**Approval of all items on the Consent Calendar requires a single unanimous vote called for as the first order of business under Special Orders. At the request of any member of the Division, any such item must be withdrawn and considered in its regular order on the agenda [bylaw 4.1.2].**

**Reports received and placed on file "are received as presented and require no further action" [bylaw 4.1.3]. Only the reporting committee can change or withdraw these reports; however, at the request of any member of the Division, a report will be moved into its regular order on the agenda (Item 10. Reports of Standing Committees and Faculties) where it may be discussed, and motions relating to the report may be offered.**
h. Faculty Welfare
i. Graduate Council
j. International Education
k. Library (No Report Received)
l. Physical Resources Planning
m. Preparatory Education
n. Privilege and Tenure
o. Research
p. Rules and Jurisdiction
q. Scholarships and Honors
r. Undergraduate Council
s. University Extension

B. Regular Reports

a. Committee on Committees - appointments
b. Committee on Committees – standing committee appointments for 2008-2009
c. Committee on Courses – course approvals
d. Committee on Courses – instructor approvals
e. Committee on Courses – course deletions
f. Committee on Courses – General Rules and Policies Governing Courses of Instruction
g. Committee on University Extension – course/instructor approvals
h. Graduate Council and Executive Committee Degree Reports
i. Committee on Educational Policy – proposed changes to B.A. Degree in Chicano Studies
j. Committee on Educational Policy – proposed change in the Computer Engineering Major
k. Committee on Educational Policy – proposed change in the Computer Science Major
l. Committee on Educational Policy – proposed change in the Computer Science Minor
m. Committee on Educational Policy – proposed change in the Creative Writing Minor
n. Committee on Educational Policy – proposed change in the Electrical Engineering Major
o. Committee on Educational Policy – proposed changes in the Geology Major
p. Committee on Education Policy – proposed changes in the Geology Minor
q. Committee on Educational Policy – proposed change to the Journalism Minor
r. Executive Council –Ad Hoc E-File Committee Report

8. Report of the Representative to the Assembly
   A. February 20, 2008

9. Report of Special Committees
10. Reports of Standing Committees and Faculties

A. Distinguished Teaching Award ................................................................. 126
   • Professor Susan Straight, Department of Creative Writing
B. Faculty Research Lecture Award ............................................................... 128
   • Distinguished Professor I. Strenski, Department of Religious Studies
C. Distinguished Service Award
   • Professor C. Cranor, Department of Philosophy ................................. 129
   • Professor M. Martins-Green, Department of Cell Biology & Neuroscience 130
D. Executive Council – Namings From the Senate: Student Support Services
   Building Project ...................................................................................... 131
E. Executive Council – Proposal to Reconstitute the A. Gary Anderson Graduate
   School of Management and the Transfer of the B.S. Degree in Business
   Administration to the A. Gary Anderson Graduate School of Management .......... 135
F. Executive Committee, Division of Biomedical Sciences – Post Baccalaureate Program in
   Biomedical Sciences ............................................................................. 159
G. Executive Committee, College of Natural and Agricultural Sciences – Proposal for a B.A.
   Degree in Geoscience Education ............................................................... 166
H. Executive Committee, College of Natural and Agricultural Sciences – Proposal for a B.S.
   Degree in Mathematics for Secondary School Teachers .............................. 173
I. Graduate Council - Proposal for M.S. and Ph.D. Degrees in an Interdepartmental Graduate
   Program in Materials Science and Engineering ........................................... 183
J. Graduate Council - Proposal for a Joint Doctoral Program in Evolutionary Biology Between
   The University of California, Riverside and San Diego State University .......... 373

11. Petitions of Students

12. Unfinished Business

13. University and Faculty Welfare

14. New Business

ATTACHMENT: Academic Senate Committee Attendance Records ....................... 762

May 13, 2008

A.S. Jacobs, Secretary-Parliamentarian
Riverside Division of the Academic Senate
MINUTES OF THE REGULAR MEETING OF THE RIVERSIDE DIVISION

MEETING: The Riverside Division of the Academic Senate met on Tuesday, February 19, 2008 at 2:10 p.m. in A265 Bourns. Chair T. Cogswell presided.

MINUTES: The Minutes of the Regular and Annual meeting of November 20, 2007 were approved as distributed.

ANNOUNCEMENTS BY THE CHANCELLOR: Acting Chancellor Grey commented on two items. The first item was the budget. We will know nothing about the outcome of the budget until summer. No serious negotiations will start on the budget until May. In the meantime, the Governor honored the compact with the university and that includes formula funding for an additional 5,000 students. Then the Governor’s budget proposes a 10% reduction after adding that additional funding in the compact. Discussion among the Chancellors and Office of the President was whether to take the additional 5,000 students. There were lots of people consulted and the way it will come out is that we will say yes, we will accept the additional 5,000 students systemwide for this coming academic year. There are several reasons for that. First, California has the largest high school graduating class in its history this year and secondly, it is within a few weeks of the time that the University sends out admissions letters. This doesn’t mean that that many students will matriculate and we will keep our agreement to admit them. Provost Hume has told the Chancellors that in this budget year, there will be no money for over enrollment. The referral pool will be larger and UCR will benefit from that. In the discussions among the Chancellors, President, and Provost, the question about what should be our priorities; there was unanimous agreement that the faculty salary increase plan that started this year will be a top priority. This is enthusiastically supported by all the Chancellors.

Acting Chancellor Grey commented on the School of Medicine proposal and thanked everyone who had worked on committees to review the draft proposals. It has been a huge effort and he has appreciated everyone’s time. The comments have been good for the proposal and good for the campus. It escapes no one’s attention that we are about to complete a review process for a new school that costs a lot of money to start originally and then over the decade to develop. It is not a cheap undertaking; it is a transforming step for the campus. It is almost the equivalent of starting up a new campus of the university because of the nature and size it can become if it is successful. We can’t do anything about the coincidence of the budget but what the Chancellor will say in the transmittal letter pending the review by the Senate and assuming that it is favorable when we get the appropriate revisions made is the following: “We are submitting the proposal with full enthusiasm. We have put a lot of work into it and we are poised to make it happen. But it cannot happen and we will not accept its establishment at the cost of current programs on the Riverside campus.” The venture is too costly to implement by shaving budgets of the existing colleges and schools. It would be inappropriate to proceed. This is Chancellor’s Grey own view on the matter. We can make the case that the investment which will require special attention by the Legislature and Governor is well worth the making. It will return a lot on that investment, not just in dollars but in benefit to the community.

ANNOUNCEMENTS BY THE EXECUTIVE VICE CHANCELLOR AND PROVOST: There were no announcements by the Executive Vice Chancellor and Provost.

ANNOUNCEMENT BY THE DEANS OR OTHER EXECUTIVE OFFICERS: Tonantcin Oseguera, Assistant Dean of Students, addressed the faculty regarding Homecoming. In an effort to improve the connection between faculty and students, she shared information on some of the events that are happening on campus this weekend and encouraged faculty to help celebrate homecoming.
ANNOUNCEMENT BY THE SECRETARY-PARLIAMENTARIAN: Professor A.S. Jacobs announced that the election report was found on page 6 of the full agenda.

Professor R. Richert was elected to serve on the Executive Committee of the College of Humanities, Arts, and Social Sciences.

Professor L. Swanson was elected to serve as Chair of the Faculty of the Graduate School of Education.

ANNOUNCEMENTS BY THE CHAIR: Chair T. Cogswell began with an announcement from the eFile ad hoc committee. A questionnaire is going to be distributed to all faculty & staff who have (or will have) used the e-file program. The questionnaire will help the committee determine those areas of eFile that are successful and those that are opportunities for improvement. Chair Cogswell encouraged all faculty to respond to the questionnaire and ask that faculty encourage their respective departmental staff who are responsible for academic personnel to also respond to the questionnaire.

Another questionnaire, the Faculty Climate Survey, will be distributed shortly. A similar effort in Spring 2006 due to a lack of response from the faculty, less than 1/3 responded. The earlier effort was organized by the Administration with the advice of the Senate and employed Wonderlic. This time the Administration will fund the survey, the Senate will retain full control over the exercise and the results. Faculty can be certain of complete confidentiality in their responses.

Chair Cogswell announced that a Special Division Meeting is tentatively planned for Tuesday, March 4, 2008. Senate Committees are analyzing the business plan for the medical school. At the special meeting, we will collectively determine a response. This is the second and last step in the discussions about the new medical school.

Regarding the search for the new Chancellor, members of the search committee both here and in Oakland have given Chair Cogswell to understand that their efforts are progressing nicely and they are about to begin discussions with several highly promising persons of interest.

SPECIAL ORDERS:
I. Consent Calendar: The Consent Calendar was adopted with unanimous consent.

REPORT OF THE REPRESENTATIVE TO THE ASSEMBLY: Professor C. Lovatt presented the report of the January 30, 2008 meeting of the Assembly of the Academic Senate, which can be found on page 39 of the full agenda.

REPORTS OF STANDING COMMITTEES AND FACULTIES:

A. Professor T. Cogswell, Chair of the Executive Council, presented and moved adoption of The Curriculum for the School of Medicine found on page 43 of the full agenda. The motion was unanimously adopted.

B. Naming from the Senate: Raymond L. Orbach Science Library. The Administration and the Senate had agreed to put forth a proposal to rename the Science Library. As long as Raymond Orbach continues to serve for the White House Administration we cannot do this without coming into conflict with federal funding guidelines. Chair Cogswell requested permission to pull this item. There were no objections.
C. Chair I. Dumer, Chair of the Graduate Council presented and moved adoption of the proposal for an Interdepartmental Graduate Program in Management Leading to the M.A. and Ph.D. Degrees found on page 243 of the full agenda. The motion was unanimously adopted.

There being no further business, the meeting adjourned at 2:50 p.m.

ATTEST:

A.S. Jacobs, Secretary-Parliamentarian
Riverside Division of the Academic Senate

Sue Stracener
Recording Secretary
MINUTES OF THE SPECIAL MEETING OF THE RIVERSIDE DIVISION

MEETING: The Riverside Division of the Academic Senate met on Tuesday, March 4, 2008 at 2:10 p.m. in A265 Bourns. Chair T. Cogswell presided.

Professor T. Cogswell, Chair of the Executive Council, presented and moved adoption of the Proposal for the Business Plan for the School of Medicine at the University of California Riverside. Professor T. Morton referenced page 65 and 67 of the proposal which indicates that the East Campus Transition Phase Project Cost is $48 million and that the funding source for the Health Sciences Surge Building and Vivarium will be the campus.

The question was how exactly will the campus funding work? VC Gretchen Bolar explained that the funding is from campus funds, not general funds. It is a general campus facility not a school of medicine facility. You can’t use state enrollment funds, they have to use gifts to the chancellor or opportunity funds. This will not be funded out of FTE. The motion was unanimously adopted.

Acting Chancellor Grey thanked and congratulated the Senate and all the members for all their hard work on this proposal.

There being no further business, the meeting adjourned at 2:20 p.m.

ATTEST:

A.S. Jacobs, Secretary-Parliamentarian
Riverside Division of the Academic Senate

Sue Stracener
Recording Secretary
To be received and placed on file:

2007-2008 Election Report

1. RIVERSIDE DIVISION

Chair of the Riverside Division (2 year term)

Two valid nominations were received for:

Professor A.W. Norman, Department of Biochemistry
Professor T. Przymusinski, Department of Computer Science & Engineering

An election was held and the results of the balloting are as follows:

Professor A.W. Norman   148 votes*
Professor T. Przymusinski     97 votes

*Professor A.W. Norman has been elected to serve as Chair of the Riverside Division for a 2 year term, effective September 1, 2008 through August 31, 2010. The results of this election have been posted on the Academic Senate website.

Vice Chair of the Riverside Division (1 year term)

1 valid nomination received:

Professor W.P. Beyermann, Department of Physics and Astronomy

Representative to the Assembly (2 year term)

1 valid nomination received:

Professor M.M. Martins-Green, Department of Cell Biology & Neuroscience

2. BOURNS COLLEGE OF ENGINEERING

One Member BCOE Executive Committee from the Department of Computer Science (3 year term)

1 valid nomination received for:

Professor G. Ciardo
One Member At Large of the BCOE Executive Committee from the Department of Computer Science (3 year term)

1 valid nomination received for:

Professor C. Shelton

3. COLLEGE OF HUMANITIES, ARTS, AND SOCIAL SCIENCES

One member of the CHASS Executive Committee (2 year term)
Chosen from among the Departments of Art History, History, Comparative Literature & Foreign Languages, Philosophy, Hispanic Studies, and Women’s Studies

1 valid nomination received:

Professor J. Ward, Department of Women’s Studies

Three members of the CHASS Executive Committee (2 year term) chosen from the Departments of Anthropology, Economics, Ethnic Studies, Political Science, Psychology, And Sociology

3 valid nominations received:

Professor D. Rodriguez, Department of Ethnic Studies
Professor K. Esterling, Department of Political Science
Professor R. Arnott, Department of Economics

One member CHASS Executive Committee (2 year term) chosen from the Departments of Fine Arts, [Art, Creative Writing, Dance, Music and Theatre]

1 valid nomination received:

Professor D. Burrill, Department of Dance

Two members, Committee on Committees (3 year term)

2 valid nominations received:

Professor L. Bell, Department of History
Professor C. Gailey, Department of Women’s Studies

At the Faculty Meeting of the College of Humanities, Arts, and Social Sciences on April 16, 2008, the Secretary was instructed to cast a single ballot for the following nominees who were approved for membership on the College Executive Committee for a 2 year term effective September 1, 2008. Professors L. Bell (History) and C. Gailey (Women’s Studies) were approved to serve on Committee on Committees for a 3 year term effective September 1, 2008.

Women’s Studies  Professor J. Ward
Ethnic Studies  Professor D. Rodriguez
4. COLLEGE OF NATURAL AND AGRICULTURAL SCIENCES

Chair of the Faculty (2 year term)

1 valid nomination received:

Professor M. Yates, Department of Environmental Sciences

One Member CNAS Executive Committee from the Department of Biochemistry (3 year term)

1 valid nomination received:

Professor R. Debus

One Member CNAS Executive Committee from the Department of Biological Sciences (3 year term)

No valid nomination received

One Member CNAS Executive Committee from the Department of Botany & Plant Sciences (3 year term)

1 valid nomination received:

Professor T. Close

One Member CNAS Executive Committee from the Department of Entomology (3 year term)

1 valid nomination received:

Professor R. Stouthamer

One Member, CNAS Executive Committee from Mathematics (3 year term)

1 valid nomination received:

Professor G. Geirz

One Member, Committees on Committees (Not from the Departments of Biochemistry, Biology or Statistics) – 3 year term

No valid nomination received
5. ANDERSON GRADUATE SCHOOL OF MANAGEMENT

One Member of the AGSM Executive Committee (2 year term)

1 valid nomination received for:

Professor E. Rolland

One Member of the AGSM Executive Committee (2 year term)

1 valid nomination received for:

Professor B. Dodin

At the Faculty Meeting of the Anderson Graduate School of Management on March 21, 2008, Professors B. Dodin and E. Rolland were approved for membership on the AGSM Executive Committee for a 2 year term effective September 1, 2008.

2. GRADUATE SCHOOL OF EDUCATION

One Member of the GSOE Executive Committee (2 year term)

1 valid nomination received for:

Professor M. Nash

One Member of the GSOE Executive Committee (2 year term)

1 valid nomination received for:

Professor G. Marcoulides

At the Faculty Meeting of the Graduate School of Education on January 13, 2008, Professor D. Mitchell was elected to serve as Chair of the Faculty for a 3 year unexpired term effective September 1, 2008 and Professor L. Swanson was approved for membership on the GSOE Executive Committee for a 1 year unexpired term.

At the Faculty Meeting of the Graduate School of Education on April 15, 2008, Professor M. Nash and Professor G. Marcoulides were approved for membership on the GSOE Executive Committee for a 2 year term beginning September 1, 2008.
In Memoriam

HARRY WILLIAM JOHNSON, JR.

Professor of Chemistry Emeritus
University of California, Riverside
January 2, 1927 - December 18, 2007

Harry W. Johnson, Jr., the son of second generation Swedish immigrants, was a native of Central Florida, among the orange groves about equidistant from Kissimmee and Tampa. He was born in Waverly, Florida on January 2, 1927. After graduating from Lake Wales High School in 1945 he served in the U.S. Army at Camp Crowder, Missouri, and Washington D.C. decoding enemy communications. After his Army service, he proceeded to the Massachusetts Institute of Technology where he received his S.B. degree in Chemistry in 1951 and graduated Phi Beta Kappa. He did graduate studies at the University of Illinois, Champagne-Urbana, where he completed his Ph.D. in organic chemistry in 1954 under the direction of Professor David Y. Curtin. His Ph.D. thesis concerned the mechanism of one of the famous name reactions in organic chemistry, the para-Claisen Rearrangement. He joined as Instructor in the Division of Physical Sciences as one of its original chemistry faculty members at the University of California, Riverside in Fall, 1954. Harry retired from the UCR faculty at the end of 1989.

Harry was a long time member of the American Chemical Society as well as other professional organizations. His UCR research focused on structural and mechanistic organic chemistry, which included studies of hetero-aromatic organometallic compounds and acid-base chemistry. He also co-authored with Professor Emeritus George Helmkamp a well known undergraduate organic chemistry laboratory text, "Selected Experiments in Organic Chemistry". Without doubt, Harry's most lasting contribution has been his service to the Department and Campus. During the early years of the newly created Department of Chemistry (1960) and its Graduate Program, Harry, an Associate Professor, stepped in as Departmental Chair (1963-66). This unusual action, triggered by a sudden resignation in a Department apparently suffering from growing pains, reflects Harry's calming influence in an administrative role. This also reflected the high esteem he had achieved among his colleagues. It came as no surprise then that after a brief stint as Assistant Vice Chancellor for Research (1973-74), Harry was appointed as Graduate Dean, a post he held for six years (1974-1980). He continued his association with Graduate Division as Associate Dean (in 1981 after a one year hiatus) until his retirement in 1989. The period of his leadership in the Graduate Division coincided with the period of rapid growth in the number and size of graduate programs throughout the campus and with the development of graduate program evaluations, all of which benefited greatly from Harry's judicious and fair implementation.

Time and time again it was heard from students, staff and faculty that Harry was a nice guy, possessed a boisterous, infectious laugh, and exhibited a calm
demeanor with exceptional patience. And, in contrast, Harry could be a no nonsense kind of individual who was capable of being blunt. He was said to profess to a young faculty member that he would be fired if he did not do good research. And, in virtually the same breath, Harry indicated that this young faculty member would also be fired if he did not do a good job teaching. But he also informed faculty members what great research they had accomplished as reported in recent papers he had read. He also kindly praised a young, newly hired secretary some forty years ago for what a great job she did in typing her first scientific manuscript, not a small task in the days before computers and photocopying machines.

Aside from his UCR association, some of the Chemistry Faculty best remember Harry as an avid fisherman, most notably on the LaJollan down in San Diego or at the Arcularius Ranch north of Bishop. One member of this Committee shared living quarters with Harry about fifty years ago, and another shared an office complex in Pierce Hall with Harry for many years. Thus, it was easy to recollect what a fine influence he had on this campus. And there was George Helmkamp, Harry's long time friend and associate. George, an organic chemistry faculty member who arrived at UCR shortly before Harry, was also an enthusiastic fisherman. It became clear later on that Harry, a member of the Sierra Club, had many other hobbies including photography, bird watching, rock hounding, often traveling around in his signature camper. He was a member of the First Congregational Church of Riverside and was also a member of PFLAG.

During his long battle with myositis, a disease that causes severe muscle deterioration, Harry was under the care of his personal physician, who was also his former student. Several other former Organic Chemistry students, who are now doctors, assisted him during his illness. The night he passed away, one of his attending physicians was also a former student. He remembered Harry as a demanding but fair teacher, whose teaching stayed with him through his career as a doctor. Harry always said Organic Chemistry classes should not be easy because he “did not want a doctor who did not understand what he or she was doing.” Thus his role in the emergence of the Biomedical Sciences Program did result in quality physicians returning to serve the community.

Harry passed away at the age of 80 on December 18, 2007 in Riverside after a heroic, 14-year battle with inclusion body myositis. Although incapacitated by ill health in recent years, he remained active in the Myositis Association. He is survived by Margaret, his wife of 50 years, and his three daughters: Anne Johnston (Chicago, Illinois), Jill Johnson-Young (Riverside) and Gail MacMillan (Riverside) and their spouses Robert Johnston, Linda Johnson-Young and Kevin MacMillan. His grandchildren include Sandy and Isaac Johnston, Kerry and Chloe Johnson-Young, and Natalie and Linnea MacMillan. His parents, Harry W. Johnson, Sr. and Effie Johnson, and his sister, Patricia, preceded him in death.
M. Mark Midland
Hartland H. Schmidt
Richard M. Wing
William H. Okamura, Chair
To be received and placed on file:

At this time, the committee has met twice and will have at least two more meetings. One of the future meetings will be in connection with a joint initiative with UCR Computing and Communications, and UCR Survey Research Center to poll faculty for their input on prioritizing a set of instructional and research initiatives for improving the UCR information technology infrastructure. A second future meeting will be used to review proposal for Innovative Uses of Computers in Instruction (IUC). Awards should be announced before July 1. We will also attend an additional ITTP meeting during the Spring quarter. At two meetings we have had thus far, the following matters were discussed:

1. Conflict of Interest. The Committee discussed and adopted the same Senate Conflict of Interest statement as last year.

2. Responded to a Senate Reorganization Committee request to estimate the number of person-hours invested during the year by this committee.

3. Sent one committee member to an ITTP meeting in Oakland during the fall quarter.


5. Discussed and provided feedback (to Bob Hanneman, UCR Survey Research Center) on a proposed faculty survey to solicit priorities on various initiatives to improve the UCR information technology infrastructure.


D. A. BIGGS
J. GREENSTEIN
S. KRISHNAMURTHY
T-H. LEE
L. J. MUELLER
P. PAVLOU
J. SIMUNEK
R. JACKSON, UNIV. LIBRARIAN, EX OFFICIO
C. ROWLEY, EX OFFICIO
W. B. TAYLOR, ASUCR REPRESENTATIVE
D. JESKE, CHAIR
To be received and placed on file:

So far the Committee on Academic Freedom has had one meeting in the current academic year, on February 15. At that meeting the Committee took action on the following items.

1. The conflict-of-interest policy that had been in effect in the 2006-2007 academic year was adopted for 2007-2008 without amendment.

2. The Committee responded to a request for comments on the draft California Animal Enterprise Protection Act.

3. The Committee responded to a request for comments on draft systemwide regulations governing the conduct of non-affiliates on University grounds.

4. In response to a request from a faculty member, the Committee considered the implications of the change in grade submission deadlines in Winter 2008 for the academic freedom of UCR faculty. The Committee’s concerns about this matter were forwarded to the Committee on Education Policy, the Graduate Council, and the Executive Council.

5. Both at the February 15 meeting and later in the year, the Committee also discussed and commented upon draft proposals for reorganizing the administration of the Academic Senate.

X. Liu  
D. A. Weber  
D. Hare, Ex Officio  
R. Redak, Ex Officio  
L. Holness, ASUCR Representative  
R. L. Russell, Chair
To be received and placed on file:

The Committee on Charges has not met during the past period and currently has no cases pending. The Committee is prepared to address any further cases brought during the remainder of the year.

A. M. ARRIZON
J. P. BRENNAN
S. N. CURRIE
D. B. KRONENFELD
M. A. NASH
M. V. YATES
S. N. THOMPSON, CHAIR
COMMITTEE ON COURSES
ANNUAL REPORT TO THE RIVERSIDE DIVISION
MAY 20, 2008

To be received and placed on file:

Since the 2007 Annual Report to the Riverside Division, the Committee on Courses has approved a total of 183 new courses (109 undergraduate, 68 graduate, and six professional). It has approved changes in 363 Courses (289 undergraduate, 73 graduate, and one professional); deletions of 34 courses (six undergraduate and 28 graduate); restoration of eight courses (seven undergraduate and one graduate); and 11 extension courses. Sixty-six associate-in requests were approved.

Effective from the start of Fall 01 we introduced a single course deadline for all courses for the following academic year. This simplified the existing system with the aim of making it easier for departments, the courses office, and this committee to process course requests. However, with the substantial increase in workload this year (~50% over previous years), we are considering returning to multiple deadlines, which may help distribute the workload more evenly.

The Committee invited Representatives from the Registrar’s Office (L. Lundgren, Interim Registrar and B. Dailey, Associate Registrar), Courses Specialist (C. Spina) and University Library (A. Frenkel) to attend our meetings. The Committee wishes to express its appreciation for the information and assistance they provided.

R. Clare
A. E. Goldberg
B. K. Mishra
Y-S. Poon
Z. Xu
T. Steinbacher, ASUCR Representative
_____________, GSA Representative
A. Frenkel, Library Representative
G. E. Haggerty, Chair, Fall and Winter
R. O’Connor, Chair, Spring
The Committee on Diversity and Equal Opportunity (CODEO) met 4 times in 2007-2008. Actions undertaken by the Committee on Diversity and Equality Opportunity were the following:

1. The Committee continued progress towards developing an exit interview instrument to conduct interviews with faculty who have departed from the UCR campus.
   - The EVC agreed to do the climate survey and faculty exit survey through the Survey Research Center (SRC).
   - Chair J. Allison met with Bob Hanneman, Co-Director of the SRC regarding the survey.
   - CODEO members met with B. Hanneman, to discuss the survey and go over the recommendations made by the SRC, and subsequently approved a revised version of the survey.
   - Following a meeting between B. Hanneman and University Counsel, CODEO members approved final revision of the survey instrument to be consistent with UCR’s legal requirements and concerns.
   - The survey is expected to be in the field Spring 2008.

2. The Committee was asked to review and comment on the Regents’ Task Force on Diversity Reports. CODEO members did not find significant issues pertaining to Diversity & Equal Opportunity.

3. The Committee reviewed and discussed the System-wide Review proposed Amendments to Academic Personnel Manual 710, 71l and 080 and did not find significant issues pertaining to Diversity & Equal Opportunity.

4. The Committee met on February 8, 2008 with Dr. Phyllis Guze and Kiki Nocella, Vice Provost for Health Affairs, to discuss the medical school proposal. The presentation to CODEO focused on the diversity section of the plan. The Committee unanimously approved the proposal for a School of Medicine at UCR.
5. The Committee was asked to review and comment on Senate Bylaw 140. The University Committee on Affirmative Action and Diversity (UCAAD) requested a change in its name with “Equity” replacing “Affirmative Action”, and a change in its charge which reflects the proposed name change. CODEO members supported the change.

L. Barrett
B. Echeverria
L. Fernandez
J. E. Garay
J. M. McMullin
D. Rodriguez
M. Lopez, ASUCR Representative
J. E. Allison, Chair
The CEP will have held semi-weekly meetings for a total of 25 times this academic year. (This includes 17 regular CEP meetings and 8 undergrad program review subcommittee meetings per faculty member.) In addition to attendance at meetings, and the close study of often complex and lengthy proposals that must precede such meetings, many CEP matters are dealt with via email. CEP members are also asked by the Administration and/or the chair of the Senate to attend additional meetings. This year our involvement included the following obligations above and beyond our regular committee and subcommittee work: BOARS meeting on Admissions, the Medical School kick off, the sessions the VPUE organized on Learnings Outcomes, and meeting with WASC reaccredidation team. Our active members are to be commended for their countless hours of attention to a broad spectrum of matters concerning educational policy. The attendance report for our regular meetings is attached.

A conflict of interest statement was adopted to govern the Committee on Educational Policy procedures for 2007-08.

Undergraduate program reviews have now become an established routine under our supervision. The History, Statistics and Computer Science and Engineering program reviews from 06-07 have been closed and follow up meetings concerning action plans have taken place between the History and Statistics programs, the Vice Provost for Undergraduate Education, the appropriate Dean, and the CEP Chair. A similar meeting is scheduled for the Computer Science and Engineering review late this spring quarter. Last year, we scheduled four reviews for 2007-08: Comparative Literature and Foreign Languages, Music, Mathematics, and Electrical Engineering. Mathematics asked for a one year postponement which we granted. We then notified the Chemistry program of their upr for 2007-08. Because of workload issues, and difficulty recruiting new members for this demanding committee, we were forced to delay the Music review until the 08-09 year. For the 08-09 academic year, we also proposed reviewing the Mechanical Engineering program. The ME program has requested a deferral of this review, which the CEP has carefully considered. We do not grant a deferral lightly, but the reasons for the deferral request presented to us by the Chair were sufficiently compelling that we decided to grant it. Since we have more programs in the CHASS College to review, it was decided to forego a BCOE program review next year in favor of an additional review in CHASS. We will be reviewing the Psychology program for 08-09 in addition to the Music Department.

We have been trying to push forward the implementation of the Life Sciences review. In the fall, we invited CNAS Associate Dean Walling to a committee meeting to provide an update on the efforts of the Life Sciences program to implement the recommendations made by the Life Sciences Review Team as a result of the 05-06 site visit and subsequent findings and recommendations by our committee. At that time, she estimated that new program proposals or changes to existing proposals would come to the CEP by early 2008. In March of 2008, we became concerned that we had not seen the promised program proposals. We requested followed up with Associate Dean Walling and she reported that 7 of the 9 program changes were prepared and that they would be sent through the CNAS Executive Committee in April, 2008. She indicated that it was understood now in her College that none of these initiatives would arrive at the Senate in time for Fall, 2008 implementation. It was her hope at that time that the CEP should have the program proposals in time for Fall, 2008 review. At this writing, we have learned from the CNAS Executive Committee that they have requested a copy of the Life Sciences Council of Chairs plan for reorganization. We are expecting to receive a copy of the plan with any CNAS EC comments sometime in late May.
In Spring of 2007, we initiated discussion with the Graduate Council on combining the faculty survey used for graduate reviews with the survey used for undergraduate reviews. Over the Summer of 2007, we received a negative response from the Graduate Council. We hope that there will be closer cooperation with the Graduate Council in the future on program reviews at the undergraduate and graduate level.

At the beginning of the academic year, we formulated a set of guidelines and procedures for establishment of new academic programs or changes to existing programs. These guidelines have been posted on the Senate webpage and distributed to the Executive Committees for wide distribution to program chairs and Student Affairs Officers.

Considerable committee time was spent on two major initiatives: the new Medical School curriculum and business plan and the system wide proposal to reform freshmen eligibility (the so-called BOARS report). Each of these initiatives were on four regular committee meeting agendas and also demanded extensive review on our members’ time outside of meetings to work through very substantial amounts of documentation.

CEP also took up a number of matters with respect to majors and minors and other programs. Matters of this nature that were discussed, approved and forwarded to the Division as of this date, include the following:

**PROPOSED CURRICULUM CHANGES APPROVED:**

- Computer Engineering Major
- Information Systems Major
- Computer Science Major
- Computer Science Minor
- Electrical Engineering Major
- Computer Engineering Major
- Spanish Major
- Spanish Minor
- CRWT Minor
- Journalism Minor, including lifting of moratorium
- Biochemistry B.S. and B.A.
- Botany and Plant Sciences Minor
- Geology and Geophysics Major
- Geology Minor
- Mathematics Honors program
- Geology Minor 2nd round of changes
- Geology Major

**NEW DEGREES APPROVED:**

- Medical School
- Chem and Envi Eng 5 yr. bs/MS
- Computer Sci 5 yr bs/MS
- Mechanical Eng 5 yr bs/MS
- Joint grad program with SDSU in Evolutionary Biology
- MS and PhD programs in Material Science and Engineering
- B.A. in Geoscience for Educators
B.S. in Mathematics for Secondary School Teachers

Topics discussed and/or acted upon by the Committee in consultation with other Senate Committees and/or the Administration throughout the year have included:

Senate chair goals at annual retreat
Role of graduate students in instruction
Classroom disruptions by on and off campus groups
Biomed bylaws
Medical School Business plan
Ad Hoc General Education proposal
W. Ruel Johnson and S. Sue Johnson Chair and Jacques S. Yeager Chair in Bioengineering
Board of Admissions and Relations with Schools proposal to Reform Freshman Eligibility
Increased Enrollment Initiative with Division Chair
Report of the Ad Hoc Committee on International Education
Proposed UC Undergraduate Mission Statement
CCGA/UCEP/ITTP “Dialectic” Paper on Remote/Online Instruction
Report on Affordability
Proposal to reconstitute and transfer the b.s. in Business Administration to AGSM
Meeting with WASC Reaccredidation team
Grade deadline submissions
Post baccalaureate program in Biomedical Sciences
Senate Ad Hoc Committee on Reorganization report

During the remainder of the academic year, we envision much of our time will be occupied with the on site program reviews scheduled for May. These onsite program reviews also involve a follow up in June. We will also continue with the planning process for the 08-09 reviews. We also anticipate substantial involvement in the attempt to comply with the Learning Assessment demands that have been placed on the campus by the WASC review team.

Taradas Bandyopadhyay, member of CEP currently represents the campus at the system-wide level of CEP (UCEP). He has kept CEP informed about system-wide developments and items discussed at UCEP including standardizing of Undergraduate Program Review procedures and discussions on Freshman Eligibility requirements, and online instruction.

T. Bandyopadhyay
B. Bhanu
Y.P. Chung
David Funder (Winter and Spring quarters)
G.E. Haggerty (Fall and Winter quarter)
Rollanda O’Connor (Spring quarter)
David Reznick
Reinhard Schultz
S.C. Straight
John Wills, (Winter and Spring quarters)
Zhenbiao Yang
Craig McClaren, GSA rep
Victoria Carlstrom, ASUCR rep
S.J. Wimpenney, Vice Chair
P. Keller, Chair
To be received and placed on file:

The Executive Council reports on discussions and actions taken in 11 meetings held from September 2007 to April 2008.

Chair Thomas Cogswell reported on issues reviewed at Academic Council Meetings and other critical issues raised by the faculty or the administration.

Issues considered and actions taken by the Executive Council include the following:
- Initiated discussions with the EC members to change the name of the Committee from Advisory Committee to Executive Council;
- Discussed the revised Proposal to reform UC’s Freshman Eligibility Policy and formulated a response for the Campus;
- Discussed and approved various bylaw changes;
- Discussed the report from the Ad Hoc Committee on Graduate Education;
- Discussed and reviewed the Report on UCR’s Preparatory Education Program.

Campus Initiatives:
- Discussed and approved the proposal for the establishment of a School of Public Policy;
- Discussed and approved the Medical School Curriculum and Business plan;
- Discussed and approved the Reconstitution of the UCR A. Gary Anderson graduate School of Management (AGSM) and the transfer of the BS Degree in Business Administration to AGSM;
- Discussed the possibilities of creating an exploratory Administrative team to coordinate the efforts between the Library and Computing and Communications;
- Initiated discussions on themes for the campus to pursue which included the areas of Environmental research and International Education;
- Initiated discussions with the EC members on the pending visit by President Dynes and the EC members participation on the panel dealing with the Chancellorial Search;
- Encouraged Dean Cullenberg and Mike Miller to develop outdoor seating plans for the CHASS courtyard and similar plans with Dean R. Abbaschian and Assistant Vice Chancellor Miller in the BCOE courtyard.

Faculty Issues:
- Discussed and reviewed the Report of the Joint Senate/Administration relating to retired faculty and senior staff;
- Appointed an Ad Hoc Committee to review the eFile process and collect faculty input;
- Appointed an Ad Hoc Committee to formulate a faculty survey;
- Appointed an Ad Hoc Committee under the leadership of Vice Chair Ward Beyermann to discuss the reorganization of the Academic Senate Committees;
- Discussed with the Administration, the issue of the Psychology Vivaria and the cost that was being pushed on to the faculty;
- Continued discussions on the establishment of a University Club.

Visitors:
• Acting Chancellor R. Grey
• Executive Vice Chancellor and Provost Ellen Wartella
• Dean Dallas Rabenstein
• Vice Chancellor James Sandoval
• Assistant VC Enrollment, Larae Lundgren

Thomas Cogswell, Chair, History
W. P. Beyermann, Vice Chair, Department of Physics and Astronomy
Andrew S. Jacobs, Religious Studies
J. E. Allison, Political Science
Ilya Dumer, Electrical Engineering
Christopher Chase-Dunn, Sociology
Anil Deolalikar, Economics
John Ganim, English
John Halebian, AGSM
Dan. Jeske, Philosophy
Pierre Keller, Philosophy
Carol Lovatt, Botany and Plant Sciences
Mart L. Molle, Computer Science and Eng.
Doug Mitchell, GSOE
Anthony Norman, Biochemistry
Leonard Nunney, Biology
Tom Patterson, Anthropology
Rick Redak, Entomology
Pete Sadler, Earth Sciences
Kambiz Vafai, Mechanical Engineering
Frank Vahid, Computer Science and Eng.
Ameae Walker, Biomedical Sciences
Deborah Willis, English
During the 2007-2008 academic year, the Committee on Faculty Welfare (CFW) met seven times, and dealt with the following issues:

1. The Conflict of Interest Statement for 2007-2008 was adopted.

2. The Committee on Faculty Welfare met on September 28, 2007 and discussed the data, findings and recommendations found in the "Report from the Joint Task Force Relating to Retired Faculty and Senior Staff-July 2007." The CFW was unanimous in endorsing the findings of the Task Force Report with the suggested following actions:

   (a) As outlined in the report, facilities for retired faculty and staff be made available as soon as is reasonably possible.

   (b) Parking and handicap parking should be provided adjacent to such a retirement facility.

   The committee suggested that serious consideration be given to the concept of developing a joint faculty club and retirement facility. Furthermore, the committee suggested that inquiries be made as to the availability of the new Alumni Center for the placement of such a joint faculty club/retirement center facility.

3. The CFW Committee was charged with the award process for The Dickson Emeritus/a Professorship beginning with the 2008-2009 academic year and annually thereafter to one or more emeritus professors for teaching, research, or public service activities in the amount of $10,000. The call for applications went out end of February 2008.

4. CFW was asked to respond to the Systemwide Review of APM 710, 711 & 080. The committee on Faculty Welfare did not find significant issues pertaining to Faculty Welfare and had no substantive comments on the proposal.

5. The Committee reviewed the proposed amendments to SR750B as outlined in the CCGA/UCEP report on *The Role of Graduate Students in University Instruction*. Although not requested to comment on the report as part of the UCR Senate’s review of this document, the CFW was of the unanimous opinion that the committee’s input was reasonable. The CFW respectfully requested the
Senate Chair forward a follow-up document to the Academic Council expressing the concerns of the Divisional Committee on Faculty Welfare regarding the proposed changes in SR750B.

6. At its December 4, 2007 meeting, the Committee on Faculty Welfare discussed the Systemwide Senate Review of Proposed Regulations Governing Conduct of Non-Affiliates. They did not find significant issues pertaining to Faculty Welfare and therefore had no substantive comment on the proposal.

7. CFW reviewed the UC Sponsored Legislation Proposal – California Animal Enterprise Protection Act and found no significant issues pertaining to Faculty Welfare and therefore had no substantive comment on the proposal.

8. A presentation was given to the Committee on Faculty Welfare by Dr. Phyllis Guze and Vice Chancellor Bolar regarding the proposal to establish a School of Medicine at the University of California, Riverside. The committee had no specific concerns and voted to approve the proposal.

9. CFW was asked to respond to the Regents’ Task Force on Diversity Reports. The CFW discussed the proposal and had no substantive comments.

10. At its February 22, 2008 meeting, the Committee discussed the proposed Transitional Leave Policy for member of the Senior Management Group (SMG). The committee voted unanimously to select Policy Option #3: Apply standard faculty sabbatical leave policy.

11. The Committee met with Richard Luben, Chair of the Campus Vivarium Advisory Committee to discuss the animal care charges as a result of value-engineering in the new Psychology building. The committee summarized the issues which pertain to faculty welfare and forwarded a letter to Chair Cogswell.

12. The Committee on Faculty Welfare evaluated eight proposals for the Edward A. Dickson Emeritus Professorship at its meeting on April 29, 2008 and voted unanimously to nominate two emeriti faculty for the award. The nomination packages will be forwarded to the Vice Provost for Academic Personnel to enable CAP review. After CAP has reviewed and approved the nominations, they will be sent to the EVC/P for appointment, to be effective the following academic year.

13. CFW was asked to review and respond to the Systemwide Senate Review of Proposal Regulations Governing the Code of Conduct for Health Sciences. The committee had no specific concerns and voted unanimously to approve the proposal.

14. CFW reviewed the Proposal to Amend Senate Bylaw 337 (Privilege and Tenure: Divisional Committees – Early Termination Cases). The committee had no specific concerns and voted unanimously to approve the proposal.
15. The Committee on Faculty Welfare reviewed the Proposed Revisions to Academic Personnel Policy 220-85-b, 335-10-a, 740-11-c and 350. The committee had no specific concerns and voted unanimously to approve the proposal.

16. CFW reviewed the proposed Senate Reorganization and had some concerns which will be addressed to the Chair of the ad hoc committee.

J. Chen  
T. Garland  
M. Martins-Green  
T. Morton  
S. Ness  
S. Xu  
J.K. Oddson  
L.A. Pedrotti  
R. Redak, Chair  
M. Wiley (GSA Representative)
To be received and placed on file:

The Graduate Council met ten times during the period May 2, 2007 through April 23, 2008. The Administrative Committee of the Council met five times during this same period. Complete records of Council activity are on file in the Office of the Academic Senate.

The Courses and Programs Subcommittee made recommendations and the Council acted on 88 new courses, 94 changes in existing courses, 1 restoration, and 23 deletions. In addition, the Graduate Council acted on requests for changes in requirements for the following graduate programs: Biomedical Sciences, Comparative Literature, Creative Writing and Writing for the Performing Arts, Dance History, Economics, Education, English, Environmental Sciences, Evolution Ecology, and Organismal Biology, History, Physics, Religious Studies, Southeast Asian Studies (please refer to the attachment for synopses of these changes).

Since the last report, the Graduate Council Fellowship Subcommittee has awarded Dissertation Research Grants amounting to $16,200.

The Graduate Council concluded its regularly scheduled review of the graduate programs in Chemistry, Environmental Sciences, Geological Sciences, History, Philosophy, Physics, and Soil & Water Sciences. The following reviews are still underway: Dance; Dance History & Theory, Education, Management, Neuroscience, Political Science, and Statistics. The following program reviews were initiated during the academic year 2007/08: Computer Science, Environmental Toxicology, Music, and Electrical Engineering.

Additionally, the following actions were taken by the Graduate Council:

At its first meeting of the academic year, the Council adopted a statement regarding possible conflicts of interest by its members.

The Graduate Council considered and approved a Proposal to Establish a School of Public Policy.

The Graduate Council considered and responded to a change in Biomedical Sciences Executive Committee By-laws.
The Graduate Council considered and responded to a student query regarding Academic Senate regulation R.5.1.4.

The Graduate Council considered and approved the combination of the graduate programs in Environmental Sciences and Soil and Water Sciences.

The Graduate Council considered and responded to a document titled “Student Freedom of Scholarly Inquiry Principles.”

The Graduate Council considered and supported development of a policy for parental accommodation for graduate students.

The Graduate Council considered and approved the Campus Visa Policy – Report.

The Graduate Council considered and responded to a request to combine graduate/undergraduate faculty survey for extramural reviews.

The Graduate Council considered and responded to a request to approve the W. Ruel Johnson and S. Sue Johnson endowed chair for the UCR School of Medicine and the Jacques S. Yeager Endowed Chair in Engineering in the Bourns College of Engineering.

The Graduate Council considered a request from Yolanda Moses, Associate Vice Chancellor to support the Graduate Diversity Summit.

The Graduate Council considered and responded to a document titled “The Role of Graduate Students in University Instruction.”

The Graduate Council considered and approved a request from the Office of the President to allow postdocs hired in title Code 3253 to receive health benefits.

The Graduate Council considered and approved a proposal for a new Interdepartmental Graduate Program in Management.

The Graduate Council considered and approved the proposed curriculum for the School of Medicine and the proposal to establish a School of Medicine at UC Riverside.

The Graduate Council considered and provided an analysis of the two reports on graduate student funding prepared by the Childers Ad Hoc Committee on Graduate Education and the Graduate Council Ad Hoc Committee on Graduate Student Funding with Robert Russell as Chair.

The Graduate Council considered and approved Regulation 8 – the policy on classroom disruption.
The Graduate Council considered and responded to a document titled “CCGA/UCEP/ITTP ‘Dialectic’ Paper on Remote/Online Instruction.”

The Graduate Council considered and responded to a request from the Coordinating Committee on Graduate Affairs to provide additional information related to the changes to the graduate programs in Environmental Sciences and Soil & Water Sciences.

The Graduate Council approved combined Five-Year BS/MS graduate program proposals for computer Science, Chemical and Environmental Engineering, and Mechanical Engineering.

The Graduate Council approved the proposed order for graduate program reviews for 2008/09.

The Graduate Council considered and responded to a request from the Academic Senate to consider reorganization of the UCR Academic Senate.

The Graduate Council considered and responded the Regent’s Task Force on Diversity Reports.

The Graduate Council considered and responded to the Reconstitution of the UCR A. Gary Anderson Graduate School of Management (AGSM) and the Transfer of the B.S. degree in Business Administration to AGSM.

The Graduate Council considered and approved a request from the Office of the President to require electronic submission of dissertations to ProQuest for publishing.

The Graduate Council considered and responded to a memo from R. L. Russell regarding a change in deadlines for grade submission.

The Graduate Council considered and approved the addition of a “diversity” question to the list of questions routinely distributed to external graduate program reviewers.

The Graduate Council considered and approved a proposal for a new graduate program in Materials Science and Engineering.

The Graduate Council considered and approved a proposal for a new Joint Doctoral Program in Evolutionary Biology between the University of California, Riverside and San Diego State University.
The Graduate Council approved the following program changes during the period May 2, 2007 through April 23, 2008.

**Biomedical Sciences** – change in requirements for the doctoral degree [5/2/07].

**Comparative Literature** – addition of new track in Science Fiction, Science and Literature [6/11/07].

**Creative Writing and Writing for the Performing Arts** – addition of a concentrated residency at the Palm Desert campus [1/23/08].

**Dance History and Theory**: change in language requirement [11/14/07].

**Economics** – addition of a specialized field requirement in Public Economics [2/27/08].

**Education** – addition of an emphasis in Leadership to the M.Ed. program [5/23/07].

**English** – change in admission requirements for students entering the Ph.D. program with an M.A. degree [3/19/07].


**History**: change in exam requirements and protocols [11/14/07].

**Physics**: requirement changes for Astronomy track [4/23/08].


**Soil & Water Sciences/Environmental Sciences**: reorganization of Soil & Water Sciences and Environmental Sciences graduate programs into one combined graduate program in Environmental Sciences [5/23/07].

**Southeast Asian Studies** – addition of a Plan II, Comprehensive Exam option [2/27/08]

Ilya Dumer, Chair                            Bajis M. Dodin
Christopher Y. Switzer, Vice Chair           J. T. Guo
Patricia S. Springer, CCGA Rep.              Linda J. Tomko
Morris Maduro, Secretary                    Alan Williams
John G. Andersen                              Alejandro Cortez, Graduate Student Rep.
Kenneth Barish                               Erik Kolb, Graduate Student Rep.
Kimberly Devlin                              Dallas L. Rabenstein, ex officio
The Committee on International Education (CIE) met three times so far: on October 9, 2007; on December 5, 2007; and on January 24, 2008. A fourth and final meeting for the year will take place later this month. These meetings are scheduled around the quarterly meetings of the system-wide Committee on International Education (UCIE), which are attended by the CIE chair (me), who then reports back to our committee about main developments. CIE has been unusually busy this year, for several reasons. Most significantly, we were asked to comment on a substantive report by the Joint Ad Hoc Committee on International Education, including the controversial "Kissler Report" attached to it, in which major changes to the UC Education Abroad Program (EAP) were proposed. (Our committee's official response to this report is attached; so is a relevant recent letter by Michael O'Connell, the Interim Director of EAP.) In addition, several other developments affecting international education caught our attention, including: the creation of new administrative committees for international developments, both at UCR and system-wide; the search for a Vice Provost for International Affairs at UCR; and changes affecting UCR's International Education Center. In what follows, I will say more in each connection, in particular about ways in which these developments have raised noteworthy worried for us.

The UC International Education Program is undergoing far-reaching changes, mostly driven by financial considerations. For several reasons, EAP accumulated a non-negligible deficit two years ago. These reasons include not only what are perceived to be inefficiencies on the side of the EAP administration, but also the following: significantly higher costs due to the low exchange rate of the dollar; and a general funding scheme for EAP that is proving to be more and more inadequate, among others because of shifts in how UC students have come to use EAP (more short term stays abroad, rather than whole year immersion programs). In addition, John Marcum, the long-term director of EAP, retired a year ago, to be replaced by Michael O'Connell as the Interim Director. Moreover, a general audit of EAP was undertaken not long ago, resulting in several reports, in particular the above mentioned Joint Ad Hoc Report, in which changes to EAP have been proposed. Until recently, the two main outcomes of these developments were: First, EAP started to streamline its operations drastically, both by cutting back on administrative costs (reducing the size of the Santa Barbara office) and by eliminating or downsizing some of its offerings to students (eliminating a few programs, cutting back on the number of study center directors, etc.). Second, fundamental changes to the funding structure of EAP began to be pursued seriously (including the one proposal by Jerry Kissler, an external consultant who also visited UCR last year). The most recent outcome, however, is that these new funding structures have been found unfeasible; and as a result, the Office of the President has decided to keep the old structure in place for now, but require EAP to reduce its budget for 2008-2009 by 15%. This is a very deep cut, deeper than for many other programs; and it will surely have a negative effect on EAP's ability to operate. (For EAP's own analysis of the situation, see the attached letter by Michael O'Connell; it paints a vivid picture of the overall impact of all the recent changes.) This cut will also affect UCR directly, as our International Education Center relied on funding from EAP to provide adequate on-campus advising.
Our committee’s main reactions to these developments were, very briefly (compare the attached official CIE response): We are pleased to see that, with the above mentioned reports, international education is taken seriously again in the UC system; we strongly reaffirm the central role of EAP in this connection; we believe that a new funding structure for EAP is called for, although we are skeptical about the ones proposed so far; and most importantly, we are worried about both EAP’s ability to keep functioning at all, given the severe financial cutbacks mentioned above, and about the ability of UCR's International Education Center to keep fulfilling its corresponding role. Concerning the former, it should be noted that the recent changes involve cutting, or curtailing severely, actual academic programs, not just more minor services to our students. Concerning the latter, the worry is that it seems unlikely that our administration will be willing, or able financially, to provide the funding needed for the Center, i.e., to take over what will be lost due to EAP cutbacks.

Turning to other issues affecting international education at UCR: Our committee noted three additional developments that, from the point of view of the Academic Senate, should be seen as worrisome. First, both at the system-wide level and at the campus level advisory committees for international initiatives were formed without Academic Senate representation (system-wide: the International Initiative Steering Committee; on campus: the International Advisory Committee). This is worrisome, among others, because academic programs will most likely be affected by the committees' recommendations. Second, the search for a Vice Provost for International Affairs at UCR was aborted, or at least postponed, due to general financial considerations, something that also doesn't bode well. (As the Chair of CIE, I was involved in the interviewing of candidates for this position, on the invitation of the Chair of the Academic Senate.) Concerning the ability of UCR's International Education Center to continue fulfilling its function properly (see above), a third issue should be mentioned. Namely, it has come to our committee's attention that there are plans to move the Center to a different location on campus; but very low priority seems to be given to providing appropriate, not to speak of attractive, rooms for it. This is again a worrisome development for international education, since the advising provided by the Center is crucial and needs to be secured in general. We believe that the Academic Senate should urge our administration to give higher priority to this issue.

These are tough times for international education in the UC system. Our committee will, no doubt, stay busy monitoring related developments for some time to come.

E. Reck (Chair); I. Ethell; B.-L. Li; G. Xu; Y. Ye; and L. Zanello; also S. Duffy (UNEX Acting Dean); D. Elton (Director, International Education Center); C. Pratt (Interim Director, UNEX IEP); and K. Tomoff (Director, Education Abroad Program).
February 12, 2008

TO: Tom Cogswell, Chair of the Academic Senate, UC Riverside
FROM: Erich Reck, Chair of the Committee on International Education

RE: CIE Response to Joint Ad Hoc Committee Report on International Education

The Committee on International Education (CIE) has been asked to respond to the Report of the University of California Joint Ad Hoc Committee on International Education, dated November 2007 (and hereafter called the Report). We discussed it at two CIE meetings: on December 5, 2007, and on January 24, 2008. (The committee found the report so important overall, and the changes faced by the Education Abroad Program so significant and potentially damaging, that we added a meeting to our usual schedule.) In giving our response, we will start with some background information.

Background

The Report is the outcome of a series of developments over the last 3-4 years, including: the discovery of an unexpected deficit by the UC Education Abroad Program (EAP); the subsequent audit of that program; the formation of the original Ad Hoc Committee on International Education, resulting in an initial, less widely distributed report (with little input by the Academic Senate, it seems); the expansion of the committee to the Joint Ad Hoc Committee on International Education (with more Academic Senate participation); the financial analysis and corresponding recommendations by Jerry Kissler, an external consultant (not strictly part of the Report and not endorsed by the Joint Ad Hoc Committee, but appended for further consideration); the production of the Report itself, by the expanded committee; and the addition of a minority report by Gayle Binion, one of the committee members, in which some disagreements are expressed.

For ease of reference, the sixteen main recommendations in the Report are appended below. They fall under four general rubrics: (i) expanding student participation in study abroad programs; (ii) reorganization of EAP; (iii) funding EAP and the new “study abroad consortium”; and (iv) transitional planning. Our committee’s response is based on discussions of the Report (made available to us in mid-November), but also on additional information provided, at our request, by the UCR Faculty Campus Director, Kiril Tomoff, and by the Director of the International Education Center, Diane Elton. (The latter information includes statistics about the participation of UCR students in education abroad activities over the last few years, in comparison with other UC campuses.) Our response will focus on the Report itself. We will start with general comments, then elaborate on a few of them, and conclude with suggestions of our own.

General Comments

To begin with, our committee is pleased to see that, with the Report and related discussions, international education in the UC system is finally taken seriously again. We also want to express support for several general points in the Report, namely:

(1) The acknowledgment of the value of study abroad experiences for UC students; the corresponding goal to increase participation in exchange programs significantly (but see
(6) below); also the suggestion to increase the number of international students enrolled at UC campuses.  [Compare Recommendations 1., 2., 7., 15.]

(2) The attention paid to, not just EAP, but a whole menu of choices, including: exchange programs administered jointly with other universities in the US; research agreements with universities worldwide; and, at least to some degree, the use of “third-party providers” (but see (7) and (11) below). [Recommendations 4., 6., also 9., 12., 13.]

(3) At the same time, the recognition of the crucial role EAP will, or should, continue to play for UC students (compare (10) and (12)); and consequently, the importance of finding ways of saving, and if possible strengthening, this UC program in a time of financial deficits, cutbacks, and other pressures.  [Recommendations 3., 8., 10., 15.]

(4) Moreover, the recognition of the essential role the campus offices for international education play in providing opportunities for study abroad, by providing information and advice to students, not just concerning what EAP has to offer, but also other opportunities (but compare (8) and (13)).  [Recommendations 5., 11.]

However, we also have a variety of criticisms, questions, and worries:

(5) A first criticism concerns the fact that the financial analysis by Kissler, in particular, but also the Report itself, tends to present EAP as a service program, rather than an academic program.  We think this is a serious distortion (compare (10), also (11)).  [A partial exception is Recommendation 14., which should be much more prominent.]

(6) While we welcome the plan to increase the number of UC students going abroad, we wonder whether it is realistic to double that number within five years [Recommendation 1., Kissler Report].  We are skeptical especially because there is no provision for the amount of financial support to go up accordingly.  In fact, that amount will almost certainly go down, perhaps drastically, in the near future because of the financial crunch the university is facing (see comment (15)).  With student numbers going up and financial support going down, the quality of international education must surely suffer.

(7) A big part of the growth in student numbers is supposed to be absorbed by “third-party providers”, including various non-UC organizations, often of a commercial nature, that offer study abroad programs [see the Kissler report, but also Recommendations 4.]. But we had a whole range of questions about them that should be answered, or at least investigated in a preliminary way, before relying so heavily on them (see (11), (14)).

(8) There are various tensions, or incongruities, between the Joint Ad Hoc Report and the Kissler proposal.  A particularly glaring one is that, in the Report, the essential role played by campus centers is recognized [Recommendations 2., 5.], while in the Kissler proposal no clear provisions are made for how to secure their financial support.  The hope seems to be that individual campuses will take over much of that support; but that seems overly optimistic, to say the least.  (Compare (12), (13) below, also (15).)

(9) Finally, we are surprised about the haste with which decisions are being made and implemented in this connection.  The Joint Ad Hoc Report is long and multi-faceted; its recommendations, and even more those in Kissler’s plan for financial restructuring, are far reaching; but our committee received the whole package only in mid-November.  Nevertheless, important steps in the transition plan are about to be taken or have already been taken [Recommendation 16., compare p. 15 of the Report].  Financial pressures seem to be driving a lot of the proposed changes, while their academic
implications are not thought through fully. As a consequence, there is a real danger that several of these changes will do substantial harm to an established academic program. At the very least, careful and ongoing oversight of their effects seems called for (see (14) below.)

Elaborations

(10) EAP as an academic program: Students taking part in EAP remain registered as UC students during their time abroad; they take classes at host universities for which they receive credits towards their UC degrees; also, currently sustained attempts are under way—by the EAP Faculty Director at UCR, in collaboration with members of various departments—to improve and facilitate academic integration further; and finally, CIE, as an Academic Senate committee, has as one of its explicit charges to oversee EAP. For all these reasons, it should be clear that EAP is an academic program, not just a service provided to students. Changes to it, including drastic changes to its financial structure and viability, will directly affect academic affairs.

(11) Third-party providers: Clearly these providers can, and already do, serve useful and commendable functions. For example, there are various parts of the world in which EAP does not have study centers or other arrangements, so that they become accessible to UC students only through third-party providers. It seems also hard to deny that, if the number of UC students participating in study abroad programs is to go up significantly in the near future, EAP will not be able to accommodate all of them. And it is well known that some of the third-party providers offer high quality services, also educationally. Nevertheless, many questions about them remain, especially from an academic point of view, including the following: (i) As the quality of such providers seems to vary widely, are there any reliable procedures in place for evaluating them, so that UC can advise and direct its students accordingly? (ii) More basically, is any research available about the effect on the academic success of UC students using these providers, e.g., about how many and what kind of credits they receive for classes taken abroad, about the ways in which using them affects the quality and the length of the students' education, etc.? (iii) Are there any studies about the financial effects of choosing third-party providers, i.e., about how much more expensive they are compared to EAP, if so? And (iv), what about investigations into whether UCR students are taking advantage of third-party providers to the same degree as students from other UC campuses? Question (iv) has the following relevant background: As is well known, UCR has an unusually large percentage of first-generation students, minority students, and students from low-income families. In connection with such students, depending on third-party providers may have unexpected, and potentially undesirable, effects at UCR, partly also elsewhere.

Concluding Suggestions

(12) EAP has come under intense scrutiny and criticism recently, especially because of its financial difficulties. (They are not entirely due to mismanagement, as may be worth adding—the low exchange rate of the US Dollar, especially compared to the Euro and the British Pound, did not help either, among other factors.) A careful look at EAP’s structure, and at possible ways of streamlining its operations, seems justified. In addition, current initiatives to broaden the menu of options available to UC students for going abroad are welcome. At the same time, EAP constitutes a very valuable academic program, one that should not be treated in any light or dismissive way. In addition to the questions about third-party providers just listed, the following kinds of
considerations play a role here: EAP has an established infrastructure that will be hard, as well as expensive, to duplicate or replace by other programs; it has an excellent track record of keeping students abroad safe; and the kind of immersion program EAP offers remains invaluable educationally. For these reasons it would be a big mistake to undercut EAP so much, financially and otherwise, that it was no longer able to function properly. Put more positively, EAP should remain at the center of UC’s study abroad initiatives.

(13) Similarly, the various UC campus centers, including UCR’s International Education Center, play a core role in study abroad. They are not only indispensable for the functioning of EAP; they are also the main places for students to get information about related programs, including those provided by third-party providers, and especially, information about programs we can recommend to UC students in good conscience. It is very important, then, to ensure that the campus centers can continue to function properly, especially by being able to provide substantive advising to interested students. (There are recent studies showing the number of students studying abroad to be directly proportional to the amount of advising available at campus centers. To undercut, or neglect, the funding for campus centers would be in direct conflict with the goal of increasing that number, as well as with making UCR a global research university.)

(14) Given the relative disregard for the academic nature of EAP, the various questions about third-party providers mentioned above, and the worries expressed about adequate funding for both EAP and the campus centers, it would seem important to keep track of the changes brought about by the Joint Ad Hoc Report and, especially, by Kissler’s and similar recommendations over the next few years. One possibility might be for the Academic Senate, at UCR or systemwide, to request the formation of a new Ad Hoc Committee, this time focused squarely on academic affairs and effects in this connection.

Added Remark

(15) At the systemwide CIE meeting on February 7, 2008, the following points became clear: a) The shift towards a fee-based funding model for EAP, as proposed in the Kissler report, is off the table, at least for the moment. b) EAP has been asked to make a 15% cut to its budget for next year, not just the originally expected 10% cut. c) Cuts to the budgets of the campus offices, usually supplemented by EAP funds (so as to be able to advise and adequate number of students), will be a direct consequence. Several of the issues raised above seem thus even more acute (especially (6), (8), (12), and (13)).
Recommendation 1. Taking into account recent growth in UC study abroad, the importance of providing this experience to students, and the relative proportions of students studying abroad at comparable universities, UC should set a five-year goal of doubling the participation rate at each UC campus. (Campuses currently have significantly different levels of participation.)

Recommendation 2. The President of the University should issue a statement on international education, expressing commitment both in educational and final terms, and request release annually of a major paper on international education at UC. These statements will explore the increasing global context of knowledge advancement and the value of study abroad for preparing the next generation of leaders for private and civil life. Such a central commitment to international education will strengthen the position of all study-abroad programs at UC as a core component of the overall education experience.

Recommendation 3. The Education Abroad program should continue to occupy a central position in a broad portfolio of student study opportunities that include campus and third-party programs. Together, this portfolio of options will accommodate a diverse range of student needs and interests as appropriate for a university with large number of students with different majors, aims, and personal circumstances.

Recommendation 4. The entire menu of choices—EAP, campus-based programs, and approved third party provider programs—must be centrally and prominently publicized so that students at all campuses can weigh all their options, study their individual features, and then seek advice from professional staff with experience and expertise in the area.

Recommendation 5. Campus-based student advising must also be understood as an essential element of the study abroad experience and services in these areas must be better supported. Every UC campus must make a careful inventory of available advising and invest sufficient funds to make this aspect of international education available to all students who need it.

Recommendation 6. Faculty and administrative leadership of the University must articulate the goals of international education and take steps to integrate a global perspective into commonly held belief systems about higher education.

Recommendation 7. As the number of UC students participating in study abroad grows and as Tidal Wave II subsides, the University should consider enrolling a much larger number of degree-seeking international students, building at the undergraduate level where numbers are very small.

Recommendation 8. The University must adopt an overall financial plan for study abroad that includes significant continued core University support, including adequate financial aid. In particular, financial aid must account for expenses in high-cost areas and the impact of loss of student earnings while studying abroad.

Recommendation 9. Implementation of new policies on the granting of academic credit for specific programs of international study should be reviewed by the Academic Senate on each UC campus with an eye toward streamlining and simplification. Consistency of
reviews of courses taken by students while abroad, as well as timeliness and efficiency in decisions to grant specific types of academic credit (particularly within majors), are serious problems at present.

Recommendation 10. Wherever centralized services can be provided in a more efficient and cost-effective manner, they should be performed as a system.

Recommendation 11. With the envisioned expansion of participation rates by UC students, as well as a need to streamline the process currently employed by UOEAP, campus responsibilities for study abroad will necessarily be expanded, while those conducted systemwide more sharply focused.

Recommendation 12. In order to establish an integrated framework for international education at UC, comprised of a broad portfolio of programs, an International Education Leadership Team, appointed by the Chancellors and the President, will be charged with overseeing integration of the University’s various study abroad programs, including EAP.

Recommendation 13. The International Education Leadership Team will oversee development and implementation of a transition plan for the short term, designed to facilitate a new universitywide coordinated effort to provide expanded options for international education. In the long term, the Leadership Team will act as a governing/advisory group for EAP and other elements of the new portfolio in international education. Authority for oversight and direction of EAP will be vested in this body.

Recommendation 14. The prerogatives of the Academic Senate for ensuring quality control and managing the course articulation process must be preserved.

Recommendation 15.

1. Ensure that EAP programs are accessible and affordable to all UC students.
2. Correct the imbalance inherent in the current funding formula, which causes EAP to absorb state budget cuts but does not allow EAP to benefit from offsetting student fee increases.
3. Give EAP an opportunity to compete with other service providers based upon the quality of its programs.
4. Provide the stability for better planning and adequate resources for future growth so that EAP can help the University achieve aggressive goals for increasing the number of students who have studied abroad.
5. Develop a long-term funding of international education that will provide UC students access to a wide portfolio of study abroad opportunities including those offered directly through EAP, campus-based programs, and preferred third-party providers. Develop and maintain a UC systemwide online repository of information about these opportunities, as well as substantially augmented staff on each campus to advise students adequately.
6. Provide funding for research to ascertain student needs, selection and outcomes relating to study abroad (that is, “market information”) for use systemwide in program planning and marketing.
7. Encourage the development of outstanding educational programs that are responsive to student interests and based upon cost-effective management principles.
8. Adopt a self-sustaining budgetary model with the understanding that a subsidy from UCOP to EAP will be necessary for some of the more expensive programs.
9. Provide additional funds to support campus international offices.

Recommendation 16. The University should develop a detailed implementation plan for installing the new structures outlined and recommended in the report. The International Leadership Team should be appointed and charged with drafting this plan. It should also assume responsibility for carrying it out. The plan should be finalized no later than February 2008 in order to synchronize with the 2008/09 budget cycle.
To: Professor Michael T. Brown  
Chair of the Assembly and the Academic Council  
University of California, Academic Senate  

From: Michael O’Connell  
Interim Universitywide Director  
Education Abroad Program  

Re: EAP in the wake of the Joint Ad Hoc Report and funding cuts for 2008-09  

Dear Michael,  

Now that the Academic Council and both systemwide and campus committees have responded to the Joint Ad Hoc Report on International Education, I want to provide some further reflection on the report and the consequences for the Education Abroad Program. Together with the senior leaders of EAP I have already responded to the report itself. But after ten months as Interim Director of EAP, I want to consider in more detail the fate of the review, EAP’s current funding, and what I understand as possible future planning for its funding. Despite excellent assessments from the Joint Ad Hoc Report about the value and centrality of EAP for meeting UC’s international goals, the intentions of the Office of the President toward EAP and the implementation of those goals remain unclear and require continued Senate concern. The only response from OP thus far has been a budget cut that has necessitated sharp reductions in EAP staff and threats to its programming abroad. Even more alarming is the possibility that it may intend to redefine EAP and to move it to a funding model that would jeopardize its scope and character.  

The report as a review of EAP  

The Academic Council is right in finding the Ad Hoc Report remiss at a basic level in assessing EAP. There appears to have been considerable confusion about the nature of the review, which apparently began as a review of EAP, then was broadened to encompass international education generally in the University of California. There was also, as you know, confusion about the composition of the committee from the beginning. The committee was assembled without sufficient consultation or representation from the Academic Senate, and three new representatives of the Senate were added in the final year of the committee’s work. The UCOP-appointed administrative staff assistant to the committee also changed midway through the review process, leaving the committee without the experience of Julie Gordon. In fact, the expanded committee apparently met only once; it never met with EAP, in spite of requests from its leadership, and none of the committee ever met with the new leadership that was in place after John Marcum’s retirement in June, 2007.
The committee as constituted before the three additional members were added issued a report in April 2007. That report contained a number of basic errors about EAP and its operations; it was clear that the committee had not been able to review the program in sufficient detail to understand important elements of EAP’s structure and processes. Several groups responded to that report, including the leadership at UOEAP, the Council of Campus Directors, and the Campus Administrative Directors, all pointing out the errors and omissions in the preliminary report. The leadership of EAP had hoped that these errors would be corrected, and in fact this was promised by the expanded committee, but the final report issued in November 2007 did not mention or address the errors.

None of this criticism is meant to deny the utility of the report in providing a preliminary overview of international educational opportunities in UC and some direction for providing enhanced study abroad opportunities for UC students. As I’ve already indicated in my response to the Joint Ad Hoc Report, the leadership of EAP found the report a strong voice for the necessity of expanding these opportunities. And it placed EAP at the center of this expansion.

The final report contained a financial analysis by Consultant Jerry Kissler, which centered on a possible new funding model that proposed that EAP’s funding be altered from a general fund appropriation to a student fee-based model. Kissler’s analysis was based on considerable work with EAP financial records; his questions about these records were highly valuable to the leadership of EAP, particularly to its director of budget and finance. But Kissler had not been charged with any analysis beyond the financial, and his own report did not provide detailed discussion of alternate funding models for a university that wished to maintain a significant and growing program for international education. His recommendations on staffing, for example, seemed arbitrary and based on an a priori need to reduce general fund appropriations to $3M (falling to $1M) without a sense of what this would mean to the academic structures of EAP. There may have been some hope that the Ad Hoc committee would make use of this limited analysis in its own analysis, but because the committee itself had not devoted sufficient attention to the structures and processes of EAP, let alone its funding and financial workings, this did not occur. The result was a puzzling disconnect between Kissler’s work and that of the rest of the committee. In fact, as we noted in our response to the Joint Ad Hoc Report, the funding suggestions in the Kissler report fell far short of what would be needed to maintain EAP in its present level of operation, let alone grow in the way larger report envisioned. We did, however, feel that Kissler’s report provided a potentially useful model of an alternate way of funding EAP that may be worthy of further exploration, but only if this were combined with a firm sense of EAP’s academic nature and goals.

A New Funding Formula for EAP

The major disappointment for EAP in the work of the Joint Ad Hoc committee and its final report is its failure to arrive at and to propose a new funding model for EAP. It has been recognized by a number of authorities that the current funding, by which EAP receives an appropriation based on a fixed percentage (70 percent) of the marginal cost of instruction for enrollment growth, but returns the student education fees to the campuses, has become increasingly problematic. As MCOI declined significantly from early in the decade to the middle, the University raised student fees. But EAP did not receive any part of this enhanced funding. The Kissler report proposed switching these two funding sources, allowing EAP the education fee revenue and giving the MCOI-based funding to the campuses. But the difficulty for EAP is that education fee-based funding requires a 33 percent return to aid, which effectively reduced this
revenue stream to the point that EAP was even further disadvantaged. On April 21, 2006, Provost Hume wrote to Professor Stanton Glantz, chair of the University Committee on Planning and Budget:

EAP has proposed to UCOP that its funding be adjusted to reflect the realities of running study abroad programs. EAP had also proposed to UCOP a budget incorporating cuts that would bring it back into balance over a period of several years, but would entail eliminating a number of academic programs. I asked EAP not to cut academic programs but to reduce administrative support to save funds, while permitting a deficit for the current year. *It is my intent that the budget will be brought into balance through a combination of such reductions and a change to the funding model* [emphasis added]. Because the funds needed to protect EAP programming are too large to be accommodated by adjustments to the MCOI and Ed fee distribution formulas as had been proposed initially by EAP, EAP would require a needs-based allocation to address its current budget deficits, while protecting current programs. Additional funding would also be needed to conceptualize, design, and offer new EAP programs.

Since that time EAP has brought its budget into balance, in large part through a significant downsizing of its administrative office (through reduction of its staffing FTE and subleasing of a third of its office space as well as consolidation of operations and programs abroad). And in spite of the plural reference to budget deficits, the deficit that was discovered in 2005 was a one-time event and has remained constant at $2.4M. At the close of the memo to Professor Glantz, Provost Hume referred to an annual difference between revenues and expenses of $2.84M, suggesting continued accumulating deficits in this range. But this was incorrect; EAP has not added to the 2005-06 budget deficit, which UCOP has allowed EAP to carry forward over the past two years. Since 2005-06 EAP revenues have been in balance with EAP costs.

In spite of the Provost’s intentions, EAP remains, two years later, without a change in its funding model. Given the unsettled situation in the Office of the President over the past year, this is not, perhaps, surprising; clearly the overall budget situation in the University has been perplexing in the extreme. The leadership of EAP was taken aback to hear that the Provost had gone before the Academic Council in November and declared that EAP was a “failed program” and incapable of reforming its financial situation. It is difficult, to say the least, to understand what the Provost may have meant by this judgment. With record high student numbers (4500 in 2007-08), strong faculty support (as evidenced in the campus and senate responses to the Joint Ad Hoc report), and its prestigious reputation nationwide in the professional study-abroad community, EAP would appear to remain one of UC’s most obviously successful operations. Even if he was referring to the one-time deficit incurred in 2005, the irony is that EAP’s finances were even then being brought into balance, and until the announcement of a 15 percent funding cut, repayment of the deficit had been planned to begin in the 2008-009 year.

**Instead, Funding Cuts**

Rather than a new funding model that would address EAP’s genuine needs, EAP has instead endured a funding cut for 2008-09 of 15 percent. A cut of 10 percent was originally proposed in September, 2007. Because of EAP’s overseas commitments and the need to project programs for students and faculty directors a year in advance, the 10 percent cut was difficult enough to accommodate. But then in December the amount was raised to 15 percent, with the directive that the plan for this budget cut be presented by mid-January. Most perplexingly, EAP was told it might dodge the 15 percent cut, and perhaps be absolved from its deficit, if it came up with a student-fee-based funding model. The EAP leadership, in consultation with the campus EAP offices, constructed such a model, one which, because of the mandated return-to-aid, still required a general fund appropriation of approximately $9M (around
45 percent of the current appropriation) to maintain current programming. This model was rejected by UCOP without discussion, and EAP was instructed to present a budget that would simply reduce funding by 15 percent.

In its response to the Joint Ad Hoc Report, the Academic Council goes on record as opposing this cut, but UCOP had already mandated the presentation of this budget by the end of January, well before the Academic Council could present its response.

The need for this funding cut was presented to EAP as simply meeting UCOP’s need for the reductions that had been mandated for the Office of the President. The leadership of EAP recognized the severity of the situation at UCOP. It felt, however, that the situation merited some discussion of the implications of the reductions for its programs and processes. There appeared no sentiment for such discussion in the office of the Provost, and the end result was simply the demand for the 15 percent cut. EAP has responded to the 15 percent funding cut by directing 63 percent of the reductions to the operations of the University Office of EAP, including a reduction of 20 percent in its staff FTE. It also reduced its spending abroad by $1.37M through reductions in the number of faculty study center directors and the elimination of some programs. But the reductions abroad coincided with a further weakening of the dollar against the Euro and other major currencies and compounded the effects of the budget cuts.

The future

At present – and with new interim leadership as Professor Michael Cowan takes the helm at the beginning of May 2008 – EAP is being told to prepare to develop “a new business model” over the next year. On the one hand, it appears difficult to say what this means. One would presume, for an academic program like EAP, that a business model must follow from academic goals and needs, and EAP’s academic model, while varied in the diversified programming it has developed over the past decade, is well established and depends on the Academic Senate for oversight and approval. On the other hand, EAP has been told that its per-student FTE funding should not exceed $7000, a figure that must include total EAP operations, including UOEAP, study centers, and all programming abroad. This figure is well below the current figure, which stands around $10,000 per student FTE. So a “business model” dependent on a figure of $7000 would mean a further reduction of EAP’s funding by 30 percent.

How EAP is understood and defined by UC.

The essential question that stands behind the question of funding level is whether EAP will continue to be defined as an academic program of the University or whether it will be redefined as a mere service provider to the campuses. The Academic Council has decreed that EAP is an academic program on the UC campuses; students earn UC units and grades, its programs are overseen by UC faculty, and its academic operations are subject to oversight by the Academic Senate. If an academic program, it would seem obvious that EAP’s funding must reflect this status and remain consistent with the average of on-campus funding of upper-division undergraduate students and not be subject to an a priori limit that seriously disadvantages EAP in relation to other undergraduate instruction.

Perhaps as a result of the budget deficit of 2005 EAP has recently been characterized as administratively heavy. This characterization has sometimes been accompanied by a comparison to other US study abroad programs that operate on smaller overall budgets. What is needed is an explanation of the basic character and structure of EAP in relation to those programs and whether the differing structures, expectations, and policies of UC have necessitated a substantially different model for study abroad.
Does EAP determine its own “business model,” or is that model determined by UC’s policies, its academic culture, and the federal character of UC?

There can be no doubt that study abroad programs at such institutions as the University of Minnesota, Indiana University, the University of Wisconsin, and the University of Michigan have funded their programs at a lower cost than the University of California. They do so by making heavy use of third-party provider programs and providing far fewer of their own programs, either programs that the university has constructed or exchanges they have negotiated with host universities. (In fact, exchange plays a very small part in the programs of these universities, while reciprocal exchange continues to be the very coinage by which EAP negotiates its immersion programs; it further serves to enrich UC with a richly diverse cohort of international undergraduate students.) The use of third-party providers essentially passes on the generally higher cost of these study abroad programs to the student consumer. In some cases the universities noted above are able to accept the academic programs of these third-party providers for credit, and they waive their own fees for their students. This is not possible in UC policy; students cannot be given UC units or grades unless they pay UC fees and are taking courses that have been subject to faculty approval and oversight. Faculty response to the idea of using third party providers in the Joint Ad Hoc Report, it should be noted, was uniformly and steadfastly negative across the campuses. It seems clear that if there were to be a change in EAP’s business model, it would need to be preceded by a thoroughgoing change to UC’s own business model. A radical change in faculty perspectives on non-UC programs receiving UC credit would also be essential as well as changes in Senate rules and regulations.

In fact the structures, procedures, and policies of EAP mirror UC structures, procedures, and policies quite precisely. Perhaps the most significant instance of this is the insistence on academic quality that must be certified at every point by UC faculty. Every new EAP program has been subjected to thorough academic review before it is brought to UCEF for approval. New programs are subject to third-year review; the programs in every country are reviewed on a ten-year schedule, just as academic departments on the campuses are. Academic review is a constant and continuing process for all EAP programs through the annual analysis produced by its faculty study center directors and liaison officers. Student evaluations are completed and reviewed for every EAP program. All EAP courses {some 7,000 a year} are reviewed by the Academics section of UOEAP for their conformity with UC requirements, then individually approved by the faculty associate dean, a process that mimics the work of senate undergraduate course committees and college offices on campus. The faculty administrators at UOEAP, its director, academic dean and associate dean, oversee all elements of the program and its academic processes. In every respect EAP’s concern for faculty-certified academic quality expresses precisely UC’s concern for the same.

A second way in which EAP, in its evolution over 46 years, has responded to the character of UC is its creation of a structure that makes study abroad available to the federal character of the UC system. In accordance with the fundamental tenets of UC, EAP provides academically rigorous programs that are both accessible and affordable to UC students. But no other study abroad program in the country has the need to coordinate its own programs for ten co-equal campuses of an overarching university of more than 200,000 students. EAP does so by concluding agreements for the UC system with some 120 foreign universities, developing programs in which all nine undergraduate campuses participate, and overseeing the work of 47 study centers abroad. EAP’s responsibilities, whether for immersion programs based on reciprocal exchange or for those constructed by UC faculty and taught abroad by faculty overseen by EAP, are assumed for the entire UC system. In virtually all respects, UOEAP functions in part as a college office does on the campuses, but a college office with responsibilities to ten campuses and to hundreds of departments. Further its Operations structures serve the campuses in
the work of efficiently coordinating the movement of over 4500 UC students abroad over the course of a year. Over its history, EAP has evolved structures and efficiencies for these operations, but its complexity cannot be underestimated.

Conclusion, recommendations

None of the above is meant to suggest that EAP would not continue to benefit from internal efficiencies and continued analysis of its programs, procedures, and policies. In fact, by virtue of its tripartite structure -- a central administrative office in Santa Barbara, nine campus offices, and 47 study centers abroad -- EAP is a remarkably self-critical, self-correcting academic organism. Moreover, it is subject to academic oversight by an academic senate committee as well as critical review by the various faculty committees that it empanels for particular purposes. The deficit crisis of 2005 and the imposed budget cut of 2007-08 have focused its attention decisively on the need to maintain a balance between costs and programming. That much of EAP’s operations occur in an economically volatile international arena makes “balance” something of a high-wire act. Add to this the dire economic prognostication of the recent UCPB “Cuts Report,” which projects the possibility of an economically hobbled UC into the next decade.

If UC continues to value international education, and it is unimaginable that it should not, it is crucial that EAP be afforded funding stability in the near term, that it not be subjected to the “new business model” pressures that in fact mean a further 30 percent cut in funding. EAP is an academic program of UC, not simply a provider of study abroad programs to the campuses, and as such its funding must follow from its academic character. Like all academic programs, EAP must respond to the funding constraints of the University, but these constraints should be sensitive to the complexity of a program with far-flung economic commitments and not simply a function meeting immediate cost-cutting needs.

In the longer term, a new funding model for EAP must be found that allows it to grow in ways consistent with University goals. The funding model espoused by Kissler is simply untenable and unworkable. It is now universally recognized that an international component should be a significant part of students’ university study, just as the ideal of a liberal education has traditionally included elements of humanistic, social science, and scientific study. Whatever its budgetary constraints, UC cannot afford to disengage from something it pioneered 46 years ago, and just at a time when other universities are discovering its necessity and expanding possibilities. The challenge will be to find a way of funding EAP so that it can fulfill the ambitious goals of the Joint Ad Hoc report.

It may indeed be questioned whether EAP is administratively well placed in its current reporting line to the Provost of the University, or whether it would receive more nuanced understanding of its operations and programs via another reporting relationship. As a systemwide program, it may make abstract sense that EAP should report to the systemwide administration, but there are instances of universitywide operations run efficiently from an individual campus. In fact UCOP is a largely an administrative unit with few structures for understanding or evaluating academic programs. Because the essential academic work of UC occurs on the campuses, one may wonder if campus placement of EAP would make better sense. The Provost and the Joint Ad Hoc Report have proposed an International Leadership Team composed of representatives from the campuses. EAP would not, presumably, report to such a committee, but rather use it as a potential source of information about campus goals and needs for study abroad. In any case, Senate representation on such a committee is essential.
I’ve enjoyed my several opportunities to reflect with you on the role and challenges of the Education Abroad Program over the past ten months. Please share these thoughts with whoever may find them useful.

Cc.: University Committee on Education Abroad  
University Committee on Planning and Budget  
Council of Campus EAP Directors  
Campus Administrative Directors  
Management Council of EAP
To be received and placed on file:

The Committee on Physical Resources and Planning (PRP) met 5 times during AY 2007-2008. The business of the Committee has been primarily devoted to project initiatives for enhancing the quality of the campus’ physical appearance.

The Committee discussed the following issues:

- Placing benches and fountains around campus.
- Reviving plans for a faculty club. The Committee has met with Ward Beyermann, Vice Chair, to discuss alternative sites and alternative methods of supporting the faculty club. The Committee was asked if they would initiate a faculty and staff survey regarding dining options on campus.
- The Advisory Committee on Campus Art – an artist from Seattle will visit UCR and propose a site-specific art work for the plaza that exists between Arts and the CHASS Interdisciplinary Building. The Chair of PRP is a member of this committee.
- Alternative modes of transportation to campus. The PRP Committee has met with Mike Delo, Director of Transportation and Parking Services. Alternative transportation incentives are being put in place. There is a program where students can ride on any RTA bus route free. TAPS is working on getting this program for faculty. There are 18 van pools out on the road with 120-130 participants. Within the next year or two the campus should decide whether or not to build a parking structure. The alternative is to put parking restrictions in place.
- An ad hoc committee was formed to work on getting benches and fountains for the campus. Two members of PRP will participate on this ad hoc committee.

The Committee on Physical Resources Planning reviewed the document on the UCR Academic Senate Reorganization and one of the PRP members had a number of concerns regarding the proposed reorganization. These were passed on to the senate.

The PRP Committee met with Vice Chancellor Gretchen Bolar and Tim Ralston to discuss the Proposal to establish a School of Medicine. The committee voted unanimously to approve the proposal.

The Committee met to address issues related to the faculty club. VC Bolar attended the meeting as well as Tom Cogswell and Ward Beyermann. A location has been pinpointed behind the Computing and Communications building and would offer a 180° panoramic view of the Riverside area and would be open to the public during evenings and weekends. The area that the committee is looking at is a designated campus reserve area. A suggestion was made that a joint senate administrative committee be formed that would include members of the University Club and staff to come up with a vision and program in the form of a proposal that the campus can get behind and approve. This proposal would then be presented to the Chancellor with a request that
a basic architectural and capital planning/business plan study be done and at this point also ask
for funding from the Administration. Also noted was the fact that the proposal should include
the need for a conference facility that would serve the entire campus, and especially if we
proceed with the Medical School.

Members of PRP have also participated in the campus architect candidate interviews and the
Campus Art Committee.

The meeting minutes are attached.

A.J. Kposowa
E,S-K Ma
G. Michels
J.T. Rotenberry
F. Sauer
A. Zaki
K. Vafai, Chair
To be received and placed on file:

The Committee met four times in 2007-08 and expects to meet at least once more before the end of the academic year. As part of its regular business, the Committee heard reports from the Chair about developments at UCOPE (University Committee on Preparatory Education) and from John Briggs, Director of Entry Level Writing, about enrollments and pass rates in the ELWR program. In addition, the Committee acted on the following issues:

1. The Committee reviewed and submitted comments on the systemwide report from the Academic Council on the Proposed Amendment to Senate Regulation 636.

2. The Committee reviewed the General Education Reform Proposal submitted in Fall '07 and discussed it with Senate Chair Tom Cogswell and Rich Cardullo, member of the Ad Hoc Committee on General Education. The Committee provided feedback on the proposal through oral and written comments.

3. The Committee reviewed and discussed the Fall '07 BOARS Proposal to Reform UC Eligibility and provided a written response to Senate Chair Tom Cogswell. The Committee also reviewed and extensively discussed the revised BOARS Proposal submitted in Spring '07 and provided a written report with recommendations to Senate Chair Cogswell and the Executive Council.

4. The Committee reviewed, discussed, and approved the CNAS Community College Referral Plan for the Freshman Class of Fall 2008. This plan establishes guidelines for advising incoming freshman who place into the Community College Referral course on Intermediate Algebra due to their Math Advisory Exam test results and sets a timeline for completion of the course. Students who do not complete the CCR course with a C or better by the end of fall quarter will not be able to register as CNAS students in winter and will be advised to file a change of major petition.

5. The Committee approved a revised course description for English 002.
6. The Committee met with Vice Provost of Undergraduate Education Dave Fairris to review developments in the pre-calculus math program and to discuss plans for a Task Force on Preparatory Mathematics at UCR. Recommendations from the Committee's Report on Preparatory Education at UCR were also discussed. The Committee expressed support for the Task Force and several members of the Committee have been appointed to serve on it.

D. R. COCKER
G. GIERZ
J. TOBIAS
A. WINER
J. C. BRIGGS, EX OFFICIO
S. BRIINT, EX OFFICIO
C. RAVISHANKAR, EX OFFICIO
G. W. SCOTT, EX OFFICIO
P. M. SADLER, EX OFFICIO (BOARS)
J. W. SANDOVAL, EX OFFICIO
L. LUNDGREN, INTERIM REGISTRAR, ADM. REP.
T. SHAPIRO, CHAIR [FALL QUARTER]
D. S. WILLIS, CHAIR [WINTER/SPRING QUARTERS]
To be received and placed on file:

The principal function of the Committee on Privilege and Tenure is to consider grievances brought by members of the Academic Senate and disciplinary charges brought by the administration against members of the Academic Senate. Details of all grievances, charges, and cases are confidential.

Following is a summary of Committee activities from May 1, 2007 to April 30, 2008:

The report of a formal hearing that was held in March of 2007 was delivered to all concerned parties.

The Committee received one new grievance.

The Chair of the Committee received and responded to several inquiries from individual faculty.

W. J. Farmer
P. A. Graham
G. I. Hatton
V. D. Lippit
T. Przymusinski
J. D. Hare, Chair
To be received and placed on file:

During the 2007-2008 academic year the Committee on Research (COR) conducted business via email, met twice before this report was filed, and expects to meet at least two more times before the end of the academic year.

COR’s primary activity was to significantly expand the resources and programs available for faculty research and to administer intramural grant competitions. This year, COR was able to obtain additional funding to expand the seed grant activity that was initiated last year to encourage faculty to develop new research projects that could ultimately be funded extramurally.

COR Research Fellowships – The Committee intends to award 10 fellowships of $10,000 each and 20 fellowships of $5,000 each. At least half of these fellowships will be reserved for Associate Professors. COR Research Fellowships are intended to assist faculty to develop new research projects that could be funded extramurally. All tenured members of the Academic Senate are eligible.

Regents’ Faculty Fellowships and Faculty Development Awards – The Committee intends to award 30 Regents’ Fellowships at $5,000 each. All Assistant Professors, Acting Assistant Professors, Assistant Agronomists and Acting Assistant Agronomists are eligible for these awards. Partial funding for the Regents’ Fellowship program is provided by the Office of the President (UCOP).

COR raised the maximum award granted under the Omnibus Senate Grants competition to $3,000 this year. In addition, the Omnibus application was revised to allow faculty requesting travel funds only (to travel to professional meetings for presenting a paper) to submit a simplified application. The Committee expects to fund roughly 300 Omnibus grants at an average grant size of $1,700 per applicant this year, which will result in a total Omnibus Senate Grant allocation of about $510,000. In addition, $200,000 will be allocated to COR Research Fellowships and $150,000 to the Regents’ Faculty Fellowships and Faculty Development Awards, resulting in total disbursements of $860,000 – significantly greater than the $588,190 allocated by COR last year (2006-07).

Another new development this year is that applications for all three grants were online and required to be submitted electronically. Application deadlines for all three competitions were April 7, 2008.

In other business, the Committee on Research met with Dr. Phyllis Guze to discuss the research component of the proposed UCR School of Medicine proposal. The committee voted unanimously to approve the proposal.

The Committee on Research also reviewed a number of other proposals and plans (e.g., the Senate Reorganization Plan, UC Sponsored Legislation Proposal, State Bill on Animal
Researcher Protection, etc.), and reported its findings and summaries of the discussions of its members to the Chair of the Riverside Division.

The Riverside Division was represented on the University-wide Committee on Research Policy (UCORP) by J. C. Laursen, a member of COR.

A. Balandin  
M. El Hafsi  
J. C. Laursen  
J. G. Millar  
M.C. Pirrung  
L. Saavedra  
J. H. Sandholtz  
A. B. Deolalikar, Chair
To be received and placed on file:

The Committee on Rules and Jurisdiction conducted its business by email and telephone.

The Committee reaffirmed its policy on Conflicts of Interest that had been in force in the previous year.

Regulations and bylaws reviewed:

Approval of Regulation 8 – Classroom Disruption

Proposal to amend Bylaw 2.6 (Executive Office)

Proposals to amend Bylaw 3.3 (Emergency Meeting), 8.2.5, 8.5, 8.5.2, 8.5.3, and 8.8.3 (Executive Council)

Proposal to amend Bylaw 8.1 (Committees of the Division, Appointment and Tenure)

Proposed Bylaw 8.27 (Distinguished Campus Service Award)

Proposal to amend International Education Committee Bylaw 8.15.1

Proposal to amend A. Gary Anderson Graduate School of Management Bylaw M2

Proposal to amend Bylaw Bourns College of Engineering Bylaw EN2, EN4, and EN4.2

Proposal to amend College of Humanities, Arts & Social Sciences Bylaw HS4.1.1.4

Proposal to amend College of Natural and Agricultural Sciences Bylaw N4.1.1 and N41.1.1

Proposal to amend College of Natural and Agricultural Sciences Regulation NR24.5.1

Proposal for Division of Biomedical Sciences Bylaw ME1
Proposal to amend Graduate School of Education Bylaw E4.1.1.2

Requests for advice and rulings:

The Committee chose not to not opine on the Informal Systemwide Senate Review of a Proposed UC Undergraduate Mission Statement.

The Committee responded to a request for a Systemwide Senate Review of the Proposed Amendments to SR 636.

The Committee reviewed the proposal to Repeal Academic Senate Regulation 458 and endorsed the revision.

The Committee reviewed the Amendment to Senate Bylaw 140.

The Committee reviewed the document on the UCR Academic Senate Reorganization and did not have any objections to the proposed reorganization.

The Committee reviewed proposal to amend Senate Bylaw 337.

The Committee reviewed the proposed revisions to Academic Personnel Policy 220-85-b, 335-10-a, 740-11-c, and 350.

The Committee and individual members of the committee have responded to informal requests for advice concerning issues of departmental, academic program, and campus governance, including faculty voting rights, procedures for calling special meetings of the Academic Senate, the definition of academic programs, the deadline for sending notice of an Academic Senate meeting, and the definition of a departmental quorum.

P. Gorecki, Chair
T.J. Close
A.S. Jacobs
COMMITTEE ON SCHOLARSHIPS AND HONORS

ANNUAL REPORT TO THE RIVERSIDE DIVISION

April 28, 2008

During the 2007-2008 academic year, the Committee on Scholarships and Honors met and accomplished the following:

1. On November 14, 2007, the Committee reviewed and readopted the Conflict of Interest Statement. The decision to approve the conflict of interest statement was reached through emails.

2. Per request of Ms. Sheryl Hayes, Director of Financial Aid, the committee reviewed and voted the selection criteria for Regents’ and Chancellor's scholarship for the new undergraduate students. No major change was proposed this year on the selection criteria and process. Because of the budget concerns, however, the amount of award for Chancellor’s scholarship was scaled down to one-year full-fee support, i.e., the Chancellor's Scholarship program is adjusted to a 1-year, full fee scholarship. It appears that a more costly 4-year 75% fee offer did not improve the acceptance yield of these scholars. No change was made to the 4-year full fee Regents Scholarship.

   While most committee members voted in favor of the changes, one member commented that the current criteria may favor applicants that attend high schools offering extensive honors and AP courses. Because those schools tend to serve students from more affluent families, this criteria may have unintended consequences. Perhaps the committee can consider this issue in the future.

3. The committee met on April 25, 2002 to review the nominations for this year's Chancellor's Awards for Excellence in Undergraduate Research. Eight faculty members, 5 from engineering and sciences and 3 from humanities were nominated for the faculty award, and 4 undergraduate students, 2 from engineering and sciences and 2 from humanities, were nominated for the student awards.

   After detailed discussions, the committee selected the following recipients for this year's awards

   Faculty:

   Howard Friedman, department of Psychology, howard.friedman@ucr.edu, x-23672

   Ashok Mulchandani, department of Chemical & Environmental Engineering, ashok.mulchandani@ucr.edu, x-26419

   Students:
Tristan Harris, department of Biochemistry; tristan.harris@email.ucr.edu; x-29461; 3996 Iowa Ave.

Sunshine LeMontree, department of Creative Writing; sunshine.lemontree@email.ucr.edu; Phone # (909) 683-6859; 1133 Blaine St Apt 27
To be received and placed on file:

The Undergraduate Council met 5 times during AY 2007-2008. Admissions Director, M. Campos was invited as a guest to each meeting and provided regular progress reports on applications and admissions to the Fall 2008 freshman class.

1. The Conflict of Interest Statement was adopted for 2007-2008.

2. The Undergraduate Council discussed the Report on Undergraduate Diversity at the January and February meetings. The committee found relevant material in the report on campus climate, but considered the reports on faculty and graduate student diversity to be outside their mandate. Members readily agreed that the Report addressed thoroughly laudable goals that we would all like to reach.

3. Members of the UGC attended the meeting with the WASC Visiting Team to discuss undergraduate recruitment issues and the BOARS eligibility proposal and our Comprehensive Review.

4. At the November 16, 2007 meeting, the members of the Undergraduate Council unanimously carried a motion to endorse the proposed repeal of SR458.

5. Undergraduate Council Response to Review of the Ad Hoc Committee Report on Education Reform – UGC members agree that UCR’s breadth requirements do not present our many fine lower division courses to best advantage. The Ad Hoc Committee report dismisses the current regulated-selection approach and proposes that courses be bundled into theme sets that extend over four years. Students would satisfy the General Education (Gen Ed) requirements by completing one set whose theme combines courses from a broad span of disciplines. UGC found merit in the concept of focused concentrations but remain disappointed and troubled by the sample curricula. UGC recommended that the trial concentrations be rolled out in less haste and that the proposal remain with the ad hoc committee until they can advance a set of sample concentrations that convincingly illustrate the integrity and practicality of their plan.

6. The UGC reviewed a Proposed UC Undergraduate Mission Statement. The current draft articulated the obvious and honorable elements of an undergraduate education. It seems reasonable for the University to have such a document. UGC did not identify any problems that have arisen solely for lack of an undergraduate mission statement. The best mission statement should not only guide our curriculum development and admission practices but could also give incoming students a sense of their responsibilities and what is expected of them.
7. The Undergraduate Council submitted their review of the BOARS Proposal to Reform Freshman Eligibility for admission to the University of California. The changes proposed by BOARS move the identification of the top 12.5% of high-school graduates from the blunt instruments of eligibility to the more discriminating tools of selection.

Currently, the University of California determines which freshman applicants are eligible for admission by a convenient formulaic consideration of quantifiable achievement without regard to the applicant’s circumstances. In the second phase of the admission process, each campus may select from this eligible pool by re-evaluating achievement in the context of the opportunities available to each applicant as revealed by a comprehensive analysis of the whole application. The initial eligibility threshold is adjusted to meet our mandate to draw from the top 12.5% of high school graduates. The comprehensive review allows us to meet our mandate to represent all portions of the State. In essence, the proposed new framework simply moves the identification of the top 12.5% (which task is also mandated to the University) to the comprehensive review of the entire application at the campus level. The best interests of the UCR faculty are served by admitting the most able students.

The proposed changes improve the fairness and intelligence of the admissions process and can allow UCR to better serve the Inland Empire, where educational opportunity and family circumstance too rarely confer any advantage. Because the proposed change could also alter the balance of the intercampus competition for the best applicants, UCR should be concerned about the implementation of the new policy. Of particular concern are the allotment and enforcement of campus enrolment ceilings and the mechanisms for prompt referral of applicants to campuses other than their initial preferences. Finally, any plan to raise admission standards ought to be coupled with plans to improve retention.

8. Undergraduate Council reviewed BOARS’ Revised Proposal for Freshman Eligibility Reform. The Undergraduate Council continues to be in favor of adding the new “Entitled to Review” (ETR) category to freshman admissions. This category will assist UCR’s move to a fully selective admissions process, using Comprehensive Review guidelines established by the Academic Senate. The advantage for students is the fairness of a holistic evaluation of their achievements in the context of opportunity. The advantage to UCR is the chance to better manage the quality of our undergraduate student body by searching among an enlarged pool of applications for predictors of success at our campus. Currently, statewide eligibility is determined by a simplistic formula and the requirement to take a pattern of standardized tests including the SAT subject tests, for which the scores do not enter the formula. The formulaic cut-off is designed and adjusted to achieve a 12.5% eligibility rate systemwide; it does not serve those campuses who need to search intelligently for good students with scores close to the cut-off.

Of course, freshman admission policy needs to strike a balance between improving the academic profile of our admittees and recruiting a large enough student body to maintain the associated revenue stream. We recognize that any policy changes will temporarily reduce the ability of our admissions staff to predict the yield on their recruitment efforts. Numerical models such as those presented by BOARS cannot readily assess changes in application habits. Accordingly, we
recommend that the new policy be introduced with a transitional phase that allows UCR the reap
the benefits of the changes without suffering fiscal shocks as a result of short-term
unpredictability.

C. Amrhein
P. Chatterjee
M. Faloutsos
J. Heraty
P.M. Johnson
V. Nyitray
P.M. Sadler, Chair
L. Lundgren, Ex Officio (representing J. Sandoval)
To be received and placed on file:

The Committee on University Extension met four times in the period from July 2007, to April 23, 2007 and will meet once during the summer. The Committee examined and approved 323 courses and instructors in the X 300-400 series. There were 43 courses in the X 1-200 series submitted for review this year. The Committee also approved three programs for extension certificates.

The Committee made a few minor adjustments to its own procedures for approval of courses and instructors.

The Committee heard regular reports from Interim Dean S. A. Duffy on existing University Extension programs and on plans for the future. Again this year, we would like to commend Extension for its continuing efforts to expand its offerings in new directions, and for the high quality of its programs. Extension has developed a number of very innovative programs this year, and the quality of its instructors continues to be excellent.

Finally, we thank the staff of the Office of the Academic Senate, in particular, Marla Jo Howell, and of University Extension for their excellent support services.

G. Canalizo  
M. Chauvet  
W. W. Megenney  
T. M. Perring  
H. L. Swanson  
S. Mathew, ASUCR Representative  
________________, GSA Representative  
J. Silva-Risso, Chair
To be received and placed on file:

The Committee on Committees reports the following appointments made since the last report of February 19, 2008:

Appointed Professor N. V. Myung from Chemical/Environmental Engineering Department to replace Professor J. Wu from Chemical/Environmental Engineering Department on the Academic Integrity Committee.

Appointed Professor E. Jaffe-Berg from the Theatre Department to replace Professor C. Allgor from the History Department on the Academic Integrity Committee.

Recommended five faculty members to serve on the Joint Administrative Task Force on Graduate Programs.

Nominated Professor N. L. Schiller of the Biomedical Sciences to serve on the University Wide Health Sciences Committee.

Recommended a slate of eight faculty names to serve on a Special Joint Senate/Administrative Committee on Extramural Research Support.

Appointed Professor V. L. Nyitray from the Religious Studies Department to replace Professor C. Allgor from the History Department on the Undergraduate Council.

Appointed the following faculty to serve on the Joint Administrative Task Force on a School of Communications: B. T. Miller-Media and Cultural Studies; T. Lutz-Creative Writing; S. Krieger-Theatre; E. Suderburg-Art; and K. Harris-English.

Re-appointed Professor Jocelyn Millar from the Entomology Department and Professor Ken Baerenklau from the Environmental Sciences Department to the Committee on Sales and Services (COSSA).

Appointed Professor R. T. A. Lysloff from the Music Department to replace Dr. G. E. Haggerty from the English Department on the Courses Committee for the Spring Quarter.

Dr. R. O’Connor from Graduate School of Education was appointed the Chair of Courses for the Spring Quarter.

Appointed the following faculty to serve on the Joint Administrative and Senate Task Force on Graduate Programs: P. D. Hoffman-Philosophy; M. E. Adams-Entomology; K. Barish-Physics and Astronomy; W. Chen-Chemical/Environmental Engineering; and A. E. Williams-Earth Sciences.

Recommended a slate of 11 faculty names to serve on the Graduate Division Dean Search Committee.
Appointed Professor M. K. Rust of the Entomology Department as Chair of the In Memoriam Committee for Chancellor Emeritus I. H. Hinderaker. Professors Emeritus F. M. Carney of Political Science, S. D. Van Gundy of Nematology, and R. Ruibal of Biology were appointed as members of the committee.

Appointed Professor Emeritus W. H. Okamura of the Chemistry Department as Chair of the In Memoriam Committee for Professor Emeritus H. Johnson. Professors Emeritus H. H. Schmidt, R. M. Wing, and M. M. Midland of the Chemistry Department have agreed to serve on the committee.

Appointed Professor I. Kaloshian of the Nematology Department as Chair of the In Memoriam Committee for Professor Emeritus I. J. Thomason. Professor J. G. Baldwin and Professor Emeritus S. D. Van Gundy from the Nematology Department, as well as N. Toscano and A. Paulus of Cooperative Extension have agreed to serve on the committee.

Appointed Professor R. N. Parker of Sociology, C. s. Ozkan of Mechanical Engineering, and A. E. Goldberg of History to the Campus Safety Committee.

Appointed Professors M. Zuk-Biology, J. Kim-Ethnic Studies, and J. W. Childers-English to the Search Committee for the Faculty Director of the University Honors Program. Two other faculty members were recommended for appointment.


Appointed Professor P. Gorecki of the History Department to the Faculty Advisory Committee for the University Writing Program.

Appointed the following faculty members to serve on the Joint Task Force on Facilities and Administrative Cost Recovery: F. Sauer from Biochemistry, J. K. Zhu from Botany & Plant Sciences, R. C. Haddon from Chemistry, and A. Mulchandani from Chemical/Environmental Engineering.

B. C. ARNOLD  
R. A. CARDULLO  
R. J. DEBUS  
A. MULCHANDANI  
K. PYKE  
F. M. SLADEK  
M. SPERLING  
A. ULLAH  
G. WATSON  
J. M. GANIM, CHAIR
ACADEMIC COMPUTING & INFORMATIONAL TECHNOLOGY
L. J. MUELLER, CHAIR
P. CHAGAS
X. CUI
S. KRISHNAMURTHY
L. RAPHALS
L. D. ROSENBLUM
J. SIMUNEK
R. JACKSON, UNIV. LIBRARIAN, EX OFFICIO
C. J. ROWLEY, EX OFFICIO

DISTINGUISHED CAMPUS SERVICE
J. T. TRUMBLE, CHAIR
J. C. BRIGGS
R. A. REDAK
G. W. SCOTT
T. SHAPIRO

DISTINGUISHED TEACHING
N. L. SCHILLER, CHAIR
M. R. DIMATTEO
S. L. FEDICK
M. J. MARSELLA
Y. WU

ACADEMIC FREEDOM
R. L. RUSSELL, CHAIR
X. LIU (W)
D. A. WEBER
T. PRZYMUSINSKI, EX OFFICIO
R. A. REDAK, EX OFFICIO

DIVERSITY & EQUAL OPPORTUNITY
L. BARRETT
B. ECHEVERRIA (F)
L. FERNANDEZ
J. E. GARAY
J. MCMULLIN
D. RODRIGUEZ

ACADEMIC PERSONNEL
K. MONTGOMERY, CHAIR
N. E. BECKAGE
J. B. BLACHER (F)
H. W. GREEN
G. E. HAGGERTY
S. MAHALINGAM
D. E. RUSH
M. S. SPRINGER
E. SUDEBURG
R. C. SUTCH

EDUCATIONAL POLICY
D. S. STRAUS, CHAIR
D. C. FUNDER, VICE CHAIR
T. BANDYOPADHYAY
B. BHANU
R. B. AXELROD
J. LEVIN
E. A. NOTHNAGEL
P. PAVLOU
D. N. REZNICK
P. SINGH
S. C. STRAIGHT
J. WUDKA

CHARGES
S. N. THOMPSON, CHAIR
A. M. ARRIZON
J. P. BRENNAN
D. A. JOHNSON
D. B. KRONENFELD
M. A. NASH

FACULTY RESEARCH LECTURER
R. R. RUSSELL, CHAIR
R. ATKINSON
D. L. RABENSTEIN
N. RAIKHEL
J. H. TURNER

COURSES
H. BRAYMAN HACKEL
K. DEFEA
D. A. MALUEG
E. A. NOTHNAGEL
Y-S. POON
Z. XU
FACULTY WELFARE
R. A. REDAK, CHAIR
J. CHEN
T. GARLAND, JR.
M. MARTINS GREEN
T. H. MORTON (S)
S. A. NESS
J. K. ODDSON
L. A. PEDROTTI
S. XU

GRADUATE COUNCIL
C. Y. SWITZER, CHAIR
P. S. SPRINGER, VICE CHAIR
G. J. ANDERSEN
K. N. BARISH
W. CHEN
K. J. DEVLIN
P. E. GREEN
J-T. GUO
M. MADURO
T. A. MILLER
K. PYKE
E. ROLLAND
C. TRAFZER
A. E. WILLIAMS
____________, DEAN, EX OFFICIO

INTERNATIONAL EDUCATION
E. RECK, CHAIR
I. M. ETHELL
B-L. LI
G. XU
Y. YE
L. ZANELLO
K. TOMOFF, EX OFFICIO, DIR. EAP
S. A. DUFFY, EX OFFICIO, INTERIM VC-INT. PROGRAMS
B. JENKINS-DEAS, EX OFFICIO, DIR. UNEX INT. ED. PROGRAMS
D. ELTON, DIRECTOR, INT. SERVICES

LIBRARY & SCHOLARLY COMMUNICATION
______________, CHAIR
J. C. BAEZ
R. L. CROWDER
N. C. ELLSTRAND
K. HARRIS
J. HUGHES
A. N. KOROTKOV
R. JACKSON, UNIV. LIBRARIAN, EX OFF.

PHYSICAL RESOURCES PLANNING
K. VAFAI, CHAIR
P. J. BURKE
E. S-K. MA
G. MICHELS
J. T. ROTENBERRY
F. SAUER
A. ZAKI

PLANNING & BUDGET
M. GAUVAIN, CHAIR
M. E. ADAMS
J. A. FARRELL
P. D. HOFFMAN
C. J. LOVATT
R. T. A. LYSLOFF
U. MOHIDEEN
S. SRINIVASAN

PREPARATORY EDUCATION
S. G. AXELROD, CHAIR
D. R. COCKER
G. GIERZ
B. A. LEEBAW
J. TOBIAS
J. C. BRIGGS, EX OFFICIO
C. RAVISHANKAR, EX OFFICIO
G. W. SCOTT, EX OFFICIO
S. G. BRINT, EX OFFICIO
P. M. SADLER, EX OFFICIO
J. W. SANDOVAL, EX OFFICIO
L. LUNDGREN, ACTING REGISTRAR, ADM. REP.

PRIVILEGE & TENURE
T. PRZYMUSINSKI, CHAIR
W. J. FARMER
P. A. GRAHAM
G. I. HATTON
V. D. LIPPIT
Z. RAN

RESEARCH
R. ARNOTT, CHAIR
J. GIEGERICH
K. A. HAMMOND
K. S. LII
J. G. MILLAR
C. B. MURRAY
M. C. PIRRUNG
L. SAAVEDRA
J. H. SANDHOLTZ
A. VENKATRAM
J. C. LAURSEN, EX OFFICIO
RULES & JURISDICTION
P. GORECKI, CHAIR
T. J. CLOSE
A. S. JACOBS, SEC/PARL.

SCHOLARSHIPS & HONORS
J. WU, CHAIR
M. ASAEDEA
M. E. BLOOM
V. BOMBERRY
G. J. PALARDY
N. SATO
V. UMANSKAYA
J. ZHANG
S. HAYES, EX OFFICIO

UNDERGRADUATE COUNCIL
P. M. SADLER, CHAIR
C. AMRHEIN
M. FALOUTSOS
J. W. GARY
J. M. HERATY
P. M. JOHNSON
V. L. NYITRAY
J. W. SANDOVAL, EX OFFICIO

UNIVERSITY EXTENSION
W. W. MEGENNEY, CHAIR
M. CHAUVET
C. CHO
M. D. COFFEY
E. JAFFE-BERG
H. L. SWANSON (F)

GRIEVANCE CONSULTATION PANEL
J. W. CHILDERS
S. L. FEDICK
J. D. HARE
J. S. HOLT
K. MONTGOMERY
F. M. SLADEK

STATEWIDE REPRESENTATIVES
ACADEMIC FREEDOM
R. L. RUSSELL
ACADEMIC PERSONNEL
H. W. GREEN
AFFIRMATIVE ACTION
L. FERNANDEZ
BOARS
P. M. SADLER
CCGA
M. SPERLING
COMMITTEE
L. J. MUELLER
COMPUTING AND COMMUNICATIONS
W. A. ASHMORE
EDITORIAL
D. K. GLIDDEN
B. T. MILLER
T. BANDYOPADHYAY
EDUCATIONAL POLICY
H. L. HENRY
FACULTY WELFARE
T. H. MORTON
CHAIR
E. RECK
INTERNATIONAL EDUCATION
P. HOFFMAN
LIBRARY
T. PRZYMUSINSKI
PLANNING & BUDGET
D. S. WILLIS
PRIVILEGE & TENURE
S. G. AXELROD
PREPARATORY EDUCATION
CHAIR
RESEARCH POLICY
V. CHAIR
RULES & JURISDICTION
J. C. LAURSEN
NONE

5/6/2008
Committee on Courses
Report to the Riverside Division
May 20, 2008

To be received and placed on file:
The Committee on Courses has approved the following courses.

Undergraduate Course

| RESTORE  | BPSC 185 Molecular Evolution (4) |
| PSYC 158 Person Perception (4) |
| NEW      | AHS 174 Dutch Art and Culture in the Seventeenth Century (4) |
| ANTH 174 Anthropology and Film (4) |
| ANTH 179 Gender, War, and Militarism (4) |
| ARBC 001 Elementary Arabic (4) |
| ARBC 002 Elementary Arabic (4) |
| ARBC 003 Elementary Arabic (4) |
| ARLC 001 Introduction to Arabic Literatures and Cultures (4) |
| ARLC 120 Classical Arabic Literary Prose (4) |
| ARLC 152 Modern Arabic Poetry in a Multilingual Frame (4) |
| ART 143 Advanced Digital Imaging Technology (4) |
| ART 161 Special Topics in Art Criticism and Theory (4) |
| BCH 187 Fundamentals of Enzymology (3) |
| BIEN 125 Circulation Physiology (4) |
| BIOL 118 Laboratory in Molecular Phylogenetics and Evolution (4) |
| BUS 021 Generation of Financial Accounting Information (4) |
| CLA 050 Folktales, Monsters, and Magic in Ancient Greece and Rome (4) |
| CPLET 152 Modern Arabic Poetry in a Multilingual Frame (4) |
| CPLET 153 Literature, Language, Relation (4) |
| CS 013 Introductory Computer Science for Engineering Majors (4) |
| CS 179 N Project in Computer Science (4) Graphics and Electronic Games |
| DNCE 068 Somatic Techniques and Experiential Anatomy (2) |
| EE 162 Introduction to Nanoelectronics (4) |
| FREN 187 Food and French Literature (4) |
| GBST 100 Global Cities (4) |
| GEO 136 Introduction to Molecular and Petroleum Geochemistry (4) |
| GEO 147 Active Tectonics and Remote Sensing (4) |
| GEO 160 Global Climate Change (4) |
| HASS 100 Studies in Leadership and Organizational Effectiveness (5) |
| HNPG 012 Global Health, Agriculture, and Economic Development (4) |
| HNPG 031 I Honors Seminar in the Fine Arts (4) Art History: Photography in the Arts of the Twentieth Century |
| LGBS 153 Homosexuality and Music (4) |
| MCS 127 Chicana/o Cultural Studies and Gender Politics (4) |
| MCS 163 Special Topics in Art Criticism and Theory (4) |
| MUS 020 Music of Scotland (4) |
| PSYC 162 Biological Issues in Development (4) |
| PSYC 164 Emotional and Behavioral Disorders of Childhood (4) |
| PSYC 165 B The Development of Immigrant and Ethnic Minority Youth (4) |
| PSYC 195 Senior Thesis (1-4) |
| RLST 039 Introduction to African American Religions (5) |
| RLST 140 Martin, Malcolm, and Masculinity (4) |
| RLST 166 Evangelical Religion, Media, and Culture in America (4) |
| VNM 020 A Beginning Vietnamese for Advanced Heritage Learners (4) |
| VNM 020 B Beginning Vietnamese for Advanced Heritage Learners (4) |
| WMST 166 Chicana/o Cultural Studies and Gender Politics (4) |

DELETE CBNS 191 Seminar in Neuroscience (3) |

CHANGING GEO 168 Biogeography (4) |

| AHS 008 Modern Western Visual Culture (4) |
| AHS 020 Introduction to Media Art (4) |
| AHS 120 Berlin Metropolis in Literature, Film, Music, and Art (4) |
| AHS 121 From Expressionism to Epic Theatre: Benn, Brecht, Kafka, and the Bauhaus (4) |
| AHS 136 History of Video Art (4) |
| AHS 137 History of Experimental Cinema (4) |
| AHS 176 Pictorialism to New Media: A History of Twentieth-Century Photography (4) |
| AHS 186 Media and Movements: Film, Video, Photography, and the Visual Arts (4) |
| AHS 187 Visual Culture and Art History (4) |
| ANTH 103 Introduction to Visual Anthropology (4) |
| ART 003 Introduction to Photographic Processes (5) |
ART 006   Introduction to Contemporary Critical Issues in Art (4)
ART 007   Introduction to Digital Photography (4)
ART 028   From Hamlet to Babylon 5: Introduction to Design in Film, Television, and Theatre (4)
ART 070 (E-Z) Digital Imaging Software for the Visual Arts (2)
ART 131   Intermediate Photography and Digital Technology (4)
ART 135   Intermedia: Art, Media, and Culture (4)
ART 136   Installation and Site-Specific Art (4)
ART 140   Intermediate Analog Photography (4)
ART 150   Intermediate Video Art (5)
ART 155   Advanced Video and Film Art (4)
ART 160   Intermediate Art Theory (4)
ART 162   Special Topics in New Genres of Art Practice (4)
ART 167   Intermediate Digital Media: Web Authoring (4)
ART 170   Advanced Digital Imaging (4)
ART 175   Advanced Digital Workshop (4)
AST 022   Introduction to Japanese Film (4)
AST 064   Introduction to Vietnamese and Diasporic Film Culture (4)
AST 184   Japanese Film and Visual Culture (4)
AST 185   New Chinese Cinema (4)
AST 186   Hong Kong Cinema: Gender, Genre, and the "New Wave" (4)
AST 187   Vietnamese and Overseas Vietnamese Cinema (4)
BCH 095   Topics in Biochemistry for Career Planning (1)
BOL 171   Human Anatomy and Physiology (4)
BSAD 020 B Principles of Accounting (4)
CHN 185  New Chinese Cinema (4)
CLA 045   The Ancient World in Film and Television (4)
CPLT 021   Introduction to Film, Literature, and Culture (4)
CPLT 024   World Cinema (4)
CPLT 026   New European Cinemas: Experiment and Innovation (4)
CPLT 027   Food in Film (4)
CPLT 110 B Berlin Metropolis in Literature, Film, Music, and Art (4)
CPLT 115   Modern German History through Film (4)
CPLT 126 From Novel to Screen: Film Adaptations of German Literature (4)
CPLT 134   Cinematic War Memory (4)
CPLT 135   Film Noir and Hollywood's German Immigrants (4)
CPLT 138   From Expressionism to Epic Theatre: Benn, Brecht, Kafka, and the Bauhaus (4)
CPLT 171 (E-Z) Auteurs and Auteur Theory (4)
CPLT 173 (E-Z) International Cinemas (4)
CPLT 174 (E-Z) Comparative Studies in Film (4)
CPLT 181   Existentialism in Literature, Film, and Culture (4)
CRWT 040   Fiction and Film (4)
CRWT 066   Screenwriting: How Movies Work (4)
CS 012   Introduction to Computer Science for Science, Mathematics, and Engineering II (4)
CS 014   Introduction to Data Structures and Algorithms (4)
CS 122 A Intermediate Embedded and Real-Time Systems (5)
CS 122 B Advanced Embedded and Real-Time Systems (5)
DNCE 161   Choreographing the Screen (4)
DNCE 162   Tool, Technology, Technique (4)
DNCE 173 (E-Z) Digitized Bodies (4)
EDUC 001   Imagining Teaching (2)
EDUC 003   Imagining Teaching: Science/Mathematics Emphasis (3)
ENGL 021   Culture Clash: Studies in Latino Theatre and Film (4)
ENGL 033   Introduction to Comparative Media Studies (4)
ENGL 104   Film and Media Theory (4)
ENGL 128 (E-Z) Major Authors (4)
ENGL 143 (E-Z) Gender, Sexuality, and Visual Cultures (4)
ENGL 144 (E-Z) Race, Ethnicity, and Visual Culture (4)
ENGL 145 (E-Z) Special Topics in Film and Visual Culture (4)
ENGL 146 (E-Z) Special Topics in Technoculture and Digital Media (4)
ENS 141   Public Health Microbiology (4)
EUR 026   New European Cinemas: Experiment and Innovation (4)
EUR 110 B Berlin Metropolis in Literature, Film, Music, and Art (4)
EUR 138   From Expressionism to Epic Theatre: Benn, Brecht, Kafka, and the Bauhaus (4)
FREN 045   French Cinema (4)
FREN 181   Existentialism in Literature, Film, and Culture (4)
FREN 185 (E-Z) Studies in French and Francophone Cinema (4)
GBST 001   Global History, Culture, and Ideas (5)
GBST 002   Global Socioeconomic and Political Processes (5)
GER 045   Introduction to German Cinema (4)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER 110 B</td>
<td>Berlin Metropolis in Literature, Film, Music, and Art (4)</td>
</tr>
<tr>
<td>GER 118 (E-Z)</td>
<td>Topics in German Cinema (4)</td>
</tr>
<tr>
<td>GER 118 E</td>
<td>Topics in German Cinema (4)</td>
</tr>
<tr>
<td>GER 118 F</td>
<td>Topics in German Cinema (4) The Cinema of Fritz Lang</td>
</tr>
<tr>
<td>GER 118 G</td>
<td>Topics in German Cinema (4) Film and the Holocaust</td>
</tr>
<tr>
<td>GER 126</td>
<td>From Novel to Screen: Film Adaptations of German Literature (4)</td>
</tr>
<tr>
<td>GER 134</td>
<td>Cinematic War Memory (4)</td>
</tr>
<tr>
<td>GER 135</td>
<td>Film Noir and Hollywood's German Immigrants (4)</td>
</tr>
<tr>
<td>GER 138</td>
<td>From Expressionism to Epic Theatre: Benn, Brecht, Kafka, and the Bauhaus (4)</td>
</tr>
<tr>
<td>GER 163</td>
<td>Modern German History through Film (4)</td>
</tr>
<tr>
<td>HISE 163</td>
<td>Modern German History through Film (4)</td>
</tr>
<tr>
<td>ITAL 045</td>
<td>Italian Cinema (4)</td>
</tr>
<tr>
<td>JPN 022</td>
<td>Introduction to Japanese Film (4)</td>
</tr>
<tr>
<td>JPN 134</td>
<td>Cinematic War Memory (4)</td>
</tr>
<tr>
<td>JPN 184</td>
<td>Japanese Film and Visual Culture (4)</td>
</tr>
<tr>
<td>LNST 015</td>
<td>Latin American Folk and Popular Styles (4)</td>
</tr>
<tr>
<td>LNST 016</td>
<td>Latin American Classical Heritage (4)</td>
</tr>
<tr>
<td>LNST 105</td>
<td>Imagining the Nation: Film and Media in Latin America (4)</td>
</tr>
<tr>
<td>LNST 109</td>
<td>Gender, Media, and Latin America (5)</td>
</tr>
<tr>
<td>LNST 125 (E-Z)</td>
<td>Topics in Latin American Film and Media (5)</td>
</tr>
<tr>
<td>LWSO 180 A</td>
<td>Symposium in the Law (1)</td>
</tr>
<tr>
<td>LWSO 180 B</td>
<td>Symposium in the Law (1)</td>
</tr>
<tr>
<td>LWSO 180 C</td>
<td>Symposium in the Law (1)</td>
</tr>
<tr>
<td>MCS 004</td>
<td>Introduction to Video Art (5)</td>
</tr>
<tr>
<td>MCS 006</td>
<td>Introduction to Contemporary Critical Issues in Art (4)</td>
</tr>
<tr>
<td>MCS 007</td>
<td>Introduction to Digital Photography (4)</td>
</tr>
<tr>
<td>MCS 008</td>
<td>Modern Western Visual Culture (4)</td>
</tr>
<tr>
<td>MCS 009</td>
<td>Music in Movies and TV (4)</td>
</tr>
<tr>
<td>MCS 015</td>
<td>Introduction to Television Studies (4)</td>
</tr>
<tr>
<td>MCS 020</td>
<td>Introduction to Film Studies (4)</td>
</tr>
<tr>
<td>MCS 021</td>
<td>Introduction to Film, Literature, and Culture (4)</td>
</tr>
<tr>
<td>MCS 022</td>
<td>Introduction to Japanese Film (4)</td>
</tr>
<tr>
<td>MCS 023</td>
<td>Introduction to Media Art (4)</td>
</tr>
<tr>
<td>MCS 024</td>
<td>World Cinema (4)</td>
</tr>
<tr>
<td>MCS 025</td>
<td>Culture Clash: Studies in Latino Theatre and Film (4)</td>
</tr>
<tr>
<td>MCS 026</td>
<td>New European Cinemas: Experiment and Innovation (4)</td>
</tr>
<tr>
<td>MCS 028</td>
<td>From Hamlet to Babylon 5: Introduction to Design in Film, Television, and Theatre (4)</td>
</tr>
<tr>
<td>MCS 033</td>
<td>Introduction to Comparative Media Studies (4)</td>
</tr>
<tr>
<td>MCS 036</td>
<td>Food in Film (4)</td>
</tr>
<tr>
<td>MCS 038</td>
<td>The Ancient World in Film and Television (4)</td>
</tr>
<tr>
<td>MCS 039</td>
<td>Fiction and Film (4)</td>
</tr>
<tr>
<td>MCS 042</td>
<td>Introduction to German Cinema (4)</td>
</tr>
<tr>
<td>MCS 043</td>
<td>Soviet Cinema (4)</td>
</tr>
<tr>
<td>MCS 044</td>
<td>Italian Cinema (4)</td>
</tr>
<tr>
<td>MCS 045</td>
<td>French Cinema (4)</td>
</tr>
<tr>
<td>MCS 046</td>
<td>Introduction to Latin American Film (5)</td>
</tr>
<tr>
<td>MCS 049</td>
<td>Introduction to Vietnamese and Diasporic Film Culture (4)</td>
</tr>
<tr>
<td>MCS 066</td>
<td>Screenwriting: How Movies Work (4)</td>
</tr>
<tr>
<td>MCS 103</td>
<td>Introduction to Visual Anthropology (4)</td>
</tr>
<tr>
<td>MCS 104</td>
<td>Film and Media Theory (4)</td>
</tr>
<tr>
<td>MCS 110 (E-Z)</td>
<td>Topics in Film and Media History (4)</td>
</tr>
<tr>
<td>MCS 114</td>
<td>Cinematic War Memory (4)</td>
</tr>
<tr>
<td>MCS 115</td>
<td>Modern German History through Film (4)</td>
</tr>
<tr>
<td>MCS 118 (E-Z)</td>
<td>Topics in German Cinema (4)</td>
</tr>
<tr>
<td>MCS 118 E</td>
<td>Topics in German Cinema (4) Weimar Cinema and After</td>
</tr>
<tr>
<td>MCS 118 F</td>
<td>Topics in German Cinema (4) The Cinema of Fritz Lang</td>
</tr>
<tr>
<td>MCS 118 G</td>
<td>Topics in German Cinema (4) Film and the Holocaust</td>
</tr>
<tr>
<td>MCS 120</td>
<td>Major Figures in Film and Media (4)</td>
</tr>
<tr>
<td>MCS 121 (E-Z)</td>
<td>Auteurs and Auteur Theory (4)</td>
</tr>
<tr>
<td>MCS 125 (E-Z)</td>
<td>Topics in Latin American Film and Media (5)</td>
</tr>
<tr>
<td>MCS 126</td>
<td>From Novel to Screen: Film Adaptations of German Literature (4)</td>
</tr>
<tr>
<td>MCS 131</td>
<td>Intermediate Photography and Digital Technology (4)</td>
</tr>
<tr>
<td>MCS 133</td>
<td>The Effects of Mass Media (4)</td>
</tr>
<tr>
<td>MCS 135</td>
<td>Intermedia: Art, Media, and Culture (4)</td>
</tr>
<tr>
<td>MCS 136</td>
<td>Installation and Site-Specific Art (4)</td>
</tr>
<tr>
<td>MCS 137</td>
<td>History of Video Art (4)</td>
</tr>
<tr>
<td>MCS 138</td>
<td>History of Experimental Cinema (4)</td>
</tr>
<tr>
<td>MCS 139</td>
<td>Mass Media and Popular Culture (4)</td>
</tr>
<tr>
<td>MCS 142</td>
<td>Gender in Southeast Asian Diasporic Literature and Film (5)</td>
</tr>
<tr>
<td>MCS 143 (E-Z)</td>
<td>Gender, Sexuality, and Visual Cultures (4)</td>
</tr>
<tr>
<td>MCS 144 (E-Z)</td>
<td>Race, Ethnicity, and Visual Culture (4)</td>
</tr>
<tr>
<td>Course</td>
<td>Title</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>MCS 145</td>
<td>Special Topics in Film and Visual Culture</td>
</tr>
<tr>
<td>MCS 146</td>
<td>Special Topics in Technoculture and Digital Media</td>
</tr>
<tr>
<td>MCS 150</td>
<td>Intermediate Video Art</td>
</tr>
<tr>
<td>MCS 160</td>
<td>Intermediate Art Theory</td>
</tr>
<tr>
<td>MCS 161</td>
<td>Choreographing the Screen</td>
</tr>
<tr>
<td>MCS 162</td>
<td>Tool, Technology, Technique</td>
</tr>
<tr>
<td>MCS 167</td>
<td>Vietnamese and Overseas Vietnamese Cinema</td>
</tr>
<tr>
<td>MCS 168</td>
<td>Hong Kong Cinema: Gender, Genre, and the &quot;New Wave&quot;</td>
</tr>
<tr>
<td>MCS 169</td>
<td>New Chinese Cinema</td>
</tr>
<tr>
<td>MCS 170</td>
<td>Film Noir and Hollywood's German Immigrants</td>
</tr>
<tr>
<td>MCS 171</td>
<td>Reel to Real: Latin American Film and Social Change</td>
</tr>
<tr>
<td>MCS 172</td>
<td>Topics in Film and Media Genres</td>
</tr>
<tr>
<td>MCS 173</td>
<td>International Cinemas</td>
</tr>
<tr>
<td>MCS 174</td>
<td>Comparative Studies in Film</td>
</tr>
<tr>
<td>MCS 175</td>
<td>Advanced Digital Imaging</td>
</tr>
<tr>
<td>MCS 176</td>
<td>Pictorialism to New Media: A History of Twentieth-Century Photography</td>
</tr>
<tr>
<td>MCS 178</td>
<td>Berlin Metropolis in Literature, Film, Music, and Art</td>
</tr>
<tr>
<td>MCS 179</td>
<td>Gender, Media, and Latin America</td>
</tr>
<tr>
<td>MCS 180</td>
<td>Existentialism in Literature, Film, and Culture</td>
</tr>
<tr>
<td>MCS 181</td>
<td>From Expressionism to Epic Theatre: Benn, Brecht, Kafka, and the Bauhaus</td>
</tr>
<tr>
<td>MCS 183</td>
<td>Studies in French and Francophone Cinema</td>
</tr>
<tr>
<td>MCS 184</td>
<td>Japanese Film and Visual Culture</td>
</tr>
<tr>
<td>MCS 185</td>
<td>Imagining the Nation: Film and Media in Latin America</td>
</tr>
<tr>
<td>MCS 186</td>
<td>Media and Movements: Film, Video, Photography, and the Visual Arts</td>
</tr>
<tr>
<td>MCS 187</td>
<td>Visual Culture and Art History</td>
</tr>
<tr>
<td>MCS 190</td>
<td>Special Studies (1-5)</td>
</tr>
<tr>
<td>MCS 198 I</td>
<td>Individual Internship in Media and Cultural Studies (1-4)</td>
</tr>
<tr>
<td>MUS 007</td>
<td>Music in Movies and TV</td>
</tr>
<tr>
<td>MUS 015</td>
<td>Latin American Folk and Popular Styles</td>
</tr>
<tr>
<td>MUS 016</td>
<td>Latin American Classical Heritage</td>
</tr>
<tr>
<td>MUS 153</td>
<td>Homosexuality and Music</td>
</tr>
<tr>
<td>NASC 091</td>
<td>Freshman Advising Seminar in the Natural and Agricultural Sciences</td>
</tr>
<tr>
<td>NASC 093</td>
<td>Freshman Advising Seminar in the Natural and Agricultural Sciences</td>
</tr>
<tr>
<td>PHYS 002 A</td>
<td>General Physics</td>
</tr>
<tr>
<td>PHYS 002 B</td>
<td>General Physics</td>
</tr>
<tr>
<td>PHYS 002 C</td>
<td>General Physics</td>
</tr>
<tr>
<td>PSYC 160</td>
<td>Life Span Development</td>
</tr>
<tr>
<td>PSYC 161</td>
<td>Socioemotional and Personality Development</td>
</tr>
<tr>
<td>PSYC 163</td>
<td>Cognitive Development</td>
</tr>
<tr>
<td>PSYC 165 A</td>
<td>The Cultural Bases of Human Development</td>
</tr>
<tr>
<td>PSYC 166</td>
<td>Adolescence and Emerging Adulthood</td>
</tr>
<tr>
<td>PSYC 169</td>
<td>Topics in Developmental Psychology</td>
</tr>
<tr>
<td>RUS 045</td>
<td>Soviet Cinema</td>
</tr>
<tr>
<td>THEA 021</td>
<td>Culture Clash: Studies in Latino Theatre and Film</td>
</tr>
<tr>
<td>THEA 038</td>
<td>From Hamlet to Babylon 5: Introduction to Design in Film, Television, and Theatre</td>
</tr>
<tr>
<td>THEA 066</td>
<td>Screenwriting: How Movies Work</td>
</tr>
<tr>
<td>VNM 001</td>
<td>Elementary Vietnamese</td>
</tr>
<tr>
<td>VNM 002</td>
<td>Elementary Vietnamese</td>
</tr>
<tr>
<td>VNM 003</td>
<td>Elementary Vietnamese</td>
</tr>
<tr>
<td>VNM 004</td>
<td>Intermediate Vietnamese</td>
</tr>
<tr>
<td>VNM 064</td>
<td>Introduction to Vietnamese and Diasporic Film Culture</td>
</tr>
<tr>
<td>WMST 122</td>
<td>Gender in Southeast Asian Diasporic Literature and Film</td>
</tr>
<tr>
<td>WMST 179</td>
<td>Gender, Media, and Latin America</td>
</tr>
</tbody>
</table>

**Graduate Course**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 230 C</td>
<td>Advanced Quantum Mechanics and Quantum Theory of Fields</td>
<td></td>
</tr>
<tr>
<td>ANTH 261</td>
<td>Anthropology of the Body</td>
<td></td>
</tr>
<tr>
<td>CHEM 270</td>
<td>Theoretical Quantum Chemistry: Methods and Applications</td>
<td></td>
</tr>
<tr>
<td>CRWT 257</td>
<td>The Sufis</td>
<td></td>
</tr>
</tbody>
</table>

69
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 223</td>
<td>Reconfigurable Computing (4)</td>
</tr>
<tr>
<td>ECON 246</td>
<td>Introduction to Public Economics (4)</td>
</tr>
<tr>
<td>ECON 247</td>
<td>Recent Advances in Public Economics (4)</td>
</tr>
<tr>
<td>EDUC 248 P</td>
<td>Higher Education (4)</td>
</tr>
<tr>
<td>EDUC 248 S</td>
<td>Higher Education (4)</td>
</tr>
<tr>
<td>EDUC 248 U</td>
<td>Higher Education (4)</td>
</tr>
<tr>
<td>EDUC 266</td>
<td>Language, Schooling, and Identity (4)</td>
</tr>
<tr>
<td>EDUC 287</td>
<td>Structural Equation Modeling (4)</td>
</tr>
<tr>
<td>EE 223</td>
<td>Numerical Analysis of Electromagnetic Devices (4)</td>
</tr>
<tr>
<td>ENSC 207</td>
<td>Surface Water Quality Modeling (4)</td>
</tr>
<tr>
<td>GEO 257</td>
<td>Current Issues in Seismology (4)</td>
</tr>
<tr>
<td>GEO 263</td>
<td>Organic and Petroleum Geochemistry (4)</td>
</tr>
<tr>
<td>MCS 290</td>
<td>Directed Studies (1-6)</td>
</tr>
<tr>
<td>MCS 292</td>
<td>Concurrent Analytical Studies in Media and Cultural Studies (1-4)</td>
</tr>
<tr>
<td>SEAS 243 A</td>
<td>Seminar in Southeast Asian History (4)</td>
</tr>
<tr>
<td>SEAS 243 B</td>
<td>Seminar in Southeast Asian History (4)</td>
</tr>
<tr>
<td>SOC 258</td>
<td>Current Research in the Sociology of Families and Loving Relationships (4)</td>
</tr>
<tr>
<td>BPSC 220</td>
<td>Physiology of Tree Crop Productivity (3)</td>
</tr>
<tr>
<td>BPSC 280</td>
<td>Maya Subsistence and Biodiversity (2-12)</td>
</tr>
<tr>
<td>CHEM 221 C</td>
<td>Advanced Analytical Chemistry: Chemical Instrumentation (3)</td>
</tr>
<tr>
<td>CHEM 257</td>
<td>Environmental Chemistry Seminar (1)</td>
</tr>
<tr>
<td>SWSC 202</td>
<td>Soil Chemical Conditions and Plant Growth (4)</td>
</tr>
<tr>
<td>SWSC 257</td>
<td>Environmental Chemistry Seminar (1)</td>
</tr>
<tr>
<td>ART 240</td>
<td>Current Topics in Critical Theory (4)</td>
</tr>
<tr>
<td>CHEM 221 C</td>
<td>Advanced Analytical Chemistry: Electrochemistry (3)</td>
</tr>
<tr>
<td>ECON 283 (E-Z)</td>
<td>Advanced Microeconomic Theory (4)</td>
</tr>
<tr>
<td>EDUC 241 A</td>
<td>Inquiry and Research Methods (4)</td>
</tr>
<tr>
<td>EDUC 241 B</td>
<td>Introduction to Qualitative Methods (4)</td>
</tr>
<tr>
<td>EDUC 241 C</td>
<td>Introduction to Quantitative Methods (4)</td>
</tr>
<tr>
<td>EDUC 245 G</td>
<td>Review of Research Literature in Education (4) The Opportunity/Achievement Gap</td>
</tr>
<tr>
<td>EE 208</td>
<td>Semiconductor Electron, Phonon, and Optical Properties (4)</td>
</tr>
<tr>
<td>EE 209</td>
<td>Semiclassical Electron Transport (4)</td>
</tr>
<tr>
<td>EE 212</td>
<td>Quantum Electron Transport (4)</td>
</tr>
<tr>
<td>EEOB 211</td>
<td>Ecology: Genes to Ecosystems (4)</td>
</tr>
<tr>
<td>EEOB 213</td>
<td>Behavioral Ecology (4)</td>
</tr>
<tr>
<td>EEOB 214</td>
<td>Evolutionary Genetics (4)</td>
</tr>
<tr>
<td>EEOB 215</td>
<td>Advanced Methods in Evolution, Ecology, and Behavior (4)</td>
</tr>
<tr>
<td>EEOB 216</td>
<td>The Theory of Evolution (4)</td>
</tr>
<tr>
<td>EEOB 217</td>
<td>Advanced Population and Community Ecology (4)</td>
</tr>
<tr>
<td>EEOB 220</td>
<td>Evolutionary Physiology (4)</td>
</tr>
<tr>
<td>EEOB 230</td>
<td>Analysis of Ecological Communities (5)</td>
</tr>
<tr>
<td>EEOB 265</td>
<td>Advances in Population and Evolutionary Biology (1-2)</td>
</tr>
<tr>
<td>EEOB 282</td>
<td>Seminar in Genetics and Evolution (2-4)</td>
</tr>
<tr>
<td>EEOB 283</td>
<td>Seminar in Organismal Physiology and Physiological Ecology (2-4)</td>
</tr>
<tr>
<td>EEOB 290</td>
<td>Directed Studies (1-6)</td>
</tr>
<tr>
<td>EEOB 291</td>
<td>Individual Study in Coordinated Areas (1-6)</td>
</tr>
<tr>
<td>EEOB 292</td>
<td>Concurrent Analytical Studies in Evolution, Ecology, and Organismal Biology (2-4)</td>
</tr>
<tr>
<td>EEOB 297</td>
<td>Directed Research (1-6)</td>
</tr>
<tr>
<td>EEOB 299</td>
<td>Research for the Thesis or Dissertation (1-12)</td>
</tr>
<tr>
<td>HIST 243 A</td>
<td>Seminar in Southeast Asian History (4)</td>
</tr>
<tr>
<td>HIST 243 B</td>
<td>Seminar in Southeast Asian History (4)</td>
</tr>
<tr>
<td>MATH 216 A</td>
<td>Combinatorial Theory (4)</td>
</tr>
<tr>
<td>MATH 216 B</td>
<td>Combinatorial Theory (4)</td>
</tr>
<tr>
<td>MUS 291</td>
<td>Individual Study in Coordinated Areas (1-6)</td>
</tr>
<tr>
<td>SOC 264 (E-Z)</td>
<td>Topics in Gender Studies (4)</td>
</tr>
</tbody>
</table>

**Professional Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 337 A</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 B</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 C</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 D</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 E</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 F</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 G</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 H</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 I</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 J</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 K</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 L</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 M</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 N</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 O</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 P</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 Q</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 R</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 S</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 T</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 U</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 V</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 W</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 X</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 Y</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 337 Z</td>
<td>Teaching Performance Assessment for Multiple Subjects Candidates (1)</td>
</tr>
<tr>
<td>EDUC 338 A</td>
<td>Supervised Teaching in the Elementary School (2)</td>
</tr>
<tr>
<td>EDUC 338 B</td>
<td>Supervised Teaching in the Elementary School (5)</td>
</tr>
<tr>
<td>EDUC 338 C</td>
<td>Supervised Teaching in the Elementary School (11)</td>
</tr>
<tr>
<td>EDUC 338 D</td>
<td>Intern Teaching in the Elementary School (9)</td>
</tr>
<tr>
<td>EDUC 338 E</td>
<td>Intern Teaching in the Elementary School (9)</td>
</tr>
<tr>
<td>EDUC 338 F</td>
<td>Intern Teaching in the Elementary School (9)</td>
</tr>
<tr>
<td>EDUC 338 G</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 H</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 I</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 J</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 K</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 L</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 M</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 N</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 O</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 P</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 Q</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 R</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 S</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 T</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 U</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 V</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 W</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 X</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 Y</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>EDUC 338 Z</td>
<td>Multiple Subjects Credential Seminar (2)</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>EDUC 348 A</td>
<td>Single Subject Intern Teaching Seminar (2)</td>
</tr>
<tr>
<td>EDUC 348 B</td>
<td>Single Subject Intern Teaching Seminar (2)</td>
</tr>
<tr>
<td>EDUC 348 C</td>
<td>Single Subject Intern Teaching Seminar (2)</td>
</tr>
<tr>
<td>EDUC 349 A</td>
<td>Single Subject Student Teaching Seminar (2)</td>
</tr>
<tr>
<td>EDUC 349 B</td>
<td>Single Subject Student Teaching Seminar (2)</td>
</tr>
<tr>
<td>EDUC 349 C</td>
<td>Single Subject Student Teaching Seminar (2)</td>
</tr>
<tr>
<td>EDUC 376 A</td>
<td>Supervised Teaching in the Secondary School (2)</td>
</tr>
<tr>
<td>EDUC 376 B</td>
<td>Supervised Teaching in the Secondary School (5)</td>
</tr>
<tr>
<td>EDUC 376 C</td>
<td>Supervised Teaching in the Secondary School (11)</td>
</tr>
<tr>
<td>EDUC 378 A</td>
<td>Intern Teaching in the Secondary School (9)</td>
</tr>
<tr>
<td>EDUC 378 B</td>
<td>Intern Teaching in the Secondary School (9)</td>
</tr>
<tr>
<td>EDUC 378 C</td>
<td>Intern Teaching in the Secondary School (9)</td>
</tr>
<tr>
<td>EEOB 400</td>
<td>Introduction to Graduate Study in Biology (2)</td>
</tr>
<tr>
<td></td>
<td>BIOL 400</td>
</tr>
</tbody>
</table>
To be received and placed on file:

The Committee on Courses has approved requests to allow the following instructors to teach upper division courses as indicated:

<table>
<thead>
<tr>
<th>INSTRUCTOR</th>
<th>DEPARTMENT</th>
<th>COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. HARRIS</td>
<td>COMPUTER SCIENCE &amp; ENGINEERING</td>
<td>CS 141</td>
</tr>
<tr>
<td>W-S. LEE</td>
<td>ENGINEERING</td>
<td>CS 183</td>
</tr>
<tr>
<td>C. NICOLESCU-WAGGONER</td>
<td>POLITICAL SCIENCE</td>
<td>POSC 154</td>
</tr>
<tr>
<td>T. WONG</td>
<td>POSC 124</td>
<td></td>
</tr>
<tr>
<td>T. HAYES</td>
<td>POSC 143</td>
<td></td>
</tr>
<tr>
<td>C. MURPHY</td>
<td>POSC 101</td>
<td></td>
</tr>
<tr>
<td>B. MARTIN</td>
<td>POSC 101</td>
<td></td>
</tr>
<tr>
<td>C. CALDWELL</td>
<td>POLITICAL SCIENCE</td>
<td>POSC 111</td>
</tr>
<tr>
<td>C. HILLARD</td>
<td>POSC 110</td>
<td></td>
</tr>
<tr>
<td>J. FILLA</td>
<td>POSC 167</td>
<td></td>
</tr>
<tr>
<td>K. GRISHAM</td>
<td>POSC 152</td>
<td></td>
</tr>
<tr>
<td>M. OMAE</td>
<td>POSC 123</td>
<td></td>
</tr>
<tr>
<td>S. SCHULENBERG</td>
<td>POLITICAL SCIENCE</td>
<td>POSC 182</td>
</tr>
<tr>
<td>S. AIRBORN</td>
<td>PSYCHOLOGY</td>
<td>PSYC 160A</td>
</tr>
<tr>
<td>B. VARDA</td>
<td>THEATRE</td>
<td>THEA 180L</td>
</tr>
<tr>
<td>K. LAWRENCE</td>
<td>SOCIOLOGY</td>
<td>SOC 184</td>
</tr>
<tr>
<td>C. LEPAUGE</td>
<td>SOCIOLOGY</td>
<td>SOC 147</td>
</tr>
<tr>
<td>A. CUBBAGE-VEGA</td>
<td>SOCIOLOGY</td>
<td>SOC 180</td>
</tr>
<tr>
<td>T. HOOVER</td>
<td>SOCIOLOGY</td>
<td>SOC 140</td>
</tr>
<tr>
<td>W-S. LEE</td>
<td>ENGINEERING</td>
<td>CS 183</td>
</tr>
<tr>
<td>J. LOPEZ</td>
<td>ETHNIC STUDIES</td>
<td>ETST 121</td>
</tr>
<tr>
<td>P. LASHHELL</td>
<td>PSYCHOLOGY</td>
<td>PSY 134</td>
</tr>
<tr>
<td>A. NGUYEN</td>
<td>PSYCHOLOGY</td>
<td>PSY 142</td>
</tr>
<tr>
<td>T. STIMSON</td>
<td>PSYCHOLOGY</td>
<td>PSY 150</td>
</tr>
<tr>
<td></td>
<td>PSYCHOLOGY</td>
<td>PSY 153</td>
</tr>
<tr>
<td>S. FAIRBORN</td>
<td>PSYCHOLOGY</td>
<td>PSY 152</td>
</tr>
<tr>
<td>N. STANOFF</td>
<td>PSYCHOLOGY</td>
<td>PSY 160A</td>
</tr>
<tr>
<td>R. GODFREY</td>
<td>PSYCHOLOGY</td>
<td>PSY 175</td>
</tr>
<tr>
<td>S. WILLIAMS</td>
<td>PSYCHOLOGY</td>
<td>PSY 178</td>
</tr>
<tr>
<td>P. KERN</td>
<td>PSYCHOLOGY</td>
<td>PSY 179</td>
</tr>
</tbody>
</table>
To be received and placed on file:

The Committee on Courses has approved the following courses for deletion with the concurrence of the departments involved. (These courses have been listed in the General Catalog, but for at least five years, have not been offered, been offered with zero enrollment, or have been offered but canceled.)

CBNS 191
CHEM 219 (E-Z)
CHEM 221C
CHEM 234
CHEM 235
CHEM 236
CHEM 257
ENSC 224
ENSC 225
ENSC 257
PHYS 275
SWSC 224
SWSC 225
SWSC 257
SWSC 260 (E-Z)
To be received and placed on file:

Revisions to Committee on Courses, University of California-Riverside, "General Rules and Policies Governing Courses of Instruction".

(Strikeover indicates deletion; double underline indicates new text)

II. Preparation of Course Proposals.

D. Syllabus: For a new course, restored course, or a course with a substantive change, include a substantive current or proposed course outline or syllabus that outlines the course by week, date, or topic and includes weighted grading criteria. To indicate the amount of required reading, provide a reading list that is linked to a week, date, or topic.
To be received and placed on file:

The Committee on University Extension has approved the following courses and/or teacher approvals:

<table>
<thead>
<tr>
<th>DEPT</th>
<th>NUMBER</th>
<th>COURSE TITLE/UNITS</th>
<th>INSTRUCTOR(S)</th>
<th>TYPE</th>
<th>CERT.</th>
<th>IN SERVICE</th>
<th>DATE APPROVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU</td>
<td>X81</td>
<td>ORGANIZATIONAL LEADERSHIP CERTIFICATE</td>
<td>STREET, H., M.S.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X82.31</td>
<td>THE ROLE OF HOME, SCHOOL AND COMMUNITY IN EARLY CHILDHOOD STUDIES 4/23/08</td>
<td>STREET, H., M.S.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X86</td>
<td>PARENT INVOLVEMENT IN EARLY CHILDHOOD EDUCATION (3)</td>
<td>STREET, H., M.S.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X87</td>
<td>HEALTH, NUTRITION AND SAFETY IN EARLY CHILDHOOD (2)</td>
<td>STREET, H., M.S.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X88.65</td>
<td>SUPERVISED FIELD EXPERIENCE IN EARLY CHILDHOOD STUDIES (5)</td>
<td>STREET, H., M.S.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>JPN</td>
<td>XR1</td>
<td>ELEMENTARY JAPANESE (4)</td>
<td>ONOZAKI, RYO, M.A</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>JPN</td>
<td>XR2</td>
<td>ELEMENTARY JAPANESE (4)</td>
<td>ONOZAKI, RYO, M.A</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>JPN</td>
<td>XR3</td>
<td>ELEMENTARY JAPANESE (4)</td>
<td>ONOZAKI, RYO, M.A</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>JPN</td>
<td>XR4</td>
<td>INTERMEDIATE JAPANESE (4)</td>
<td>ONOZAKI, RYO, M.A</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>JPN</td>
<td>XR5</td>
<td>INTERMEDIATE JAPANESE (4)</td>
<td>ONOZAKI, RYO, M.A</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>JPN</td>
<td>XR6</td>
<td>INTERMEDIATE JAPANESE (4)</td>
<td>ONOZAKI, RYO, M.A</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>KOR</td>
<td>X1</td>
<td>ELEMENTARY KOREAN (4)</td>
<td>CHOI, D., PHD</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>KOR</td>
<td>X2</td>
<td>ELEMENTARY KOREAN (4)</td>
<td>CHOI, D., PHD</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>KOR</td>
<td>X3</td>
<td>ELEMENTARY KOREAN (4)</td>
<td>CHOI, D., PHD</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X309.15</td>
<td>CURRICULUM IN VOCATIONAL EDUCATION (2)</td>
<td>SHAMBIN, M., M.A</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X312.97</td>
<td>THE ADULT LEARNING PROCESS (2)</td>
<td>C. TSUSHIMA, M.A.</td>
<td>I*</td>
<td>X</td>
<td>3/19/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X312.98</td>
<td>INSTRUCTIONAL AND INTERACTIONAL STRATEGIES IN ADULT EDUCATION (2)</td>
<td>C. TSUSHIMA, M.A.</td>
<td>I*</td>
<td>X</td>
<td>3/19/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X312.99</td>
<td>ASSESSMENT AND EVALUATION IN ADULT AND VOCATIONAL EDUCATION (2)</td>
<td>C. TSUSHIMA, M.A.</td>
<td>I*</td>
<td>X</td>
<td>3/19/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X313.E-F</td>
<td>WORK EXPERIENCE EDUCATOR TRAINING (1)</td>
<td>PIERCE, R.</td>
<td>C/I</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X314.28</td>
<td>LEGAL ISSUES IN EDUCATIONAL FACILITIES PLANNING (.5)</td>
<td>DIETRICH, J., JD</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X314.35</td>
<td>CHARTER SCHOOL FACILITIES: HOW TO FIND SCHOOL SITES AND GAIN LOCAL AND STATE APPROVALS (1)</td>
<td>VAIL, M., B.A.</td>
<td>C/I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X314.35</td>
<td>CHARTER SCHOOL FACILITIES: HOW TO FIND SCHOOL SITES AND GAIN LOCAL AND STATE APPROVALS (1)</td>
<td>MEARS, DWAYNE</td>
<td>C/I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X324.38</td>
<td>IDENTIFYING THE EDUCATIONAL NEEDS OF GIFTED MALES, AGES 5-18</td>
<td>HARRRELL, M., M.S</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X328.26</td>
<td>PRINCIPLES OF EDUCATIONAL THERAPY (3)</td>
<td>MICKELSON, E., B.A.</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X330.27</td>
<td>MANAGEMENT OF A CLINICAL PRACTICE (3)</td>
<td>LEISURE, M., M.A</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X330.28</td>
<td>IMPLEMENTING STANDARDS-BASED TEXTS IN THE MATHEMATICS CLASSROOM (4)</td>
<td>UNFRESS, J.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X352.3</td>
<td>V. L. KUKURUDA, M.A.</td>
<td>I*</td>
<td>3/14/08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEPT</td>
<td>NUMBER</td>
<td>COURSE TITLE/UNITS</td>
<td>INSTRUCTOR(S)</td>
<td>TYPE</td>
<td>CERT.</td>
<td>COURSE IN SERVICE</td>
<td>DATE APPROVED</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>------</td>
<td>-------</td>
<td>-------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>EDU</td>
<td>X355.4</td>
<td>WRITING FROM TWO PERSPECTIVES: THE TEACHER AND THE STUDENT (3)</td>
<td>SKUMAWITZ, P.</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X372.4</td>
<td>HUMAN RESOURCES MANAGEMENT FOR CHIEF BUSINESS OFFICIALS (4)</td>
<td>S. PICKUP, ED.D.</td>
<td>I*</td>
<td>X</td>
<td>2/6/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.11</td>
<td>CONSULTATION, LEADERSHIP, AND SUPERVISION (3)</td>
<td>E. TELLEZ-ARMUJO, M.S.</td>
<td>I*</td>
<td>X</td>
<td>2/13/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.12</td>
<td>HISTORY AND PRACTICES OF SCHOOL COUNSELING</td>
<td>WILLIAMS, D., M.A.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.13</td>
<td>GUIDANCE INSTRUCTION AND ADVOCACY</td>
<td>STONE, S., M.A</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.15</td>
<td>CAREER DEVELOPMENT (3)</td>
<td>TAYLOR, K., M.S</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.16</td>
<td>PERSONAL AND SOCIAL DEVELOPMENT (3)</td>
<td>PUES, S., M.A</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.19</td>
<td>LEADERSHIP, COORDINATION, COLLABORATION OF SCHOOL COUNSELING AND GUIDANCE PROGRAMS (3)</td>
<td>ARCOS, K., M.S</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.19</td>
<td>LEADERSHIP, COORDINATION, COLLABORATION OF SCHOOL COUNSELING AND GUIDANCE PROGRAMS (3)</td>
<td>STONE, S., M.A</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.19</td>
<td>LEADERSHIP, COORDINATION, COLLABORATION OF SCHOOL COUNSELING AND GUIDANCE PROGRAMS (3)</td>
<td>TELLEZ-ARMUJO, E., M.S</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.22</td>
<td>RESEARCH DESIGN, EVALUATION AND TECHNOLOGY IN SCHOOL COUNSELING (2)</td>
<td>STONE, S., M.A</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X388.9</td>
<td>SCHOOL SAFETY AND VIOLENCE PREVENTION (2)</td>
<td>TELLEZ-ARMUJO, E., M.S</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X395.8A</td>
<td>RIMS-BTSA CFASST MENTIRING FOR SUPPORT PROVIDERS, YEAR I (4)</td>
<td>L. DIVERS</td>
<td>I*</td>
<td>X</td>
<td>2/13/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X395.8B</td>
<td>RIMS-BTSA CFASST MENTIRING FOR SUPPORT PROVIDERS, YEAR II (4)</td>
<td>L. DIVERS</td>
<td>I*</td>
<td>X</td>
<td>2/13/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X395.9A</td>
<td>RIMS-BTSA CFASST MENTIRING FOR PROFESSIONAL TEACHERS, YEAR I (4)</td>
<td>L. DIVERS</td>
<td>I*</td>
<td></td>
<td>2/13/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X395.9B</td>
<td>RIMS-BTSA CFASST MENTIRING FOR PROFESSIONAL TEACHERS, YEAR II (4)</td>
<td>L. DIVERS</td>
<td>I*</td>
<td></td>
<td>2/13/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X396.1</td>
<td>FOUNDATIONS OF ADVANCED PLACEMENT (2)</td>
<td>DRAKE, P., B.A.</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EGR</td>
<td>X402</td>
<td>GREEN BUILDING DESIGN (2)</td>
<td>SHAMP, E., B.A.</td>
<td>C/I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>SPN</td>
<td>X403.2</td>
<td>SPANISH READING AND WRITING SKILLS FOR BILINGUAL INTERPRETERS</td>
<td>MARTINEZ, M., PHD</td>
<td>C/I</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>MAT</td>
<td>X405</td>
<td>DEVELOPING THE REAL NUMBER SYSTEM (4)</td>
<td>WOOLSEY, E.</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>MAT</td>
<td>X405.B</td>
<td>DEVELOPING THE REAL NUMBER SYSTEM, PART B (4)</td>
<td>WOOLSEY, E.</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X412.2</td>
<td>CONTENT AND METHODS FOR TEACHING ADVANCED PLACEMENT SPANISH LANGUAGE</td>
<td>MCMULLAN, J., M.S</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X412.2</td>
<td>CONTENT AND METHODS FOR TEACHING ADVANCED PLACEMENT SPANISH LANGUAGE (5)</td>
<td>VAZQUEZ, M., B.S.</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>ART</td>
<td>X413.28</td>
<td>INTRODUCTION TO PENCIL DRAWING (1.5)</td>
<td>DAVIS, L., M.A.</td>
<td>I*</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>CRW</td>
<td>X414.7</td>
<td>TAKING YOUR WRITING TO THE NEXT LEVEL (.5)</td>
<td>BASSIOR, J.</td>
<td>C/I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>ENT</td>
<td>X415</td>
<td>FORENSIC ENTOMOLOGY</td>
<td>FAULKNER, D., M.S</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>X415.11</td>
<td>INTRODUCTION TO FORENSIC HANDWRITING EXAMINATION</td>
<td>LOWE, S., B.S.</td>
<td>C/I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>PLS</td>
<td>X417</td>
<td>MANAGEMENT SKILLS FOR TURFGRASS &amp; LANDSCAPE MANAGERS (3)</td>
<td>D. ORSBORN, B.S.</td>
<td>I*</td>
<td></td>
<td>2/15/08</td>
<td></td>
</tr>
<tr>
<td>CRW</td>
<td>X417.5</td>
<td>WRITING CHILDREN'S BOOKS (1)</td>
<td>LATTIMORE, D., B.A.</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td>X418.3</td>
<td>ENGLISH USAGE FOR BUSINESS (2)</td>
<td>F. B. LAUB, ED.D</td>
<td>I</td>
<td>2/6/08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>X418.83</td>
<td>SQL SERVER 2005-DESIGNING DATABASE SOLUTIONS (4)</td>
<td>WANG, X.</td>
<td>I</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X422.31</td>
<td>INTERVENTION STRATEGIES IN READING AND LANGUAGE ARTS (3)</td>
<td>T. BASTIAN, M.A.</td>
<td>I*</td>
<td>X</td>
<td>3/19/08</td>
<td></td>
</tr>
<tr>
<td>EDU</td>
<td>X422.33</td>
<td>INSTRUCTION</td>
<td>OLER, D., M.S</td>
<td>I*</td>
<td>X</td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>X423.10</td>
<td>MICROSOFT PROJECT-COMPREHENSIVE</td>
<td>EPPS, J., B.A.</td>
<td>I</td>
<td></td>
<td>4/23/08</td>
<td></td>
</tr>
<tr>
<td>DEPT</td>
<td>NUMBER</td>
<td>COURSE TITLE/UNITS</td>
<td>INSTRUCTOR(S)</td>
<td>TYPE</td>
<td>CERT.</td>
<td>IN</td>
<td>DATE</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>--------------------</td>
<td>--------------</td>
<td>------</td>
<td>-------</td>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>ART</td>
<td>X425.10</td>
<td>ILLUSTRATING CHILDREN'S BOOKS (1)</td>
<td>LATTIMORE, D., B.A.</td>
<td>C/I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426</td>
<td>CULTURE AND INCLUSION (4)</td>
<td>D. ROZESKI</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>2/13/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426</td>
<td>CULTURE AND INCLUSION (4)</td>
<td>M. O. CASTRO, M.A.</td>
<td>I</td>
<td>X</td>
<td></td>
<td>2/26/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426</td>
<td>CULTURE AND INCLUSION (4)</td>
<td>S. CASTANEDA, M.S.</td>
<td>I</td>
<td>X</td>
<td></td>
<td>3/27/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426</td>
<td>CULTURE AND INCLUSION (4)</td>
<td>MIKULICS, M., MED</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426</td>
<td>CULTURE AND INCLUSION (4)</td>
<td>RUIZ, J., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426</td>
<td>CULTURE AND INCLUSION (4)</td>
<td>SALDIN, D., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.1</td>
<td>LANGUAGE AND LANGUAGES DEVELOPMENT (4)</td>
<td>M. MILULICS</td>
<td>I</td>
<td>X</td>
<td></td>
<td>2/13/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.1</td>
<td>LANGUAGE AND LANGUAGES DEVELOPMENT (4)</td>
<td>J. L. GARNER, M.A.</td>
<td>I</td>
<td>X</td>
<td></td>
<td>3/6/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.1</td>
<td>LANGUAGE AND LANGUAGE DEVELOPMENT (4)</td>
<td>CASTRO, M., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.1</td>
<td>LANGUAGE AND LANGUAGE DEVELOPMENT (4)</td>
<td>ROZESKI, D., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.1</td>
<td>LANGUAGE AND LANGUAGE DEVELOPMENT (4)</td>
<td>RUIZ, J., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.1</td>
<td>LANGUAGE AND LANGUAGE DEVELOPMENT (4)</td>
<td>SALAZAR, L., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.1</td>
<td>LANGUAGE AND LANGUAGE DEVELOPMENT (4)</td>
<td>Saldin, D., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>ASSESSMENT OF ENGLISH LANGUAGE LEARNERS (4)</td>
<td>L. SALAZAR</td>
<td>C/I</td>
<td>X</td>
<td></td>
<td>2/13/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>ASSESSMENT OF ENGLISH LANGUAGE LEARNERS (4)</td>
<td>S. GILBERT, ED.D.</td>
<td>I</td>
<td>X</td>
<td></td>
<td>3/11/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>ASSESSMENT OF ENGLISH LANGUAGE LEARNERS (3)</td>
<td>CASTRO, M., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>ASSESSMENT OF ENGLISH LANGUAGE LEARNERS (3)</td>
<td>MEIER, J., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>ASSESSMENT OF ENGLISH LANGUAGE LEARNERS (3)</td>
<td>ROZESKI, D., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>ASSESSMENT OF ENGLISH LANGUAGE LEARNERS (3)</td>
<td>RUIZ, J., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>FOUNDATIONS OF ENGLISH LANGUAGE DEVELOPMENT (6)</td>
<td>SALAZAR, L., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.2</td>
<td>ASSESSMENT OF ENGLISH LANGUAGE LEARNERS (3)</td>
<td>SALDIN, D., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.3</td>
<td>FOUNDATIONS OF ENGLISH LANGUAGE DEVELOPMENT AND METHODS FOR</td>
<td>P. RICE, M.A</td>
<td>C/I</td>
<td>X</td>
<td></td>
<td>2/15/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.3</td>
<td>FOUNDATIONS OF ENGLISH LANGUAGE DEVELOPMENT (6)</td>
<td>CASTRO, M., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.3</td>
<td>FOUNDATIONS OF ENGLISH LANGUAGE DEVELOPMENT (6)</td>
<td>MEIER, J., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.3</td>
<td>FOUNDATIONS OF ENGLISH LANGUAGE DEVELOPMENT (6)</td>
<td>ROZESKI, D., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.3</td>
<td>FOUNDATIONS OF ENGLISH LANGUAGE DEVELOPMENT (6)</td>
<td>RUIZ, J., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.3</td>
<td>FOUNDATIONS OF ENGLISH LANGUAGE DEVELOPMENT (6)</td>
<td>Saldin, D., M.A</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>EDU</td>
<td>X426.9</td>
<td>CTEL PORTFOLIO (1)</td>
<td>J. ROUSSE, M.S.</td>
<td>C/I</td>
<td>X</td>
<td></td>
<td>2/13/08</td>
</tr>
<tr>
<td>MGT</td>
<td>X427.6</td>
<td>TAXATION-PARTNERSHIP (4)</td>
<td>A. CHEMKHI, M.B.A.</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>3/4/08</td>
</tr>
<tr>
<td>MGT</td>
<td>X427.82</td>
<td>TAXATION-CORPORATE (4)</td>
<td>A. CHEMKHI, M.B.A.</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>4/10/08</td>
</tr>
<tr>
<td>LAW</td>
<td>X432</td>
<td>LEGAL RESEARCH AND WRITING II</td>
<td>LEMMON, C., JD</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>MAT</td>
<td>X432.5</td>
<td>UNDERSTANDING (2)</td>
<td>WOOLSEY, E.</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>CSC</td>
<td>X433.4</td>
<td>STUDIO 2005 (4)</td>
<td>DARAEI, K., B.S.</td>
<td>I</td>
<td></td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>LAW</td>
<td>X436</td>
<td>FAMILY LAW</td>
<td>WATKINS, T., JD</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>LAW</td>
<td>X439</td>
<td>TORT LAW (3)</td>
<td>B. C. HOFIELD, J.D.</td>
<td>I</td>
<td>X</td>
<td></td>
<td>2/6/08</td>
</tr>
<tr>
<td>ERT</td>
<td>X454.5</td>
<td>GIS DATABASE DESIGN (3)</td>
<td>CHILDS, C., B.A.</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>ERT</td>
<td>X454.9</td>
<td>GIS DATA RESOURCES (3)</td>
<td>CORRIGAN, T., M.S</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>ART</td>
<td>X461.61</td>
<td>KITCHEN DESIGN AND REMODELING (3)</td>
<td>K. D. SMITH</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>2/19/08</td>
</tr>
<tr>
<td>ART</td>
<td>X462.6</td>
<td>USING INTERIOR DESIGN PRINCIPLES TO SELL A HOUSE (1)</td>
<td>GROSS-VASQUEZ, S., B.A</td>
<td>C/I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>ART</td>
<td>X463</td>
<td>FLOOR COVERINGS IN INTERIOR DESIGN (3)</td>
<td>BERNSTEIN, J.</td>
<td>I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>DEPT</td>
<td>NUMBER</td>
<td>COURSE TITLE/UNITS</td>
<td>INSTRUCTOR(S)</td>
<td>TYPE</td>
<td>CERT.</td>
<td>IN SERVICE</td>
<td>DATE APPRVD</td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>-------</td>
<td>-------</td>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>BMSC</td>
<td>X465.3</td>
<td>FORENSIC APPROACHES TO HUMAN ABUSE INJURIES (2)</td>
<td>C. CARUSO, RN</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>3/17/08</td>
</tr>
<tr>
<td>BMSC</td>
<td>X465.8</td>
<td>FORENSIC APPROACHES TO DOMESTIC VIOLENCE (1)</td>
<td>A. ZARAGOZA, MSN</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>2/6/08</td>
</tr>
<tr>
<td>MGT</td>
<td>X469.A</td>
<td>LEADERSHIP, COMMUNICATION AND TEAMBUILDING (5)</td>
<td>J. EPPS, B.A.</td>
<td>C/I</td>
<td></td>
<td></td>
<td>2/6/08</td>
</tr>
<tr>
<td>MGT</td>
<td>X469.1</td>
<td>PRACTICE (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT</td>
<td>X470.39</td>
<td>PROJECT SCHEDULING AND RISK MANAGEMENT (3)</td>
<td>TOOTHMAN, M.</td>
<td>I</td>
<td></td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>MGT</td>
<td>X471.6</td>
<td>PROJECT SCHEDULING, SCHEDULING AND CONTROL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT</td>
<td>X471.7</td>
<td>CONSTRUCTION MANAGEMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT</td>
<td>X471.8</td>
<td>CONSTRUCTION FIELD SUPERVISION (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT</td>
<td>X471.8</td>
<td>CONSTRUCTION FIELD SUPERVISION (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAW</td>
<td>X477.4</td>
<td>MEDICAL MALPRACTICE LAW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT</td>
<td>X477.4</td>
<td>MANAGERIAL FINANCE (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEO</td>
<td>X481.1</td>
<td>INTRODUCTION TO ASTRONOMY FOR EDUCATORS (1)</td>
<td>WHAHA, R.</td>
<td>C/I</td>
<td>X</td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>ART</td>
<td>X485.12</td>
<td>COMPOSITION AND CONCEPTS FOR BETTER PHOTOGRAPHY (2)</td>
<td>NICOLETTI, W., B.A.</td>
<td>I*</td>
<td></td>
<td></td>
<td>4/23/08</td>
</tr>
<tr>
<td>POL</td>
<td>X490</td>
<td>GOVERNMENT AND POLITICS-U.S. (3)</td>
<td>D. W. HENDERSON, M.A.</td>
<td>I*</td>
<td>X</td>
<td></td>
<td>4/21/08</td>
</tr>
</tbody>
</table>

* Denotes first time approval for Instructor
**Denotes Instructor has previously been approved but has not yet taught; therefore, there are no evaluations
THE GRADUATE COUNCIL AND EXECUTIVE COMMITTEES OF THE COLLEGES
REPORT TO THE RIVERSIDE DIVISION
MAY 20, 2008

To be received and placed on file:

Reports of degrees awarded*

<table>
<thead>
<tr>
<th>COLLEGE/ DIVISION</th>
<th>MASTER OF FINE ARTS</th>
<th>MASTER OF ARTS</th>
<th>MASTER OF SCIENCE</th>
<th>MASTER OF BUS. ADMIN.</th>
<th>MASTER OF EDU.</th>
<th>DOCTOR OF PHILOSOPHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Division</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter 2008</td>
<td>2</td>
<td>7</td>
<td>23</td>
<td>16</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>College of Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall 2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>College of Natural &amp; Agricultural Sciences</td>
<td>BACHELOR OF ARTS</td>
<td>BACHELOR OF SCIENCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall 2007</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>College of Humanities, Arts &amp; Social Sciences</td>
<td>BACHELOR OF ARTS</td>
<td>BACHELOR OF SCIENCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall 2007</td>
<td>286</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>76</td>
</tr>
</tbody>
</table>

A.S. Jacobs, Secretary-Parliamentarian

Riverside Division of the Academic Senate

*The names of the candidates are filed in the official records of the Office of the Registrar
To be adopted:

Proposed Changes to B.A. Degree in Chicano Studies

Present:

The major requirements for the Bachelor of Arts degree in Chicano Studies are as follows:

Core courses required of all majors

1. Lower-division requirements (8 units)
   a) ETST 002, ETST 004/HIST 004

2. Upper-division requirements (48-50 units)
   a) ETST 100, ETST 131
   b) ETST 191R
   c) A minimum of three courses selected from two of the following areas of emphasis:
      (1) Law
         (a) ETST 145/SOC145
         (b) Two additional courses: ETST 126, ETST 128/SOC128, ETST 185, ETST 108-I
      (2) Politics:
         (a) ETST 123
         (b) ETST 125
         (c) One additional course: ETST 111, ETST 132, ETST 142, ETST 156
      (3) History & Culture:
         (a) ETST 155
         (b) Two additional courses:
             ETST 108E, ETST 108F
             ETST 108-I, ETST 108P
             ETST 122, ETST 125
             ETST 128/SOC128
             ETST 146/EDUC 146
             ETST 153/LNST 153
             ETST 154, ETST 161, ETST 166
      (4) Gender:
         (a) ETST 124
         (b) Two additional courses:
             ETST 114, ETST 134, ETST 127,
             ETST 175/WMST 175

d) One Senior Research Seminar (4 units)

e) One Internship course (4 units)

f) One additional elective upper-division course in Ethnic Studies

Note No internship courses may be counted toward the upper-division electives in Ethnic Studies.

Proposed:

The major requirements for the Bachelor of Arts degree in Chicano Studies are as follows:

Core courses required of all majors

1. Lower-division requirements (8 units)
   a) ETST 002, ETST 004/HIST 004

2. Upper-division requirements (48-50 units)
   a) ETST 100, ETST 131
   b) ETST 191R
   c) A minimum of three courses selected from two of the following areas of emphasis:
      (1) Law
         (a) ETST 145/SOC145
         (b) Two additional courses: ETST 126, ETST 128/SOC128, ETST 185, ETST 108-I
      (2) Politics:
         (a) ETST 123
         (b) ETST 125
         (c) One additional course: ETST 111, ETST 132, ETST 142, ETST 156
      (3) History & Culture:
         (a) ETST 155
         (b) Two additional courses:
             ETST 108E, ETST 108F
             ETST 108-I, ETST 108P
             ETST 122, ETST 125
             ETST 128/SOC128
             ETST 146/EDUC 146
             ETST 153/LNST 153
             ETST 154, ETST 161, ETST 166
      (4) Gender:
         (a) ETST 124
         (b) Two additional courses:
             ETST 114, ETST 127, ETST 175/WMST 175

d) One Senior Research Seminar (4 units)

e) One Internship course (4 units)

f) One additional elective upper-division course in Ethnic Studies

Note No internship courses may be counted toward the upper-division electives in Ethnic Studies.
JUSIFICATION

ETST 131 is a core required class and is also listed in Gender area incorrectly.

APPROVALS:

Approved by the faculty of the Department of Ethnic Studies: 4/01/2008
Approved by the Executive Committee of the College of: 4/16/2008
Approved by the Committee on Educational Policy: 4/30/2008
EXECUTIVE COMMITTEE
BOURNS COLLEGE OF ENGINEERING
REPORT TO THE RIVERSIDE DIVISION
May 20, 2008

PROPOSED CHANGE TO COMPUTER ENGINEERING MAJOR REQUIREMENTS

To be adopted:

PRESENT:
Major Requirements
1. Lower-division requirements (68 units)
   a) ENGR 001G
   b) CS 010, CS 012, CS 014, CS 061
   c) CS 011/MATH 011
   d) EE 001A, EE 011A, EE 001B
   e) MATH 008B or MATH 009A, MATH 009B, MATH 010A, MATH 046
   f) PHYS 040A, PHYS 040B, PHYS 040C
   g) One course of 4 or more units in Chemistry to be selected in consultation with a faculty advisor.
2. Upper-division requirements (80 units)
   a) CS 141, CS 161, CS 161L; one course from CS 153 or CS 160
   b) CS 120A/EE 120A, CS 120B/EE 120B; one course from CS 122A or EE 128
   c) CS 111/MATH 111
   d) EE 100A, EE 100B, EE 110A, EE 110B
   e) ENGR 180
   f) MATH 113
   g) EE 114 or STAT 155
   h) Five courses (at least 20 units) as technical electives from the following set of Computer Science and Engineering, and Electrical Engineering upper-division courses
      CS 100, CS 122A, CS 122B, CS 130, CS 133, CS 150, CS 152, CS 153, CS 160, CS 162, CS 164, CS 165, CS 166, CS 168, CS 170, CS 177, CS 179 (E-Z), CS 180, CS 181, CS 183, CS 193
      EE 105, EE 115, EE 128, EE 132,

PROPOSED:
Major Requirements
1. Lower-division requirements (68 units)
   a) ENGR 001G
   b) CS 010, CS 012 or CS 013, CS 014, CS 061
   c) CS 011/MATH 011
   d) EE 001A, EE 011A, EE 001B
   e) MATH 008B or MATH 009A, MATH 009B, MATH 010A, MATH 046
   f) PHYS 040A, PHYS 040B, PHYS 040C
   g) One course of 4 or more units in Chemistry to be selected in consultation with a faculty advisor.
2. Upper-division requirements (80 units minimum)
   a) CS 141, CS 161, CS 161L; one course from CS 153 or CS 160
   b) CS 120A/EE 120A, CS 120B/EE 120B; one course from CS 122A or EE 128
   c) CS 111/MATH 111
   d) EE 100A, EE 100B, EE 110A, EE 110B
   e) ENGR 180
   f) MATH 113
   g) EE 114 or STAT 155
   h) Five courses (at least 20 units) as technical electives from the following set of Computer Science and Engineering, and Electrical Engineering upper-division courses
      CS 100, CS 122A, CS 122B, CS 130, CS 133, CS 150, CS 152, CS 153, CS 160, CS 162, CS 164, CS 165, CS 166, CS 168, CS 170, CS 177, CS 179 (E-Z), CS 180, CS 181, CS 183, CS 193
      EE 105, EE 115, EE 128, EE 132,
The technical electives selected from h) must include either CS 179 (E-Z) or both EE 175A and EE 175B. The selection of the remaining technical electives must be planned, in consultation with a faculty advisor, to include at least one coherent sequence of two classes from either Computer Science and Engineering or Electrical Engineering. The technical electives must be distinct from those used to satisfy the upper-division requirements specified in items a) and b) above.

Students may petition for exceptions to the above degree requirements. Exceptions to Computer Science course requirements must be approved by the Computer Science and Engineering undergraduate advisor or chair, and exceptions to Electrical Engineering course requirements must be approved by the Electrical Engineering undergraduate advisor or chair. Exceptions to other requirements require the approval of the undergraduate advisors of both chairs of both departments.

Visit the Student Affairs Office in the College of Engineering or www.engr.ucr.edu/studentaffairs for a sample program.

**Justification:**

The Electrical Engineering (EE) department has requested that we introduce a variant of CS012 that teaches the same programming concepts and skills, but with examples and assignments tailored specifically for engineering students. EE currently requires CS010 (the course before CS012) but not CS012. They would like their majors to have more training than they currently get in the concepts of C++ programming, but with examples and projects with content that fits the EE major better. We are introducing CS013 to meet their request.
That is the motivation for introducing CS013. CS013 is a course-equivalent to CS012 in the sense that it teaches the same programming skills and concepts, just with different examples. We anticipate that the examples and projects in CS013 will be chosen to fit not just EE majors, but also other Engineering majors, and that the course may be of interest to CS, IS, and CompEng majors who choose to take it instead of CS012. For this reason, we are happy to give our own majors and CS minors the option of taking either CS012 or the new CS013, whichever fits their interest better.

Approved by the Faculty of the Electrical Engineering Department: December 5, 2007
Approved by the Faculty of the Computer Science and Engineering Department: November 28, 2007
Approved by the College of Engineering Executive Committee: April 9, 2008
Approved by the Committee on Educational Policy: May 30, 2008
PROPOSED CHANGE TO COMPUTER SCIENCE MAJOR REQUIREMENTS

To be adopted:

PRESENT:
Major Requirements
Computer Science Major

PROPOSED:
Major Requirements
Computer Science Major

1. Lower-division requirements (60 units)
   a) ENGR 001I
   b) CS 010, CS 012, CS 014, CS 061
   c) CS 011/MATH 011
   d) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A
   e) PHYS 040A, PHYS 040B, PHYS 040C
   f) One course of 4 or more units in an engineering discipline outside the field of computer science to be selected in consultation with a faculty advisor. (Either a lower-division or an upper-division course may be used to satisfy this requirement.)
   g) ENGL 01SC

2. Upper-division requirements (85 units minimum)
   a) ENGR 101I
   b) CS 141, CS 150, CS 152, CS 153, CS 161, CS 161L, CS 179 (E-Z)
   c) CS 120A/EE 120A, CS 120B/EE 120B,
   d) CS 111/MATH 111
   e) ENGR 180
   f) MATH 113
   g) STAT 155
   h) Two courses from MATH 046, MATH 120, MATH 126, PHIL 124
   i) At least 24 units of technical electives to be chosen from an approved list of courses which currently includes CS 100, CS 122A, CS 122B, CS 130, CS 133, CS 134, CS 145, CS 151, CS 160, CS 162, CS 164, CS 165, CS 166, CS 168, CS 170, CS 177, CS 179 (E-Z) (4 units maximum), CS 180, CS 181, CS 183, CS 193 (4 units maximum),
EE 140, MATH 120, MATH 135A, MATH 135B
The technical electives selected must be distinct from those used to satisfy the requirements specified in 2.a)-g) above.

Visit the Student Affairs Office in the College of Engineering or www.engr.ucr.edu/studentaffairs for a sample program.

JUSTIFICATION:

The Electrical Engineering (EE) department has requested that we introduce a variant of CS012 that teaches the same programming concepts and skills, but with examples and assignments tailored specifically for engineering students. EE currently requires CS010 (the course before CS012) but not CS012. They would like their majors to have more training than they currently get in the concepts of C++ programming, but with examples and projects with content that fits the EE major better. We are introducing CS013 to meet their request.

That is the motivation for introducing CS013. CS013 is a course- equivalent to CS012 in the sense that it teaches the same programming skills and concepts, just with different examples. We anticipate that the examples and projects in CS 013 will be chosen to fit not just EE majors, but also other Engineering majors, and that the course may be of interest to CS, IS, and CompEng majors who choose to take it instead of CS012. For this reason, we are happy to give our own majors and CS minors the option of taking either CS012 or the new CS013, whichever fits their interest better.

APPROVALS:

Approved by the Computer Science and Engineering Department: November 28, 2007
Approved by the BCOE Executive Committee: April 9, 2008
Approved by the Committee on Educational Policy: April 30, 2008
To be adopted:

**PRESENT:**
Requirements for the minor Computer Science are:

1. Prerequisite courses: CS 010, CS 012, CS 014, CS 061, CS 011/MATH 011, MATH 008B or MATH 009A, MATH 009B, MATH 009C

2. Core courses: CS 111/MATH 111, CS 141

3. Three elective courses, each of four or more units such that:

   a) Each is an upper-division requirement or a listed technical elective for the Computer Science major, excluding courses numbered 190-199

   b) No course may be an upper-division requirement of the student’s major

   c) At least two courses must be in the Department of Computer Science and Engineering

4. All courses for the minor must be taken for a letter grade.

**Note** Students with a minor in Computer Science must obtain approval from the undergraduate advisor in Computer Science and Engineering for a specific program of electives consistent with their career goals.

**PROPOSED:**
Requirements for the minor Computer Science are:

1. Prerequisite courses: CS 010, CS 012 or CS 013, CS 014, CS 061, CS 011/MATH 011, MATH 008B or MATH 009A, MATH 009B, MATH 009C

2. Core courses: CS 111/MATH 111, CS 141

3. Three elective courses, each of four or more units such that:

   a) Each is an upper-division requirement or a listed technical elective for the Computer Science major, excluding courses numbered 190-199

   b) No course may be an upper-division requirement of the student’s major

   c) At least two courses must be in the Department of Computer Science and Engineering

4. All courses for the minor must be taken for a letter grade.

**Note** Students with a minor in Computer Science must obtain approval from the undergraduate advisor in Computer Science and Engineering for a specific program of electives consistent with their career goals.
**JUSTIFICATION:**

The Electrical Engineering (EE) department has requested that we introduce a variant of CS012 that teaches the same programming concepts and skills, but with examples and assignments tailored specifically for engineering students. EE currently requires CS010 (the course before CS012) but not CS012. They would like their majors to have more training than they currently get in the concepts of C++ programming, but with examples and projects with content that fits the EE major better. We are introducing CS013 to meet their request.

That is the motivation for introducing CS013. CS013 is a course-equivalent to CS012 in the sense that it teaches the same programming skills and concepts, just with different examples. We anticipate that the examples and projects in CS 013 will be chosen to fit not just EE majors, but also other Engineering majors, and that the course may be of interest to CS, IS, and CompEng majors who choose to take it instead of CS012. For this reason, we are happy to give our own majors and CS minors the option of taking either CS012 or the new CS013, whichever fits their interest better.

**APPROVALS:**

Approved the Faculty of the Computer Science and Engineering Department: November 28, 2007
Approved by the BCOE Executive Committee: April 9, 2008
Approved by the Committee on Educational Policy: April 30, 2008
To be adopted:

Proposed Change in the Creative Writing Minor

<table>
<thead>
<tr>
<th>Present</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The minor requirements for the Department of Creative Writing are as follows:</td>
<td></td>
</tr>
<tr>
<td>1. Lower-division requirements (8 Units)</td>
<td>1. Lower-division requirements (9 Units)</td>
</tr>
<tr>
<td>a) One Introductory writing workshop: CRWT 056</td>
<td>a) No Change</td>
</tr>
<tr>
<td>b) One introductory reading course: CRWT 040/FVC 039, CRWT 041, CRWT 042, or CRWT 043</td>
<td>b) One introductory reading course: CRWT 040/FVC 039, CRWT 043, CRWT 046A, CRWT 046B, or CRWT 046C</td>
</tr>
<tr>
<td>C) One introductory workshop course: CRWT 057A, CRWT 057B, CRWT 057C</td>
<td>C) No Change</td>
</tr>
<tr>
<td>2. Upper-division requirements (20 units)</td>
<td>2. Upper-division requirements (20 units)</td>
</tr>
<tr>
<td>a) Four (4) units from</td>
<td>a) No Change</td>
</tr>
<tr>
<td>(1) CRWT 176 (E-Z)</td>
<td>(1) No Change</td>
</tr>
<tr>
<td>(2) Any upper-division course in English, Comparative Literature and Foreign Languages, or Theatre (except ENGL 101, ENGL 103; FREN 100, FREN 101A, FREN 101B, FREN 101C; GER 101, GER 103A, GER 103B, RUSN 103; SPN 101A, SPN 101B, SPN 101C, SPN 105, SPN 106A, SPN 106B)</td>
<td>(2) No Change</td>
</tr>
<tr>
<td>b) Sixteen (16) units in one of the following emphases:</td>
<td>b) No Change</td>
</tr>
<tr>
<td>Nonfiction Emphasis</td>
<td>Nonfiction Emphasis</td>
</tr>
<tr>
<td>(1) CRWT 130, CRWT 132, CRWT 134</td>
<td>(1) No Change</td>
</tr>
<tr>
<td>(2) Four (4) units from CRWT 150, CRWT 152, CRWT 164A/ THEA 164A, CRWT 165, CRWT 166A/FVC 166A/ THEA 166A, CRWT 187</td>
<td>(2) No Change</td>
</tr>
<tr>
<td>Poetry Emphasis</td>
<td>Poetry Emphasis</td>
</tr>
<tr>
<td>(1) CRWT 150, CRWT 160, CRWT 170</td>
<td>(1) No Change</td>
</tr>
<tr>
<td>(2) Four (4) units from CRWT 130, CRWT 152, CRWT 164A/ THEA 164A, CRWT 165, CRWT 166A/FVC 166A/ THEA 166A, CRWT 171, CRWT 187/CPLT 187</td>
<td>(2) No Change</td>
</tr>
</tbody>
</table>
**Fiction Emphasis**
(1) CRWT 152, CRWT 162, CRWT 172
(2) Four (4) units from CRWT 130, CRWT 150, CRWT 164A/THEA 164A, CRWT 165, CRWT 166A/FVC 166A/THEA 166A, CRWT 187/CPLT 187
(1) No Change
(2) No Change

**Drama Emphasis**
(1) CRWT 164A/THEA 164A, CRWT 164B/THEA 164B, CRWT 164C/THEA 164C
(1) No Change

(2) Four (4) units from CRWT 130, CRWT 150, CRWT 152, CRWT 165, CRWT 166A/FVC 166A/THEA 166A, CRWT 166B/FVC 166B/THEA 166B, CRWT 166C/FVC 166C/THEA 166C, CRWT 187/CPLT 187, THEA 121
(2) No Change

Justification: The Creative Writing Department is incorporating the new series of lower division courses in the minor requirements.

Effective: Fall 2008
Approved by: Creative Writing Department – 10/16/2007
Approved by: Executive Committee, CHA&SS – 01/30/2008
Approved by: Committee on Educational Policy-2/6/2008
PROPOSED CHANGE TO ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

To be adopted:

**PRESENT:**

<table>
<thead>
<tr>
<th>Major Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lower-division requirements (70 units)</td>
</tr>
<tr>
<td>a) One course in the biological sciences chosen from an approved list</td>
</tr>
<tr>
<td>b) CHEM 001A, CHEM 01LA</td>
</tr>
<tr>
<td>c) CS 010, CS 061</td>
</tr>
<tr>
<td>d) EE 001A, EE 01LA, EE 001B, EE 010</td>
</tr>
<tr>
<td>e) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046</td>
</tr>
<tr>
<td>f) PHYS 040A, PHYS 040B, PHYS 040C</td>
</tr>
</tbody>
</table>

**PROPOSED:**

<table>
<thead>
<tr>
<th>Major Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lower-division requirements (70 units)</td>
</tr>
<tr>
<td>a) One course in the biological sciences chosen from an approved list</td>
</tr>
<tr>
<td>b) CHEM 001A, CHEM 01LA</td>
</tr>
<tr>
<td>c) CS 010, CS 013, CS 061</td>
</tr>
<tr>
<td>d) EE 001A, EE 01LA, EE 001B, EE 010</td>
</tr>
<tr>
<td>e) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046</td>
</tr>
<tr>
<td>f) PHYS 040A, PHYS 040B, PHYS 040C</td>
</tr>
</tbody>
</table>

| 2. Upper-division requirements (81 units) |
| a) EE 100A, EE 100B, EE 105, EE 110A, EE 110B, EE 114, EE 115, EE 116, EE 132, EE 141, EE 175A, EE 175B |
| b) CS 120A/EE 120A, CS 120B/EE 120B |
| c) ENGR 180 |
| d) Twenty (20) units of technical electives (chosen with the approval of a faculty advisor) from CS 122A, CS 130, CS 143/EE 143, CS 161, CS 168, EE 117, EE 128, EE 133, EE 134, EE 135, EE 136, EE 137, EE 138, EE 139, EE 140, EE 144, EE 146, EE 150, EE 151, EE 152, EE 160 |

The choice of technical electives must ensure that the upper division requirements include at least one coherent sequence of at least three (3) electrical engineering courses to ensure depth in one area of electrical engineering. Example course sequences are available through the Student Affairs Office in the College of Engineering or [http://www.engr.ucr.edu/studentaffairs/](http://www.engr.ucr.edu/studentaffairs/)

2. Upper-division requirements (81 units) |
| a) EE 100A, EE 100B, EE 105, EE 110A, EE 110B, EE 114, EE 115, EE 116, EE 132, EE 141, EE 175A, EE 175B |
| b) CS 120A/EE 120A, CS 120B/EE 120B |
| c) ENGR 180 |
| d) Twenty (20) units of technical electives (chosen with the approval of a faculty advisor) from CS 122A, CS 130, CS 143/EE 143, CS 161, CS 168, EE 117, EE 128, EE 133, EE 134, EE 135, EE 136, EE 137, EE 138, EE 139, EE 140, EE 144, EE 146, EE 150, EE 151, EE 152, EE 160 |

The choice of technical electives must ensure that the upper division requirements include at least one coherent sequence of at least three (3) electrical engineering courses to ensure depth in one area of electrical engineering. Example course sequences are available through the Student Affairs Office in the College of Engineering or [http://www.engr.ucr.edu/studentaffairs/](http://www.engr.ucr.edu/studentaffairs/)
JUSTIFICATION:

Justification for the removal of ME 010-
ME 010 deals with statics, which are not used in the rest of the EE curriculum and has very limited relevance to an EE career in the fields in which we train our students.

Justification for the addition of CS 013-
Programming skills, database concepts, and their applications in design, analysis and problem solving are indispensable in the practice of electrical engineering. The current curriculum only provides one course in programming (CS 010) which does not provide sufficient training to students. CS 013 is added as a second course to cover more advanced programming concepts and introduction to database, and their applications in electrical engineering.

APPROVALS:

Approved by the faculty of the Department of Electrical Engineering: December 5, 2007
Approved by the Executive Committee of the College of Engineering: April 9, 2008
Approved by the Committee on Educational Policy: April 30, 2008
To be adopted

Proposed Changes to Geology Major

<table>
<thead>
<tr>
<th>CURRENT</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Geology, Geobiology, Geophysics, and Biogeography Options</strong></td>
<td><strong>General Geology, Geobiology, Geophysics, and Global Climate Change Options</strong></td>
</tr>
<tr>
<td><strong>Core Requirements (77-79) units</strong></td>
<td><strong>Core Requirements (77-79) units</strong></td>
</tr>
<tr>
<td>1. Lower-division requirements (58-59) units</td>
<td>1. Lower-division requirements (58-59) units</td>
</tr>
<tr>
<td>a) GEO 001, GEO 002, GEO 003/BIOL 010</td>
<td>a) [no change]</td>
</tr>
<tr>
<td>b) BIOL 002 or both BIOL 005A and BIOL 05LA</td>
<td>b) [no change]</td>
</tr>
<tr>
<td>c) Either CHEM 001A and CHEM 01LA or CHEM 01HA and CHEM 1HLA, either CHEM 001B and CHEM 01LB or CHEM 01HB and CHEM 01HLB, either CHEM 001C and CHEM 01LC or CHEM 01HC and CHEM 01HLC</td>
<td>c) [no change]</td>
</tr>
<tr>
<td>d) MATH 008B or MATH 009A, MATH 009B, MATH 009C</td>
<td>d) [no change]</td>
</tr>
<tr>
<td>e) PHYS 040A, PHYS 040B, PHYS 040C</td>
<td>e) [no change]</td>
</tr>
<tr>
<td>2. Upper-division requirements (19-20 units)</td>
<td>2. [no change]</td>
</tr>
<tr>
<td>a) GEO 101, GEO 115, GEO 122</td>
<td>a) [no change]</td>
</tr>
<tr>
<td>b) STAT 100A or STAT 155</td>
<td>b) [no change]</td>
</tr>
</tbody>
</table>
**Biogeography Option** (60 units)

1. Lower-division requirements (8 units)
   a) BIOL 005B, BIOL 005C.

2. Upper-division requirements (52 units)
   a) GEO 157, GEO 167, GEO 168, GEO 169
   b) Two courses from GEO 151, GEO 152/BIOL 152, GEO 153
   c) Twelve (12) units of upper-division courses approved by the undergraduate advisor
   d) Sixteen (16) additional units of upper-division courses approved by the undergraduate advisor

**Global Climate Change Option** (59 units)

1. Lower-division requirements (20 units)
   a) [no change]
   b) GEO 9, GEO 10 and GEO 11

2. Upper-division requirements (38-39 units)
   a) GEO 118, GEO 136 or GEO 137, GEO 152/BIOL 152 or Geo 153, GEO 157, GEO 160, GEO 169
   b) Fourteen (14) units of related upper-division courses approved by the undergraduate advisor

**General Geology Option** (58 units)

1. GEO 100, GEO 116, GEO 118, GEO 123

2. GEO 102A (14 units in one quarter), or GEO 102A and GEO 102B (14 units in two quarters), or GEO 102A, GEO 102B, and GEO 102C (14 units in three quarters).

3. One course from GEO 157, GEO 161, GEO 162, GEO 168, GEO 169

4. GEO 132 or GEO 137 or GEO 124

5. One course from GEO 140, GEO 144, GEO 145

6. GEO 151 or GEO 152/BIOL 152

7. Eight (8) additional units of related upper-division courses approved by the undergraduate advisor

**General Geology Option** (58 Units)

1. [no change]

2. [no change]

3. One course from GEO 157, GEO 160, GEO 161, GEO 162, GEO 169

4. One course from GEO 132, GEO 136, GEO 137, GEO 124

5. One course from GEO 140, GEO 144, GEO 145, GEO 147

6. [no change]

7. [no change]
**Geobiology Option (58 units)**

1. BIOL 005B, BIOL 005C
2. GEO 100, GEO 116, GEO 118, GEO 123
3. GEO 102A (14 units in one quarter), or GEO 102A and GEO 102B (14 units in two quarters), or GEO 102A, GEO 102B, and GEO 102C (14 units in three quarters).
4. Three courses from GEO 151, GEO 152/BIOL 152, GEO 168, GEO 169
5. Four (4) additional units of related upper-division courses approved by the undergraduate advisor

**Geophysics Option (55 units)**

1. MATH 046
2. PHYS 040D, PHYS 040E
3. GEO 116, GEO 118, GEO 132, GEO 140, GEO 144, GEO 145
4. Two additional 4-unit upper-division courses in Geosciences
5. Two upper-division physical science courses approved by the undergraduate advisor

**Geophysics Major**

1. Lower-division requirements (67-68 units)
   a) Either CHEM 001A and CHEM 01LA or CHEM 01HA and CHEM 1HLA, either CHEM 001B and CHEM 01LB or CHEM 01HB and CHEM 01HLB, either CHEM 001C and CHEM 01LC or CHEM 01HC and CHEM 01HLC
   b) GEO 001

**Geobiology Option (58 units)**

1. [no change]
2. [no change]
3. [no change]
4. Three courses from GEO 151, GEO 152/BIOL 152, GEO 160, GEO 169
5. [no change]

**Geophysics Option (55 units)**

1. [no change]
2. [no change]
3. GEO 116, GEO 118, GEO 132, GEO 140, GEO 144, and GEO 145 or GEO 147
4. [no change]
5. [no change]

**Geophysics Major**

1. Lower-division requirements (71-72 units)
   a) [no change]
c) MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046

d) PHYS 040A, PHYS 040B, PHYS 040C, PHYS 040D, PHYS 040E

c) [no change]

d) [no change]

e) CS 010

2. Upper-division requirements (67-71 units)

a) GEO 115, GEO 116, GEO 140, GEO 145, GEO 122

b) Two of GEO 144, PHYS 111, PHYS 177

b) Three of GEO 144, GEO 147, GEO 157, PHYS 177

c) PHYS 130A, PHYS 130B, PHYS 135A, PHYS 135B, PHYS 136

c) [no change]

d) PHYS 139L or 4 units of PHYS 142L

d) Twelve (12) units of upper-division physical sciences courses, which may include up to 4 units of Senior Thesis (GEO 195A, GEO 195B, GEO 195C) or up to 4 units of independent internship (GEO 198I).

e) Twelve (12) units of upper-division physical sciences courses, which may include up to 4 units of Senior Thesis (GEO 195A, GEO 195B, GEO 195C) or up to 4 units of independent internship (GEO 198I).
JUSTIFICATION:

Change from Biogeography option to Global Climate Change option; GCC Minor:

The Biogeography option was a legacy from the merger of Geological Sciences and Geography years ago. It has gradually deteriorated into a narrow and unwieldy option due to the departure of all human geography faculty from the department; we now only cover some aspects of physical geography, mainly in the context of climate change and fire ecology.

With the establishment of a new graduate track in Global Climate Change, it makes more sense to recast the legacy undergraduate option as the undergraduate equivalent of the graduate track, more in line with the expertise and interests of the current faculty. A corresponding Minor has been created as well.

Changes to Geophysics Major

Students in modern geophysics need better computer skills. CS 010 (Intro to Computer Science) is added to the lower division courses; computationally-intensive GEO 147 (Remote Sensing), GEO 157 (Geographical Information Systems) and EE 110A (Signals and Systems) are added to the list of recommended courses and PHYS 111 (Astrophysics and Stellar Astronomy) is removed. PHYS 139L (Electronics for Scientists) or PHYS 142L (Advanced Physics Laboratory) are no longer essential for the degree.

New courses

New courses by new faculty in Organic Geochemistry (GEO 136), Global Climate Change (Geo 011, GEO 160) and Advanced Tectonics (GEO 147) have been integrated into the Geology and Geophysics major options.

APPROVALS:

Approved by the faculty of the Department of Earth Sciences: January 16, 2008
Approved by the Executive Committee of the College of Natural and Agricultural Sciences: April 2, 2008
Approved by the Committee on Educational Policy: April 11, 2008
To be adopted:

Proposed Changes to Geology Minor

<table>
<thead>
<tr>
<th>PRESENT</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who wish to Minor in Geology or Geophysics must complete 20-28 units of organized upper division courses in Geosciences. A minimum of 16 of these units must be unique to the minor and cannot be used to satisfy major requirements. Due to prerequisites, additional preparatory coursework in Earth Sciences and other sciences (Biology, Chemistry, Mathematics, Physics) may be required.</td>
<td>[no change]</td>
</tr>
<tr>
<td>Minor in Geology: GEO 001, GEO 115; plus 15-23 additional upper division Geoscience units.</td>
<td>[no change]</td>
</tr>
<tr>
<td>Minor in Geophysics; GEO 001; GEO 140; plus 16-24 additional units taken from GEO 115, GEO 116, GEO 132, GEO 144, GEO 145, GEO 190, and GEO 199.</td>
<td>[no change]</td>
</tr>
<tr>
<td>Minor in Global Climate Change; GEO 1 or GEO 2; GEO 11; GEO 160; plus 16-24 additional upper division Geoscience units.</td>
<td>[no change]</td>
</tr>
</tbody>
</table>

Before submitting a petition for a Minor to the college, students interested in pursuing a Minor in Geology or Geophysics must consult with the undergraduate advisor in Earth Sciences.

Justification: The new Minor in Global Climate Change is designed for non-majors who are interested in those aspects of the Earth Sciences pertaining to long-term interactions between the atmosphere, oceans and human resource consumption (especially fossil fuel combustion). It will appeal to majors planning careers in disciplines that will be affected by new policies and regulations on carbon emissions, greenhouse gas emissions, and heat production, providing them...
with an integrated scientific background on the causes and manifestations of global climate change and sea-level rise.

Approved by the faculty of the Department of Earth Sciences: January 16, 2008
Approved by the Executive Committee of the College of Natural and Agricultural Sciences: April 16, 2008
Approved by the Committee on Educational Policy: April 30, 2008
1 April 2008

To: Prof. Thomas Patterson, Chair
   CHASS Executive Committee

Via: Prof. Stephen Cullenberg, Dean
      College of Humanities, Arts, and Social Sciences

From: Charles Whitney, Chair
       Department of Creative Writing

RE: Lifting the Moratorium on, and Proposed Changes to Journalism Minor

Attached is a proposed change that would in effect restore the minor in Journalism to Creative Writing. The brief justification therein focuses on curricular changes from the "old" minor in journalism.

To expand on a justification for the minor: The Department regularly fills all its basic journalism (CRWT 165, offered twice yearly) classes in the first hour of undergraduate enrollment, and department staff receive inquiries each week both from current UCR students and from potential applicants wanting to know about if and when the minor will be restored. We believe, in brief, there is ample demand for restoration of the minor.

The Department will have adequate staffing for the minor as of the Fall 2008 Quarter: The dean authorized the Department this academic year to search for an assistant professor whose teaching responsibilities would be in journalism. We will be interviewing four exceptional applicants at the end of this month. This faculty member would join the Chair in offering the bulk of our journalism classes, perhaps occasionally supplemented by a contract lecturer to offer classes on the books but for which faculty have no special expertise (e.g., CRWT 151: Sports Journalism). The Chair has a professional and academic background in journalism of more than two dozen years, having taught journalism courses at Stanford, Ohio State, Illinois and Texas before coming to Riverside; I will continue to teach two to three journalism classes per year, more when I complete my term as department chair.

Attachment (1)

Approved by CHASS EC: 30 January 08
Approved by CEP: February 6, 2008
To be adopted:

Proposed Change to the Journalism Minor

<table>
<thead>
<tr>
<th>Present</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The minor requirements for the Department of Creative Writing are as follows:</td>
<td>Lower-division requirements (9 Units)</td>
</tr>
<tr>
<td>1. ART 003</td>
<td>1. No Change</td>
</tr>
<tr>
<td>2. CRWT-043</td>
<td>2. CRWT 057C</td>
</tr>
<tr>
<td>Upper-division requirements (16 units)</td>
<td>Upper-division requirements (20 units)</td>
</tr>
<tr>
<td>1. Eight (8) units from:</td>
<td>1. Eight (8) units from:</td>
</tr>
<tr>
<td>a) CRWT 165</td>
<td>a) No Change</td>
</tr>
<tr>
<td>b) CRWT 175</td>
<td>b) No Change</td>
</tr>
<tr>
<td>2. Eight (8) units from:</td>
<td>2. Eight (8) units from:</td>
</tr>
<tr>
<td>a) CRWT-176 (E-Z)</td>
<td>a) CRWT 174</td>
</tr>
<tr>
<td>b) One (1) upper-division media-related course among the following:</td>
<td>b) One (1) course either from an approved list of media-related upper-division courses, or, with the approval of the academic advisor for journalism minors, an upper-division course relevant to an area of journalism specialization.</td>
</tr>
<tr>
<td>AHS 186/FVC186, HISA 118, POSC 128, or other media-related course with departmental approval</td>
<td></td>
</tr>
<tr>
<td>c) CRWT 195H or CRWT 198I</td>
<td></td>
</tr>
</tbody>
</table>

Justification: Journalism minor has been on hiatus since 1994; within CRWT, 057C has replaced 043 in the interim, and HIS 118 no longer exists. CRWT 174 (Issues in Journalism) is a new course, taught for the first time in Winter 2007, and specifically designed to be incorporated into a restored journalism minor. Other courses listed in Present 2B (2) will be included in Proposed 2B(2); other Proposed upper-division requirements are more focused on journalistic practice than requirements in Present minor.

Effective: Fall 2008
Approved by: Creative Writing Department – 10/16/2007
Approved by: Executive Committee, CHA&SS – 01/30/2008
Approved by: Committee on Educational Policy: -2/6/2008
May 8, 2008

TO    ACTING CHANCELLOR ROBERT D. GREY
ELLEN A. WARTELLA, EXECUTIVE VICE CHANCELLOR & PROVOST

FM:    THOMAS COGSWELL
CHAIR, RIVERSIDE DIVISION

RE:    AD HOC COMMITTEE REPORT ON EFILE

Early this year, the Academic Senate appointed an Ad Hoc E-file Committee, under the Chairmanship of Professor Richard Redak, to gather information on the success and utility of the current e-file process being developed on the UCR campus. The Ad Hoc Committee having completed its work, I attached its report for your review.

The Executive Council has reviewed the report and unanimously endorsed it. In so doing, the EC wants to highlight the four major issues:

1. This vital aspect of the personnel process currently lacks a formal joint Administrative/Senate committee in charge of the development and implementation of the E-file system. This omission needs to be corrected as soon as possible. [I.a and b of the report]

2. The current E-file system potentially compromises the confidentiality of extramural letters. Consequently until this issue is resolved, the E-file system should not be employed in promotion cases. [II.b]

3. While the faculty should utilize the E-file system for merit cases, they should also understand that the new system has yet to receive the Academic Senate’s formal blessing. Until it delivers its official judgment of “nihil obstat,” the faculty should be told that their participation in the E-file system, while encouraged, is not yet mandatory, and they should be given the option of using the traditional paper system for merit cases [I. D]

4. In order to be effective, units need to be able to customize the E-file system to their own requirements. Future improvements of the E-file system need to accord this “customization” the highest priority. [III.a]

The EC wants to emphasize its support for the further development of the E-file system, and it looks forward formally to approving it - after the satisfactory resolution of these and other issues identified in the Ad Hoc Committee’s Report.
1 May 2008

To: Thomas Cogswell, Chair, Academic Senate, University of California, Riverside

From: Rick Redak, Chair, Instruction and Student Affairs Committee, Department of Entomology

Re: E-file Survey

Attached is the completed report from the Ad Hoc E-file committee. Our findings are focused around three main categories: Policy, Process, and Content. Although we received many comments and suggestions, most are adequately covered by the specific suggestions found within the three aforementioned categories. The committee was unanimous in the opinion that moving forward to an electronic version of the academic file process was on the whole a good thing. None-the-less, the current version of e-file requires much improvement before this committee can recommend that the Academic Senate formally approve electronic submissions of merit and promotion files.
Academic Senate E-File Ad Hoc Committee Final Report

Richard A. Redak, Chair
Daniel Hare, Chair Committee on Privilege and Tenure
Kathleen Montgomery, Committee on Academic Personal
Thomas Morton, Committee on Faculty Welfare
Thomas Patterson, Chair, CHASS Executive Committee
Paul Pavlou, AGSM
Cynthia Palmer, Academic Senate

April 30, 2008
Introduction:

At the urging of several Academic Departments and faculty members, Academic Senate Chair Tom Cogswell, through the Academic Senate Executive Council, created the Ad Hoc E-file Committee with the charge to gather information on the success and utility of the current (2007-2008) e-file process being used on the UCR campus and to report back to the Senate with future recommendations regarding e-file. Members of the committee include: Rick Redak, Chair of the Ad Hoc Committee, Thomas Morton representing the Committee on Faculty Welfare, Kathleen Montgomery representing the Committee on Academic Personal, and Dan Hare representing the Committee on Privilege and Tenure. Additionally, Paul Pavlou (AGSM), Tom Patterson (CHASS) and Cynthia Palmer were appointed to the committee due to their experiences and expertise with information technology as it relates to the academic personal process at UCR.

Approach:

Throughout the Fall 2007, the Committee met several times. The focus of those meetings was to develop an approach to gather information to evaluate the utility and success of the e-file process. The Committee settled on developing a brief survey to be sent out to all individuals involved in the e-file process (faculty, departmental staff, college staff, Deans, and members of CAP). The survey forms are attached as Appendix 1. Appendix 2 contains the raw survey results. Additionally, at the urging of the VCAP, throughout the Fall and Winter quarters, faculty could and did send additional suggestions and comments relating to their e-file experiences by email to Redak. Those comments are summarized in Appendix 3.

Recommendations:

After reviewing all of the available material, the committee unanimously recommends the following actions be taken within the Categories stated.

Category I: E-file Policy

A. The Academic Senate should be formally consulted and given the opportunity for input on any changes proposed or made to the e-file program and process. Current “control” of the e-file content and process is maintained by the AIS Committee. Currently there is no formal mechanism for Academic Senate input into the process. We recommend that the Academic Senate should have an equal standing in e-file oversight, modification and maintenance as all other administrative committees responsible for e-file.

B. Academic Senate Consultation shall be through the Ad hoc E-file Committee until other consultative pathways are approved by the Division. Ideally, and ultimately, changes to the e-file process and content should be announced and discussed as part of the Call.

C. Electronic voting through e-file (discussed but not yet implemented) and file commentary ability (now available) shall only be implemented and used after Divisional approval of such processes.

D. At this time, faculty may choose to opt out of using e-file and continue to submit a paper version of their academic file. Mandatory use of e-file will only occur after Divisional approval of the e-file process.
Category II: The E-file Process

A. Currently the routing process of e-files from candidates, within and through Departments and to the Deans’ offices can be cumbersome and cyclical. Routing of e-files, especially at the departmental level, needs to be streamlined. Addition of help screens as to the routing options and process would be very useful (See Category III).

B. Due to concerns regarding confidentiality, only merit files should be processed at this using e-file. Once confidentiality issues are resolved, promotion files may be processed using e-file. Confidentiality issues revolve around who has access to confidential (redacted and un-redacted materials) in terms of viewing and printing.

Category III: The E-file Content

A. Customization of input/output screens for each department should be immediately implemented. Much of the confusion and angst generated by converting to e-file occurred as a result of e-file presenting all categories of all works to the individual. Loss of departmental culture regarding file preparation and appearance has led to tremendous confusion and frustration. Allowing each department to consult with C&C to develop input/output screens that reflect the departmental traditional appearance will be of great benefit. This recommendation is of the utmost priority with regard to future versions of e-file.

B. Within the input screens, specific links to the Call should be incorporated as needed. Individuals need to see what is required by the Call. Optional fields requesting information not requested in the Call should be clearly marked (either color coded or preferentially by drop down menus). Benefits of linking the Call to the e-file include ensuring faculty read the Call.

C. Provide a mechanism to physically separate out specific portions of the file (difference list, self-statement, teaching load, teaching evaluations, publications, presentations, etc). This should be done to not only provide a mechanism to print out specific sections, but also to review separate sections in a split screen mode. Reviewers have found it confusing to continually wade through the entire document just to evaluate an individual section. In the process, important pieces of the file have been overlooked.

D. More training is needed at all levels but especially at the Departmental Administrative Assistant level with regard to routing procedures.

E. The general appearance and formatting of the output is poor. Increase font size on print outs. Lack of formatting on self-statement is annoying and has led to omissions. Page breaking is problematic.

F. Allow on-line signatures for every level of review. This should help some of the routing issues dealing with minor corrections.

G. Clarification/help screens should be added to the input fields for teaching materials.
APPENDIX 1: Survey Forms

UCR Academic Senate eFile Questionnaire (Faculty)

1. Check all that apply.

   My unit is: □ CHASS □ BCOE □ Biomed
   □ GSOE □ AGSM □ CNAS
   □ Administrative Unit (not in a college)

   I am a:
   □ Ladder rank faculty member: □ Tenured □ Not tenured
   □ Member of Departmental staff responsible for preparing and routing academic files
   □ Department Chair
   □ Member of Dean’s staff responsible for preparing and routing academic files
   □ Dean
   □ Member of CAP
   □ Member of Senate or Administrative staff responsible for preparing and routing academic files

2. □ Yes I have… □ No I have not….. used eFile to submit my academic file.

3. □ Yes I have… □ No I have not … personally prepared an eFile for merit or promotion.

4. □ Yes I have… □ No I have not… evaluated an academic file using the eFile system?

5. If you answered “Yes” to question 4, did you evaluate the file □ online, □ printed hard copy, □ both online and print versions.

6. What might an eFile system do to more efficiently implement the Call?

IF YOU HAVE NOT USED eFile FOR FILE PREPARATION OR REVIEW, YOU ARE NOW FINISHED WITH THIS SURVEY. THANK YOU FOR YOUR TIME.
7. What does the present eFile system do better than paper files and why?

8. What do paper files do better than the present eFile system and why?

9. What requests for information can/should be removed from the eFile (e.g. dates of publication as contrasted with dates of acceptance)? Should information requested that is not part of the academic review process (i.e., in the Call) be coded differently to identify it as extraneous to the Call?

10. How can the preparation and routing process for eFiles be improved? How can the training process for preparation and routing be improved?

11. Is the time commitment devoted to file preparation and review greater or lesser with eFile than traditional paper?

12. Does eFile ask for information not requested in the paper file and is it warranted?

13. What are your concerns (if any) regarding security and privacy of eFile information?

14. If you are a Department Chair, have you had adequate training in file preparation and routing with eFile?
UCR Academic Senate eFile Questionnaire (Staff)

1. Check all that apply.

   My unit is:  □ CHASS  □ BCOE  □ Biomed
   □ GSOE  □ AGSM  □ CNAS
   □ Administrative Unit (not in a college)

   I am a:
   □ Ladder rank faculty member:  □ Tenured  □ Not tenured
   □ Member of Departmental staff responsible for preparing and routing academic files
   □ Department Chair
   □ Member of Dean’s staff responsible for preparing and routing academic files
   □ Dean
   □ Member of CAP
   □ Member of Senate or Administrative staff responsible for preparing and routing academic files

2.  □ Yes I have…  □ No I have not….. used eFile to submit my academic file.

3.  □ Yes I have…  □ No I have not … personally prepared an eFile for merit or promotion.

4.  □ Yes I have…  □ No I have not… evaluated an academic file using the eFile system?

5. If you answered “Yes” to question 4, did you evaluate the file □ online, □ printed hard copy, □ both online and print versions.

6. What might an eFile system do to more efficiently implement the Call?

IF YOU HAVE NOT USED eFile FOR FILE PREPARATION OR REVIEW, YOU ARE NOW FINISHED WITH THIS SURVEY. THANK YOU FOR YOUR TIME.
7. What does the present eFile system do better than paper files and why?

8. What do paper files do better than the present eFile system and why?

9. What requests for information can/should be removed from the eFile (e.g., dates of publication as contrasted with dates of acceptance)? Should information requested that is not part of the academic review process (i.e., in the Call) be coded differently to identify it as extraneous to the Call?

10. How can the preparation and routing process for eFiles be improved? How can the training process for preparation and routing be improved?

11. Is the time commitment devoted to file preparation and review greater or lesser with eFile than traditional paper?

12. Does eFile ask for information not requested in the paper file and is it warranted?

13. What are your concerns (if any) regarding security and privacy of eFile information?

14. Have you had adequate training in file preparation and routing with eFile?
APPENDIX 3: Summary Comments from E-mail

Policy / general
- Add links to the CALL – routing links, policy links, etc.
- Formatting in general is problematic – printed snapshot is not pleasant to look at and read. Font should be larger for printed copies. Lack of formatting on text input boxes makes reading difficult, (i.e. self-statements, publication lists etc)
- There should be the ability to print each document independently. For example, if a reviewer or candidate wants to see a difference list, the requestor should be able to run a difference list report to see/print that one document. Perhaps all file elements should be generated as reports rather than tables?
- There are no good page breaks in the printed documents and titles of sections are too small. Each section should have its own page rather than a continuing list.
- The system should send periodic email to faculty to remind them to update their eFile if he/she has not logged on or made changes in awhile.
- Reviewers & router should be able to split the screen so that elements of the snapshot can be compared and looked at simultaneously – especially with the teaching evaluations.
- In pdf documents, there is the ability to add reviewer comments and “post-it notes” directly onto the document. Can this be incorporated for individual review, not something to be shared but a place to add comments directly onto the file?
- Allow on-line signatures for every level from the candidate, to the file preparer to the chair and dean
- MSO’s (as a function of his/her supervisory role) should be able to access eFile and search an academic record without having to have preparer status.
- Deans should have the ability to search and review all academic files within their college
- Dean’s analysts should be able to review (at the department level), the data input files (i.e. before a snapshot is created).
- CV generator should allow for date ranges to be pulled rather than pulling all data by category unless you select individual items to be excluded. For example, a faculty member can extrapolate only the last 5 years of work for a press release....
- Wherever a notes/comments field is included in the data input, it should appear in the snapshot.
- Patent fields do not match the CALL
- More report/query options should be available for the dean. For example, the dean should be able to search for faculty who have a career NSF award, or to search by category such as all current grants.
- There should be the ability to label files more granularly, such as “accelerated merit” rather than just “merit”

Bibliography/Diff List related suggestions
- Provide definitions for each sub-category for the bibliography (i.e. “working papers” vs. “work in progress” or “review articles” vs. “review essays”)
- There should be a sort option so that faculty can rearrange the order of publications or sequence them so that the most recent ones appear first.
- Highlight the difference list with a background color so that it is differentiated from the bibliography – like the “blue” difference list of paper files
- There should be a separate category on the bibliography for serving as editor of a special issue of a journal (now it is inappropriately put in the edited books category)
- There should be a way to indicate if Journal Articles also appeared a Conference Proceedings and a comment box to indicate the difference.
- Referred vs. non referred is too obscure – these should be separated within their category (i.e. journal articles referred vs. journal articles non-referred) with the headline so noted – rather than just the parenthesis at the end of the item..
- Co-authorship roles and identification is difficult to decipher as is contribution of the candidate
- Perhaps all the categories of publication should have a check-box next to them so that a candidate can choose those he/she wishes to see or can choose a “see all” option. This way faculty won’t have to scroll through all the options (including unused categories) each and every time.
• Book reviews section is still confusing & needs to be clarified.
• All publication fields should be in mm/yy format instead of mm/dd/yy – or alternatively season/yy (i.e., fall 2007).
• Add “Essays” as a category for publication
• There should be a way to view publications at last advance without having to generate an entire snapshot. Perhaps have a “reports” section?
• Create an interface between eFile and the UCR library journal databases.
• Candidates should be able to label sub-categories under “other”
• There needs to be a mechanism for cross-referencing same or similar publications

Professional/Activity & Service
• Format is lacking. Needs more space in the columns for title & named of event/society
• Does not allow you to accurately list presentations that were not related to scientific conferences. For example how or where would one list invited seminar presentations made at another university?
• Add a non-mandatory field so that candidates can include the percentage of effort included for service contributions and contributions to publications (for example, a candidate can add “this committee met weekly during the academic year for 1-2 hours each week).

Teaching Load Data
• Some type of online help should be created to explain what all of the different activities mean.

Grants
• Asking for the sources of grant funds to support co-workers is not in the CALL and should be removed, or made optional and color coded to indicate this not required and not a CALL question.
• Asking for month & year instead of the exact date is more helpful
• Include a range of years for fellowships/awards
• Add a sub-menu to list “award notification date” on current grants

Routing – within the eFile and routing of the snapshot
• Perhaps add a sidebar that allows one to move from section to section of the eFile
• Each person with a routing role should be able to manually designate who the file is going to instead of so many automatic layers. This will save time if some levels can be bypassed on a case by case basis, but will require in-depth training.
• Notification emails should allow the sender to include a personalized note in the email.
• When assigning roles and access, instead of one large list of all eligible faculty, it would be helpful to see them separated by rank.
• Add a check box for faculty to designate that they’ve seen and approve any changes that were made to a snapshot – instead of having to have the procedural safeguard printed, signed and scanned.
• Routing and notification emails should be manually driven instead of automatic
• Make it optional to add a comment when routing rather than require it.
• The system should generate a message confirming that a file has been sent or has been received

Training
• Provide more faculty hands-on training – let them start inputting pieces of their own file
• Provide a step by step instruction manual (with screen shots) as well as on-line help tips and a help site.
• Provide a designated campus trainer who will travel between departments and hold “office hours” in each department to answer questions/provide training.
• Hold monthly staff user groups meetings, similar to the monthly pps user group meetings.
• Training should stress that all uploaded documents/files must be in pdf format.
I felt it was ok at the time, but now it's been a while. I feel a refreshed course may be needed.

I have only done one file. It would be nice if it didn't always have to go back through all of the faculty.

Like all training, it doesn't do as much for you until you begin to actually do the files and come across the unusual. Working on files would be great. You don't always know what you need to ask when you haven't worked in the system before.

Not sure how extramural letters will be handled.

Yes yes It makes the dept review easier. Nothing I don't think any should be removed. I think it can be coded differently or perhaps should be put in italics???

Would be nice to just list the year of committee membership (e.g., 2007-2008) instead of having to put the full month and day in.

I attended all the training sessions required for the process. Greater right now because of having to check and verify every entry and make needed corrections.

Have more regularly scheduled training sessions for the faculty.

Computer files present possible problems—efile may help restrict who sees the files.

On the service and grants information, just having month and year instead of the full date would be easier.

Easier to read. Faculty are used to seeing the file in one format and the eFile is very different looking.

The bibliographic and other listings are more uniform and look much better and it helps prepares make more complete listings.

Paper files have more flexibility for candidates bibliographic listings and categories, especially for departments who do not have traditional publication files. It's easier to make changes to listings and less complicated.

As a beta tester I received one-on-one training from the project manager so yes, my training was excellent. The problem with any training is that it makes sense as it is presented, but until one actually works with the system and encounters something that does not fit in the one-size-fits-all program, it is not real. Again, I recommend cheat sheets. New ideas can be conceptualized easily, but applying is another thing.

The routing page could add more elements of the department procedures, similar to the Call description of how the department review procedures works. Efile could potentially incorporate more ideas of ways to help keep units on track. As far as policy, this might be cited at the relevant parts of the file, as added to documentation on using efile. There may be more details of the call procedures added eventually.

Right now documentation is used in all sections of efile.

The routing page could add more elements of the department procedures, similar to the Call description of how the department review procedures works. Efile could potentially incorporate more ideas of ways to help keep units on track. As far as policy, this might be cited at the relevant parts of the file, as added to documentation on using efile. There may be more details of the call procedures added eventually.

Makes it available to faculty who may not be here (e.g. leaves) and they can read it at their leisure instead of having to go into the office to get to the file.

Easier to read. Faculty are used to seeing the file in one format and the efile is very different looking.

It might be worth trying to streamline some of the listings (it is somewhat trying to have to go through all the categories for a reason from the Call or other valid reason for all the information).

There does need to be more training and documentation on the snapshot and routing and on the bibliographic history. There are a lot of wrinkles on bibliographies. The efile system tends to over simplify what happens with files.

Eventually Efile should be easier but there were a lot of technical issues, especially for a first file that still take more time. Ellef does have a different structure and requires more time. It's very helpful on the international publications where the author might know coauthors and the journal but not the fine details.

The bibliographic and other listings are more uniform and look much better and it helps prepares make more complete listings.

Paper files have more flexibility for candidates bibliographic listings and categories, especially for departments who do not have traditional publication files. It's easier to make changes to listings and less complicated.

It makes available to faculty who may not be here (e.g. leaves) and they can read it at their leisure instead of having to go into the office to get to the file.

Easier to read. Faculty are used to seeing the file in one format and the efile is very different looking.

On the service and grants information, just having month and year instead of the full date would be easier.

Have more regularly scheduled training sessions for the faculty.

Stronger right now because of having to check and verify every entry and make needed corrections. Would be nice to just list the year of committee membership (e.g., 2007-2008) instead of having to put the full month and day in.

Not sure how extramural letters will be handled.

As a beta tester I received one-on-one training from the project manager so yes, my training was excellent. The problem with any training is that it makes sense as it is presented, but until one actually works with the system and encounters something that does not fit in the one-size-fits-all program, it is not real. Again, I recommend cheat sheets. New ideas can be conceptualized easily, but applying is another thing.
The initial training was done several months prior to actual entry of data and actual snapshot preparation so things were... were turned in with the first 25% so I know I had more problems at the time than I’m remembering now (3 months later).

I was afraid that if I failed to check a certain section, the candidate would be able to view confidential documents (i.e., the student letters).

As I entered the initial data, there was a lot of information requested for certain sections that I had no knowledge of. ... here for numerous years, this will be a huge issue, especially if they want the information entered by myself or a temp.

Initially, greater. Once people become more familiar with how this system works, I think it will be much less. Once people are familiar with the system, they are not going to bother with each and every change during the preparation of the file.

Having the mandatory information requested coded in red and "extra" information coded in black is clear. If filled out correctly, it populates the various sections automatically. You don't have to cross-check the difference between the paper file and the computer. Having the mandatory information requested coded in red and "extra" information coded in black is clear.

The training was okay but was so broad that I found I had a lot of problems once I was trying to work on it alone. Eric... can come in and get help with loading material into an eFile or creating a snapshot. Kind of like faculty office hours.

yes yes yes printed Direct links to the CALL would be helpful.

The formatting is easier and the... easier to make corrections to their own file. I have the same problem though with faculty giving me the hard copy and me doing the inputting. Before I could just make the corrections, now I have to wait for them to send it back even though they just handed me the sheets to correct.

I get a lot of my faculty asking me why they have to fill in different fields. It was helpful if the required fields were coded in red and the faculty actually had fields to do.

The training was more of a plug for eFile and was very basic. It would be more helpful if the trainers knew the CALL and all the intricacies of the personnel process - not just the technical eFile stuff.

The training was more of a plug for eFile and was very basic. It would be more helpful if the trainers knew the CALL and all the intricacies of the personnel process - not just the technical eFile stuff.

yes yes yes Both links to the CALL would be helpful.

... extra pieces of the file or even... save it and email to others if they really wanted to. I have privacy concerns and security concerns. If staff are not trained properly it is very easy to make documents and files available to the wrong people. We used to have paper files in the dept and faculty had to come to the dept to review and sign - now they can review and print a file anywhere. They can save it and email to others if they really wanted to.

yes yes yes both links to the CALL would be helpful.

Corrections and tracking... obvious. We’re also printing way more than we did with the paper file which is tons. I also spent a lot of time answering faculty questions and they don’t do this all the time so I’ll be answering the same questions for the same people every few years when their file comes up.

I'm not sure why some of the dates it asks for are there. It would be helpful if the required fields were coded in red and all the others had a link explaining what it is that is wanted and why or who wants the information.

The trainers need to be people who know the CALL and the file process inside and out. They need to tell the faculty who the reviewers are, what they’re doing and why. The trainers need to be people who know the CALL and the file process inside and out.

I get a lot of my faculty asking me why they have to fill in different fields. It was helpful if the required fields were coded in red and the faculty actually had fields to do.

It is easier to view two different sections of a paper file at one time and the font can be made larger. It is easier to view two different sections of a paper file at one time and the font can be made larger.

It is easier to communicate with faculty and all with them to prepare files and answer questions. It easier to review paper files and quicker to correct them.

Having the mandatory information requested coded in red and "extra" information coded in black is clear. Having the mandatory information requested coded in red and "extra" information coded in black is clear.

Yes, the dates that we didn’t have to provide before are dates that we didn’t have to provide before.

I have privacy concerns and security concerns. If staff are not trained properly it is very easy to make documents and files available to the wrong people. We used to have paper files in the dept and faculty had to come to the dept to review and sign - now they can review and print a file anywhere. They can save it and email to others if they really wanted to.

I have privacy concerns and security concerns. If staff are not trained properly it is very easy to make documents and files available to the wrong people. We used to have paper files in the dept and faculty had to come to the dept to review and sign - now they can review and print a file anywhere. They can save it and email to others if they really wanted to.

yes yes yes Both links to the CALL would be helpful.

yes yes yes Both links to the CALL would be helpful.

The training was more of a plug for eFile and was very basic. It would be more helpful if the trainers knew the CALL and all the intricacies of the personnel process - not just the technical eFile stuff.

The training was more of a plug for eFile and was very basic. It would be more helpful if the trainers knew the CALL and all the intricacies of the personnel process - not just the technical eFile stuff.

yes yes yes printed Direct links to the CALL would be helpful.

The training was more of a plug for eFile and was very basic. It would be more helpful if the trainers knew the CALL and all the intricacies of the personnel process - not just the technical eFile stuff.

The training was more of a plug for eFile and was very basic. It would be more helpful if the trainers knew the CALL and all the intricacies of the personnel process - not just the technical eFile stuff.
I think a users manual and a users monthly meeting would be helpful (similar to the PPS-payroll personnel). That way we could share our experience and learn from each other.

I prepared a paper file first then the eFile snapshot to compare, which was very helpful but not realistic when I’m doing it. Our process is always a huge challenge with new applications. Training is available and I believe there will be a User group to help staff with problems and to share best practices.

Yes, both

Electronic routing is definitely a plus. If we can convince faculty that it’s a better idea. The costs and environmental concerns have been considered. It’s the way to go.

No, online

The only advantage I can see to paper files is the ability for faculty to make notes directly on the file. Perhaps a feature that could incorporate on the site might be possible? Print is much easier to read on paper as well. The font in efile could stand improvement.

Online

It takes time from formatting every file so that they’re consistent and saves paper. It also helps us remember to enter certain fields since they’re required in the system.

Yes online

I believe it implements the CALL as it is, but does need better tools in that data can link to the call or help explain certain sections.

No online

Faculty could keep their bibliographies up to date, if they would, but most have told me they don’t like all the boxes that have to be filled in. The online review by the faculty is more convenient than the multiple printed binders used by our School for review by the ad hoc committee, Dean, Associate Dean, and candidate and faculty.

Online

All data is contained in a data base and can be updated at any time, from any location by the candidate. If the data base is kept up-to-date, the workload for staff and faculty would be reduced during fall quarter. The review of merit and promotions has been dramatically improved in our department, because faculty can review files from their desktops and submit comments.

Online

APPENDIX 2: Survey Data - Staff Responses

<table>
<thead>
<tr>
<th>#6</th>
<th>What might eFile do to more efficiently implement the CALL?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#7</td>
<td>What do paper files do better than the eFile?</td>
</tr>
<tr>
<td>#8</td>
<td>What requests for information should be removed? Diff. costing for info extraneous to the CALL?</td>
</tr>
<tr>
<td>#9</td>
<td>Can we prevent routing being improved? How can prep &amp; routing be improved?</td>
</tr>
<tr>
<td>#10</td>
<td>Does eFile ask for info not in the paper file? Is it warranted?</td>
</tr>
<tr>
<td>#11</td>
<td>Security &amp; privacy concerns?</td>
</tr>
<tr>
<td>#12</td>
<td>Have you had training in prep &amp; routing?</td>
</tr>
</tbody>
</table>

No, online

APPENDIX 2: Survey Data - Staff Responses

The generation of the difference list is wonderful. The online review by the faculty is more convenient than the multiple printed binders used by the Ad Hoc Committee, Dean, candidate and faculty.

Online

The only recommendation is to have the system remove old comments when forwarding a file with no new comment on the same topic. Otherwise, the comment is not restated. There is always a huge challenge with new applications. Training is available and I believe there will be a User group to help staff with problems and to share best practices.

Yes, online

Electronic routing is definitely a plus. If we can convince faculty that it’s a better idea. The costs and environmental concerns have been considered. It’s the way to go.

Yes online

The generation of the difference list is wonderful. The online review by the faculty is more convenient than the multiple printed binders used by the Ad Hoc Committee, Dean, candidate and faculty.

Online

The routing was confusing. It was necessary to contact Eric frequently (just working out the bugs). I think a more comprehensive training would be helpful—especially with the routing. We did get a few handouts, but I think an interactive manual with screen print outs would be a useful tool.

Online

If it’s on the internet, even a supposedly secure one, it can be accessed if one really wants the information.

Online

The routing was confusing. It was necessary to contact Eric frequently (just working out the bugs). I think a more comprehensive training would be helpful—especially with the routing. We did get a few handouts, but I think an interactive manual with screen print outs would be a useful tool.

Online

We did get a few handouts, but I think an interactive manual with screen print outs would be a useful tool.

Yes online

Electronic routing is definitely a plus. If we can convince faculty that it’s a better idea. The costs and environmental concerns have been considered. It’s the way to go.

No online

The generation of the difference list is wonderful. The online review by the faculty is more convenient than the multiple printed binders used by the Ad Hoc Committee, Dean, candidate and faculty.

Online

The generation of the difference list is wonderful. The online review by the faculty is more convenient than the multiple printed binders used by the Ad Hoc Committee, Dean, candidate and faculty.

Online

The generation of the difference list is wonderful. The online review by the faculty is more convenient than the multiple printed binders used by the Ad Hoc Committee, Dean, candidate and faculty.

Online

The generation of the difference list is wonderful. The online review by the faculty is more convenient than the multiple printed binders used by the Ad Hoc Committee, Dean, candidate and faculty.

Online
## Appendix 2: Survey Data - Staff Responses

<table>
<thead>
<tr>
<th>#</th>
<th>Submitted an e-file</th>
<th>Prepared an e-file</th>
<th>Evaluated an e-file</th>
<th>Evaluated online?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#6</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Have statements from the CALL inserted into eFile screens. For example, CALL requires a brief statement of Co-PI contribution to grant.

Period of review is more accurate. Less details missing compared to a paper file, such as dates, page numbers, formatting makes it easier to understand what is being listed.

Details required by CALL should be identified separately from details not required. There are some areas where there is too much detail, such as the actual date, down to the day. Now that we have changed the period of review to be cut off in September, we no longer need the actual day of the month. Simply month and year would be adequate.

We need to have a system on electronic signatures. Scanning and uploading safeguards seems to defeat the purpose of going paperless. Now we are also required to scan and upload the Dean's signature for a concord on the department letter, which is actually more time consuming when the Dean may not be in his office. The objective of the eFile system is for reviewers to be able to conduct their reviews from anywhere, even if out of town. However, when this occurs, the Dean's analyst cannot route the file forward until the Dean returns to town, and we have the Dean sign the actual Department letter, then we must scan it and upload it to the snapshot. I also think the campus needs written instructions from start to finish on all phases of the eFile system. Including a manual with all the screen shots.

Paper files are easier to read and review due to the font size.

The generation of the difference list is great.

If we could have a training manual with actual screen shots. We did get hand outs from the training. But a reference manual would be great. I spent a lot of time asking with Eric when it came to the routing because the hand outs I received in class weren't as detailed as they could have been.

Being this was the first eFile for us. I prepared a "traditional" paper file first... then proceeded to prepare the eFile from that. This helped with the transition. In the long run I think the file preparation time will decrease.

This has been a learn as you go sort of thing. But more training would be great. Perhaps a monthly eFile users group meeting would be helpful where information can be shared.

Evaluate online? #6

What might eFile do to more efficiently implement the CALL?

What do paper files do better than eFile?

How can prep & routing be improved? How can prep & routing training be improved?

Is time for file prep greater or lesser with eFile?

Does eFile ask for info not in the paper file? Is it warranted?

Security & privacy concerns?

Have you had training in prep & routing?

<table>
<thead>
<tr>
<th>#7</th>
<th>What does eFile do better than paper files?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>What requests for info should/could be removed? Diff coding for info extraneous to the CALL?</td>
</tr>
<tr>
<td>#9</td>
<td>How can prep &amp; routing be improved? How can prep &amp; routing training be improved?</td>
</tr>
<tr>
<td>#10</td>
<td>Is time for file prep greater or lesser with eFile?</td>
</tr>
<tr>
<td>#11</td>
<td>Does eFile ask for info not in the paper file? Is it warranted?</td>
</tr>
<tr>
<td>#12</td>
<td>Security &amp; privacy concerns?</td>
</tr>
<tr>
<td>#13</td>
<td>Have you had training in prep &amp; routing?</td>
</tr>
<tr>
<td></td>
<td>Submitted an e-file</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------</td>
</tr>
<tr>
<td>#6</td>
<td>no</td>
</tr>
</tbody>
</table>

A reviewer might ask for info not in the paper file. I think that is warranted. At one time I had to request a Clarification letter from a candidate, which was not required.

Sometimes, when information is very old, like 20 years, we would not really make the faculty go back and provide that information when doing a paper file. But eFile might require more details that the faculty does not know.

My concern involves a reviewer seeing routing comments and basing their analysis on something from there. Another concern I have is that a candidate might accidentally gain access to see information they should not see, such as confidential material.

I believe I have had as much training as one could get on the campus. However, since I am often called for trouble shooting questions, there are times where I wish I could be more help to a file preparer by having access to the screens they are seeing so I can understand better what their issue is.
APPENDIX 2: Survey Data - Faculty Responses

#6 What might eFile do to more efficiently implement the CALL?
- It is very difficult to read the file online, so printing is done, which defeats the purpose of making the process paperless!
- It could facilitate routing of files from one reviewing body to another.

#7 What does eFile do better than paper files?
- There is no separate category on the BIBLIOGRAPHY for serving as editor of a special issue of a journal in a soft book appropriately.
- It is very difficult to read teaching evaluations online.

#8 What do paper files do better than eFile?
- It is very difficult to find some way to make teaching evaluations more accessible.
- It is not at all clear how confidentiality can be maintained.

#9 What requests for info can/should be removed?
- It would be helpful to have links to the appropriate sections of The Call within the e-file system.

#10 How can prep & routing be improved?
- It is not at all clear how confidentiality can be maintained.

#11 Is time for file prep greater or lesser with eFile?
- It is easier to sort through the materials.

#12 Does eFile ask for info not in the paper file? Is it warranted?
- It is easier to sort through the materials.

#13 Security & privacy concerns?
- It is easier to sort through the materials.

#14 Dept chair - have you had training in prep & readings?
- Yes, I had ARS (similar to e-file) developed by BCOE. It is similar to a file and I have no problem preparing or reviewing either e-file or the ARS system. I don't like printing since it defeats the purpose of making the process paperless!
APPENDIX 2: Survey Data - Faculty Responses

#6 What might eFile do to more efficiently implement the CALL?

- Paper files are cumbersome and not very green. There is no disadvantage to evaluating an efile. It is actually easier. All files are organized in the same manner and it makes file evaluation at the Deans office MUCH, MUCH easier. Previously, each department used their own formats and criteria so time consuming for Deans to evaluate files - with each file you had to adjust to its own.

#7 What does eFile do better than paper files?

- Deans must go out of the system to indicate that a decision has been made on a file. The draft letters also have to be re-written. The system is a marvelous system. It is well organized and easy to review files. I can review files anywhere and securely. BRAVO!!!

#8 What do paper files do better than efile?

- I’ll have to have more experience with efile to clarify these issues. Seems greater at this point. That may change as the learning curve diminishes. The transition has been very slow for the staff preparing the efiles, which would not have occurred with the paper files.

#9 What requests for info can/should be removed? Diff coding for info extraneous to the CALL?

- There is an initial investment of time to enter the historical data is substantial but it is worth it. This forms a useful database for faculty to utilize. The commitment of paper to file evaluation is wasteful. It is not necessary in today’s world.

#10 How can prep & routing be improved? How can prep & routing training be improved?

- Security & privacy concerns? None. It is as secure as anything today. Dept chair - have you had training in prep & routing? You don’t need training for routing.

#11 Is time for file prep greater or lesser with eFile?

- Dept chair - have you had training in prep & routing? You don’t need training for routing.

#12 Does efile ask for info not in the paper file? Is it warranted?

- Dept chair - have you had training in prep & routing? You don’t need training for routing.

#13 Security & privacy concerns? None. It is as secure as anything today.

#14 dept chair - have you had training in prep & routing?
The files are potentially available to a larger group of people and people can print out information that they would not normally be able to take from a paper file.

Security can be breeched in paper files or in electronic files much much much greater. I will never use this as a cv generator so do not see the need to create this data/field driven system. Lets look at the engineering model or Santa Barbara's document imaging system instead

I heard that more personal information was requested in the eFile than in the paper file. Some things were required in forms that were not required previously.

yes yes yes no this was mind blowingly difficult. whatever it does is not worth everything! eFile should be strictly limited

the back and forth routing to correct simple mistakes is an incredible waste of time

its nice to be able to track the file and seems to move quicky at the cap level but maybe that was the case all along

to the rules of the CALL

no yes yes yes both not user friendly - go back to paper or

saves paper   easier all around staff has a better handle on

give us the option

who controls the ultimate access to my file? Do I own it or does the administration?

paper files seem to be more flexible this was the best aspect of eFile same don't know. There doesn't seem to be anyone in central academic human resources who was able to answer my questions and the eFile didn't provide links. I had to trudge through the CALL and finally just asked Betty Lord directly.

no yes yes no both communication with my staff

preparer was simplified and I appareciated being able to look at her requests withouth having to come in the office

Flexibility in categories and organization. Initially the research papers were not numbered so they could not be referenced in a statement (I don't know if this was changed).

Yes, because of the tedious info about publications (see below)

allow faculty to submit word files and have someone else enter and check the info. Many faculty have no desire to learn... especially if the web based system cannot be made self explanatory then it should not be implemented.

APPENDIX 2: Survey Data - Faculty Responses

What might eFile do to more effectively implement the CALL?

What does eFile do better

What requests for info can/should be removed? Diff coding for info extraneous to the CALL?

How can prep & routing be improved?

Is time for file prep greater or lesser with eFile?

Does eFile ask for info not in the paper file? Is it warranted?

Security & privacy concerns?

dept chair - have you had training in prep & reading?

119
APPENDIX 2: Survey Data - Faculty Responses

#6 What might eFile do to more efficiently implement the CALL?
- Provide sample e files for faculty to review. (But maybe it already does that?)
- Reduce the time involved with the CALL. I would have to spend the same amount of time if I spent a little more time walking around the system.
- Provide training. I have not been trained to use the system. The training is not as thorough as it should have been.

#7 What does eFile do better than paper files?
- Easier to call up information and to move from one area to another without shuffling papers and getting them out of order.
- Easier to put different parts side by side for comparison.
- Saves paper. However, even that is questionable since before eFile, only one copy of the file existed, now I know myself and at least 3-4 others in my department all printed the file for individual documents are easier to read in paper form - the blue difference list for example. The bibliography and difference list are also better organized in the paper file (TJA's more identifiable)
- Easier to call up files from anywhere, rather than having to view the hard copy in the office.

#8 What do paper files do better?
- From what I have heard from those who prepare the files, the preparation time is much greater for eFiles. However, updating files that are already on the system should be easier.
- Training is a huge waste of my time. Like any overworked faculty member I am unlikely to update my own file until just before I retire. But if I have to, I would have to spend the same amount of time if I spent a little more time walking around the system.

#9 What requests for info can/should be removed? Diff coding for info extraneous to the CALL?
- Don’t know, but see my answer to Question 9. Surely information that is unnecessary should be eliminated.

#10 How can prep & routing be improved? How can prep & routing training be improved?
- All electronic information is vulnerable to “hacking.” It does concern me that the university is going to electronic information management of highly sensitive material - eg, promotion and tenure - when we can’t even manage to filter our campus email accounts to eliminate offers to buy performance enhancing drugs or knock-off nake pictures. I don’t feel our electronic security is adequate, in other words, and the more information we store in electronic form, the more possibilities we create for someone to enter the system illegally. Outsiders could publish information that would be embarrassing or even hurtful to individuals who work for the university. Then there is the YouTube tragedy where the things that the university actually posted on YouTube would be valuable to individuals or others posting about them. It seems to me that if I don’t want to have information on academic personnel, and teaching and service and submit it to my department MSD, so I have always done.

#11 Is time for file prep greater or lesser with eFile?
- If I print out the copies from eFiles, I’ve just cancelled out their biggest advantage of being "paperless."
- Easier to call up information and to move from one area to another without shuffling papers and getting them out of order.
- Saves paper. However, even that is questionable since before eFile, only one copy of the file existed, now I know myself and at least 3-4 others in my department all printed the file

#12 Does eFile ask for info not in the paper file? Is it warranted?
- The eFile system is new and I don’t have much experience with it yet. It is easy to log on and read a file if I happen to be sitting at my desk. But the system is only as portable as my ability to carry a computer around with me all day and thus, it seems to me, is the biggest drawback. I do not carry a computer with me all the time, nor is every place I go wired to allow me to log in to read eFiles.

#13 Security & privacy concerns?
- Security & privacy concerns?

#14 Dept chair - have you had training in prep & routing?
- Yes no yes yes printed eFile seems to do an okay job in implementing the CALL. I don’t think there were problems with the paper files that eFile fixed. Why was this incredibly expensive project undertaken? It seems to me that if I don’t want to have information on academic personnel, and teaching and service and submit it to my department MSD, so I have always done.

120
## APPENDIX 2: Survey Data - Faculty Responses

### 1. What might eFile do to more efficiently implement the CALL?

- **#6** What might eFile do to more efficiently implement the CALL?
  - It seems to be working well as is. I don't think it is necessary to change anything.
  - It is difficult to read the bibliography and difference list.
  - It is easier to use and less time consuming.

### 2. What does file data do better than paper files?

- **#7** What does eFile do better than paper files?
  - It is easier to read.
  - It is more flexible with location.
  - It is more secure.

### 3. What do paper files do better than eFile?

- **#8** What do paper files do better than eFile?
  - I haven't prepared a complete eFile so can't answer this.
  - Some parts of the technical aspect will lessen as we become experienced but the review aspect has increased. I find I have to make my own notes to decipher the snapshot bibliography and difference list and self statements which I didn't have to do before.

### 4. Requests for info can/should be removed?

- **#9** Requests for info can/should be removed?
  - Diff coding for info extraneous to the CALL.

### 5. How can prep & routing be improved?

- **#10** How can prep & routing be improved?
  - How can prep & routing training be improved?
  - There is always concern with putting sensitive material online and open to reviewers. This raises the question of whether different standards used by members of different departments might come to lie the basis of expectations of conf. On the other hand, it is time to rethink & retool the eFile & other tools with a view to creating a more user-friendly environment.

### 6. Is time for file prep greater or lesser with eFile?

- **#11** Is time for file prep greater or lesser with eFile?
  - Some parts of the technical aspect will lessen as we become experienced but the review aspect has increased. I find I have to make my own notes to decipher the snapshot bibliography and difference list and self statements which I didn't have to do before.

### 7. Does eFile ask for info not in the paper file? Is it warranted?

- **#12** Does eFile ask for info not in the paper file? Is it warranted?
  - No but more of the same won't help.
  - I consider it to be a major flaw. The faculty can not copy and paste their bibliography of publications directly into the eFile system. For faculty with several hundred publications, and chapters, and thousands of articles, there is an incredible burden. As such, it is only through the hard work of the staff that we can get a reasonable submission.

### 8. Security & privacy concerns?

- **#13** Security & privacy concerns?
  - Yes, I have had training in prep & routing, but there is no training in how to handle sensitive material online and open to reviewers. There are numerous potential for manipulation of data as well as distribution of personnel information. Is it time to rethink & retool the eFile & other tools with a view to creating a more user-friendly environment.

### 9. Dept chair - have you had training in prep & routing?

- **#14** Dept chair - have you had training in prep & routing?
  - Yes, I have had training in prep & routing but there is no training in how to handle sensitive material online and open to reviewers. There are numerous potential for manipulation of data as well as distribution of personnel information.
APPENDIX 2: Survey Data - Faculty Responses

**What might eFile do to more effectively implement the CALL?**

<table>
<thead>
<tr>
<th>#</th>
<th>What might eFile do to more effectively implement the CALL?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#6</td>
<td>Defer coding for info not part of the review process</td>
</tr>
<tr>
<td>#7</td>
<td>Allow department specific format</td>
</tr>
</tbody>
</table>

**What does eFile do better than paper files?**

<table>
<thead>
<tr>
<th>#</th>
<th>What does eFile do better than paper files</th>
</tr>
</thead>
<tbody>
<tr>
<td>#9</td>
<td>You can look at paper files anywhere. You do not have to be on a computer with access to the internet.</td>
</tr>
</tbody>
</table>

**What do paper files do better?**

<table>
<thead>
<tr>
<th>#</th>
<th>What do paper files do better</th>
</tr>
</thead>
<tbody>
<tr>
<td>#11</td>
<td>Because of the large number of data fields required for each and every publication, presentation, grant, award...there are numerous possibilities for errors, in everything from types to a writing date etc. This level of intricacy makes almost any editing process through the file be far more time-consuming for the data entry has to be made far less time-consuming/far more efficient. The Efile system has increased the amount of time I and the office staff spent on preparation by the ENORMOUSLY, and the data entry is not as accurate as is the case for paper files.</td>
</tr>
</tbody>
</table>

**What requests for info should be removed?**

<table>
<thead>
<tr>
<th>#</th>
<th>What requests for info should be removed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#13</td>
<td>Not prepared to say what should be removed, as I am only familiar with criteria for review in my own field, not necessarily that of others.</td>
</tr>
</tbody>
</table>

**How can prep & routing be improved?**

<table>
<thead>
<tr>
<th>#</th>
<th>How can prep &amp; routing be improved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#14</td>
<td>Periodic emailed reminders to update entries. If faculty respond appropriately, then rush to update just prior to submission can be alleviated.</td>
</tr>
</tbody>
</table>

**Is time for file prep greater or lesser with eFile?**

<table>
<thead>
<tr>
<th>#</th>
<th>Is time for file prep greater or lesser with eFile?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#12</td>
<td>You do not have to be on a computer with access to the internet.</td>
</tr>
</tbody>
</table>

**Does eFile ask for info not in the paper file? Is it warranted?**

<table>
<thead>
<tr>
<th>#</th>
<th>Does eFile ask for info not in the paper file? Is it warranted?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#14</td>
<td>Not prepared to say what should be removed, as I am only familiar with criteria for review in my own field, not necessarily that of others.</td>
</tr>
</tbody>
</table>

**Security & privacy concerns?**

<table>
<thead>
<tr>
<th>#</th>
<th>Security &amp; privacy concerns?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#14</td>
<td>If security can be built into the system, then it will be acceptable. Hackers are out there and will always be. Security has to hold them out. Period.</td>
</tr>
</tbody>
</table>

**dept chair - have you had training in prep & routing?**

<table>
<thead>
<tr>
<th>#</th>
<th>dept chair - have you had training in prep &amp; routing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#14</td>
<td>Yes; no. n/a n/a Provides one or two people in the administration the ability to data-mine and develop statistics. As far as I can tell, it causes a LOT more work and wastes a bit more time for almost everyone else involved, both in terms of file preparation, and the multiple times that the file gets bounced back and forth between people who are editing, correcting, and sending to the head of the department. I think the office staff in the department can be sufficiently trained to know how to make the necessary changes, but people changed with collecting statistics</td>
</tr>
</tbody>
</table>

**What might eFile do to more effectively implement the CALL?**

<table>
<thead>
<tr>
<th>#</th>
<th>What might eFile do to more effectively implement the CALL?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#6</td>
<td>Defer coding for info not part of the review process</td>
</tr>
<tr>
<td>#7</td>
<td>Allow department specific format</td>
</tr>
</tbody>
</table>
APPENDIX 2: Survey Data - Faculty Responses

#10
How can prep & routing be improved? How can prep & routing training be improved?

#11
Is time for file prep greater or lesser with eFile?
It appears to be greater for both. I keep, and constantly update, my file material on my office computer. I can download a three-year file in a matter of minutes. The self statement takes time to write and that is not affected by the file format.

#12
Does eFile ask for info not in the paper file? Is it warranted?
I skipped over many of the trivial requests for information like letters of recommendation. It is a good thing that all of the information that can be entered is not required!

#13
Security & privacy concerns? There appears to be an important security concern if, as I know to be the case in my Department, the eFile system can still be hacked. The Administration has not explained their safeguard procedures for eFiles to the faculty at all.

#14
dep’t chair - have you had training in prep & reading? The call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#15
The call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#16
This issue has been addressed above. EFile should address only the Call and nothing more. If the Administration desires information from faculty in other areas, then they can request it independently of EFile.

#17
The Call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#18
The Call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#19
This issue has been addressed above. EFile should address only the Call and nothing more. If the Administration desires information from faculty in other areas, then they can request it independently of EFile.

#20
The Call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#21
This issue has been addressed above. EFile should address only the Call and nothing more. If the Administration desires information from faculty in other areas, then they can request it independently of EFile.

#22
The Call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#23
This issue has been addressed above. EFile should address only the Call and nothing more. If the Administration desires information from faculty in other areas, then they can request it independently of EFile.

#24
The Call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#25
This issue has been addressed above. EFile should address only the Call and nothing more. If the Administration desires information from faculty in other areas, then they can request it independently of EFile.

#26
The Call does not require ad hoc committees, nor does the Call require ad hoc committees to ‘approve’ a file before it is circulated to the faculty. For more efficient file management, the role of the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty. For example, the ad hoc committees should be expanded to include the faculty.

#27
This issue has been addressed above. EFile should address only the Call and nothing more. If the Administration desires information from faculty in other areas, then they can request it independently of EFile.
### APPENDIX 2: Survey Data - Faculty Responses

<table>
<thead>
<tr>
<th>#</th>
<th>What might eFile do to more efficiently implement the CALL?</th>
<th>What does eFile do better than paper files?</th>
<th>What do paper files do better?</th>
<th>What requests for info can/should be removed?</th>
<th>How can prep &amp; routing be improved?</th>
<th>How can prep &amp; routing training be improved?</th>
<th>In what time for file prep greater or lesser with eFile?</th>
<th>Does eFile ask for info not in the paper file?</th>
<th>Is it warranted?</th>
<th>Security &amp; privacy concerns?</th>
<th>dept chair - have you had training in prep &amp; routing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#6</td>
<td>What does eFile do to more efficiently implement the CALL?</td>
<td>What might eFile do to more efficiently implement the CALL?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#7</td>
<td>What does eFile do better than paper files?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#8</td>
<td>What do paper files do better?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#9</td>
<td>What requests for info can/should be removed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#10</td>
<td>How can prep &amp; routing be improved?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#11</td>
<td>How can prep &amp; routing training be improved?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#12</td>
<td>In what time for file prep greater or lesser with eFile?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#13</td>
<td>Does eFile ask for info not in the paper file?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#14</td>
<td>Is it warranted?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#15</td>
<td>Security &amp; privacy concerns?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#16</td>
<td>dept chair - have you had training in prep &amp; routing?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The second meeting of the Assembly of the Academic Senate for the academic year 2007-2008 was held on February 20, 2008, via teleconference. Chair Michael Brown called the meeting to order. Roll call established that the number of participating members was sufficient for a quorum.

Assembly Chair Michael Brown
Chair Brown announced that purpose of the meeting was to elect the 2008-2009 Vice Chair.

President Robert Dynes
President Dynes' comments were limited to discussion of the budget as related to enrollment 2008-2009. After wide consultation, Dynes concluded that we had a moral, legal and intellectual responsibility to provide admissions to all UC eligible students for fall 2008-2009 and to meet the expectations of students and parents by not reducing enrollment. He noted that whereas UC has taken responsibility for 2008-2009, it cannot do this in the future and issued a severe warning to the State that UC cannot grow at the projected rate without State funds. He left enrollment restrictions as an option for 2009-2010 and beyond.

Katherine Lapp, Executive Vice President Business Operations - Current State of the UC Budget
1) The State budget shortfall is now predicted to be greater than the $14B first projected. Student fees will need to be increased by 10%, not the 7% originally proposed. UCOP is to be reduced by 10% in overall size in 2008-2009 to save ~$28M. Lapp urged campuses to be more diligent in meeting their enrollment targets to maximize income from fees, noting that there will be no dollars for over enrolled students. When asked, it became clear that the Faculty Salary Plan was on the table for cuts and that the faculty needs to be proactive to keep cuts from happening. The final State budget will not be known until July 1, 2008, or after.

Chair Michael Brown
1) Announced that the Western Association of Schools and Colleges (WASC) would meet February 21, 2008, to review Dyne's response to WASC's Review of UC, the letter from Chair Brown and the Advisory Council delineating the roles, responsibilities, and expectations of the Board of Regents and the President, and the compiled responses from the Chancellors regarding the WASC Review. President Dynes and Provost Hume will meet with WASC to provide any required clarification and then WASC will announce its final recommendations. The goal is for WASC to help UC get its governance in order.

2) Henry Powell, M.D., D.Sc., F.R.C.Path., Program Director, Anatomic and Neuropathology Residency Training Program, UC-San Diego, was elected unanimously to serve as Vice Chair of the Assembly for 2008-2009.

3) Senate Regulation (SR) 458, which allows graduates of certain schools and colleges in China and Japan to meet course requirements for UC admission by substituting a satisfactory course in the history of their own country for United States history, as well as satisfactory courses in Asian law, language, and literature for the matriculation requirement in English, was repealed unanimously.

Respectfully submitted,

Carol J. Lovatt, Senior Representative
Assembly of the Academic Senate
To Be Adopted:

The Academic Senate Committee on Distinguished Teaching recommends that Professor Susan Straight (Department of Creative Writing) be the recipient of the Distinguished Teaching Award for 2007-2008.

Professor Susan Straight

“Instructing students is not simply standing before a classroom and venting opinions and fact; it is the act of giving – giving of oneself, one’s ideas. … Teaching, for Susan Straight, is generosity and sacrifice.” This statement, from one of the students who wrote in support of Professor Straight’s nomination, captures the spirit of many of the comments our committee read. Professor Straight does not simply teach, she inspires! Each of us were very impressed as we reviewed her teaching career at UC Riverside, well laid out and documented in the dossier which her Chair forwarded on her behalf. Excerpts from this dossier and student letters are used below to illustrate the strength of Professor Straight’s case for receiving this recognition.

Professor Straight began her career at UC Riverside as a creative writing lecturer in 1988, well before the Department of Creative Writing was created in 2000. Her very first teaching evaluation was a 6.55 on a 7-point scale; most of the other 68 courses she has taught since then are as good or better. This includes evaluations from lower division to upper division to graduate classes, in seminars and workshops, in her primary discipline (fiction) and secondary field (nonfiction). Rarely does a professor demonstrate such teaching excellence across the breadth of classes and over such an extended period.

Student comments are numerous and laudatory throughout – many demonstrating that Professor Straight is more than an instructor, perhaps better described as a mentor and friend, both challenging the students and counseling them through the rough patches. Here are just a few representative examples. From her Introduction to Creative Writing Class – “Susan is simply a jewel of an instructor who not only carries out her craft as a professional, but sincerely helps students to learn and gain a lot from the course, whether they are writing majors or not. Bravo!” In her Beginning Fiction Workshop, one student wrote: “Professor Straight was an absolute joy! Most definitely I would take her again! BRAVO UCR. She’s the Bomb!” Another student seemed to capture the sentiments of many others when s/he wrote this comment from an Advanced Fiction Workshop: “It boggles my mind how a person so busy can be so helpful to so many people … A true mentor and a wonderful instructor. She deserves a statue … and a parade. And I’m serious.”

Working with Professor Eric Barr in the Department of Theatre, Professor Straight served as co-creator and founding co-chair of UCR’s MFA Program in Creative Writing and
Writing for the Performing Arts in 2001. Graduate writing programs are recognized by a) the literary reputations of their faculty and b) the book publications of their graduates. Professor Straight is well known as a gifted writer, and has garnered numerous awards for her eight novels and recently the 2008 Edgar Award for her first mystery short story, but what impressed our committee most was her ability to translate her skills into successful mentorship of her students who have in turn won their own awards.

Professor Straight has supervised an estimated 40 senior theses, has directed seven completed masters theses and is currently on seven other MFA thesis committees. The MFAs from the past year and current second year class have a total of seven books in press or under contract, including 4 works of fiction or non-fiction, each of which began in a Susan Straight workshop.

Graduate student letters of support echoed her inspirational style. One student writes: “Professor Straight deserves this award because she is an incredibly hard-working, patient, funny and wise teacher.” Professor Straight inspired this current MFA student to submit her own work to the Atlantic Monthly student fiction contest and she won first place! Another MFA student credits Prof. Straight’s gentle bullying style with his success in getting his story published in Zyzzyva, one of the most prestigious West Coast literary magazines. Finally, this MFA’s comment seemed most appropriate: “Nurtures, in fact, might be an understatement; at times she is more mother than mentor, enlightening us not only about the world of fiction but the real world.”

Professor Straight is known to be extremely generous with her time and expertise for her students. We were struck by the Chair’s comment that because of the usual long line of students waiting outside Professor Straight’s office to meet with her to discuss their work, her MFA students actually bought some plastic lawn chairs to place in the hallway so that the students would be more comfortable waiting for her. Amazing!

In short, Professor Straight is a gifted writer, educator and scholar who generously shares her skills and her crafts with both undergraduate and graduate students. By giving of herself, mentoring, nurturing, prodding and inspiring, she helps her students achieve their highest potential. Professor Straight exemplifies the true spirit of the “Distinguished Teacher” and this Committee could not think of anyone more worthy of this recognition in 2007-08. We are delighted to unanimously recommend Professor Susan Straight as this year’s recipient of the Distinguished Teaching Award. Both faculty and students at UC Riverside are fortunate to have such a distinguished scholar and educator as a colleague.

Robin DiMatteo
Scott Fedick
Subir Ghosh
Nathan Manning (GSA)
Neal Schiller (Chair)
Yenna Wu
COMMITTEE ON FACULTY RESEARCH LECTURER
REPORT TO THE RIVERSIDE DIVISION
MAY 20, 2008

NOMINATION OF DISTINGUISHED PROFESSOR IVAN STRENSKI
FOR 2008-2009 FACULTY RESEARCH LECTURER

From its inception well over half a century ago, the Faculty Research Lecturer Award has been the highest honor that the Academic Senate bestows. The Committee on the Faculty Research Lecturer is honored to place in nomination Ivan Strenski, Distinguished Professor of Religious Studies and Hollstein Family Community Endowed Chairholder. We believe that the international acclaim for Professor Strenski’s research on religion and its relationship to other academic disciplines and to social and political institutions will add great luster to the award.

The nomination letter from Professor Strenski’s department frames his research as “focusing on: a) the history of the rise of the academic study of religion in France; b) the history of theology and religious thought; c) French social and cultural history; and d) contemporary questions about religions and social political institutions that beg for insight and interpretation.” A celebrated expert on Durkheim and on Judaism, Professor Strenski has published 10 books (and has another in press) with the very best publishing houses (for example, Princeton University Press, University of Chicago Press, and University of Virginia Press), and his books have been favorably reviewed not only in religious studies journals but also in history, anthropology, philosophy, and sociology journals. He has similarly published many scholarly papers in highly regarded journals that cross the same set of academic disciplines.

Professor Strenski’s professional stature is documented by his many invited presentations around the world, frequently as a keynote speaker, and at the very top universities in the country (including Harvard, UC Berkeley, and Chicago). He has been the recipient of several NEH Fellowships, has been granted the coveted John Templeton Prize, and has been awarded an honorary doctorate at the University of Lausanne for his work on the history of religions.

Letters from scholars around the world also attest to Professor Strenski’s prominence. He is lauded as “one of the most productive and innovative scholars of religion of the present generation,” as “amongst the very elite of US and international scholarship,” and as having “shaped the field of religious studies.” Also pertinent to the spirit of the Faculty Research Lecturer award is the observation that “the years since his appointment at UC Riverside have been the most productive of his career.”

These are only a few of the reasons why we, the undersigned members of the Senate Committee on Faculty Research Lecturer, unanimously and enthusiastically nominate, as Faculty Research Lecturer for 2008-2009, Distinguished Professor Ivan Strenski.

R. Robert Russell, Chair (Department of Economics)
Roger Atkinson (Department of Environmental Sciences)
Dallas L. Rabenstein (Department of Chemistry)
Natasha Raikhel (Department of Botany and Plant Sciences)
Jonathon H. Turner (Department of Sociology)
The Committee is pleased to nominate Professor Manuela Martins-Green of the Department Cell Biology and Neuroscience as a recipient of the DISTINGUISHED CAMPUS SERVICE AWARD for the academic year 2007-2008.

Professor Martins-Green has a history of extensive service and dedication to her department, the college, and the Academic Senate that extends from very early in her appointment at UCR. As an Assistant Professor she helped generate NSF funding for a new electron microscope and served on a Dean's committee to reorganize the UCR biological sciences departments. As an Associate Professor she served on numerous committees, including a committee to reorganize the undergraduate program in biological sciences, the Reg Fees Committee, and chaired the Committee on Committees. However, this award is largely due to her truly exceptional efforts during her tenure as Chair of the Academic Senate at UCR.

The many nominators were all in agreement that Professor Martins-Green was largely responsible for reinvigorating the practice of shared governance at UCR. On behalf of the faculty, she moved decisively to evaluate issues of concern by the faculty in the merit and promotion process, established mechanisms to deal with the concerns regarding Subject A and access to English 1C, and she invigorated and restored the atmosphere of true shared governance between the faculty and the UCR Administration.

She also played a prime role in reorganizing the Academic Senate Office, more than doubling the staff and the budget. As Chair of the Academic Senate, Dr. Martins-Green worked diligently on issues for the Child Care Center on campus, revived a plan for a new Faculty Club, and established a mentoring program for new women faculty. Even though she is on sabbatical this year, she continues to serve the campus on the Search Committee for a new Chancellor at UCR, on another Search Committee for the Director of the Health Sciences Research Institute, and on the Faculty Welfare Committee. As her nominators repeatedly stressed, she always participates with exceptional energy, enthusiasm, and dedication regardless of the assignment.

These and many other service activities over the years attest to Professor Martins-Green's extraordinary dedication to UCR and to the University.

Respectfully submitted: Respectfully submitted: J. Briggs, R. Redak, G. Scott, T. Shapiro, and J. Trumble, Chair
The Committee is pleased to nominate Professor Carl Cranor of the Department of Philosophy as a recipient of the DISTINGUISHED CAMPUS SERVICE AWARD for the academic year 2007-2008.

Professor Cranor has a long history of extraordinary service and dedication to his department, college, and the UCR campus at large. His service to UCR spans approximately three decades and is distinguished by the exceptional number of positions that he has held. Dr. Cranor served as Chair of the Philosophy Department during a period of exceptional growth, as Interim Chair of the History Department, as Acting Chair of the Department of Hispanic Studies on two separate occasions, as Acting Director of Physical Education, and most recently as Chair of the Department of Finance and Management Sciences. He has also served for eight years as Associate Dean of CHASS and for an extended period as the Interim Dean of CHASS.

In addition he has accumulated an impressive history of important committee assignments and contributions to the UCR community. These include taking a leadership role in the establishment of the undergraduate Law and Society major, chairmanship of architectural projects for CHASS, participation in a carcinogen risk assessment project for UCR, and service on particularly demanding Senate committees such as CAP and the Graduate Council.

The letters of nomination for Professor Cranor all stressed his fairness, his willingness to help even in sometimes difficult circumstances, and the high level of trust he engendered in his colleagues. All of his nominators make clear that Professor Cramer's dedication and service to UCR have been truly extraordinary.

Respectfully submitted: J. Briggs, R. Redak, G. Scott, T. Shapiro, and J. Trumble, Chair
February 25, 2008

TO:  GRETCHEN BOLAR
     VICE CHANCELLOR

FM:  THOMAS COGSWELL, CHAIR
     RIVERSIDE DIVISION

RE:  NAMINGS FROM THE SENATE: STUDENT SUPPORT SERVICES
     BUILDING PROJECT

The Executive Council met today, February 25, 2008 and unanimously approved the proposed name for the Student Academic Support Services Building project.

Cc:  Vice Chancellor Diaz
     Interim Vice Chancellor Harlow
     Director Lehr
Chair Cogswell  
Academic Senate

RE: Campus Naming Committee – Building Name Change

Dear Tom:

As Chair Designee of the UCR Committee on Naming Campus Properties, Programs and Facilities, I am requesting the review and approval by the Academic Senate Advisory Committee for this naming opportunity.

- *Student Services Building* is the proposed name for the Student Academic Support Services building project. This is a functional name change to reflect the type of services provided to the students in this building.

Please review the attached request and summary details. This proposed name needs approval by the Academic Senate before it is endorsed by the Campus Naming Committee. Please respond with your recommendations by Friday March 7, 2008.

Sincerely,

Gretchen Bolar  
Vice Chancellor

Attachments

xc: Vice Chancellor Diaz  
Interim Vice Chancellor Harlow  
Director Lehr
SUMMARY INFORMATION

UCR: NAMING CAMPUS PROPERTIES, ACADEMIC AND NON-ACADEMIC PROGRAMS, AND FACILITIES

Proposed Name: Student Services Building

Building Background:
- Project Name: Student Academic Support Services Building
- Capital Asset Account Numbers: P5614
- Building Basic Gross Square Feet: 55,094 gsf
- Building Assignable Square Feet: 38,449
- Location: UCR Core Campus

Description: While the Student Academic Support Services (SASS) Building will provide vital services to the student to support their academic career, the services within SASS are not academic in nature. Hence, the term “academic” is not functional in the title. It is critical that the name of the building reflect the type of services provided to students.

See attached Background Information.

Site Map:
BACKGROUND INFORMATION
FOR
STUDENT ACADEMIC SUPPORT SERVICES BUILDING

UNIVERSITY OF CALIFORNIA
RIVERSIDE

Assistant Vice Chancellor Enrollment Management
2121 Hindaraker Hall
Riverside, CA 92521
951-827-2588
951-827-2589 FAX

January 28, 2008

To: Committee on Naming Campus Properties, Programs and Facilities
   Academic Senate

Through: Gretchen Bolar
   Vice Chancellor, Academic Planning and Budget

Through: James Sandoval
   Vice Chancellor, Student Affairs

From: LaRae Lundgren
   Assistant Vice Chancellor, Enrollment Management

Re: Building Name Change
   • Current Building Name: Student Academic Support Services (SASS)
   • Proposed Building Name Change: Student Services Building (SS)
   • Reason: Functional Name Change

The Student Academic Support Services (SASS) building is located on the Carillon Mall adjacent to Costo Hall. It embodies recent trends in student services: 1) consolidating services to maximize efficiency, 2) customer (student) service, and 3) fostering staff development and interaction. The primary intent of SASS is to foster and create an environment in which services to students are the highest priority. Recognizing such, departments that will be housed by SASS provide services to students related to student admissions, student enrollment, student records, registration, fees and tuition, and financial aid as well as student special services. The SASS building is scheduled to break ground December 2008.

While the offices in SASS will provide vital services to students to support their academic career, the services within SASS are not academic in nature. Hence, the term "academic" is not functional in the title. Additionally, research on university building names involving Student Academic Support Services revealed an interesting trend: services provided to students were those such as academic guidance and counseling, and tutorial services (as evident in the SASS building at Cal State San Marcos which houses the Undergraduate Advising Services Center, Career Center, and Testing Services Center).

In an effort to increase visibility of the SASS building on campus, it is critical that the name of the building reflect the type of services provided to students. Hence, we would like to respectfully request to change the building name from Student Academic Support Services to Student Services Building. The term "student services" is often used to refer to a cluster of offices that provide critical services to students both continuing and prospective and are not academic in nature. By renaming SASS, Student Services Building it will provide a more appropriate representation of the services and programs offered to students.

Thank you for your consideration of this request. I can be reached at ext. 2-2587 or via e-mail at larae.lundgren@ucr.edu.
RECONSTITUTION OF THE UCR A. GARY ANDERSON GRADUATE SCHOOL OF MANAGEMENT (AGSM) AND THE TRANSFER OF THE B.S. DEGREE IN BUSINESS ADMINISTRATION TO AGSM

University of California Riverside

November 27, 2007

Approved:
Business Administration Program Committee - December 5, 2007
AGSM Executive Committee - December 7, 2007
AGSM Faculty - December 20, 2007

Committee on Academic Personnel - March 12, 2008
Committee on Educational Policy – March 6, 2008
Committee on Planning and Budget – March 14, 2008
Graduate Council – March 26, 2008
Executive Council – April 28, 2008
Reconstituting AGSM

SUMMARY

This is a revision of the proposal to reconstitute the A. Gary Anderson Graduate School of Management (AGSM) at the UC Riverside (UCR), and to transfer the granting authority of the B.S. degree in Business Administration from the UCR College of Humanities, Arts, and Social Sciences to the reconstituted AGSM. The original proposal was approved by the Riverside Division of the Academic Senate on November 22, 2005, and was submitted for approval by the UC system wide committees on January 19, 2006. The Academic Council and Assembly of the Academic Senate decided in May 2006 to table the approval of the proposal until UCR responds to the concerns that were raised by the two Committees: University Committee on Planning and Budget (UCPB), and University Committee on Educational Policy (UCEP).

In this revision we respond fully to all the concerns that were raised by the above two committees. The concerns raised by UCPB in its April 11, 2006 report deal with the issue of leadership at AGSM, especially the dean and the chairs of the departments, and the issue of faculty resources. These two issues have been resolved; the school has since hired a highly qualified and experienced dean, the two chairs from philosophy have been replaced: one by an experienced AGSM faculty at the full professor rank, and the other by a former AGSM faculty who is currently in the Economics Department at UCR and has excellent leadership. Also faculty resources are in line with what is required. In addition, the new dean has appointed an experienced, senior member of the AGSM faculty as the associate dean for the undergraduate program and has hired a very experienced full time director of the program. The latter staff member brings more than 15 years of similar experience at the Marshall School of Business at the University of Southern California, a program that made enormous improvement over the past decade and a half and that routinely ranks among the top 10 undergraduate business programs.

The concerns of UCEP, as stated in its April 10, 2006 report, deal with several issues; they include issues of admission, advising, curriculum, faculty resources and deployment, and the role of AGSM in the Business Administration Program at UCR. It appears that most of
Reconstituting AGSM

UCEP’s concerns may have emanated from lack of information in the original proposal about the role of AGSM in the Business Administration Program at UCR, and the evolution of this program since its inception in the fall of 1985. These issues are fully addressed in this revision.

I. Introduction

Currently The A. Gary Anderson Graduate School of Management (AGSM) at UC Riverside is chartered to offer only graduate degrees. In this proposal it is requested that AGSM be reconstituted to award the B.S. degree in Business Administration in addition to graduate degrees. The reconstituted school will be called College of Business (COB), which will house both the Anderson Graduate School of Management and the Undergraduate Business Program. The B.S. degree is currently conferred by UCR College of Humanities, Arts, and Social Sciences (CHASS); however the program has been managed, staffed and operated by AGSM since its inception in 1985.

The request is a simple one given the affiliation and involvement of AGSM in the undergraduate Business Administration Program (BAP) at UCR. While the program is governed by a joint committee consisting of eight Academic Senate members, four from AGSM including its dean and the chair of the committee and four from CHASS including its dean, AGSM has played the primary role in the design, development, and delivery of the program and its subsequent revisions; it continues to operate and manage the program including admission and advising of its students, and teaching most of its business administration courses. In fact this involvement provides AGSM with most of its FTE faculty lines. AGSM provides for the staffing of the Office of Undergraduate Programs (OUP), which acts as the administrative office for the BAP. AGSM had conducted self-studies of the program, and all the required periodic and critical reviews ordered by the Committee on Educational Policy of the UCR Division of the Academic Senate. It has regularly revised the curriculum, and has maintained the program on par with the best of public business administration programs in the country. AGSM has also maintained BAP’s compliance with all standards of the national accreditation agency for business education in USA, known as Association to Advance Collegiate Schools of Business (AACSB). Virtually all business
Reconstituting AGSM

courses within the program are staffed by faculty members or lecturers with primary appointments in AGSM. However, due to the current charter of AGSM, the B.S. degree in Business Administration at UCR continues to be conferred by CHASS.

The desire to reconstitute AGSM and grant it the authority to award the B.S. degree in Business Administration in addition to graduate degrees was included in UCR’s Perspectives for the years 2004/09, 2005/10 and 2006/11. It is stated in UCR 2004/09 Perspective, “AGSM would resume full responsibility for the undergraduate B.S. degree in Business Administration. This requires authorization for AGSM to offer the Bachelor’s degree and should be accompanied by a change in the name of the school from Graduate School of Management to College of Business.”

II. Objectives of the Business Administration Program

The Business Administration Program at UCR is an upper division program that was designed and approved in the academic year 1984/85. Students are admitted to the Business Administration Program in their late sophomore or early junior years through an admissions process coordinated by AGSM. The program continues to adhere to its original mission of providing a high quality University of California education in business administration based on strong grounding in liberal arts and sciences. This mission is wholly consistent with the mission of the University of California. The Master Plan for Higher Education in California states that the University of California shall provide instructions in the liberal arts, sciences, and in the professions. The objectives of the undergraduate degree in business administration will not change as a result of the proposed reorganization; these objectives are:

- To provide leadership training in management strongly grounded in the social sciences.
- To equip students with the ability to identify, analyze, and provide solutions to business problems.
- To provide students with the knowledge in functional areas of management.
- To offer a degree program which meets the accreditation standards of the Association to Advance Collegiate Schools of Business (AACSB).
The program continues to compare very favorably with some of the best liberal arts oriented business administration programs in the country. The latest self-study that was conducted shortly before its accreditation by AACSB in April 2003 shows that it is at par with the business administration programs at UC Berkeley, University of Michigan at Ann Arbor, University of North Carolina at Chapel Hill, and University of Virginia. The transfer of the degree to the reconstituted AGSM will not change the objectives or pedagogical characteristics of the program. It will change and streamline the management of the program. This change in program management should have the effect of simplifying governance and making program change and innovation easier and more frequent. Curriculum change and program innovation are important for responding to the changing business environment, to shifting business practices, and to the program innovations of competitor business schools. The shift of governance to a single academic unit on the UCR campus should also have a positive impact on student retention.

III. Administration of the Program

The transfer of the B.S. degree in Business Administration to the reconstituted AGSM, College of Business, will strengthen the program as it simplifies the governance of the program, and provides a home for its students. As observed above, this should have the effect of increasing program innovation and currency, increasing responsiveness to students and the requirements of employers, and increase student retention. These positive outcomes will arise from improvements in governance, admission, advising, curriculum, and resources.

1. Governance: Although the BAP is currently the largest major in UCR it does not have an independent governing body whose primary function is to serve the major and its students. The B.S. degree in Business Administration is operated by AGSM and conferred by CHASS. The policies governing the degree are first developed and approved by the BAP Committees, then they are approved by the executive committees of both colleges (AGSM and CHASS), before they are forwarded to the appropriate Academic Senate committees. The BAP Committee consists of eight voting members; four from AGSM and four from CHASS. The four from AGSM include the dean, and three AGSM faculty members including the chair of the committee who is appointed by the dean of AGSM. The chair of the committee is
Reconstituting AGSM

Currently the associate dean for undergraduate programs within AGSM. The Director of the Undergraduate Business Program is also an ex officio member of the committee. The four members of the committee from CHASS include the dean, and faculty members representing the departments of Economics, Political Science, and Sociology. The committee composition has to be approved annually by the two respective executive committees of AGSM and CHASS.

The BAP Committee has worked well on policy issues and helped evolve the program over time to the state it is in today; but it falls short on managing the tactical and operational issues. Consequently, transfer of the degree to the reconstituted AGSM should improve the management of these issues, facilitate innovation, and contribute to student retention by placing responsibility for students’ education experience within the domain of a single academic unit. The present organizational structure assures that any change in policy or curriculum for the program will take a longer time to approve if compared to programs managed by independent departments. The diffusion of responsibilities for the program structure and for students’ experience also reduces incentives for attending to such matters. The BAP Committee is not involved in course offerings or scheduling. Similarly, the committee does not address the deployment of faculty to courses and classes; and it is not involved in monitoring quality of instructions. All these issues are the domain of the participating departments that teach the courses.

The present organization of the undergraduate business program is virtually unique among such programs. Most business schools operate both the undergraduate and graduate programs. A few Universities have separated the graduate and undergraduate business schools as separate academic units, e.g. University of Virginia and Wake Forest University, but even this organizational structure is rare and does not diffuse the responsibility for individual programs across different academic units. Even in those cases where there are separate schools for the undergraduate and graduate business programs the result has been that the reputation of the undergraduate program has suffered relative to the MBA program located on the same campus. The present organization of the undergraduate program in
Reconstituting AGSM

business at UCR contributes to diminished visibility and reputation for the undergraduate business program.

Students, their parents, and recruiters from the business community are often confused by the current organizational structure of the undergraduate business program. Students at various stages of study come to AGSM advisors for advice when they are supposed to go to counselors in CHASS and vice-versa. Many students graduate without knowing to which school or department they belong. This confusion has been reduced by elaborate orientation programs involving academic advisors and associate deans from AGSM and CHASS, and by regular meetings and ongoing communications between the OUP in AGSM and the Student Affairs Office in CHASS. Confusion remains, however. Corporate recruiters are often unclear about whether UCR offers an undergraduate business degree. At minimum, the current organizational structure of the undergraduate business program reduces its visibility and reputation among prospective students and recruiters, necessitating unnecessary effort to explain the program.

Once the B.S. degree in Business Administration is transferred to AGSM, the joint Business Administration Program Committee (specified above) will be disestablished and replaced with a structure similar to that at HAAS in UC Berkeley and other similar institutions. The Office of Undergraduate Programs at AGSM will be the home/department for the program. OUP has been restructured and strengthened in preparation for this request (to restructure AGSM and transfer the authority to grant the B.S. degree in Business Administration to it). It currently consists of six individuals: Associate dean for Undergraduate Business Programs, who is an experienced and tenured AGSM faculty, an experienced Director for Undergraduate Business Programs, three qualified and highly experienced student advisors, and one administrative assistant. This team can be increased if need arises. Also this team works very closely with the AGSM faculty, Dean, AGSM Executive Committee, the Pre-business Office at CHASS, UCR Registrar, and with Transfer Students Center at UCR. The OUP is located in a newly modeled section of AGSM in Anderson Hall, enjoying state of the
art information technology, and supported by AGSM technology advisors. It is well accessed by Pre-business and Business Administration students and faculty.

2. Admission Process: The BAP is an upper division (junior and senior) program. It attracts high quality and well motivated students from diverse backgrounds. Most are domestic students from Southern California. Students apply for admission into the program after they complete the college breadth requirements and the business administration pre-requisites (more on these requirements in the section on Curriculum). About 60% of the students admitted into the major are from the freshmen who joined UCR two years earlier as pre-business students. The remaining 40% are transfer students from other departments in UCR, other UC campuses, but mostly from the California community college system. Table 1 below shows the enrollment data for the last seven years. Pre-business students in UCR are advised and supervised by the Pre-business Office in CHASS. This office coordinates its activities with the Office of Undergraduate Programs in AGSM and will continue to do so after the transfer of the BAP to AGSM.

Table 1 indicates that about one third of the entering Pre-business students make it to the major two years later. The attrition that occurs is not unusual across universities that offer upper division undergraduate programs in business and is largely due to:

- Normal attrition in the first two, pre-business, years.
- Change to other majors such as those in Table 2 early on before applying for admission into the major.
- Or the students do not meet the requirements for admission to the undergraduate business program, especially the 2.5 cumulative GPA requirement. These students generally migrate to other majors in UCR, especially those identified in Table 2. Most of these alternative majors have a business administration flavor and make complete use of students’ pre-business preparation.

Table 2 shows the enrollment data in eight of the majors that require some business administration course work. For instance, the B.S. in Information Systems offered by
Computer Science in the School of Engineering requires ten business courses. The minor in Business Administration requires seven courses. The others, which all are cooperative majors in CHASS departments, each requires five business courses. This shows that a pre-business or a transfer student who could not be admitted into the Business Administration major can easily move to another major in UCR without a loss of time or any of the breadth and/or the business major pre-requisites that he/she has completed.

Students (pre-business or transfer) can apply for admission into the major towards the end of the sophomore or beginning of the junior year. They apply after they have completed, or are about to complete, college breadth requirements and business major pre-requisites. These are normally completed after earning no less than 75 units and without exceeding 100 quarter units. Hence the student must apply for admission before exceeding 100 quarter units. In some exceptional circumstances, students are allowed to apply even after they have exceeded the 100-unit limit by petitioning the director of OUP. Students can not apply for admission to the undergraduate business program more than twice. All applications, whether a first time application or second time application must be completed prior to the completion of 100-units. The idea is to enable interested students to get into the major if qualified, or to find an alternative major before taking other courses that may not help them in the alternative major.

The application is submitted to the Office of Undergraduate Programs in AGSM anytime the student feels that he/she has completed or is about to complete the requirements for admission. Applications are collected, then processed by OUP staff four times within the academic year: Fall, Winter, Spring, and Summer. Admission into the program is competitive and it is well advertised to students through orientation programs and advising. It is based on the cumulative GPA (currently it is set at 2.5), a personal statement, and letters of recommendation. Once the student is admitted, he/she completes an orientation program, and is advised by AGSM’s staff in the OUP.

The program is competitive and enrollment is limited. Initially in 1984/85 enrollment was limited to a total of 250 students. As UCR grew student demand for the program increased; as a result the program was revised in 1989/90 to provide for more flexibility in its
Reconstituting AGSM

requirements, and a dynamic quota was established. The new quota allowed enrollment in the program to increase proportionally to the increase in UCR’s undergraduate population; the quota was set to 6.5% of the undergraduate population. In the latest evaluation of the program, which culminated in the requirements presented in Appendix I, the quota was set to a total of 1200 students (as measured by the fall quarter 3rd week figures). The latest revisions of the curriculum and requirements were approved by the UCR Division of the Academic Senate on November 22, 2005; and they are currently implemented.

Table 1: Record of Enrollment in Business Administration Program & Its Two Input Segments at UCR

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Pre-Business Students</th>
<th>Total Transfer Students</th>
<th>Total Business Administration</th>
<th>Total No. of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001/02</td>
<td>1,577</td>
<td>320</td>
<td>1,032</td>
<td>602</td>
</tr>
<tr>
<td>2002/03</td>
<td>1,602</td>
<td>334</td>
<td>1,132</td>
<td>650</td>
</tr>
<tr>
<td>2003/04</td>
<td>1,443</td>
<td>269</td>
<td>1,288</td>
<td>742</td>
</tr>
<tr>
<td>2004/05</td>
<td>1,160</td>
<td>250</td>
<td>1,172</td>
<td>679</td>
</tr>
<tr>
<td>2005/06</td>
<td>1,050</td>
<td>314</td>
<td>1,180</td>
<td>626</td>
</tr>
<tr>
<td>2006/07</td>
<td>1,134</td>
<td>270</td>
<td>1,186</td>
<td>645</td>
</tr>
<tr>
<td>2007/08</td>
<td>1,170</td>
<td>262</td>
<td>1,116</td>
<td></td>
</tr>
</tbody>
</table>

* Data recorded at the end of the third week of the fall quarter within the academic year.

Table 2: Majors in UCR with some Business Administration Courses Required

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2001/02</td>
<td>9</td>
<td>1</td>
<td>10</td>
<td>16</td>
<td>43</td>
<td>99</td>
<td>32</td>
<td>172</td>
</tr>
<tr>
<td>2002/03</td>
<td>10</td>
<td>45</td>
<td>6</td>
<td>21</td>
<td>34</td>
<td>90</td>
<td>31</td>
<td>210</td>
</tr>
<tr>
<td>2003/04</td>
<td>10</td>
<td>63</td>
<td>13</td>
<td>21</td>
<td>26</td>
<td>92</td>
<td>63</td>
<td>255</td>
</tr>
<tr>
<td>2004/05</td>
<td>10</td>
<td>63</td>
<td>12</td>
<td>16</td>
<td>22</td>
<td>93</td>
<td>117</td>
<td>332</td>
</tr>
<tr>
<td>2005/06</td>
<td>17</td>
<td>41</td>
<td>19</td>
<td>22</td>
<td>30</td>
<td>85</td>
<td>145</td>
<td>346</td>
</tr>
<tr>
<td>2006/07</td>
<td>11</td>
<td>35</td>
<td>22</td>
<td>20</td>
<td>28</td>
<td>70</td>
<td>158</td>
<td>377</td>
</tr>
<tr>
<td>2007/08</td>
<td>18</td>
<td>39</td>
<td>24</td>
<td>28</td>
<td>27</td>
<td>60</td>
<td>186</td>
<td>358</td>
</tr>
</tbody>
</table>

*AS in the above five cooperative majors stands for “Administrative Studies, which is a major that existed in UCR and was disestablished few years after the B.S. degree in business Administration was established. These cooperative majors continue to use the AS in their titles.
3. **Student Advising:** Students in Business Administration continue to enjoy one-on-one advising with full-time professional academic advisors, as well as significant advice and information that is available on-line. Students are advised by the staff of the Office of Undergraduate Programs in AGSM. OUP employs six individuals: an associate dean for the undergraduate program, a full time director of the undergraduate program, three professional academic advisors, and an administrative assistant. The advisors, with the assistance of the director and the associate dean evaluate the applications and issue admission letters. AGSM faculty support is available if needed. Each admitted student enjoys a personalized advising session with one of the professional academic advisors where the degree requirements are explained and a study plan is established. Advising thereafter is available in two separate settings: one through the open hours of the professional advising staff who are available for walk-in appointments during certain hours every week, and one through individualized appointments. The OUP also provides advising through the electronic media and the AGSM website. Advisors also provide workshops to pre-business in conjunction with the Pre-Business Office in CHASS, and to transfer students about the pre-requisites for the major and the application process. Efforts are being made to reach out to students in other settings such as student dorms and through working with the Students Transfer Center on UCR to work with California Community College system.

4. **Curriculum:** The B.S degree in Business Administration at UCR is strongly grounded in liberal arts education. Transfer of the program to the reconstituted AGSM will not alter this characterization. The curriculum consists of five segments; Appendix I shows the complete requirements of the program. These are:

   a. **College Breadth Requirements:** All pre-business students must complete the CHASS breadth requirements; these consist of five courses in humanities, four in social sciences, five courses in natural sciences in addition to three courses in English, three courses in foreign language (or acquiring of third level competency), and a course in ethnic studies. These requirements, at the lower division, are comparable to their counterparts in excellent undergraduate business programs such as those of UC Berkeley, U. of North Carolina at Chapel Hill, U. of Michigan, and U of Virginia. In
b. **Pre-requisites for the Major**: These consist of eight courses. Only two of them are business courses (BUS 10: Introduction to Business, and BUS 20: Financial Accounting and Reporting). The other six are in the social and natural sciences, and they can count toward the college breadth requirements. The breadth requirements and pre-requisites for the undergraduate business program can be completed in the first two years of enrollment.

c. **Business Core Requirements**: These required business courses consist of the ten courses specified in Appendix I. They capture the standard curriculum required by AACSB as a basis for accreditation. These requirements provide a broad knowledge of all functional areas of business and are consistent with the goal of developing breadth in the educational experience of undergraduate business students. Two of these requirements can be satisfied by courses taken in some of the departments at CHASS such as Political Science, Sociology, Philosophy, and Psychology. Core courses are usually completed in the third year of enrollment.

d. **Concentration Courses**: To be competitive in the market for their business education undergraduate business students generally find initial employment after graduation in a specific business function, such as accounting, marketing, finance, human resources
or other areas. Some professional certification requirements, such as eligibility to take the Certified Public Accountant (CPA) exam, also require specific amounts and types of course work. In order to prepare students for work in a business function and to assure that UCR graduates meet the requirements for professional certification in areas where it is required, the undergraduate business program requires that students complete a minimum number of courses in a specific business function. These focused functional courses are called a concentration. Concentrations offered within the general business administration major and are common features of undergraduate business programs. Such concentrations also support the student advising function by providing students with clearly identified groups of courses that will prepare them for specific career opportunities or for eligibility for professional certification. For example, a concentration in accounting would be defined by the courses required for eligibility to take the CPA examination.

The most recent review and revision of the business administration program resulted in the creation of twelve concentrations. These were created to provide for more flexibility for the students, and to allow for a certain degree of specialization. The functional concentration consists of an additional five courses beyond those in the general business core, which were described in c above. These concentrations are listed in Appendix II. At least six of these concentrations rely on taking upper division courses in departments in the other colleges of UCR (BCOE, CHASS, and CNAS). Such concentrations are consistent with the objective of providing undergraduate business students with a broad educational experience while still assuring that students are adequately prepared for careers in business and professional certification. The availability of a range of concentrations allows students to benefit from faculty strengths within AGSM and across UCR. The cross college concentrations provide a means for meeting students’ interests in integrating business management with other educational experiences within the larger campus. These courses are usually taken in the senior year.

e. **Upper division business electives**: These elective courses consist of three upper division courses. Student can add them to increase his/her focus/depth in a
Reconstituting AGSM

collection, or to focus toward a specific career. Students who wish to graduate with more than 180 units can choose to take more electives should they wish to do so. The design of the program, including the availability of electives both within specific business disciplines and in relevant disciplines outside of the business disciplines provides students with the opportunity to pursue a broad education and simultaneously prepare for a career and qualify for national certifying exams, such as the Certified Public Accountant (CPA) and Certified Financial Analyst (CFA).

5. Faculty Resources: BAP generates FTE faculty lines for all of the participating schools and departments in a manner proportional to their involvement in the program. At the pre-requisite and upper division levels these departments include AGSM, Art, Computer Science, Engineering, Economics, Political Science, Philosophy, Psychology, Sociology, and Statistics. AGSM teaches two of the pre-requisite courses (BUS 10 and BUS 20), at least eight of the ten core courses, many of the concentration courses, and most of the business electives. Consequently, AGSM generates most of its FTE faculty lines from this program. It also deploys its ladder rank faculty in teaching and serving this program. AGSM currently has 24 ladder rank faculty, two visitors, four full time lecturers, and numerous part-time lecturers. AGSM is currently involved in an aggressive faculty recruiting campaign intended to add at least ten ladder faculty members for the fall of 2008. This would bring the total active faculty to 40, including all ladder faculty, visitors, and full time lecturers. The School is currently budgeted for 39.5 FTE. Given the current enrollment of the School (1116 undergraduate students and 125 MBA students) this faculty size will provide for the faculty to student ratio mandated by the accreditation agency AACSB, which is 1:25.

6. Accreditation of the Program: The Association to Advance Collegiate Schools of Business (AACSB International) promotes academic standards for business programs that focus on curriculum, resources, and currency of the faculty in their fields. The curriculum standards determine the basic requirements for a degree in business administration. Standards for faculty resources maintains that the faculty to student ratio to be no less than 1:25 on one hand, that over 60% of the faculty must be academically qualified, and that over 90% must
Reconstituting AGSM

be academically and/or professionally qualified (a professionally qualified faculty member would be one with significant business experience). Academic and professional qualifications are specified and are a function of the mission of the school and university. Business administration programs are evaluated on these standards. Those that satisfy or exceed these standards are accredited for a certain period of time after which they must come back for re-accreditation.

Accreditation is important for students, faculty and employers. It indicates that an accredited program has met or exceeded the minimum standards required for a degree in business administration, and that the program is true to its mission. It indicates quality. Prospective faculty prefer to be hired by schools/colleges with accredited programs, some employers hire graduates of only accredited programs, some employers support the continuing education of their employees only if they attend accredited programs. The BAP at UCR was accredited in April 2003 and it is up for reaccreditation. Transferring the degree to the reconstituted AGSM will make the reaccreditation process easier as it provides for a more focused governing structure for the program, and provides the students with a well defined home.

Appendix I: Curriculum of the B.S. Degree in Business Administration at UCR

Requirements for the B.S. degree in Business Administration include the following five segments:

1. **Breadth Requirements** of the college from which they enter. In case of CHASS, where the Pre-business students are, the B. S. degree breadth requirements are:
   - English Composition: Varies
   - Humanities: 20 units
   - Social Sciences: 16 units
   - Natural Sciences and Mathematics: 20 units
   - Ethnicity: 4 units
   - Foreign Language (level 3): 12 units

2. **Prerequisites:**

   2.1 **General Prerequisites:** (6 Courses, 27 Units) (may be applied toward breadth requirements)
Reconstituting AGSM

Economics 4, Introduction to Economics (5 units)
Computer Science 8, Introduction to Computing (4 units)
Mathematics 22, Calculus for Business (5 units)
Statistics 48, Statistics for Business (5 units)
Economics 102A, Microeconomic Theory (4 units)
Economics 103A, Macroeconomic Theory (4 units)

2.2 Major Prerequisites: (2 Courses, 8 Units)
Business Administration 10, Introduction to Business (4 units)
Business Administration 20, Financial Accounting and Reporting (4 units)

3. Core Requirements: (10 Courses, 40 – 48 Units):
Business Administration (BUS) 100, Management Communication
Business Administration (BUS) 101, Information Technology Management
Business Administration (BUS) 102, Ethics and Law in Business and Society
Or PHIL 116 and either POSC 182 or POSC 186
Business Administration (BUS) 103, Marketing and Distribution Management
Business Administration (BUS) 104, Decision Analysis and Management Science
Business Administration (BUS) 105, Production and Operations Management
Business Administration (BUS) 106, Financial Theories and Markets
Business Administration (BUS) 107, Organizational Behavior
Or PSYC 142 and either SOC 150 or SOC 151
Business Administration (BUS) 108, Financial Evaluation and Managerial Analysis
Business Administration (BUS) 109, Competitive and Strategic Analysis

4. Concentration: (5 Upper Division Courses, 20 Units); please see Appendix II

5. Business Electives: (3 Upper Division BUS Courses, 12 Units)

Appendix II: Concentrations Offered within the B.S. Degree in Business Administration

Concentration: Choose five courses (20 units), from a larger menu of courses, for any of the twelve concentrations listed below. The courses are selected with the approval of an advisor. Courses completed to meet upper division core requirements may not be used to meet
Reconstituting AGSM

congestion requirements. The Concentration will appear on the transcript, but does not appear on the diploma.

- Accounting
- Arts Management
- Environmental Management
- Financial Economics
- General Management
- Human Resource Management
- Information Systems management
- International Management
- Managerial Economics
- Marketing
- Operations and Supply Chain Management
- Public Policy and Management
May 2, 2008

TO: ELLEN WARTELLA  
EXECUTIVE VICE CHANCELLOR AND PROVOST

FM: THOMAS COGSWELL, CHAIR  
RIVERSIDE DIVISION

RE RECONSTITUTION OF THE UCR A. GARY ANDERSON GRADUATE SCHOOL OF MANAGEMENT (AGSM) AND THE TRANSFER OF THE B.S. DEGREE IN BUSINESS ADMINISTRATION TO AGSM

The Senate has completed its review of the Proposal for reconstitution of the UCR A. Gary Anderson Graduate School of Management (AGSM) and the transfer of the B.S. Degree in Business Administration to AGSM and it will be included in the Agenda for the May 20 Division Agenda for divisional vote.

In addition to the comments received from the other committees that reviewed the proposal, the Committee on Educational Policy had this to say: “Since the initial proposal was tabled at the systemwide level, we would encourage AGSM to strengthen the case that it makes for the transfer by soliciting expert evaluation of the implications of the proposed transfer. By soliciting outside letters that evaluate the strength of the plan and program, concerns that may still linger from the initial abortive transfer can effectively be addressed. Most importantly, we feel a letter from those involved in the undergraduate program at UC Berkeley would help the reviewing parties with advice from a well established and also otherwise comparable program”.

The Executive Council at its meeting on Monday the 28th of April approved the proposal on condition that outside letters are solicited as mentioned above.
FEBRUARY 22, 2008

TO:    CHRISS CHASE-DUNN, CHAIR
       ACADEMIC PERSONNEL

       ILYA DUMER, CHAIR
       GRADUATE COUNCIL

       PIERRE KELLER, CHAIR
       EDUCATIONAL POLICY

       ANTHONY NORMAN, CHAIR
       PLANNING AND BUDGET

FM:    THOMAS COGSWELL, CHAIR
       RIVERSIDE DIVISION

RE    RECONSTITUTION OF THE UCR A. GARY ANDERSON GRADUATE
      SCHOOL OF MANAGEMENT (AGSM) AND THE TRANSFER OF THE B.S.
      DEGREE IN BUSINESS ADMINISTRATION TO AGSM

Attached you will find a proposal to reconstitute the A Gary Anderson Graduate School of Management and to transfer the BS Degree in Business Administration from CHASS to AGSM.

I am also attaching a copy of the policy for reconstitutions from the Compendium.

Please forward your committee’s response to me by March 20, 2008.
March 12, 2008

To: Thomas Cogswell  
Chair, Riverside Division Academic Senate

Fr: Christopher Chase-Dunn  
Chair, Committee on Academic Personnel

Re: Reconstitution of the AGSM and the transfer of the BS Degree in Business Administration to AGSM

CAP discussed the proposed reconstitution of AGSM and the transfer of the B.S. degree in Business Administration from CHASS to the Anderson Graduate School of Business. There was strong support for the efforts to expand the mandate of AGSM to undergraduate education. CAP noted with approval that the proposed curriculum for the undergraduate major remains a broad interdisciplinary approach with substantial prerequisites in social sciences and the humanities. CAP notes that the relevant UCR Academic Senate Committees should be consulted regarding any future changes in the requirements for the Business Administration major.
March 26, 2008

Thomas Cogswell, Chair
Riverside Division
Academic Senate

At its meeting of Wednesday, March 19, 2008, the Graduate Council considered the Reconstitution of the UCR A. Gary Anderson Graduate School of Management (AGSM) and the Transfer of the B.S. Degree in Business Administration to AGSM. The reconstitution does not appear to affect graduate education, thus the Graduate Council had no objections.

Ilya Dumer, Chair
Graduate Council

ID/vb
March 6, 2008

TO: THOMAS COGSWELL, CHAIR
RIVERSIDE DIVISION

FR: PIERRE KELLER, CHAIR
COMMITTEE ON EDUCATIONAL POLICY

RE: AGSM PROPOSAL TO RECONSTITUTE AND TRANSFER THE B.S. IN BUSINESS ADMINISTRATION TO AGSM

The CEP met on March 5 and discussed the proposal to reconstitute and transfer the B.S. in Business Administration to AGSM. We voted unanimously in favor of the proposal (5 Yes votes, 0 No votes, 1 Abstention from an AGSM member in virtue of conflict of interest).

CEP has concluded that with the addition of a new permanent Dean, the recruitment of new advising staff, and the plan to hire ten new ladder rank faculty in order to replace lecturers in AGSM, the transfer is now on a much firmer footing than when it was initially proposed and later tabled at the systemwide level. The concerns that we had as a committee at the time of the initial transfer proposal have been addressed in the new proposal. We would also note that the transfer, if and when it is implemented, will help satisfy a request from the AACSB accreditation board.

Since the initial proposal was tabled at the systemwide level, we would encourage AGSM to strengthen the case that it makes for the transfer by soliciting expert evaluation of the implications of the proposed transfer. By soliciting outside letters that evaluate the strength of the plan and program, concerns that may still linger from the initial abortive transfer can effectively be addressed. Most importantly, we feel a letter from those involved in the undergraduate program at UC Berkeley would help the reviewing parties with advice from a well established and also otherwise comparable program.
TO: THOMAS COGSWELL, CHAIR RIVERSIDE DIVISION

FM: ANTHONY NORMAN, CHAIR COMMITTEE ON PLANNING AND BUDGET

RE: REORGANIZATION OF UNDERGRADUATE BUSINESS PROGRAM

This proposal is a revision of a previous proposal approved by the UCR campus. The revision has addressed the reasons for the deferral of a decision at the system level. First, with regard to administration, the A. Gary Anderson Graduate School of Management, UCR has hired a Permanent Dean, David Stewart. The school also has assigned an experienced associate dean to oversee the program. Second, the Undergraduate Program Office has hired a new full time director from USC with 15 years experience running the undergraduate business program, in addition to advising staff (three staff members). This seems to be an improved governance structure and in line with what is being done at other business schools. Lastly, the school is currently hiring additional faculty members.

Moreover, it is important to note that no new classes or new faculty would be needed. As for the curriculum, the program offers 12 concentrations (shown on page 16) in most recent curriculum revision. These “tracks” provide advice and guidance to supplement advising staff. These concentrations bring it in line with concentrations offered by other business schools.

It is important to note that the revised proposal is approved by CHASS, AGSM, and the Business Administration Program Committee (BAPC) and supported by both of the Deans of AGSM and CHASS. This transfer will accomplish the following for UCR/AGSM as described in the proposal:

- It will streamline the management and ownership of the program.
- It will bring UCR’s undergraduate business program model in line with other UC business schools with undergraduate programs (e.g. UCI and UC Berkeley).
- It will address UCR campus-wide retention issues (many students find the lack of a “home” confusing).
- It will increase the visibility and the marketability of the program from UCR’s standpoint (this is especially important given UCI’s introduction of an undergraduate business program).
- It will help with reaccreditation of AGSM/UCR’s business programs since this unusual structure has been a concern of previous accreditation visitation teams.
- Last but not the least, it might also enable UCR out-reach efforts since there will be one central point of contact with the business community at AGSM.
The members of the Committee on Planning and Budget voted unanimously to approve this reorganization.
April 3, 2008

TO: THOMAS COGSWELL, CHAIR
RIVERSIDE DIVISION

FR: PIERRE KELLER, CHAIR
COMMITTEE ON EDUCATIONAL POLICY

RE: POST BACCALAUREATE PROGRAM IN BIOMEDICAL SCIENCES

The CEP met on April 2 and discussed the proposal for the Post Baccalaureate Program in Biomedical Sciences. The conception for this proposal was first brought to us via the Business Plan for the School of Medicine. The CEP finds the goals of the program both valuable and laudable considering both the number of disadvantaged students we have at Riverside and the medical needs of the Inland Empire. We have no reservations about the mission of the Post Baccalaureate Program. However, we do have some questions about the timing of the intervention proposed in the program. Prima facie, an intervention to aid disadvantaged students in their preparation for medical school would seem more likely to meet with success if it were begun at an earlier stage in a student’s career. We noted however that programs such as this are already in place and apparently successful on other UC campuses. This went a long way to mitigating our concern about potential effectiveness at such a late stage.

We think that it would be sensible to initiate a similar program at the undergraduate level, if the resources for such a program can be secured. We recommend that resources for such a program be identified if possible and that such a program be mounted.

We voted unanimously in favor of the proposal (6 Yes votes, 0 No votes, 0 Abstentions) adding a stipulation similar to that of the CNAS Executive Committee: that the effectiveness of the program be thoroughly evaluated after a two year period.
As we discussed recently, I am writing you to request your assistance in developing a postbaccalaureate (postbac) program at UC Riverside. In order for this program to be successful, we will need the cooperation and collaboration of several important groups on campus, including the Executive Committee of the College of Natural and Agricultural Sciences, the registrar’s office, financial aid office, and others. Before describing the program, some important background is needed.

**Background:**

It has been extensively discussed within the State of California (as well as on campus during the preparation of a proposal for a UC Riverside School of Medicine) that there is both a critical need to increase the number of physicians in California who practice in underserved communities, and a compelling need to diversify the healthcare workforce. One way to accomplish both of these goals is to increase the number of medical school matriculants who come from underserved and underrepresented communities. The Division of Biomedical Sciences has been involved in several major “pipeline” initiatives over the past 8 years to address this matter, including the Health Sciences Partnership Program (our outreach program to seven Health Academy programs in local area high schools), our 5-week residential summer bridge program called *FastStart*, and our Medical Scholars Program. Each of these programs has been funded either completely or mainly from external funding with additional support from the Division of Biomedical Sciences. Over the past 18 months, we have been involved in developing a postbaccalaureate consortium which has positioned us to now open a new postbac program at UC Riverside.

Each of the 5 UC Schools of Medicine has been training students in postbac programs for a number of years now with great success. The goal of these programs has been to recruit and train educationally and/or socio-economically disadvantaged applicants to increase their success in gaining acceptance to medical school. Ultimately, these programs hope to increase the number of physicians who practice in underserved areas. There is now good evidence that this first goal has been attained. As reported recently by Grumbach and Chen (JAMA **296:**1079-1085, 2006), “postbaccalaureate premedical programs appear to be an effective intervention to increase the number of medical school matriculants from disadvantaged and underrepresented groups”. In regards to where these physicians will practice, a study is now underway to investigate that.

During the past 18 months, the 5 UC postbac programs have been meeting in preparation for a new grant proposal to The California Endowment which has previously funded many of.
these programs. Seeking to increase the number of students who participate in these programs (each of which is small, typically 12-15 students), both UCLA/Drew and the UCR/UCLA Thomas Haider Program were invited to attend these meetings and develop their own programs. A postbaccalaureate consortium was developed between all the UC Schools of Medicine, including our program and UCLA/Drew and a common application was developed. This application allows students to apply to each program in the consortium in a single application and with no charge (see https://meded-postbac.uesd.edu/). Additionally, The California Endowment provided a 3-year grant to each of the consortium schools, including UC Riverside, in order to support the program. In order to qualify for this grant, the Division of Biomedical Sciences had to guarantee a level of support for this program which amounts to about half of the final cost of the program. The initiation of this new postbac program is consistent with the mission of the UCR/UCLA Thomas Haider Program as well as the mission of the proposed UC Riverside School of Medicine which is:

“The mission of the UCR School of Medicine is to improve the health of the people of California and, especially, to serve Inland Southern California by training a diverse workforce of physicians and by developing innovative research and health care delivery programs that will improve the health of the medically underserved in the region and become models to be emulated throughout the state and nation.”

Because of this mission, the new postbac program at UC Riverside will be restricted to applicants who completed their undergraduate training at UC Riverside (this is unique within UC postbac programs). As a result this program, even considering the small size of the program, should be able to dramatically increase the number of underrepresented and disadvantaged UC Riverside undergraduates who matriculate into medical school, either into the UCR/UCLA Thomas Haider Program in Biomedical Sciences or into other medical schools in the state and the nation.

The Program:

Each of the UC postbac programs have similar elements – the year long program begins with an intensive 6-week summer study skills and MCAT preparation program, followed by three quarters of enrollment in upper division science courses at UC Riverside. Participation in this inaugural year is limited to eight (8) students (we intend to grow to 12-15 in subsequent years). Students accepted to our program will receive extensive instruction, personalized advising and counseling and support in:

- Developing effective studying and test-taking skills
- Preparing for the Medical Colleges Admissions Test (MCAT)
- Writing an effective personal statement
- Completing the American Medical Colleges Application Service
- Selecting medical schools
- Understanding the health system and health careers
- Preparing for interviews
- Establishing a competitive academic record
In response to the development of a postbaccalaureate consortium, the southern 5 UC postbac programs (UCSD, UCI, UCLA, UCLA/Drew, and UCR/UCLA) will collaborate by having a one-week joint program hosted by UCLA School of Medicine. This intense week of programming will set the tone for the rest of the year-long program with various student learning skills tests and evaluations, study skills strategies, confidence and team building exercises, etc. Hosted by Hy Doyle, Ph.D., a noted educational specialist, this program will not only be of most assistance to our staff as we will be the newest postbacc program in the system.

After this initial week, the UC Riverside postbac students will be housed on campus and work as a cohort for 5-weeks in intensive MCAT preparation, development of comprehensive problem solving skills, improved reading and comprehension, test-taking strategies, time management, personal counseling, confidence building, and professional development workshops and seminars. After this summer program, the students will have a few weeks before their scheduled MCAT examination.

Prior to the start of the academic year, each student will receive an individualized academic plan tailored to their specific educational needs. It is generally accepted that the students who begin this program would benefit from additional upper division science coursework to increase their science GPA, which most medical schools closely examine in determining the student’s ability to successfully complete a medical school curriculum. These students would sign a “learning contract” which would set goals for the year, typically a 3.5 or better each academic quarter, while acknowledging that they must set aside volunteer or work commitments, utilize key campus educational resources (e.g., study groups, TA and office hours, supplemental instruction, etc.), and actively participate in designated weekly seminars on health care topics, ethics, biomedical research, etc.

Although this program is designed for one year, participants will be supported and advised after this period until they are successful at getting into medical school. This advisement includes a substantive and evaluative letter from the postbac Director for each postbac student which is known to carry a lot of weight in Medical School Admissions Committees.

Issues:

The establishment of a new postbac program at UC Riverside raises a number of issues which must be addressed. These include issues of admission and registration for students who have already received BS or BA degrees from UC Riverside, financial aid and health insurance, admission into upper division science classes which are often highly impacted, utilization of campus resources, etc. Our staff has scheduled meetings with a number of campus constituencies even before we have hired a Postbac Coordinator who will handle the day-to-day operations of the program. This coordinator will work closely with me (as Director) and Teresa Cofield, who serves as the Assistant Director of the Medical Scholars Program.

Having discussed some of the concerns with several other postbac Directors and Coordinators, it has been recommended that we try to register and admit these students into the College of Natural and Agricultural Sciences as “Limited Status” students. I understand that CNAS has specific policies regarding these students, one of which might be a concern for the new postbac students. Specifically, the policy states that students “should indicate a minimal overall grade point average of 3.30”. Most UC postbac programs admit students who have a minimum science GPA of ~2.75 and we have adopted this criteria for our own program. While we expect most students will have a somewhat higher science GPA (closer to 3.00), the goal of this program is to enhance the student’s science GPA. If their science GPA is already 3.30 or
above, these students would be advised to participate in other types of postgraduate training. So I am hoping that the Executive Committee would consider waiving this gpa requirement for our postbac students.

A second concern is enrolling these students into upper division science courses. Applicants who have already completed a lot of upper division science classes at UC Riverside would probably be better suited to pursue a graduate degree than a postbac. For those who we consider good candidates for the postbac, we would expect them to register for 12 units per academic quarter, with at least 2 upper division science classes each quarter. We would consider classes such as those listed below as good choices for these students:

Biochemistry classes:
BCH 100 Elementary Biochemistry (4)
BCH 110A, B and C General Biochemistry (4, 4, 4)

Biology classes: there are many here that would be appropriate, but a few specific examples are:
BIO 102 Introductory Genetics (4)
BIO 107A Molecular Biology (4)
BIO 107B Advanced Molecular Biology (3)
BIO 115 Human Genetics (3)
BIO 121 Introductory Microbiology (4)
BIO 128 Immunology (3)

While we consider the BIO 161A, 161B, 171, and 171L to be an excellent sequence of classes, we recognize that these classes are very impacted – however, we hope that some of our students might qualify for this sequence.

We would identify a set of classes which would be ideal for our postbac students during the summer period of evaluation. We recognize that this would mean that these students would be late registrants for these classes and hope to work with the Department Chairs and instructional faculty to determine if a few seats could be reserved for our students (note that we will have a maximum of 8 students in the program the first year). We do consider this to be a serious issue and alternative classes may be needed to satisfy this requirement. We hope that the fact that these students would be “super seniors” might be taken into consideration in allowing them to register late for some of the fall classes with the possibility of enrolling in these courses.

Request:

The purpose of this letter is to request the assistance of the CNAS Executive Committee and faculty in helping us establish this postbac program at UC Riverside. We hope that we can work with appropriate college representatives in addressing the issues listed above. We firmly believe that this postbac program can significantly improve the chances of some disadvantaged and underrepresented UC Riverside graduates to get into high quality medical schools in the UC system, including our own UCR/UCLA Thomas Haider Program in Biomedical Sciences. Thank you for your collaboration in this endeavor.
To: Pierre Keller, Chair, Committee on Educational Policy
Fr: Len Nunney, Chair, CNAS Executive Committee
Re: Postbaccalaureate Premedical Program
Cc: Neal Schiller, Associate Dean, Division of Biomedical Sciences

13 Mar. 2008

At its meeting of 11 Mar. 2008, the CNAS Executive Committee considered a proposal from the Division of Biomedical Sciences for a Postbaccalaureate Premedical Program. The committee supported the program and granted a 2-year waiver to the program’s students regarding the GPA minimum of 3.30 for limited status students.

Background: The program would involve a very limited number of UCR graduates deemed suitable for additional training to achieve their goal of entering medical school. A cornerstone of the proposal is that the students would take a series of upper-division science courses at UCR, enrolling as “limited status” students. College policy is that limited status students must have a GPA exceeding 3.30; however the students targeted for the Program would typically have a GPA of around 3.00 - hence the need for a waiver. The committee has initially granted this waiver for a 2-year period in order to get some feedback on the performance of the program once it has become established.
March 11th, 2008

The Biomedical Sciences Executive Committee supports the proposed Post baccalaureate Program as described by Associate Dean Schiller in the February 5th letter to Associate Dean for CNAS, Gary Scott.

[Signature]

Ameae M. Walker
Chair, Executive Committee for Biomedical Sciences
To be adopted:

Proposal for a Bachelor of Arts Degree in Geoscience Education

Present: Proposed:

MAJOR REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE

1. Lower-division Geoscience requirements (20 units)
   a. GEO 001, GEO 002, GEO 003/BIOL 010, GEO 004, GEO 010

2. Upper-division Geoscience requirements (26-30 units)
   a. GEO 115, GEO 122
   b. Four courses from GEO 100, GEO 101, GEO 116, GEO 118, GEO 123, GEO 124, GEO 132, GEO 136, GEO 137, GEO 140, GEO 147, GEO 151, GEO 152/BIOL 152, GEO 157, GEO 160, GEO 168, GEO 169.

3. Mathematics requirements (12 units)
   a. MATH 009A, MATH 009B, MATH 009C

4. Natural Sciences requirements (28-31 units)
   a. BIOL 002, or BIOL 005A and BIOL 005LA
   b. CHEM 001A and CHEM 001LA, CHEM 001B and CHEM 001LB, CHEM 001C and CHEM 001LC
   c. PHYS 002A and PHYS 002B and PHYS 002C, or PHYS 040A and PHYS 040B and PHYS 040C

5. Humanities requirements (to count towards College requirement of 20 units for the B.A.)
   a. LING 020 or LING 021

6. Education requirements (41 units):
   a. EDUC 003, EDUC 004, EDUC 100B or equivalent, EDUC 104/MATH 104, EDUC 109, EDUC 110, EDUC 116, EDUC 139, EDUC 174, EDUC 177A
Justification:

This proposed program provides an earth science degree for those students who want to pursue a career in secondary science education, but who have no intent of becoming professional geologists. It provides a more efficient means for students who have an interest in earth science and secondary school teaching to begin a teaching internship after 4 years, instead of taking 5 years to complete both a regular 4-year Geology B.S. plus teaching credential coursework.

In place of most of the specialized upper division coursework in Geological Sciences, the proposed degree substitutes Education coursework that will enable a graduate to obtain an intern teaching credential and ultimately pass the CBEST and CSET examinations in general science and earth science, respectively. Students will be required to take Education courses that involve a presence in the secondary classroom early in their undergraduate career.

Students in the proposed B.A. must complete a full year each of Freshman Calculus, Chemistry and Physics, plus Biology 002 or 005A/005LA and Freshman and Sophomore coursework in Geological Sciences, so it remains possible to switch tracks between the B.A. in Geoscience Education and the B.S. in General Geology (or vice-versa) at the end of their Sophomore year.

The Earth Sciences faculty believes that a B.A. degree is more appropriate than a B.S. degree for aspiring science teachers because of the importance of bilingual abilities and cultural breadth in teaching at the Middle and High School levels in California.

Approved by Earth Science Faculty: February 28, 2008

Approved by CNAS Executive Committee: March 11, 2008

Approved by the Committee on Educational Policy: April 7, 2008
March 14, 2008

Professor Pierre Keller
Chair, Committee on Educational Policy
University of California, Riverside

Re: B.A. in Geoscience Education

Dear Dr. Keller:

In addition to the proposed program and letters of support from affected departments and programs, I wanted to provide your committee with additional background information that is required for new program proposals.

In seeking the letters of support, we presented estimated workload projections to GSOE, Dept. of Education, and CALTeach-SMI. In its first two years we anticipate no more than 1-3 students in the new program. After it gets established and better known, we anticipate no more than 5-10 students per year in the program.

The teaching, advising and administrative load impacts on Earth Sciences and Education are projected to be zero-sum, because in the absence of the program the same population of students would normally be Geology majors the first 4 years and then Education majors for a year afterwards; the new program just provides them with a more efficient blended-curriculum format where none existed previously. In fact the new program may actually lower the overall impacts to both programs, because it provides a quicker 4-year route to the B.A. plus teaching credential internship rather than the more traditional 5-year route of a B.S. in Geology plus 1 year in Education for the teaching credential internship.

Because the courses in the new program consist of core courses already taught each year by a large number of faculty in Earth Sciences and Education, there is no burden of new courses and resources placed upon either of these faculty or departments. Core courses in Earth Sciences are currently under-subscribed, so any additional enrollment would be welcome and easily accommodated. Again, given that traditionally the students would be first Geology and then Education majors over a total of 5 years in the absence of the new program, the impact of the new program on either Department’s course loads and
resources may be quite positive given that their education is accomplished in only 4 years.

I could have provided a full list of faculty for the melded program, but because it entails core courses and a large number of faculty already teaching them routinely in both Departments, I saw no added benefit to such a list. By all of the arguments presented above, we are making the combined curriculum more efficient and less cumbersome for both faculty and students.

Please feel free to contact me if you have any further questions.

Sincerely,

Michael A. McKibben  phone: (951) 827-3444, fax: 827-4324
Associate Professor of Geology  e-mail: michael.mckibben@ucr.edu
March 3, 2008

TO:  Professor Pierre Keller  
Chair, Committee on Educational Policy

FR:  Bradley C. Hyman  
Professor of Biology  
Faculty Director, CaTEACH-SMI

Leslie Y. Bushong  
Staff Director, CaTEACH-SMI

RE:  Proposed B.A. Geoscience Education Degree

It is with great pleasure that we forward our enthusiastic support for the proposed Bachelor of Arts degree in Geoscience Education. California is facing a crisis in mathematics and science education. No Child Left Behind (NCLB) guidelines require placement of “highly qualified” science and mathematics teachers in grades 7-12 classrooms. As part of this federally-imposed mandate, these same instructors must achieve credentialing by demonstrating subject matter competence in the subject area(s) being taught. Annually, the number of credentialed science and mathematics teachers cannot match the needs of California’s classrooms. In response, school districts eagerly prepare attractive hiring packages to recruit newly graduated but pedagogically under-prepared science, engineering or math (STEM) majors as intern teachers. To meet our State’s educational challenges, the UC response was to establish a California Teach-Science/Mathematics Initiative (CaTEACH-SMI) on each of its campuses.

At UCR, CaTEACH-SMI is committed to recruiting and preparing STEM majors for teaching careers in science or mathematics. With freshly crafted comprehensive STEM degree programs that embed tracks toward secondary school education, such as the current proposal by the Department of Earth Sciences, STEM students will be able to secure expert preparation in earth science education. STEM students will then be able to insure a brighter future for California, which currently ranks near the bottom in mathematics/science performance, while as individuals they prepare for their own academic and professional futures.

The proposed course plan deftly partners courses required for a solid Bachelor’s of Arts degree in Geoscience Education with education courses offered by UCR’s Graduate School of Education (GSOE). This two-pronged curriculum offers a unique experience for our students, in that they will:
• develop analytical and technical skills to enhance their ability to teach the subject.
• enable the articulation of well-written, competitive responses to the required science component of California Subject Examination for Teachers (CSET).
• be given early opportunities to consider teaching as a career option by conducting field work as early as freshman year.
• be required to record, interpret, reflect, and compare their observations about complex educational issues to research-based studies of classrooms.
• be provided with pedagogical training to best prepare them for intern-teaching positions.

In summary, we enthusiastically endorse the proposed B.A. degree in Geoscience Education. If you have any questions, please feel free to contact us at either leslie.bushong@ucr.edu or bradley.hyman@ucr.edu.

cc:
Mike McKibben, Department of Earth Sciences
Cherie Pierce, CNAS Student Academic Affairs Office
March 31, 2008

Professor Pierre Keller
Chair, Committee on Educational Policy
University of California, Riverside

Dear Dr. Keller,

We are pleased to write this letter of support on behalf of the Graduate School of Education and the GSOE Teacher Education Program. We enthusiastically support the proposed Bachelor of Arts degree in Geoscience Education.

California is facing a critical shortage of highly qualified mathematics and science teachers. This has resulted in many school districts recruiting newly graduated and pedagogically under-prepared science, engineering or math (STEM) majors as intern teachers. In order to meet our State's educational challenges, the University of California established a California Teach-Science/Mathematics Initiative (CaTEACH-SMI) on each of its campuses.

At UCR, the GSOE Teacher Education Programs work in close collaboration with the CaTEACH-SMI program. It is a priority of the GSOE to increase the recruitment of qualified STEM majors for teaching careers in science or mathematics. We have been very successful in doing so in the area of mathematics, and we believe that the current proposal by the Department Earth of Sciences aligns well with our established partnership with CaTEACH-SMI and our need to increase recruitment levels for science majors, in particular.

The UCR GSOE Teacher Education Program is committed to serving the needs of our community; most of our newly credentialed teachers secure employment locally, thus improving the educational experiences for our community and constituencies. Thus, there is a range of short and long-term benefits for the proposed Bachelor of Arts degree in Geoscience Education. We wholeheartedly support the proposal and look forward to being a contributing partner.

Respectfully,

Steven T. Bossert
Dean and Professor

Dr. Anne Jones, Director
Teacher Education Services
Graduate School of Education
To be adopted:

Proposal for a Bachelor of Science Degree in Mathematics for Secondary School Teachers

Present:

Proposed:

**MAJOR REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE**

1. **Lower-division Mathematics requirements (24 units)**
   - MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046

2. **Upper-division Mathematics requirements (36 units)**
   a. MATH 131, MATH 133, MATH 140, MATH 144, MATH 153
   b. Four courses from
      - MATH 132, MATH 136, MATH 137, MATH 138A, MATH 145A, MATH 145B, MATH 149A, MATH 149B, MATH 149C, MATH 151A, MATH 151B, MATH 151C, MATH 171, MATH 172

3. **Additional Mathematics and related disciplines requirements (12 units)**
   a. CS 010
   b. CS 011/MATH 011
   c. STAT 155

4. **Natural Sciences (16-20 units)**
   a. BIOL 002 or BIOL 003 or BIOL 005A and BIOL 051A
   b. CHEM 001A and CHEM 01LA or CHEM 001HA and CHEM 1HLA
   c. PHYS 002A or PHYS 040A
   d. CHEM 001B and CHEM 01LB or CHEM 001HB and CHEM 1HLB or PHYS 002B or PHYS 040B or an additional laboratory Biological science course
5. Social Sciences (16 units)
   a. One course in ECON or POSC
   b. One course in ANTH
   c. One course in PSYC
   d. One course in SOC
6. Mathematics Education and Education requirements (18 or 19 units):
   EDUC 104/MATH 104, EDUC 003 or EDUC 004 or EDUC 100B or equivalent, EDUC 109, EDUC 110, EDUC 139
7. Recommended Courses
   LING 020 or LING 021, EDUC 116, EDUC 174, EDUC 177A

Justification: This proposed program provides a much needed degree program to those students pursuing a career in secondary education. The traditional Bachelor of Arts does not provide the more specialized courses that this option includes. The lower division Mathematics and related disciplines requirement will cover the high school mathematics curriculum from an advanced perspective. With respect to the Sciences, students should experience all three disciplines rather than complete a one-year sequence. This will allow them to better understand how the courses are taught and their use of mathematics and mathematics-like concepts. Students are encouraged to take additional courses to deepen their understanding.

Students will also be required to complete Mathematics Education and Education courses in order to facilitate a presence in the classroom early in their undergraduate career. This program incorporates advanced mathematics with the basic Education requirements for students entering a credential program. Students who wish to be considered for a teaching internship and/or the M.Ed. General Education Teaching Emphasis at UCR GSOE should complete the recommended courses as part of their undergraduate program.

Approved by Department Faculty on 11/14/07.
Approved by CNAS Executive Committee on 1/29/08
Approved by the Committee on Educational Policy on 4/7/08
Dear Professor Keller,

Here is our response to the concerns expressed about resource issues for our proposed Bachelor of Science degree in Mathematics for Secondary School Teachers. It is not a fill-in-the-box, just-give-me-the-facts kind of thing but I think that it might answer some of you concerns. If there are any remaining concerns, then I will do what I can to address them with a probably even more prolix response.

Al

Our Subject Matter Preparation Program [SMPP], or waiver program, is expiring. It is only available to students who are near the end of their undergraduate studies. For a long time now we have been, and for a long time we will be, in the process of preparing a proposal for a new one. Stated simply, dealing with the California Commission on Teacher Credentialing is notably painful, and possibly fruitless. That being said the principles expressed in the CCTC call for waiver proposals are sound. In particular we agree that in their courses prospective teachers should study the topics covered in high school mathematics from an advanced [and even more advanced] perspective, that they should have early experience in school classrooms and that they should learn as much as they can about the population they will work with. The proposed Bachelor of Science Degree in Mathematics for Secondary School Teachers is very similar to the expiring SMPP; it will include all the course work that we are planning to include in this proposal and it is the course work that we advise all prospective teachers in our program to take. In a sense we are giving a name to something that we are already doing.

The proposed program is flexible enough to facilitate student preparation for graduate school in mathematics. A student need only choose, and do very well in, Math 171 and Math 151 in the additional courses category to be ready for graduate school. Surely, the Education courses should be useful for any prospective teaching assistant.

What new resources will be required for the proposed program and what impact would the proposed program have on existing programs?

The proposed Bachelor of Science Degree in Mathematics for Secondary School Teachers will require no new courses to begin operation. It could be operational as soon as it is approved.

The program requirements for the Natural Sciences and the Social Sciences differs slightly for the CNAS requirements for Bachelor of Science degrees and those differences have only to do with freshman level courses typically used to meet breadth requirements.
The collection of courses in the program is very similar to those in the expiring SMPP, it includes all the course work that we are planning to include in the new SMPP proposal and it is the collection of courses that we advise all prospective teachers in our program to take. The new program will not have a noticeable effect upon the courses offered by the Mathematics Department.

We have written to the Graduate School of Education to inquire what impact our requiring a collection of their courses will have upon their program.

How many students would be expected to enroll in the program?

As you may know, advising is being centralized, programs are being created to encourage students to consider teaching and then, of course, teaching credentialing is a graduate matter. So, information about the prospective teacher cadres is somewhat dispersed.

It is expected that some students will be attracted to the proposed program but we believe that most of the students entering the program would be students who would have entered one of our current programs. We encourage our students to explore the many pathways and options that our Department offers in order to find the course of study that is best for them. Many of our majors have an interest in teaching in the secondary schools but then, many of our majors change their minds a time or two.

Since we do not have a major specifically for prospective teachers, they are to be found in our BA program and in many of the options of the BS degree. Consequently, it is somewhat difficult to give an accurate count of prospective teachers.

One measure comes from our advising groups. Rena Roberts, [the Coordinator for the Mathematics, Statistics & Physical Sciences Unit, CNAS Undergraduate Academic Advising Center] and I advise all freshman and sophomores students and all students at the junior and senior level who wish to be advised as prospective teachers. The later cadre is broken up into two groups: Pre-teaching group #1 is comprised of those students who will graduate in the coming spring or summer, Pre-teaching group #2 consists of the remaining students. As of March 2008, there are 12 students in the Pre-Teaching group #1 and 44 students in the Pre-Teaching group #2. Last year at this time there were 14 students in the Pre-Teaching group #1 and 33 students in the Pre-Teaching group #2. We are certain that the students in Pre-Teaching group #1 will enter a teaching credential program. We are also certain that other mathematics majors will also enter a credential program.

Another measure of prospective teachers come from Leslie Bushong of SMI: According to the SMI database, a total of 85 STEM majors have expressed interest in teaching mathematics 82 of these students are mathematics majors. A further breakdown would be: FR: 12, SO: 21, JR: 17, SR: 32.

As for the number of UCR math majors who have completed the UCR GSOE credential program in recent years, Paula Sutton, Assistant Director of the UCR GSOE Teacher Education Services writes: We have the following UCR math majors who have completed the GSOE credential program:

2006: 12 completed
2007: 19 completed
2008: 4 expected to complete

176
The admission process for 2008-09 is still in progress and breaks down as follows:

Spring '08: 12

Fall '08: 2

* *

We expect that most of the prospective secondary school teachers will enroll in the proposed program. As was noted above, the prospective teachers will take most of the same Mathematics courses that are currently being taken and that the new program would lead to a re-arrangement of students among the options within the Department. There will not be a significant change in the population of our courses.

What about advising?

The SMPP that we are working on will be somewhat less, but not very much, extensive than our proposed program. The program will serve as a model of what preparation prospective teachers should have. Students in the program will be advised as they would currently be advised. SMI provides programs and information beginning in the freshman year. When students are far enough along they are advised to consult with the UCR GSOE about their programs and requirements. Working together with SMI and the GSOE we are able to help students make good decisions about how to proceed with their teaching career.

If nothing much is going to be changed, then why do we want the program?

As can be gathered from above a large number of mathematics majors have an interest in teaching secondary school mathematics. It would be good to have a degree program which covers all those topics taught in high schools from an advanced and an even more advanced perspective.
Dear Dr. Keller,

The GSOE fully supports the Proposal for a Bachelor of Science degree in Mathematics for Secondary School Teachers submitted by Dr. Stralka et al. We will make our courses available to the students in this program as a priority. A formal letter to this effect will be sent to you next week on behalf of Dean Bossert and myself.

Sincerely,

Anne

Dr. Anne Jones  
Director of Teacher Education  
Graduate School of Education  
University of California, Riverside  
951-827-5225  
anne.jones@ucr.edu <mailto:anne.jones@ucr.edu>
March 17, 2008

Professor Pierre Keller
Chair, Committee on Educational Policy
University of California, Riverside

Professor Vyjayanthi Chari
Department of Mathematics
University of California, Riverside

Dear Dr. Keller and Dr. Chari,

We are pleased to write this letter of support on behalf of the Graduate School of Education and the GSOE Teacher Education Program. We enthusiastically support the proposed Bachelor of Science degree in Mathematics for Secondary School Teachers.

California is facing a critical shortage of highly qualified mathematics and science teachers. This has resulted in many school districts recruiting newly graduated and pedagogically under-prepared science, engineering or math (STEM) majors as intern teachers. In order to meet our State’s educational challenges, the University of California established a California Teach-Science/Mathematics Initiative (CaTEACH-SMI) on each of its campuses.

At UCR, the GSOE Teacher Education Programs work in close collaboration with the CaTEACH-SMI program. It is priority of the GSOE to increase the recruitment of qualified STEM majors for teaching careers in science or mathematics. We believe that the current proposal by the Department of Mathematics aligns well with our established partnership with CaTEACH-SMI and our need to increase recruitment levels for math majors.

In review of the requirements for the B.S. in Mathematics for Secondary School Teachers, UCR Teacher Education recommends that students be allowed to choose between EDUC109 and EDUC174 from the required course list. We feel that EDUC109 is an excellent option for undergraduates who do not intend to complete preservice admission requirements for a University Intern Credential Program. In contrast, EDUC174 is a reading methods course that is commonly accepted by other Teacher Preparation Programs. This course benefits students who intend to complete preservice admission requirements for a University Intern Credential Program. The GSOE will work collaboratively to provide access to the required courses for candidates in the new major.
The UCR GSOE Teacher Education Program is committed to serving the needs of our community; most of our newly credentialed teachers secure employment locally and thus improve the educational experiences for our community and constituencies. Thus, there is a range of short and long-term benefits for the proposed Bachelor of Science degree in Mathematics for Secondary School Teachers. We wholeheartedly support the proposal and look forward to being a contributing partner.

Respectfully,

Steven T. Bossert
Dean and Professor

Dr. Anne Jones, Director
Teacher Education Services
Graduate School of Education
----Original Message----
From: Theodore Gamelin [mailto:twg@math.ucla.edu]
Sent: Wednesday, February 27, 2008 2:38 PM
To: Albert Stralka
Subject: Re: Proposal for a Bachelor of Science Degree in Mathematics for Secondary School Teachers

Hi Al,

I think you have put together a good program for preparing math teachers. I would recommend strongly to the UC Riverside CED that they approve the program. I hope that you are able to attract a number of students into the program -- there is a desperate need for highly qualified math teachers in our secondary schools. You're work in contributing to solve this problem should be commended.

Cheers -- Ted
February 28, 2008

Professor Vyjayanthi Chari, Chair
Department of Mathematics
University of California, Riverside

Re: Proposal for a Bachelor of Science Degree in Mathematics for Secondary School Teachers

Dear Professor Chari:

I write to add my strong personal support of your department’s proposal for a new Bachelor of Science Degree in Mathematics for Secondary Teachers. Professor Stralka shared the proposed curriculum with me, by email, last year and I was pleased to see a proposal that provides substantial mathematical depth and while still addressing many of the intellectually challenging dimensions of effective mathematics teaching. By tying the field experience to a deep understanding of school mathematics helps make the mathematics accessible to secondary students. As a consequence, graduates of this program will be exceptionally well prepared to begin successful careers in California schools.

Several of our sister campus have BA or BS degree programs explicitly designed for such students, for example UC Davis, UC Los Angeles, and UC San Diego, while others, such as UC Berkeley, UC Santa Cruz, and UC Irvine, offer concentrations or tracks for such students. Only UC Merced and UC Santa Barbara, at least from my search of their Mathematics Departments’ undergraduate program information, do not appear to offer a program for such students. As a consequence, UC Riverside is joining a very special group of campuses in making this high quality BS opportunity available to its students. I believe that other campuses should look to this program as a strong model for what they could make available at their institutions.

My congratulations to you and your colleagues on putting together an outstanding proposal. Wishing the best, I am pleased to take this opportunity to give its adoption my strongest and enthusiastic support.

Sincerely,

[Signature]
Professor of Mathematics
TO BE ADOPTED:

The Riverside Division of the Academic Senate approves the proposal for M.S. and Ph.D. degrees in an Interdepartmental Graduate Program in Materials Science and Engineering as described in the attached documents received in the Graduate Division in December 2007.

JUSTIFICATION (adapted from program proposal)

The interdepartmental graduate program in Materials Science and Engineering will be administered by faculty from the departments of Chemical and Environmental Engineering, Bioengineering, Chemistry, Computer Science & Engineering, Electrical Engineering, Mechanical Engineering, and Physics & Astronomy.

The program will provide coordinated and coherent training that will allow students from various undergraduate disciplines to obtain a core background in the fundamental materials subjects with the flexibility to pursue many areas of specialization. The program aims to provide fundamental knowledge for understanding of materials with the objective of predicting, modifying, and tailoring their properties to achieve enhanced performance of the devices based on these materials. The foundations of materials science and engineering are the basic sciences of physics, chemistry, and mathematics. An engineer working with the great variety of materials responses at the electrical, optical, magnetic, mechanical, and chemical levels must have a solid scientific foundation and breadth of basic knowledge from the physical sciences and engineering. The interdisciplinary and interdepartmental nature of the proposed program at UCR is ideally suited to address these requirements. The proposed UCR-wide MSE Graduate Program is truly interdisciplinary, cutting across departmental and collegiate lines. Founding faculty from seven departments and with different backgrounds will participate in the program. The number of participating departments will increase as the program develops. The Bourns College of Engineering (BCOE) and College of Natural and Agricultural Sciences (CNAS) already have a substantial number of faculty members who carry out experimental, theoretical and computational research in materials science and engineering. The proposed MSE Graduate Program will be complementary to the existing programs and will add to the strengths of the UCR campus. The creation of the MSE Graduate Program is energetic with the campus, nanotechnology and renewable energy investments. It will also benefit the campus' major efforts in establishing a Medical School.
The unique feature of the proposed UCR program will be its focus on nanotechnology, energy generation and its conversion and sustainability. The nanotechnology innovations will be applied to energy generation, conversion and storage; renewable energy (photovoltaic solar cells, thermoelectric, etc.); environmentally friendly technology; materials for low-power devices; materials for sustainable economy; and other “nano/energy” areas.

The proposed program will also use the advantage of its close association with the highly successful College of Engineering-Center for Environmental Research and Technology (CE-CERT), which conducts research related to new materials and energy. The center is active in sustainable energy systems; emissions and fuels; transportation systems; and other major research thrusts. The letter of support from the Director of CE-CERT is attached. The UCR MSSE Graduate Program will attain some unique features through its cooperation with the UCR Center for Nanoscale Science and Engineering (CNSE), which focuses on applications of advanced carbon materials: 3D magnetic memory devices; spintronics; and other cutting-edge research directions in nanotechnology.

The proposal has been examined and approved by the following committees of the Academic Senate: Graduate Council, Planning and Budget, Educational Policy, and Library. The proposal has the approval of the Executive Committee and the Dean of the Bourns College of Engineering.

Ilya Dumer, Chair
Graduate Council

Enclosures: Program Proposal (including memos of support)
A Proposal for an Interdepartmental Graduate Program Leading to

M.S. and Ph.D. Degrees

in

Materials Science and Engineering

Marlan and Rosemary Bourns College of Engineering
University of California – Riverside
Riverside, CA 92521

December 25, 2007

Submitted by
Alexander A. Balandin
Chair, Materials Science and Engineering Program
Professor, Department of Electrical Engineering
The Proposal Prepared by the BCOE MSE Committee:

Alexander A. Balandin, MSE Chair
Sakhrat Khizroev, Department of Electrical Engineering
Mart Molle, Department of Computer Science and Engineering
Nosang Myung, Department of Chemical and Environmental Engineering
Cengiz Ozkan, Department of Mechanical Engineering
Valentine Vullev, Department of Bioengineering

The MSE Proposal Approvals:

<table>
<thead>
<tr>
<th>Approvals</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved by MSE Committee on</td>
<td>December 20, 2007</td>
</tr>
<tr>
<td>Approved by BCOE Executive Committee on</td>
<td>January 9, 2008</td>
</tr>
<tr>
<td>Approved by BCOE Faculty on</td>
<td>January 16, 2008</td>
</tr>
<tr>
<td>Approved by UCR Committee on Education Policy</td>
<td></td>
</tr>
</tbody>
</table>
Contact Information

Professor Alexander A. Balandin
Department of Electrical Engineering
Room 435 Engineering Building Unit II
Bourns College of Engineering
University of California
Riverside, CA 92521 USA

Phone: 951-827-2351
FAX: 951-827-2425
Email: balandin@ee.ucr.edu
# TABLE OF CONTENTS

SECTION I: INTRODUCTION........................................................................................................ 1

1. Introduction to Materials Science and Engineering .......................................................... 1
2. Definitions and Program Objectives .................................................................................. 2
3. Existing Facilities and Resources ..................................................................................... 4
4. Equipment for MSE Graduate Training and Research ...................................................... 7
5. Justification for MSE Graduate Program .......................................................................... 7
6. Enrollment Projections for MSE Graduate Students ......................................................... 9
7. Administration of the MSE Graduate Program .................................................................. 10
8. MSE Graduate Advisor and Graduate Program Assistant ................................................ 12
10. Relationship to Other Programs within the UC System .................................................. 12

SECTION II: PROGRAM ............................................................................................................. 15

1. MSE Program Description and Admission Requirements .................................................. 15
2. Sample Program for Ph.D. Student ................................................................................... 17
3. Written Qualifying and Comprehensive Examination ....................................................... 18
4. Dissertation Proposal and Oral Qualifying Examination .................................................. 18
5. Dissertation Examination and Defense .......................................................................... 19
6. Relationship of M.S and Ph.D. Programs ........................................................................ 19
7. Normative Time from Matriculation to Degree ................................................................... 19
8. Special Requirements above Graduate Division Minimum Requirements ...................... 20
9. Field Examinations ........................................................................................................ 20
10. Special Preparations for Careers in Teaching ............................................................... 20
11. MSE Faculty and MSE Participating Faculty .................................................................. 20

SECTION III: PROJECTED NEED .............................................................................................. 21

1. Student Demand for the Program ...................................................................................... 21
2. Opportunities for Placement of Graduates ....................................................................... 21
3. Ways in which the Program will meet the Needs of Society ............................................ 22
4. Relationship of the Program to Research and Professional Interests of Faculty .............. 22

SECTION IV: FACULTY AND STAFF ......................................................................................... 23

SECTION V: COURSES ................................................................................................................ 30

SECTION VI: RESOURCE REQUIREMENTS .................................................................................. 37

1. FTE Faculty .................................................................................................................... 37
2. Library Acquisition ........................................................................................................ 37
3. Computing Facilities ...................................................................................................... 39
4. Physical Facilities and Equipment .................................................................................. 41
5. Space and Other Capital Facilities

SECTION VII: GRADUATE STUDENT SUPPORT

SECTION VIII: GOVERNANCE

Appendices

A. Program for B.S. in Materials Science and Engineering at UC Riverside
B. Advertisement for the B.S. in Materials Science and Engineering
C. Letters of Support
D. Founding Faculty Bio-Sketches
E. UCR Guidelines for Interdepartmental Grad Program By-Laws
F. Advertisement for Multiple Positions in Materials Science and Engineering
G. Sample Listing of Companies Interested in MSE Graduates
H. Appendix H: Projections for Enrollment and TA Resources
SECTION I: INTRODUCTION

1. Introduction to Materials Science and Engineering

This section describes in detail the aim and objectives of the program, timetable for the program development, relation of the proposed graduate program with other University of California institutions, administration of the program and the plan for its evaluation. The motivations for the program, definition of the field and existing facilities and resources are also provided.

The proposed Graduate Program will lead to MS and PhD degrees in Materials Science and Engineering (MSE). It aims to provide coordinated and coherent training that will allow students from various undergraduate disciplines to obtain a core background in the fundamental materials subjects with the flexibility to pursue many areas of specialization. A wide scope of the specialization areas will be achieved through participation of all departments of the Bourns College of Engineering (BCOE) and many other academic units of the University of California – Riverside (UCR). BCOE recently established an undergraduate major in Materials Science and Engineering, and the College will be the administrative home for the graduate program as well. BCOE has a substantial number of faculty members (~30) at different departments with expertise in MSE who are active in materials research. One new faculty member was hired last year specifically for the new MSE program. This year alone, BCOE departments collectively plan to hire 5 new MSE faculty members. The MSE faculty will have their teaching load evenly split (50/50) between their home departments and the MSE Program. The office and laboratory space has also been allocated for both the newly established MSE undergraduate program and the proposed MSE graduate program. A full-time staff Administrative Assistant to the MSE Program has been hired. The ground breaking of a new 76,000 ft² MSE building, which will host some of the new materials research laboratories and graduate students, is planned for January 2008. The proposed MSE Graduate Program will benefit greatly from the new MSE building (see the attached letter from the Dean of Engineering).

The proposed MSE Graduate Program will use some of the resources of the recently established undergraduate MSE program. The undergraduate MSE program has a completely developed and formally approved curriculum (see Appendix A). The undergraduate MSE office has been established in the newly opened Engineering Unit 2 building (see Figure 1). This office space will be used to accommodate the MSE Graduate Program Assistant during the initial phase of the graduate program existence. The recruitment campaign for the MSE undergraduate program has been started with the goal to admit freshman students in the Fall quarter of 2008 (see Appendix B). The description of the undergraduate MSE program can be found at http://www.engr.ucr.edu/mse/.

We anticipate that the proposed interdepartmental MSE Graduate Program will enhance faculty and staff efforts to increase the student recruitment, research resources, and rankings. UCR already has many faculty members with active and well-funded research programs pertinent to MSE, and many departments already offer a large number of MSE-
related graduate courses. The BCOE departments with ongoing materials research programs include Bioengineering; Chemical and Environmental Engineering; Computer Science and Engineering; Electrical Engineering; and Mechanical Engineering. The College of Natural and Agricultural Sciences (CNAS) departments with ongoing materials research include Chemistry; Physics and Astronomy; Biochemistry; Biology; Cell Biology and Neuroscience; and Statistics. Materials-related research is also being carried out at the UCR Division of Biomedical Sciences (UCR/UCLA Thomas Haider Program in Biomedical Sciences). The faculty in the MSE participating departments will benefit from the creation of the MSE Graduate Program through better opportunities for recruiting highly motivated and qualified graduate students who are interested in MSE. The coherent MSE graduate curriculum will improve the quality of education. The graduate program in MSE will also help undergraduate students from various departments interested in pursuing graduate degree specializing in materials.

The proposed MSE program will not only strengthen the basic disciplines at UCR but also provide a mechanism for fostering interdisciplinary training and research. The proposed MSE Graduate Program will provide a pedagogically sound mechanism for training students by means of a core curriculum followed by a coherent and flexible choice of electives in the student’s area of specialization. Moreover, because of the participation of the faculty from many departments, the students will be aware of the range of opportunities available in the related fields. The students graduating from the MSE Graduate Program will have excellent training and should be competitive for research, teaching and other careers in materials science and engineering.

2. Definitions and Program Objectives

Materials Science and Engineering (MSE) is concerned with the study of the structure, properties, processing and applications of materials. The research in the MSE field aims to explain and control one or more of four basic elements:

- The properties or phenomena of a material that make it interesting or useful;
- The performance of a material, that is, the measurement of its usefulness in actual conditions or application;
- The structure and composition of a material,
including the type of atoms that determine its properties, performance, and their arrangement; and the synthesis and processing by which the particular arrangements of atoms are achieved (NRC, 1989).

At the core of materials science is an understanding of the microstructure of materials. The term microstructure is used broadly in reference to solids viewed at the subatomic and atomic levels, and the nature of the defects at these levels. The microstructures of solids and defects profoundly influence the mechanical, electronic, optical, chemical, and biological properties of material. The phenomenological and mechanistic relationships between the microstructure and the macroscopic properties of solids constitute, in essence, the materials science. Materials engineering, on the other hand, is concerned with the design, fabrication, processing and testing of engineering materials. Such materials must fulfill simultaneously the dimensional properties, quality control, and economic requirements.

MSE is an interdisciplinary field. Nearly all science and engineering disciplines are involved in some way with material properties. Engineers and scientists in many disciplines – including electronics, solid-state physics, chemistry, biology and mechanics – provide many of the ideas and motivations for the materials science and engineering research. Nearly all modern industries benefit from developments in materials research. Because there is considerable overlap in the study of materials problems among different industries, the solutions have enormous economic leverage. For example, semiconductors are at the foundation of the electronic industry. At the same time, the development of the new semiconductor materials for the electronics industry has a large economic multiplying effect since it also advances fields like photovoltaic and thermoelectric energy conversion and creates demand for new processing equipment and manufacturing tools. The research and development of the advanced materials and education of the next generation of MSE experts have a clear strategic importance for our nation.

The proposed MSE Graduate Program at UCR aims to provide fundamental knowledge for understanding of materials with the objective of predicting, modifying, and tailoring their properties to achieve enhanced performance of the devices based on these materials. The foundations of materials science and engineering are the basic sciences of physics, chemistry, and mathematics. An engineer working with the great variety of materials responses at the electrical, optical, magnetic, mechanical, and chemical levels must have a solid scientific foundation and breadth of basic knowledge from the physical sciences and engineering. The interdisciplinary and interdepartmental nature of the proposed program at UCR is ideally suited to address these requirements. The proposed UCR-wide MSE Graduate Program is truly interdisciplinary, cutting across departmental and collegiate lines. Founding faculty from seven departments and with different backgrounds will participate in the program (see Section II). The number of participating departments will increase as the program develops. BCOE and CNAS already have a substantial number of faculty members who carry out experimental, theoretical and computational research in materials science and engineering (see Appendix D). The proposed MSE Graduate Program will be complementary to the existing programs and will add to the strengths of the UCR campus. The creation of the MSE Graduate Program is synergetic with the
campus nanotechnology and renewable energy investments. It will also benefit the campus’ major efforts in establishing a Medical School.

The estimated number of MSE graduate students over the first five years is around 40-50. The detailed analysis of the projected enrollment and trends is given at the end of this Section. During the first year we expect that some currently admitted students will transfer to the program. The MSE BCOE office has already received and documented a number of inquiries from the prospective graduate applicants who requested information about the possibility of MSE graduate training at UCR after visiting MSE web site at http://www.engr.ucr.edu/mse/. The introduction of the MSE Ph.D. and M.S. degrees is expected to help with the retention at the campus levels. During the second year of the program we plan to have around 10-20 graduate students directly entering the MSE program. The estimates for the number of MSE majors are based on the enrollment data for other majors.

3. Existing Facilities and Resources

The students in the MSE Graduate Program will benefit from the unique research facilities existing and currently under development at UCR. These include the materials synthesis and characterization resources available in the Department of Bioengineering, Department of Chemical and Environmental Engineering, Department of Electrical Engineering, Department of Mechanical Engineering, Department of Physics and Astronomy, Department of Chemistry, and other departments. The existing Center for Nanoscale Science and Engineering (CNSE) and Central Facility for Advanced Microscopy and Microanalysis (CFAMM) are additional positive factors for the MSE Graduate Program development (letters from the CNSE and CFAMM Directors are attached). The proposed MSE Graduate Program will have an additional support from the well-funded and successful College of Engineering-Center for Environmental Research and Technology (CE-CERT), which conducts research in a number of areas overlapping with the scope of the MSE program (a letter of support from the CE-CERT Director is attached). The examples of the areas of cooperation between MSE program and CE-CERT in graduate training and research include (i) sustainable energy systems; (ii) emissions and fuels; (iii) atmospheric processes; and (iv) transportation systems.

Modern materials science and engineering involves a substantial computational component, i.e., computational materials science. The MSE graduate students will benefit from the computational resources available in the Department of Computer Science and Engineering, Department of Electrical Engineering, Department of Physics, Department of Statistics and the campus-wide computational facilities. A more detailed description of the computational facilities available at the Department of Computer Science and Engineering, and the Department of Electrical Engineering is given below. Participation of researchers from the Center for Research in Intelligent Systems (CRIS) will also enhance the computational expertise available for graduate student training.
The availability of a clean room and nanofabrication facilities are essential for any modern successful MSE Graduate Program, particularly for one with an emphasis on nanotechnology and energy conversion. The UCR CNSE Nanofabrication Facility (CNSE-NF) directed by Distinguished Professor R. Haddon has been designed to enhance the research capabilities of a diverse set of researchers engaged in the multidisciplinary nanotechnology research. The newly opened clean room facility occupies about 2,000 ft$^2$ of class 100/1000 clean space and is located on the first floor of Bourns Hall (see Figure 2). The room contains state-of-the-art fabrication and characterization tools. The facility is made user friendly and provides training for new graduate students. The new users attend the mandatory orientation session before entering the clean room or using equipment. The majority of the current research within the CNSE-NF involves fabrication of silicon-based complementary metal-oxide-semiconductor (CMOS) devices, memory devices, field-effect transistors (FET) and MEMS devices or variants of these devices with the novel materials and process sequences. The facility also includes electron beam (EB) lithography and focused ion beam (FIB) instruments that provide state-of-the-art nanofabrication capabilities. The FIB system is located outside the clean room envelope to facilitate access by a variety of researchers and graduate students. A new MSE building (ground breaking is planned for January 2008) will feature a much larger clean room (~10,000 ft$^2$), which will accommodate the needs of the proposed MSE Graduate Program.

Other fabrication equipment and capabilities available at UCR CNSE-NF include the standard capabilities available in industrial semiconductor clean room operations: surface preparation, thermal gate oxidation, low-pressure and plasma enhanced chemical vapor deposition (PECVD), photolithography and associated wet chemical processing, electron-beam pattern generation, reactive ion etching (RIE), plasma etching, thermal and electron-beam evaporation of various metals and materials, metal sputtering and rapid thermal annealing. More information about experimental facilities and resources available the UCR CNSE-NF can be found at http://www.cnse.ucr.edu/capabilities/index.shtml.

![Figure 2: Fully equipped clean room housed in the Bourns College of Engineering (BCOE). The clean room facilities will be used for MSE graduate student training and research.](image-url)
(SEM); Philips TECNAI 12 transmission electron microscope (TEM); vacuum evaporator; sputter coater; Fullam carbon coater; critical-point-dryer Balzers CPD0202; cryofixation system Reichert-Jung KF80; ion thinner; lapping and polishing machines; and other ancillary equipment. The metrology equipment available at CNSE includes oxide metrology for oxide/nitride measurements; thin-film profiling for photoresist and metal layer thickness; C/V stress measurements; I/V probe for the electrical parametric control and standard optical microscopes for surface inspection.

The students of the proposed MSE Graduate Program will benefit from the presence on campus of the DARPA – DMEA funded Center for Nanoscale Innovation for Defense (CNID). CNID is a collaborative partnership between UCSB, UCLA and UCR that builds on existing interactions and will focus our cooperative research in new directions. The three University of California campuses serve as the hub of a national center, facilitating the exchange of new ideas, scientific discoveries, and demonstration technologies with industrial partners that play important roles in national defense. A substantial number of MSE founding faculty (A.A. Balandin, R. Lake, J.L. Liu, C. Ozkan and M. Ozkan) are members of the DARPA – SRC funded FCRP Center on Functional Engineered Nano Architectonics (FENA). The FENA research center, led by Prof. K.L. Wang (UCLA), aims at finding alternatives for Si beyond the Si CMOS roadmap projections. The long-term research activities at UCR in the framework of FENA projects are focused on finding new materials for nanometer scale electronic circuits (see description of FENA new materials related projects at http://www.fena.org/). The graduate students of the new MSE program will be involved in the FENA center activities. The latter provides great opportunities for graduate student training and research focused on the practical engineering problems.

As MSE graduate and undergraduate programs grow and develop, more facilities and laboratory space will be needed. These demands will be met via the opening of the new Materials Science and Engineering (MSE) building (see Figure 3). The MSE building will have approximately 77,000 assignable square feet to accommodate the interdisciplinary instructional and research needs of BCOE and CNAS joint programs in nanotechnology, materials science, energy and bioengineering. In addition, the MSE building will provide approximately 18,000 ft² of general assignment classrooms for the campus.

![Figure 3: Schematic of a new Materials Science and Engineering (MSE) building. Ground breaking ceremony is scheduled for January 2008.](image)

The primary goal of the MSE building is to foster interdisciplinary research among faculty from BCOE and CNAS. The building represents a new model of scientific exploration at UCR that crosses traditional college boundaries. This model is synergetic with the proposed MSE Graduate Program. The new building will be used for laboratory training of
MSE majors. The proposed MSE Graduate Program places significant emphases on the laboratory instruction and training. The capability to have the students connect theories learned in the classroom with hands-on experience in the laboratory is considered pivotal in the engineering learning process. The new MSE building is expected to facilitate such laboratory-oriented training.

4. Equipment for MSE Graduate Training and Research

The laboratory-intensive student training in MSE field requires well-equipped laboratories in addition to the centralized user facilities and resources. The MSE Participating faculty members have active research groups conducting extramurally funded projects. Many PIs developed unique experimental capabilities, which will be made available for MSE graduate student training. The highlights of the equipment already available for MSE training and research in the laboratories of the faculty members are given in Section V. These highlights are by no means comprehensive and only illustrate the breadth and scope of the materials research capabilities already present on campus.

5. Justification for MSE Graduate Program

Many applications today require broad-based materials knowledge. A materials engineer may specialize in a specific class of materials (magnetic materials, nanostructured materials, polymers, biological materials, etc.) or a specific area of materials science (electrical properties, mechanical properties, materials processing, materials testing, etc.), but should possess a broad background in materials science and engineering. Increased emphasis on cost, weight, and size reduction, while still improving product performance, creates challenges for monolithic materials, and opportunities for composites, nanostructures and other new materials. Miniaturization of components is frequently limited by the interactions of dissimilar materials at a microscopic and nanometer scale. A materials engineer must be able to optimize the overall performance of complex systems involving several materials.

One of the best examples of the increased role of the materials science and engineering and the fact that many innovations in today’s world are happening at the materials level is a recent announcement (January 2007) by Intel, the world’s largest chip maker, that it overhauled the basic building block of the information age, paving the way for a new generation of faster and more energy-efficient processors. According to the company researchers the advance represented the most significant change in the materials used to manufacture silicon chips since Intel pioneered the modern integrated-circuit transistor more than four decades ago (see, for example, PhysOrg.com feature at http://www.physorg.com/news89109741.html). The drastic increase in the chip speed and energy efficiency was made possible due to the introduction of the new materials (“high-K” dielectric and metal gate) into the chip design and technological process.
In many industries, several materials may be competing for the same market (e.g., polymer composites versus metal in aircraft structures, ceramic versus metal in engine components). In these applications, a materials engineer must be able to make a decision in selecting the best materials or combination of materials. The latter requires a fundamental understanding of the properties and performance of each of the competing materials.

The increasing global competition for raw materials and energy resources make the MSE major particularly relevant and timely. According to the National Science Board (NSB) Science and Engineering Indicators 2006 statistics, the US high-technology trade balance is negative. US trade in goods with high-technology content, which includes advanced materials and products based on advanced materials, is also negative. Substantial efforts in educating a workforce with interdisciplinary expertise in MSE are required to correct this situation. The important resource needed for work and research in materials science and engineering is trained scientific and engineering manpower.

Education and research in materials science and engineering differ from those in other fields because they span the full spectrum from basic sciences to practical applications. Thus, it is highly desirable to have a dedicated MSE program in this field. The introduction of the interdepartmental MSE program is expected to help in promotion of innovation and creating a culture that produces new ideas and allows one to capitalize on these new ideas. A materials engineer who has taken time to learn about a spectrum of subjects offered by different departments should be well positioned to succeed after completing his or her degree.

There is strong industrial commitment to materials research, especially applied research. Materials characterization is an area with many job opportunities in California and nationwide. The US government increasingly supports research and education in materials science and technology. For example, some recent National Science Foundation (NSF) initiatives include the International Materials Institutes (IMI), Materials Processing and Manufacturing (MPM), Instrumentation for Materials Research (IMR), Materials Research Science and Engineering Centers (MRSEC), and many others. The goal of IMI program is to advance fundamental materials research by coordinating international research and education projects involving condensed matter and materials physics; solid state and materials chemistry; and the design, synthesis, characterization, and processing of materials to meet global and regional needs. The MPM Program advances the fundamental knowledge base that is needed for the realization of desired product attributes through the application of the systematic integration of processing-material-performance relationships. MPM also supports research activities that incorporate connectivity of this materials processing knowledge to sensing systems for process control. MRSEC program supports interdisciplinary materials research and education while addressing fundamental problems in science and engineering. These centers foster active collaboration between universities and other sectors, including industry, and they constitute a national network of university-based centers in materials research. Other government agencies have their own program in support of materials science and engineering.
The broad technical base of the MSE degree prepares graduates for employment in a wide range of industries, including electronics, data-storage, automotive, medical products and aerospace, as well as for government research laboratories and academia. Graduates of this program will be particularly well suited to work for smaller, entrepreneurial companies that need materials engineers with a broad background, rather than people specialized in particular fields. Many companies involved in manufacturing require engineers with this broad materials background who can specify materials selection, oversee production, or maintain quality control. In addition, independent testing and consulting companies may be strongly interested in MSE program graduates. Engineering managers must be able to direct engineers and scientists with varied backgrounds. The described career options require the ability to communicate with different materials disciplines and to make sound engineering decisions based on knowledge from the different disciplines. The companies that are looking for materials experts are numerous. The placement of MSE graduates (all degrees) is discussed in more details in Section III.

6. Enrollment Projections for MSE Graduate Students

The estimated number of MSE graduate students over the first five years is around 40-50. During the first year we expect that some currently admitted students will transfer to the program. During the second year of the program we plan to have around 10-20 graduate students directly entering MSE program. A rather optimistic projection for the estimated number of MSE majors are based on the recent graduate applications enrollment data for the engineering and science majors (see Table I).

Table I: Graduate Applications and Accepted Offers for CNAS and BCOE for Fall 06/07

<table>
<thead>
<tr>
<th>Program</th>
<th>Fall 2006</th>
<th>Fall 2007</th>
<th>% Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Statistics</td>
<td>16</td>
<td>17</td>
<td>6%</td>
</tr>
<tr>
<td>Biochemistry &amp; Molec Biol</td>
<td>19</td>
<td>17</td>
<td>-11%</td>
</tr>
<tr>
<td>Cell, Molec &amp; Dev Biology</td>
<td>8</td>
<td>7</td>
<td>-13%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>24</td>
<td>25</td>
<td>4%</td>
</tr>
<tr>
<td>Entomology</td>
<td>7</td>
<td>6</td>
<td>-14%</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>2</td>
<td>3</td>
<td>50%</td>
</tr>
<tr>
<td>Environmental Tox</td>
<td>4</td>
<td>4</td>
<td>0%</td>
</tr>
<tr>
<td>Evolution, Ecology &amp; Org Biology</td>
<td>28</td>
<td>40</td>
<td>43%</td>
</tr>
<tr>
<td>Genetics, Genomics &amp; Biology</td>
<td>62</td>
<td>79</td>
<td>27%</td>
</tr>
<tr>
<td>Geological Sciences</td>
<td>24</td>
<td>33</td>
<td>38%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>90</td>
<td>73</td>
<td>-19%</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>46</td>
<td>45</td>
<td>2%</td>
</tr>
<tr>
<td>Physics</td>
<td>108</td>
<td>255</td>
<td>192%</td>
</tr>
<tr>
<td>Plant Biology</td>
<td>70</td>
<td>93</td>
<td>33%</td>
</tr>
<tr>
<td>Plant Pathology</td>
<td>12</td>
<td>17</td>
<td>42%</td>
</tr>
<tr>
<td>Soil &amp; Water Science</td>
<td>10</td>
<td>11</td>
<td>10%</td>
</tr>
<tr>
<td>Statistics</td>
<td>21</td>
<td>38</td>
<td>81%</td>
</tr>
<tr>
<td><strong>CNAS Total</strong></td>
<td>1161</td>
<td>1412</td>
<td>22%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
<th>Fall 2006</th>
<th>Fall 2007</th>
<th>% Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Statistics</td>
<td>16</td>
<td>17</td>
<td>6%</td>
</tr>
<tr>
<td>Biochemistry &amp; Molec Biol</td>
<td>19</td>
<td>17</td>
<td>-11%</td>
</tr>
<tr>
<td>Cell, Molec &amp; Dev Biology</td>
<td>8</td>
<td>7</td>
<td>-13%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>24</td>
<td>25</td>
<td>4%</td>
</tr>
<tr>
<td>Entomology</td>
<td>7</td>
<td>6</td>
<td>-14%</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>2</td>
<td>3</td>
<td>50%</td>
</tr>
<tr>
<td>Environmental Tox</td>
<td>4</td>
<td>4</td>
<td>0%</td>
</tr>
<tr>
<td>Evolution, Ecology &amp; Org Biology</td>
<td>28</td>
<td>40</td>
<td>43%</td>
</tr>
<tr>
<td>Genetics, Genomics &amp; Biology</td>
<td>62</td>
<td>79</td>
<td>27%</td>
</tr>
<tr>
<td>Geological Sciences</td>
<td>24</td>
<td>33</td>
<td>38%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>90</td>
<td>73</td>
<td>-19%</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>46</td>
<td>45</td>
<td>2%</td>
</tr>
<tr>
<td>Physics</td>
<td>108</td>
<td>255</td>
<td>192%</td>
</tr>
<tr>
<td>Plant Biology</td>
<td>70</td>
<td>93</td>
<td>33%</td>
</tr>
<tr>
<td>Plant Pathology</td>
<td>12</td>
<td>17</td>
<td>42%</td>
</tr>
<tr>
<td>Soil &amp; Water Science</td>
<td>10</td>
<td>11</td>
<td>10%</td>
</tr>
<tr>
<td>Statistics</td>
<td>21</td>
<td>38</td>
<td>81%</td>
</tr>
<tr>
<td><strong>CNAS Total</strong></td>
<td>1161</td>
<td>1412</td>
<td>22%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
<th>Fall 2006</th>
<th>Fall 2007</th>
<th>% Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioengineering</td>
<td>0</td>
<td>8</td>
<td>n/a</td>
</tr>
<tr>
<td>Chemical &amp; Environ Eng</td>
<td>79</td>
<td>113</td>
<td>43%</td>
</tr>
<tr>
<td>Computer Science</td>
<td>260</td>
<td>335</td>
<td>31%</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>230</td>
<td>315</td>
<td>37%</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>76</td>
<td>98</td>
<td>29%</td>
</tr>
<tr>
<td><strong>COE Total</strong></td>
<td>645</td>
<td>900</td>
<td>40%</td>
</tr>
</tbody>
</table>
The left panel of Table I shows the graduate applications for different departments of CNAS and BCOE for Fall 2006 and Fall 2007 (data provided by the UCR Graduate Division). The right panel of Table I shows the number of accepted offers (i.e., “Statement of Intent to Register” received) for both colleges. One can see from this table that the number of applications in the departments with MSE-relevant curriculum has increased strongly over just one year. The BCOE departments experienced a surge in the number of graduate applications, admitted and enrolled graduate students. For example, the Department of Mechanical Engineering increased the number of enrolled students by 209% over one year to 31 graduate students while the Department of Electrical Engineering increased the number of enrolled students by 29% with 44 new graduate students in a single year. The detailed analysis of the new student cohort at the Department of Electrical Engineering shows that the largest increase in the graduate applications and admissions happened in the Nano Materials, Devices and Circuits (NMDC) area, which is closely related to the proposed MSE program. A similar situation is observed in the Department of Mechanical Engineering as well as some other departments. These statistics suggest that there will be a very large pool of applicants to the proposed MSE Graduate Program. The MSE Graduate Program may also improve the campus graduate student retention and prevent some of the graduate students from changing their degree objectives from Ph.D. to M.S. by offering a new interdisciplinary degree option.

7. Administration of the MSE Graduate Program

This program will offer a Master’s Degree (Plan I and Plan II) and a Ph.D. Degree. The Graduate Program will be administered by the Chair (Director) of the Materials Science and Engineering Program with the help of a Graduate Advisor and supporting committees that will advise and make decisions regarding the graduate admissions, curricula and student academic progress (see Figure 4).

![Figure 4: Illustration of the MSE Program structure.](image-url)
The founding faculty members (MSE participating faculty) are listed at the end of this Section. The MSE faculty meetings will be called regularly by the Chair (Director) of the Materials Science and Engineering Program. Within a year of the MSE Graduate Program approval, a set of bylaws will be formulated and approved by the founding faculty. The UCR guidelines for the program by-laws are summarized in Appendix E. The applications by other faculty will be entertained according to the bylaws when established. After the program approval, an Executive Committee will be formed from the members of the MSE Graduate Committee and the Program Chair. An additional Membership Committee will be formed from several members of the Founding Faculty. The organizational structure of the committees and their tasks will be determined by the by-laws.

The members of the MSE Graduate Program Committee will be selected by the Chair (Director) of the Materials Science and Engineering Program. BCOE hosts the MSE Program at UCR. The Chair (Director) of MSE Program is appointed by the Dean of Engineering in consultations with the Graduate Dean. The Graduate Program Committee will be composed of one faculty member from each participating department and the Graduate Advisor, who serves as a Chair of the Graduate Program Committee. The Graduate Program Committee will be responsible for overseeing courses, curricula, admission, degree requirements, administration of the student assistantship awards and other policy matters. The role and place of the Graduate Program Committee within the MSE Program is illustrated in Figure 4.

The specific responsibilities of the Graduate Program Committee will include (i) the review and recommendation of the actions on the proposed new graduate courses and changes in the existing graduate courses; (ii) recommendation of any changes in M.S. and Ph.D. degree requirements; (iii) review of the applications for admissions and providing the admission recommendations to the UCR Graduate Division; (iv) review and approval of the petitions for the advancement to candidacy for the Ph.D. degree; (v) approval of the recommended appointments for the Graduate Examination Committees, M.S. Thesis Committees, Ph.D. Dissertation Committees and submission of these recommendations to the Dean of the Graduate Division; (vi) recommendation of candidates for the graduate fellowships; and (vii) review of the teaching assistants (TA) evaluation reports from the students and faculty.

A graduate student representative will be selected by the students to provide input on matters pertaining to the graduate course work, degree requirements and other student matters. The student representative’s role is to serve as a liaison between the faculty and students. The student will not be a member of the committee and will not have voting privileges. At the same time, he/she will be invited to all MSE Graduate Program Committee meetings, except during the discussions pertinent to specific student records and funding decisions.
8. MSE Graduate Advisor and Graduate Program Assistant

The Graduate Advisor will be nominated by the MSE Participating Faculty through the election called by the Chair (Director) of MSE Program every three years. The nominated Graduate Advisor will be approved by the Dean of Engineering and appointed by the Dean of the Graduate Division. The Chair of the Materials Science and Engineering Program and the Graduate Advisor will be assisted by the Graduate Program Assistant. At the early stages of the Graduate Program, the MSE Program Assistant, who has been recently hired by BCOE, will be performing the functions the Graduate Program Assistant together with her regular duties for the undergraduate MSE program. The Chair (Director) of the Materials Science and Engineering Program and the Graduate Advisor will administer the graduate program under the policies established by the Graduate Program Committee. The Graduate Program Committee will consist of one representative from each participating department.

The responsibilities of the MSE Graduate Advisor include: (i) chairing the Graduate Program Committee; (ii) coordinating the recruitment activities for the Graduate Program; (iii) coordinating the advising sessions for the graduate students; (iv) holding orientation sessions for the incoming graduate students on various aspects of the graduate study; (v) ensuring completion of annual reviews of the student performance; and (vi) counseling graduate students without a research advisor (e.g. M.S. Plan II students). The faculty research advisors will advise students on curriculum planning, research, examination preparation and provide M.S. thesis and/or Ph.D. dissertation supervision. The Graduate Advisor generally will formally assign each incoming student a faculty advisor after consultation with the faculty members. The Graduate Advisor will also assist the students with the issues related to changing the research advisor if required.

9. Plan for Evaluation of the MSE Program

The MSE graduate program will undergo an internal review conducted by the Graduate Council during the third or fourth year of the program existence with an external review held in the sixth or seventh year. As is the norm for all graduate programs at the UCR campus, the program will thereafter be evaluated by an outside team of experts once every six or seven years. Beginning with the second year the program will conduct a self-evaluation by circulating an annual survey asking participating faculty and students to critique the program and make suggestions for its improvement.

10. Relationship to Other Programs within the UC System

The MSE Committee studied the organization of the closely related graduate programs in materials and/or materials science and engineering in other UC campuses. Below we provide comparison and list distinctions of the proposed MSE Graduate Program from those at other UC campuses. The letters of support from the Deans, Chairs and Program
Directors of materials science and engineering related units of other UC campuses are provided in Appendix C.

The undergraduate and graduate degrees in materials at UCB and UCLA are offered through the separate Department of Materials Science and Engineering. The UCB MSE Department offers the following specialization areas: biomaterials; chemical and electrochemical materials; computational materials; electronic, magnetic and optical materials; structural materials. The Materials Department at UCSB is organized into four distinct groups specializing in electronic and photonic materials; macromolecular and biomolecular materials; structural materials; and inorganic materials. The UCSB Department offers programs leading to the M.S. or Ph.D. degrees. Many faculty members at the department have joint appointments with other departments.

The materials degree at UCD and UCI are offered through the Department of Chemical Engineering and Material Science. The UCD department features two separate graduate degree tracks: one in Materials Science and Engineering and another in Chemical Engineering. The UCI department offers two focus areas: biotechnology thrust; and nanotechnology thrust. The biotechnology thrust encompasses activities within Biochemical Engineering, Biomedical Engineering, Environmental Engineering, Biology, Medicine, and Computer Engineering.

The Materials Science and Engineering Program at UCSD is an interdepartmental program with participation of faculty members from following departments: Mechanical and Aerospace Engineering, Physics, Scripps Institution of Oceanography (SIO), Structural Engineering, Electrical and Computer Engineering, Chemistry, and Bioengineering. The program focus areas are magnetic and nano materials; structural materials; electronic materials and interfaces; and biomaterials.

The proposed MSE program at UCR will have a different organizational structure from those at UCB, UCLA, UCSB, UCD and UCI. The UCR program, similar to that in UCSD, will be an interdepartmental program. The interdepartmental arrangement is optimum for UCR, which is a smaller campus within UC system. It will also allow us to capitalize on the existing research strengths and close collaboration among faculty from different departments. The UCR MSE teaching faculty will be MSE Participating Faculty members who have full-time appointments at some department in BCOE, CNAS or other academic unit. The faculty members hired by BCOE specifically in the interdisciplinary MSE field (one FTE last year and five FTE this year) will have their teaching load split 50/50 between the host department and MSE Program. This arrangement has been formally approved by the Dean of Engineering.

The unique feature of the proposed UCR program will be its focus on nanotechnology, energy generation and conversion and sustainability. The nanotechnology innovations will be applied to energy generation, conversion and storage; renewable energy (photovoltaic solar cells, thermoelectric, etc.); environmentally friendly technology; materials for low-power devices; materials for sustainable economy; and other “nano / energy” areas.
The proposed program will also use the advantage of its close association with the highly successful College of Engineering-Center for Environmental Research and Technology (CE-CERT), which conducts research related to new materials and energy. The center is active in sustainable energy systems; emissions and fuels; transportation systems; and other major research thrusts. The letter of support from the Director of CE-CERT is attached. The UCR MSE Graduate Program will attain some unique features through its cooperation with the UCR Center for Nanoscale Science and Engineering (CNSE), which focuses on applications of advanced carbon materials; 3D magnetic memory devices; spintronics; and other cutting-edge research directions in nanotechnology.
SECTION II: PROGRAM

1. MSE Program Description and Admission Requirements

The Materials Science and Engineering Graduate Program will offer M.S. and Ph.D. degrees. The university requirements for the M.S. and Ph.D. degrees in Materials Science and Engineering will be given in the Graduate Studies section of the UCR General Catalog.

Admission Requirements

The following are the rules for the admission to the MSE Graduate Program. All applicants must submit official scores for the GRE General Test. All applicants whose native language is not English and who do not have a degree from an institution where English is the exclusive language of instruction must complete the Test of English as a Foreign Language (TOEFL) with a minimum score of 550 (paper-based), 213 (computer-based), or 80 (Internet-based). Applicants must meet the general admission requirements of the Riverside Division of the Academic Senate and the UCR Graduate Council as set forth in the UC Riverside Graduate Student Application. In addition, M.S. degree applicants should have completed a program equivalent to UCR’s B.S. in MSE relevant disciplines such as Bioengineering, Biochemistry, Chemistry, Chemical and Environmental Engineering, Electrical Engineering, Mechanical Engineering, Physics and Astronomy, as well as other materials related discipline. Students can be admitted to M.S. and Ph.D. programs for all three terms. Most of the financial aid in the form of fellowships is distributed to the students admitted for Fall quarter. Students can apply to Ph.D. degree program directly from B.S. degree.

Students with backgrounds in other scientific fields are encouraged to apply. Applicants lacking minimum undergraduate MSE related preparation may be admitted but must take the appropriate undergraduate courses. Under special circumstances, students may be admitted with deficiencies provided that the deficiencies are corrected within the first year of graduate study. Courses taken for this purpose do not count towards an advanced degree.

Master of Science

The Materials Science and Engineering Program will offer the M.S. degree in Materials Science and Engineering. The general university requirements will be listed in the Graduate Studies section of the UCR General Catalog. Students may obtain an M.S. degree in Materials Science and Engineering through either Plan I (Thesis Option) or Plan II (Comprehensive Examination Option). The normative time for a student to complete the M.S. degree under both Plan I or Plan II is six quarters (two years). Students who are admitted with deficiencies may require up to three additional quarters. Exceptional students may complete the M.S. degree in less than six quarters (two years). Students must complete a minimum of three quarters (one year) in residence with a GPA of 3.00 or better.
Plan I (Thesis Option): Students must complete 36 units of graduate or upper-division undergraduate work in Materials Science and Engineering and other approved subject areas. At least 24 of these units must be in graduate-level courses. Of these 24 units, at least 12 units should be the required graduate courses. The required and approved courses in each area are determined by the MSE Graduate Program Committee. Normally the required courses are selected from the list of the MSE core courses (MSE 200 – MSE 204). No more than 12 units may be in graduate research. The upper-division undergraduate courses numbered 125 and above can be counted toward the graduate degree requirements with the approval of the Graduate Advisor. No more than 12 units of the undergraduate courses numbered 125 and above can be used toward the completion of the 36 unit requirement.

A thesis on a research topic must be submitted and approved by the faculty. The thesis must demonstrate the student’s in-depth knowledge of the chosen research topic. Publishable results are encouraged. The thesis defense is a two-hour examination session open to the public and begins with a brief presentation of the thesis by the candidate, followed by a closed-door question-and-answer session.

Plan II (Comprehensive Examination Option): The same requirements as in Plan I apply, except that students must complete at least 18 quarter units of graduate-level courses, and none of these credits can be in the graduate research courses. A maximum of 6 units can be taken in Directed Studies. The students in this plan must take the comprehensive examination. The comprehensive examination is conducted jointly with the Ph.D. written qualifying examination. The written qualifying and comprehensive examinations are defined as in-depth written exams in the student focus area and play the role of the field examinations.

Doctoral Degree

The Materials Science and Engineering Graduate Program offers the Ph.D. degree in Materials Science and Engineering. The following are the rules for the admission to a Ph.D. degree program of study. A B.S. or equivalent degree in Materials Science and Engineering or a related field is normally required. The list of related fields includes, but is not limited to, Bioengineering, Biochemistry, Chemistry, Chemical and Environmental Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Metallurgy, Physics, etc. Students with backgrounds in other scientific fields are also encouraged to apply. Applicants lacking undergraduate preparation in the above areas may be admitted but must take the appropriate undergraduate courses. Under special circumstances, students may be admitted with deficiencies provided that the deficiencies are corrected within the first year of graduate study. Courses taken for this purpose do not count towards an advanced degree. The doctoral program does not have a special teaching requirement; however, the graduate students are encouraged to serve at least one quarter as TA whenever possible.
It is recommended that the students take 36 quarter units of 100- or 200-level formal course work, i.e., excluding colloquium and directed studies type of courses, while in graduate standing as evidence of preparation for the doctoral qualifying examination. The courses may include graduate course work used for the M.S. degree. Students must complete a minimum of six quarters (two years) in residence with a GPA of 3.00 or better. Students must submit a formal study plan before the end of the second quarter of academic residency. The plan lists student’s expected program of course work.

All PhD students are required to complete at least three courses from the following list of MSE graduate core course. Some of the MSE core courses can be substituted with other courses, offered by the participating departments, contingent upon approval of the MSE Graduate Advisor. The MSE core courses, approved by the MSE Program Committee, are

- MSE 200: Survey of Materials Science
- MSE 201: Thermodynamic Foundations of Materials
- MSE 202: Crystal Structure and Bonding
- MSE 203: Theory of Electron Microscopy and X-Ray Diffraction
- MSE 204: Semiconductor Materials

After passing the written qualifying examination, an amended version of the study plan must be submitted to and approved by the student’s doctoral committee. The MSE students must establish a major, i.e. focus, subject area. A coherent program of approximately 24 units of formal graduate level course work in the major area is recommended. Students may need to take considerably more than the 24 units to prepare for the Ph.D. research. The balance of the courses should lend support to the major field of study while adding breadth to the student’s overall program.

2. Sample Program for Ph.D. Student

The students in MSE Graduate Program will be able to emphasize particular areas of study while undertaking a cohesive series of courses. The MSE field encompasses a wide range of disciplines. Students can select the concentrations ranging from the computational nanotechnology and nanostructure growth to the solar cell materials and environmental effects of fuels. During the first year of graduate study the students will be introduced to core subjects in materials science and engineering. The students will also be required to start laboratory training in the laboratory of their Research Advisor. The study plan is determined by the students Research Advisor in consultations with the Graduate Advisor.

Table II: Sample Study Plan for PhD Students

<table>
<thead>
<tr>
<th>Year in Program</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MSE 201: Thermodynamic Foundations Materials (4)</td>
<td>MSE 259: Colloquium (1)</td>
<td>MSE 259: Colloquium (1)</td>
</tr>
<tr>
<td></td>
<td>EE 202: Fundamentals of</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MSE 259: Colloquium (1) 
MSE 290: Directed Studies (3) 

Semiconductors and Nanostructures (4) 
MSE 290: Directed Studies (3) 

ME 266: Mechanics and 
Physics of Materials (4) 
MSE 290: Directed Studies (3) 

2nd Year 
CEE 246: Surface and Interface Phenomena (4) 
MSE 259: Colloquium (1) 
MSE 290: Directed Studies (1) 
MSE 297: Directed Research (6) 

EE 206: Nanoscale Characterization Techniques (4) 
MSE 259: Colloquium (1) 
MSE 290: Directed Studies (1) 
MSE 297: Directed Research (6) 

EE 220: Applied Ferromagnetism (4) 
MSE 259: Colloquium (1) 
MSE 290: Directed Research (1) 
MSE 299: Dissertation Research (6) 

3rd Year 
MSE 259: Colloquium (1) 
Dissertation Research (11) 

MSE 259: Colloquium (1) 
Dissertation Research (11) 

MSE 259: Colloquium (1) 
Dissertation Research (11) 

4th Year 
Dissertation Research (12) 

Dissertation Research (12) 

Dissertation Research (12) 

In the Table II, the courses in italic are the materials core courses. The elective courses listed in the table are examples only, and can be substitute with other course from the list provided at the end of this Section.

3. Written Qualifying and Comprehensive Examination

The purpose of the written qualifying examination is to screen candidates for continuation in the doctoral program. The examination is administered by the Graduate Program Committee and is combined with the M.S. comprehensive examination. The written qualifying and comprehensive examinations are defined as in-depth written exams in the student focus area. The exact format and duration of the examination is determined by the Graduate Program Committee. Plan II M.S. candidates who took the combined M.S. comprehensive and Ph.D. written qualifying examination and successfully passed at the Ph.D. level are given credit for having passed the Ph.D. written qualifying examination. The details of the written qualifying and comprehensive examinations and the rules for their proctoring will be specified in the Graduate Student manual upon the MSE Graduate Program approval. Students are expected to take the written qualifying examination by the end of their first year in the graduate program. Only two attempts at this examination will be given.

4. Dissertation Proposal and Oral Qualifying Examination

After passing the written qualifying examination, doctoral candidates must prepare and submit a dissertation proposal to their qualifying examination committee before the qualifying examination. The oral qualifying examination is a closed-door examination with only the committee members present. The format of the dissertation proposal is flexible, but the proposal should (i) identify the proposed problem under study, (ii) demonstrate substantial knowledge of the topic and related issues; (iii) demonstrate the student’s knowledge of the experimental technique and/or theoretical and/or computational method or technique for addressing the problem; (iv) state the progress made towards a solution; and (v) outline the work remaining to be done. The new approaches and methods to be
used in the research should also be discussed. An extensive bibliography for the problem under study should be attached to the proposal. The students have to submit the PhD proposal to the committee members approximately one week prior the scheduled date of the exam. The graduate student’s research advisor is permitted to serve as a member of the oral qualifying committee.

The oral qualifying examination focuses on the dissertation problem. It should include considerable depth in the student’s area of specialization as required for a successful completion of the dissertation. The examination consists of a one- to three-hour session, which begins with the student’s presentation of the dissertation topic and is followed with questions and suggestions by the doctoral committee. The question-and-answer session is followed by the closed-door discussion of the committee members without the student.

A doctoral dissertation should be an original and substantial contribution to knowledge in the student’s major field. It must demonstrate the student’s ability to carry out a program of independent advanced research and to report the results in accordance with standards observed in recognized scientific journals.

5. Dissertation Examination and Defense

A doctoral committee is formed after a student successfully passes the Oral Qualifying Examination. The doctoral committee determines when a suitable draft of the dissertation has been presented, and schedules a dissertation examination and defense for the student. The defense consists of a public seminar followed by questions from the committee members and the audience.

*Foreign Language Requirement*

There is no foreign language requirement. However, all international students whose first language is not English will have to demonstrate proficiency in spoken English by securing a “clear pass” score on the SPEAK test, prior to graduation. Students are encouraged to complete this requirement within their first year of residence at UCR.

6. Relationship of M.S and Ph.D. Programs

Students will normally be admitted either into the Master’s (M.S.) or into the Doctoral (Ph.D.) program. Students in the Master’s program may petition for admission into the Doctoral program. The program’s Graduate Committee will evaluate the petition and make a recommendation to the Graduate Division. The Doctoral degree requires additional course work, written and oral qualifying examinations, and a dissertation.
7. Normative Time from Matriculation to Degree

The normative time to degree is 12 quarters (15 quarters for the students without an M.S. in Materials Science and Engineering or related field). Exceptional students may complete the degree in less than the normative time.

8. Special Requirements above Graduate Division Minimum Requirements

None

9. Field Examinations

There are no separate field examinations for this program. The student preparation is tested through the Written qualifying, Comprehensive and Oral Qualifying Examinations (see Section II, subsections 3 and 4).

10. Special Preparations for Careers in Teaching

Not applicable

11. MSE Faculty and MSE Participating Faculty

The MSE Program Participating Faculty includes faculty with MSE expertise who carries out MSE related research and teaching. A separate group of professors within the MSE Program Participating Faculty consists of faculty members at BCOE hired specifically for the interdisciplinary MSE Program with the formal approval of the Chair of the MSE Program. The faculty members hired for MSE Program are hosted by some of the BCOE departments and have their teaching load evenly split (50/50) between their host departments and MSE Program. For information about MSE Faculty see also Section IV.
SECTION III: PROJECTED NEED

1. Student Demand for the Program

The National Research Council recognizes Materials Science and Engineering as a major discipline in Engineering. In light of the growth of the importance of the materials research and demand for the materials experts outlined in Section I, we are assured of a high interest of students for this new Graduate Program in Materials Science and Engineering. This is particularly true for the State of California where industries with the substantial “materials component” such as electronic, optoelectronic, and energy companies are among the fastest growth sectors. The graduate applications and admission statistics for materials relevant programs support our conclusions.

2. Opportunities for Placement of Graduates

The opportunities for placement of MSE graduates (B.S., M.S. and Ph.D.) are growing. The trend is explained by the fact that many innovations are made at the materials level rather than at the device or system level. The corporate downsizing also increases the demand for graduates with broader materials expertise. The MSE degree prepares graduates for employment in a wide range of industries, including electronics, data-storage, automotive, medical products and aerospace, as well as for government research laboratories. Graduates of this program will be suited to work for smaller, entrepreneurial companies that need materials engineers with a broad background, rather than people specialized in a particular discipline. Many companies involved in manufacturing require engineers who can specify materials selection, oversee production, or maintain quality control. As an example, Appendix G provide a partial listing of companies in just one sub-field of materials research and engineering (semiconductors), which recently hired MSE graduates and/or have strong interest in hiring them.

Materials scientists and engineers are involved in every aspect of technology, ranging from the design of materials for use in integrated circuits through to the materials needed for energy generation and for building houses and roads. Upon graduation, MSE students are prepared for a number of different careers paths. According to UCB Career Center, MSE graduates with B.S. degree enjoy some of the highest starting salaries of any undergraduate engineering program: the median salary reported for 2006 graduates is $60,500 per year, with 25% of those same graduates earning $63,250 or more in their first year (http://career.berkeley.edu/Major/MatSci.stm)

California is a home state for major industries in areas of semiconductors, information technology, biotechnology and many other supporting industries. New start-ups appear almost on a daily basis in areas of energy, nanomaterials, environment, personalized medicine. All of these ventures need to recruit trained individuals who can contribute to further development. For this reason, there is a significant need for the university graduates
who can tackle the materials-related problems in all these high-tech areas of fast growth. The proposed MSE program will also work towards bridging industrial efforts and research, and facilitate technology transfer and encourage the formation of start-up companies in the Inland Empire and other parts of California.

3. Ways in which the Program will meet the Needs of Society

Described in Section I

4. Relationship of the Program to Research and Professional Interests of Faculty

A large number of faculty members at UCR are already engaged in research in materials science and engineering. The materials faculty is scattered in various departments, and the interdepartmental Ph.D. program will be a very effective mechanism for facilitating productive interactions among the faculty and for generating an enriched atmosphere for training graduate students. Because we are a small campus, interactions within this group are especially important and can bring many benefits. An interdepartmental colloquium series in Materials Science and Engineering, bringing in distinguished outside speakers, specifically under the auspices of this new program, will also be an essential addition to the campus research and education. Additional arguments emphasizing the benefit of the proposed program for the faculty are provided in Sections I and IV.
SECTION IV: FACULTY AND STAFF

About 30 faculty members at BCOE alone conduct materials science and engineering research. Our estimate is that there are approximately another 30 faculty members at CNAS and other academic units who conduct materials research. This proposal lists 39 MSE Founding Faculty members from BCOE and CNAS. These faculty members add important expertise that enriches the program.

The University Administration has recognized that it is critical to have a cadre of dedicated faculty to fully take advantage of the potential for Materials Science and Engineering on the Riverside campus. To this end, several departments are now actively recruiting or are planning recruitment efforts for faculty whose primary focus is Materials Science and Engineering.

BCOE plans to hire 5 (five) new MSE faculty members (open rank) this year alone. The MSE faculty will have their teaching load evenly split (50/50) between their home departments and the MSE Program. The office and laboratory space has also been allocated for both the newly established MSE undergraduate program and the proposed MSE graduate program. See Appendix F for the advertisement for the MSE faculty positions. More details about the advertised multiple MSE positions at BCOE can be found at [http://www.engr.ucr.edu/facultysearch/mse.shtml](http://www.engr.ucr.edu/facultysearch/mse.shtml).

A full-time staff Administrative Assistant to MSE Program has already been hired. The hiring of the faculty and staff will continue as the program develops (see the attached letter from the Dean of Engineering). The UCR Science Library has a designated Engineering Librarian who will assist with the MSE book holdings and journal subscriptions (see also Section V).

The UCR campus is planning a major initiative in the health sciences, i.e. Health Science Initiative (HSI). This long-term major initiative will result in hiring a substantial number of stuff and faculty members. The planned Graduate Program in Materials Science and Engineering is synergetic with the HIS because many applications of the materials research are in medical field. The fundamental MSE research will create a basis for innovations in the health sciences.

The MSE Faculty and MSE Participating faculty make up the Founding Faculty of the MSE Graduate Program. The MSE Participating Faculty members have been invited to the program by the MSE Program Chair at the recommendation of the MSE Program Committee. Below we provide an alphabetical list of the MSE Founding Faculty from the BCOE and CNAS who accepted an invitation to participate in this program.

BCOE MSE Participating Faculty

Dr. Reza Abbaschian
Distinguished Professor, Bourns College of Engineering
Proposal for Interdepartmental Graduate Program in Materials Science and Engineering, UCR 2007

Dean, Bourns College of Engineering  
Ph.D., University of California – Berkeley, 1971  
MSE areas: materials processing, solidification, functionally graded composites; high pressure-high temperature growth of diamond crystals.  
E-mail: rabba@engr.ucr.edu

Dr. Alexander A. Balandin  
Professor, Department of Electrical Engineering  
Chair, Materials Science and Engineering Program  
Ph.D., University of Notre Dame, 1996  
MSE areas: electronic, optoelectronic and thermoelectric nanostructures and materials; material characterization; Raman spectroscopy; graphene and other carbon materials.  
E-mail: balandin@ee.ucr.edu

Dr. Wilfred Chen  
Professor, Department of Chemical and Environmental Engineering  
Ph.D., California Institute of Technology, 1993  
MSE areas: biomolecular engineering; biosensors; nanotechnology; biotemplated synthesis of nanostructures  
E-mail: wilfred@engr.ucr.edu

Dr. David Cwiertny  
Assistant Professor, Department of Chemical and Environmental Engineering  
Ph.D., Johns Hopkins University, 2006  
MSE areas: applications of nanotechnology for environmental remediation  
Email: dcwiertny@engr.ucr.edu

Dr. Chris Dames  
Assistant Professor, Department of Mechanical Engineering  
Ph.D., Massachusetts Institute of Technology, 2006  
MSE areas: thermal properties of nanostructured materials.  
Email: cdames@engr.ucr.edu

Dr. Marc Deshusses  
Professor, Department of Chemical and Environmental Engineering  
Chair, Department of Chemical and Environmental Engineering  
Ph.D., Swiss Federal Institute of Technology, 1994  
MSE areas: development of gas-phase sensors based on functionalized nanomaterials  
Email: mdeshuss@engr.ucr.edu

Dr. Javier Garay  
Assistant Professor, Department of Mechanical Engineering  
Ph.D., University of California – Davis, 2004  
MSE areas: advanced material synthesis and processing; nanocomposites; mass transport, nucleation, electric current effects and defects in materials.  
Email: jegaray@engr.ucr.edu
Dr. Robert C. Haddon  
Distinguished Professor, Departments of Chemistry and Chemical and Environmental Engineering  
Director, Center for Nanoscale Science and Engineering  
Ph.D., Penn State, 1971  
MSE areas: chemistry and applications of carbon nanotubes and graphite; neutral radical conductors.  
E-mail: haddon@engr.ucr.edu

Dr. Qing Jiang  
Professor and Chair, Department of Mechanical Engineering  
Ph.D., California Institute of Technology, 1990  
MSE areas: mechanical properties of carbon nanotubes, ferroelectric and piezoelectric materials, acoustics and ultrasonics with applications in sensing and imaging.  
Email: qjiang@engr.ucr.edu

Dr. Sakhrat Khizroev  
Associate Professor, Department of Electrical Engineering  
MSE Committee Representative from the Department of Electrical Engineering  
Ph.D., Carnegie Mellon University, 1999  
MSE areas: magnetic materials; spintronics; nano-magnetic resonance imaging; and focused ion beam based nanofabrication.  
E-mail: khizroev@ee.ucr.edu

Dr. David Kisailus  
Assistant Professor, Department of Chemical and Environmental Engineering  
Ph.D., University of California Santa Barbara, 2002  
MSE areas: bio-mimetics, bio-inspired materials synthesis for nanomaterials, energy storage and conversion materials, biomineralization, ceramic processing, thin film growth  
E-mail: david@engr.ucr.edu

Dr. Roger K. Lake  
Professor and Chair, Department of Electrical Engineering  
Ph.D., Purdue University, 1992  
MSE areas: theory of electron transport through nanostructured, disordered and amorphous materials; computational electronics and optoelectronics; novel materials and devices.  
E-mail: rlake@ee.ucr.edu

Dr. Jianlin Liu  
Assistant Professor, Department of Electrical Engineering  
Ph.D., University of California – Los Angeles, 2003  
MSE areas: semiconductor materials and devices; molecular beam epitaxial growth of ZnO and SiGe materials and nanostructures; oxide materials; nanofabrication via self-assembly and advanced lithography; spintronics; solid state lighting and sensing.  
E-mail: jianlin@ee.ucr.edu
Dr. Stefano Lonardi  
Assistant Professor, Department of Computer Science and Engineering  
Ph.D., Purdue University, 2001  
MSE areas: bioinformatics; computational molecular biology and materials; data mining.  
Email: stelo@cs.ucr.edu

Dr. Julia Lyubovitsky  
Assistant Professor, Department of Bioengineering  
Ph.D., California Institute of Technology, 2003  
MSE areas: protein chemistry, laser spectroscopy, spectroscopy, optics.  
Email: julial@engr.ucr.edu

Dr. Mart Molle  
Professor, Department of Computer Science and Engineering  
Ph.D., University of California – Los Angeles, 1981  
MSE Committee Representative from Department of Computer Science and Engineering  
Email: mart@cs.ucr.edu

Dr. Dimitrios Morikis  
Professor, Department of Bioengineering  
Ph.D., Northeastern University, 1990  
MSE areas: computational modeling of biomolecular structure, dynamics, and interactions;  
NMR spectroscopy; protein and peptide engineering; drug design.  
Email: dmorikis@engr.ucr.edu

Dr. Ashok Mulchandani  
Professor, Department of Chemical and Environmental Engineering  
Ph.D., McGill University, 1985  
MSE areas: nanotechnology and biotechnology for the creation of (bio) analytical devices,  
novel (bio) remediation technologies and nanostructured materials.  
Email: adani@engr.ucr.edu

Dr. Nosang Myung  
Associate Professor, Department of Chemical and Environmental Engineering  
MSE Committee Representative from the Department of Chemical and Environmental Engineering  
Ph.D., University of California – Los Angeles, 1998  
MSE areas: material electrochemistry, MEMS/NEMS, nanowires, magnetic thin films and  
thermoelectric materials.  
Email: myung@engr.ucr.edu

Dr. Cengiz Ozkan  
Associate Professor, Department of Mechanical Engineering  
MSE Committee Representative from the Department of Mechanical Engineering  
Ph.D., Stanford University, 1997
MSE areas: wafer fab processing, thin film mechanics and nanotechnology.
Email: cozkan@engr.ucr.edu

Dr. Mihri Ozkan
Associate Professor, Department of Electrical Engineering
Ph.D., University of California – San Diego, 2001
MSE areas: hybrid organic/inorganic materials, organic photovoltaic materials and biosensors.
Email: mihri@ee.ucr.edu

Dr. Victor G. J. Rodgers
Professor, Department of Bioengineering
D.Sc., Washington University, 1989
MSE areas: polymeric drug delivery vehicles, membrane separations.
Email: vrodgers@engr.ucr.edu

Dr. Kambiz Vafai
Professor, Department of Mechanical Engineering
Ph.D., University of California – Berkeley, 1980
MSE areas: transport through porous media; multiphase transport; analysis of porous insulations; high heat flux applications; transport through biological membranes; thermal design and modeling.
Email: vafai@engr.ucr.edu

Dr. Valentine Vullev
Assistant Professor, Department of Bioengineering
MSE Committee Representative from the Department of Bioengineering
Ph.D., Boston University, 2001
MSE areas: biophysics, microfluidics and charge transfer.
Email: vullev@engr.ucr.edu

Dr. Junlan Wang
Assistant Professor, Department of Mechanical Engineering
Ph.D., University of Illinois at Urbana-Champaign, 2002
MSE areas: nano- and micromechanics of materials
Email: wang@engr.ucr.edu

Dr. Jianzhong Wu
Associate Professor, Department of Chemical and Environmental Engineering
Ph.D., University of California – Berkeley, 1998
MSE areas: statistical-thermodynamic and molecular-simulation methods, in conjunction with experimental tools, for rational design and fabrication of materials using nanoscale building blocks
Email: jwu@engr.ucr.edu
Proposal for Interdepartmental Graduate Program in Materials Science and Engineering, UCR 2007

Dr. Guanshui Xu
Professor, Department of Mechanical Engineering
Ph.D., Brown University, 1994
MSE areas: solid mechanics; mechanical behavior of materials
Email: gxu@engr.ucr.edu

Dr. Yushan Yan
Professor, Department of Chemical and Environmental Engineering
Ph.D. California Institute of Technology, 1997
MSE areas: zeolite thin films, fuel cells, and nanostructured materials.
Email: yushan.yan@ucr.edu

CNAS MSE Participating Faculty

Dr. Christopher J. Bardeen
Assistant Professor, Department of Chemistry
Ph.D. University of California – Berkeley, 1995
MSE areas: spectroscopy and microscopy of organic materials with photovoltaic and photomechanical properties.
Email: christopher.bardeen@ucr.edu

Dr. Ludwig Bartels
Associate Professor, Department of Chemistry
Doctor Rerum Naturalis, 1997, Freie Universität, Berlin, Germany
MSE areas: investigation and design of surface roughness, surface properties, surface reactivity, in particular with regards to organic materials at metal surfaces.
Email: ludwig.bartels@ucr.edu

Dr. Pingyun Feng
Associate Professor, Department of Chemistry
Ph.D., University of California – Santa Barbara, 1998
MSE areas: porous materials, porous semiconducting materials, catalytic, electronic, and optical materials, templated self-assembly, and targeted drug delivery.
Email: pingyun.feng@ucr.edu

Dr. Roland Kawakami
Assistant Professor of Physics, Department of Physics and Astronomy
Ph.D., University of California – Berkeley, 1999
MSE areas: molecular beam epitaxy of magnetic multilayers, graphene, tunnel junctions; magneto-optics; spin dynamics in semiconductors; spin transport in nano-devices.
Email: roland.kawakami@ucr.edu

Dr. Chun Ning (Jeanie) Lau
Assistant Professor of Physics, Department of Physics and Astronomy
Ph.D., Harvard University, 2001
MSE areas: fabrication, characterization and electronic properties of nano-materials and nanoelectronic devices; carbon nanotubes and graphene
Email: lau@physics.ucr.edu

Dr. Michael J. Marsella
Associate Professor, Department of Chemistry
Ph.D., University of Pennsylvania, 1995
Email: michael.marsella@ucr.edu

Dr. Umar Mohideen
Professor of Physics, Department of Physics and Astronomy
Ph.D., Columbia University, 1992
Email: umar.mohideen@ucr.edu

Dr. Leonard J. Mueller
Associate Professor, Department of Chemistry
Ph.D., California Institute of Technology, 1997
Email: leonard.mueller@ucr.edu

Dr. Jing Shi
Professor, Department of Physics and Astronomy
Ph.D., University of Illinois, 1994
MSE areas: synthesis of transition metal oxide thin films by laser molecular beam epitaxy; spin-dependent transport and tunneling phenomena in organic, inorganic semiconductors, and oxides
Email: jing.shi@ucr.edu

Dr. Harry W. K. Tom
Professor of Physics, Department of Physics and Astronomy
Ph.D. University of California, Berkeley
MSE areas: nonlinear optical and ultrafast optical studies of interfacial magnetism and spin transport across interfaces, development of magnetic nanowire devices, and development of optical biosensors.
Email: Harry.Tom@ucr.edu

Dr. Yadong Yin
Assistant Professor, Department of Chemistry
Ph.D., University of Washington, 2002
Email: yadong.yin@ucr.edu
SECTION V: COURSES

In the early phase of the MSE Graduate Program, the teaching faculty will be drawn from BCOE and CNAS with the approval of the Deans and the Chairs of the respective departments. As more faculty members are hired specifically for the interdisciplinary MSE Program (see a letter of the Dean of Engineering attached), the teaching duties will be redistributed in such a way that MSE Faculty carry most of the formal lecturing and instructions (see Appendix F for BCOE advertisement of multiple faculty openings in materials). MSE Participating Faculty will continue to play an important role in research supervision and laboratory training.

The MSE program will be interdepartmental. The courses included in the MSE major curriculum will have either specific MSE subject abbreviation or the department subject abbreviation, e.g., ME, CEE, PHYS, etc. The courses can also be cross-listed, e.g., EE/MSE. Each department may offer a “focus” area within the MSE program by designating a set of the advanced-level graduate courses, which emphasize a certain aspect of materials science and engineering.

There will be no strict division of how many courses are taught by each department. Some departments, which have faculty with the relevant expertise and existing courses, may teach more than others. The materials core courses will be selected to maximize the use of the existing courses (with ME, EE, CEE, CHEME, ENVE, PHYS, CHEM, etc.) while covering the topics essential for a successful MSE graduate program. The upper-level undergraduate courses can be taken toward M.S. and Ph.D. requirements. Below we provide a description of the BCOE upper-level MSE undergraduate courses, which have been formally proved.

Existing Upper-Level Undergraduate MSE Courses

MSE 175A: Senior Design
Preparation of formal engineering reports and statistical analysis on a series of problems illustrating methodology for various branches of applied materials science and engineering. Covers the entire design process: design problem definition, generation of a design specification, documentation, design review process, prototype fabrication, testing and calibration, cost estimation, and federal guidelines. Requires a term project and oral presentation.

MSE 175B: Senior Design
Preparation of formal engineering reports and statistical analysis on a series of problems illustrating methodology for various branches of applied materials science and engineering. Covers the entire design process: design problem definition, generation of a design specification, documentation, design review process, prototype fabrication, testing and calibration, cost estimation, and federal guidelines. Requires a term project and oral presentation.
MSE 160: Nanostructure Characterization Laboratory
Structure of materials at the nanoscale, including semiconductors, ceramics, metals, and carbon nanotubes. Relationships among morphology, properties, and processing. Primary methods of characterization including scanning electron microscopy, scanning probe microscopy, x-ray diffraction and transmission electron microscopy. Elementary discussions of x-ray, vibrational, and electron waves in solids and introductory diffraction theory.

MSE 161: Analytical Materials Characterization
Analysis of the surfaces of materials via ion, electron and photon spectroscopy. Rutherford back scattering, secondary ion mass spectroscopy, electron energy loss spectroscopy, Auger electron spectroscopy, X-ray photoelectron spectroscopy, photo-luminescence, extended X-ray absorption fine structure, Fourier transform infrared spectroscopy and Raman spectroscopy. Sputtering, high-vacuum generation and focused ion beam milling.

Currently Offered MSE-Relevant Graduate Courses

BIEN 224: Cellular and Molecular Engineering
Emphasizes biophysical and engineering concepts intrinsic to specific topics at the cellular and molecular level. Includes receptor-ligand dynamics in cell signaling and function; DNA replication and RNA processing; cellular and protein sorting; control of gene expression; membrane structure, transport and traffic; biological signal transduction; and mechanics of cell division.

BIEN 233: Computational Modeling of Biomolecules
Introduces computational methods for the quantitative analysis of biomolecular structures at atomic resolution. Aids in understanding the physicochemical properties of biomolecular function, the prediction of biological properties, and the design of new experiments. Forms the basis for structure-based design of proteins with tailored properties and inhibitors of protein function.

BIEN 245: Fluorescence Methods in Biology and Chemistry
Topics include the origin of fluorescence and other emission processes that modulate the characteristics of molecular emissions. Presents emission-based analytical and bioanalytical methods and techniques. Reviews state-of-the-art instrumentation, including their applicability, limitations, and source, as well as interpretation and meaning of the measured signals, with applications to biological systems.

BIEN 264 Dynamics of Biological Systems
Covers engineering principles for the analysis and modeling of biological phenomena. Topics include molecular diffusion and transport, membranes, ligand-bioreceptor interactions, enzyme kinetics, and dynamics of metabolic pathways and the application of these principles to the design of bioreactors, bioassays, drug delivery systems, and artificial organs.
CEE 200 Advanced Engineering Computation  
Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): ENGR 118 or consent of instructor. Problem-solving techniques for basic engineering systems including heat and mass transfer, coupled reactions, fluid flow potential, and control.

CEE 206 Advanced Chemical Engineering Thermodynamics  
Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CHE 130/ENVE 130 or consent of instructor. Application of the laws of thermodynamics to phase and chemical reaction equilibrium. Introduction to statistical thermodynamics, molecular simulations, and the evaluation of thermodynamic properties from molecular simulations.

CEE 221 Introduction to Microfluidics  
Lecture, 4 hours. Prerequisite(s): CHE 160A/ENV 160A or consent of instructor. Provides a theoretical and practical introduction to microfluidic devices. Covers traditional and new methods for making microfluidic devices and assembly of components into systems. Emphasizes the considerations underlying the design or operation of devices based on pressure-driven or electrokinetic flow. May be taken Satisfactory (S) or No Credit (NC) with consent of instructor and graduate advisor.

CEE 231 Scattering and Reflectometry for Environmental, Material and Biological Applications  
Lecture, 3 hours; discussion, 5 hours per quarter; laboratory, 15 hours per quarter. Prerequisite(s): CEE 206 or equivalent. Covers experimental and theoretical aspects of conventional static and dynamic light scattering, small-angle X-ray scattering, small-angle neutron scattering, X-ray and neutron reflectivity for colloids and biological solutions, surfaces, and interfaces. May be taken Satisfactory (S) or No Credit (NC) with consent of instructor and graduate advisor.

CEE 246 Surface and Interface Phenomena  
Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CHE 100 or ME 100A or consent of instructor. An introduction to colloid systems, capillarity, surface tension and contact angle, and micelles and microemulsions. Also covers adsorption and desorption at the solid-liquid interface, electrostatic forces, and colloid stability.

CEE 247 Molecular Thermodynamics of Complex Fluids  
Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): CEE 200, CEE 206, or consent of instructor. Introduces recent developments in applied thermodynamics and molecular simulations, with emphasis on current concerns in chemical and environmental engineering such as colloids, polymers, biomacromolecules, and fluids under inhomogeneous conditions.

EE 201 Applied Quantum Mechanics  
Lecture, 3 hours; outside research, 3 hours. Prerequisite(s): MATH 046, PHYS 040A; or consent of instructor. Covers topics in quantum mechanics including Schroedinger equation, operator formalism, harmonic oscillator, quantum wells, spin, bosons and fermions, solids, perturbation theory, Wentzel-Kramers-Brillouin approximation,
tunneling, tight-binding model, quantum measurements, quantum cryptography, and quantum computing.

EE 202 Fundamentals of Semiconductors and Nanostructures
Lecture, 3 hours; outside research, 3 hours. Prerequisite(s): EE 133, EE 201; or consent of instructor. Examines principles of semiconductor materials and nanostructures. Topics include periodic structures, electron and phonon transport, defects, optical properties, and radiative recombination. Also covers absorption and emission of radiation in nanostructures, and nonlinear optics effects. Emphasizes properties of semiconductor superlattices, quantum wells, wires, and dots.

EE 203 Solid-State Devices
Lecture, 3 hours; outside research, 3 hours. Prerequisite(s): EE 133 or consent of instructor. Covers electronic devices including p-n junctions, field-effect transistors, heterojunction bipolar transistors, and nanostructure devices. Explores electrical and optical properties of semiconductor heterostructures, superlattices, quantum wires and dots, as well as devices based on these structures.

EE 206 Nanoscale Characterization Techniques
Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): EE 201, EE 202, EE 203; or consent of instructor. An in-depth study of nanoscale materials and device characterization techniques. Laboratory emphasizes atomic force microscopy (AFM) and scanning tunneling microscopy (STM). Topics include semiconductor fabrication fundamentals; metrology requirements; in situ monitoring; interconnects and failure analysis; principles of AFM, STM, and scanning electron microscopy; X-ray methods; optical and infrared techniques; and electrical characterization.

EE 205 Optoelectronics and Photonic Devices
Lecture, 3 hours; outside research, 3 hours. Prerequisite(s): EE 203, 204; or consent of instructor. A study of the physical optical and photonic devices and their use in an optical communication system. Covers silica fibers, light-emitting diodes (LEDs), heterojunction lasers, p-i-n photodiodes, and avalanche photodiodes.

EE 207 Noise in Electronic Devices
Lecture, 3 hours; outside research, 3 hours. Prerequisite(s): EE 203 or consent of instructor. A study of fluctuation processes in solids and noise in electronic devices. Topics include the theory of random processes and analysis of noise types such as generation-recombination noise, low-frequency noise, random telegraph noise, thermal noise, and short noise.

EE 208 Semiconductor Electron, Phonon, and Optical Properties
Lecture, 3 hours; discussion. Prerequisite(s): EE 202. Topics include semiconductor electronic band structure theory and methods, phonon dispersion theory and methods, defects in semiconductors, and optical properties of semiconductors.
Proposal for Interdepartmental Graduate Program in Materials Science and Engineering, UCR 2007

EE 209 Semiclassical Electron Transport
Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): EE 201, EE 203, EE 208. Covers the Boltzmann transport equation applied to semiconductor device modeling. Topics include the physics of carrier scattering in common semiconductors, theoretical treatments of low and high field transport, balance equations, and Monte Carlo solutions.

EE 216 Nanoscale Phonon Engineering
Lecture, 3 hours; outside research, 3 hours. Prerequisite(s): EE 202. Studies acoustic and optical phonons that affect electrical, thermal, and optical properties of materials. Focuses on the confinement-induced changes of phonon properties in nanostructures and their implications for performance of electronic, thermoelectric, and optoelectronic devices. Explores phonon theory, Raman spectroscopy and other phonon characterization techniques, thermal conductivity, and related measurements.

EE 219 Advanced Complementary Metal Oxide Semiconductor (CMOS) Technology
Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): EE 203. Introduces advanced complementary metal oxide semiconductor (CMOS) technology. Topics include MOS field effect transistor (MOSFET) scaling, short and narrow channel effects, high field effects, vertical MOSFET transistors, single electron transistors, MOSFET nonvolatile memory devices, and small- and large-signal MOSFET models. Covers CMOS process integration.

EE220 Applied Ferromagnetism
Lecture, 3 hours. Students are introduced to the fundamentals of ferromagnetism necessary to develop next-generation nanomagnetic and spintronics related devices. By the end of the course, they will acquire adequate knowledge to work as a research/development engineer in applied fields such as electromagnetic motor industry, magnetic recording, nuclear magnetic resonance (NMR) – based technologies, and any other industry where the knowledge of magnetism is essential. The course will begin with an introduction of the basics of magnetism and proceed with detailed analyses of some of the basic and advanced applications.

ME 266 Mechanics and Physics of Materials
Lecture, 4 hours. Prerequisite(s): graduate standing or consent of instructor. Introduces the structure and properties of materials; the characterization and modeling of mechanical, thermal, electric, and magnetic properties of materials; and coupling properties. Topics include phase transformations and brittle-to-ductile transitions.

ME 270 Introduction to Microelectromechanical Systems
Lecture, 4 hours. Prerequisite(s): ME 110, ME 114, or equivalents. An introduction to the design and fabrication of microelectromechanical systems (MEMS). Topics include bulk and surface micromachining processes; material properties; mechanisms of transduction; applications in mechanical, thermal, optical, radiation, and biological sensors and actuators; fabrication of microfluidic devices; Bio-MEMS and applications; packaging and reliability concepts; and metrology techniques for MEMS. Also discusses directions for future research.
ME 272 Nanoscale Science and Engineering
Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): ME 01H or consent of instructor. An overview of the machinery and science of the nanometer scale. Topics include patterning of materials via scanning probe lithography; electron beam lithography; nanoimprinting; self-assembly; mechanical, electrical, magnetic, and chemical properties of nanoparticles, nanotubes, nanowires, and biomolecules (DNA, protein); self-assembled monolayers; and nanocomposites and synthetic macromolecules.

ME 278 Imperfections in Solids
Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): graduate standing in Chemical and Environmental Engineering or Computer Science or Electrical Engineering or Mechanical Engineering. Covers fundamentals of crystal structures and crystal defects, including the generation of point defects; nucleation and propagation of dislocations; perfect and partial dislocations; twins, stacking faults, and transformations; mechanics of semiconductor and metallic thin films and multilayered structures.

Proposed MSE Graduate Courses

MSE 200 Survey of Materials Science and Engineering
4-unit course introducing to MSE at the beginning graduate level, intended for those who did not major in the field as undergraduates. Focus on the nature of microstructure and its manipulation and control to determine engineering properties. Reviews bonding, structure and microstructure, the chemical, electromagnetic and mechanical properties of materials, and introduces the student to microstructural engineering.

MSE 201 Thermodynamic Foundations of Materials
4-unit course, which covers the laws of thermodynamics, fundamental equation for multicomponent elastic solids and electromagnetic media, equilibrium criteria. Application to solution thermodynamics, point defects in solids, phase diagrams. Phase transitions, interfaces, nucleation theory, elastic effects. Kinetics: diffusion of heat, mass and charge; coupled flows.

MSE 202 Crystal Structure and Bonding
4-unit course, which covers regular, irregular arrays of points, spheres; lattices, direct, reciprocal; crystallographic point and space groups; atomic structure; bonding in molecules; bonding in solids; ionic Pauling rules, covalent, metallic bonding; structure of elements, compounds, minerals, polymers.

MSE 203 Theory of Electron Microscopy and X-Ray Diffraction
4-unit course, which covers basic principles of techniques used in the characterization of engineering materials by electron microscopy, diffraction, and spectroscopy; provides analysis of defects responsible for materials properties. Modern electrical, optical and particle beam techniques for the characterization of single crystals and amorphous layers.
Examples include Hall effect, Raman spectroscopy, Deep Level Transient Spectroscopy, IR-Spectroscopy, Rutherford Backscattering Spectrometry, and others.

**MSE 204 Semiconductor Materials**
4-unit course, which covers semiconductor purification and crystal growth techniques; doping, radiation damage, and annealing; metal-semiconductor interfaces and reactions; interaction between defects and impurities during processing of devices; major electronic and optical methods for the analysis of semiconductors.

**MSE 259 Colloquium in Materials Science and Engineering**
Colloquium, 1-unit course; Prerequisite(s): graduate standing. Lectures on current research topics in electrical engineering presented by faculty members and visiting scientists. Graded Satisfactory (S) or No Credit (NC). Course is repeatable.

**MSE 290 Directed Studies**
1-6-unit course; individual study, 3-18 hours; prerequisite(s): graduate standing; consent of instructor and Graduate Advisor. Individual study, directed by a faculty member, of selected topics in electrical engineering. Graded Satisfactory (S) or No Credit (NC). Course is repeatable to a maximum of 12 units.

**MSE 297 Directed Research**
1-6-unit course; outside research, 3-18 hours; prerequisite(s): graduate standing; consent of instructor. Research conducted under the supervision of a faculty member on selected problems in electrical engineering. Graded Satisfactory (S) or No Credit (NC). Course is repeatable.

**MSE 299 Research for the Thesis or Dissertation**
1-12-unit course; outside research, 3-36 hours; prerequisite(s): graduate standing; consent of instructor. Research in electrical engineering for the M.S. thesis or Ph.D. dissertation. Graded Satisfactory (S) or No Credit (NC). Course is repeatable.
SECTION VI: RESOURCE REQUIREMENTS

The resource needs for faculty FTEs, library acquisitions, facilities and equipment, space and other capital facilities, other operating cost are discussed or summarized in this section.

1. FTE Faculty

MSE faculty hiring is discussed in Section I and Section IV.

2. Library Acquisition

The University of California, Riverside, has a relatively new (opened in Fall 1998), four-story 106,000 ft² Science Library. The engineering collection is housed in this new library, which is located next to the Engineering Bourns Hall and Engineering Unit 2 building. The library provides 1,500 reader and computer stations, more than one million volumes in science and engineering, and hundreds of database and on-line information sources. The library offers 60 computers for students to use in their research and another 32 computers used for information literacy instruction. The Science Library also provides both wired and wireless access to the internet from students’ laptop computers.

The existing holdings in the UCR Science Library will support the proposed Materials Science and Engineering graduate program because this program will build on existing campus academic strengths and foci. In addition, subscription to online journals, collectively within the UC system, as well as interlibrary exchanges will be available to support the MSE graduate program. The library has recently subscribed to CRC Materials Net-Base [http://www.materialsnetbase.com]. It is currently negotiating the subscriptions for the MRS Proceedings Library. Both databases are important for the MSE Graduate Program.

The Science Library has a professional staff of 7 librarians, all of whom provide reference assistance to engineering students, faculty and staff. Of these librarians, one has subject responsibility for engineering and can help students, faculty and staff with more in-depth questions. The Engineering Librarian also conducts tutorials and classes on engineering information topics, and maintains Web pages and path-finders to assist engineering students, faculty and staff in finding the information they need.

The MSE Chair has been communicating with the Engineering Librarian to correlate the activities for enhancing the materials book holdings and subscriptions in a view of new MSE program. The MSE Faculty will continue to work close with the Library to enhance its collection of relevant holdings and subscriptions. Although it is certain that additional resources will be needed, it should be possible to start a graduate program without a substantial one-time increase in library funds. New resources for the Library are expected as the Riverside Campus and the College of Engineering continue to grow.
The Science Library offers a full range of reference services, including walk-up, telephone, and electronic mail reference services as well as reference by appointment. The Science Library reference desk is staffed 60 hours per week when school is in session and 40 hours per week during inter-session periods. In addition to these standard services, engineering students can get additional reference help from the Engineering Librarian. The Engineering Librarian is available for extended consultation on Senior Design or other research projects. Phone and in-person services are available 9 a.m.-8 p.m. Monday-Thursday, 9 a.m.-5 p.m. on Friday and 1 p.m.-5 p.m. on Saturday and Sunday. A chat reference consortium with the other UC libraries, currently being piloted, has the potential to extend the reference hours to 9 p.m. nightly. Incoming freshman typically get a library orientation session in their introductory classes. They might also have additional information literacy instruction in classes that require outside research, such as senior design classes. One-on-one or group tutorials are available for any research topic that might be desired and helpful.

Engineering books are acquired as part of the Science Library’s approval plan, ordered from catalogs or suggested by students, faculty and staff. Recently, the library has begun to purchase e-books for engineering and currently maintains a collection of more than 500 electronic books. The library currently subscribes to 121 engineering journals in print, and UCR students have access to more than 1,800 journals online (see Table III and IV). UCR has access, for example, to all of the journals and proceedings of both IEEE and ACM. Faculty, staff and students may suggest new monographs, journals or other media to be purchased by the library. UC Riverside students have access to a number of journal databases to assist them in their research in engineering and in other areas of study. The California Digital Library has licensed, across all of the UC schools, INSPEC, Compendex and the Web of Science as well as SciFinder Scholar for chemistry and chemical engineering and Biosis or MEDLINE for biotechnological literature. UCR also licenses Water Resources Abstracts locally. The Science Library maintains a collection of videotapes applicable engineering in the Media Library. The Media Library has viewing stations and viewing rooms and will check video materials out to instructors to use in their classes.

Table III: Statistical Information about UCR’s Libraries

<table>
<thead>
<tr>
<th>CURRENT COLLECTION RESOURCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Books</td>
</tr>
<tr>
<td>Entire Institutional Library</td>
<td>(Volumes)</td>
</tr>
<tr>
<td></td>
<td>2,305,526</td>
</tr>
<tr>
<td>Engineering</td>
<td>63,669</td>
</tr>
</tbody>
</table>
Table IV: Library Expenditures

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditures for Engineering (Total)</td>
<td>$114,317</td>
<td>$126,736</td>
<td>$130,255</td>
</tr>
<tr>
<td>Books</td>
<td>$37,000</td>
<td>$48,000</td>
<td>$55,956</td>
</tr>
<tr>
<td>Periodicals</td>
<td>$75,517</td>
<td>$75,736</td>
<td>$72,091</td>
</tr>
<tr>
<td>E-Book Packages</td>
<td>$1,800</td>
<td>$3,000</td>
<td>$2,208</td>
</tr>
</tbody>
</table>

*All figures are approximate and do not include the large amount of electronic materials that UCR receives through consortia arrangements with other UC Schools.

3. Computing Facilities

The engineering programs at UCR emphasize the use of computers in all aspects of the engineering curricula. Due to the importance of computers in the engineering practice, computer work is incorporated into all lecture, laboratory and design courses offered. For computational work, BCOE has numerous PC microcomputing facilities, individual faculty computers, and on-line access to campus mainframe computing facilities.

PC Microcomputer Laboratories

Each of the five departments in the College of Engineering has PC (Windows-based) microcomputer laboratories for course labs and general student use. Each of these laboratories has 30 or more PCs. There are extensive software tools for word processing, general and engineering drawing, desk publishing, scientific computing, data analysis, database management as well as specialized software related to specific engineering program needs.

UNIX Computing Facility

In addition to the PC Windows-based labs, a UNIX based general computer lab is available to all undergraduate and graduate engineering students. The facility supports general scientific computation and experimentation, engineering design and simulation, electronic data communications, word processing, and project documentation. The lab is equipped with 16 workstations, a multi-processor file server, various storage devices, networked laser printers, and extensive UNIX workstation software for word processing, scientific computation, software development, and engineering design.

Additional Computing Resources

The proposed MSE Graduate Program plans to utilize a range of computing services offered by the Department of Computer Science and Engineering for instructional and
research purposes. The CS&E Technical Staff provide support for more than 500 desktop computers, which run a comprehensive range of operating systems – including Linux, Windows and MacOS X – and are located in a variety of research and instructional labs. Students are provided with card access, and all labs are open for 24/7 use. CS&E server infrastructure provides clients with remote access to their personal files and a vast range of application software via a number of mechanisms: Windows Terminal Service, secure shell, and the NX protocol. Other core network services include email, software version control, printing, authentication, name service, web, and database access. The CS&E network infrastructure is shared with other departments in the College of Engineering. Gigabit Ethernet to the desktop is the most common client configuration, with the lowest speeds being 100 Megabits. The network core is fully redundant with 10 Gigabit aggregate bandwidth between the College of Engineering LAN and the Internet core. CS&E also hosts an SGI Altix 4700 supercomputer, which is mainly used to support research in Computational Biology, Computer Architecture and Embedded Systems. This supercomputer features 64 Itanium processors and a RASC blade containing Xilinx Field-Programmable Gate Arrays (FPGAs) for offloading computation. Direct compilation of high-level application programs to FPGA logic circuits, and dynamic run-time translation of executing program binary code to FPGA logic circuits are subjects of active research within the CS&E Department, and preliminary work has demonstrated speed-ups of two orders of magnitude on some well-known scientific computing benchmarks.

Engineering Faculty Offices

Computers in faculty offices are purchased through extramural funds and/or faculty member’s initial complement with a rotating 3-yr replacement plan. Every office is equipped with a high-end PC computer. All computers are connected to the College of Engineering UNIX server and to the campus Ethernet.

Other Facilities Available to the College of Engineering Faculty

The research and training in computational materials science and engineering require state-of-the-art computing facilities, particular for materials \textit{ab initio} calculations. As part of the Engineering Building Unit II complex, a High-Performance Computing Clusters Laboratory has been established, which enables massive computations for MSE relevant projects. This facility will be available to the MSE faculty. In addition, UCR is connected to the UCSD Supercomputer Facility which the MSE faculty may use on a recharge basis.

Additional computational facilities are also available in MSE Participating Faculty laboratories. For example, Prof. R. Lake’s laboratory at the Department of Electrical Engineering features two Beowulf clusters that were custom built and expandable on demand. The original cluster consists of 32 slave nodes where each slave node contains one Intel Pentium 4, 3GHz w/1MB cache hyper-threading enabled (Prescott) cpu on an Intel D875PBZ board with 2GB ECC PC3200-DDR RAM connected via a gigabit
ethernet. The head node is configured with an Intel Pentium 4, 3GHz w/1MB cache hyperthreading enabled (Prescott) cpu on an Intel S875WP-1E server board with 4GB ECC PC3200-DDR RAM. For high performance database storage, the head node is equipped with an ultra320 SCSI RAID controller with a total of 300GB. The newer cluster consists of 16 dual-core 64-bit AMD Athlon slave nodes. Each slave node has a 3800+ 2GHz w/512KB L2 cache processor and 2GB ECC PC3200-DDR RAM on a ASUS A8N32-SLI Deluxe motherboard. The slave nodes each have two Gb connections to a gigabit ethernet switch. The head node consists of two Opterons running at 2GHz equipped with a total of 16GB of ECC-buffered RAM on a Tyan Thunder S2892 K8SE motherboard. For database storage, the head node is equipped with a SATA RAID controller with 1TB capacity. Both clusters use a common storage space on a custom built 2TB hot-swappable SATA RAID fileserver expandable on demand. Scientific software installed on the clusters includes GAUSSIAN03, Linda, GAMESS, NAMD, FIREBALL, SIESTA, ABINIT, PWSCF, and NEMO1D. Utility software includes the Portland Group CDK cluster development kit, OpenPBS, MPICH2, PVM, Intel MKL (Math Kernal Library), BLACS, PBLAS, LAPACK, ScaLAPACK, and Atlas.

4. Physical Facilities and Equipment

Teaching Laboratories and Equipment

Laboratory experience is an extremely important component of engineering education. All of the engineering programs, since their inception, have devoted significant efforts to the development of their respective laboratory courses and facilities, equipping them with state-of-the-art technology and equipment. It is an important goal of the Materials Science and Engineering program that the laboratories reflect the interdisciplinary nature of field. The following principles have guided these efforts:

- The labs must reflect the state-of-the-art technology in equipment, instrumentation, computer controls and interfaces, as well as methodology.
- The labs must reflect a balance between breadth in MSE, and the focus areas of the MSE Faculty.
- Certain teaching activities may be conducted in faculty research laboratories. This allows students to be exposed to the current research frontiers and the highly specialized instrumentation and equipment used in MSE research.

Although the majority of teaching laboratory use will be for the MSE undergraduate program, graduate courses may also utilize these facilities. Based on the approved BCOE undergraduate program for Materials Science and Engineering, we have identified the need for two teaching-research laboratories. Because the equipment needed for these labs overlap with that used in other engineering programs, teaching laboratory facilities in the other engineering departments will be used initially for the MSE program.
The centralized user facilities available for MSE graduate training have been described in Section I. In addition to these facilities, the laboratories of MSE Founding Faculty offer some unique experimental capabilities. Below we highlight some of these capabilities. This description is by no means comprehensive and only illustrates the breadth and scope of the materials research capabilities already present on UCR campus.

The laboratory of Prof. V. Vullev at the Department of Bioengineering is equipped with the fluorescence spectrophotometer for the steady-state and time-resolved measurements; UV/visible absorption spectrophotometer; potentiostat-galvanostat Gamry with capabilities for electrochemical measurements and impedance spectrometry measurements; plasma system Diener Electronics FEMTO; optical reflection and transmission bright-field microscopes; fluorescence and bright-field phase-contrast microscope with CCD cameras; Syringe pumps, Harvard Apparatus with nano and picoliter resolution; vacuum oven and related components.

The Nano Electrochemical System Laboratory (NESL) of Prof. N. Myung is equipped with the electrochemical facilities including Verstat multi-channels potentiostat/gavalnostats with integrated impedance spectroscopy for cyclic voltammetry, chronoamperometry, and chronocoulometry work, three channels research quartz crystal microbalance, three CHI electrochemical analyzers, rotating disk electrode apparatus, custom designed electrochemical flows cell to growth nanostructured materials, Emitetch Dual targets table-top sputter with turbo pump, Denton DV-502 thermal evaporator, Perkin Elmer’s AAnalyst atomic absorption spectroscopy (AAS), five Isotemp digital hot plate/stirrers, digital balances, microbalance, polisher, and water chillers. NESL is also equipped with Karl Suss manual probe stations with programmable hot chucks, a Wenworth probe station with Microzoom microscope, a Micromanipulator probe station with Mitutoyo long distance microscope, and a Signatone probe station with a hot chuck. In addition, it is equipped with Hirox video microscope, Westbond wedge wire bonder to in-situ monitor nanowire growth and package nanosensor. Agilent semiconductor parameter analyzer, Kiethley source measurement unit, Hoike LCR meter are available to characterize the electronic properties of nanowires. For spin transport studies, NESL is equipped with Janis’s temperature controllable cryostat (10 K to 400 K), which is positioned inside of electromagnet to examine temperature dependent spin transport properties of devices.

The materials characterization equipment is also available in Prof. Y. Yan’s laboratory. A gas/vapor permeation system equipped with an SRI Series 8610 gas chromatograph with flame ionization (FID) and thermal conductivity (TCD) detectors and full computer-control of flow, pressure, data collection, and data analysis will be used for gas and methanol permeation measurements. A Solartron electrochemical impedance spectroscopy system consisting of a Solartron impedance analyzer and a Solartron potentiostat with an automatic control and data acquisition computer station equipped with Z-Plot and Corr software for proton conductivity test and for in situ characterization of membrane electrode assembly (MEA). An ElectroChem fuel cell test station is used for measuring fuel cell performance for both polymer electrolyte membrane fuel cells (PEMFC) and direct methanol fuel cells (DMFC). An environmental chamber with controlled temperature and humidity will be used for proton conductivity measurements. A thermal gravimetric
analysis (TGA) system consisting of a Cahn recording balance with micro-gram sensitivity is used for study of thermal stability. Other available equipment includes Micromeritics automatic gas adsorption system, Carver hot press for making membrane electrode assembly (MEA) for fuel cells, Cambridge Applied Systems viscometer, Dynamic Light Scattering (DLS) system for particle size measurement and Veeco Dektek surface profiler for surface roughness and for low-k film thickness characterization.

Distinguished Prof. R. Haddon has separate laboratories for experimental research in the Department of Chemistry and the Department of Chemical and Environmental Engineering: (i) a laboratory devoted to chemical synthesis; (ii) a laboratory for synthesis, sample preparation and inert atmosphere work; (iii) thin film growth, spectroscopy, solid state measurement and microscopy laboratory; as well as (iv) experimental space in the ground floor of the Engineering building for nanotechnology work. The synthesis laboratories are fully equipped for synthetic chemistry with three inert atmosphere boxes (wet and dry). The sample preparation, solid state measurement and spectroscopy laboratory contains Digital Instruments Nanoscope IIIA AFM/STM, a Bruker RFS 100/S Near-IR Raman spectrometer, a Varian Cary UV-Vis-IR Spectrometer, a Continuum Thermo-Nicolet FTIR microscope integrated with a Nexus FTIR Nicolet spectrometer, Olympus optical microscope with DP10 digital camera, together with a custom cryostat for transport measurement in the temperature range between 4 and 480 K. The Engineering space contains a George Associates Faraday balance for magnetic susceptibility measurements between 4 and 500K and a bell jar for thin film growth and characterization. With the appointments in both CNAS and BCOE Prof. Haddon’s group members have access to many shared facilities including the Analytical Chemistry Instrumentation Facility, the Southern California Mass Spectra Facility and the Quantum Design MPMS and PPMS machines recently installed in the Department of Physics and Astronomy. The departments provide the services of electronics technicians, glass-blowers, X-ray crystallographer, and machine shop technicians with the capability to build scientific equipment and UHV parts. The usual analytical equipment for synthetic chemistry such as GC/MS, ESR and NMR is also available.

The materials synthesis and characterization equipment available at the Department of Mechanical Engineering include, but not limited to, the following. The laboratory of Prof. J. Wang is equipped for the thin film synthesis, quasi-static and dynamic characterization of materials. The essential elements are ORION-UHV magnetron sputtering system, Hysitron nanomechanical test instrument, Liveco universal micro material test system, Nd:YAG pulse lasers, high resolution curvature sensor system, optical microscopes, integrated surface acoustic wave system, and the reflection-transmission testing set. The laboratory of Prof. J. Garay specializes in materials processing and synthesis. It is equipped with the electric current activated densification apparatus - spark plasma sintering (SPS) system; hot isostatic press (HIP), ultra-high vacuum physical vapor deposition (PVD) system; high-temperature vacuum furnaces, general ultra high vacuum chambers and pumps, Instron universal tester, Instron microhardness tester, Agilent power supplies and electrical characterization systems, Buehler polishing and sample mounting equipment.
Prof. C. Ozkan’s laboratory focuses on nanofabrication and self assembly of materials and nanoscale characterization. The essential equipment consists of two low pressure chemical vapor deposition systems for semiconductor deposition, three electrochemical semiconductor deposition stations with digital control capability, wet chemical benches for self assembly and functionalization, probe sonicator, centrifuge, inert atmosphere and vacuum glove box, several cell culturing incubators for cancer cells and viruses research, laminar flow biological hood, Olympus inverted and upright microscopes, Agilent semiconductor parametric analyzer, solar simulator, Agilent capacitance measurement system, MMR low temperature probe station, Signatone probe station, Keithley semiconductor parametric analyzer; Digital Instruments Multimode-V AFM/STM with C-AFM and TUNA modules, Nanonics NSOM system, variable spin coating and UV curing system, Top-Gun SEM with EDAX. Prof. C. Dames’ laboratory is equipped with hardware and electronics for the precise nanothermal measurements over a broad range of temperatures: Janis ST-100 continuous-flow cryostat, Signal processing box for 1-omega, 2-omega, and 3-omega methods, highly-accurate DC and AC characterization systems, Keithley precision AC/DC current source and nanovoltmeter, Stanford Research lock-in amplifiers, Keithley digital multimeters and arbitrary waveform generators.

The Nano-Device Laboratory (NDL) of Prof. A.A. Balandin at the Department of Electrical Engineering is equipped with several thermal conductivity measurement setups: Netzsch Nano Flash LFA thermal diffusivity measurement system; transient planar source Hot-Disk system; MMR Technologies Seebeck-effect measurement system; home-built 3-omega thermal conductivity measurement setup and related equipment. The optical materials characterization equipment include Renishaw micro-Raman spectrometer operating under visible (488 nm; 630 nm) and ultraviolet (235 nm) excitation over a range of temperatures. Other equipment includes Edinburgh FLS920 spectrometer with the single-photon counting and time-resolved capabilities; Hall effect measurement system; Signaton probe-station with the hot chuck system, HP Precision LCR meter, METRIS atomic force microscope (AFM), scanning tunneling microscope (STM), as well as ancillary sample preparation equipment. The software available at NDL for materials and device simulation includes both commercial and in-house developed packages. Among commercial packages are ISE DESSIS for device modeling; CFDRC ACE+ for electron transport; FEMLAB; Gaussian; TCAD tools, etc. In addition, current and former NDL group members have developed software tools for simulation of electron and phonon dispersion and scattering rates in different types of nanostructured materials.

The 3D-Electronics laboratory of Prof. S. Khizroev include Dual Focused Ion Beam (FIB) System Strata; Dimensions scanning probe microscope (SPM) from DI/Veeco Corporation; AFM; magnetic force microscopy (MFM); STM; four-point nanoprober; scanning near-field optical microscopy (SNOM) based on Aurora-3; nanoscale accuracy spinstand Guzik V2002; near-field Kerr magnetometry system; vibrating sample magnetometer (VSM) and torque magnetometer, Kerr magnetometer; 10 KeV four pocket e-beam deposition system with planetary and residual gas monitoring; SEM/E-beam lithography LEO; four-tube low pressure chemical vapor deposition (LPCVD) system CVD; plasma enhance chemical vapor deposition (PECVD) system Plasmatherm; E-beam evaporator; rapid thermal anneal (RTA) system RTP-600S; deep reactive ion etcher system.
STS Multiplex RIE; Spin-Rinser-Dryer System ST-880D; inductively coupled plasma system Oxford Plasmalab; ellipsometer; mask aligners, 3D Confocal microscope; Resist/Spin/Coat station Headway; and other equipment.

Prof. J.L. Liu’s Quantum Structures Laboratory features material growth capabilities such as three molecular beam epitaxy (MBE) systems for the growth of II-VI ZnO-based materials and group IV SiGe-based materials. The devices characterization equipment include I-V probe station with Agilent 4155C parameter analyzer, Signatone probe station, Agilent precision pulse generators, and C-V with Agilent 4284A LCR meter; photoluminescence and electroluminescence with Janis cryostat for low temperature studies; photocurrent measurement setup, Ocean Optics LED measurement system, Ecopia Hall effect measurement system, and Hybond wire bonder system.

Prof. C.N. Lau’s laboratory is equipped with cutting-edge nanoscale characterization and cryogenic measurement systems, such as Veeco Nanoscope IV Multimode AFM. Its versatile design allows for the scanned gate microscopy (SGM), electrostatic force microscopy (EFM), scanned conductance microscopy (SCM), scanned magnetization microscopy and magnetic force microscopy (MFM). Other equipment includes Oxford Instrument Cryostat with Variable Temperature Insert, Helium-3 Insert and 10T Magnet together with a super-insulation helium dewar, 8 – 10 T magnet and a variable temperature insert that allows continuous measurement in temperature range from 1.5 K to 300 K; WestBond wire bonder; chemical vapor deposition chamber for growth of single walled carbon nanotubes; thermal evaporator; rotatable liquid nitrogen-cooled substrate holder, and a base vacuum of 3x10-7 torr; sputtering system by Aja International.

Prof. J. Shi’s laboratory is equipped with the UHV laser MBE system, which includes differentially pumped RHEED system and an ion source for cleaning and etching. This system is capable of oxide as well as metal and organic material deposition. Other equipment includes Lakeshore low-temperature DC and microwave probe station (4-400 K and 1 Tesla); scanning Hall probe microscope (4-300 K and 9 Tesla); Janis Research continuous-flow transport and magneto-optic system (4-350 K and 0.2 Tesla); Janis closed-cycle transport and magneto-optic system (10-300K and 1 Tesla); Janis Research low-temperature probe station (4-300 K and 200 Oe); Oxford He3 system with variable temperature insert (300 mK and 8/10 Tesla); Quantum Design Magnetic Property Measurement System (7T SQUID); and Lakeshore Vibrating Sample Magnetometer.

The laboratory of Prof. Y. Yin is equipped for synthesis, characterization and assembly of colloidal nanostructured materials. It includes MBRAUN Lab Master fully automated system with two antechambers for rapid and safe transfer of air and humidity sensitive compounds; Ocean Optics HR2000 UV-Vis fiber spectrometer with Mikropack DH-2000 UV-Vis-NIR light source; Zeiss Axio Imager A1m optical microscope; glass schlenk lines equipped with vacuum pumps and Digi-sense temperature controllers for reactions and sample manipulations under controlled atmosphere and temperature; two Eppendorf high-speed centrifuges for colloidal nanoparticle separation and purification; Precision lab oven, Fisher Isotemp programmable muffle furnace.
Dr. Feng’s research group operates two synthetic and one instrument laboratories. The synthetic laboratory is equipped with eleven large fume hoods, one MBRAUN glovebox, and other standard laboratory equipment (such as vacuum lines, pumps, ovens, furnaces and Parr bombs) for materials syntheses. Major instruments available in Dr. Feng’s laboratory are Bruker D8 Advance X-ray powder diffractometer with variable temperature and controlled atmosphere, Micromeritics ASAP 2010 automated micropore and surface area analyzer, Solatron 1260 impedance analyzer and 1287 electrochemical interface, Shimadzu Model UV-3101PC computerized UV-VIS-NIR spectrophotometer system with diffuse reflectance capability; photocatalytic reaction system with gas chromatograph equipped with a thermal conductivity detector; Shimadzu GC includes AFC, linear FID with electronic detector gas control and standard temperature and pressure control values; Vibrating Orifice aerosol generator from TSI Incorporated Particle Instruments; as well as High Performance Liquid Chromatography (HPLC).

The Bardeen group has the following equipment: a regeneratively amplified Ti:Sapphire laser system, which can generate sub-100 fs pulses tunable from 450 nm to 700 nm, with a minimum of 100 nanojoules of energy; Ti:Sapphire femtosecond oscillator, a Spectra-Physics Mai-Tai, tunable from 710 nm to 920 nm interfaced with an Olympus IX-70 inverted fluorescence microscope. Other equipment is photomultipliers, photodiodes, lock-in detection, a Hamamatsu streak camera with 15 picosecond temporal resolution, Ultrafast Systems transient absorption spectrophotometer; stand-alone fluorescence microscopes and a third microscope coupled to a Novascan atomic force microscope. AFM has a sealed cell attachment, which allows one to purge the sample cell with an inert gas to minimize oxygen and water vapor exposure of the sample. The AFM can be operated in multiple modes, including force curve, tapping, and contact modes.

The Machine Shop and Mechanical Engineering Facility

The machine shop is an important resource for the undergraduate education and graduate research. The equipment in the shop includes 4 milling machines (2 are numerically controlled), an Electric Discharge (EDM) system, 4 lathes, drilling presses and sanding machinery, arc and gas welding equipment, and metal and wood cutting and sawing equipment.

The Electronics Shop

The MSE Graduate Program will also have access to the Electronics Shop maintained by the Department of Electrical Engineering.
5. Space and Other Capital Facilities

Each of the faculty members that have agreed to participate in the MSE Graduate Program have individual labs and support facilities assigned through their respective colleges. The detailed design for a new Material Science and Engineering building has been completed (see Figure 3 in Section I). The new MSE building will have approximately 77,000 ft\(^2\). In addition, the MSE building will provide approximately 18,000 ft\(^2\) of general assignment classrooms for the campus. The new building will be used for laboratory training of MSE majors. The MSE Graduate Program places significant emphases on the laboratory instruction and training. The new MSE building is expected to facilitate such laboratory-oriented training. Other Engineering building (Engineering III and IV) are currently at the planning stage (see Figure 5).

![Figure 5: Schematic of the existing (Bourns A and B; Engineering II); and planned engineering buildings (MSE building; Engineering III and IV) at UCR campus. Surge building was temporarily used by CSE department. The ground breaking for MSE building is planned for January 2008.](image-url)
SECTION VII: GRADUATE STUDENT SUPPORT

At the initial phase, the MSE Programs, both undergraduate and graduate, will be offering about 10 undergraduate lecture and laboratory course per year on a regular basis, and about 6 MSE graduate courses each year. The number of MSE relevant courses at different participating departments is expected to be much larger. On average, one teaching assistant will handle two discussion sections and laboratory sections each year. BCOE will allocate TAs according to the college TA allocation guidelines. After the MSE Graduate Program is started, the recruitment funds and the first year fellowships will be requested on an annual basis from the UCR Graduate Division (see the attached letter from the Dean of Graduate Division and Appendix H).

Faculty recruitment, especially in applied areas, will also increase the need and support for qualified research assistants. Extramural funding, from grants and research contracts, will be used to partially support graduate students working under the direction of individual faculty members. With the additional TA-FTE allocations, we will be able to put together 4-5 year packages of support for incoming graduate students. A large number of MSE participating faculty members have very well funded research programs, which allow them to support 5 – 10 graduate students through GSR appointments. A similar situation is expected for the proposed Graduate Program. The projections for enrollment and TA resources are given in Appendix H.

The estimated number of the enrolled MSE graduate students over the first five years is around 40-50. During the first year we expect that some currently admitted students will transfer to MSE Graduate Program. During the second year of the program we plan to have around 10-20 graduate students directly entering MSE program. More details on the enrollment projections and the evaluation method used can be found in Section I.6.

SECTION VIII: GOVERNANCE

The MSE Graduate Program governance and administration is described in Section I.7. The role and duties of the MSE Graduate Advisor and Graduate Program Assistant are specified in Section I.8. The adopted UCR Guidelines for the Interdepartmental Graduate Program By-Laws are provided in Appendix E.
# Suggested Course Plan for a UC Riverside B.S. Major in Materials Science and Engineering
**(Catalog Year 2007)**

## Fall Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 001A</td>
<td>English Composition</td>
</tr>
<tr>
<td>CHEM 001A/01LA</td>
<td>General Chemistry</td>
</tr>
<tr>
<td>MATH 009A</td>
<td>First Year Calculus</td>
</tr>
<tr>
<td>MSE 001</td>
<td>Fundamentals of Material Science</td>
</tr>
</tbody>
</table>

## Winter Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 001B</td>
<td>English Composition</td>
</tr>
<tr>
<td>CHEM 001B/01LB</td>
<td>General Chemistry</td>
</tr>
<tr>
<td>MATH 009B</td>
<td>First Year Calculus</td>
</tr>
<tr>
<td>ENGR 092*</td>
<td>Freshman Seminar</td>
</tr>
</tbody>
</table>

## Spring Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 001C/01LC</td>
<td>General Chemistry</td>
</tr>
<tr>
<td>CS 030</td>
<td>Intro to Comp Science &amp; Eng</td>
</tr>
<tr>
<td>ENGL 001C OR 01SC*</td>
<td>English Composition</td>
</tr>
<tr>
<td>MATH 009C</td>
<td>First Year Calculus</td>
</tr>
</tbody>
</table>

## First Year

### Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 112A</td>
<td>Organic Chemistry</td>
</tr>
<tr>
<td>MATH 046</td>
<td>Differential Equations</td>
</tr>
<tr>
<td>ME 018</td>
<td>Intro to Engineering Computation</td>
</tr>
<tr>
<td>PHYS 040A</td>
<td>Physics (Mechanics)</td>
</tr>
<tr>
<td>MATH 010A</td>
<td>Multivariable Calculus</td>
</tr>
<tr>
<td>PHYS 040B</td>
<td>Physics (Heat/Waves/Sound)</td>
</tr>
<tr>
<td>BREADTH</td>
<td>Humanities/Social Sciences</td>
</tr>
<tr>
<td>BREADTH</td>
<td>Biological Science</td>
</tr>
</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 138</td>
<td>Electrical Properties of Materials</td>
</tr>
<tr>
<td>ENGR 180</td>
<td>Technical Communications</td>
</tr>
<tr>
<td>ME 114</td>
<td>Intro to Materials Science &amp; Engr</td>
</tr>
<tr>
<td>BREADTH</td>
<td>Humanities/Social Sciences</td>
</tr>
<tr>
<td>CHE 100</td>
<td>Engineering Thermodynamics</td>
</tr>
<tr>
<td>ME 110</td>
<td>Mechanics of Materials</td>
</tr>
<tr>
<td>TECHNICAL ELECTIVE</td>
<td>**See Catalog List</td>
</tr>
<tr>
<td>BREADTH</td>
<td>Humanities/Social Sciences</td>
</tr>
</tbody>
</table>

### Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSE 161</td>
<td>Analytical Materials Characterization</td>
</tr>
<tr>
<td>STAT 155 or STAT 100A</td>
<td>Probability &amp; Statistics for Engr</td>
</tr>
<tr>
<td>TECHNICAL ELECTIVE</td>
<td>**See Catalog List</td>
</tr>
<tr>
<td>BREADTH</td>
<td>Humanities/Social Sciences</td>
</tr>
<tr>
<td>MSE 175B</td>
<td>Senior Design</td>
</tr>
<tr>
<td>TECHNICAL ELECTIVE</td>
<td>**See Catalog List</td>
</tr>
<tr>
<td>BREADTH</td>
<td>Humanities/Social Sciences</td>
</tr>
</tbody>
</table>

## Notes

Humanities/Social Sciences courses fulfill the breadth requirements specific to the College of Engineering and is available on the College of Engineering Student Academic Affairs website: [www.engr.ucr.edu/studentaffairs](http://www.engr.ucr.edu/studentaffairs).

*Optional, but recommended.

**Technical Electives are courses in Materials Science & Engineering which explore specific topics. A list of Technical Electives is available on the College of Engineering Student Academic Affairs website: [www.engr.ucr.edu/studentaffairs](http://www.engr.ucr.edu/studentaffairs), and the UCR College Catalog website: [www.catalog.ucr.edu/](http://www.catalog.ucr.edu/).
APPENDIX B: ADVERTISEMENT FOR B.S. DEGREE IN MATERIALS SCIENCE AND ENGINEERING
Major and Emerging Job Opportunities

Engineering majors study materials in order to apply this knowledge to high-tech products ranging from ultra-fast computers and high-efficiency solar cells to super-jets and cars. Today, engineering innovations are on the forefront of breakthroughs in materials research.

Graduates of the program prepare for a variety of careers in nanotechnology, electronics, computing, biotechnology, chemical, automotive and aerospace industries, as well as government agencies and research laboratories, which have been increasingly hiring students with expertise in materials science.

Contact Information:

Kristine Phengrasamone, Assistant to MSE Program
Bourns College of Engineering
University of California
Riverside, CA 92521
E-mail: kristinep@engr.ucr.edu
Phone: 951-827-7151
FAX: 951-827-3188

Professor Alexander Balandin, Chair, MSE Program
E-mail: balandin@ee.ucr.edu Phone: 951-827-2351

MSE Program website: www.engr.ucr.edu/mse/

Office of Student Academic Affairs
Bourns College of Engineering
A199 Bourns Hall
University of California
Riverside, CA 92521-0144
Phone: 951-827-3647 (UCR-ENGR)
FAX: 951-827-2822

Undergraduate Affairs website:
http://www.engr.ucr.edu/studentaffairs/

Images are courtesy of D. Ntallis, R. Lake and A.A. Balandin research groups.
Welcome to Materials Science Engineering (MSE) at the University of California, Riverside!

The program at Bourns College of Engineering, in response to the growing demands of high-tech industries, is concerned with the physical sciences and engineering. It puts major emphasis on nanotechnology and novel methods of energy generation and use. Ours is one of the only undergraduate programs that involves all departments of the College of Engineering. Without inflating the total number of units required for graduation, we developed a program which creates a broad technical base that prepares MSE majors for employment in a wide range of industries, including electronics, data-storage, automotive, aerospace, energy generation and distribution, medical products and pharmaceutical, as well as for graduate school in engineering and sciences.

MSE graduates are well-suited to work not only for the large high-tech corporations but also for smaller entrepreneurial companies that need engineers with a broad base of skills rather than people specialized in particular areas. Companies are eager to hire engineers who can bring materials science expertise to bear on materials selection, process innovation, or control.

Independent testing and consulting clients are also strongly interested in MSE experts, who can bring technical expertise to companies with problems that require innovative solutions. MSE graduates are in great demand, and they are well-positioned to enter a wide array of high-tech industries.

To learn more about education, research, and job opportunities in materials engineering and science, please visit the MSE Website at www.engr.ucr.edu/faculty/chemeng/

Faculty Members:

- Dr. David Kisailus
  www.engr.ucr.edu/faculty/chemeng/kisailus.html
- Dr. Sahkrit Khizrov
  www.engr.ucr.edu/faculty/chemeng/khizrov.html
- Dr. Roger K. Lake
  www.engr.ucr.edu/faculty/chemeng/lake.html
- Dr. Jiann Lin
  www.engr.ucr.edu/faculty/chemeng/lin.html
- Dr. Stefano Leonardi
  www.engr.ucr.edu/faculty/chemeng/leonardi.html
- Dr. Jalt Lubyovitsky
  www.engr.ucr.edu/faculty/chemeng/lubyovitsky.html
- Dr. Mark Wolle
  www.engr.ucr.edu/faculty/chemeng/wolle.html
- Dr. Dimitrios Morikis
  www.engr.ucr.edu/faculty/chemeng/morikis.html
- Dr. Ashok Mulchandani
  www.engr.ucr.edu/faculty/chemeng/mulchandani.html
- Dr. Nosang Myung
  www.engr.ucr.edu/faculty/chemeng/myung.html
- Dr. Congz Okean
  www.engr.ucr.edu/faculty/chemeng/okean.html
- Dr. Nithri Ozkan
  www.engr.ucr.edu/faculty/chemeng/ozkan.html
- Dr. Victor G. J. Rodgers
  www.engr.ucr.edu/faculty/chemeng/rodgers.html
- Dr. Kambiz Vafaie
  www.engr.ucr.edu/faculty/chemeng/vafaie.html
- Dr. Valentine Willey
  www.engr.ucr.edu/faculty/chemeng/willey.html
- Dr. Junlan Wang
  www.engr.ucr.edu/faculty/chemeng/wang.html
- Dr. Jiazhong Wu
  www.engr.ucr.edu/faculty/chemeng/wu.html
- Dr. Guanshi Xu
  www.engr.ucr.edu/faculty/chemeng/xu.html
- Dr. Yushan Yan
  www.engr.ucr.edu/faculty/chemeng/yan.html
Welcome to Materials Science and Engineering

Materials Science and Engineering is concerned with the creation of materials with novel properties and their use in a variety of fields ranging from ultra-fast computer chips and high-efficiency solar cells to high-powered jets, and even beauty products. Today, engineering innovations are increasingly dependent on breakthroughs in materials at the micro- and nanometer scale. Students in MSE acquire a solid background in the basic sciences and in the engineering of materials, with hands-on laboratory experience in nano-scale materials characterization and processing. This program prepares graduates for a variety of careers in fields such as nanotechnology, electronics, computing, the biomedical, automotive and aerospace industries, as well as government agencies and research laboratories.
APPENDIX C: LETTERS OF SUPPORT

BCOE Letters of Support
- Reza Abbaschian, Dean, Bourns College of Engineering, UCR
- Mark R. Matsumoto, Associate Dean for Research and Graduate Studies, Bourns College of Engineering, UCR
- Roger Lake, Chair, Department of Electrical Engineering, UCR
- Qing Jiang, Chair, Department of Mechanical Engineering, UCR
- Jerome S. Schultz, Chair, Department of Bioengineering, UCR
- Laxmi N. Bhuyan, Chair, Department of Computer Science & Engineering, UCR
- Marc A. Deshusses, Chair, Department of Chemical & Environmental Engineering, UCR

UC Riverside Campus Letters of Support
- Dallas Rabenstein, Dean, Graduate Division, UCR
- Eric L. Chronister, Chair, Department of Chemistry, UCR
- Robert Haddom, Director, Center for Nanoscale Science and Engineering, UCR
- Matthew Barth, Director, Center for Environmental Research and Technology, Bourns College of Engineering, UCR
- Harry W. Green, II, Director, Central Facility for Advanced Microscopy and Microanalysis, UCR
- Bir Bhanu, Director, Center for Research in Intelligent Systems, UCR

UC System Letters of Support
- Enrique J. Lavernia, Dean, College of Engineering, UCD
- Frieder Seible, Dean, Jacobs School of Engineering, UCSD
- James S. Speck, Chair, Materials Science, UCSB
- Farghali A. Mohamed, Chair, Chemical Engineering and Materials Science, UCI
- Vijay K. Dhir, Distinguished Professor and Dean, Samueli School of Engineering and Applied Science, UCLA

External Letters of Support
- Alan J. Hurd, President, Materials Research Society
- Merton C. Flemings, Professor and Faculty Director, MIT
- Edwin L. Thomas, Head, Department of Materials Science and Engineering, MIT
- William A. Goddard, III, Director, Materials and Process Simulation Center, California Institute of Technology
- Alexander J. Malkin, Scientific Capability Leader for BioNanoSciences, Lawrence Livermore National Laboratory
- Jagdish Narayan, Distinguished Chair in Materials Science, Department of Materials Science and Engineering, North Carolina State University
- Robert L. Snyder, Professor and Chair, Materials Science and Engineering, Georgia Institute of Technology
January 17, 2008

TO: Ellen Wartella
Executive Vice Chancellor and Provost

FROM: Reza Abbaschian
Dean, Bourns College of Engineering

RE: Establishment of the Interdisciplinary Materials Science and Engineering Graduate Degree

I am pleased to submit the attached documents for the establishment of a campus-wide and Interdisciplinary Materials Science and Engineering Graduate Degree at UCR. The proposed MS and PhD program, as noted in the attached proposal, will have participation not only from Bourns College of Engineering but also from departments of Chemistry, Biochemistry, Biology, Cell Biology, Neurosciences, Physics and Astronomy from the College of Natural and Agricultural Sciences. Over 30 faculty members have already agreed to participate as “Founding Faculty” of the program. I am confident additional faculty from BCOE and other colleges will join when the program gets established.

The proposed graduate program will complement the recently established undergraduate Materials Science and Engineering program in BCOE. The undergraduate program integrates across all BCOE departments (Bioengineering, Chemical and Environmental Engineering, Computer Science and Engineering, Electrical Engineering and Mechanical Engineering) and allows MSE students to directly join the program or enter through any of the BCOE programs and follow a materials degree curriculum. The undergraduate curriculum concentrates on fundamental and engineering principles dealing with structure, processing, properties and performance of materials but allows for specialization in their home departments. The program is chaired by Professor Alexander Balandin of our Electrical Engineering Department.

The graduate program will have a Graduate Program Committee, which will include a faculty member from each of the participating departments. The core educational curriculum, as described in the proposal, will concentrate on the fundamental and engineering principles dealing with structure, properties, performance and processing of materials. The research focus of the program initially will be on nanotechnology, sustainability, alternate energy generation and conversion. Additional research areas will be included depending on the research interests of the participating faculty. The graduate students will utilize laboratories of their supervisors for their research and will have access to the centralized facilities such as CNSE nanofabrication and CFAMM materials characterization laboratories. The administration offices of the program will be housed in the existing BCOE buildings. These offices will move to the new Materials Science and Engineering Building in 2010.

Professor Alexander A. Balandin, who is chairing the undergraduate MSE program, will serve as chair the graduate program as well. To assure adequate structure and organization, BCOE will be the administrative unit of the graduate program. All support functions such as student services,
January 18, 2008
RE: Establishment of the Interdisciplinary Materials Science and Engineering Graduate Degree

accounting, purchasing, recruitment, contract and grant administration will be accomplished through the College and participating departments as appropriate. We have already hired a staff member to the undergraduate program. However, an additional graduate staff member will be needed to support the recruitment and processing of the applications. We request allocation of funds for the new staff when the program gets established.

MSE graduate students will be supported similar to other graduate students in the campus. They will be funded through the normal process of the Central Fellowship funding, GSR and other funding resources by the participating departments and faculty members. To initially support the teaching functions, however, we request allocation of five temporary TAs for five years. At the end of this period, the temporary TA lines will be transitioned to regular lines based on the student FTE generation by the program.

Per your direction, we are recruiting five additional interdisciplinary MSE faculty members this year. Last year, one such faculty was hired by the CEE department. Similar to the last year, the new faculty will have homes in existing departments, but will contribute to both their home department, as well as, the MSE program. We anticipate the core BCOE faculty to grow to around 15 within the next 5–10 years.

I strongly believe the proposed interdisciplinary program will greatly enhance graduate training and education at UCR. Therefore, I request your approval.
December 12, 2007

Letter of Support for the Proposal for a
Graduate Program in Materials Science and Engineering

I am writing to express my strong support the proposed Graduate (M.S. and Ph.D.) Program in Materials Science and Engineering. Faculty members in every Bourns College of Engineering department have strong research interests and programs related to materials science and engineering. To retain and enhance the quality of our existing faculty, and attract additional eminent researchers, it is in the best interest of the College and the UCR campus to establish this program.

This past year our graduate student enrollment experienced a major increase. Many of the newly admitted graduate students are specializing in nanotechnology and/or other materials related areas. This increase suggests that the graduate program expansion in the direction of the materials with the focus on nanotechnology, energy conversion, and sustainability will be strategically right decision for the campus and UC system in general.

Further, the College has just submitted a full proposal (one of 34 selected from 147 pre-proposals) to establish a National Science Foundation Engineering Research Center (ERC) for Thin-Ordered Porous (TOP) Film Systems for Energy, Environment, and Electronics. This center would primarily be a materials science and engineering effort that involves BCoE faculty across all departments.

In conclusion, I am strongly in favor of establishing the Graduate Program in Materials Science and Engineering.

Sincerely,

Mark R. Matsumoto
Associate Dean
Research and Graduate Studies
December 8, 2007

Dr. A. A. Balandin
Chair, Materials Science and Engineering Program
Professor, Department of Electrical Engineering
University of California - Riverside
Riverside, CA 92521 USA

Dear Alex:

The Department of Electrical Engineering is pleased to add its strongest support for the proposed PhD and MS Graduate Program in Materials Science and Engineering (MSE) at the University of California – Riverside. There are already a number of faculty members at the Department of Electrical Engineering who are active in materials research. The establishment of the MSE Graduate Program will definitely help them in attracting gifted graduate students and enhance their extramural funding opportunities. I am confident that the proposed MSE Graduate Program will be beneficial for UCR and UC system as whole.

The MSE proposal is focused on the most important areas in materials research such as nanotechnology, energy and sustainability. These are the key areas for California and the nation. The fact that so many internationally recognized professors from different departments already expressed their interest to participate in the program confirms its significance for the campus. I also believe that the success of the MSE program is ensured by the availability of the clean room, state-of-the-art facilities and equipment, as well as planned completion of the new Materials Science and Engineering building.

In summary, you have my full support. Should you need any additional information or help, please do not hesitate to contact me.

Cordially,

Roger Lake
Professor and Chair
Department of Mechanical Engineering  
University of California  
Riverside, CA 92521  
951)827-2872

December 9, 2007

Dr. A. A. Balandin  
Chair, Materials Science and Engineering Program  
Professor, Department of Electrical Engineering  
University of California - Riverside  
Riverside, CA 92521 USA

Dear Alex:

I am writing to express the strong support of the Department of Mechanical Engineering for the newly proposed interdisciplinary graduate program (MS and PhD) in Materials Science and Engineering. The creation of this program is both timely and welcomed. This program will not only respond to the national trend in the rapidly evolving field of materials science and engineering but will also enhance and strengthen UCR’s role as an institution of excellence in education and research.

As you know, materials science and engineering field is a major research thrust at the Department of Mechanical Engineering. A substantial number of our faculty members carry out well-funded research focused on nanotechnology, novel materials synthesis and direct energy conversion. We are happy that the proposed MSE graduate program will put a strong emphasis in those areas. The faculty of the Department of Mechanical Engineering is looking forward to contributing to and benefiting from the MSE Graduate Program.

Sincerely,

Qing Jiang  
Professor and Chair
Date: December 15, 2007

To: Alexander Balandin
Material Science and Engineering Program

From: Jerome S. Schultz
Chairman, Department of Bioengineering

Re: Establishment of the Graduate Material Science and Engineering Program

Dear Professor Balandin,

I am pleased to report that the Department of Bioengineering fully endorses your proposal to establish a Material Science and Engineering Graduate Program.

Advances in material science have been critical in the development of new technologies that have had a major impact on human health. Biomedical devices such as pacemakers, artificial joints, heart assist pumps, and dialysis machines would not have been possible without the major scientific contributions of the material science research community.

The establishment of a Graduate MSE Program at UC Riverside will assist the development of our Department of Bioengineering as we move towards a significant role in the planned School of Medicine on our campus. Our Department plans to fully collaborate with the MSE Graduate Program through teaching and research. Given that California has the most biomedical device companies in the United States, we expect that our Biomaterials efforts as part of the MSE Program will have a very positive effect on our region.
December 12, 2007

Dr. A. A. Balandin
Chair, Materials Science and Engineering Program
Professor, Department of Electrical Engineering
University of California - Riverside
Riverside, CA 92521 USA

Re.: letter of support for MSE Program

Dear Alex:

I am writing you to express the strong support of the Department of Computer Science and Engineering for the establishment of the interdepartmental graduate program in Materials Science and Engineering. I am very glad to know that this program will include all departments of the Bourns College of Engineering. In this sense it is a truly unique program for the college and campus in general.

The substantial component of the field of materials science and engineering is computational materials research. The \textit{ab initio} simulations of material properties require state-of-the-art computing resources and expertise in massively parallel computations. The faculty of the Department of Computer Science and Engineering will be glad to participate in the materials relevant computer simulation research and contribute to education via offering courses on the computer and programming fundamentals.

We are looking forward to cooperating with you in the framework of this new Materials Science and Engineering graduate program.

Sincerely,

\[\text{[Signature]}\]

Professor and Chair
Department of Computer Science and Engineering
http://www.es.ucr.edu/~bhuyan/
January 17, 2008

Alexander Balandin  
Professor, Department of Electrical Engineering  
Director, Materials Science and Engineering Program  
University of California  
Riverside, CA 92521

Re: Letter in support of the establishment of an Interdepartmental Graduate Program in Materials Science and Engineering at UC Riverside  

Dear Alex:

I am pleased to add CEE’s strong support to the proposed Interdepartmental Graduate Program leading to M.S. and Ph.D. degrees in Materials Science and Engineering.

The synthesis of novel materials in particular nanostructured materials, materials characterization, and development of novel functional materials that can be deployed in energy, medical, sensing, magnetic/electronic or environmental applications are already important research area of several faculty members in the Department of Chemical and Environmental Engineering. We are looking forward to growing this thrust together in the College and to build infrastructure, while educating graduate and undergraduate students.

California’s preeminence in cutting edge technologies, venture capital, high-tech industries and entrepreneurial spirit provides the competitive advantage for the region to become a leader in the broad fields of nanotechnology and materials science and engineering. By facilitating a multidisciplinary approach to materials science and engineering, the proposed program has the potential to redefine how we educate and train researchers in this field. We, in the Department of Chemical and Environmental Engineering are looking forward to working together to this endeavor.

Sincerely,

Marc A. Deshusses  
Professor and Department Chair  
Department of Chemical and Environmental Engineering

Co-Editor, Chemical Engineering Journal
Professor Alexander Balandin
Department of Electrical Engineering
Materials Science and Engineering Program
University of California - Riverside
Riverside, CA 92521

Dear Professor Balandin:

I am writing to support your proposal for an interdepartmental graduate program in Materials Science and Engineering (MSE) at the University of California, Riverside. As well documented in your proposal, we already have a number of faculty dispersed in several departments in the Bourns College of Engineering and in the College of Natural and Agricultural Sciences engaged in materials science and engineering research. By bringing this group of faculty together in the proposed interdepartmental graduate program, UC Riverside will be able to offer exciting opportunities to graduate students for state-of-the-art research and education in materials science and engineering. This should result in the recruitment of high quality graduate students, which will benefit not only our faculty and their research programs but also the state of California by providing highly trained scientists and engineers for our knowledge-based economy.

Fellowship funding will be provided for graduate students in the MSE graduate program by the same model used to provide funding for graduate students in other engineering graduate programs. Graduate student fellowship funding is provided to the Bourns College of Engineering on the basis of the number of students recruited in a given cohort. This funding can be used by the College to cover fees and provide a stipend in the financial support package offered to applicants. In addition, there are other fellowship funds administered by the Graduate Division, including Chancellor’s Distinguished Fellowships and diversity fellowships that are available to graduate students in the Bourns College of Engineering on a competitive basis.

In summary, I strongly support your proposal for creation of a graduate program in Materials Science and Engineering. With the strong research programs we already have together with future faculty hires in materials science and engineering, I predict the program will rapidly attract a strong cohort of graduate students and will become one of the premier graduate programs in Materials Science and Engineering.

Sincerely,

[Signature]

Dallas L. Rabenstein
Dean, Graduate Division
Distinguished Professor of Chemistry
January 15, 2008

Dr. A. A. Balandin  
Chair, Materials Science and Engineering Program  
Professor, Department of Electrical Engineering  
University of California - Riverside  
Riverside, CA 92521 USA

Re.: letter of support for the Graduate Program  
in Materials Science and Engineering

Dear Alex:

I have read your proposal on the establishment of the interdepartmental graduate program leading to M.S. and Ph.D. degrees in Materials Science and Engineering at UC-Riverside. I would like to express my strong support for this timely initiative.

It is clear from the proposal that you have already assembled a team of very capable researchers working in materials science and engineering. In addition to the six Chemistry faculty included in the existing MSE proposal, the Chemistry Department currently has an ongoing junior faculty search specifically devoted to the area of Materials Chemistry. Our efforts to hire new faculty in Materials Chemistry will be enhanced by, and will enhance, the proposed program.

The materials characterization and nanofabrication facilities at UCR are already adequate for the proposed program and are sure to be expanded as the program grows.

I believe that the proposed interdepartmental structure of the graduate program is appropriate and allows you to efficiently utilize the campus resources. It also reflects the interdisciplinary nature of the program.

In conclusion, the proposed program will help to modernize our graduate programs and it will help UCR to attract the best graduate students.

Sincerely,

Eric Chronister  
Chair, Chemistry
December 15, 2007

Dr. A. A. Balandin
Chair, Materials Science and Engineering Program
Professor, Department of Electrical Engineering
University of California - Riverside
Riverside, CA 92521 USA

Re: UCR Interdepartmental Graduate Program in Materials Science and Engineering

Dear Alex:

I read your proposal on the plan to establish an interdepartmental graduate program leading to M.S. and Ph.D. degrees in Materials Science and Engineering and I would like to add my strongest support to this initiative. I am particularly pleased that you have chosen to focus the new materials engineering graduate program on nanotechnology, energy and sustainability because I believe these topics to be both timely and important for the US and California. The program focus and administrative structure will allow us to capitalize on the existing strengths and resources on the UCR campus.

You have already assembled an excellent team of active researchers to serve as Founding Faculty for the graduate program. This ensures the program success in graduate training and will provides a healthy level of extramural funding for the program. I am sure that the number of participating faculty members will continue to grow as the program develops.

As you know we have developed state-of-the-art nanofabrication capabilities in the fully-equipped clean room at the Center for Nanoscale Science and Engineering. A large number of graduate students from all departments of BCOE and many departments of CNAS currently use these facilities for a variety of research projects on a recharge basis. We offer training sessions and safety classes to the users. The nanofabrication capabilities already present at UCR campus will be a major benefit for the planned research-intensive graduate program in materials. The planned opening of the new Materials Science and Engineering building will further enhance the nanofabrication and experimental capabilities at UCR.
I believe the proposed interdepartmental Graduate Program in Materials Science and Engineering will enhance interdisciplinary research and education on campus and will enhance the competitiveness of UCR in seeking major research and instrumentation awards. The creation of this program will further enhance the reputation of the UC system as the premier public research institution.

In many respects nanotechnology is a fine scale extension of materials science and engineering and in order to have a strong nanotechnology program it is essential to have in place core programs in materials. The research in the Center for Nanoscale Science and Engineering is directed toward the realization of advanced spintronic, electronic and photonic devices based on new materials such as carbon nanotubes and graphene. There is also a strong effort in magnetic storage and recording which relies on nanoscale ferromagnets and patterned media together with programs on fuel cells with novel architectures. Clearly these efforts will be greatly facilitated by the availability of your program and thus I would like to add my strongest endorsement to the proposed interdepartmental Graduate Program in Materials Science and Engineering.

Please let me know if I can be of further help.

Sincerely,

Robert Haddon
Distinguished Professor
Department of Chemistry
Department of Chemical and Environmental Engineering
Director, Center for Nanoscale Science and Engineering
December 10, 2007

Dr. Alexander Balandin, Professor and Chair
Materials Science and Engineering Program
Department of Electrical Engineering
University of California - Riverside
Riverside, CA 92521 USA

Dear Professor Balandin:

I am writing to offer my strongest support for the proposal to establish an interdisciplinary graduate program in Materials Science and Engineering (MSE) at UCR. The research and training in materials science and engineering are clearly gaining importance in the nation and world-wide. The establishment of the graduate program in materials in Southern California will have a positive impact on the local industry.

We, at the College of Engineering-Center for Environmental Research and Technology (CE-CERT), conduct research in a number of areas overlapping with the scope of the proposed MSE graduate program. For example, we will be very happy to cooperate in research and graduate student training in areas such as sustainable energy systems, emissions and fuels, atmospheric processes, and transportation systems.

I understand that the proposed MSE graduate program will focus on nanotechnology and energy conversion. This opens up many opportunities for joint CE-CERT – MSE research projects. CE-CERT has a history of successful involvement of the graduate student to research during summer and throughout the academic year. Our experimental facilities will be available for MSE graduate student training and research.

In summary, I wish to express my full support to establishing the MSE graduate program at UCR.

Sincerely yours,

Matthew Barth
Professor, Electrical Engineering
Director, Center for Environmental Research and Technology
University of California
Riverside, CA 92521
tel: (951) 781-5782 fax: (951) 781-5744
December 23, 2007

Alexander A. Balandin, PhD
Professor, Department of Electrical Engineering
Chair, Materials Science and Engineering Program
Director, Nano-Device Laboratory
University of California - Riverside
Riverside, CA 92521 USA

Re.: Letter of support for the Graduate
Program in Materials Science and Engineering

Dear Alex:

I have read your proposal on establishing an interdepartmental graduate program leading to M.S. and Ph.D. degrees in Materials Science and Engineering at UC Riverside. I would like to state that I enthusiastically support this proposal. I believe our campus is ready for such a graduate program and has both faculty expertise and equipment required for the research and graduate training in materials science and engineering.

As you know, the UC Riverside Central Facility for Advanced Microscopy and Microanalysis (CFAMM) is a universal research, service, and consulting laboratory for microscopic characterization of organic and inorganic materials, biological tissue and minerals applying electron beam techniques. The facility utilizes state-of-the-art equipment and its personnel conduct research and provide collaborative assistance, training and service to faculty and students at UC Riverside as well as to clients in industry, government, commerce, forensics and academia.

This facility will certainly be open to the graduate students pursuing their degrees in Materials Science and Engineering. I also see a benefit for the facility as more users will help to cover the cost of the instrument maintenance, and world-class research will facilitate the facility upgrades through extramurally funded grants.

I also would like to take this opportunity to volunteer as a faculty member in your graduate program. Although my research is in high-pressure geophysics and therefore, the motivation for my research is often different from that of “normal” material scientists, in terms of what I actually do, I am a materials scientist. I work on flow mechanisms and kinetics in crystalline
solids, the mechanisms of and materials consequences for phase transformations, especially when the products of the transformation are nanocrystalline (often leading to mechanical instability), phase equilibria, etc.

I am confident that the interdepartmental graduate program in Materials Science and Engineering will enhance interdisciplinary research and education at UCR. I give my strongest endorsement to this development.

Thank you.

Sincerely,

Dr. Harry W. Green, II  
Distinguished Professor of Geology and Geophysics  
Director, Central Facility for Advanced Microscopy and Microanalysis (CFAMM)  
Institute of Geophysics and Planetary Physics  
University of California  
Riverside, CA 92521  
Tel: (951) 827-4505  
Fax: (951) 827-4324  
email: harry.green@ucr.edu
Center for Research in Intelligent Systems

December 11, 2007

Dr. Alexander Balandin, Professor and Chair
Materials Science and Engineering Program
Department of Electrical Engineering
University of California - Riverside
Riverside, CA 92521 USA

Dear Professor Balandin:

I would like to add my enthusiastic support to the proposed interdisciplinary graduate program in Materials Science and Engineering (MSE) at the University of California – Riverside. I believe that such a program is very important and timely. It will definitely enhance the campus research and graduate education.

There are no doubts that modern research in materials science and engineering includes substantial computational component. As the director of the Center for Research in Intelligent Systems (CRIS) at the University of California – Riverside, I would be happy to share the computational resources and participate in MSE graduate student supervision. Currently, at CRIS we carry out research in the following MSE related areas: (i) biologically motivated computational models; (ii) performance modeling and prediction; and (iii) biological databases, (iv) bioinformatics, and (v) VLSI design and implementation of computational algorithms. I would be glad to further extend our activities in the computational engineering areas relevant to MSE and cooperate with the MSE Graduate Program.

I offer my strongest support to the new MS and PhD Graduate Program in Materials Science and Engineering at UCR.

Sincerely,

Bir Bhanu
Professor and Director
Center for Research in Intelligent Systems (CRIS),
Visualization and Intelligent Systems Laboratory (VISLab)
October 30, 2007

Reza Abbaschian, Dean
College of Engineering
Distinguished Professor, Mechanical Engineering
University of California, Riverside
Riverside, CA 92521

Re: Letter of Support for MSE Graduate Program

Dear Professor Abbaschian:

It is my great pleasure to write this letter of support for your proposed interdisciplinary graduate program in Materials Science and Engineering (MSE) at the University of California Riverside (UCR). I am currently a Professor of Materials Science and Engineering and Dean of the College of Engineering at the University of California, Davis.

Materials Science and Engineering is at the core of many of the most pressing intellectual challenges facing our world. Renewable energy, advances in the health sciences and environmental stewardship, for example all require advances in new materials that can be safely manufactured in an economical manner. The introduction of a graduate program in MSE will most certainly generate a greater recruiting interest among potential students to your campus and the MSE department. Graduate and undergraduate programs improve faculty student interactions along with faculty resources, which will likely lead to increased research funding. This will enhance staff, faculty and students alike. UC Riverside will benefit from having a unique mechanism for interdisciplinary training and research for your new graduate students and for faculty who already cross multiple disciplines with graduate courses that they are offering. From the background that I have read on this new program it will work to strengthen UCR in nanotechnology and renewable energy efforts, which are so important for our future.

I hope your college of engineering will share in the enthusiasm for the addition of a MSE graduate program. Please do not hesitate to contact me if you have any questions or need additional information.

Sincerely yours,

Enrique J. Lavernia, PhD
Professor of Materials Science and Engineering
Dean, College of Engineering
January 16, 2008

Dean Reza Abbashian
Bourns College of Engineering
University of California, Riverside
Riverside, CA 92521

Dear Dean Abbashian:

The UC Riverside proposal to establish a university-wide Materials Science & Engineering (MSE) Graduate Program represents a very positive step to further enhance the education and research for materials science and engineering graduate students. The specifics of the proposed plans are well thought out, and the fact that 30+ interdisciplinary faculty members from different areas including engineering, chemistry, biology, neurosciences, and physics have already signed up to participate in the program indicates a strong, interdisciplinary enthusiasm and commitment across the UC Riverside campus.

Many of the participating members already have active on-going research projects in the field of materials science & engineering, and enjoy strong external reputation. The planned expansion of central user facilities for nanofab, processing and characterization that will be added to the MSE Program (similar to our Calit2 nanofab facilities) will be very useful for promoting active R&D effort toward forefront research on energy, environment, nanotech, biotech and other applications.

Following are my comments on some specific aspects of the MSE Program:

*The national and statewide needs for graduates in materials science and engineering* --- Materials Science & Engineering (MSE) is a highly interdisciplinary field encompassing engineering, physical science, biology/medicine. Almost all high tech or engineering related industries in US require participation of materials scientists or engineers. In California, where electronics and biotech industries are strong, and energy and environment/sustainability consciousness is very high, highly educated MSE graduates are needed even more to challenge the major technical issues and to contribute to the advancement of the technologies and applications.

*Interdisciplinary and interdepartmental nature of the program* --- The proposed program has enthusiastic participating faculty members not only from Engineering but also from Departments of Chemistry, Biochemistry, Biology, Cell Biology, Neurosciences, Physics and Astronomy. The Program is highly interdisciplinary and interdepartmental in nature.
Proposed Curriculum and whether it compliments the recently established undergraduate program ---
The proposed MSE graduate curriculum compliments well the undergraduate program.

Initial program research focus on nanotechnology, alternative energy generation and conversion, and sustainability --- These are important issues that require prioritized attention, so the selection of these areas as the research focus is quite appropriate.

Quality of the Founding Faculty Members' research --- Many of the founding faculty members seem to be of high quality, with several of them very well respected in the field of MSE.

Overall administrative structure of the proposed graduate program (it is interdepartmental but Bourns College of Engineering serves as a home) --- The proposed administrative structure appears to be adequate. We have a somewhat similar structure at UCSD which has been working well.

How the program will enhance interdisciplinary research and education at UCR --- With the participation of faculty members having diverse disciplines, it is anticipated that the interdisciplinary research and education will be significantly enhanced at UCR.

How will it contribute to the UC system standing as a premier public research institution --- The success of UCR's proposed MSE Program will certainly contribute positively to the reputation of the UC system.

In summary, the proposed plan is very similar to our current 50+ faculty, UCSD-wide Materials Science & Engineering Program (http://matsci.ucsd.edu), which successfully provides strong interdisciplinary education and research opportunities across the boundaries among different colleges. Considering the high quality of UC Riverside's committing/participating faculty members, well-thought-out curriculum and related education plans, and the strong resource commitments from the UCR leadership, it is believed that UC Riverside's proposed MSE Program will be highly successful.

Sincerely,

Frieder Seible
Dean, Jacobs School of Engineering
October 13, 2007

Professor Alexander A. Balandin
Department of Electrical Engineering
University of California - Riverside
Riverside, CA 92521

Dear Professor Balandin,

I am writing to support the proposed Materials Science and Engineering Graduate Program at UC Riverside. Materials Science and Engineering is a vital area for California’s continued technology leadership in the rapidly globalizing economy. In many fields that California has world leadership, including electronics, optoelectronics, biomedical, … there is great demand for well trained and versatile materials scientists. I understand that UCR’s program will focus on nanomaterials and energy – both areas are essential for the continued growth of the California economy.

UCR’s proposed graduate program, which draws from faculty from at least five departments, will provide the diverse and balanced training necessary for future materials scientist. The program is well conceived and structured.

I strongly support this activity.

If you have further questions, please do not hesitate to contact me.

Sincerely,

James S. Speck
Chair, Materials Department
November 5, 2007

Dr. Alexander Balandin, Professor and Chair
Department of Electrical Engineering
Materials Science and Engineering Program
University of California - Riverside
Riverside, CA 92521 USA

Dear Professor Balandin:

I am pleased to respond to your e-mail of October 15, 2007 concerning the proposed establishment of your interdisciplinary graduate program in Materials Science and Engineering (MSE) at the University of California, Riverside (UCR). I carefully examined the documents describing the motivations for the new MSE program and the graduate courses relevant to materials currently offered at the UCR Bourns College of Engineering.

Based on my examination, the proposal has my most enthusiastic endorsement. First, the specifics of the proposal are extremely well crafted. Second, I was impressed by its emphasis on nanomaterials and energy, two areas that are very important and timely for California and the nation. Third, you have already assembled a large number of recognized professors who carry out materials engineering research. The presence of these resident faculty members is a primary gradient of a future successful graduate program.

I strongly feel that by establishing your new MSE program, you will be able to (a) attract high quality graduate students, (b) enhance the faculty competitive edge in securing research funds, and (c) reflect positively on engineering programs at UCR.

Best regards,

Sincerely yours,

[Signature]
Farghali A. Mohamed, Professor
Chemical Engineering and Materials Science
Mechanical and Aerospace Engineering
Civil and Environmental Engineering
January 18, 2008

Dr. A.A. Balandin  
Chair, Materials Science and Engineering Program  
Professor, Department of Electrical Engineering  
Marlan and Rosemary Bourns College of Engineering  
UNIVERSITY OF CALIFORNIA, RIVERSIDE  
Riverside, CA 92521

RE: Letter of Support for the Proposal of the Graduate Program in Materials Science and Engineering

Dear Professor Balandin:

I have read your proposal on establishing the interdepartmental graduate program leading to M.S. and Ph.D. degrees in Materials Science and Engineering at UC-Riverside. I would like to express my strong support to this initiative.

As I see from the proposal you have already assembled a team of capable researchers with background in materials science and engineering. This is very important for the research-intensive Ph.D. program, which requires substantial extramural financial support. The nanofabrication facilities and experimental equipment already present at UCR appear to be adequate for the program.

I believe that the proposed interdepartmental structure of the graduate program with the College of Engineering as an administrative home is logical and allows you to efficiently utilize the campus resources to meet the needs of this interdisciplinary program.

I am sure the proposed program will help UCR in attracting talented graduate students and it will contribute to the overall strength of the UC System in Material Science and Engineering.

Sincerely,

[Signature]

Vijay K. Dhir, Ph.D.  
Distinguished Professor and Dean  
VVD/gdn
December 19, 2007

Alexander A. Balandin, PhD
Professor, Department of Electrical Engineering
Chair, Materials Science and Engineering Program
Director, Nano-Device Laboratory
University of California - Riverside
Riverside, CA 92521 USA

Dear Prof. Balandin,

I have read with great interest and pleasure your proposal for an interdepartmental graduate program at UC Riverside in materials science and engineering. Your proposal is based on the central tenet of materials research: interdisciplinarity. Over the several-decades development of the materials field, intellectual and technological excitement invariably has appeared at the interfaces of core disciplines. The proposed program overlays well into current directions for materials, including nanoscience and soft matter.

Your forward-looking proposal comes at a critical time in the evolution of American academia. Under the circumstance of global parity, American pre-eminence in graduate research is threatened as never before. Moreover, technological advances are needed to feed lagging American competitiveness and to underwrite solutions to epic global problems such as energy availability. Materials research is at the centroid of these issues and practitioners have an obligation to respond.

I speak for the 15,000 members of the Materials Research Society in stating the importance of establishing strong materials science and engineering programs. The pipeline for future talent in our field must be enriched by superb institutions such as University of California. I can think of no higher priority for major campuses. I enthusiastically endorse and encourage your efforts.

Sincerely,

[Signature]

Alan J. Hurd
January 3, 2008

Professor Alexander Balandin
Department of Electrical Engineering
Materials Science and Engineering Program
University of California-Riverside
Riverside, CA 92521

Dear Professor Balandin,

I am very pleased to provide my strong support for the proposed interdisciplinary graduate program in Materials Science and Engineering at UC Riverside. I had the privilege some 20 years ago of co-chairing the national materials study, *Materials Science and Engineering for the 1990’s*, a study which I believe played an important role in the evolution and development of the field as it exists today. Today, MS&E is a vital engineering discipline in its own right, one in which interdisciplinarity in teaching and research is at its core.

Your program emphasizes interdisciplinarity, but properly has a coherent graduate curriculum. It focuses on critical and ripe areas of the field, aimed at meeting national needs, as well as preparing students for a wide range of productive careers. It anticipates broad interactions within the university, including with the planned medical initiative. You have a strong core of participating faculty.

In my opinion the program is sound and forward looking. It is the type of program we hoped might evolve when we did the materials study 20 years ago. Establishment of the MS&E Graduate Program will fill an important need and provide added strength to participating departments and to UC-Riverside. I strongly recommend it be instituted at this time.

Sincerely yours,

Merton C. Flemings
Professor and Faculty Director
January 6, 2008

Alexander A. Balandin, PhD
Professor, Department of Electrical Engineering
Chair, Materials Science & Engineering Program
Director, Nano-Device Laboratory
University of California- Riverside
Riverside, CA 92521

Dear Dr. Balandin:

I am writing regarding the establishment of an inter-departmental graduate program in Materials Science and Engineering at the University of California Riverside. As you and your colleagues well know, materials research is fundamental to development of new technology and is central to many of the challenges that will face our nation, such as alternative energy development, energy efficiency, environmental remediation, and improving health through materials development across the soft/hard interface of the biology/materials worlds. Therefore, quality materials science programs, dedicated to training the next generation of materials scientists and engineers are essential to not only California, but the USA and indeed the world. I have read over the extensive package “Proposal for an Interdepartmental Graduate Program leading to MS and PhD Degrees in MSE at UC Riverside. This document indicates that UCR has done an excellent job of planning and coordinating the research and teaching activities of the many materials-centric faculty already present on campus. Moreover, opportunities are readily apparent for future growth in MSE spurred by the creation of a graduate program in MSE.

Materials Science drives new technology. Materials with new properties (such as higher strength, electronic or optical properties) can improve existing technologies or create entirely new products. Nanotechnology research has been a major new and developing area in materials science in recent years, and is a fertile ground for developing new materials and processes for refining existing materials such that they exhibit new properties. Collaboration between industry and UCR with its state of the art materials science research facilities will be a key to pushing the frontiers of nanotechnology. Demand for engineers and scientists trained in the structure-property-processing-performance paradigm continues to be high. Therefore, I whole-heartedly support the establishment of a graduate program in Materials Science and Engineering at the University of California Riverside and I look forward to seeing the excellent scholarly work and graduates that such a program will produce.

Sincerely,

Edwin L. Thomas
Department Head, Materials Science and Engineering
Morris Cohen Professor of Materials Science and Engineering
Founding Director, Institute for Soldier Nanotechnologies
December 17, 2007

Dr. A. A. Balandin
Chair, Materials Science and Engineering Program
Professor of Electrical Engineering
Marlan and Rosemary Bourns College of Engineering
University of California – Riverside
Riverside, CA 92521 USA

Re: Letter of support for the interdepartmental Graduate Program in Materials Science and Engineering at UCR

Dear Alex:

I would like to communicate my enthusiastic support for your proposal for the interdepartmental Graduate Program leading to M.S. and Ph.D. degrees in Materials Science and Engineering at UC Riverside.

Many engineering applications already require broad-based materials knowledge and this will become much more in the future as we meet the challenges of energy and nanotechnology within the constraints of sustainability and environmental issues. Our training of materials engineers must provide them with the intellectual basis to optimize overall performance of complex systems involving a variety of materials and interfaces. Materials research has become of paramount importance because many innovations must now start at the materials level. This requires that we educate all engineers to have a basic knowledge of materials science and engineering, while some must be given sufficient fundamental understanding to build practical solutions to the materials challenges. Thus, your proposal comes at an excellent time.

Your proposed new program focuses on energy, nanotechnology, and sustainability, all of which are essential areas of research and of education of our next generation of engineers. It is clear from your proposal that UC Riverside has already accumulated sufficient experimental capabilities and expertise to launch a specialized graduate program in materials science and engineering. In addition you have a core of faculty in computational materials science, and area that I believe will increase greatly in importance as it becomes possible to start with first principles.
The structure of the Graduate Program, with an interdepartmental program using the College of Engineering as the administrative home, makes great sense, allowing you to benefit from the programs already present in each department.

Sincerely,

William A. Goddard III
October 15, 2007

Professor Alexander Balandin  
Department of Electrical Engineering  
Materials Science and Engineering Program  
University of California - Riverside  
Riverside, CA 92521 USA

Dear Professor Balandin:

It is a pleasure to write a letter of support for the proposed MS and PhD degrees in Materials Science and Engineering at UC Riverside. I have had a chance to read the documents describing the structure of the proposed graduate program together with the list of the existing graduate courses and facilities at UC Riverside. I think that you have outlined a plan to develop a competitive and exciting program. It is very important that you already have a large number of faculty members with expertise in materials science and engineering.

As you know, materials research is a significant part of Livermore Laboratory’s University Relation Program. In particular, we have a program which allows students from the University of California to work part-time at the Laboratory while completing their dissertations. Over the years this program has provided young scientists a springboard to their professional careers. I look forward for participation of MSE graduate students from UC Riverside in research activities at Lawrence Livermore National Laboratory.

In conclusion, I strongly support the plans for introduction of the MSE graduate program at UCR.

Sincerely,

[Signature]

Alexander J. Malkin, Ph.D.  
Scientific Capability Leader for BioNanoSciences  
Chemistry, Materials, Earth and Life Sciences Directorate  
Lawrence Livermore National Laboratory  
Mail-stop 234, 7000 East Ave, Livermore, CA 94551  
http://www-cms.llnl.gov/bios/malkin.html  
email: malkin1@llnl.gov; Tel: 925-423-7817; FAX: 925-422-2041
December 26, 2007

Professor Reza Abbaschian
Dean, Bourns College of Engineering
William R. Johnson, Jr. Family Professor
Distinguished Professor of Mechanical Engineering
University of California,
Riverside, CA 92521.

Dear Reza:

I very pleased to provide my strongest support for establishing a campus-wide interdepartmental graduate (MS and PhD) program in materials science and engineering. The materials hold a key to every advanced technology. There is often a materials or processing bottleneck which prevents fruition of a new technology. The MSE is very critical as it addresses and bridges the gap between science and engineering and technology. The initial focus on nanotechnology, energy and environment for this multidisciplinary program is very appropriate, as nanoscience needs to transition from science to technology to systems. As a past NSF/DMR Division Director, we changed from MRLs to MRSECs to address this front coherently and effectively.

The proposed curriculum is fine as it covers fundamentals of thermodynamics, defects, diffusion and phase transformation with a focus on small systems. If I could be further help, please do not hesitate to call me.

Sincerely,

Jagdish (Jay) Narayan
The John C. C. Fan Family Distinguished Chair in Materials Science
Distinguished University Professor and Director
NSF Center for Advanced Materials and Smart Structures
Department of Materials Science and Engineering
EB I, Suite 3030, Centennial Campus
North Carolina State University
Raleigh, NC 27695-7907.
T: (919) 515-7874; Fax: (919) 515-7642
E-mail: J_NARAYAN@NCSU.EDU
February 3, 2008

Professor Alexander A. Balandin
Chair, Materials Science and Engineering Program
University of California - Riverside
Riverside, CA 92521

Dear Prof. Balandin:

I have read with your excellent proposal to establish a Materials Science and Engineering Program at UCR and am pleased to strongly support it. At Georgia Tech we have built and emphasized the interdisciplinary nature of MSE by establishing joint faculty appointment in Biomedical Engineering, Chemical and Biomolecular Engineering, Electrical and Computer Engineering, Mechanical Engineering, Civil and Environmental Engineering, Chemistry and Biochemistry and Physics. In addition, a number of the core MSE faculty participate as faculty in our interdisciplinary Bioengineering Program. The interdisciplinary approach proposed by UCR accomplishes the same goal with faculty from various Schools appointed to the Program.

The Bioengineering Program at Georgia Tech has a very similar administrative structure to the one proposed for this new program. Our program works quite well with this structure and has been growing. It is quite popular with our students.

There is a growing national need for materials engineers with serious projected shortfalls in their production. Thus this proposed new program is very timely. Our students at both the undergraduate and graduate have been enjoying 100% employment for years.

The proposed curriculum is solid and will complement and enrich the undergraduate MSE Program. The program’s research focus on nanotechnology, alternative energy generation and conversion, and sustainability is rather similar to the strategic goals of my School: Nano & Bio technology, sustainable energy, electronic materials and computational materials design.

The founding faculty look solid and bring a nice mix of junior level people to senior distinguished faculty. I have no doubt that these people will build a strong and dynamic program. This program should help nurture interdisciplinary research at UCR and will find many further connections at the other centers of excellence in the UC system, thereby enhancing Riverside's reputation.

I am happy to support this new program and will welcome it into the MSE University Materials Council.
Sincerely,

Robert L. Snyder
Professor and Chair
REZA ABBASCHIAN  
Dean, Bourns College of Engineering

EDUCATION

BS in Metallurgy, University of Tehran, Department of Mining Engineering, School of Engineering, 1965  
MS in Metallurgy, Michigan Technological University, Department of Metallurgical Engineering, 1968  
PhD in Materials Science and Engineering, University of California, Berkeley, Department of Materials Science and Engineering, 1971

RESEARCH INTERESTS

The role of interfaces on the processing and/or properties of material; investigations in solidification, high pressure-high temperature growth of diamond crystals, and electromagnetic levitation processing of alloys

APPOINTMENTS

Dean and William R. Johnson, Jr., Family Professor, UC Riverside (UCR), Bourns College of Engineering (09/05-Present)  
Distinguished Professor, Department of Mechanical Engineering, UCR, Bourns College of Engineering (09/05-Present)  
Vladimir A. Grodsky Professor, Materials Science & Engineering (MSE), University of Florida (UF), Gainesville (02/00-08/05)  
Professor, MSE, UF, Gainesville (08/83-08/05)  
Associate Professor, MSE, UF, Gainesville (12/80-07/83)  
Chairman, MSE, UF, Gainesville (02/87-5/00)  
Acting Chairman, MSE, UF, Gainesville (08/86-02/87)  
Visiting Scientist, NASA-Marshall Space Flight Center, Huntsville, AL (07/81-08/81)  
Visiting Scientist, Massachusetts Institute of Technology, Cambridge, MA (03/80-12/80)  
Associate Professor, MSE, Shiraz University, Shiraz, Iran (11/74-2/80)  
Assistant Professor, MSE, Shiraz University, Shiraz, Iran (02/72-11/74)  
Chairman, MSE, Shiraz University, Shiraz, Iran (09/74-08/76)  
Visiting Associate Professor, Dept. of Metallurgy, University of Illinois, (Sabbatical leave) (08/76-07/78)

AWARDS AND HONORS

He has received several awards and citations such as, TMS1998 Educator Award; the TMS 1999 Leadership Award; and the Structural Material Division’s 1999 Distinguished Scientist/Engineer Award. He was elected as a Fellow of ASM in 1992, and a Fellow of TMS in 2000. He is also the recipient of the Donald E. Marlowe Award of ASEE for creative and distinguished administrative leadership in engineering in 2003. Shortly after arriving at UCR, Dr. Abbaschian...
was named 2005-06 President of ASM International, the largest materials society in the world with over 37,000 members. And, most recently, recognized for his meritorious efforts in advancing research in Materials Science, he was nominated as an AAAS Fellow in January 2007.

**SELECTED PUBLICATIONS**


ALEXANDER A. BALANDIN  
Electrical Engineering  

EDUCATION  

B.S. in Mathematics, Moscow Institute of Physics & Technology, Russia, 1989  
M.S. in Applied Physics, Moscow Institute of Physics & Technology, Russia, 1991  
Ph.D. in Electrical Engineering, University of Notre Dame, Notre Dame, USA, 1997  
Postdoctoral Research, University of California - Los Angeles, USA, 1997-1999  

RESEARCH INTERESTS  

Electronic, optoelectronic, thermoelectric, photovoltaic and spintronic materials and devices; nanostructures and nanotechnology; hybrid biological-organic-inorganic nanomaterials; electronic noise and thermal phenomena in materials and devices, nanoscale phonon engineering  

APPOINTMENTS  

Founding Chair, Materials Science and Engineering Program, UC Riverside, 2006 – present  
Professor, Department of Electrical Engineering, UC Riverside, 2005 – present  
Visiting Professor, Department of Engineering, University of Cambridge, 2005 – 2006  
Associate Professor, Department of Electrical Engineering, UC Riverside, 2001 – 2005  
Assistant Professor, Department of Electrical Engineering, UC Riverside, 1999 – 2001  
Research Engineer, Electrical Engineering Department, UC Los Angeles, 1997 – 1999  

AWARDS AND HONORS  

Fellow, American Association for the Advancement of Science, 2007  
Associate Scholar, Pembroke College, University of Cambridge, UK, 2005  
Chair and Keynote Speaker, SPIE Noise Conference, Austin, Texas, USA, 2005  
Editor-in-Chief, J. Nanoelectronics and Optoelectronics (JNO), 2005 – present  
Office of Naval Research (ONR) Young Investigator Award, Arlington, USA, 2002  
National Science Foundation (NSF) Faculty Development CAREER Award, 2001  
University of California Regents Faculty Award, 2000  
Merrill Lynch Innovative Engineering Research Award, New York, 1998  
US Civil Research & Development Foundation Young Investigator Award, 1997  
Summa Cum Laude, Moscow Institute of Physics & Technology, Russia, 1991  

SELECTED PUBLICATIONS  


CHRISTOPHER J. BARDEEN
Chemistry

EDUCATION

B.S., Chemistry, Yale University, 1989
Ph.D., Chemistry, University of California, Berkeley, 1995
Postdoctoral Fellow, University of California, San Diego, 1995-1998

RESEARCH INTERESTS

Our research is broadly concerned with how transport processes occur in complex systems, ranging from live cells to organic semiconductor thin films. The research takes place at the boundaries between physical chemistry, biology and materials science.

APPOINTMENTS

Assistant Professor, Department of Chemistry, University of California, Riverside, 2005-present
Assistant Professor, Department of Chemistry, University of Illinois at Urbana-Champaign, 1998-2004

SYNERGISTIC ACTIVITIES

Outreach to Gage Middle School, Riverside, 2007 –present.
Introduced an Honors program in advanced freshman chemistry to place students in outreach program to local middle and elementary schools, 2002.
Developed new physical chemistry laboratory course, Chemistry 114 “Advanced Physical Chemistry Lab with Applications in Biology, Materials, and Environmental Science”, 2006.
Designed and taught AFM module for UCR Copernicus Project (Community College Summer Science Laboratory Internship Program), 2005.
Session Chair, 13th Annual Southern California Conference on Undergraduate Research, 2005.

SELECTED PUBLICATIONS


EDUCATION

Professional Training as Chemical Technician, Hamburg, Germany, 1986 - 1989
Diplom in Physics, Fritz-Haber-Institute, Berlin, Germany, 1989 – 1995
Doctor Rerum Naturalis, Freie Universität, Berlin, Germany, 1995 – 1997
Postdoc at the Paul-Drude-Institute for Solid State Electronics, Berlin, Germany, 12/97 – 8/98
Postdoc at Columbia University, 9/98 – 6/00

RESEARCH INTERESTS

Scanning Tunneling Microscope (STM) for the investigation of molecular adsorption on metal surfaces

APPOINTMENTS

Promotion to Associate Professor, UCR, 2005 – present
Cooperating Faculty Member, Dept. of Mechanical Engineering, UCR, 2003
Cooperating Faculty Member, Dept. of Electrical Engineering, UCR, 2002
Cooperating Faculty Member, Dept. of Physics, UCR, 2001
Assistant Professor, Dept. of Chemistry, University of California at Riverside, 2000

AWARDS AND HONORS

Ramsauer Award of the German Physical Society, 1998
Fellowship of the Academia Leopoldina
NSF Career Award, 2002
UCR Faculty Development Award, 2004

SELECTED PUBLICATIONS


WILFRED CHEN
Chemical and Environmental Engineering

EDUCATION

B.S. in Chemical Engineering, University of California, Los Angeles, 1988
Ph.D. in Chemical Engineering, California Institute of Technology, 1993

RESEARCH INTERESTS

Biomolecular Engineering; design of biocatalysis for environmental and biofuel applications; biosensors; nanotechnology; biotemplated synthesis of nanostructures

APPOINTMENTS

Presidential Chair, 2006-Present
Professor, Chemical and Environmental Engineering, UC Riverside, 2002-Present
Associate Professor, Chemical and Environmental Engineering, UC Riverside, 1998-2002
Assistant Professor, Chemical and Environmental Engineering, UC Riverside, 1994-1998
Faculty, Cell, Molecular, & Developmental Biology Graduate Program, UC Riverside, 2004 – present
Faculty, Microbiology Graduate Program, UC Riverside, 1997 – present
Faculty, Environmental Toxicology Graduate Program, UC Riverside, 1995 – present

AWARDS AND HONORS

Fellow, American Association for the Advancement of Science, 2006
UC Presidential Chair, July 2006-Present
Participant of the Fifth Annual U.S./Japan Frontiers of Engineering Symposium, 2005
Participant of the National Academy of Engineering’s Fourth Annual Symposium on Frontiers of Engineering, 1998
NSF CAREER AWARD, 1997
NASA Certificate of Recognition, 1995
National Institutes of Health Predoctoral Traineeship, 1990-1992

SELECTED PUBLICATIONS


DAVID M. CWIERTNY  
Chemical and Environmental Engineering

EDUCATION

B.S. in Environmental Engineering Science, University of California – Berkeley, 2000  
Ph.D. in Environmental Engineering, Johns Hopkins University, 2006  
Postdoctoral Research, University of Iowa, 2005 – 2007

RESEARCH INTERESTS

Environmental chemistry, pollutant fate and transport in aquatic systems, applications of catalysis and nanotechnology for environmental remediation

APPOINTMENTS

Assistant Professor, Department of Chemical & Environmental Engineering, University of California – Riverside, 2007 – present  
Research Associate, Departments of Civil & Environmental Engineering and Chemistry, University of Iowa, 2005 – 2007

AWARDS AND HONORS

American Chemical Society Graduate Paper Award, Division of Environmental Chemistry, 2005  
Environmental Protection Agency S.T.A.R. Graduate Fellow, 2004 – 2005  
National Science Foundation Graduate Fellow, 2000 – 2003  
Tau Beta Pi W.E. Deuchler, Sr. Graduate Fellow, 2000 – 2001

SELECTED PUBLICATIONS


M. Elsner, D.M. Cwiertny, A.L. Roberts, and B. Sherwood-Lollar, “1,1,2,2-Tetrachloroethane reactions with OH-, Cr(II), granular iron and a copper-iron bimetal: Insights from product


EDUCATION

B.S. in Mechanical Engineering, University of California at Berkeley, 1998
M.S. in Mechanical Engineering, University of California at Berkeley, 2001
Ph.D. in Mechanical Engineering, Massachusetts Institute of Technology, 2006
Postdoctoral Research, Massachusetts Institute of Technology, 2006

RESEARCH INTERESTS

Thermal and electrical properties of nanostructures used for energy conversion; modeling and experiments on the thermal properties of individual nanowires, nanotubes, and other nanostructures

APPOINTMENTS

Assistant Professor, Department of Mechanical Engineering, UC Riverside, 2006 – present
Research Engineer, Solo Energy Corp., Alameda, CA, 1998-1999

AWARDS AND HONORS

Best graduate student presentation award, Mat. Res. Soc. Fall Meeting, Thermoelectrics Symposium, 2003
MIT Presidential Fellowship, 2001 - 2002

SELECTED PUBLICATIONS


C. Dames and G. Chen, “1, 2, and 3 omega methods for measurement of thermal properties,”


C. Dames, G. Wu, H. Lin, and A. Majumdar, “Multiplexed detection of nanoscale microcantilever deflections for high-throughput biomolecular analysis,” *ASME International Mechanical Engineering Congress and Exposition*, Nov. 11–16, New York, NY (2001)
MARC A. DESHUSSES
Chemical and Environmental Engineering

EDUCATION

B.S.-M.S. in Chemical Engineering, Swiss Federal Institute of Technology Lausanne, Switzerland - EPFL, 1990
Ph.D. in Chemical Engineering, Swiss Federal Institute of Technology Zurich, Switzerland - ETHZ, 1994
Postdoctoral Research (Biochemistry) Swiss Federal Institute of Technology Zurich, Switzerland - ETHZ, 1994

RESEARCH INTERESTS

Gas-phase sensors based on functionalized nanostructured materials; nanomaterials for environmental applications; fate and transport of nanomaterials

APPOINTMENTS

Professor and Chair, Chemical and Environmental Engineering, UC Riverside, 2004 – present
Associate Professor, Chemical and Environmental Engineering, UC Riverside, 2001 – 2004
Assistant Professor, Chemical and Environmental Engineering, UC Riverside, 1994 – 2001
Faculty, Environmental Sciences Graduate Program, UC Riverside, 2000 – present
Faculty, Microbiology Graduate Program, UC Riverside, 1997 – present
Faculty, Environmental Toxicology Graduate Program, UC Riverside, 1996 – present

AWARDS AND HONORS

Fellow, American Association for the Advancement of Science, 2006
Bourns College of Engineering Outstanding Teaching Award, 1997/98
Chancellor’s Award for Excellence in Fostering Undergraduate Research, 2001
Research Achievement Award from the Los Angeles Basin Section of the California Water Environment Association (Recognized by the City of Los Angeles Board of Public Works on May 14, 2003), 2002
Research Achievement Award, Third Place, California Water Environment Association, 2002.
Presented at the 75th Annual Conference of the CWEA, Ontario, California, April 22-25, 2003
Erskine Visiting Faculty Fellowship, University of Canterbury, New Zealand, 2003
Quality & Productivity Award of the City of Los Angeles for Environmental Marvels (Project Title: Biological Odor and Toxic Air Treatment), 2003
Editor, Chemical Engineering Journal (Elsevier), 2007-Present
Editorial Boards: Journal of Industrial Microbiology & Biotechnology, Applied Biochemistry and Biotechnology, Environmental Progress
SELECTED PUBLICATIONS


PINGYUN FENG  
Department of Chemistry

EDUCATION

B.S. in Chemical Engineering, Taiyuan Institute of Technology, 1984  
M.S. in Organic Chemistry, Rochester Institute of Technology, 1991  
Ph. D. in Inorganic and Materials Chemistry, University of California at Santa Barbara, 1998  
Postdoctoral research; Department of Chemical Engineering, University of California at Santa Barbara; July 1998- June 2000

RESEARCH INTERESTS

Synthetic development, characterizations, and properties of porous and open framework materials, hybrid inorganic-organic nanomaterials, semiconducting nanostructured open framework materials, and molecular quantum dots and their superlattices; New materials-based energy production and conversion involving photocatalysis, chemical catalysis, and solar cell; nanoporous and nanostructured materials for biological applications such as targeted drug delivery

APPOINTMENTS

Associate Professor of Chemistry (July 1, 2004 – Present)  
Department of Chemistry, University of California at Riverside  
Assistant Professor of Chemistry (July 1, 2000 – June 30, 2004)  
Department of Chemistry, University of California at Riverside

AWARDS AND HONORS

University Scholar Award (2005-2008)  
Camille Dreyfus Teacher-Scholar Award (2004-2009)  
National Science Foundation Career Award (2004-2009)  
Beckman Young Investigator Award (2003-2006)  
Alfred Sloan Fellow (2003-2005)  
Regents’ Faculty Fellowship/Development Award, University of California (2001)  
Outstanding Chemistry Graduate Student Award, The America Institute of Chemists (1998)  
Materials Research Laboratory Corning Fellowship (1997-1998)  
Rochester Institute of Technology Summer President Fellowship (1991)

SELECTED PUBLICATIONS

Zhang, N; Liu, Y; Bu, X; Wu, T and Feng, P., “A rare (3,4)-connected chalcogenide superlattice and its photoelectronic effect” Angew. Chem. Int. Ed. in press.

Zhang, Q.; Bu, X.; Zhang, J.; Wu, T.; Feng, P., “Chiral semiconductor frameworks from


EDUCATION

B.S. in Mechanical Engineering/Materials Science and Engineering, UC Davis, 1999
M.S. in Materials Science and Engineering, UC Davis, 2002
PhD. in Materials Science and Engineering, UC Davis, 2004

RESEARCH INTERESTS

Material synthesis and processing with a particular interest in nanocrystalline materials; processing techniques include electric field assisted material synthesis, sintering and spark plasma sintering (SPS); solid-state processes including mass transport, nucleation, electric current effects and defects in materials; material testing and characterization including electrical and mechanical property characterization, and positron annihilation spectroscopy (PAS); the materials include nano-materials, electronic materials, structural and functional ceramics, and composites

APPOINTMENTS

Assistant Professor, Department of Mechanical Engineering, UC Riverside, 7/2004 – present

AWARDS AND HONORS

Army Research Office Young Investigator Program Award (ARO-YIP), 2005.

SELECTED PUBLICATIONS


EDUCATION

B.Sc. Hon. (1st class honors), Melbourne University, Australia, 1965
Postdoctoral Research, University of Texas at Austin, USA, 1972-1973

RESEARCH INTERESTS

Electronic structure and properties of molecules and materials, with particular emphasis on transport, magnetism, superconductivity, device fabrication, nanotechnology, and the discovery of new classes of electronic materials; organic conductors, carbon nanotubes, graphene and nanographite

APPOINTMENTS

Director, Center for Nanoscale Innovation for Defense, UC Riverside, 2002 – present
Distinguished Professor, Departments of Chemistry and Chemical & Environmental Engineering, UC Riverside, 2000 – present
Director, Center for Nanoscale Science and Engineering, UC Riverside, 2000 – present
Professor, Chemistry and Physics, University of Kentucky; 1997 – 2000
Director, NSF MRSEC Advanced Carbon Materials Center, University of Kentucky; 1998 – 2000
Vice-President, CarboLex Inc, 1997 – 1998
Member of Technical Staff, Departments of Chemical Physics and Materials Chemistry, Bell Telephone Laboratories (AT&T; Lucent Technologies), 1976 – 1997

AWARDS AND HONORS

Queen Ellizabeth II Fellow, 1973 – 1975
Fellow, Royal Australian Chemical Institute, 1988
Fellow, American Association for the Advancement of Science, 1993
Fellow, American Physical Society, 1996
Superconductor Week Person of the Year, 1991
Distinguished Member of Technical Staff, AT&T Bell Laboratories, 1992

SELECTED PUBLICATIONS


QING JIANG
Mechanical Engineering

EDUCATION

B.S. in Mechanics, Huazhong University of Science and Technology, 1982
M.S. in Mechanics, Huazhong University of Science and Technology, 1984
Ph.D. in Engineering and Applied Sciences, California Institute of Technology, 1990

RESEARCH INTERESTS

Reliability of piezoelectric/ferroelectric materials and devices, smart sensors, properties of carbon nanotubes (CNTs) and CNT-based nano-devices

APPOINTMENTS

Chair of Mechanical Engineering, UC Riverside, July 2007 - present
Professor, Department of Mechanical Engineering UC Riverside, January 1998 - Present
Professor, University of Nebraska, August 1997 - December 1997
Associate Professor, University of Nebraska, August 1994 - July 1997
Assistant Professor, University of Nebraska, August 1991 - July 1994
Guest Scientist, Summer 1997
Institute for Reliability and Failure Analysis, Karlsruhe Research Center, Germany
Guest Scientist, Summer 1996
Ceramics Division, National Institute of Standards and Technology

AWARDS AND HONORS

Recognition Award, Executive Committee of Student Leadership, UCR, 1998
DAAD Fellowship, German Academic Exchange Office, 1997
Outstanding Research Award, University of Nebraska-Lincoln, 1996
Research Initiation Award, National Science Foundation, 1993
Outstanding Teaching Award, University of Nebraska-Lincoln, 1993
Layman Award, Layman Foundation, 1993
Syford Faculty Summer Fellowship, University of Nebraska-Lincoln, 1993
Teaching Recognition Award, University of Nebraska-Lincoln, 1992
Karman Fellowship, Karman Fellowship Foundation, 1987

SELECTED PUBLICATIONS


EDUCATION

B. S. Electrical Engineering, University of Pennsylvania, Summa Cum Laude, 1992
B. A. Physics, University of Pennsylvania, Summa Cum Laude, 1992
M. A. Physics, University of California at Berkeley, 1997
Ph. D. Physics, University of California at Berkeley, 1999
   Thesis: Quantum Confinement and Symmetry Breaking in Layered Magnetic Nanostructures

APPOINTMENTS

Assistant Professor, Department of Physics and Astronomy, UC Riverside, 2002 – present
Postdoctoral Researcher, Department of Physics, UCSB, 1999 – 2002
Graduate Research Assistant, Department of Physics, UC Berkeley, 1994 – 1999

AWARDS AND HONORS

- David A. Shirley Award, 1999
- MMM Conference Student Award, finalist, 1998
- Leo M. Falicov AVS Student Award (American Vacuum Society), 1997
- University Fellowship (U. C. Berkeley), 1992-1994
- National Science Foundation Honorable Mention, 1992
- Benjamin Franklin Scholar (U. Pennsylvania), 1988-1992
- Honor Societies: Phi Beta Kappa, Tau Beta Pi (Engineering), Pi Mu Epsilon (Mathematics)

SELECTED PUBLICATIONS

Magnetic Multilayers

**Semiconductor Spintronics**


**Carbon-Based Spintronics**


SAKRAT KHIZROEV  
Electrical Engineering  

EDUCATION  

B.S. in Physics and Quantum Electronics, Moscow Institute of Physics & Technology, Russia, 1992  
M.S. in Physics, Moscow Institute of Physics & Technology, Russia, 1994  
Ph.D. in Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA, 1997  

RESEARCH INTERESTS  

Nanomagnetic and spintronics devices, information storage and memory technologies, magnetic resonance imaging, optoelectronics, nanophotonics, nanomagnetic drug delivery, nanomagnetic energy fuel cells, sensor technologies  

APPOINTMENTS  

Associate Professor (tenured), Department of Electrical Engineering, UC Riverside, 2006 – present  
Associate Professor (tenured) and Director, Center for Nanoscale Magnetic Devices, Department of Electrical and Computer Engineering, Florida International University, 2003 – 2006  
Research Staff Member, Seagate Research, 1999 – 2003  
Doctoral Intern, IBM Almaden Research Center, 1997 – 1998  

AWARDS AND HONORS  

Associate Editor, IEEE Transactions on Nanotechnology, 2004 – 2006  
2 Focused Review Papers Awards, American Institute of Physics  
Senior Member, IEEE  
29 Technology Achievement Awards, Seagate Technology, 1999 – 2002  
Key Employee Awards, Seagate Technology, 1999 – 2000  
IBM Doctoral Fellowships (two in a row), 1997 – 1999  
Dean’s List Fellowship (highly selective, one at a department of ~100), Moscow Institute of Physics and Technology, 1989 – 1990  

SELECTED PUBLICATIONS  


EDUCATION

B.S. in Chemical Engineering, Drexel University, Philadelphia, 1993
M.S. in Materials Science and Engineering, University of Florida, Gainesville, 1999
Ph.D. in Materials, University of California, Santa Barbara, 2002
Postdoctoral Research, University of California, Santa Barbara, 2002 – 2005

RESEARCH INTERESTS

Bio-mimetics, Bio-inspired materials synthesis, biomineralization, ceramic processing, thin Film growth, nanomaterials, energy storage and conversion materials (fuel cell, batteries)

APPOINTMENTS

Assistant Professor, Chemical and Environ. Engineering, UC Riverside, 2007 – present
Research Scientist, HRL Laboratories, Malibu, CA, 2005 – 2007
Research Scientist, University of California, Santa Barbara, 2002 – 2005
Visiting Researcher, Max-Planck Institut fuer Metallforschung, Stuttgart, Germany, 1998

AWARDS AND HONORS

Invited speaker for the Oxide thin films and Nanostructures session of The Fourth International Conference on Technological Advances of Thin Films and Surface Coatings, Singapore, July, 2008.
Invited speaker as for the Workshop on Bio-Nano Technology, Georgia Institute of Technology, August 2004.

SELECTED PUBLICATIONS


D. Kisailus, J.H. Choi, J.C. Weaver, W. Yang, and D.E. Morse, “Enzymatic synthesis and 
 nanostructural control of gallium oxide at low temperature,” *Adv. Mat.*, 17 (3), pp.314-
318 (2005).

D.J. Kisailus, J.H. Choi, and F.F. Lange, “GaN nanocrystals from oxygen and nitrogen-

J. Weaver, J. Aizenberg, G. Fantner, D. Kisailus, A. Woesz, P. Allen, K. Fields, M. Porter, F.
Zok, P. Hansma, P. Fratzl, D.E. Morse, “Hierarchical assembly of the siliceous skeletal lattice of 

P. Curnow, D. Kisailus, D.E. Morse, “Biocatalytic synthesis of Poly(L-Lactide) by native 
and recombinant forms of the silicatein enzymes,” *Angew. Chem. Int. Ed.*, 45, 613-616 

P. Curnow, P. Bassette, D. Kisailus, M.M. Murr, P.S. Daugherty, D.E. Morse, 
“Enzymatic synthesis of layered titanium phosphates at low temperature and neutral pH 

J.L. Sumerel, W. Yang, D. Kisailus, J.C. Weaver, J.H. Choi, and D.E. Morse, 
“Biocatalytically templated synthesis of titanium dioxide,” *Chem. Mater.*, 15 (25), 4804-

D.J. Kisailus, J.H. Choi, and F.F. Lange, “Chemical solution deposited GaN films from 
oxxygen- and nitrogen-based precursors,” *J. Mater. Res.*, 17 (10), 2540-2548, October 
(2002).
EDUCATION

B.S.E.E. (Highest Honors), Purdue University, 1986
M.S.E.E., Purdue University, 1988
Ph.D., Purdue University, 1992
Post-Doctoral Research Associate, Purdue University, 1993

APPOINTMENTS

Department Chair, University of California at Riverside, 2006 – present
Professor, University of California at Riverside, 2006 – present
Associate Professor, University of California at Riverside, 2000 – 2006
Member Technical Staff, Texas Instruments (Corporate Research Lab), 1993 – 1997

AWARDS AND HONORS

Senior Member IEEE, 2001

SELECTED PUBLICATIONS


CHUN NING “JEANIE” LAU
Physics

EDUCATION
B.A. in Physics, University of Chicago, 1994
M.S. in Physics, Harvard University, 1997
Ph.D. in Physics, Harvard University, 2001

RESEARCH INTERESTS
Superconducitivity, spin transport, thermal management and quantum transport in nanostructures such as nanowires, graphene and nanotubes; engineering of new classes of nanoscale devices

APPOINTMENTS
Assistant Professor, Physics Dept, University of California–Riverside, 2004 – present
Research Associate, Hewlett-Packard Laboratory, 2002 – 2004

AWARDS AND HONORS
Faculty Development Grant of Chinese American Faculty Association of Southern California
Grainger Scholarship
HongKongBank Scholarship
Member, Phi Beta Kappa

SELECTED PUBLICATIONS


“Quantum Phase Slips in Superconducting Nanowires,” XXIIith International Conference on Low Temperature Physics, Tokyo, Japan, August 2002.
JIANLIN LIU
Electrical Engineering

EDUCATION

B.S. in Physics, Nanjing University, China, July, 1993
Ph.D. in Physics, Nanjing University, China, May, 1997
Ph.D. in Electrical Engineering, University of California at Los Angeles, January, 2003

RESEARCH INTERESTS

Si-based and ZnO-based thin films, nanowires, and quantum dots; diluted magnetic semiconductors and spintronics; emerging nonvolatile memories and logic devices; light emitting diodes and photodetectors; photovoltaic devices

APPOINTMENTS

Assistant Professor, Department of Electrical Engineering, UC Riverside, 03/03 - present
Ph.D Candidate, Department of Electrical Engineering, University of California at Los Angeles, 09/99 - 01/03
Staff Research Associate, Department of Electrical Engineering, University of California at Los Angeles, 08/97 - 08/99
Graduate Student Researcher, Department of Physics, Nanjing University, China, 09/93 - 07/97

AWARDS AND HONORS

1994: 2\textsuperscript{nd} Class Guang-Hua Award for academically excellent graduate student of all grades, Nanjing University
1995: 2\textsuperscript{nd} Class Guang-Hua Award for academically excellent graduate student of all grades, Nanjing University
1996: 1\textsuperscript{st} Class Guang-Hua Award for academically excellent graduate student of all grades, Nanjing University
2001: PhD thesis is awarded as one of the 100 Excellent National PhD Theses of all discipline in China
2004: UC Regents' Faculty Fellowship
2007: UCR Faculty Development Award

SELECTED PUBLICATIONS


EDUCATION

Laurea, Computer Science, University of Pisa, 1994
Dottorato di Ricerca, Electrical and Computer Engineering, University of Padova, 1999
Ph.D., Computer Sciences, Purdue University, West Lafayette, IN, 2001

RESEARCH INTERESTS

Computational Molecular Biology, Data Compression, Data Mining

APPOINTMENTS

Associate Professor, University of California, Riverside, CA, Jul 2007 - present
Assistant Professor, University of California, Riverside, CA, Jul 2001 - Jun 2007
Intern, Celera Genomics, Rockville, MD, May 1999 - Aug 1999
Consultant, Dept. of Neurosurgery, Univ. of Verona, Italy, Aug 1994 - Apr 1995

AWARDS AND HONORS

NSF Career Award, Science and Engineering Information Integration and Informatics program, 2005
"Bioinformatics and Genomic Research" fellowship sponsored by the Italian Ministry of University and Research, 2000
Student Research Award, Purdue University, Chapter of Upsilon Pi Epsilon, 2000

SELECTED PUBLICATIONS


EDUCATION

Transfer Credits in Chemical Engineering, Moscow State Academy of Light Industry, Novosibirsk Institute of Technology, Russia, 1994
B.S. in Chemistry, New York University, New York, NY, USA 1997
Ph.D. in Chemistry, California Institute of Technology, Pasadena, CA, USA, 2003
George E. Hewitt Medical Fellow, Beckman Laser Institute, UC - Irvine, CA, USA, 2003 – 2006

RESEARCH INTERESTS

Protein and peptide self-assembly, composite biomaterials, bio-adhesives, interface engineering, optical imaging, spectroscopy, bioinformatics

APPOINTMENTS

Assistant Professor, Department of Bioengineering, UC Riverside, 2007 – present
Staff, Beckman Laser Institute, UC – Irvine, 2003 – 2007

AWARDS AND HONORS

Young Investigator Travel Award, Society of Molecular Imaging Annual Meeting, 2004
George E. Hewitt Medical Fellowship, Beckman Laser Institute, UC Irvine, 2003-2006
NIH Traineeship, California Institute of Technology, 2000-2002
NSF Graduate Fellowship Award, 1997-2000
Dow Travel Award, California Institute of Technology, 1999
NSF Undergraduate Fellow at University of Southern California, 1996
George Granger Brown Award in Chemistry for Academic Excellence, 1996-1997
NSF Undergraduate Fellow at New York University, 1995
New York University College of Arts and Science Merit Scholarship, 1995-1997
A member of Phi Beta Kappa and Phi Lambda Upsilon Chemical Honor Society
Magna Cum Laude, New York University, New York, 1997

SELECTED PUBLICATIONS


MICHAEL J. MARSELLA
Chemistry

EDUCATION

B.S. in Secondary Education, University of Rhode Island, 1990
Ph.D. in Chemistry, University of Pennsylvania, 1995
Postdoctoral Research, Caltech, 1995 - 1997

RESEARCH INTERESTS

Design and synthesis of organic materials, with an emphasis on highly conjugated molecules with mechanical, optical, and / or electronic properties. Integrated studies of computational analysis and synthesis of functional single molecules.

APPOINTMENTS

Associate Professor, Department of Chemistry, UC Riverside, 2003 – present
Assistant Professor, Department of Chemistry, UC Riverside, 1997 – 2003

AWARDS AND HONORS

Academic Senate Distinguished Teaching Award, 2007
Chancellor’s Award for Excellence in Fostering Undergraduate Research, 2003
DuPont Young Professor Award, 2000
Research Corporation, Research Innovation Award, 1998

SELECTED PUBLICATIONS


EDUCATION

B.Tech., Engineering, Banares Hindu University, India., 1983
Ph. D., Physics, Columbia University, New York, N.Y., 1992
Postdoctoral Fellow, Physics, AT&T Bell Labs, Murray Hill, N.J., 1992-1994

APPOINTMENTS

Professor, Department of Physics, Univ. of California-Riverside, 2002- present
Vice Chair, Department of Physics, Univ. of California-Riverside, 2004- 05
Associate Professor, Department of Physics, Univ. of California-Riverside, 2000- 02
Assistant Professor, Department of Physics, Univ. of California-Riverside, 1994- 00
Post Doctoral Fellow, Optical Physics Dept., Bell, 1992-94
Laboratories at Murray Hill, N.J, with R.E. Slusher.

AWARDS AND HONORS

Fellow, American Physical Society
Fellow, American Association for the Advancement of Science

SELECTED PUBLICATIONS


MART L. MOLLE
Computer Science and Engineering

EDUCATION

B.S. in Mathematics/Computer Science, Queen’s University at Kingston, Canada, 1976
M.S. in Computer Science, University of California, Los Angeles, 1978
Ph.D. in Computer Science, University of California, Los Angeles, 1981

RESEARCH INTERESTS

Dr. Molle's research interests include computer networking, performance evaluation, high performance computing, distributed algorithms and computer security. He is particularly interested in fundamental performance limits, and in applying measurements and/or analytical modelling techniques to practical problems in computer systems.

APPOINTMENTS

Professor, Dept. of Computer Science & Engineering, UC Riverside, 1994-present
Chair, Dept. of Computer Science & Engineering, UC Riverside, 1999-2002
Professor, Dept. of Computer Science, University of Toronto, 1991-94
Associate Professor, Dept. of Computer Science, University of Toronto, 1985-91
Visiting Associate Professor, Information and Computer Science, UC Irvine, 1987-88
Assistant Professor, Dept. of Computer Science, University of Toronto, 1981-85

AWARDS AND HONORS

Member, Editorial Board, ACM/IEEE Transactions on Networking, 1994-1999
Top-25 Contributors Award, IEEE 802.3z Gigabit Ethernet Standards Group
Best Paper, International Conference on Communications, Toronto, Canada, 1986
Chancellor’s Intern Fellowship, UCLA, 1976-80
Major James A. Rattray M.C. Scholarship in Science, Queen’s University, 1975-76

SELECTED PUBLICATIONS


EDUCATION

B.S. in Physics, Aristotle University of Thessaloniki, Greece, 1983
M.S. in Physics, Northeastern University, 1985
Ph.D. in Physics (Biophysics), Northeastern University, 1990
Postdoctoral Research in Structural Biology, Scripps Research Institute, 1990 – 1993
NIH Senior Postdoctoral Research in Computational Chemistry, UC San Diego, 1999 – 2001

RESEARCH INTERESTS

Biomaterials, peptide and protein design, biopharmaceuticals, biomolecular structure, dynamics, and interactions, molecular dynamics simulations, electrostatic calculations, structural bioinformatics, NMR spectroscopy

APPOINTMENTS

Faculty, Materials Science and Engineering Program, UC Riverside, 2007 – present
Professor, Department of Bioengineering, UC, Riverside, 2006 – present
Cooperating Faculty, Department of Chemistry, UC, Riverside, 2007 – present
Faculty, Center for Research in Intelligent Systems, UC, Riverside, 2007 – present
Member, Center for Plant Cell Biology, UC, Riverside, 2005 – present
Adjunct Associate Professor, Division of Immunology and Department of Neurobiochemistry, Beckman Research Institute, City of Hope, 2003-present
Researcher, Institute for Integrative Genome Biology, UC Riverside, 2001 – present
Visiting Scholar, Department of Chemistry & Biochemistry, UC San Diego, 2001 – 2003

AWARDS AND HONORS

American Association for the Advancement of Science Fellow (AAAS), 2006
Non-Senate Distinguished Researcher Award, UC Riverside, 2003 – 2004
National Institutes of Health (NIH) National Research Service Award – Senior Fellowship, 1999 – 2001
Fulbright Graduate Fellowship, 1983 – 1984
The Scripps Society of Fellows Travel Award for best presentation at the Scripps Society of Fellows Annual Research Symposium, 1993
American Physical Society STEP Travel Grants, 1986 & 1989
International Association for the Exchange of Students for Technical Experience (IAESTE) Student Trainship, Summer 1981
SELECTED PUBLICATIONS


LEONARD J. MUELLER
Chemistry

EDUCATION

B.S., University of Rochester, Rochester, New York, 1988
C.P.G.S., University of Cambridge, Cambridge, U.K., 1989
Ph.D., California Institute of Technology, Pasadena, California, 1997
Postdoctoral, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1996-98

RESEARCH INTERESTS

Applications of nuclear magnetic resonance (NMR)

APPOINTMENTS

Associate Professor of Chemistry, University of California, Riverside, 2005 – present
Vice Chair, Department of Chemistry, University of California, Riverside, 2005 – present
Assistant Professor of Chemistry, University of California, Riverside, 1998 – 2005

AWARDS AND HONORS

University of California, Riverside
  Regent’s Faculty Fellowship
  Research Corporation, Research Innovation Award
Massachusetts Institute of Technology
  American Cancer Society Postdoctoral Fellowship
California Institute of Technology
  National Defense Science and Engineering Graduate (NDSEG) Fellowship
  National Science Foundation Fellowship
Churchill College, University of Cambridge
  The Winston Churchill Society of the United States, Churchill Fellowship

SELECTED PUBLICATIONS

Affiliation: University of California, Riverside
(Refereed Journals)


L.J. Mueller and D.W. Elliott, “Correlated tensor interactions and rotational-echo double-

information processing with a single-crystal solid,” *Journal of Chemical Physics* 119(3), 1643-
1649 (2003).

barriers in picolinamide and nicotinamide: NMR and *Ab Initio* studies,” *Journal of the American
Chemical Society* 125(33), 10125-10132 (2003).

correlation at the natural abundance level: Refining dynamic regions in the crystal structure of
vitamin-D$_3$ with solid-state NMR,” *Journal of the American Chemical Society* 125(39), 11784-
11785 (2003).


“Uniform-sign cross-peak double-quantum-filtered correlation spectroscopy,” *Journal of

amide rotational barrier in isonicotinamide: Dynamic NMR and Ab Initio Studies,” *Journal of
the Physical Chemistry A*, 109(6), 1152-1158 (2005).

“Constant-time through-bond $^{13}$C correlation spectroscopy for assigning protein resonances with
solid-state NMR spectroscopy,” *Journal of the American Chemical Society*, 128(31), 9992-

protonation on the conformation of cinchonidine,” *Journal of the American Chemical Society*,
128(49), 15594-15595 (2006).

assignments in solid-state proteins using J-based 3D heteronuclear correlation spectroscopy,”
ASHOK MULCHANDANI
Chemical and Environmental Engineering

EDUCATION

Ph.D., Chemical/Biochemical Eng., McGill University, Montreal, Canada, 1985
M.Tech., Chemical Engineering, Indian Institute of Technology, Bombay, India, 1978
B.Tech., Chemical Engineering, Laxminarayan Institute of Technology, Nagpur, 1976

University, Nagpur, India
Post-Doc, Chemical Engineering, Laval University, Ste. Foy, Canada, 1985-1987

RESEARCH INTERESTS

Bionanotechnology, (bio)analytical sensors, biomaterials, biophotovoltaics

APPOINTMENTS

Professor, Associate Professor, Assistant Professor, Department of Chemical and Environmental Engineering, UC, Riverside, CA., Sept., 1991 - Present
Visiting Researcher, Oak Ridge National Laboratory, Oak Ridge, TN, Sept., 1999 - June, 2000,
Faculty Member, Graduate Program in Environmental Toxicology, UCR, CA, January 1996 - Present
Faculty Member, Graduate Program in Biochemistry, UC, Riverside, CA, July, 1993 - Present
Faculty Member, Microbiology Graduate Program, UC, Riverside, CA, July, 1998 - Present
Guest Researcher, Biotechnology Division, NIST, Gaithersburg, MD., July, 1993 - Sept., 1993
Research Associate, Biotechnology Research Institute, Nov., 1987 - July, 1990
National Research Council, Montreal, Canada.
Research Assistant, Chemical Engineering Department, June, 1980 - Sept., 1985
McGill University, Montreal, Canada.
Teaching Assistant, Chemical Engineering Department, Sept., 1980 - April, 1982
McGill University, Montreal Canada.

AWARDS AND HONORS

Elected Fellow of the American Institute for Medical and Biological Engineering (AIMBE)
Elected Fellow of the American Association for the Advancement of Science (AAAS)
Editor-in-Chief, Applied Biochemistry and Biotechnology, 2003-Present
Editorial Board, Molecular Biotechnology, 1997-2002
Editorial Board, Journal of Bionanoscience, 2007 - Present
Editorial Board, Open Access Journal of Biotechnology, 2006 – Present
National Science Foundation, Research Initiation Award, 1993-1996
Faculty Research Participation Award, U.S. Department of Energy

325
SELECTED PUBLICATIONS


NOSANG V. MYUNG
Chemical and Environmental Engineering

EDUCATION

B.S. in Chemical Engineering, University of California, Los Angeles, 1994
M.S. in Chemical Engineering, University of California, Los Angeles, 1997
Ph.D. in Chemical Engineering, University of California, Los Angeles, 1998

RESEARCH INTERESTS

Electrochemistry, electrodeposition, sensors, environmental remediation, thermoelectrics,
spintronic materials and devices; nanostructures and nanotechnology; hybrid biological-organic-
inorganic nanomaterials

APPOINTMENTS

Associate Professor, Department of Chemical and Environmental Engineering, UC Riverside,
2007 – present
Assistant Professor, Department of Chemical and Environmental Engineering, UC Riverside,
2003 – 2007
Assistant Research Engineer, Department of Chemical Engineering, UC Los Angeles, 1998 –
2001

AWARDS AND HONORS

Keynote Speaker, Wastewater Reclamation & Reuse for Sustainability, Jeju, Korea, Nov. 8-11,
(2005)
Regent Fellowship (2004); Jet Propulsion Laboratory Spot Award (2002)
Abner Brenner Gold Medal Award from American Electroplaters and Surface Finishers Society
(AESF) (June, 2001)
National Science Foundation Fellowship and Department of Education Fellowship (Jan.
1995-Dec. 1998),
American Electroplating and Surface Finishing Summer Scholarship, Electrochemical Society
Student Grant, Hughes Aircraft Company Scholarship, Korean American Edward Lee
Scholarship
Lead symposium organizer, “1st and 2nd International Symposium on Electrodeposition of
Issue Editor, Electrochemical Society Transactions

SELECTED PUBLICATIONS


EDUCATION

M.S., Materials / Mechanical, Stanford University, 1993
Ph.D., Materials / Electronics, Stanford University, 1997

RESEARCH INTERESTS

wafer fab processing, thin film mechanics, and nanotechnology

APPOINTMENTS

Associate Professor of Mechanical Engineering, UC-Riverside, 2006-present
Assistant Professor of Mechanical Engineering, UC-Riverside, 2001-2006
Research Fellow, Max Planck Institute, Stuttgart, Germany, 2002 (Summer)
Member of the Center for Nanoscience Innovation for Defense, UC-Riverside, 2002-present
Member of the Center for Nanoscale Science and Engineering, UC-Riverside, 2001-present
Co-operating Faculty of Chemical and Env. Engineering, UC-Riverside, 2002-present
Co-operating Faculty of Electrical Engineering, UC-Riverside, 2001-present
Consulting Professor of Mechanical Engineering, Stanford University, 2000-present
Senior Engineer, Applied Micro Circuits Corporation, San Diego, CA, 1997-2001
Lecturer of Electrical Engineering and Materials Science, UC-San Diego, 1997-2000

AWARDS AND HONORS

Workshop Recognition Award, Nanotechnology Workshop, Bilkent University, Turkey (2006)
University of California, Faculty Excellence Award (2006)
Outstanding Research Award, Taiwanese American Aeronautics and Space Association (TAASA) (2005)
University of California, Regents Fellowship (2005)
Member of US Delegation, USA-Japan Nanotechnology in Advanced Therapy and Diagnosis Symposium, Yokohama Japan (2003)
Achievement in Technical Ingenuity Award, UCR Core 21 Consortium (2003)
Regents Faculty Award (2002)

SELECTED PUBLICATIONS

330


EDUCATION

B.S. in Metallurgical Engineering Middle East Technical University, Turkey, 1988  
M.S. in Metallurgical Engineering, University of Illinois at Urbana - Champaign, 1991  
M.S. in Materials Science & Engineering, Stanford University, 1994  
Ph.D. in Electrical & Computer Engineering, UC San Diego, 2001  

RESEARCH INTERESTS

Prof. Mihri Ozkan’s laboratory focuses on the future renewable energy device design and fabrication. Integration of these devices on consumable electronics and clothing are some of the current activities in her interdisciplinary laboratory. Furthermore, her expertise in nanotechnology is also applied towards the development of beyond CMOS unconventional device fabrication and integration methods for nanowires and carbon nanotubes.  

APPOINTMENTS

Associate Professor, Electrical Engineering, UC Riverside, 2006 - present  
Assistant Professor, Center for Nanoscale Science and Engineering, UC Riverside, 2001- present  
Visiting Scientist, Electrical and Computer Engineering, UC San Diego, 2001 - 2002  
Invited Research Fellow, Max Planck Institute, Stuttgart, Germany, 2002 - summer  
Research Assistant, Electrical and Computer Engineering Dept., UCSD, 1997 - 2001  

AWARDS AND HONORS

“2006 Referee of the Year” by the Journal of Biomedical Microdevices (2007)  
Army's “Young Investigator Award” (2006)  
“Distinguished Engineering Educator of the Year” Award by the National Engineers' Council (2006)  
Regents Faculty of Excellence Award (2006)  
Nationwide Award of "2005 Emerging Scholar" by American Association of University Women  
Regents Faculty Excellence Award (2004)  
"Frontier Research" by the Virtual Journal of Nanoscale Science and Technology edited by Dr. David Awschalom (2004)  
Visionary Science Award: BioMEMS and Biomedical Nanotechnology Conference (2003)  
"Research Leadership Recognition Award" from CORE21 (2003)  
Travel Award from Association for Lab Automation (2003)
Regents Faculty Excellence Award, Riverside (2002)
Academic Senate Faculty Excellence Award, Riverside (2002)
Invited Research Fellow, Max Planck Institute, Stuttgart, Germany (2002)

SELECTED PUBLICATIONS


EDUCATION

B.Ch.E. in Chemical Engineering, University of Dayton, Dayton, OH, 1980
M.S.ChE. in Chemical Engineering, University of Pittsburgh, Pittsburgh, PA, 1985
D.Sc. in Chemical Engineering with Biomedical Engineering Certificate, Washington University, St. Louis, MO, 1989

RESEARCH INTERESTS

Director of Biotransport and Bioreactions Kinetics Group; Biotransport and bioreaction in organelles including mitochondria, artificial organs; Thermodynamics of crowded proteins in cells; Membrane separations / Bioseparations, Protein fouling of membranes, Bioreactor design, Drug delivery

APPOINTMENTS

Engineer, Gulf Refining & Marketing Company, Philadelphia, PA, 6/80 – 9/81
Engineer, Gulf Research & Development Company, Pittsburgh, PA, 9/81 – 8/83
Assist. Professor, University of Iowa, Chemical & Biochemical Engineering, 8/89 – 7/95
Assoc. Professor, University of Iowa, Chemical & Biochemical Engineering, 7/95 – 6/03
Visiting Professor, University of Delaware, Chemical Engineering, 1/98 – 5/98
Assoc. Prof., Sec. Appoint., University of Iowa, Biomedical Engineering, 11/02 – 6/03
Professor, Sec. Appoint., University of Iowa, Biomedical Engineering, 7/03 – 12/05
Professor, University of Iowa, Chemical & Biochemical Engineering, 7/03 – 12/05
Director, Ethnic Inclusion Effort for Iowa Engineering, University of Iowa, 8/03 – 12/05
Professor, University of California, Riverside, Bioengineering,
Adjunct Professor, Biomedical Engineering, University of Iowa, 3/06 –
Graduate Faculty Member, Biomedical Sciences Graduate, UCR, 3/06 –

AWARDS AND HONORS

Fellowship (G-POP), University of Pittsburgh, 1983
Fellowship, Washington University, 1985
Tau Beta Pi Excellence in Engineering Teaching Award, University of Iowa, 1991
GE Foundation Faculty Fellowship, University of Iowa, 1991 - 1992
James N. Murray Faculty Award (Most Outstanding Young Professor), Iowa, 1992
Salute to Excellence Stellar Achievement, St. Louis American Newspaper, 1992
SROP Distinguished Mentor Award, Committee on Institutional Cooperation, 1995
Hawkeye Engineer Excellence in Teaching, University of Iowa, 1995 - 1997
Collegiate Teaching Award, University of Iowa, 1998
Distinguished Service Award, AIChE, Minority Affairs Committee, 1999
Collegiate Service Award, University of Iowa, 2004
Distinguished Educator Award, Iowa, Multicultural Graduating Students, 2005
Catalyst Award, Univ. of Iowa’s Award for Outstanding Diversity Effort, 2005
AAAS Fellow, 2007

SELECTED PUBLICATIONS


JING SHI  
Physics and Astronomy

EDUCATION

M.S., Solid State Physics, University of Illinois-Urbana-Champaign, 1991  
Ph.D., Solid State Physics, University of Illinois-Urbana-Champaign, 1994

RESEARCH INTERESTS

Physics of nanostructures and nanodevices; nanoscale magnetism and spin transport properties in organic and inorganic semiconductors

APPOINTMENTS

Professor, Department of Physics, University of California-Riverside, 2005 – present  
Associate Professor then Professor, Department of Physics, University of Utah, 1999 – 2005  
Senior Staff Scientist, Motorola Labs, 1997 – 1999  
Staff Scientist, Motorola Labs, 1996 – 1997  
Postdoctoral Research, Department of Physics and Materials Research Laboratory, University of California-Santa Barbara, 1994 – 1996  
Research Assistant, Department of Physics, University of Illinois-Urbana-Champaign, 1989 – 1994

SELECTED PUBLICATIONS


HARRY W. K. TOM  
Physics and Astronomy

EDUCATION

M.S., Physics, Balliol College, Oxford University, 1981  
Ph.D., Physics, University of California, Berkeley, 1984

RESEARCH INTERESTS

Surface nonlinear optics studies of metal, semiconductor and water/solid interface systems,  
ultrafast physical and chemical processes on surfaces, terahertz spectroscopy of liquid water,  
confined water, and biomolecules in liquid water, time-resolved imaging of laser-induced  
damage and of spin torque on magnetic domain walls, optical biosensors

APPOINTMENTS

Chair, Physics and Astronomy, UC Riverside, 2005 – present  
Professor, Physics and Astronomy, UC Riverside, 1992 – present  
Technical Staff Member, AT&T Bell Laboratories, Holmdel, NJ, 1984 – 1992

SELECTED PUBLICATIONS

Varma, C.M.; and Mills, A.P., “Positronium as a probe of transient paramagnetic centers in a-SiO₂,”  

Jiang, H.; McNary, J.; Tom, H.W.K.; Yan, M.; Radousky, H.B.; and Demos, S.G.,  
“Nanosecond time-resolved multiprobe imaging of laser damage in transparent solids,”  

Chang, Y.-M.; Xu, L.; and Tom, H.W.K., “Coherent phonon spectroscopy of GaAs surfaces using time-resolved second-harmonic generation,” Chemical Physics 251/1-3,  
283-308 (2000).


Tom, H.W.K.; Chang, Y.-M.; and Kwak, H., “Coherent phonon and electron spectroscopy


Current UCR advisees: Ken James, XiaoJing Tan, Peng Wan, Koji Yokoyama, Jojit Torcedo, Heng Ji
KAMBIZ VAFAI
Mechanical Engineering

EDUCATION

B.S. in Mechanical Engineering, University of Minnesota at Minneapolis, 1975
M.S. in Mechanical Engineering, University of California at Berkeley, 1977
Ph.D. in Mechanical Engineering, University of California at Berkeley, 1980

RESEARCH INTERESTS

Transport through porous media; multiphase transport; analysis of porous insulations; high heat flux applications; transport through biological membranes; thermal design and modeling; heat transfer augmentation investigations, feasibility, optimization and parametric studies for various engineering applications

APPOINTMENTS

Professor, Mechanical Engineering (appointed July 1, 2000), 2000 - present
Professor; The Ohio State University, Columbus, Ohio, 1991-2000
Visiting Professor; Fluid Mechanics Institute, University of Paul Sabatier, Toulouse, France, 1998
Visiting Professor; Technical University of Naples, Naples, Italy, 1997
Visiting Professor; Fluid Mechanics Institute, University of Paul Sabatier, Toulouse, France, 1995
Visiting Professor; University of Bordeaux, Bordeaux, France, 1990
Visiting Professor, Technical University of Munich, Munich, Germany, 1989
Associate Professor, Ohio State University, Columbus, Ohio, 1986-1991
Consultant, Battelle, Columbus, Ohio, 1982-1986
Assistant Professor, Ohio State University, Columbus, Ohio, 1981-1986

AWARDS AND HONORS

ASME Heat Transfer Memorial Award (2006)
Classic Paper Award ASME Heat Transfer Division (1999)
Listed in ISI Highly Cited (2/04 –present)
Honorary Editorial Advisory Board-International Journal of Heat and Mass Transfer (2/99-present)
Honorary Editorial Advisory Board-International Communications in Heat and Mass Transfer (2/99-present)
Editor in Chief-Journal of Porous Media (1/97-Present)
Board of Editors-Experimental Heat Transfer (10/97-Present)
Associate Editor of ASME Journal of Heat Transfer (2/94-8/97)
Member of the Editorial Board for the International Journal of Heat and Fluid Flow (8/94-11/97,2/06-present)
Selected Chair of the Second International Conference in Porous Media and its Applications in Science, Engineering and Industry (2007).
Selected Chair of the First International Conference in Porous Media and its Applications in Science, Engineering and Industry (1995-96).
Presidential Chair, University of California, Riverside (2000-2002)
Fellow of American Society of Mechanical Engineers (8/92)
Fellow of American Association for Advancement of Science (AAAS) (2002)
Associate Fellow of American Institute of Aeronautics and Astronautics (9/98)
Citation in MRS Bulletin (Materials Research Society) Vol.24, No.10, PP 13-14, Oct 99
Citation in Inside R&D (John Wiley & Sons) Vol. 28, No.42, PP 2-3, Oct 99
Citation in NEWS IN ENGINEERING (The Ohio State University) Vol. 71, No.3, P 18, December 99
Citation in Research at Ohio State University (The Ohio State University) November 99
Citation in Research News (The Ohio State University) September 99
Citation in Research News (The Ohio State University) July 99
College of Engineering Outstanding Research Award as Professor, Ohio State University (1996)
College of Engineering Outstanding Research Award as an Associate Professor, Ohio State University (1991)
College of Engineering Outstanding Research Award as an Assistant Professor, Ohio state University (1986)
Owens/Corning Faculty Fellowship (1985)
Chair of the General Papers Committee for the National Heat Transfer Division, ASME from 9/88-9/90
Dupont Summer Faculty Fellowship (1982)
Earle C. Anthony Academic Fellowship from the University of California at Berkeley (1975-76)
Mary Ann Wheeler Academic Scholarship from the University of California at Berkeley (1975-76)
Honor Society Membership: Pi Tau Sigma, Tau Beta Pi, since 1974.

SELECTED PUBLICATIONS


VALENTINE IVANOV VULLEV  
Bioengineering

EDUCATION

B.S., Chemistry and Physics, Keene State College, Keene, NH, 1993  
MA (Postdoctoral Fellow), Harvard University, Cambridge, 2002 – 2004  
Ph.D., Chemistry, Boston University, Boston, MA, 2001  
Ph.D. Dissertation title: “Towards Artificial Photosynthesis: Photoinduced Multiple-Step Electron Transfer in Supramolecular Structures Based on Synthetic Polypeptides”

RESEARCH INTERESTS

Charge transfer in biomimetic and bioinspired systems; microfluidics and biosensors; bioorganic surface chemistry and biophysics

APPOINTMENTS

Assistant Professor, University of California, Riverside, 2006 – present  
Research Associate / Senior Chemist, Boston University / PhotoSecure, Inc., 2004 – 2005  
Postdoctoral Fellow, Harvard University, 2002 – 2004  
Research Associate, Boston University, 2000 – 2002

AWARDS AND RECOGNITIONS

Philip L. Levins Memorial Prize, 2001  
(Awarded by the American Chemical Society, Northeastern Section, for outstanding research)  
Sugata Ray Award, 1998  
(Awarded by Boston University for outstanding graduate research in chemistry)

SELECTED PUBLICATIONS


JUNLAN WANG
Mechanical Engineering

EDUCATION

B.S. in Mechanics and Mechanical Engineering, University of Science & Technology of China, 1994
M.S. in Mechanics and Mechanical Engineering, University of Science & Technology of China, 1997
Ph.D. in Theoretical and Applied Mechanics, University of Illinois at Urbana-Champaign, USA, 2002
Postdoctoral Research, Brown University, USA, 2002-2003

RESEARCH INTERESTS

Mechanics and physics of materials at small length and time scales; mechanics of thin films, coatings and interfaces; mechanics of materials under dynamic and high strain-rate shock wave loadings; size-dependent mechanical behavior of surface micro and nanostructures; synthesis and mechanical reliability of multifunctional nanoporous materials.

APPOINTMENTS

Assistant Professor of Mechanical Engineering, UC Riverside, 2003-present
Co-operating faculty member of Electrical Engineering, UC Riverside, 2005-present
Participating faculty member of Stem Cell Research Center, UC Riverside, 2006-present
Participating faculty member of Materials Science and Engineering Program, UC Riverside, 2007-present
Post-doctoral Research Associate, Brown University, 2002-2003

AWARDS AND HONORS

Bourns College of Engineering Excellence in Teaching Award, UC Riverside (2007)
Materials Division Certificate of Recognition for organizing activities, American Society of Mechanical Engineers (ASME) (2006)
Regents’ Faculty Fellowship/Development Award, University of California (2004, 2006)
M. Hetenyi Award, Society for Experimental Mechanics (SEM) (2004)
Dissertation Completion Fellowship, University of Illinois at Urbana-Champaign (2001-2002)
Thomas J. Dolan Award, University of Illinois at Urbana-Champaign (2001)
Fred B. Seely Award, University of Illinois at Urbana-Champaign (1998)
Guang-Hua Outstanding Graduate Award, University of Science and Technology of China (1995)
ELITE Experimental Science Award for academic excellence, University of Science and Technology of China (1994)
Ranked No. 1 in solid mechanics major in 5 years (1989-1994), admitted to graduate school exempted from entrance examination (1994), University of Science and Technology of China
People’s Scholarship, University of Science and Technology of China (1989-1994)

SELECTED PUBLICATIONS


JIANZHONG WU
Chemical and Environmental Engineering

EDUCATION
B.E. Chem. Eng., Tsinghua University, Beijing, 1991
B.S. Applied Math, Tsinghua University, Beijing, 1991
M.S. Chem. Eng., Tsinghua University, Beijing, 1994

RESEARCH INTERESTS
Molecular modeling and design, theory of complex fluids and self-assembly, DNA/RNA packaging.

APPOINTMENTS
University of California at Riverside, Associate Professor (7/05 – present)
University of California at Riverside, Assistant Professor (1/01 – 6/05)
Lawrence Berkeley National Laboratory, Postdoctoral Researcher (10/98 – 12/00)

AWARDS AND HONORS
Regents’ Faculty Development Award, University of California at Riverside (2003);
Regents’ Faculty Fellowship, University of California at Riverside (2001);
Outstanding Performance Award, Lawrence Berkeley National Laboratory (2000);
Progress in Science and Technology Award (team), Ministry of Education, P. R. China (1999);
Shen Graduate Award, University of California at Berkeley (1996);
Guanghua Fellowship, Tsinghua University, Beijing (1993)

SELECTED PUBLICATIONS


(Appeared also in April 15, 2007 issue of Virtual Journal of Biological Physics Research).


(Appeared also in February 15, 2006 issue of *Virtual Journal of Biological Physics Research*)


GUANSHUI XU  
Mechanical Engineering

EDUCATION

B.S. in Solid Mechanics, University of Science and Technology of China, 1986  
M.S. in Applied Mathematics, Brown University, USA, 1992  
Ph.D. in Engineering, Brown University, USA, 1994  
Postdoctoral Research, Massachusetts Institute of Technology, USA, 1993-1995

RESEARCH INTERESTS

Mechanical Behavior of Materials and Structures, Dislocations in Crystalline Solids

APPOINTMENTS

Professor, Dept. of Mechanical Engineering, UC Riverside, 2007 – present  
Visiting Professor, Institute of Materials Science, Friedrich Alexander University of Erlangen Nuremberg, 2007  
Associate Professor, Dept. of Mechanical Engineering, UC Riverside, 2003 – 2007  
Assistant Professor, Dept. of Mechanical Engineering, UC Riverside, 1998 – 2003  
Project Engineer, TerraTek, Inc., Salt Lake City, USA, 1995 – 1998

AWARDS AND HONORS

National Science Foundation (NSF) Faculty Development CAREER Award, 2002  
University of California Regents Faculty Award, 1999

SELECTED PUBLICATIONS


YUSHAN YAN  
Chemical Engineering

EDUCATION

B.S., Chemical Physics, Univ. of Science and Technology of China, 1988  
M.S., Chemical Engineering, California Institute of Technology, 1995  
Ph.D., Chemical Engineering, California Institute of Technology, 1997

RESEARCH INTERESTS

Zeolite thin films as insulators for computer chips, corrosion-resistant coatings for aerospace alloys, and hydrophilic and antimicrobial coatings for water separation in space station, nanostructured fuel cell catalysts and membranes, and design, synthesis, and applications of nanoparticles, nanowires, and nanotubes

APPOINTMENTS

University Scholar Professor, UC Riverside, 2006-present  
Professor of Chemical Engineering, UC Riverside, 2005-present  
Associate Professor, UC Riverside, 2002-2005  
Assistant Professor, UC Riverside, 1998-2002  
AlliedSignal Inc. Senior Staff Engineer/Project Leader, 1996-1998  
Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Research Assistant, 1988-1992

AWARD AND HONORS

Keynote Speaker, The 15th International Zeolite Conference, Beijing, China, 2007  
Keynote Speaker, The International Symposium on Zeolites and Microporous Crystals (ZMPC2006), Yonago, Japan, 2006  
Guest Editor, Special Issue in Honor of Professor R. R. Xu, Microporous and Mesoporous Materials, Elsevier, 2007  
Top 100 most cited papers (28th) in Ind. Eng. Chem. Res. since 1975, 2007  
University Scholar, University of California, Riverside, 2006  
Overseas Young Investigator, Chinese Academy of Sciences, 2003  
Faculty Development Award, University of California, Riverside, 2001  
Executive Committee Member, UC-DISCOVERY Program, 2000 – Date  
Regent’s Faculty Fellowship, University of California, Riverside, 2000  
New, Junior Faculty Research Award, UC-SMART Program, 1999  
Guest Professor, Department of Chemistry, Jilin University, China (98-03)  
Li Ming Scholarship Award, California Institute of Technology, 1994  
President Scholarship Excellence Award, Chinese Academy of Sciences, 1990
SELECTED PUBLICATIONS


YADONG YIN
Chemistry

EDUCATION

B.S., Univ. of Science and Technology of China Chemistry, 1996
M.S., Chemistry, Univ. of Science and Technology of China (USTC), 1998
Ph.D., Materials Science and Engineering, University of Washington (UW), 2002

RESEARCH INTERESTS

Colloidal inorganic nanostructures: synthesis and surface modification; self-assembly approaches to nanoscale electronic and photonic devices; composite nanomaterials; biomedical applications of nanostructures; colloidal and interface chemistry; nanofabrication using unconventional methods

APPOINTMENTS

Assistant Professor, Department of Chemistry, University of California, Riverside, 2006-present
Staff Scientist, Molecular Foundry, Lawrence Berkeley National Laboratory, 2005-2006
Postdoctoral Fellow, Molecular Foundry, Lawrence Berkeley National Laboratory, 2003-2005
Postdoctoral Fellow, Department of Chemistry, University of California, Berkeley, 2003
Research Assistant, Department of Chemistry, UW, 1999-2002
Teaching Assistant, Department of Materials Science and Engineering, UW, 2000
Research Assistant, Department of Applied Chemistry, USTC, 1996-1998
Teaching Assistant, Department of Applied Chemistry, USTC, 1996-1998

AWARDS AND HONORS

Regents’ Faculty Fellowship, University of California, 2007
Outstanding Poster Award, Materials Research Society 2005 Spring Meeting, 2005
Outstanding Poster Award, Materials Research Society 2004 Spring Meeting, 2004
Graduate Student Award, Materials Research Society, 2001
Graduate Student Award, Materials Research Society, 2000
Graduate Research Fellowship Awards, Center for Nanotechnology at UW, 2000-2002

SELECTED PUBLICATIONS


352


APPENDIX E: UCR Guidelines for Interdepartmental Grad Program By-laws

Guidelines for Developing Bylaws for Interdepartmental Graduate Programs

The Graduate Council requires that all Interdepartmental Graduate Programs have an approved set of bylaws that provide for procedures for Program governance. The purpose of this document is to provide guidelines for developing appropriate bylaws and to describe the approval process.

Bylaws should be prepared in the following format:

<table>
<thead>
<tr>
<th>Section Title</th>
<th>To be included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title page</td>
<td>1. The name of the graduate program followed by “Bylaws”</td>
</tr>
<tr>
<td></td>
<td>2. Graduate Council’s approval date (left blank on original submission)</td>
</tr>
<tr>
<td></td>
<td>3. Revision approval dates</td>
</tr>
<tr>
<td>I. Objective</td>
<td>1. A brief statement of the discipline and mission of the program</td>
</tr>
<tr>
<td></td>
<td>2. Degree(s) offered by the program</td>
</tr>
<tr>
<td>II. Membership</td>
<td>1. Describe graduate program faculty membership criteria.</td>
</tr>
<tr>
<td></td>
<td>2. Describe activities expected of the faculty to retain membership.</td>
</tr>
<tr>
<td></td>
<td>3. Describe the basis and procedures for termination of membership.</td>
</tr>
<tr>
<td></td>
<td>4. Describe process for Emeritus faculty participation in the program.</td>
</tr>
<tr>
<td></td>
<td>When preparing this section, please refer to the Graduate Council “Guidelines for Membership in Interdepartmental Graduate Programs” in Appendix EE below.</td>
</tr>
<tr>
<td>III. Organization &amp; Administration</td>
<td>This Article may include the requested information in one statement or as separate articles. An example of a statement that might be inserted here is, “The administration of the program and its activities will be vested in an Executive Committee consisting of (number) program members and chaired by the graduate program director.”</td>
</tr>
<tr>
<td>A. Graduate Program Director</td>
<td>Describe the duties and responsibilities of the Graduate Program Director.</td>
</tr>
<tr>
<td></td>
<td>Director is responsible for all administrative tasks not otherwise delegated by the bylaws and Chairs the Executive Committee.</td>
</tr>
<tr>
<td>B. Graduate Advisers</td>
<td>Describe the duties and responsibilities of the Graduate Adviser(s). Describe the process by which individuals are nominated for appointment to this position by the Dean of the Graduate Division.</td>
</tr>
<tr>
<td>C. Committees</td>
<td>Provide a list and description of all standing committees set up to administer the graduate program. At a minimum, graduate programs should have an Executive Committee and Membership Committee. These may be combined in small programs. The descriptions should include the committee’s responsibilities, composition, and basis for selecting members.</td>
</tr>
</tbody>
</table>

The Executive Committee coordinates with the Director in administering the program and assumes governance oversight. Unless otherwise stipulated, the Executive Committee nominates the Program Director.

A Membership Committee reviews new member applications and nominations.
and conducts periodic reviews of members, using the criteria indicated in Article II.

Additional committees that might be formed include Admissions, Fellowship and Awards (student financial support), Curriculum, or Seminar committees.

D. Major Professors
Describe the duties and responsibilities of major professors of students enrolled in the program (e.g., participation in annual review of graduate student progress).

E. Meetings
The bylaws should specify the frequency of regular meetings of the program faculty (at least one annual meeting is expected). Describe who may call additional meetings, and under what circumstances. For example, the graduate program director may call a special meeting of the program as deemed necessary or desirable by the Executive Committee. In addition, a description should be included of how faculty members can petition for additional meetings (for example, “by petition of five or more members”).

F. Quorum
The Graduate Council has defined a minimum quorum. It specifies that all issues that require a vote must be:

- voted on by 50+% of the eligible members
- passage requires a 50+% supporting vote

The program may set more stringent quorum requirements if it wishes. The accepted quorum should be described in the bylaws. Voting may be done by E-mail ballot. If the program approves this option, its bylaws should indicate that.

G. Amendments
All amendments and revisions must be submitted to Graduate Council for review and approval. Passage of amendments to bylaws must satisfy the program’s quorum rules.

Appendix EE: Guidelines for Membership in Interdepartmental Graduate Programs

Election to membership in an interdepartmental graduate program is governed by the by-laws of the specific program.

The by-laws of each program must specify the criteria for nomination, initial election and periodic review of membership. These criteria will generally be based on academic title, disciplinary research area, research accomplishments and contributions to the program. Thus, faculty from throughout the campus may be eligible for election to graduate program membership providing that they meet the following criteria:

1. Hold an appropriate academic title as a member of the Academic Senate of the University of California (includes Professors, Lecturers with Security of Employment, Professors in Residence, Professors of Clinical “__”, Professors Emeritus/a, and Research Professors).

2. Have an active program of research or scholarship commensurate with the
expectations of the University of California. This is essential if the faculty member is to provide appropriate research guidance to his/her graduate students.

Each elected member of a graduate program will normally have the full rights and privileges accorded to other members. Graduate program members are expected to make contributions in one or more of the following ways in order to maintain their membership status:

1. Take an active role in the administration of the graduate program by serving on administrative committees, serving as a graduate adviser or serving as an administrative officer in the program.
2. Provide graduate level instruction and mentorship.
APPENDIX - F

Advertisement for New Materials Science and Engineering Faculty Positions

(appeared in Materials Today; brief version appeared in IEEE Spectrum and other professional publications)

THE BOURNS COLLEGE OF ENGINEERING, UNIVERSITY OF CALIFORNIA, RIVERSIDE invites applications for several tenure-track or tenured faculty positions in materials science and engineering (MSE). Applicants should have a Ph.D. in an MSE – related field, show outstanding potential for initiating and/or sustaining strong extramurally funded research and must be committed to excellence in undergraduate and graduate education. The MSE program is an interdisciplinary program, which is offered jointly by all five BCOE departments. The hired faculty will be hosted by one of the departments and will have a split teaching load between his/her department and MSE program. The MSE program has more than twenty internationally recognized participating faculty members who focus on nanotechnology, energy conversion and biomaterials. The successful candidate should be able to develop research collaboration with other MSE participating faculty. More information about the MSE program can be found at http://www.engr.ucr.edu/mse/. See www.engr.ucr.edu/facultysearch/ for the application procedure as well as each individual department’s areas of interest. EEO/AA employer
APPENDIX B: SAMPLE LISTING OF COMPANIES INTERESTED IN MSE GRADUATES
If you want me to add a company, then just drop me a line.
If you are coming from the outside, then please visit our department.

High Tech Companies for Materials Science and Engineering

- General "Company" Listings
- Materials Manufacturing
- Materials Testing and Service
- Vacuum/Surface Companies
- Microscopy/Spectroscopy/Imaging
- Optics
- Instrumentation
  - Components
  - Data Acquisition, Motion Control, Sensors
  - Power Products
  - Test and Measurement
  - Preowned Equipment
  - Temperature
  - Other
- Semiconductors
- Chemical, Oil, and Chemistry
- Corporate Labs
- Computing
  - Science Software:

- Semiconductors
  - Chips
    - AMD
    - American Megatrends
    - Analog Devices
    - Analogic
    - Burr-Brown
    - Chips and Technologies
    - Cirrus Logic
    - Cypress Semiconductor
    - Cyrix
    - Dallas Semiconductor
    - Fairchild Semiconductor
    - GEC Plessey Semiconductor
    - General Semiconductor
    - Hamilton Hallmark
    - Harris Semiconductor
    - Hewlett-Packard
    - Hitachi
    - Hitachi (US)
    - Holtek
- IBM
- ICsinc
- Implant Sciences
- Intel
- KLA-Tencor
- Marvell: mixed signal processors
- Matsushita
- Maxim
- Micro Hybrids
- Micron Technology
- Motorola
- National Semiconductor
- NexGen
- NoHau
- Philips Semiconductor
- QuickLogic
- Rockwell Semiconductor Systems
- Ross Technology
- Samsung
- Samtec
- SGS Thomson
- Siemens
- Sierra Semiconductor
- Standard Microsystems
- Toshiba
- Toshiba (US)

- Components
  - Elantec
  - Mitel Semiconductors
  - PowerTrends

- Wafers
  - AlSil-Supply: wafers
  - Chip Supply: die and wafers
  - Compart Technology
  - Cree Research: SiC
  - Crystal GmbH: substrates and wafers
  - Episil Technologies: silicon epitaxial wafers
  - Flina GmbH
  - Freiberger Compound Materials: GaAs wafers
  - GEMAC mbH
  - Global Material Services
  - IBIS: SIMOX-SOI
  - ITME
  - Komatsu
  - MEMC Electronic Materials: wafers
  - Mitsubishi Silicon America: wafers
  - Montco Silicon: wafers
  - Nova Crystals: wafers
  - Polishing Corporation of America
  - SINO-AMERICAN
  - Shin-Etsu
  - Sil-Supply
  - Silicon Crystals
  - Silrec Corporation
  - Silicon Quest
  - Silicon Valley Microelectronics: wafers and services
    - Silicon Valley Microelectronics: Chinese
    - Silicon Valley Microelectronics: Japanese
    - Silicon Valley Microelectronics: Korean
  - SouthWest Silicon
  - Sumitomo Sitix Silicon
  - TELECOM-STV Company
  - TTI
  - Topsil
  - Transition Technology International
  - Typh Silicon
  - UniSil
  - Virginia Semiconductor

http://www.matscieng.sunysb.edu/other4sec.html

12/12/2007
- Wacker Siltronic
- Wafer World

Meta Sites
- SuperSite/Semiconductor: Links to others
- e-inSITE: Electronics Industry Knowledge Network (Cahners)
- Link2Semi

Processing
- Chemicals
  - Al Technology: adhesives and thermales
  - Allied Signal: Advanced Microelectronics Material
  - Genex: lubricants/adhesives
  - Lintec: pressure-sensitive adhesives
  - National Starch and Chemical Compnany: adhesives
  - Schumacher
- Clean Room Equipment
  - Almond Engineering
  - Automation In Cleanroom (ACR)
  - Airtech International Manufacturing
  - Atec
  - Clestra Cleanroom
  - Clean Room Consulting
  - Clean Room Services
  - Daw Technologies
  - Exolab
  - Gordon
  - Lighthouse Worldwide Solutions
  - Mahle Raumtechnik: access floors
  - Meissner+Wurst
  - Particle Measuring Systems
  - Rotter
  - Staubli
- Crystal Growth
  - Ferrofluidics
  - GigaMat Systems
  - Kayex
- Die/Bonding stuff
  - Dage Group: bond testing
  - Datacon: die bonding
  - Die-Tech Connects
  - Kulicke and Soffa Industries: bonding
  - Micro Swiss
  - Orthodyne: wire bonding
  - Research Devices: flip chip bonders
  - Royce Instruments
  - Semiconductor Equipment
- Small Precision Tools
- Gas/Handling/Monitoring
  - Accurate Gas Control Systems
  - Aera
  - Aeronex
  - Air Products and Chemicals
  - American Gas & Chemical
  - Bacharach
  - Bionics Instrument Europe
  - BOC Gases
  - Bronkhorst High-tech
  - Brooks Instrument
  - CEA Instruments
  - DH Instruments
  - Dockweiler: pure tubing
  - Donaldson: filtration products
  - Fullmann
  - Gasonics
  - George Fischer: piping
  - Gow-Mac Instrument
  - HNU Systems
  - Hoffman Air & Filtration Systems
  - IN USA: ozone monitoring
- LEPCO
- Norcimbus
- Persys technology
- Particle Measuring Systems
- Praxair
- SAES Pure Gas
- Scott Specialty Gases Compressed Gas
- Swagelok: connectors/valves

**Inspection/Metrology**
- **local Ellipsometer list**
- ADE
- Atomika
- August Technology
- Axic
- B&G International
- Bio-Rad
- Chapman Instruments: surface profiling
- Electroglas: wafer probes
- Equipment Technology Conveyance: assorted
- Faxitron X-Ray: imaging
- Four Dimensions: f-p probes
- Frontier Semiconductor Measurements: stress/flatness
- Gold Technology: test interface solutions
- Intest: dock and test-head manipulators
- Jandel: f-p probes
- KLA-Tencor
- Knights Technology
- Lasertec: inspection systems
- Machlam Instruments: wafer level testing
- Micromanipulator Company
- Nanometrics
- Phase Shift Technology
- SemiTest
- Signatone: analytical probing
- Veeco

**Liquid/Water/Handling/Monitoring**
- Anatel
- Asti
- Brooks Instrument
- Dockweiler: pure tubing
- Flowell
- Fullmann
- Georg Fischer: piping
- HNU Systems
- PTI Technologies: purification through
- Semco

**Processing Equipment**
- AG Associates: rapid thermal processing
- Aixtron
- Anelva
- Applied Materials
- APT
- Axic
- Brooks Automation
- CAE-Online: marketplace for used
- Canary Technology Services
- Canon: steppers
- CHA Industries
- Crystec Technology Trading
- CVC
- CVD Equipment
- Cybeq Systems
- Dainippon Screen
- Electro Scientific Industries
- EMCORE: MOCVD of compound semis
- FSI Int'l
- Fusion: photoresist curing/removal
- GENUS
Harper: thermal
High Tech Trade
Integrated Process Equipment (IPEC)
Infab
KDF
LabX
Lam Research
Mattson
MetroLine/IPC: plasma
Micron: focused ion-beam systems
Modular Process Technology
Moore Technologies
Oxford Instruments Plasma Technology
Plasma-Therm: like the name says
Riber: MBE systems
Telemark
Semi Tool
Second Source: sputtering systems
Silicon Valley Group
Sizar: thermal processing
STEAG
Stangel
Surface Technology Systems
Vergason: PVD equipment

Deposition Sources
- Aja International/ Sairem
- Anatech
- Ion Tech
- John Yvon - Sofie: thin film processing
- MRG

Lithography
- ASM Lithography
- Benchmark Tech: reticles
- Compugraphics (UK): mask maker
- Cymer: dUV sources
- EV Group
- Elec Systems: masking equipment
- Fairchild Technologies USA
- FSI: microlithography
- JC Nably Lithography Systems
- K&W
- Micronic Laser Systems
- MRS Technology
- Myriad
- Photronics: masks
- Revise: microstereolithography
- SITE
- SUSS
- TPI

Misc Hardware and Furnaces/Heat-Treating
- Also see local "metal" equipment
- Induction Atmospheres: turnkey induction heating systems
- Bryant Manufacturing: test chambers
- BTU International: ovens and furnaces
- Durex: heaters
- Hotpack: ovens and furnaces
- CLC Furnace: 30+ innovative modulary designed HV furnaces
  - Advanced Materials Production Equipment Store: used
  - Aerovac: vacuum hot presses
  - ArcVac: vacuum arc-remelting
  - ATOven: hi-temp atmosphere furnaces
  - AIVacHigh: hi-temp with selected atmos
  - BinderVac: binder-removal atmosphere furnaces
  - BrazeVac: brazing vacuum furnaces
- **CarbideVac**: WC debind/sintering vac-furns
- **CeramVac**: ceramic debind/sintering
- **ChemVac**: furnace for (CVD)
- **CustomVac**: customization/updating
- **Elabar**: production size pressure/quench furnaces
- **Elavac**: batch vac-furns for heat treat/brazing
- **EncapsulVac**: vac-epoxy outgas/impregnation
- **Heating Element Manufacturers**: meta-site
- **HiTempFurnaces**: pre-owned furnaces
- **Industrial Auctions**: sell your surplus equipment
- **LabGloveBox**: vacuum/atmos chambers
- **LabVac**: research-size furnaces
- **Koyo Lindberg**: ovens and furnaces
- **Laurel Technologies**: spinners
- **Loadpoint**: dicing/grinding
- **Logitech Product Group**: cutting, lapping, polishing
- **Lufran**: process heating/cooling
- **MHI**: oven/furnace heating-elements
- **Manufacturing Technology**: slicing/grinding
- **Okamoto**: slicing/dice/grind/etc...
- **Resonetics**: laser micromachining
- **Samcoplastics**: lapping/polishing
- **Supplies**
  - **Dynamic Micro Systems**: wet processing
  - **Empak**: shipping/process containers
  - **Enhanced Technology Products**: wet
  - **Fluoro Mechanic**: wafer handling tools
  - **Green Tweed**: seals
  - **MEC Tech**: spare parts
  - **Parker Hannifin**: seals
  - **Vacuum Wand**: vacuum tweezers/pumps
- **Wet**
  - **Amerimade technology**: wet processing
  - **CFM Technologies**: wet
  - **FAS Technologies**: coating technology
  - **SCP**: wet
  - **SEZ**: spin etch
- **Software**
  - **ABAKUS**: fab/tool automation
  - **Static Charge control**
    - **Charleswater**: static control
    - **Forbo**: static control
    - **Julie Associates**: static control
    - **Simco**

- **Polymer/Plastic/Chemical Companies**
  - **Advanced Elastomer Systems**
  - **Allied Signal, Plastics**
  - **Amoco Chemicals**
  - **Ashland Chemical Company**
  - **AlliedSignal Plastics**
  - **BASF**
  - **BASF**
  - **Bayers - Polymers Division**
  - **Cadillac Plastic**
  - **Calsak**
  - **Cambridge Polymer**
  - **CAMPUS**: huge database
  - **Chemical Register**: yellow pages from chems
  - **Chemicals Technology**: meta-site
  - **Nanfang Nylon Industries** (China Engineering Plastics)
  - **Colorite Polymers - Special Resins Division**

---

http://www.matscieng.sunysb.edu/other4sec.html

12/12/2007

364
- Condea Vista
- Cyro Industries
- DoPlastic: plastics
- Dow Chemical Company
- DSM Group
- Dupont
- DuPont Company: engineered polymers
- Dyneon
- Dynamold: mag-rubber, replication/shim plastic
- E-A-R Specialty Composites: anti-vibration polymers
- Eastman Chemical Company
- Extruded Rubber
- Epoxies
- Exxon Chemical
- Ferro Corporation
- Fiberite
- Firestone Polymers
- GE Plastics
- Geon
- Goodyear
- Hoechst Celanese
- Huntsman
- Kemco
- Lorad
- Monsanto
- Nova Chemicals
- Novartis
- Occidental Chemical
- Plastics Technology Magazine
- Southland Polymers
- PlasticsNet
- Polymer Search
- Polymerland
- Polymer Com, POLY-LINKS
- PolySort
- Quantum Chemical Company
- RAPRA: plastics/polymers
- Reichhold Chemicals
- Rohm and Haas
- Sentinel Products
- Sorbothane: anti-vibration polymer
- Shell Chemical
- SKS Bottle: supplier/consultant/designer of plastic bottles
- Solutia
- Sumitomo Chemical
- Epoxy Systems: Resins in Construction
- Union Carbide
- Vinyl Institute
- VTEC Polyimide: for semiconductor/electronics industry

- Oil Companies
  - BP
  - Exxon
  - Hess
  - Mobil
  - Shell
  - Texaco

- Chemistry Companies and Lab Equipment
  - Aldrich: Organics and Inorganics for Chemical Synthesis
  - Alfa Aesar: a Johnson Matthey Company
  - Cole Parmer
- Denver Instrument
- Fisher Scientific
- Flow Sciences
- Fluka: Specialty Chemicals for Research
- GMI: preowned lab equipment
- Hazardous Chemical Database
- High-Q: high purity water systems
- Labconco
- Lab Deals
- Lab Depot
- Lab Design and Supply: equipment and furniture
- LabSystems
- LabWare
- MarketLab: unique and hard to find products for the lab
- Midwest Scientific
- Millipore: Ultrapure water systems
- Osmotics: filter king
- ScienceLab: chemicals and lab equipment
- Sigma: Biochemicals and Reagents
- Terra Universal: almost everything
- Thomas Scientific
- VWR
- Ultra Scientific: Analytical Standards

- Corporate Labs
  - Battelle
  - AT&T: formerly Bell Labs
  - General Electric
  - HTE Labs
  - IBM Research Labs
  - Rockwell
  - SRI International
  - Southwest Research Institute
  - United Technologies

- Magazines, Journals, and Publishers
  - Science and Technology
    - Advance Materials and Processes (from ASM-INTL)
    - Alloy Digest
    - Applied Physics Letters
    - Cahners
    - Cambridge International Science Publishing
    - CASTI Publishing, Inc.
    - Chemistry Journals online
    - Elsevier: All of its Journals and its Materials Science area
    - Elsevier Engineering
    - Engineering Fracture Mechanics
    - Heat Treating Progress (from ASM-INTL)
    - IOP: Institute of Physics
      - JOP: Conds. Matters
      - Measurement Science and Technology
      - Semiconductor Science and Technology
    - Int'l Union of Crystallographers
      - Acta Crystallographica
      - Journal of Applied Crystallography and the
        Journal of Synchrotron Radiation
    - International Journal of Fatigue
    - International Journal of Impact Engineering
    - International Materials Reviews
    - Journal of Advanced Materials
    - Journal of Crystal Research and Technology
    - Journal of Corrosion Science and Engineering
Journal of Materials Engineering and Performance
JOM and Online articles
Journal of Phase Equilibria
Journal of Vacuum Science and Technology
Journal of Thermal Spray Technology
Kluwer's Materials Journals
- Adsorption
- Advanced Performance Materials
- Applied Composite Materials
- Biomedical Microdevices
- Glass Physics and Chemistry
- Glass and Ceramics
- High Temperature
- Industrial Laboratory (Diagnostics of Materials)
- Interface Science
- International Journal of Fracture
- International Journal of Thermophysics
- Journal of Computer-Aided Materials Design
- Journal of Computer-Assisted Microscopy
- Journal of Electroceramics
- Journal of Low Temperature Physics
- Journal of Materials Science
- Journal of Materials Science Letters
- Journal of Materials Science: Materials in Electronics
- Journal of Materials Science: Materials in Medicine
- Journal of Materials Synthesis and Processing
- Journal of Nanoparticle Research
- Journal of Nondestructive Evaluation
- Journal of Porous Materials
- Journal of Sol-Gel Science and Technology
- Journal of Superconductivity
- Materials Science
- Measurement Techniques
- Mechanics of Composite Materials
- Mechanics of Time-Dependent Materials
- Metal Science and Heat Treatment
- Metallurgist
- Molecular Engineering
- Optical and Quantum Electronics
- Oxidation of Metals
- Photonic Network Communications
- Plasma Chemistry and Plasma Processing
- Plasmas and Polymers
- Powder Metallurgy and Metal Ceramics
- Protection of Metals
- Refractories and Industrial Ceramics
- Russian Journal of Nondestructive Testing
- Subsurface Sensing Technologies and Applications
Light Metal Age
Materials Today
Metallurgical and Materials Transactions
Metallurgical and Materials Transactions A & B
Metals Watch
MRS Bulletin
Performance Materials: online
N.D.T. & E. International
Physics News
Physical Review
Physics Today
Platinum Group Database: Pt, Pd, Rh, Ir, Os, Ru
Science
Scientific American
Surface Science Spectra
Technical Diagnostics and NDT
Theoretical and Applied Fracture Mechanics
Tribology International
Ultrasonic Testing OnLine Journal, by Rolf Diederichs
- Wear
- Vacuum Solutions
- World Scientific

Forums, Bulletins, etc....

- Biomaterials
- American Metals Market Online
- Defect and Diffusion Forum
- Forging
- Key Engineering Materials Forum
- Materials Science Forum
- Materials Science International Services, Red Book on Materials Science
- Metal Bulletin
- Metal Industry Indicators
- Metals Watch!
- NCEMT Metalworking Technology Updates
- National Academy Press, On-line books on Materials
  - Industrial Technology
    - Abrasive Magazine
    - American Metal Market: Online
    - Ceramic Industry
    - Compound Semiconductor Magazine
    - Electronic Design News
    - ECN: Electronic Component News
    - EEM: Electronic Engineers Master
    - EEM Local Sources
    - Electronic Products
    - Electronic News: Online
    - Foundry Management & Technology
    - Hearst: ElectroWeb
    - IC Master
    - Instrumentation & Control Systems
    - Iron and Steelmaker
    - Labtrader Magazine
    - Laser Focus World
    - LC-GC
    - MicroDesign Resources
    - Microscopy and Analysis
    - Microscopy Today
    - Microwave Journal
    - Military and Aerospace Electronics
    - Modern Casting Magazine
    - Motion Control Buyers Guide
    - Motion Magazine
    - Nanolithe
    - NASA Tech Briefs
    - Personal Engineering and Instrumentation News
    - Plastics Technology Magazine
    - Research and Development Magazine
    - Scanning
    - Semiconductor International
    - Semiconductor Online
    - Sensors Magazine
    - Solid State Technology
    - Spectroscopy
    - Spectrum: from IEEE
    - Test and Measurement World
  - Computer and Computing
    - Byte
    - Comdex
    - Computer Shopper
    - CPG RS/Magazine, SunExpert, WebServer
    - Doctor Dobbs
    - GCN
    - InfoWorld
    - Java World
Computing
  - Numerical/Science Software

Materials
  - Advanced Chemistry Development: ChemSketch (free) and more!
  - Advanced Kinetics and Technology Solutions: thermal analysis software
  - Atomistic Defect Simulation Handler
  - CASINO: SEM trajectory simulation
  - BuzzMac: Non-destructive testing software
  - CCP14: single xtal xray software
  - CombineZ: extended focus
  - Crystal Draw
  - Crystal Structure Design AS (Mac)
  - Crystal Impact
  - CIT Explorer: phase contrast for TEM
  - Desktop Microspopist Diffraction software for Macs
  - DTSA: energy dispersive xray analysis (Mac) (free)
  - ESM Software
  - FACT: for chemical thermodynamics
  - Foster Findlay Associates, Image Processing and Analysis
  - Granta: materials selector
  - Grain size measurement (free)
  - InterCorr International: corrosion software
  - ImageJ: Image Processing and Analysis in Java (free)
  - icube: Image Processing/Analysis
  - ImageProcessing ToolKit, by John Russ, PhotoShop Plugins and Standalone
  - ImagePC: Scion, Clone of NIH for Win95 and Mac (free)
  - Image Tool: UTexas San Antonio: Image Processing and Analysis (Win95/NT) (free)
  - Imaging: local list of imaging companies
  - LaboTex, Texture Analysis Software
  - Kontron Elektron GmbH, Image Analysis Software and Equipment
  - k Space Navigator, TEM software
  - Leica, Image Analysis Software and Equipment
  - MacLispix, (free) (PMac) like NIH
  - MAP, Materials Algorithms Project: Fortran Library
  - MATTER, Materials Science on CD-ROM
  - Media Cybernetics: Image Processing/Analysis
  - MicroScope for Windows: TEM simulation
  - MMeter's grain-counting software
  - Monte Carlo simulation for SEM
  - More Monte Carlo simulation for SEM
  - MS MacroSystem: 3d-imaging software
  - Microanalyst Net: EDS software (free)
  - NIH-Image, Image Analysis Software (Mac) (free)
  - Osiris: free image-processing
  - Oxford's Crystallographica, from Oxford Cryo-UK
  - OpenDX: visware ala IBM
  - Oxford Materials: modeling software
  - Panorama Tools: free
  - ProcessDiffraction: SAED/TEM
  - PythonWare: python imaging library
  - SICMCON: Simulation of Electron Diffraction Contrast Images of Localized Strain
  - SimaPro: Material Life Cycle Software
  - Powder Cell: xray spectra and modelling (PC) (free)
  - SARCH/LATUSE/PLOT3D: Surface ARCHitect / LATtice USE (free)
- **SEMware** from NISSEI SANGYO CANADA
- **Scanning Probe Image Processor**
- **SINCRIS**: Information Server for Crystallography
- **SINCRIS software list for Crystallography** *(mostly free)*
- **SpecTel**: SEM simulation
- **Small World**: electron flight simulator (PC) *(free demo)*
- **VEC**: Visual computing in Electron Crystallography: TEM software
- **VIMS**: Materials Science courseware from North Carolina StateU
- **Weber’s Software**: xray,diff,electron (PC) *(free)*
- **WDXRF**: xray-flour spectra
- **WinSoft**: Chemistry Software
- **XPowder**
- **XPowder, X-Ray Powder Diffraction Software**. Developed at the University of Granada, Spain

### Numerical/Math software

- **Algor**
- **Ansys**
- **Artisoft**
- **AutoDesk**
- **Datatrend Software**: Grab It
- **Dadisp Student Software**
- **FalconWare**
- **GnuPlot**: free
- **InterActiv**: Electronics Work Bench
- **Intusoft**: SPICE software
- **Invention Machine**
- **Jandel**
- **MAG**: Molecular Applications Group
- **Mandalay**
- **Maple**
- **MathSoft**
- **MathType**
- **MathTools**: "specials add-ons" for MatLab
- **MathWorks**: MatLab
- **MicroGrafX**
- **Minitab**
- **Molecular Simulations**
- **NAG**: Numerical Algorithms Group
- **Numega**
- **Numerica**
- **Octave**: free
- **OriginLab** *(formerly MicroCal)*
- **SAS**
- **SciTech**
- **Silk Scientific**: uSCANit
- **SoftShell**
- **StatSoft**
- **Synergy**
- **TCIsoft**
- **Visual Numerics**
- **Wolfram**: Mathematica
- **Wolfram**

[Check out even more companies](http://www.matscieng.sunysb.edu/other4sec.html)
- General "Materials" Lists
- Jobs

- General "Company" Listings
- Materials Manufacturing
- Materials Testing and Service
- Vacuum/Surface Companies
- Microscopy/Spectroscopy/Imaging
- Optics
- Instrumentation
  - Components
    - Data Acquisition, Motion Control, Sensors
  - Power Products
  - Test and Measurement
  - Preowned Equipment
  - Temperature
  - Other
- Semiconductors
- Chemical, Oil, and Chemistry
- Corporate Labs
- Computing
  - Science Software:

---

E-MAIL comments to james.quinn@sunysb.edu

03/01/2007, since 08/03/94
APPENDIX H: PROJECTIONS FOR ENROLLEMENT AND TA RESOURCES

Table I: Projected Recruitment and Enrollment Growth

<table>
<thead>
<tr>
<th>Year of the Program</th>
<th>Admitted Students*</th>
<th>Graduated Students</th>
<th>Total in the Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
<td>10</td>
<td>55</td>
</tr>
<tr>
<td>8</td>
<td>15</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>10</td>
<td>80</td>
</tr>
</tbody>
</table>

*It is expected that the MSE core faculty will be able to support 5-6 graduate students from their research grants. In addition, the MSE participating faculty will support on average 1-2 extra graduate students majoring in MSE. This is because the MSE program will enable collaborative research programs and funding opportunities. The MSE Graduate Program will also enhance recruitment potential for participating faculty from various departments via offering a major with favorable employment opportunities.

Table II: Projected Resource Requirements*

<table>
<thead>
<tr>
<th>Year</th>
<th>TA FTE*</th>
<th>NRT**</th>
<th>Fellowships</th>
<th>Staff Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>formula</td>
<td>10</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>formula</td>
<td>12</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>formula</td>
<td>14</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>formula</td>
<td>17</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>formula</td>
<td>20</td>
<td>20</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note that beginning from the 6th year the number of TA FTE lines will be determined according to the campus formula based on the undergraduate enrollment to MSE program.

** The NRTs, Fellowships and TA FTEs will be requested separately as appropriate for new graduate programs. The projected numbers will be based on the UCR policy at any given year.
TO BE ADOPTED:

The Riverside Division of the Academic Senate approves the proposal for a Proposal for a Joint Doctoral Program in Evolutionary Biology Between the University of California, Riverside and San Diego State University (revised April 2008).

JUSTIFICATION (adapted from program proposal)

At UCR, the Evolutionary, Ecology, and Organismal Biology (EEOB) Graduate Program will administer the joint doctoral program. The detailed administration of the program will be handled almost entirely at SDSU by a faculty member charged to be the SDSU JDPEB Coordinator. Similarly, the joint doctoral faculty of the EEOB graduate program at UCR will have a designated UCR JDPEB Coordinator (Graduate Advisor). The faculty at both institutions, through their respective JDPEB Coordinators, shall confer on matters regarding administration of the program and shall submit proposals for modification of the program to the Graduate Councils at UCR and SDSU.

The principal purpose of this program is to allow talented students interested in integrative evolutionary studies to pursue graduate work towards a doctoral degree jointly at UCR and at SDSU. This experience will result in academic training and research expertise not otherwise sustainable in the programs working in isolation. Perhaps more importantly, the students themselves will form the nexus for novel collaborations and synergism between faculty at both institutions. The students will be directly involved in, and indeed be the reason, for innovative research directions in evolutionary biology.

This JDPEB will provide multiple benefits to faculty and students at both SDSU and UCR. The Department of Biology at SDSU has strength in systematics, paleontology molecular population biology, and organismal/biodiversity biology. UCR is also strong in these areas, enabling natural partnerships between the two faculties. Equally important to the joint doctoral program are UCR's complementary research areas that include experimental evolutionary biology, evolutionary ecology, comparative physiology, and genome evolution. As a result, joint doctoral students in this program will benefit from intellectual and research expertise in a full range of sub-disciplines in evolutionary biology. The Interaction among faculty that will be fostered by this program will increase collaborative studies among laboratories, resulting in more innovative and cross-disciplinary research programs. In short, both universities will be strengthened by having complementary and overlapping fields represented in a single, integrative program.
San Diego State University has a long and successful history with joint doctoral programs. SDSU presently has 16 joint doctoral programs, three of which are among the top five in the country in their respective fields (Chronicle of Higher Education, January 2007). Currently, two joint doctoral programs are administered by the SDSU Department of Biology in the areas of cell and molecular biology (with U.C. San Diego) and ecology (with U.C. Davis). These two programs have been extremely successful for several decades. The current proposal for a joint doctoral program in evolutionary biology will allow all sub-disciplines in the SDSU Department of Biology to award PhD degrees, via the establishment of a unique and integrative doctoral program between SDSU and the EEOB Graduate Program at UCR. A direct benefit of the joint doctoral program to UCR is the increase in the number of students trained by EEOB faculty. Additionally, other benefits are expected to emerge from the increased interaction between the two institutions. For example, strengthening the relationships between SDSU and UCR faculty will facilitate the development of new, multi-campus research collaborations and potentially increase the pool of talented students coming to UCR.

The proposal has been examined and unanimously approved by the following committees of the Academic Senate: Graduate Council, Educational Policy, and Library. The Planning and Budget Committee voted 3 in favor, 3 opposed, with 1 abstention. Planning & Budget views the proposal as a minimal cost proposal, but equally considers the benefits as minimal. The proposal has the approval of the Executive Committee and the Dean of the College of Natural and Agricultural Sciences.

Ilya Dumer, Chair
Graduate Council

Enclosures:  Program Proposal (including memos of support)
A PROPOSAL FOR A JOINT DOCTORAL PROGRAM IN
EVOLUTIONARY BIOLOGY BETWEEN THE UNIVERSITY OF
CALIFORNIA, RIVERSIDE AND SAN DIEGO STATE UNIVERSITY

April 28, 2008
# TABLE OF CONTENTS

## SECTION 1. INTRODUCTION
1. Aims and objectives of the joint doctoral program 4
2. The importance of evolutionary biology 5
3. The benefits of a joint doctoral program in evolutionary biology 6
4. Timetable for development of the program and enrollment projection 8
5. Department or group that will administer the program 9
6. Plan for evaluation of the program 9

## SECTION 2. THE PROGRAM
1. Admission and residency requirements 9
2. Program of study 10
   A. Master’s Degree 10
   B. Ph.D. Degree 10
      1. Foreign language requirement 10
      2. Specific fields of emphasis 10
      3. Course requirements 10
      4. Teaching requirement 11
      5. Qualifying examination and committee 11
      6. Dissertation committee 11
      7. Completion of the dissertation 12
      8. Certification (award of the degree) 12
      9. Normative time from matriculation to degree 12

## SECTION 3. PROJECTED NEEDS
1. Student demand for the program 12
2. Opportunities for placement of graduates 13
3. Importance to the discipline 13
4. Ways in which the program will meet the needs of society 13
5. Relationship of the program to research and to the professional interests of the faculty 14
6. Benefits of the program to UC Riverside 14
7. Program differentiation 15

## SECTION 4. STAFF
1. Participating Faculty 15
2. Faculty at SDSU 15
3. Faculty at UCR 16

## SECTION 5. COURSES
1. Graduate courses at UCR 17
2. Graduate courses at SDSU 17
SECTION 6. ADDITIONAL RESOURCE REQUIREMENTS

1. Resources at UCR
   A. FTE faculty
   B. Library acquisition
   C. Computing costs
   D. Equipment
   E. Space and other capital facilities
   F. Other operating costs

2. Resources at SDSU
   A. FTE faculty
   B. Library acquisition
   C. Computing costs
   D. Equipment
   E. Space and other capital facilities
   F. Other operating costs

SECTION 7. GRADUATE STUDENT SUPPORT

APPENDICES

A. Program Summary
B. Evolutionary Biology and the National Research Agenda supporting document
C. University of California, Riverside Course Descriptions
D. San Diego State University Course Descriptions
E. Supplemental Admission Requirements
F. Permission to Negotiate letters
G. Support Letters
H. Budgets
I. San Diego State University Faculty Vitae
J. University of California, Riverside Faculty Vitae
A PROPOSAL FOR A JOINT DOCTORAL PROGRAM IN EVOLUTIONARY BIOLOGY BETWEEN THE UNIVERSITY OF CALIFORNIA, RIVERSIDE AND SAN DIEGO STATE UNIVERSITY

SECTION 1. INTRODUCTION

1. Aims and objectives of the Joint Doctoral Program

This is a proposal to establish a joint doctoral program in Evolutionary Biology (JDPEB) between the Graduate Program in Evolution, Ecology, and Organismal Biology (EEOB) at the University of California Riverside and the Department of Biology at San Diego State University. Faculty at both campuses are highly engaged in research which provides a strong base for a JD in Evolutionary Biology. SDSU has traditionally graduated many highly qualified M.S. students in evolutionary biology, reflecting the long-standing strength of SDSU faculty in this field. The principal purpose of this program is to allow talented students interested in integrative evolutionary studies to pursue graduate work towards a doctoral degree jointly at UCR and at SDSU.

This program will be unique for everyone involved. Doctoral students will be immersed in a deep and rich intellectual environment and exposed to diverse ideas and cutting edge research methodologies. This experience will result in academic training and research expertise not otherwise attainable in the programs working in isolation. Perhaps more importantly, the students themselves will form the nexus for novel collaborations and synergism between faculty at both institutions. The students will be directly involved in, and indeed be the reason for, innovative research directions in evolutionary biology.

San Diego State University has a long and successful history with joint doctoral programs. SDSU presently has 16 joint doctoral programs, three of which are among the top five in the country in their respective fields (Chronicle of Higher Education, January 2007). Currently, two joint doctoral programs are administered by the SDSU Department of Biology in the areas of cell and molecular biology (with U.C. San Diego) and ecology (with U.C. Davis). These two programs have been extremely successful for several decades. The current proposal for a joint doctoral program in evolutionary biology will allow all sub-disciplines in the SDSU Department of Biology to award PhD degrees, via the establishment of a unique and integrative doctoral program between SDSU and the EEOB Graduate Program at UCR. A direct benefit of the joint doctoral program to UCR is the increase in the number of students trained by EEOB faculty. Additionally, other benefits are expected to emerge from the increased interaction between the two institutions. For example, strengthening the relationships between SDSU and UCR faculty will facilitate the development of new, multi-campus research collaborations. The benefits to both campuses are further detailed in Section 1.3.

As described below, the methods and perspectives of evolutionary biology pervade fields as disparate as psychology, medicine, behavior, genetics and ecology. The field has made innumerable contributions to societal needs that include human health, agriculture and renewable resources, and environmental management and conservation. Students with doctoral training in Evolutionary Biology are in great need at universities and colleges, museums, biotechnology companies, environmental consulting firms, and local, state and federal agencies.
2. The Importance of Evolutionary Biology

The famous evolutionary biologist Theodosius Dobzhansky once wrote, "Nothing in biology makes sense except in the light of evolution." Because all living organisms have descended with modification from common ancestors, a complete understanding of any biological process or characteristic can only be obtained through an evolutionary perspective. Consequently, a recent report from the U.S. National Academy of Sciences emphasized that evolution is "the most important concept in modern biology- a concept central to understanding key aspects of living things." The evolutionary thread that accounts both for the unity and diversity of life extends across levels of biological organization that range from the DNA molecule to entire species, from individual organisms to ecological communities. Working under a complex and continually advancing body of theory, evolutionary biologists unravel the complexities of this thread using an integrative diversity of approaches. The implications of this research have profound and far-reaching importance. As highlighted below, novel insight in traditional areas of study and newly developing connections across previously isolated disciplines ensure that the importance of evolutionary biology will continue to increase in the future (also see Appendices A and B).

Evolutionary biology has been traditionally defined to encompass broadly studies of both historical patterns (including discovering, describing, and classifying the diversity of past and present life) and evolutionary processes (including population genetics, reproductive mechanisms, and speciation). The interface of these two focal areas has blurred recently, and for any given feature (e.g., the vertebrate limb), it is now possible to analyze structure and function, study ontogeny or developmental history, and reconstruct phylogeny and evolutionary transitions. This combination of complementary pattern- and process-based research characterizes the best of modern-day evolutionary biology. The integration of broad biological disciplines such as comparative physiology, functional morphology, evolutionary ecology, genome evolution and conservation biology – further enriches the core of the field (Figure 1). Modern evolutionary biology is a synthesis of diverse scientific approaches conducted using field, laboratory, and computational methods. No issue in public education holds greater urgency or importance than communicating the nature, implications and application of evolutionary biology.

![Diagram illustrating the disciplines of biology that are integrated in evolutionary biological studies.](image-url)
Two examples illustrate the relevance of evolutionary biology in society today. First, the myriad benefits of life's richness are eroding due to human-related activities. Because of habitat destruction, pollution, invasive species, and long-term climatic change, species are going extinct at a rate unprecedented in the earth's history. The loss of this biodiversity has profound impacts on human welfare, as we depend on the diversity of life for food, clothing, shelter, medicine, and recreation. Evolutionary biologists play many key roles in the study of biodiversity, serving as caretakers of the knowledge and resources (e.g., museum collections) required to answer the most basic of questions, “What is the diversity of life in a region?” Evolutionary biologists also seek to elucidate the processes of diversification and extinction that underlie this biodiversity, the distribution of biodiversity across phylogenetic groups, and the assemblage of ecological communities through time. The ability of biologists to predict and mitigate the future effects of global change is predicated on a full understanding of these patterns and processes in space and time.

As with other life sciences, the technological advances of molecular biology have revolutionized evolutionary biology over the past two decades. Our understanding of the evolutionary relationships among the major groups of life on Earth (and the origin of life itself) has been completely restructured based on molecular evidence. Molecular genetics is providing astounding and unforeseen insight into the development and evolution of life. Conversely, the theoretical and research framework provided by evolutionary biology has also impacted the sciences of molecular biology, biotechnology, and biomedicine. The structure and function of all molecules become modified in evolving lineages. This includes all medically important viruses (e.g., HIV), such that evolutionary epidemiology is emerging as an exceedingly important medicinal discipline. Tremendous resources have been directed at the sequencing of numerous genomes (including the human genome), and the ultimate value of these data is contingent upon a comparative evolutionary framework. Throughout many other applications of evolutionary biology, the basic principle of descent with modification provides a powerful conceptual framework for advancing research.

3. The Benefits of a Joint Doctoral Program in Evolutionary Biology

This JDPEB will provide multiple benefits to faculty and students at both SDSU and UCR. The Department of Biology at SDSU has strength in systematics, paleontology, molecular population biology, and organismal/biodiversity biology. UCR is also strong in these areas, enabling natural partnerships between the two faculties. Equally important to the joint doctoral program are UCR’s complementary research areas that include experimental evolutionary biology, evolutionary ecology, comparative physiology, and genome evolution. As a result, joint doctoral students in this program will benefit from intellectual and research expertise in a full range of sub-disciplines in evolutionary biology. The interaction among faculty that will be fostered by this program will increase collaborative studies among laboratories, resulting in more innovative and cross-disciplinary research programs. In short, both universities will be strengthened by having complementary and overlapping fields represented in a single, integrative program.

The establishment of a joint doctoral program in evolutionary biology will benefit SDSU faculty within and outside of the Biology Department’s Evolutionary Biology (EB) Program Area. Already, four EB faculty are adjunct members of the department’s other joint doctoral programs. With full access to a dedicated program, all faculty in the program area will be able to pursue research projects that require students that are more advanced, and student-led projects
that require longer periods of time. The joint doctoral students will benefit from world-class mentoring and training, through access to an unusually large, diverse and research-active complement of faculty. Finally, larger societal needs in the twenty-first century will be met with an investment in evolutionary biology while there is still time to change current environmental and educational trends. (For example, a substantial portion of the public is skeptical about, or even hostile to, the very concept of evolution).

Specific benefits of the joint doctoral program in Evolutionary Biology include the following:

- As outlined below under Projected Needs, there are great employment needs for students with training in evolutionary biology.
- A major benefit to UCR is the influx of additional highly talented students from the joint program. These students will not only participate in collaborative research at UCR, but will also serve to further increase the intellectual depth and breadth of the graduate student body at UCR. As described below, SDSU’s program in evolutionary biology has historically graduated many excellent students who have gone on to lead the field. These leaders include faculty at major research universities and curators at the most prominent national museums.
- The joint doctoral program would greatly facilitate collaborative research between UCR and SDSU faculty and students, and would increase the visibility of each independent faculty group.
- The close geographic locations of SDSU and UCR provide a logical basis for conducting collaborative field research in southern California. SDSU currently operates field stations in southern California that would be accessible to faculty and students of UCR. These stations span a variety of ecosystem types, including some habitat types not represented in the UC Reserve System. In addition, because SDSU maintains close collaborations with researchers at the San Diego Natural History Museum, the joint program can serve as a gateway to research in the chaparral, deserts, and mountains of Baja California. These resources will be more easily available to UCR researchers through this joint program.
- UCR EEOB students can potentially access SDSU lab facilities, field stations and other logistical resources.
- SDSU will fund a joint seminar series for talks given alternately at UCR and at SDSU by faculty members or advanced Ph.D. candidates. The close geographic proximity of the campuses makes this arrangement highly feasible.
- Finally, there will be an increased potential to track some of the best-qualified undergraduate and M.S. biology students at SDSU into UCR’s EEOB doctoral program.

The obvious major benefit to SDSU is the development of a doctoral program for an area in which faculty and M.S. student research is already strong. With 12 faculty pursuing research in evolutionary biology, the Department of Biology at SDSU already contains one of the largest evolutionary biology programs in southern California. Development of a Ph.D. program would further enhance SDSU’s success in research, education, and student mentoring and training in evolutionary biology. Of the potential collaborating institutions in southern California (e.g., UC San Diego, UC Irvine, UCLA), the evolutionary biologists at SDSU believe UC Riverside to be the strongest and most obvious candidate, for several reasons, including:

- The Evolution, Ecology, and Organismal Biology graduate program at UCR (EEOB) emphasizes vertical integration of the life sciences. The faculty of the EEOB program strive to make fundamental and unifying discoveries at all levels of the biological hierarchy ranging
from cellular and molecular mechanisms to evolutionary mechanisms to ecology and conservation biology. There is a strong group of faculty (30 out of 38, including Cooperating Faculty from outside the Biology department that participate in the EEOB graduate program) that shares a common interest in evolutionary mechanisms (including systematic biology, development, molecular evolution, evolutionary physiology, and evolutionary ecology).

- The graduate program in UCR’s Department of Biology has been nationally ranked by the National Research Council as being in the top 20% of Ecology, Evolution, and Behavior programs in the nation (1995 NRC ranking). While the UCR EEOB graduate program is administered primarily by the Department of Biology, the program also includes 13 Cooperating Faculty Members from three of UCR’s extensive life sciences departments (Entomology, Botany and Plant Sciences, and Earth Sciences), with the potential for additional membership in the future.

- Because they share many of the same general programmatic interests, the Department of Biology at SDSU and the EEOB program at UCR are complementary, not competitive, promising much very fruitful collaboration. For instance: expertise in plant molecular evolution and morphological systematics at SDSU can be paired with plant molecular systematics at UCR. Spider phylogeography and phylogenetics at SDSU can be interfaced with spider molecular evolution at UCR. Similarly, mammalian morphological systematics at SDSU can intersect with mammalian molecular systematics at UCR. Finally herpetological molecular systematics at SDSU can be combined with vertebrate comparative biology at UCR. This list highlights only some of the possibilities for integrative research between the institutions.

- The geographic proximity between the two universities is an important practical consideration for this collaboration. Local field research areas are near both institutions, and faculty and students participating in the joint doctoral program will be able to meet regularly without the loss of a great deal of time and money spent in traveling.

The strength in evolutionary biology at SDSU is one of the key ways in which the proposed program meets the criteria for approval. SDSU is currently classified as a University-High research activity in Carnegie rankings. In particular, SDSU’s Department of Biology is exceptionally strong in research activity and committed to graduate training. Much of that strength is in the area of evolutionary biology (12 of 41 faculty), and graduate research in the Department has been nationally regarded for decades. The establishment of a joint doctoral program in evolutionary biology will not only enhance the academic environment at SDSU (complementing the existing joint doctoral programs in Cellular/Molecular Biology with UC San Diego and Ecology with UC Davis), but will also provide a new and distinctive doctoral program in southern California.

4. **Timetable for development of the program and enrollment projection**

Because the faculties at both institutions are already in place, only administrative details need to be worked out. As detailed below, this only requires a part-time staff person at and funded by SDSU for administrative support. As soon as the administrations on both campuses agree and the state board grants approval, the program may begin to accept applications, with a strong goal of beginning the program in Fall 2009. The JDPEB is anticipated to be a six- year program, with a steady state enrollment of up to 20 students.
5. **Department or group that will administer the program**

At UCR, the EEOB Graduate Program will administer the joint doctoral program. The
detailed administration of the program will be handled almost entirely at SDSU by a faculty
member charged to be the SDSU JDPEB Coordinator. Similarly, the joint doctoral faculty of the
EEOB graduate program at UCR will have a designated UCR JDPEB Coordinator (Graduate
Advisor). The faculty at both institutions, through their respective JDPEB Coordinators, shall
confer on matters regarding administration of the program and shall submit proposals for
modification of the program to the Graduate Councils at UCR and SDSU. **Changes in the JDPEB
program and its bylaws must be approved by both Graduate Councils.**

6. **Plan for evaluation of the program**

As with other academic programs, an external committee will review the program, submit a
proposal concerning the program’s future operation to the two Graduate Councils for approval,
and report to the Joint Doctoral Board at appropriate intervals (e.g., five years). Established
review procedures at each institution will be followed.

**SECTION 2. THE PROGRAM**

1. **Admission and Residency Requirements**

   Applicants for admission to the JDPEB will apply to the SDSU-UCR Evolutionary Biology
   JDP. The application process will be coordinated by SDSU. Potential applicants should have a
   bachelor's degree in one of the life sciences or physical sciences. Promising students with other
   academic backgrounds are also encouraged to apply if they have strong undergraduate
   coursework in biology. The applicant must have a bachelor's and/or master's degree or the
   equivalent from an accredited institution, with training comparable to that provided by the SDSU
   and UCR programs. The applications to the JDPEB will be evaluated by the Joint Admissions
   Committee, a four member committee consisting of two SDSU Evolutionary Biology faculty and
   two UCR EEOB faculty. Successful applicants must meet the general requirements for
   admission of both institutions with graduate standing, as outlined in the respective graduate
   catalogs, and must also receive approval from the UCR EEOB Graduate Advisory Committee to
   ensure that the JDPEB and EEOB graduate programs have comparable admissions standards. To
   facilitate communication between the Joint Admissions Committee and EEOB Graduate
   Advisory Committee, at least one UCR faculty member will serve on both committees.
   Admission recommendations by the Joint Admissions Committee and supported by the EEOB
   Graduate Advisory Committee will require acceptance by the Graduate Divisions of both SDSU
   and UCR.

   After formal admission to the joint doctoral program, the student must satisfy the minimum
   academic residency requirements for both institutions. For UCR this would normally be three
   quarters and for SDSU, two semesters. **By completing one year of graduate studies at SDSU
   before attending UCR, the students will be more academically prepared and in a better position
to maximize their research experience at UCR.** Also, some students may have coursework
deficiencies, which are typically prerequisites that they have yet to take before enrolling in
particular graduate classes. If these deficiencies are fulfilled in the first year at SDSU, the
students can focus on graduate-level courses and research while at UCR. Normally, the one-year
residency at UCR would encompass consecutive Fall, Winter, and Spring terms during the
student’s second year in the program. In some cases, with approval by the UCR and SDSU joint graduate advisors, the student may satisfy the UCR three quarter residency requirement by taking terms in more than one academic year. This is in accordance with other joint programs between SDSU and UC campuses in which no program requires more than one year of residence at the UC institution. Permission to stay longer than one year at UCR may be granted by the student’s joint guidance committee.

At the start of the student’s first year in the program, the student will form a Guidance Committee. This committee will consist of four faculty members, two chosen from each institution. From SDSU, the committee must include the student's prospective dissertation advisor and an additional, programmatically appropriate, member. From UCR, the committee members will be drawn from faculty within the EEOB graduate program. In consultation with the student, the Guidance Committee plans the student's program through Advancement to Candidacy.

2. Program of Study
   A. Master’s Degree
      Because this is a joint doctoral program, and because San Diego State University already offers a Master’s degree, this aspect does not apply to the program. Students who leave the joint doctoral program may be eligible to obtain an M.S. degree from SDSU (but not UCR) upon completion of the Master’s program requirements.

   B. Ph.D. Degree
      1. Foreign Language Requirement
         Students are expected to understand the relevant literature in their field in whatever foreign languages are appropriate. There is no language exam administered by the program.

      2. Specific fields of emphasis
         This program emphasizes evolutionary biology; there are no specific emphases within the program, although research specialties may be quite diverse.

      3. Course Requirements
         The Guidance Committee works with the student to develop an individualized course of study and identify potential deficiencies. Students in the joint doctoral program will have similar requirements as students in UCR’s EEOB graduate program. Specifically, the joint doctoral students will take the Theory of Evolution (UCR Biol 216) and at least two disciplinary courses (see below; the two required disciplinary courses must cover different disciplines; at least one disciplinary course must be taken at UCR). In addition, the students will enroll in a current research topics seminar course during each UCR quarter or SDSU semester of residence. UCR course descriptions are in Appendix C and SDSU course descriptions are in Appendix D. The majority of required course work should be completed prior to the Written Qualifying Exam, which is taken at the end of the second year. All required disciplinary courses (see below) must be completed before taking the Oral Qualifying Exam. Students in good standing must maintain a minimum GPA of 3.0 overall in upper division and graduate level course work related to the degree. An example of the required coursework and anticipated schedule for completion is presented below:
Year 1 at SDSU
• Seminar in Ecology and Evolutionary Biology (each semester) (SDSU Biol 796A)
• At least one of the following courses:
  - Phylogenetic Systematics (SDSU Biol 740)
  - Population Genetics (SDSU Biol 624)

Year 2 at UCR
• The Theory of Evolution (UCR Biol 216)
• At least one of the following courses:
  - Ecology: Genes to Ecosystems (UCR Biol 211)
  - Ecological Systems in Space and Time (UCR Biol 212)
  - Behavioral Ecology (UCR Biol 213)
  - Evolutionary Genetics (UCR Biol 214)
  - Population and Community Ecology (UCR Biol 217)
  - Theory of Systematics (UCR Biol 219)
  - Evolutionary Physiology (UCR Biol 220)
• During each quarter of residence:
  - General Colloquium in Biology (UCR Biol 252 or another disciplinary colloquium)
  - Advances in Population and Evolutionary Biology (UCR Biol 265)

4. Teaching Requirement
All joint doctoral students are required to be a Graduate Teaching Assistant for at least two semesters at SDSU.

5. Qualifying Examination and Committee
By the end of the second year, students are expected to have taken a written qualifying examination, according to similar requirements of the EEOB Evolutionary Biology PhD Track at UCR. The Written Exam consists of a review paper in the intended topic of the dissertation; details of the structure of the exam are provided during the Fall quarter of the year in which the exam is to be taken. The written exam is evaluated by an ad hoc committee of faculty participating in the JDPEB program. The committee will have a minimum of 4 faculty, at least 2 from UCR EEOB and 2 from SDSU EB.

Upon passing the written examination, the student (in consultation with their SDSU and UCR co-advisors) selects an Oral Examination Committee. This committee normally consists of five faculty members: a minimum of 2 UCR EEOB faculty, a UCR outside committee member, and a minimum of 2 SDSU EB faculty. The SDSU major advisor cannot be a member of the Oral Exam Committee. The student then writes a detailed research proposal, which is a different document from the review paper described above, and schedules an oral examination. During the exam, the candidate must defend the research proposal and may be questioned on other topics by the Oral Examination Committee. Assuming normative progress, the Oral Exam occurs in the Fall term of the student’s third year.

6. Dissertation Committee
After passing the Written and Oral Exams, students file for Advancement to Candidacy with the Graduate Divisions at UCR and SDSU. On the petitions, the student states the topic of their dissertation and names the members of the Dissertation Committee, which is approved by the
Graduate Divisions. This committee consists of at least four faculty members, including the major advisor. In all, at least two members must be from the EEOB faculty of UCR and at least two members must be from the EB faculty of SDSU (with approval from the Graduate Division at UCR). Any changes to the composition of the Dissertation Committee must adhere to the above requirement. The Dissertation Committee is responsible for advising the student on the research and provides final approval of the dissertation.

7. Completion of the Dissertation
Upon completion of the dissertation, the student will present research seminars at both UCR and SDSU. At one institution, which will be determined by the student’s Dissertation Committee, the research seminar may be followed by a final oral dissertation defense to be administered by the Dissertation Committee. Preferably, the seminars will be given during the academic year of each institution. Completion of the oral dissertation defense requires either unanimous positive votes or no more than one negative vote from the Dissertation Committee. While it is strongly encouraged that the students prepare the dissertation in the form of a manuscript (or series of manuscripts) to be submitted to peer-reviewed journals to expedite the publication of their research, the completed dissertation must be formatted and filed in accordance with the requirements currently in force at UCR.

8. Certification (Award of the Degree)
The Doctor of Philosophy degree in EEOB will be awarded jointly by the Regents of the University of California and the Trustees of the California State University in the names of both institutions.

9. Normative time from matriculation to degree
The normative time for completion of the doctoral program will be six years from admission, but students should be able to finish in five years. Advancement to candidacy will normally be completed early in their third year; students not advancing by the end of their third year must petition to avoid being subject to probation and dismissal from the program. Total registered time in the program cannot exceed four years following advancement to candidacy.

SECTION 3. PROJECTED NEEDS

1. Student Demand for the Program
The number of applications to evolutionary biology-oriented Ph.D. programs in California and across the nation far exceeds the ability of the various programs and departments to accommodate the highly qualified students who apply. The UCR EEOB graduate program attracts some of the best applicants to UCR. By adding the strengths of the SDSU EB faculty to the UCR EEOB faculty, the joint doctoral program will draw even more high-caliber students to UCR. Further, it is anticipated that the number of applicants will increase to parallel the rising number of jobs in academia, government, and industry that are related to evolutionary biology. This rise in interest is largely the result of the increasingly central role of evolution in all fields of biology. As a result of both the rapid growth of the evolutionary biology workforce and technological advances in areas such as molecular methodology, computing and information processing (i.e. bioinformatics), progress in evolutionary biology is more rapid now than ever before. With the appropriate and necessary support in education and research, evolutionary
biology will make even greater contributions to knowledge of the history of life and the processes that account for this history. Understanding the history of life and processes of evolution informs every area of biology. Given this, there is a need for a new, focused, intellectually sound, and technologically advanced doctoral program in evolutionary biology.

2. Opportunities for Placement of Graduates

The JDPEB will emphasize the intellectual content of evolutionary biology through its commitment to research. Graduates of this program will be fully prepared to enter traditional academic pursuits in evolutionary biology and related sub-disciplines (e.g., systematics, population genetics, comparative physiology, evolutionary ecology, molecular evolution). Employment in these fields can be found in colleges, universities and museums, where evolutionary biologists typically constitute 15-50% of a department’s faculty (up to 100% in research intensive natural history museums). In recent years, ~20-25% of the biology faculty positions advertised in *Science* required expertise in one or more sub-disciplines of evolutionary biology. Based on analyses of positions posted/advertised on the Evolution Directory (http://evol.mcmaster.ca/brian/evoldir.html) and in *Science* over the past few years, at least 125-250 jobs are widely and internationally advertised each year for individuals with PhDs in Evolutionary Biology. Of these jobs, approx. 30% are tenure-track faculty positions, and 55% are postdoctoral research positions. An additional unknown number of jobs in evolutionary biology may be advertised locally, and undoubtedly, many more tenure-track positions in a “general” field (e.g., biology, physiology, zoology, genetics) are also available. The most recent job search for an evolutionary biologist in the UCR Department of Biology attracted over 55 applicants. In the SDSU Biology department, the past four job searches for faculty in Evolutionary Biology have received an average of 55 applicants, compared to 45-47 for Cell and Molecular Biology or Ecology.

Increasingly, individuals with evolutionary biology training are also sought by private companies, and government agencies such as the U.S. Fish and Wildlife Service, U.S. Geological Survey, and state fish and game departments. Based on (1) the breadth and quality of the faculty participating in the program, (2) the experiences of recent graduates from comparable programs elsewhere, and (3) anticipated increases in the need for biologists with evolutionary biology training, the joint doctoral program graduates should have few problems obtaining placement in an academic and non-academic setting (typically following 1-3 years of postdoctoral research experience).

3. Importance to the Discipline

This aspect is addressed in detail in Sections 1.1 and 1.2.

4. Ways in which the program will meet the needs of society

Some students in this program will choose to pursue careers outside of academia. For example, training in comparative physiology may lead to a career in environmental toxicology (private, municipal, state and federal jobs). Expertise in avian or marine mammal biology and evolution is required for employment in zoos, wildlife rehabilitation organizations and private conservation groups. These organizations, as well as museums and an increasing number of pharmaceutical companies that “bioprospect” for new drugs, also seek systematists with doctoral degrees. Training in conservation genetics can lead to employment by federal agencies such as the U.S. Fish and Wildlife Service, and the Biological Resources Division of the USGS. Also,
individuals trained in biodiversity assessment are increasingly being sought by state, federal and international agencies dealing with biotic management, conservation, and environmental issues. Evolutionary perspectives on pest and invasive species may lead to employment in the U.S. Department of Agriculture or the California Department of Food and Agriculture (or similar agencies in other states). Physiologists, molecular geneticists and population geneticists are employed by the National Institutes of Health. Finally, we anticipate that many of our joint doctoral students will be needed to analyze and interpret the enormous amounts of comparative genomics information currently being generated by the many on-going genome projects in the growing field of bioinformatics.

To meet these goals, the doctoral students will receive training in field techniques (collection of specimens) for extant and extinct vertebrates, invertebrates, plants, or microorganisms. Laboratory skills will include specimen preparation, curation, identification using morphological and genetic data, physiological analysis, and molecular analysis (e.g., PCR, sequencing, cloning). Quantitative analytic skills will include statistics, modeling, data mining, bioinformatics, and the use and design of genetic analysis software. Most importantly, students will receive the training in the principles and concepts necessary to interpret evolutionary patterns of biodiversity at the level of the gene, individual, species and higher taxon.

5. Relationship of the Program to the Research and Professional Interests of the Faculty

As can be seen from the attached vitae, SDSU’s faculty research is well established in the field of evolutionary biology. Furthermore, there are strong complementary research programs between the evolutionary biology faculties at UCR and SDSU. This will allow the sharing of research ideas and the creation of new synergistic opportunities for students and faculty.

6. Benefits of the program to UC Riverside

The students and faculty at SDSU involved in this program will benefit from the interactive collaboration with UCR students and faculty, as well as the opportunity for students to use the collections and facilities at UCR. However, there are clear benefits to UCR as well. Six principal benefits were listed and explained in Section 1.1, above. UCR faculty will be able to expand their interactions with talented graduate students, and the program will benefit from these students who perform research in UCR laboratories and/or UC field sites. The UCR EEOB program has been highly selective about the number of students admitted for graduate work. In part this is because the EEOB faculty must have adequate space for these students and be able to provide financial support for at least five years. The joint Ph.D. program offers an expanded opportunity for graduate student mentoring and collaboration in research. The faculty will also be able to contribute to the education of a greater number of Ph.D. students who will embody the integrative approach to evolutionary biology that is the hallmark of the UCR program. The faculty of the two institutions will also have a much greater opportunity for sharing of ideas and expanded research collaboration. This offers the possibility of a larger “virtual” faculty and a much deeper talent pool available to both the SDSU and UCR biology programs. Finally, because most SDSU students tend to do their fieldwork in southern California and adjacent areas, this brings enhanced research opportunities to UCR faculty and students.

It should be emphasized that this program does not simply entail a year of coursework at Riverside, taught by UCR professors. The students generally admitted to this program will be selected because their research interests potentially overlap with those of specific UCR professors. Perhaps just as importantly, the SDSU students will be able to interact with the UCR
students. These contacts will not only take place in the specific laboratories the SDSU students join, but throughout the whole EEOB program at UCR. It is expected that students will enter this program because there are collections, facilities, expertise, and research projects at UCR from which mutual benefit can be derived. We anticipate, because research materials and methods will be closely shared, that students enrolled in the joint program will typically spend more time with their UCR professors than the one year mandated by the program.

7. Program Differentiation
These aspects were detailed in Sections 1.1 and 1.3. This proposed doctoral program is differentiated from all others at California campuses by being the only Joint Doctoral Program in Evolutionary Biology between a U.C. and C.S.U. Also, the specific and complementary research interests of the UCR EEOB and SDSU Evolutionary Biology faculties create unique opportunities for graduate training.

SECTION 4. STAFF

1. Participating Faculty
The faculty for the JDPEB will incorporate all members of the UCR EEOB graduate program who wish to participate in the joint doctoral program. Also, evolutionary biologists in other UCR departments who wish to participate may be listed as participating members. Participating faculty may be involved in the JDPEB through a variety of activities, including hosting lab rotations, membership on JDPEB committees (Joint Admissions Committee, Guidance Committees, Qualifying Examination Committees, Dissertation Committees), teaching in relevant graduate courses, and serving as the UCR JDPEB Coordinator (Graduate Advisor).
From SDSU, those members of the faculty who are qualified on the basis of their research interest and professional growth records may participate in joint doctoral training in Evolutionary Biology. All individuals listed as faculty for the program have Ph.D.s. The list of doctoral faculty submitted for SDSU represents the combined judgment of the faculties of the two programs and will be approved following established procedures of the Office of Graduate and Research Affairs. New faculty hires at SDSU will be selected, in part, on their preparation and qualifications to participate in the joint Ph.D. program and will be incorporated into the doctoral faculty. This selection process can be initiated either by new faculty or by the coordinators of the program at UCR and SDSU. It is expected that participation in the program will be both self-selective and logically appropriate; however, approval for new faculty to be involved rests with the existing faculty, by consent of the coordinators of the program.

2. Faculty at SDSU
The following is a list of the SDSU faculty who have agreed to participate actively in the joint doctoral program as dissertation advisors. All are faculty in the Department of Biology. Appendix I contains a Curriculum Vita for each SDSU faculty member.

J. David Archibald, Prof. Mammal systematics & paleontology; K/T boundary vertebrate radiation.
Annalisa Berta, Prof. Mammal systematics & evolution, functional anatomy.
Andrew J. Bohonak, Assoc. Prof. Population genetics, freshwater invertebrates.
Kevin Burns, Assoc. Prof. Ornithology, systematic biology, molecular evolution.
Rulon Clark, Asst. Prof. Behavioral ecology, predator-prey interactions, animal 
communication, foraging behavior, conservation ecology, integrating animal behavior with 
population ecology
Forest Rohwer, Assoc. Prof. Genomic analysis of marine phage, opportunistic infections and 
coral disease, diversity of coral-associated bacteria.
Marshal C. Hedin, Assoc. Prof. Speciation, phylogenetics, biodiversity, spider biology & 
evolution, evolution in caves.
Scott Kelley, Assist. Prof. Insect systematics, microbial ecology & evolution, bioinformatics.
Tod W. Reeder, Assoc. Prof. Evolution and molecular ecology of amphibians and reptiles, 
particularly those of southwestern U.S. and Mexico.
Michael G. Simpson, Prof. Plant systematics, anatomy, embryology, palynology.
Elizabeth Waters, Assist. Prof. Plant evolution, origin of land plants, molecular evolution.
Robert W. Zeller, Assoc. Prof. Developmental biology of ascidians; evolution of 
developmental gene regulatory networks in primitive chordates.

It is anticipated that one additional tenure track position (comparative animal physiologist) 
will be filled during the 2007/08 academic year, with an anticipated start of Fall 2008.

3. Faculty at UCR

The following is a list of the UCR EEOB faculty who have agreed to actively participate in 
the joint doctoral program. The faculty, all Ph.D.s, are named here with research interests. 
Appendix J contains a Curriculum Vita with a list of selected research publications for each UCR 
faculty member.

Douglas Altshuler, Asst. Prof. of Biology. Physiology, evolutionary biology, neuroscience, 
avian flight
Michael Allen, Prof. of Plant Pathology and Biology. Community and ecosystem processes, 
conservation and restoration biology
Richard Cardullo, Prof. and Chair of Biology. Cell and molecular biology, physiology, 
nervescience.
Mark Chappell, Prof. of Biology. Physiology, evolutionary biology.
Norman Ellstrand, Prof. of Botany and Plant Sciences. Applied plant population genetics, 
biotechnology risks, evolution of invasiveness, conservation genetics
Daphne Fairbairn, Prof. of Biology. Evolutionary biology, quantitative genetics, sexual 
selection, sexual dimorphism in size and morphology
Theodore Garland, Jr., Prof. of Biology. Physiology, evolutionary biology.
John Gatesy, Assoc. Prof. of Biology. Molecular systematics, phylogenetic methods, 
macroevolution, molecular evolution.
Kimberly Hammond, Assoc. Prof. of Biology. Physiology, evolutionary biology.
Cheryl Hayashi, Assoc. Prof. of Biology. Systematics, molecular evolution, evolution of silk, 
spider biology.
Seung Chul-Kim, Asst. Prof. of Botany and Plant Sciences. Molecular phylogenetics, 
conservation genetics, plant systematics
Nigel Hughes, Prof. of Earth Sciences. Paleobiology
Leonard Nunney, Prof. of Biology. Population and evolutionary genetics, with an emphasis on 
the application of basic theory to practical problems
**Timothy Paine, Prof. of Entomology.** Biology and ecology of introduced insects in urban environments

**Richard Redak, Prof. of Entomology.** Plant-insect interactions, conservation biology and community ecology of insects, IPM of commercial floricultural and ornamental plants

**Helen Regan, Asst. Prof. of Biology.** Quantitative conservation biology

**David Reznick, Prof. of Biology.** Evolutionary biology, evolution of life history traits, evolution of aging, experimental evolution

**Derek Roff, Prof. of Biology.** Theoretical and empirical studies of population and quantitative genetics, life-history, and the importance of trade-offs in shaping life history evolution

**John Rotenberry, Prof. of Biology.** Community ecology, conservation biology, avian ecology

**Joel Sachs, Asst. Prof. of Biology.** Evolution of cooperation and conflict

**Mark Springer, Prof. of Biology.** Molecular evolution and systematics, mammalian evolution

**Kirk Visscher, Assoc. Prof. of Entomology.** Social behavior and ecology of social insects, role and management of bees in agriculture, evolution of social behavior

**William Walton, Prof. of Entomology.** Biogeography of freshwater flora and fauna, trophic interactions of freshwater food webs, IPM of vector and pest arthropods

**Marlene Zuk, Prof. of Biology.** Behavioral ecology, host/parasite interactions

### SECTION 5. COURSES

Course descriptions from both UCR and SDSU are appended (Appendices C and D). Their subject matters reflect the fields of evolution, systematic biology, zoology, botany, and paleontology and related courses in ecology, conservation, biodiversity, and so on.

1. **Graduate Courses at UCR**

   This is not an exhaustive list, but represents some relevant graduate courses offered by Biology at UCR. See Appendix C for the General Catalog descriptions of these courses. The student’s advisors may recommend other appropriate courses in Biology or in other departments.

   - Biol 208. Host-Parasite Relationships
   - Biol 211. Ecology: Genes to Ecosystems
   - Biol 212. Ecological Systems in Space and Time
   - Biol 213. Behavioral Ecology
   - Biol 214. Evolutionary Genetics
   - Biol 215. Advanced Methods of Data Analysis in Evolution, Ecology, and Behavior
   - Biol 216. The Theory of Evolution
   - Biol 219. Theory of Systematics
   - Biol 220. Evolutionary Physiology
   - Biol 252. General Colloquium in Biology
   - Biol 265. Advances in Population and Evolutionary Biology
   - Biol 282. Seminar in Genetics and Evolution

2. **Graduate Courses at SDSU**

   This is not an exhaustive list, but represents some courses offered by Biology at SDSU exclusively for graduate students. See Appendix D for the General Catalog descriptions of these
courses. Other appropriate courses in Biology and other departments may be recommended at the discretion of the student's advisors.

- Biol 624. Population Genetics
- Biol 740. Phylogenetic Systematics
- Biol 770. Seminar in Systematics and Evolution
- Biol 796A. Seminar in Ecology and Evolutionary Biology (new course listing proposed)

SECTION 6. RESOURCE REQUIREMENTS

1. Resources at UCR

Few additional resources will be required for UCR. The resources described below are not requested of the joint doctoral program nor of SDSU. These requests will be made by EEOB faculty to the UCR administration. Existing administrative staff will handle applications, admission, and student advising. Also, a diverse course curriculum already exists. The program costs (i.e., joint doctoral student stipends, tuition, some research funds) for the required one-year residence at UCR will be covered by SDSU. SDSU will handle the administrative expenses and workload related to joint admission, coordination, and transfers of necessary records. Note that in some cases, collaborations may grow such that it would be fruitful to all involved for students to extend their stay at UCR. If any joint doctoral students stay any additional terms at UCR (up to one additional year) the funding for their stay will come from individual PI funds at UCR. The financial details will have to be worked out on a student-by-student basis, but there is no explicit requirement that the funds will be provided by UCR standing programs or the EEOB administrative budget.

A. FTE Faculty

No additional FTE faculty are requested.

B. Library acquisition

None.

C. Computing costs

None.

D. Equipment

Given the existing research equipment base in the laboratories of the UCR JDPEB participating faculty, the joint doctoral program can be initiated without additional equipment acquisitions.

E. Space and other capital facilities

While in residence at UCR, the joint doctoral students will require office space. Office space for graduate students will be assigned by the department chairs of the hosting PIs.
F. Other operating costs

Support is needed for travel between UCR and SDSU and telecommuting expenses. Some Joint Admission, Guidance, and Dissertation Committee meetings will take place using existing teleconferencing and videoconferencing equipment. However, it will be necessary for certain JDPEB Committees to meet in person, such as for Qualifying Examinations and Dissertation Defenses. Furthermore, there will be a JDPEB-sponsored seminar series to bring SDSU EB researchers to UCR. Funds are needed for mileage reimbursement and lunch meetings between UCR graduate students and the visiting SDSU seminar speaker.

2. Resources at SDSU

Note that the resources described below are not requested of the joint doctoral program nor of UCR. These requests will be made by SDSU Biology of the SDSU administration.

A. FTE Faculty

The Department of Biology at SDSU currently consists of 41 faculty members, of which 12 are in the department's Evolutionary Biology program area. In the Evolutionary Biology Program Area, there are three full professors, six associate professors, and three assistant professors who will participate in the joint Ph.D. program. It is anticipated that one additional evolutionary biology faculty job search will be conducted during the 2007/2008 academic year. The Evolutionary Biology Program Area has determined, depending upon hires in other programs of the department, that a core of 13 to 15 SDSU evolutionary biology faculty is needed to cover curricular needs (undergraduate and graduate) and maintain a steady state of 20 doctoral students. The Department of Biology has developed a seven-year hiring plan to accommodate this goal (and the hiring goals of the other program areas). The current evolutionary biology faculty is sufficient to initiate the joint doctoral program.

The program will require a half-time 12 month position for a current SDSU Department of Biology faculty member to serve as Joint Doctoral Program Coordinator. The Program Coordinator will need to be knowledgeable about the joint doctoral program, about the resources that are available at SDSU and UCR, and about the individuals at both institutions who are members of the joint doctoral faculty. The Coordinator's role is a key one because of the duties involved with coordinating the joint doctoral program at SDSU and advising the doctoral students. Given this, the Coordinator will need to be very familiar with the research of all members of the joint doctoral faculty and will need to work closely with them and with the UCR EEOB Graduate Advisor in assigning students to advisors and guiding the early phases of the students' graduate program.

B. Library acquisition

None.

C. Computing costs

The SDSU Biology faculty request of their administration (Chair) that each SDSU graduate student office be equipped with a PC or Mac platform computer with ethernet internet access. Computers will also need software to support word processing, graphical, database, and statistical functions, as well as be connected to a sufficient number of laser printers.
D. Equipment

Given the existing research equipment base in the SDSU Department of Biology, the joint doctoral program can be initiated with minimal equipment acquisitions. The Evolutionary Biology Program Area has state-of-the-art laboratory facilities for morphological and molecular studies in evolutionary biology. Initial startup costs would include an additional ultracold freezer, partitions and desks for restructuring graduate student office space, and a field vehicle.

E. Space and other capital facilities

The faculty of the Evolutionary Biology Program Area of the Department of Biology at SDSU currently occupies offices and laboratories on the second third floors of the North and South Life Sciences Buildings (as well as one office suite on the first floor of NLS), and the first floor of the north wing of the Physical Sciences Building. Thirteen faculty offices, space for ~20 Master's graduate students, and the vertebrate collections manager are included. The program area also has a computer lab and space for the vertebrate and entomological teaching and research collections. In all, the Evolutionary Biology program area occupies ~1340 square feet of office space and ~4740 square feet of laboratory facilities.

The other two SDSU Department of Biology program areas (i.e., Cell and Molecular Biology; Ecology) occupy offices and laboratories in the following adjacent buildings: 1) second, third, and fourth floors of the North Life Sciences Building, 2) third floor of the South Life Sciences Building, and 3) the first and second floors of the north wing of the Physical Sciences Building. In all, the Department occupies ~130,000 square feet of office, teaching, and research space. Because of the "connectiveness" of the three program areas, interaction between the program areas and use of the several departmental "common use" facilities is facilitated.

Office and laboratory space is adequate for the current faculty in the Evolutionary Biology program area at SDSU. However, space is a major concern when future hires are taken into consideration. Additional space is needed at SDSU to house the expanded number of M.S. graduate assistants now supported by the Department of Biology and the approval of the proposed joint Ph.D. program will further exacerbate that problem. Office space for the new doctoral students will be required. Two to four doctoral students will share an office (depending on office size; ~60 square feet/student). We estimate needing two offices for the first two years of the program and then one more per year until there is adequate space to accommodate ~15 doctoral students (total of ~1000 square feet; at steady state of 20 doctoral students, ~4-5 of them will be at UCR any given year). Space for student offices has been identified (LS 215, LS 216, LS 270). As with the other two Program Areas in Biology, Evolutionary Biology will experience a shortage of new space for new faculty hires 2-3 years. However, this is unrelated to implementation of the joint doctoral program. The Evolutionary Biology Program Area will work with the Chair and Dean to secure additional space in the future as the need arises.

The Department of Biology at SDSU maintains preserved collections of insects, plants, and vertebrates. Current evolutionary biology graduate students and faculty extensively use these in teaching and research. A conservative estimate places the holdings of its six major collections at over 110,000 specimens. This figure breaks down as follows: Entomology, 55,000; Herbarium, 15,000; Herpetology, 14,000; Ichthyology, 30,000; Mammalogy, 2000; and Ornithology, 2500. These collections are invaluable educational and research tools that many universities and colleges cannot boast of having. The addition of the joint doctoral program will increase the demand for these collections, as well as accelerate their growth (through doctoral student
research and collecting). Thus, additional resources (e.g., staffing, funding) will be needed in the future to support the maintenance and expansion of these valuable collections.

F. Other operating costs

The Department of Biology will provide the administrative support needed to provide essential clerical assistance to the SDSU Joint Doctoral Program Coordinator. The Administrative Assistant (AA) will be responsible for providing information about the program to prospective students, for managing files of the current students, and for managing applications for admission. Together, the AA and the Coordinator are the principal administrators of the joint doctoral program at SDSU.

SECTION 7. GRADUATE STUDENT SUPPORT

Doctoral students will be supported by existing teaching assistantships at SDSU and/or by research fellowships/assistantships funded by extramural contracts or grants. Thus, all students will be supported while enrolled in the program. No students will be admitted to the program who cannot be guaranteed five years of support. While in residence at UCR, students will be supported by SDSU, and fees/tuition at UCR will be covered by transfer of funds to UCR. The augmentation of up to 20 students in the UCR/SDSU joint doctoral program will, therefore, be a net increase of no more than 4-5 students at a time at UCR, because the majority will spend only one year in residence. During this year, they are expected to be supported by SDSU funds.
APPENDIX A
Joint-Doctoral Program in Evolutionary Biology
San Diego State University & University of California, Riverside

The Program
The Joint-Doctoral program in Evolutionary Biology (JDPEB) between the Department of Biology at SDSU and the University of California, Riverside will award PhDs and provide training in areas of evolutionary biology that include molecular evolution, genomics, paleontology, population biology, and systematics.

Need for the Program and Impact on SDSU
- We wish to complete higher graduate training in Biology at SDSU by establishing a JD program between our EB program area and UC Riverside. Two of the three programs in Biology currently have JD programs: Cell and Molecular Biology with UC San Diego, and Ecology with UC Davis.
- UC Riverside is an excellent choice for co-hosting this JD program. UCR’s Department of Biology is ranked by the National Research Council in the top 20% of Ecology, Evolution, and Behavior programs in the nation. In addition, the proximity of UC Riverside to SDSU will enhance collaborations among the two institutions and limit logistical constraints on the program.
- Southern California is internationally recognized as one of the world's greatest biodiversity “hot-spots” due to a high diversity of plants and animals, and the continuous discovery of new species. This JD program will enhance scientific discovery in our region through student dissertations, inter-faculty collaborations and new funding opportunities. This research will facilitate a better theoretical understanding of the processes that generate and maintain biodiversity, and influence regional land management and conservation policies.
- Over half of the graduated students of the MS program in EB at SDSU have gone on to PhD programs at other universities. The high quality graduate students that we attract to our MS program and the rigorous training they receive will easily translate into an exceptional joint doctoral program.
- Additional Teaching Assistantships will be the primary source of JD student stipends. These positions are needed for the establishment of inquiry-based discussion sections for our Biology core course: Genetics and Evolution (Biology 352). Genetics is the only course required for the major that does not have a laboratory, discussion or activity section, although it is almost universally taught with a laboratory at other universities. Reorganization of Biology 352 will improve the quality of undergraduate instruction and training. New Teaching Assistants will be also needed for other Biology lab courses as enrollment grows at SDSU.
- Emerging and existing infectious diseases (whether animal, plant or human) pose threats to society through disruptions in agriculture and health. A thorough grounding in evolutionary biology provides a basis for understanding how these diseases evolve and adapt, and how to develop effective medical countermeasures.
- Training of PhD students in Evolutionary Biology is needed to fill positions at universities and colleges, museums, biotechnology companies, environmental consulting firms, and governmental agencies. Many of these job opportunities are to be found in the local region and across the state.

Ability to Support the Program
- EB faculty at SDSU are nationally recognized in their fields and highly productive. In the last five years, SDSU EB faculty have published over 120 articles (over 11 per person) in prominent journals such as American Naturalist, Developmental Biology, Evolution, Geology, Journal of Vertebrate Paleontology, Molecular Ecology, Molecular Phylogenetics and Evolution, Science, PNAS, and Systematic Biology.
- SDSU EB faculty are nationally competitive in obtaining external research funding. In the last five years, EB faculty have received over $4 million in funding from sources such as the National Science Foundation, National Geographic Society, U.S. Dept. of Agriculture, U.S. Dept. of the Interior, U.S. Fish and Wildlife Service, and U.S. Geological Survey. Comparable funding into the future will support for the JD program.
- SDSU EB faculty are working towards novel sources of funding for the SDSU-UCR Joint Doctoral program including: 1) Establishment of an endowment to support graduate field and laboratory research; 2) Submission of a National Science Foundation training grant; 3) Establishment of fellowships and internships with local environmental consulting firms; 4) Sponsorship of graduate training by local biotech companies; 5) Submission of computer science training grants in the emerging field of bioinformatics.
EVOLUTIONARY BIOLOGY AND THE NATIONAL RESEARCH AGENDA
This document is abstracted from a longer version with additional detail. To receive copies of either report, or for more information, please consult our web site via http://www.amnat.org or contact one of the Chairs listed below.

Prepared by delegates representing the following scientific societies. These societies have all endorsed the final document.

American Society of Naturalists
Animal Behavior Society
Ecological Society of America
Genetics Society of America
Paleontological Society
Society for Molecular Biology and Evolution
Society for the Study of Evolution
Society of Systematic Biologists

Additional endorsement by:
American Institute of Biological Sciences

With financial sponsorship from:
A.P. Sloan Foundation
National Science Foundation

Editorial Chair:
Douglas J. Futuyma, State University of New York–Stony Brook

Organizational Chair:
Thomas R. Meagher, Rutgers, The State University of New Jersey

Steering Committee:
Michael J. Donoghue, Harvard University
James Hanken, University of Colorado
Charles H. Langley, University of California–Davis
Linda Maxson, University of Iowa

Working Group:
Albert F. Bennett, University of California-Irvine
H. Jane Brockmann, University of Florida
Marcus W. Feldman, Stanford University
Walter M. Fitch, University of California-Irvine
Laurie R. Godfrey, University of Massachusetts
David Jablonski, University of Chicago
Carol B. Lynch, University of Colorado
Leslie Real, Emory University
Margaret A. Riley, Yale University
J. John Sepkoski, Jr., University of Chicago
Vassiliki Betty Smoovitis, University of Florida

Designed and produced by the Office of University Publications, Rutgers, The State University of New Jersey
Evolutionary biology is the study of the history of life and the processes that lead to its diversity. Based on principles of adaptation, chance, and history, evolutionary biology seeks to explain all the characteristics of organisms, and, therefore, occupies a central position in the biological sciences.

Relevance of Evolutionary Biology to the National Research Agenda

The twenty-first century will be the “Century of Biology.” Driven by a convergence of accelerating public concerns, the biological sciences will be increasingly called on to address issues vital to our future well-being: threats to environmental quality, food production needs due to population pressures, new dangers to human health prompted by the emergence of antibiotic resistance and novel diseases, and the explosion of new technologies in biotechnology and computation. Evolutionary biology in particular is poised to make very significant contributions. It will contribute directly to pressing societal challenges as well as inform and accelerate other biological disciplines.

Evolutionary biology has unequivocally established that all organisms evolved from a common ancestor over the last 3.5 billion years; it has documented many specific events in evolutionary history; and it has developed a well-validated theory of the genetic, developmental, and ecological mechanisms of evolutionary change. The methods, concepts, and perspectives of evolutionary biology have made and will continue to make important contributions to other biological disciplines, such as molecular and developmental biology, physiology, and ecology, as well as to other basic sciences, such as psychology, anthropology, and computer science.

In order for evolutionary biology to realize its full potential, biologists must integrate the methods and results of evolutionary research with those of other disciplines both within and outside of biology. We must apply evolutionary research to societal problems, and we must include the implications of that research in the education of a scientifically informed citizenry.

To further such goals, delegates from eight major professional scientific societies in the United States, whose subject matter includes evolution, have prepared this document. It includes contributions by other specialists in various areas. Feedback on earlier drafts was elicited from the community of evolutionary biologists in the United States, and the draft was made public on the World Wide Web. The delegates arrived at a series of recommendations that address the areas that follow.

Advancing Understanding through Research

To capitalize on evolutionary biology as an organizing and integrating principle, we urge that:

- evolutionary perspectives be incorporated as a foundation for interdisciplinary research to address complex scientific problems
- evolutionary biologists work toward building meaningful links between basic research and practical application
- evolutionary biology play a more explicit role in the overall mission of federal agencies that could benefit from contributions made by this field

Advancing Understanding through Education

We encourage major efforts to strengthen curricula in primary and secondary schools, as well as in colleges and universities, including:

- support of supplemental training for primary school teachers and/or midcareer training for secondary school science teachers in evolutionary biology
- greater emphasis on evolution in undergraduate college curricula for biology majors and premedical students, with accessible alternative courses for nonmajors
- integration of relevant evolutionary concepts into the postbaccalaureate training of all biologists and of professionals in areas such as medicine, law, agriculture, and environmental sciences

Advancing Understanding through Communication

We urge the following roles for evolutionary biologists:

- communicating to federal agencies, and to other institutions that support basic or applied research, the relevance of evolutionary biology to the missions of these organizations
- training the next generation of evolutionary biologists to be aware of the relevance of their field to societal needs
- informing the public about the nature, progress, and implications of evolutionary biology
WHAT IS EVOLUTION?

Biological evolution consists of change in the hereditary characteristics of groups of organisms over the course of generations. From a long-term perspective, evolution is the descent with modification of different lineages from common ancestors. From a short-term perspective, evolution is the ongoing adaptation of organisms to environmental challenges and changes. Thus evolution has two major components: the branching of lineages and changes within lineages.

WHAT ARE THE GOALS OF EVOLUTIONARY BIOLOGY?

Evolutionary biology seeks to explain the diversity of life: the variety of organisms and their characteristics, and their changes over time. Evolutionary biology also seeks to interpret and understand organismal adaptation to environmental conditions. The two encompassing goals of evolutionary biology are to discover the history of life on earth and to understand the causal processes of evolution. Insights achieved through efforts to meet these goals greatly enhance our understanding of biological systems.

Evolutionary biologists often work at the interface of many subdisciplines of biology, leading to the development of subject areas such as behavioral evolution, evolutionary developmental biology, evolutionary ecology, evolutionary genetics, evolutionary morphology, evolutionary systematics, and molecular evolution. The subdisciplines of evolutionary biology also have formed direct links with fields such as statistics, economics, geology, anthropology, and psychology.

HOW IS EVOLUTION STUDIED?

Evolutionary biology draws on a wide range of methodologies and conceptual approaches.

Methods for understanding the history of evolution include observations of the fossil record and categorization and classification of variations among living organisms. Differences and similarities among species in anatomy, genes, and other features can be analyzed by molecular and statistical methods that enable us to estimate historical relationships among species and the sequence in which their characteristics evolved.
Studies of ongoing evolutionary change employ observation and experimentation. Analysis of genetic variation enables us to characterize mutation, genetic drift, natural selection, and other processes of evolution. The “comparative method” contrasts features of species that have adapted to different environments. Sophisticated mathematical models and analyses are frequently employed for both description and predication.

**WHY IS EVOLUTIONARY BIOLOGY IMPORTANT?**

Evolutionary biology provides the key to understanding the principles governing the origin and extinction of species. It provides causal explanations, based on history and on processes of genetic change and adaptation, for the full sweep of biological phenomena, ranging from the molecular to the ecological. Thus, evolutionary biology allows us to determine not only how and why organisms have become the way they are, but also what processes are currently acting to modify or change them.

Response to change is a feature of evolution that is becoming increasingly important in terms of scientific input into societal issues. We live in a world that is undergoing constant change on many levels, and much of that change is a direct consequence of human activity. Evolutionary biology can contribute explicitly to enhanced awareness and prediction of mid- and long-term consequences of environmental disturbances, whether they be deforestation, application of pesticides, or global warming.

Distinctive perspectives on biology offered by evolutionary biology include emphasis on the interplay between chance and adaptation as conflicting agents of biological change, on variation as an inherent feature of biological systems, and on the importance of biological diversity. Variation is a key concept, since evolutionary change ultimately depends on the differential success of competing genetic lineages. The ultimate consequence of variation and evolutionary divergence is biological diversity.

Biological species are not fixed entities, but rather are subject to ongoing modification through chance or adaptation. Understanding why and how some species are able to change apace with new environmental challenges is critical to the sustainability of human endeavor.
Applications that Affect Meeting Society’s Needs

How Does Evolutionary Biology Contribute to Society?

In addition to the historical dimension, evolution is an important feature in our everyday lives. Evolution is happening all around us: in our digestive tracts, in our lawns, in woodland lots, in ponds and streams, in agricultural fields, and in hospitals. For short-lived organisms such as bacteria and insects, evolution can happen on a very short time scale. This immediacy brings evolutionary biology directly into the applied realm. Indeed, evolutionary biology has a long history and a bright future in terms of its ability to address pressing societal needs. Evolutionary biology has already made particularly strong contributions in the following areas:

Environment and conservation. Evolutionary insights are important in both conservation and management of renewable resources. Population genetic methods are frequently used to assess the genetic structure of rare or endangered species as a means of determining appropriate conservation measures. Studies of the genetic composition of wild relatives of crop species can be used to discover potentially useful new genes that might be transferred into cultivated species. Studies of wild plants’ adaptations to polluted or degraded soils contribute to the reclamation of damaged land.

Agriculture and natural resources. The principles of plant and animal breeding strongly parallel natural evolutionary mechanisms, and there is a rich history of interplay between evolutionary biology and agricultural science. Evolutionary insights play a clear role in understanding the ongoing evolution of various crop pathogens and insect pests, including the evolution of resistance to pest-control measures. The methods of evolutionary genetics can be used to identify different gene pools of commercially important fish and other organisms, their migration routes, and differences in their physiology, growth, and reproduction.

Finding useful natural products. Many thousands of natural products are used in medicine, food production and processing, cosmetics, biotechnology, pest control, and industry, but millions of other potentially useful natural products have yet to be screened or even discovered. Evolutionary principles allow a targeted search by predicting adaptations to environmental selection pressures and by

Evolutionary analysis reveals extremely low levels of genetic diversity among living cheetah, likely due to a dramatic population decline—and associated inbreeding—thousands of years ago. This hinders the cheetah’s ability to reproduce successfully, which threatens the species’ survival. Such information is being used to develop management recommendations for this endangered species.

EVOLUTION OF HUMAN GENETIC DISORDERS. Some genetic diseases, such as cystic fibrosis, are caused by mutations that occur at high frequencies in certain human populations in Europe. Evolutionary geneticists are working to understand how natural selection keeps deleterious genes at such high frequencies. Their findings may lend insight to the broader physiological impacts of the cystic fibrosis gene.

EVOLUTIONARY GENETICS. Evolutionary analysis reveals extremely low levels of genetic diversity among living cheetah, likely due to a dramatic population decline—and associated inbreeding—thousands of years ago. This hinders the cheetah’s ability to reproduce successfully, which threatens the species’ survival. Such information is being used to develop management recommendations for this endangered species.
identifying organisms related to those that have already yielded useful natural products. Exploration of related species also has made it possible to develop natural products from more accessible relatives of rare species in which natural products have been found, as occurred when the rare and endangered Pacific yew was found to contain a substance that led to development of a drug (tamoxifen) useful in treating breast cancer.

**Human health and medicine.** Methods and principles from evolutionary biology have contributed to understanding the links between genes and human genetic diseases, such as cystic fibrosis. Evolutionary methods help to trace the origins and epidemiology of infectious diseases, and to analyze the evolution of antibiotic resistance in pathogenic microorganisms. Evolutionary principles are used to interpret human physiological functions and dietary needs. Methods developed by evolutionary geneticists are playing an important role in mapping defective human genes, in genetic counseling, and in identifying genetic variants that alter risks for common systemic diseases and responses to medical treatments.

**Biotechnology.** The interplay between biotechnology and evolutionary biology holds great promise for application to important societal needs. As genetic engineering has reached the field implementation stage, evolutionary biologists have been prominently involved in risk assessment as well as interpretation of phenotypic consequences of transgene insertion. Finally, the automation of DNA sequencing has made it possible to reconstruct the precise genealogical relationship among specific genes, such as those of the human immunodeficiency virus (HIV).

**Understanding humanity.** Evolutionary biology has contributed greatly to human understanding of ourselves by describing our origins, our relationships to other living things, and the history and significance of variation within and among different groups of people. Evolutionary anthropologists, psychologists, and biologists have advanced hypotheses on the biological bases of human culture and behavior. In addition, the evolutionary framework for understanding humanity has had a profound impact on literature, the arts, philosophy, and other areas of the humanities.
CONTRIBUTIONS IN BIOLOGY

How Does Evolutionary Biology Contribute to Basic Science?

Evolutionary biology has far-reaching scientific impact. Among their accomplishments in studying the history and processes of evolution, evolutionary biologists have:

- established that all organisms have evolved from a common ancestor over more than 3.5 billion years of earth’s history
- developed methods of inferring phylogenetic, or genealogical, relationships among organisms
- described patterns of diversification and extinction in both the fossil record and contemporary ecosystems
- developed and tested general theories that account for the evolution of phenotypic traits, including complex characters such as cooperative behavior and senescence
- made substantial progress in understanding evolution at the molecular level
- elucidated many aspects of human evolution

Contributions to Other Biological Disciplines

Evolution is central to biological understanding. Biologists in diverse fields regard at least a portion of what they do as evolutionary. Recent accomplishments to which evolutionary biology has contributed include the following:

Molecular biology. Evolutionary approaches have contributed insight into the function and structure of molecular processes within cells. Examples include reconstruction and functional analysis of ancestral protein sequences, and elucidation of the significance of different types of DNA. Evolutionary research thus points the way to research on fundamental molecular mechanisms.

Developmental biology. A resurgence in interaction between developmental biology and evolutionary biology is now under way, in part through comparisons among families of genes that play critical roles in development. For example, the same genes in organisms as different as insects and

THE TREE OF LIFE. Advances in molecular, morphological, and computational approaches have enabled the emergence of a comprehensive framework for the evolutionary history of all life on earth. The Tree of Life project provides a unified network for systematic investigation on all levels.

ADVANCING HUMAN
mammals play surprisingly similar developmental roles in some instances, and different roles in other cases. Such studies help to identify the developmental functions of genes and lead to a deeper understanding of the processes that transform a fertilized egg into a complex adult.

**Physiology and anatomy.** Evolutionary biology has long influenced the study of physiology and anatomy in animals and plants, and has the potential to make many other contributions that only now are being developed. Some of these contributions will affect the study of human physiology, including related areas such as clinical psychology. The logical perspectives, methods, and comparative data of evolutionary biology can advance our understanding of functional anatomy and physiological mechanisms, and can be applied to areas such as medicine, agriculture, and veterinary science.

**Neurobiology and behavior.** From its inception, the field of animal behavior has had a strong evolutionary base, for its goals have included understanding the evolutionary origin of behavioral traits and their adaptiveness. The evolutionary study of animal behavior has joined with comparative psychology in several areas of research, such as the study of learning and the search for adaptive mechanisms in human cognitive processes.

**Applications beyond biology.** There have long been rewarding interactions between evolutionary biology and other analytical fields, notably statistics and economics. Some of the basic tools in statistics, including analysis of variance and path analysis, were originally developed by evolutionary biologists. Along the same lines, evolutionary algorithms that mimic natural selection in biological systems are currently being used in computer and systems applications.

**HUMAN ORIGINS.** Studies of variation in modern populations, recent analysis of DNA extracted from fossil remnants, and an ever more complete fossil record have provided deeper insight into the evolutionary emergence of modern humans and their culture.
WHAT DOES THE FUTURE HOLD FOR EVOLUTIONARY BIOLOGY?

Researchers in molecular and developmental biology, physiology, ecology, animal behavior, psychology, anthropology, and other disciplines continue to adopt the methods, principles, and concepts of evolutionary biology as a framework. Likewise, applied research in forestry, agriculture, fisheries, human genetics, medicine, and other areas has increasingly attracted scientists trained in evolutionary biology. Evolutionary biologists have expanded their vision, addressing both basic questions throughout the biological disciplines and problems posed by society’s needs. As a result of both the rapid growth of this “evolutionary work force” and technological advances in areas such as molecular methodology, computing, and information processing, progress in evolutionary biology and related areas is more rapid now than ever before. With appropriate and necessary support in education and research, the evolutionary disciplines will make ever greater contributions to applied and basic knowledge.

Applied Science

In the applied realm, evolutionary biologists are embracing their social responsibilities. There are many ways in which their scientific efforts can help humanity:

- to understand and combat genetic, systemic, and infectious diseases
- to understand human physiological adaptations to stresses, pathogens, and other causes of ill health
- to improve crops and mitigate damage by pathogens, insects, and weeds
- to develop tools for analyzing human genetic diversity as it applies to health, law, and the understanding of human behavior
- to use and develop biological resources in a responsible manner
- to remedy damage to the environment
- to predict the consequences of global and regional environmental change
- to conserve biodiversity and discover its uses

Basic Science

In basic science, we stand at the threshold of:

- fully documenting biodiversity and describing the phylogenetic relationships among all organisms
- more completely understanding the causes of major changes in the history of life
- discovering and explaining processes of evolution at the molecular level
- understanding how developmental mechanisms evolve and give rise to new anatomical structures
- elucidating the processes that both cause and constrain adaptations in physiology, endocrinology, and anatomy
- deriving a deeper understanding of the adaptive meaning and mechanisms of behavior
- developing a predictive theory of coevolution among species, such as pathogens, parasites, and their hosts, and of the effects of coevolution on populations and ecological communities

Conclusion

Evolutionary biology plays a central role in the complexity of biological systems. Evolution is the source of biocomplexity. The continued and enhanced support of this field is critical to maximizing the nation’s research progress in both basic and applied arenas. In terms of societal needs for the twenty-first century, the time to make the investment in evolutionary biology is now, while there is still time either to change current trends or to better prepare us to deal with their consequences. Current and projected population levels will result in increasing environmental impacts, increasing pressure on food production, ever greater challenges to biological diversity, and enhanced opportunities for the emergence of new diseases. A healthy scientific base in evolutionary biology is an essential element in preparing us to address these issues. Evolutionary biology must be at the heart of the nation's research agenda in biology, just as it is at the heart of the field of biology.
Appendix C. UCR Graduate Courses

**BIOL 208. Host-Parasite Relationships** (3) Lecture, 3 hours. Prerequisite(s): BIOL 100/ENTM 100 or BIOL 157 or consent of instructor. Explores the fundamental biochemical and developmental requirements for “successful” host-parasite relationships in insects. Emphasizes wasp and nematode parasites of insects and vector-parasite interactions involved in transmission of parasites in malaria, trypanosoma, and Lyme disease. Cross-listed with ENTM 208.

**BIOL 211. Ecology: Genes to Ecosystems** (4) Lecture, 4 hours. Prerequisite(s): BIOL 116 or consent of instructor. Examination of the history, theory, and interrelationships of fundamental ecological principles through readings and discussions of classic and recent literature. Topics include quantitative, population, community, ecosystem, landscape, restoration, conservation, and human or social ecology.

**BIOL 212. Ecological Systems in Space and Time** (4) Lecture, 3 hours; field, 30 hours per quarter. Prerequisite(s): BIOL 117 or BIOL 152/GEO 152 or equivalent or consent of instructor. Focuses on how ecological systems are interpreted and reconciled at the community, landscape, and paleontological scales. Addresses the role of extrinsic factors operating at each of these scales. Also examines the historical development of our understanding of ecological systems at various scales. Cross-listed with ENTM 212 and GEO 212.

**BIOL 213. Behavioral Ecology** (4) Lecture, 4 hours. Prerequisite(s): BIOL 160 or consent of instructor. Examines animal behavior in an evolutionary context. Traces the historical development of the study of behavior, drawing from ethology, comparative psychology, and sociobiology. Topics include evolution of sociality, sexual selection, predator-prey behavior, and parental care.

**BIOL 214. Evolutionary Genetics** (4) Lecture, 4 hours. Prerequisite(s): BIOL 108 or consent of instructor. Traces the historical development of modern ideas in Evolutionary Genetics. Focuses on the influence of Fisher, Haldane and Wright on current views of genetic variation in natural populations, by examining recent research in the context of their classic works.

**BIOL 215. Advanced Methods of Data Analysis in Evolution, Ecology, and Behavior** (4) Lecture, 3 hours; laboratory, 3 hours. Prerequisite(s): PSYC 212 or STAT 100B or equivalent. Introduces students to new methods of data analysis in the fields of evolution, ecology, and behavior. Covers theory and practical application using relevant examples. Topics include maximum likelihood, randomization, the jackknife, bootstrapping, Monte Carlo approaches, and meta-analysis.
BIOL 216. The Theory of Evolution (4) Lecture, 4 hours. Prerequisite(s): BIOL 105 or consent of instructor. Traces the historical development of modern ideas in Evolutionary Theory. Focuses on the influence of Darwin and of the various authors of the Modern Synthesis on current views of macroevolution, by examining recent research in the context of their classic works.

BIOL 217. Advanced Population and Community Ecology (4) Lecture, 4 hours. Prerequisite(s): BIOL 117 or consent of instructor. Traces the development of the major concepts in ecology. Focuses on the influence of pioneers in the field, historical roots of key concepts, and key controversies. Evaluates current research with reference to these historical origins.

BIOL 219. Theory of Systematics (4) Lecture, 2 hours; discussion, 2 hours. Prerequisite(s): BIOL 112/BPSC 112/ENTM 112 or equivalent or consent of instructor. Examines topics developed around a series of classical and recent papers on the principles, philosophy, and methodology of modern systematics and phylogenetic methods. Cross-listed with ENTM 219 and GEO 219.

BIOL 252. General Colloquium in Biology (1) Seminar, 1 hour; discussion, 1 hour. Prerequisite(s): graduate standing. Oral reports by visiting scholars on current biological research. Graded Satisfactory (S) or No Credit (NC). May be repeated for credit.

BIOL 265. Advances in Population and Evolutionary Biology (1-2) Seminar, 1 hour; outside research, 3 hours (for 2-unit enrollees). Prerequisite(s): graduate status or consent of instructor. Oral reports by visiting scholars, faculty, and students on current research topics in population and evolutionary biology. Graded Satisfactory (S) or No Credit (NC). May be repeated for credit.

BIOL 282. Seminar in Genetics and Evolution (2-4) Seminar, 2-4 hours. Prerequisite(s): graduate standing; consent of instructor. Consists of lectures, discussions, and demonstrations by students, faculty, and invited scholars on selected topics concerned with the principles of genetics and evolution. Course is repeatable.

BIOL 400. Introduction to Graduate Study in Biology (2) Lecture, 1 hour; discussion, 1 hour. Prerequisite(s): graduate standing; consent of instructor. Introduces students to opportunities and requirements for successful graduate study through a series of lectures and discussions. Emphasis is placed on effective strategies for developing and implementing a program of professional development and graduate research. Graded Satisfactory (S) or No Credit (NC).
Appendix D. SDSU Graduate Courses

**Biol 624 Population Genetics (3)**
- Two lectures and two hours of activity.
- Prerequisite: Biology 352.
- Theoretical and applied population genetics to include genetic diversity in natural populations, random drift, mutation, gene flow, natural selection, nucleotide variation, and quantitative genetics. Emphasis on data analysis and interpretation.

**Biol 645 Theory and Principles of Ecology (3)**
- Prerequisites: Admission to graduate program in biology and approval of ecology graduate advisor.
- Major theoretical concepts in ecology, topics of current interest, and historical context of central ideas in ecology, with emphasis on use of primary literature.

**Biol 740 Phylogenetic Systematics (3)**
- Two lectures and three hours of laboratory.
- Prerequisite: Biol 354.
- Theory and methodology of phylogenetic systematics. Includes use of computer algorithms, survey of literature and preparation of a project in phylogenetic systematics.

**Biol 770 Seminar in Systematics and Evolution (2-3)**
- Prerequisite: Consent of instructor.
- Selected topics in systematics and evolution. May be repeated with new content. See *Class Schedule* for specific content. Maximum credit four units.

**Biol 766 Advanced Topics in Population and Community Ecology (2-4)**
- Prerequisites: Biol 354 and consent of instructor.
- Selected topics in population and community ecology. May be repeated with new content. See *Class Schedule* for specific content. Maximum credit four units.

**Biol 796A Seminar in Ecology and Evolutionary Biology (new course proposed) (1)**
- One lecture.
- Prerequisite: Graduate standing.
- Lectures by faculty and visiting scholars on current research in ecology and evolutionary biology.
APPENDIX E. SUPPLEMENTAL ADMISSION REQUIREMENTS

Because this is a joint program between two institutions, application for admission and fees must be submitted simultaneously to the Graduate Division at UCR and to the Graduate Division at SDSU. Instructions for applying are available in the respective graduate catalogs. Application to the Joint Doctoral Program in Evolutionary Biology requires that the following information be provided to each Graduate Division:

- The appropriate application forms for both campuses, including the statement of purpose. It is important for students to define one or two areas of potential research in the statement of purpose. The statement should reflect serious intent, focus, maturity, motivation, and the ability to organize and articulate thoughts on complex subjects. Research experience is preferred, but not required. Such experience helps to define interest and focus, and proven success with research is a positive indicator for success in the program.
- Three letters of recommendation from faculty or other persons who have known the applicant in an academic or research capacity.
- Results of the GRE general test. Verbal, quantitative, and analytical sections of the general test are of equal importance. There is no minimum score required for consideration. Although there are exceptions, GRE scores are taken as indicators of ability in various skills needed for graduate school.
- Results of the TOEFL and TSE are required of international students.
- Transcripts of academic work already completed. Upper division or graduate GPA is more important than overall GPA. The Graduate Division of UCR requires a minimum upper-division GPA of 3.0.

The Joint Admissions Committee will review applications for admission, select up to approximately four students per year to be admitted to the joint doctoral program, and forward these admission recommendations to each of the Graduate Divisions. The admissions committee will especially consider upper division GPA, letters of recommendation, degree of preparedness for graduate school (including course work and research experience), and statement of purpose. Before a student can be admitted to the program, faculty advisers/sponsors from both SDSU and UCR must agree on the student’s admission to the joint program.
Appendix F. Permission to Negotiate Letters
March 13, 2007

Dr. Stephen L. Weber, President
San Diego State University
5500 Campanile Drive
San Diego, California 92182-8000

Dear Steve:

On February 2, 2000, San Diego State University was granted permission to negotiate a joint PhD degree program in Evolutionary Biology with the University of California, Berkeley. In response to the SDSU request, this letter grants formal permission for SDSU to negotiate instead with the University of California, Riverside to develop the joint doctoral program.

Academic Program Planning will facilitate the process as necessary; please keep them informed as the negotiations progress. If you or your staff has any questions, please contact Dr. Christine Hanson at (562) 951-4672.

With kind regards,

Sincerely,

Charles B. Reed
Chancellor

cc: Dr. Gary W. Reichard
    Dr. Keith O. Boyum
    Dr. Nancy A. Marlin
    Dr. Jane Smith
    Dr. Steve Kramer
April 2, 2007

EXECUTIVE VICE CHANCELLOR WARTELLA

Dear Ellen:

I am pleased to approve your March 16th request for permission to negotiate a joint doctoral program with San Diego State University for a Ph.D. in Evolutionary Biology. I am encouraged to know that key faculty at UCR is supportive, and I understand that discussions are in the preliminary stages.

As your letter indicates, the process for designing joint graduate programs is described in the *Handbook for the Creation of CSU/UC Joint Doctoral Programs*. The formal program proposal, once developed by UCR and San Diego State University, must first receive campus approval and then be sent to me for transmittal to the Coordinating Committee on Graduate Affairs and the California Postsecondary Education Commission.

The CSU/UC Joint Graduate Board will act on the proposal following consultation with the Academic Council’s Coordinating Committee on Graduate Affairs. President Dynes and Chancellor Reed have final authorization for joint graduate programs. I would appreciate your keeping Acting Director Carol Copperud informed of your progress. Please let Carol know when serious program planning begins. Her phone number is (510) 987-0782, and her e-mail address is carol.copperud@ucop.edu.

Sincerely,

Wyatt R. Hume
Provost and Executive Vice President
Academic and Health Affairs

cc: President Dynes
Acting Director Copperud
Appendix G. Support Letters
November 5, 2007

Dr. Chris Glembotski, Associate Dean
Division of Graduate Affairs
San Diego State University
San Diego, CA 92182

Dear Dr. Glembotski:

I’m writing to express my very strong and enthusiastic support for the establishment of a Joint Doctoral Program in Evolutionary Biology between the Department of Biology at SDSU and the Graduate Program in Evolution, Ecology, and Organismal Biology at the University of California, Riverside. The Department of Biology at SDSU has a long and growing reputation for excellence in both student teaching and scholarly research. Our department is administratively divided into three program areas defining sub-disciplines within Biological Sciences: Cell and Molecular Biology, Ecology, and Evolutionary Biology. All three program areas have substantial strength in research and graduate education, and there is a growing interdisciplinary cohesion among the program areas. We currently participate in two Joint Doctoral Programs, one with the Division of Biology at UCSD that serves primarily faculty within the Cell and Molecular Program Area and another with the Section of Evolution and Ecology at UC Davis that serves primarily faculty within the Ecology Program Area.

Although somewhat smaller in size than our other program areas, the Evolutionary Biology Program Area (EBPA) maintains a very strong research focus, and the faculty is committed to ensuring the success of this program. Furthermore, the EBPA has invited the participation of additional faculty members from the other two program areas in order to strengthen the training faculty of the proposed joint doctoral program, while increasing the cohesion among all three program areas. I’ve read their proposal, and I believe that is carefully crafted demonstrating the need for the program to both the student clients and the faculty and the strength of the partner institution including the ties that will be produced between SDSU and UC Riverside. The strengths of the Evolutionary Biology program at SDSU complement those of UC Riverside that would create a synergism within the program. I believe that the Department of Biology and the university as a whole will greatly benefit from the establishment of this program, and I give it my wholehearted support.

Sincerely yours,

[Signature]

Terrence G. Frey
Professor and Chair
12 November 2007

Professor Annalisa Berta  
Department of Biology, LS 250  
San Diego State University  
San Diego, CA 92182-4614

Dear Dr. Berta,

I write in strong support of the establishment of a joint doctoral program in Evolutionary Biology between the Department of Biology at San Diego State University and the University of California, Riverside. Both of these campuses have strong programs in evolutionary biology that will benefit from their joint venture. In particular, the faculty of San Diego State have produced many excellent master’s students in evolutionary biology that have gone on to complete doctoral degrees at other campuses, such as UCLA and UC Berkeley. It is clear that they can and should mentor PhD students and this program will allow them to do so. A new graduate program in evolutionary biology is a welcome addition to California higher education. The importance of training additional evolutionary biologists has never been greater. With the explosion of genomic data, we need scientists that can explore these data and their implications within an evolutionary framework. Moreover, the ongoing crisis in loss of biodiversity demands additional, well-trained minds to tackle the problem. I am very enthusiastic about this joint venture and confident that it will be a successful program.

Sincerely yours,

Blaire Van Valkenburgh  
Professor
Dear Prof. Hayashi,

I enthusiastically support the establishment of a Joint Doctoral Program in Evolutionary Biology (JDPEB) between the Graduate Program in Evolution, Ecology, and Organismal Biology (EEOB) at the University of California, Riverside and the Department of Biology at San Diego State University (SDSU). Evolutionary Biology is the foundation of the biological sciences. Thus, there are numerous opportunities for Ph.D. students trained in this discipline, both in academia and in the private sector. The joint doctoral program between UC Riverside and SDSU will build upon shared interests and ongoing collaborations among faculty and students at the two institutions, and will provide valuable new opportunities for both institutions as well. Our two institutions are sufficiently close to each other to facilitate frequent interactions between faculty and students at the institutions.

Evolution is the foundation underlying all disciplines in the biological sciences. In addition, coupled with the explosion of genetic information provided by genomics, applications of evolutionary biology have enormous impact on biotechnology and the pharmaceutical industry. It would be wonderful timing to establish this new Joint Doctoral Program in Evolutionary Biology in 2009, the 200th anniversary of Charles Darwin’s birth.

As Dean of the College of Sciences, I am committed to working with the Provost and the Vice President for Graduate Affairs at SDSU to provide the resources needed to sustain this program.

Sincerely,

Stanley Maloy, Ph.D.
Dean, College of Sciences
Professor of Biology
November 26, 2007

Dr. Cheryl Hayashi
Department of Biology
University of California, Riverside

Dear Cheryl:

I am pleased to offer my strong support for the proposed joint doctoral program in Evolutionary Biology between the Graduate Program in Evolution, Ecology, and Organismal Biology at the University of California, Riverside and the Department of Biology at San Diego State University. This program will build on major strengths at both campuses and will help us to fulfill several broader goals of the UCR campus and of the College of Natural and Agricultural Sciences.

Evolutionary biology has long been one of our most recognized strengths in the sciences at UCR, and several more recent additions to our faculty have enhanced that focus. Research and educational programs in this area are core components of our plan to build an outstanding program in Ecosystems Science at UCR. Enhancing graduate education in this discipline is particularly desirable and is consistent with our broader campus goal of expanding our emphasis on graduate education in areas with interdisciplinary impacts.

In addition, we have a strong desire to collaborate more closely with California State University academic programs where we have common interests. We have been working on such collaborations with other CSU campuses with strengths in the agricultural and environmental sciences. The strong academic programs in ecology and evolutionary biology at SDSU provide another logical area of partnership to develop.

I am very impressed with the proposed curriculum and inclusion of key faculty from both campuses. I am enthusiastic about this joint program and am committed to working with our campus administration and Academic Senate to promote and sustain this program.

Sincerely,

Donald A. Cooksey
Interim Dean, College of Natural and Agricultural Sciences
Professor, Plant Pathology and Microbiology
December 18, 2007

Dr. Don Cooksey
Dean, College of Natural and Agricultural Sciences
University of California, Riverside

Dear Don:

I am pleased to submit for your consideration a proposal for a joint doctoral program in Evolutionary Biology between the Graduate Program in Evolution, Ecology, and Organismal Biology at the University of California, Riverside and the Department of Biology at San Diego State University. EEOB faculty members voted on the proposal and were unanimously in favor of creating this new program. Support for the program is also evident from the large number of faculty from both institutions who have indicated an interest in actively participating in the program.

EEOB faculty at UC Riverside and Department of Biology faculty at SDSU have a strong record of high profile, extramurally funded research in evolutionary biology. The creation of the joint doctoral program in Evolutionary Biology will bring together talented faculty from both institutions. Graduate students in the joint program will provide the nexus for novel and integrative research projects that build on collaborations and synergism between faculty members at both institutions. UCR and SDSU will both be strengthened by uniting our complementary and overlapping strengths within evolutionary biology into a single program.

The joint program in Evolutionary Biology is anticipated to be a six-year program, with a steady state enrollment of up to 20 students. Students in the program will take courses at both institutions. Graduate students in UCR’s EEOB program are also expected to benefit from the new program in numerous ways. For example, UCR EEOB students can potentially access laboratory facilities at SDSU and field stations that are maintained through SDSU. The intellectual depth of the graduate EEOB program will also be enhanced through the creation of the joint UCR/SDSU program.

Administrative expenses and workload related to joint admission, coordination, and the transfer of necessary records will be handled by SDSU. SDSU will also cover the program costs (i.e., joint doctoral student stipends, tuition, some research funds) for the required one-year residence at UCR. Indeed, UCR’s administration of the new program will require only a few additional resources including office space for joint doctoral students, mileage reimbursement associated with travel between UCR and
SDSU, and funds for UCR graduate students to have lunch with SDSU seminar speakers in the JDPEB-sponsored seminar series. My budget request on behalf of EEOB for operation of the JDPEB is attached as a separate memo.

Thanks in advance for considering the JDPEB proposal.

Sincerely,

Mark Springer
EEOB Graduate Advisor
Department of Biology
University of California, Riverside
10, January 2008

Dr. Cheryl Hayashi
Department of Biology
Spieth Hall
University of California, Riverside
Riverside, CA 92506

Dear Dr. Hayashi:

I have read the proposal to establish a Joint Doctoral Program in Evolutionary Biology between the graduate program in Evolution, Ecology, and Organismal Biology (EEOB) at the University of California, Riverside and the Department of Biology at the San Diego State University and I am delighted to give it my enthusiastic support. The Department of Biology at UC-Riverside administers the interdepartmental EEOB graduate program which has established tracks in evolution, ecology, and physiology. In addition to the Biology Department at UCR, faculty members from the Departments of Botany and Plant Sciences, Earth Sciences, Entomology, and Plant Pathology also participate in the evolutionary biology track of EEOB. These other faculty members serve as cooperating faculty members (CFMs) that have all of the rights and privileges of faculty members from the Department of Biology in the EEOB graduate program. I am convinced that the establishment of a JDP in evolutionary biology will further enhance the EEOB graduate program by fostering valuable collaborations between our two institutions while providing a high quality educational experience for our students.

The Department of Biology will provide the necessary office space for SDSU students in the JDP while they are taking classes at our institution. At the time of a student’s admission to the JDP, it will be the responsibility of the EEOB to provide the names and dates of students who will be in residence to the Department of Biology so that accommodations can be made. In addition, JDP students will be included in all departmentally-sponsored activities that are open to EEOB students.

I look forward to the inclusion of JDP students and faculty members in the evolution track of EEOB. I believe that our interests complement one another and I am convinced that we will be building an even stronger graduate program that serves the complementary interests of both our faculty and students from both SDSU and UCR. I am pleased to give this proposal my full support.

Sincerely,

Richard A. Cardullo
Professor and Chair
March 13th, 2008

Dr. Glembotski,

I am writing to provide a brief evaluation of the Joint Doctoral Program in Cell and Molecular Biology between SDSU and UC San Diego. This program began 24 years ago and currently supports over 40 students. It is a strongly collaborative and integrative effort that has yielded graduates who have gone on to postdoctoral and permanent positions in academia, industry and government. The expertise of faculty members at both campuses offers unique opportunities for broad education in the classroom and in-depth research training. This program has fostered collaborative research by faculty and students on both campuses. Over 30 UCSD faculty members are involved in collaborative research projects with the SDSU JDP faculty. In addition, training grants between the two campuses to support both joint doctoral and UCSD students have been submitted (with one currently funded). Further, a UCSD faculty member serves as a project leader on an NIH program project grant headquartered at SDSU. SDSU’s contribution to such funding efforts is valued and adds strength to grant applications, due to SDSU’s research standing and its strong population of underrepresented minority students. The two campuses have most definitely benefited from the Joint Doctoral Program in Cell and Molecular Biology and we look forward to many additional years of affiliation.

Sincerely,

[Signature]

Stuart Brody, Ph.D.
UCSD Coordinator
Joint Doctoral Program in Cell and Molecular Biology
## COLLEGE OF SCIENCES
### JOINT DOCTORAL PROGRAM: EVOLUTIONARY BIOLOGY
#### PROPOSED BUDGET

<table>
<thead>
<tr>
<th><em>ZERO</em> YEAR 2008/09 - STUDENT RECRUITMENT</th>
<th>FIRST YEAR 2009/10</th>
<th>SECOND YEAR 2010/11</th>
<th>THIRD YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students Enrolled:</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Time</td>
<td>Academic Affairs</td>
<td>Academic Affairs</td>
<td>Academic Affairs</td>
</tr>
<tr>
<td>Faculty - Academic Year [1]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Doctoral Coordinator) [2]</td>
<td>0.25</td>
<td>23,500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.25</td>
<td>25,850</td>
<td></td>
</tr>
<tr>
<td>Teaching Associate [3]</td>
<td>1.50</td>
<td>34,500</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td>34,500</td>
<td>34,500</td>
<td>34,500</td>
</tr>
<tr>
<td>Graduate Assistant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerical Position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Expense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplies &amp; Services [5]</td>
<td>500</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>388</td>
<td></td>
</tr>
<tr>
<td>Equipment [8]</td>
<td></td>
<td>48,000</td>
<td></td>
</tr>
<tr>
<td>State University Fees [9]</td>
<td></td>
<td>12,408</td>
<td></td>
</tr>
<tr>
<td>Non-Resident Tuition Waviers [10]</td>
<td>18,306</td>
<td>18,306</td>
<td></td>
</tr>
<tr>
<td>Library Resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.25</td>
<td>0</td>
<td>24,373</td>
</tr>
<tr>
<td></td>
<td>500</td>
<td>1.75</td>
<td>34,500</td>
</tr>
<tr>
<td></td>
<td>99,202</td>
<td>48,000</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>34,500</td>
<td>34,500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>123,844</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>69,602</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[1] The Biology department has 9 primary faculty in Evolutionary Biology and 4 affiliated faculty. A tenth position in EB is under search in AY 07/08. An eleventh is part of the department academic plan, to be requested in a future year.

[2] Release time and partial summer salary is requested for the coordinator, comparable to the other JD programs in Biology. The compensation ramps up over 2 years, along with a 5% increase during year 2.

[3] Based on three SDSU funded teaching associates at $23,000 per year. The Evolutionary Biology faculty intend to increase the number of JD students beyond this using external funding (approx. one additional new student per year).

[4] Current short one administrative assistant. When that position is filled, no additional clerical support will be required.

[5] $1,000 per student for supplies annually. 4 new students added annually. Also, $500 to develop and print recruitment materials in AY 08/09

[6] Mileage reimbursement for an average of 1 trip annually per faculty and student in the program. 200 miles round trip @ $0.485/mile for 9 persons (08/09), and 4 additional persons per year thereafter

[7] Recruitment travel for top 5 recruits @ $750

[8] The program requests $48,000 for a field vehicle, ultracold freezer and office desks, furniture and partitions

[9] For growth of 4 students per year @ $3,102.

[10] Non-Resident tuition waivers for 3 of 4 new students annually - $339 per unit x 18 units (average unit load) x 3 new students.

[11] Assuming steady state of 3 resident students at UC Riverside and one nonresident (international). Three quarters @ $3271.18 per quarter for residents, and $8267.18 per quarter for nonresidents.
<table>
<thead>
<tr>
<th>Time</th>
<th>Academic Affairs</th>
<th>Base</th>
<th>College Affairs</th>
<th>Time</th>
<th>Academic Affairs</th>
<th>Base</th>
<th>College Affairs</th>
<th>Time</th>
<th>Academic Affairs</th>
<th>Base</th>
<th>College Affairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>4,000</td>
<td>20,000</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>1,500</td>
<td>34,500</td>
<td>34,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>1,750</td>
<td>87,500</td>
<td>87,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>1,750</td>
<td>87,500</td>
<td>87,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>0.50</td>
<td>49,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>1.50</td>
<td>34,500</td>
<td>34,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>7.50</td>
<td>172,500</td>
<td>172,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>4,000</td>
<td>20,000</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>388</td>
<td>6,563</td>
<td>48,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary</td>
<td>12,408</td>
<td>62,040</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary</td>
<td>18,306</td>
<td>91,530</td>
<td>54,242</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Academic Affairs</td>
<td>Base</td>
<td>College Affairs</td>
<td>Time</td>
<td>Academic Affairs</td>
<td>Base</td>
<td>College Affairs</td>
<td>Time</td>
<td>Academic Affairs</td>
<td>Base</td>
<td>College Affairs</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
<td>------</td>
<td>-----------------</td>
<td>------</td>
<td>------------------</td>
<td>------</td>
<td>-----------------</td>
<td>------</td>
<td>------------------</td>
<td>------</td>
<td>-----------------</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>69,602</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>34,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>34,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>34,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>0.50</td>
<td>49,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>1.50</td>
<td>34,500</td>
<td>34,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>7.50</td>
<td>172,500</td>
<td>172,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>4,000</td>
<td>20,000</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>388</td>
<td>6,563</td>
<td>48,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary</td>
<td>12,408</td>
<td>62,040</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary</td>
<td>18,306</td>
<td>91,530</td>
<td>54,242</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Academic Affairs</td>
<td>Base</td>
<td>College Affairs</td>
<td>Time</td>
<td>Academic Affairs</td>
<td>Base</td>
<td>College Affairs</td>
<td>Time</td>
<td>Academic Affairs</td>
<td>Base</td>
<td>College Affairs</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
<td>------</td>
<td>-----------------</td>
<td>------</td>
<td>------------------</td>
<td>------</td>
<td>-----------------</td>
<td>------</td>
<td>------------------</td>
<td>------</td>
<td>-----------------</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Students Enrolled:</td>
<td>48,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EEOB’s Requested Annual Budget for JDPEB

1. Travel expenses for UCR faculty who travel to SDSU for Qualifying Exams, Committee Meetings, and Dissertation Defenses:

22 round trips (~ 200 miles per round trip) per year @ $100 per trip based on current mileage reimbursement rates (50.5 cents per mile).

This assumes an average of three new students per year and a standing crop of 18 students, which will result in three oral exams per year, three PhD defenses, and probably an additional 12 trips per year for advisory committee meetings. This sums to 18 round trips per year. There will also need to be a meeting of the admissions committee. This means two additional round trips per year for two committee members.

Subtotal = $2,200

2. Reimbursement for SDSU faculty members who travel to UCR to speak in the JDPEB-sponsored seminar series

Three faculty speakers per year (~ 200 miles per round trip @ $100 per trip based on current mileage reimbursement rates (50.5 cents per mile)

Subtotal = $300 per year

3. Funds for UCR graduate students (EEOB, JDPEB) to have lunch with JDPEB-sponsored seminar speakers

15 lunches per year ($10 per lunch)

Subtotal = $150

Total Requested Budget = $2,650 per year
APPENDIX I

San Diego State University Faculty Vitae

J. DAVID ARCHIBALD

Contact:
Phone: (619) 594-6917
Fax: (619) 594-5676
Email: darchibald@sunstroke.sdsu.edu
Web Page: http://www.bio.sdsu.edu/faculty/archibald.html

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kent State University</td>
<td>1968-1972</td>
<td>B.Sc. Magna cum Laude</td>
<td>Geology</td>
</tr>
<tr>
<td>U. California, Berkeley</td>
<td>1972-1977</td>
<td>Ph.D.</td>
<td>Paleontology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Date</th>
<th>Major Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yale</td>
<td>Asst. Prof.</td>
<td>1979-83</td>
<td>Biology</td>
</tr>
<tr>
<td>Yale</td>
<td>Assoc. Prof.</td>
<td>1983</td>
<td>Biology (declined)</td>
</tr>
<tr>
<td>SDSU</td>
<td>Assoc. Prof.</td>
<td>1983-86</td>
<td>Biology</td>
</tr>
<tr>
<td>SDSU</td>
<td>Professor</td>
<td>1986-present</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Research Grants (since 1990):

- NSF Grant, Cretaceous of northwestern Colorado, 1989-91, $106,000
- NSF Grant, GSA symposium with S. J. Carlson, 1991, $6,190
- NSF Grant, Mosasaurs, administrator only, grant to late R. Estes, 1991-93, $76,000
- Caltrans, four contracts, 1991-94, fossil salvage in San Diego County, $55,000
- NGS Grant, Earliest ungulates, Uzbekistan, 1997, $19,760, with H.-D. Sues.
- Dino Society Grant, Dinosaurs of Uzbekistan, 1997, $9,760 with H.-D. Sues.
- NSF Grant, Vert Paleo in Uzbekistan, 2002-2006, $250,000 (co-PI H.-D. Sues).
- CRDF Grant, Joint US/Russia Work, 2004-2006, $63,000 (12,000 to SDSU)
- NGS Grant, Vert Paleo in Uzbekistan, 2006-2007, $26,000.
- CRDF Grant, Joint US/Russia Work, 2007-2009, $63,000 (12,000 to SDSU)

Research Fellowships:

- J. Willard Gibbs Fellowship, Dept. of Geology & Geophysics, Yale, 1977-1979
- Fulbright Scholar, St. Petersburg State Univ., St. Petersburg, Russia, 1996

Papers Presented at Scientific Meetings (past five years):

- Society of Vertebrate Paleontology, Mexico City, 2000
- Society of Vertebrate Paleontology, Bozeman, MT, 2001
- Society of Vertebrate Paleontology, St. Paul, MN, 2003
- International Paleontology Congress Sydney, Australia, 2003

10 November, 2007
Symposium Presentations (since 2000):
- Mammalian Phylogeny Symposium (invited), Sorrento Italy, 2002
- Society of Vertebrate Paleontology, Rise of Placental Mammals (co-convener), Oklahoma City, OK, 2002
- W. A. Clemens Festscrift Symposium (invited), Berkeley, CA 2003
- International Mammalian Symposium (invited), Hiyama, Japan, 2004

Invited Seminars (since 2000):
- Arizona Western College/Northern Arizona University, 2000
- San Diego Association of Rational Inquiry, 2000
- San Diego Museum of Natural History, 2000
- Center for Reproduction of Endangered Species, San Diego Zoo, 2001
- Zamorano Club of Los Angeles, 2002
- University of Sussex, UK, 2002
- San Diego Turtle and Tortoise Society, 2002
- University of Camerino, Camerino, Italy, 2004
- University of Camerino, Ascoli Piceno, Italy, 2004
- Department of Biology, SDSU, 2004
- OASIS, San Diego, 2004
- OASIS, San Diego, 2005
- University of Iowa, 2005
- Langston Distinguished Lecturer, Geological Sciences, UT Austin. 2007
- Darwin Day Celebration Lecture, University of Dublin, 2008
- CosmoCaixa Science Museum, Barcelona, 2008

Professional Activities and Service (since 2000):
- Scientific Adviser, Huntington Library Charles Darwin Exhibit, 2001
- Departmental Post-tenure Review Committee, 1996-2004
- Vice President, Nu Chapter SDSU, Phi Beta Kappa, 1997-2002
- Editorial Board, Russian Journal of Theriology, 2001-present
- Editorial Board, Acta Palaeontologica Polonica, 1996-present
- Research Associate, Museum of Paleontology, U. C. Berkeley, 1984-present
- Research Associate & Fellow, San Diego Museum of Natural History, 1988-present
- Research Associate, Smithsonian, Museum of Natural History, 2007-present
- Secretary, Society of Vertebrate Paleontology, 2001-2006
- Department of Biology Graduate Coordinator, 2005-present

Society Affiliations:
- Society of Vertebrate Paleontology
- American Society of Mammalogists
- Society for the Study of Mammalian Evolution
- Society of Systematic Biology
- The Paleontological Society
- Sigma Xi
- Geological Society of America
- The Willi Hennig Society
- American Association for the Advancement of Science
Society for the Study of Evolution
International Society for Phylogenetic Nomenclature

**Graduate Student Theses Chaired (since 1993)**
- Sharon Messenger (with A. Berta) - graduated 1995.
- John Azua - graduated 1996.
- Cory Jones – graduation anticipated Fall 2007.

**Publications**

**BOOKS & MONOGRAPHS**

**ARTICLES, CHAPTERS, & COMMENTS**
2000. Dinosaur abundance was not declining in a “3 m gap” at the top of the Hell Creek Formation, Montana and North Dakota: Comment. Geology 28:1150–1151


**Abstracts & Reviews**


1982. Late Cretaceous mammals from Vinton's Bluff, Clay County, Mississippi. 42nd Society of Vertebrate Paleontology Meeting, Mexico City. (Helmers, J.L. and Archibald, J.D.).


10 November, 2007


ANNALISA BERTA

Contact:
Department of Biology
San Diego State University
San Diego, CA 92182-4614
Phone: 619-594-5392
Fax: 619-594-5676
Email: aberta@sunstroke.sdsu.edu
Web Page: www.bio.sdsu.edu/faculty/berta.html

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of California at Berkeley</td>
<td>8/74–6/79</td>
<td>Ph.D.</td>
<td>Paleontology</td>
</tr>
<tr>
<td>Dissertation Title: Quaternary Evolution and Biogeography of the Larger South America Canidae (Mammalia: Carnivora)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervising professor: William A. Clemens</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Washington</td>
<td>8/70-6/74</td>
<td>B.A.</td>
<td>(magna cum laude) Anthropology, Geology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Date</th>
<th>Major Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego State University</td>
<td>Associate Chair</td>
<td>2001-2006</td>
<td>Biology</td>
</tr>
<tr>
<td>San Diego State University</td>
<td>Professor</td>
<td>1993-present</td>
<td>Biology</td>
</tr>
<tr>
<td>San Diego State University</td>
<td>Assoc. Professor</td>
<td>1990-1992</td>
<td>Biology</td>
</tr>
<tr>
<td>San Diego State University</td>
<td>Lecturer</td>
<td>1982–1990</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Research Grants:

National Science Foundation Research Grant. 2002-2007 (includes 2 yr no-cost extension), $162,000.
Collaborative Research: Taxonomy, Phylogeny and the Evolution of Feeding Strategies in Fossil and Living Mysticete Cetaceans includes REU Supplement $6,000 (summer, 2003); REU Supplement $6,000 (summer, 2004); REU Supplement $6,000 (summer, 2005).
Research, Scholarship and Creative Activity Award, SDSU. 2004, $3,200.
Faculty Travel Grant, Office of International Programs, SDSU. 2002, $3,000.
Research, Scholarship and Creative Activity Award, SDSU. 2001, $3,195.
Research, Scholarship and Creative Activity Award, SDSU. 2000, $2,460.
National Science Foundation Research Grant. 1995-1998, $98,000.
Title: Collaborative Research: Phylogenetic and Functional Analyses of Fossil and Living Walruses (Pinnipedia: Odobenidae). REU Supplement $5,000 (summer).
National Science Foundation Research Grant. 1995-1998, $25,000.
Title: U.S.-Japan Cooperative Research: Pinniped Evolution, Systematics and Biogeography.
National Science Foundation Research Grant. 1990-1992, $63,839.
Title: Phylogenetic Relationships Within the Phocoid Pinniped Clade.
Research, Scholarship, and Creative Activity Award, SDSU. 11/89, $2000.
Title: Phylogeny of Otarioid Pinnipeds.

Research Fellowships:

Papers Presented at Scientific Meetings (past five years):
2007 (11): Society for Marine Mammalogy (5 co-authored), Society of Vertebrate Paleontology (1 co-authored); Society of Comparative and Integrative Biology (1 co-authored), Conference on Australasian Vertebrate Evolution, Paleontology and Systematics (Melbourne, Australia) (2 co-authored), International Conference on Vertebrate Morphology (Paris, France) (2 co-authored).
2006 (5): Society of Comparative and Integrative Biology (1 co-authored); Society of Vertebrate Paleontology (4 co-authored).
2005 (9): Society for Marine Mammalogy (4 co-authored), Evolution of Aquatic Tetrapods (4 co-authored), International Theriological Congress (Sapporo, Japan) (1 co-authored).
2004 (3): Society of Comparative and Integrative Biology (2 co-authored), International Congress on Vertebrate Morphology (1 co-authored).
2003 (11): Society of Systematic Biologists (2 co-authored), Society of Vertebrate Paleontology (3 co-authored), Society for Marine Mammalogy (6 co-authored).

Symposium Presentations:
2004: International Mammal Symposium, Hayama, Japan

Invited Seminars:
2007: San Diego State University; Moss Landing Marine Laboratories
2004: Humboldt State University; University of California, Santa Cruz
2003: University of California, Berkeley; San Jose State University
1998: University of San Diego
1997: University of Otago, New Zealand; Auckland University, New Zealand; California State University Long Beach
1996: Scripps Institute of Oceanography; National Science Museum, Tokyo
1995: Smithsonian Institution
1994: National Science Foundation; Smithsonian Institution
1993: University of California, Davis
1992: Los Angeles County Museum of Natural History
1991: University of California, Riverside

Professional Activities and Service:
Member, NSF Advisory Panel (Research Collections Panel) 2005.
Co-Chair, Scientific Program Committee, Conference of the Society of Marine Mammalogy (San Diego, California), 2005.
Member, Scientific Program Committee, (Chair, Evolution and Non-Molecular Systematics), Conference of the Society of Marine Mammalogy (Greensboro, North Carolina), 2003.
Member, NSF Advisory Panel (Systematics and Population Biology), 2002.
Vice President, Society of Vertebrate Paleontology, 2002-2004.
Member, Editorial Board, San Diego Museum of Natural History, 2001-present.
Member, Scientific Committee for Exhibits, San Diego Museum of Natural History, 2001-present.
Member, Committee- Chang Ying-Chien Prize in Paleontology, 2001.
Member, Editorial Board, San Diego Museum of Natural History, 2001-present.
Member, Research Committee, San Diego Museum of Natural History, 2000-present.
Member, Scientific Program Committee (Chair, Evolution and Systematics Section), Conference of the Society of Marine Mammalogy (Maui, 1999).
Search Committee, Phi Beta Kappa (Chair Members-In-Course), 1993-1994, 1995-1996.
Search Committee Member, Director of Biodiversity Research Center of the Californias, San Diego Museum of Natural History, 1997.
Member, Planning Committee, Biodiversity Research Center of the Californias, San Diego Museum of Natural History, 1995-1996.
Program Director, Systematics and Population Biology Program Area, National Science Foundation, 1994-1995.
Member, NSF Advisory Panel (Doctoral Dissertation Improvement Panel), 1994.
Member-At-Large (Executive Committee), Society of Vertebrate Paleontology, 1993-1996.
Chair, Information Management Committee, Society of Vertebrate Paleontology, 1993-1996.
Chair, Ernst Mayr Student Award Committee, Society of Systematic Biology, 1996, 1997.
Member (Executive Committee), Council of Systematic Biology, 1993-1996.
Co-Chair, Nominating Committee, Fellows of San Diego Society of Natural History, 1989-1993.
Founding Fellow, San Diego Society of Natural History, 1989-present.
Research Associate, Department of Paleobiology, Smithsonian Institution, 1989-present.
Research Associate, Department of Paleontology, San Diego Museum of Natural History, 1987-present.

University Activities and Service:
President, Phi Beta Kappa (SDSU Chapter) 2007-present.
Member, College of Sciences, Fulbright Fellowship Evaluation Committee, 2006-present.
Member, Reappointment, Tenure and Promotion Committee, 2007-present.
Member, Roger Carpenter Lecture Committee, 2005-present.
Member, Curriculum Committee, Department of Biology, 2002-present.
Member, Director of Center for Teaching and Learning, Search Committee, 2002.
Member, Academic Senate, 2001-2004.
Chair, Reappointment, Tenure and Promotion Committee, Department of Biology, 2000-2001.
Member, Academic Review Committee, Department of Anthropology, 2000.
Member, Evolutionary Biology Developmental Biologist Search Committee, Department of Biology, 2000.
Member, Paleontologist Search Committee, Department of Geology, 2000.
Member, Comparative Animal Physiologist Search Committee, Department of Biology, 1999.
Member, Molecular Developmental Biologist Search Committee, Department of Biology, 1999.
Co-Chair, Evolutionary Biology Scholarship Committee, 1998-2000.
Chair, Entomologist Search Committee, Department of Biology, 1998.
Chair, Evolutionary Biologist/Herpetologist Search Committee, Department of Biology, 1996.
Co-Chair (later Chair), Evolutionary Biologist/Ornithologist Search Committee, Department of Biology, 1997.
Member-At-Large, Policy and Planning Committee, Department of Biology, 1993-1994.
Graduate Advisor, Systematics, Evolutionary and Organismal Biology Program Area, Department of Biology, 1992-1993.
Media Acquisitions Representative, Department of Biology, 1991-1994.
Member, College of Sciences Research Committee, 1991-1993.
Member, Faculty Concerns Committee, Advocates for Women in Academia, 1990-1992.
Chair, Committee on Committees, College of Sciences, 1992-1994.
Member, Joint-Doctoral Committee: SDSU-Univ. California, Santa Barbara (Geology Dept.), 1990-1991.
Member, Systematics and Evolutionary Biology Group, SDSU, 1985-present.
Faculty advisor, Field Biology Club, SDSU, 1985.

Society Affiliations:
American Association for the Advancement of Science, American Society of Mammalogy, Phi Beta Kappa, Sigma Xi, Society for Marine Mammalogy, Society of Vertebrate Paleontology, Society of Systematic Biology, Willi Hennig Society

10 November, 2007
Articles in Refereed Proceedings and Journals:


Scholarly Books/Textbooks:


Book Reviews:


10 November, 2007


Publications in Process:


Adam, P.J. and A. Berta. In prep. Otariid phylogeny Palaeontologia Electronica.
ANDREW JAMES BOHONAK

Contact:
Phone:  619-594-0414
Fax:    619-594-5676
Email:  bohonak@sciences.sdsu.edu

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Cornell University</td>
<td>8/91–1/98</td>
<td>Ph.D.</td>
<td>Ecology and Evolutionary Biology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dissertation Title: Dispersal and gene flow in freshwater invertebrates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Supervising professor: Nelson G. Hairston, Jr.</td>
</tr>
<tr>
<td>B. Allegheny College</td>
<td>8/87–6/91</td>
<td>B.S.</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Faculty Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution &amp; Department</th>
<th>Rank</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. San Diego State University, Biology</td>
<td>Assoc. Professor</td>
<td>8/06–present</td>
</tr>
<tr>
<td>B. San Diego State University, Biology</td>
<td>Assist. Professor</td>
<td>8/00–8/06</td>
</tr>
</tbody>
</table>

Research Grants:

Title: Rapid genetic identification of southern California fairy shrimp species from cysts.

B. Dolphin Quest, Inc. (With K. Viaud), 8/06, $1,400.
Title: Population structure of Black Sea and Mediterranean bottlenose dolphins (Tursiops truncatus).

C. Marine Corps Base, Camp Pendleton. (With M. A. Simovich), 11/06, $39,796.
Title: MARSOC project: dry season sampling and genetic identification of vernal pool branchiopods.

D. Environmental Conservation Foundation, 1/05, $52,414.
Title: Genetic tracking of mule deer movement through wildlife corridors.

E. International Fund for Animal Welfare. (With K. Viaud), 1/05, $10,045.
Title: Conservation of Black Sea cetaceans: Assessment of genetic and morphological variation.

F. BRG Consulting, Inc. (With M. A. Simovich), 11/05, $43,063. Title: Pre-restoration genetics of the San Diego fairy shrimp.

G. US Geological Survey, 05/05, $11,201. Title: Genetic and Ecological Analysis of Southern California Animals: Jerusalem crickets.

H. US Geological Survey (With K. Burns), 05/05, $48.774. Title: Genetic and Ecological Analysis of Southern California Animals: Southwestern willow flycatchers.


J. SDSU, Committee on Research Grants and Lectureships, 1/04, $3,200.

K. SDSU, Center for Applied and Experimental Genomics. (With S. Kelley and K. Stewart), 4/04, $1,350

10 November, 2007
L. Charles A. and Anne Morrow Lindbergh Foundation. (With K. Viaud), 1/03, $8,394.  
Title: Conservation of Black Sea cetaceans: Assessment of genetic and morphological variation.

M. City of San Diego and US Fish and Wildlife Service, 1/03, $58,111.  
Title: Genetic testing of the endangered fairy shrimp species Branchinecta sandiegonensis.

N. California Department of Fish and Game. (With S. Valero), 1/03, $6,500.  
Title: Assessing corridor functionality in San Diego County using a non-invasive method.

O. SDSU, Office of International Programs, 10/02, $1,500.

P. Katholieke Universiteit Leuven, Belgium, Travel grant, Ecological genetics research network, 9/02, $1,000.

Q. SDSU, Office of Faculty Affairs, Faculty Development Program, 1/01, $4,800.

R. SDSU, Office of Faculty Affairs, Research, Scholarship and Creativity Activity Award, 1/01, $3,292.

S. SDSU, Office of Faculty Affairs, Research, Scholarship and Creativity Activity Award.  
(With C. Brauner), 1/01, $5,400

T. California Department of Food and Agriculture, Exotic Pest Research. (With G. K. Roderick, B. A. McPherson and N. Davies), 9/00, $159,247.  
Title: Comprehensive test for determining medfly origins.

Title: Statistical methods to determine relatedness and origins using DNA sequence data.

V. National Science Foundation, Doctoral Dissertation Grant, 1/95, $15,000.  
Title: Evaluating indirect estimates of gene flow: a comparative life history approach.

Research Fellowships:
A. Visiting Researcher, Max Planck Institute for Limnology, Plön, Germany, 6/99
B. National Science Foundation Fellowship, Cornell University, Section of Ecology and Systematics and Center for Applied Math, 9/93  
Title: The dynamics of heterogeneous ecological and evolutionary systems

Papers Presented at Scientific Meetings (past five years):
2007 (6):  Entomological Society of America, Entomological Society of America (Pacific Branch), European Cetacean Society, Evolutionary change in human-altered environments (An international summit), Society for Wetland Scientists, Southern California Society of Environmental Toxicology and Chemistry. (all co-authored)

2006 (2):  Society for Conservation Biology (2). (both co-authored)


2004 (2):  18th Annual European Cetacean Society Conference, Center for Marine Biodiversity Symposium. Cetacean Systematics: Approaches in Genetics, Morphology and Behavior (Scripps Institution of Oceanography). (all co-authored)

2003 (3):  California Population and Evolutionary Genetics meeting, Society for the Study of Evolution (2). (all co-authored)
2002 (5): Entomological Society of America, Exotic Fruit Fly Research Symposium, Fifth International Congress of Dipterology (2), Society for the Study of Evolution. (4 co-authored, 1 single authored)

**Invited Seminars (past five years):**

2006 (2): Department of Biology, University of California, Riverside, U.S. Fish and Wildlife Service, Carlsbad, CA

2004 (1): San Diego Partners for Biodiversity

2003 (2): University of California, San Diego, Center for Reproduction of Endangered Species (CRES, Zoological Society of San Diego)

2002 (4): Katholieke Universiteit Leuven (Belgium), Centro de Investigaciones Biologicas del Noroeste (CIBNOR, Mexico), San Diego State University, University of California, Riverside

**Professional Activities and Service:**

A. Formal collaborator on National Science Foundation, Research Collaboration Network. Invasive insects: collections and approaches. 27 core participants; lead PI: Roderick, G. K. $500,241


C. Scientific Advisory Committee for San Diego Stream Team

D. Scientific Advisory Committee for San Diego Tracking Team

E. Coordinator: SDSU Department of Biology Curriculum Assessment Report

F. SDSU Faculty in Residence (FIR) Program, 2000-2202. 8-12 hours per week of programs, meetings with students and office hours in residence hall. Coordinated and participated in ca. 25 activities annually.


**Society Affiliations:**

A. Ecological Society of America

B. Sigma Xi

C. Society for the Study of Evolution

D. The Crustacean Society

**Articles in Refereed Journals:**


**Books and Book Chapters:**


**Technical Reports:**


**Computer programs**

described in Jensen et al. (2005)  
http://ibdws.sdsu.edu/

described in Bohonak (2002)  
http://www.bio.sdsu.edu/pub/andy/IBD.html

http://www.bio.sdsu.edu/pub/andy/RMA.html

http://www.kimvdlinde.com/professional/rma.html

described in Bohonak et al. (2001)  
http://www.bio.sdsu.edu/pub/andy/ESP.html

10 November, 2007
http://www.bio.sdsu.edu/pub/andy/MANTELE.html
KEVIN JOSEPH BURNS

Contact:
Phone: 619-594-0538
Fax: 619-594-5676
Email: kburns@sunstroke.sdsu.edu

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Calif., Berkeley</td>
<td>1991 - 1996</td>
<td>Ph.D.</td>
<td>Integrative Biology</td>
</tr>
<tr>
<td>Louisiana State University</td>
<td>1988 - 1991</td>
<td>M.S.</td>
<td>Zoology</td>
</tr>
<tr>
<td>Texas A&amp;M University</td>
<td>1984 - 1988</td>
<td>B.S.</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution &amp; Department</th>
<th>Rank</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego State University, Biology</td>
<td>Assit. Prof.</td>
<td>1998 - 2004</td>
</tr>
<tr>
<td>San Diego State University, Biology</td>
<td>Assoc. Prof.</td>
<td>2004 - present</td>
</tr>
</tbody>
</table>

Research Grants:

- National Science Foundation, 2002 - 2007, $184,004
  Title: The Evolution of Sexual Dimorphism in Plumage: A Phylogenetic Perspective
- National Science Foundation, 2003 - 2006, $333,449
  Title: Collaborative Research: Historical inference in the Emberizinae (Aves: Passeriformes) using a complete species-level phylogeny
  Title: Community Evolution of Tanagers in the genus Tangara
- Faculty Grant-in-Aid, SDSU. 1998, $4,000.
  Title: The evolution of feeding morphology and sexual dimorphism in a radiation of Neotropical birds

Research Fellowships:


Papers Presented at Scientific Meetings (past five years):

- 2007 (4): Congreso de Ornithologia Neotropical, American Ornithologists’ Union
- 2005 (1): American Ornithologists’ Union
- 2004 (3): American Ornithologists' Union
- 2003 (1): Congreso de Ornithologia Neotropical

Symposium Presentation (past five years):

- 2007 (2): American Ornithologists’ Union
- 2005 (1): American Ornithologists’ Union

10 November, 2007
Invited Seminars (past five years):
2007: Museum of Vertebrate Zoology, Univ. of California, Berkeley

Professional Activities and Service:
Reviewer of research proposals for the National Science Foundation
Member of review panels for National Science Foundation (2002, 2005, 2007)
Reviewed manuscripts (within past 2 years) for: Systematic Biology, Evolution, Molecular Phylogenetics and Evolution, The Auk, The Condor, Molecular Ecology
Student Awards Committee, American Ornithologists' Union (1999, 2007)
Board of Directors Nominating Committee, Cooper Ornithological Society
American Ornithologists’ Union Young Professionals Committee
Local organizing committee for 2010 AOU/COS meetings in San Diego

Society Affiliations:
American Ornithologists Union (Elective Membership Status)
Cooper Ornithological Society
Society of Systematic Biology

Articles in Refereed Journals:


RULON W. CLARK

Contact:
Phone: 619-594-1527
Fax: 619-594-5676
Email: rclark@sciences.sdsu.edu
Web Page: http://www.bio.sdsu.edu/pub/clark/

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornell University</td>
<td>8/97–5/04</td>
<td>Ph.D.</td>
<td>Animal Behavior</td>
</tr>
<tr>
<td>Utah State University</td>
<td>8/94–5/97</td>
<td>B.S.</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution &amp; Department</th>
<th>Rank</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego State University</td>
<td>Prof.</td>
<td>8/07–present</td>
</tr>
</tbody>
</table>

Research Grants:

- Student Research Grant in Animal Behavior, Cornell University, $1,000, 2004
- Sigma Xi Graduate Student Research Grant, Cornell Chapter, $552, 2003
- USDA Hatch Funds (with Kraig Adler), $18,780, 2002-2004.
- Cornell University Travel Grant, $440, 2002
- Sigma Xi Graduate Student Research Grant, Cornell Chapter, $600, 2002
- Kieckhefer Adirondack Fellowship, $4,650, 2001
- Mellon Foundation Fellowship, $400, 2001
- American Museum of Natural History Theodore Roosevelt Memorial Grant, $1,000, 2000.
- Kieckhefer Adirondack Fellowship, $5,000, 2000.
- Sigma Xi Graduate Student Research Grant, Cornell Chapter, $300, 1998.
- Cornell University Research Grant, $600, 1998.

Research Fellowships:

- Postdoctoral Research Fellowship, Cornell University NSF Biocomplexity and Biogeochemistry Initiative, 2004-2007

Papers Presented at Scientific Meetings (past five years):

2007  Roads and Ecopassages Forum, Toronto Zoo, Toronto, ON, Canada.
2006  Animal Behavior Society, Snowbird, UT.
2006  Northeast Natural History Conference, Albany, NY.
2005  Animal Behavior Society, Snowbird, UT.
2005  Biology of the Rattlesnakes Symposium, Loma Linda, CA.
2004  Animal Behavior Society, Oaxaca, Mexico.
2004  Northeast Natural History Conference, Albany NY.

10 November, 2007
2004  Snake Ecology Group, Carbondale, IL.
2003  Joint Meeting of Ichthyologists and Herpetologists, Manaus, Amazonas, Brazil.
2002  Biennial Congress of the International Society for Behavioral Ecology, Montreal, Canada.

**Invited Seminars:**
2007  Department of Ecology and Evolutionary Biology, Cornell University
2006  Department of Biology, California Polytechnic State University Pomona
2006  Department of Biology, San Diego State University
2006  Shawangunk Ridge Biodiversity Partnership Lecture Series, State University of New York, New Paltz.
2005  Department of Biology, Queen’s University.
2005  Muhlenberg College Johnson & Johnson Pharmaceutical Research and Development LCC Seminar Series.
2005  New York State Outdoor Education Association, Featured Speaker.

**Professional Activities and Service:**
Member, Department of Biology Scholarship Committee, San Diego State University, 2007 - present
Founding Member, Ad Hoc Committee for State of the Planet Curriculum Development, Cornell University, 2004-2007
Member, Introductory Biology Faculty Search Committee, Department of Neurobiology and Behavior, Cornell University 2005.
Vice President of Graduate Student Body, Department of Neurobiology and Behavior, Cornell University 2002-2003.
Delegate to National Meeting of Sigma Xi, the Scientific Research Society, 2003.

**Society Affiliations:**
American Society of Ichthyologists and Herpetologists
Animal Behavior Society
International Society for Behavioral Ecology
Society for the Study of Reptiles and Amphibians
Sigma Xi, The Scientific Research Society
Articles in Refereed Journals:

Non-peer reviewed publications:
MARSHAL HEDIN

CONTACT:
Phone: (619) 594-6230 (office)
Fax: (619) 594-5676
Email: mhedin@sciences.sdsu.edu

EDUCATION:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas A &amp; M University</td>
<td>1987-1989</td>
<td>M.S.</td>
<td>Genetics</td>
</tr>
<tr>
<td>Humboldt State University</td>
<td>1982-1987</td>
<td>B.A.</td>
<td>Zoology</td>
</tr>
</tbody>
</table>

TEACHING POSITIONS AND RANK HELD:
2005 → Associate Professor, Department of Biology, San Diego State University
1999 - 2005 Assistant Professor, Department of Biology, San Diego State University

RESEARCH GRANTS:
2007 – 2010 National Science Foundation, Systematics Program Area, “Collaborative Research: Phylogeny of leiobunine harvestmen (Opiliones) of eastern North America and phylogeny-based tests of sexually-antagonistic coevolution”, w/ Dr. Jeff Schultz (Univ. of Maryland), $100,000 to M. Hedin
2004 – 08 US Dept of the Interior, Fish & Wildlife Service Grant, “Biological Survey of Rare Nesticus (Araneae, Nesticidae) occurring in North Carolina National Forests”, $20,000
2004 – 05 US Dept of the Interior, Fish & Wildlife Service Grant, “Genetic Analysis of Travis County (TX) Cicurina”, $40,000
2003 – 04 National Science Foundation, Systematics Program Area DEB 0322650, REU Supplement to “Molecular and Morphological Systematics of the Spider Infraorder Mygalomorphae (Araneae)”, $6,345
2003 – 08 National Science Foundation, Assembling the Tree of Life Special Competition, “Assembling the Tree of Life: Phylogeny of Spiders”, $2,738,000 total (subcontract to Hedin Lab = $134K).
2001 – 04 National Science Foundation, Systematics Program Area DEB 0108575, “Molecular and Morphological Systematics of the Spider Infraorder Mygalomorphae (Araneae)”, $213,303
2001 – 03 USDA Forest Service Grant “Biological Survey of Nesticus (Araneae, Nesticidae) Occurring in Pisgah and Nantahala National Forests, North Carolina” $25,000
2000 – 02 SDSU Faculty Grant-in-Aid, “Historical Biogeography of California Desert Arthropods”, $2,800
2000 – 01 SDSU Faculty Development Program, “An Integrated Biological Study of the Living Fossil Problem”, $2,650

10 November, 2007
1994 – 99 US Fish & Wildlife Service Grant, “Survey of Rare Nesticus of the southern Appalachians”, $11,675
1992 – 95 National Science Foundation DDIG 9213184 (w/ Dr. Alan Templeton, Washington University), “Speciation and Morphological Evolution in southern Appalachian Cave Spiders (Araneae: Nesticidae: Nesticus)”, $10,007
1992 – 93 National Speleological Society, Research Advisory Committee Grant, $500
1992 – 93 Highlands Biological Station, Grant-in-Aid of Research, $400
1992 – 93 Cave Research Foundation, Karst Research Fellowship, $2,000
1992 – 93 National Speleological Society, Ralph W. Stone Graduate Research Award, $1,000

CONTRIBUTED PAPERS (PAST FIVE YEARS):
2006 Society for the Study of Evolution, Stony Brook, NY (3 papers)
2005 American Arachnological Society, Akron, OH (8 papers)
2004 International Congress of Arachnology, Ghent, Belgium (1 paper, 1 poster)
2004 Society for the Study of Evolution, Ft. Collins, CO (3 papers)
2003 American Arachnological Society, Denver, CO (5 papers)
2002 American Arachnological Society, Riverside, CA (3 papers)

PROFESSIONAL ACTIVITIES & SERVICES:
2004 Associate Editor, Society of Systematic Biologists

2002 Spring 2002 NSF Population Biology Advisory Panel
2001 → Editorial Board, American Arachnological Society
1998-2004 Editorial Board, Society of Systematic Biologists

Proposal Reviews (last three years) - NSF Behavioral Systems Cluster, NSF Systematic Biology Program Area, NSF Population Biology Program Area, United States Department of Defense (Army), Society of Systematic Biologists Graduate Student Research Awards


ARTICLES IN REFERRED PROCEEDINGS AND JOURNALS:
Thomas SM and M Hedin. 2008. Multigenic phylogeographic divergence in the paleoendemic southern Appalachian opilionid *Fumontana deprehendor* Shear (Opiliones, Laniatores, Triaenonychidae). Molecular Phylogenetics & Evolution, Accepted.


Crews SC and M Hedin. 2006. Studies of morphological and molecular phylogenetic divergence in spiders (Araneae: *Homalonychus*) from the American southwest, including divergence along the Baja California Peninsula. Molecular Phylogenetics and Evolution 38, 470-487.


SCOTT T. KELLEY

San Diego San University
Department of Biology
5500 Campanile Drive
San Diego, CA 92182-4614

Phone: (619) 594-5371
Fax: (619) 594-5676
Email: skelley@sciences.sdsu.edu
Website: www.bio.sdsu.edu/faculty/kelley/scottkelley.htm

EDUCATION
1987-1991 B.A., Magna cum laude, Cornell University
Department of Neurobiology and Behavior

1993-1998 Ph.D., University of Colorado
Department of Environmental, Population and Organismal Biology
Dissertation: Resource use in the bark beetle genus Dendroctonus: Historical patterns and contemporary processes
Thesis Advisors: Brian D. Farrell, Ph.D. and Jeffrey B. Mitton, Ph.D.

PROFESSIONAL EXPERIENCE
1991-1992 Teacher, Houston Independent School District, Houston, TX
3rd and 4th Grade

1993-1996 Graduate Teaching Assistant, University of Colorado, Boulder, CO
Department of Environmental, Population and Organismal Biology

1998-2002 Postdoctoral Fellow, University of Colorado, Boulder, CO
Department of Molecular, Cellular and Developmental Biology
Mentors: Gary D. Stormo, Ph.D. and Norman R. Pace, Ph.D.

2002-present Assistant Professor, San Diego State University, San Diego, CA
Department of Biology

AWARDS AND HONORS

1999-2002 NIH National Research Service Award F32GM020013
Computational methods for molecular structure prediction.

2005-2006 Outstanding Faculty Service Award, Mortar Board National Honor Society, SDSU Chapter

PROFESSIONAL ACTIVITIES
Professional Societies
Member, American Society for Microbiology
Member, Society for Systematic Biology

Peer Review
Journals
Annals of the Entomological Society of America
Biological Journal of the Linnaean Society
BMC Bioinformatics
Intelligent Systems for Molecular Biology (ISMB)
Journal of Molecular Evolution
Journal of Wildlife Diseases
Microbial Ecology
Molecular Ecology
Proceedings of the National Academy of Sciences
RNA

Grants
California State University Program for Research in Biotechnology (CSUPERB), Ad-hoc Reviewer, 2005
California State University Program for Research in Biotechnology (CSUPERB), Grant Panel 2006
National Institutes of Health, National Institute of General Medical Sciences, SCORE Program, 2007
National Science Foundation, Division of Environmental Biology, Ecological Biology Cluster, Ad-hoc Reviewer, 2007

In the News
Newspaper article on research in San Diego Union - Tribune entitled, “Shower study finds what's been lurking behind the curtain”, May 2, 2004
Interviewed by local TV news stations about research, May 2004
Article on research in San Diego State publication, SDSUniverse, entitled, “Pulling Back Shower Curtains Reveals Microbial Mayhem”, May 3, 2004
Newspaper article on research in San Diego Union - Tribune entitled, “Germs hitch ride in plane bathrooms”, Dec 26, 2005
Featured Article, San Diego State University Web Site entitled, “Germ Hunters: Searching for bugs that harm and help”, June 2007

Other
Organizer, University of Colorado Department of Environmental, Population and Organismal Biology Seminar Series
Member, Biotechnology Board of Directors, High Tech High School of San Diego
Invited Advisor, Respiratory Disease in Mountain Sheep: Knowledge Gaps and Future Research, University of California, Davis, Spring 2007
Invited Instructor, Bridges to the Future (NIH), Summer 2006, 2007
Invited Instructor, Research Experiences for Undergraduates (REU –NSF), Summer 2007

PUBLICATIONS

Peer-Reviewed Papers


Manuscripts Submitted or In Preparation


Chapters in Refereed Books


INVITED SPEAKER

San Diego State University, San Diego, CA, Fall 2002
University of California, San Diego, CA, Spring 2003
PRESENTATIONS AT SCIENTIFIC MEETINGS (SINCE 2004)

(*Indicates presenter)

National


Local


**RESEARCH FUNDING**

Internal Grants (SDSU) 
1. Research and Scholarly Creative Activity Award 2002. Effects of Bark Beetle Ecology and Behavior on Symbiotic Microbial Diversity. $2,835 
3. Research and Scholarly Creative Activity Award 2003. Connecting pattern to process: The effects of host-plant use on species diversification in bark beetles. $4,200 

Extramural Funding 
5. Clorox Corporation Research Award 2005. Public Health Research in Support of Marketing. $75,000 
6. California State University Program for Research in Biotechnology (CSUPERB) Award 2006. Design and Development of Broad-Spectrum Bacterial Vaccine. $10,000 
7. Clorox Corporation Research Award 2006. Effectiveness of disinfectants on reducing microbial contamination in childcare centers. $27,000 

Funded Research Grants as a Collaborator 

**Total for all Awards=195,754**

Pending/Planned Federal Grants 

Submitted Federal Grants
2006 NSF MIP: A Global Assessment of Microbial Communities in Geothermal Springs and Fumaroles, *Rated in Outstanding Category*
2006 NSF RIG: Molecular Analysis of Bighorn Sheep Respiratory Tract Bacterial Communities
2005 NSF CAREER: Molecular and functional analysis of microbial communities associated with *Dendroctonus* bark beetles.
2005 NSF Ecological risk assessment of complex disease patterns in coral reef ecosystems.
2004 NSF MIP: Ecological and evolutionary determinants of microbial community composition in acidic thermal springs
2004 NSF Diversity Along a Sulfur Rich Thermal Gradient
2004 NSF Phylogenetic Analysis of *Dendroctonus* Bark Beetles
2003 NSF CAREER: Computational approaches for facilitating phylogenetic analysis of microbial sequence information
2003 NSF Connecting pattern to process: Effects of resource use and behavioral specialization on bark beetle diversification
2002 NSF ITR: Software Development for Enhanced Phylogenetic Analysis of Microbial Diversity
2002 NSF Effects of Bark Beetle Resource Use, Specialization and Evolution on Symbiotic Microbial Diversity

Federal Grants Submitted as a Collaborator
2007 & 2006 American Heart Association (Grants-in-Aid) Broad-spectrum vaccines against cardiovascular pathogens. In collaboration with Dr. Kathleen McGuire and Dr. Stanley Maloy.
2006 United States-Israel Binational Science Foundation. Environmental effects on mixed breeding strategy. In collaboration with Dr. Ally Harari.
2006 & 2005 MIP: Microbial diversity and flows of C in cryptobiotic soil crusts of California and Baja California. In collaboration with Dr. David Lipson.
2003 ITR: Comparative Computational Approaches to Gene Regulation. In collaboration with Dr. Robert Zeller.

MENTORING

Masters of Science (Thesis Chair or Co-Chair)
Shirin Safaei, BS in Biology, Tarbiat Moalem University, Iran
Thesis: Non-culture detection of *Pasteurella* bacteria and horizontally-transferring toxin genes.

Jayanti Mathur, Andhra University, Visakhapatnam, India
Thesis: Analysis of microbial diversity along a sulfur rich thermal gradient.

10 November, 2007
Jason Holzman, BS in Biology, University of Wisconsin
Evolutionary Biology Program, Graduated Spring 2006
Thesis: Population genetics of inbreeding seed beetle sister-species.

Eric Ngan, BS in Computer Science, San Diego State University
Computational Sciences Program, Graduated Fall 2006
Thesis: Isolation by distance web service with incorporation of DNA data sets.

Dean Ellis, BS in Biology, James Cook University, Australia
Cell and Molecular Biology Program, Graduated Fall 2006
Thesis: Archaeal diversity of geothermal steam vents.

Alexander Poole, BS in Biology, University of Colorado
Cell and Molecular Biology Program, Graduated Spring 2007

Sara Tin, BS in Biology, UC California, Berkeley
Evolutionary Biology Program, Graduated Spring 2007
Thesis: Investigating microbial diversity in the Deep Hot Biosphere and how it relates to the origin of life.

Lesley Lee, BA in Chemistry and BS in Biology, Florida Atlantic University
Cell and Molecular Program, Spring 2006-Present
Thesis: Combined culture and culture-independent analysis of microbial diversity in a childcare center; proposed Fall 2006. Lesley is culturing bacteria from a children’s daycare center and performing molecular analysis to explore the diversity of uncultured bacteria.

Julia Turner, BS in Biology, Metropolitan State College of Denver
Computational Sciences Program, Summer 2006-Present
Thesis: Parallelization of Isolation by Distance analysis; proposed Fall 2006. Julia is designing, testing and implementing a parallel processing approach for our ongoing Isolation By Distance software.

Sujata Sovani, BS in Chemical Engineering, Laxminarayan Institute of Technology, Nagpur, India
Cell and Molecular Program, Summer 2006-Present
Thesis: Design and development of broad-spectrum bacterial vaccine; proposed Spring 2007. Sujata is using Bioinformatic analyses to design a protein chimera of an outer membrane protein that could serve as a broad-spectrum vaccine against multiple bacterial pathogens.

Kranthi Kumar, BS in Biology, Jawaharlal Nehru Technological University, India
Cell and Molecular Program, Spring 2007-Present
Project: Will propose Fall 2007. Kranthi is developing molecular markers to establish the relationships among bacterial species associated with ruminant health. He will also be studying the evolution of superoxide dismutase A (sodA).

Krissi Hewitt, BS in Biology, University of California, San Diego
Cell and Molecular Program, Fall 2007
Project: Application of Microarray and Metagenomics to human environmental microbiology.

Debashree Das, BS in Zoology, University of North Bengal; MS in Zoology University of Calcutta
Cell and Molecular Program, Fall 2007
Project: Molecular analysis and cultivation of spring sediment microbial communities.

Ph.D. Rotation Student
Steve Attle, MS in Cell and Molecular Biology, SDSU (Fall 2003).
Project: Detection of novel transcription factor regulatory binding motifs.

10 November, 2007
Stanley Walls, MS in Cell and Molecular Biology, SDSU (Fall 2007)
Project: PHAT – PHylogenetic Annotation Tool software for microbial genomics.
PREP (Post-Baccalaureate Biomedical Research Education Program – NIH/NIGMS)
Eric Alegre, BS Biology, SDSU.
Project: PHAT: Phylogenetic Annotation Tool. Eric developed a Bioinformatics approach to improve the accuracy of gene sequence annotations, a critical aspect of genomic research. Eric was accepted into a Bioinformatics graduate program at Arizona State University.

Biotechnology Certificate Program
Aruna Binuraj, BS in Zoology, MS in Microbiology, Mahatma Ghandi University, India Summer 2006-Fall 2006
Project: Substrate-use profiling and molecular analysis of microbes associated with bark beetles. Aruna analyzed the types of pine host plant compounds that are utilized by microbes in the guts of tree-killing bark beetles. She also examined the diversity of these organisms using molecular methods that do not rely on culturing techniques.

Undergraduate Researchers (Biology 499)
Collin McManus, BS Biology, SDSU (Spring 2003) – continued as technician.
Adam Navidi, BS Biology, SDSU (Fall 2003).
Project: Population genetics of Dendroctonus bark beetles in relation to host-plants. Adam generated data for several population genetic projects studying the relationship between resource use and genetic diversification.
Omar Alemi, BS Biology, SDSU (Spring 2004).
Project: Development of PCR strategies to amplify insect nuclear genes. Omar successfully generated data and sequences with some very difficult primer regions for Dendroctonus bark beetles.
Cecelia Dahl, BS Biology, SDSU (Fall 2004).
Project: Strain specific genetic analysis of Pasteurellaceae bacteria. Cecelia developed novel PCR primers to amplify the superoxide-dismutase gene from disease-causing bacteria.
Diana Buenrosto, BS Biology, SDSU (Fall 2004).
Project: Bioinformatics: Sequence analysis. Diana worked on a project to streamline our data analysis of ribosomal RNA sequences.
Eric Alegre, BS Biology, SDSU (Spring 2005) – continued as PREP student.
Project: Development of software for analyzing microbial sequence data. Eric wrote programs for converting among sequence data formats.
Chris Reid, BS Biology, SDSU (Fall 2005).
Project: Effects of resource specialization on genetic structure of bark beetles populations. Chris developed molecular genetic tools to study patterns of genetic diversification in bark beetles.

Biotechnology Interns (High Tech High School)
San Diego’s High Tech High School runs an innovative Biotechnology internship program. I have mentored four students through this program (below) and I am a member of their board of directors.
Jeff Jensen (Spring 2004)
Ryan Thomas (Spring 2004)
Clark Schulman (Spring 2007)
Christopher Mitchell (Spring 2007)
Thesis Committees (Masters of Science)
3. Yanan Yu, “Computational analysis of microbial 16S ribosomal RNA sequences,” graduated Fall 2004. A computational student of Dr. Forest Rowher, Yanan developed interactive web analysis tools for editing and analyzing ribosomal RNA sequence data from environmental samples.

University Service
Committee Assignments:
1. Member, Cell and Molecular Biology Curriculum Committee, Fall 2004-Present. This committee is charged with developing and maintaining the high standards of courses for our students in the Biology program. We decide on what courses to keep and which to remove from the program. I feel that my service on this committee is especially important for the future of the department and the University.
2. Member, Cell and Molecular Biology Master’s Committee, Fall 2004-Present. The purpose of this committee is to evaluate the applications of prospective graduate students and decide who is best suited for the program.
3. Member, Bioinformatics Master’s Program Committee, Fall 2004-Present. The purpose of this committee is to develop a comprehensive plan for creating a program targeting biologists, computer scientists and chemists.
4. Advisory Member of the Distributed Computing Committee, Fall 2004-Present. This committee involved the cooperation of a number of faculty interested in a distributed computer network on campus. Using specialized software, distributed computing aims to utilize unused processor cycles for scientific calculations. For example, at night or over weekends, computers around campus sit idle, doing essentially no productive work. Distributed computing approaches utilize these empty cycles to analyze large scientific data sets and can potentially provide a massive free computer resource to the entire SDSU research community. We have succeeded in establishing a very small but effective distributed network of computers. Recently, we gained...
permission from several lab coordinators to increase the number of computers connected in the
college and now have more than 70 computers to work with. This past year, we have been
integrating our work with Mary Thomas in the Computer Science department who is putting
together a large NSF proposal for Grid computing on campus.
5. Department of Computer Science Search committee, Spring 2007. I served on the search
committee as the outside department member for a Bioinformatics position. We successfully
recruited a new colleague from this search.
Additional University Service:
1. Provided lectures for the Bridges to the Future Program, Summer 2006 and 2007. Bridges to
the Future is a joint program with local community colleges that helps minority
undergraduate students transition into the sciences as they prepare to start classes at San
Diego State University. For the past two summers, I have taught classes for the Bridges
program at the behest of Dr. Paul Paolini. This class included a two hour-long Bioinformatics
lab.
2. Research Experiences for Undergraduates (REU-NSF), Summer 2007. This interesting and
innovative program, entitled “Mathematics Research Experience for Undergraduates and
Teachers”, brought together mathematicians, statisticians and biologists to give students and
teachers enough background that they might perform hands-on research in mathematical
biology. My role was to teach the students both basic biology, Bioinformatics and
phylogenetic theory to that they might research bacteriophage evolution.
3. Volunteered two weeks of teaching time (4 lectures) of Biology 610: Advanced Topics in
Molecular Biology in the spring semesters of 2003 to 2007.
4. Participated in Laboratory Talk/Tours with the Evolutionary Biology Program Area.
5. Presented lectures on microbial diversity and evolution in Dr. Marshal Hedin’s graduate
seminar class.
6. Worked on discussion group assignments with graduate students in Dr. Bohonak’s Biology
770 class Spring and Fall 2006.
7. Presented biology lectures for Computational Science Bioinformatics course taught by Dr.
Faramarz Valafar.
8. Presented special seminars to the Department of Computational Science and Applied
Mathematics at SDSU.
9. Donated lab space to the research group of adjunct faculty Dr. Forest Rohwer in Spring and
Summer 2003. The 10 plus members of Dr. Rohwer’s lab were moved from their temporary
space and did not have a place to work or study. Dr. Rohwer was subsequently hired by the
department as an Assistant Professor.
10. Presented two lectures on the BLAST algorithm to the Biology 467 Lab course taught by Dr.
Forest Rohwer in Spring 2005.

Community Service
Presented lecture at Scripps as part of a course entitled “Chemical and Biological Principles of
Presented microbiology lectures at UC San Diego, Spring 2006.
TOD WEST REEDER

Contact:
Phone: 619-594-7826
Fax: 619-594-5676
Email: treeder@sunstroke.sdsu.edu

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Texas, Austin</td>
<td>8/90-12/93</td>
<td>PhD</td>
<td>Zoology</td>
</tr>
<tr>
<td>Louisiana State University</td>
<td>8/88-5/90</td>
<td>MS</td>
<td>Biology</td>
</tr>
<tr>
<td>University of Missouri, KC</td>
<td>8/85-5/88</td>
<td>MS</td>
<td>Biology</td>
</tr>
<tr>
<td>Emporia State University</td>
<td>8/81-5/85</td>
<td>BS</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Date</th>
<th>Major Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego State University</td>
<td>Assoc. Prof.</td>
<td>7/02-present</td>
<td>Biology</td>
</tr>
<tr>
<td>San Diego State University</td>
<td>Assist. Prof.</td>
<td>8/96-7/02</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Research Grants:

National Science Foundation Research Grant. 1/07, pending, $482,374.
Title: Collaborative Research: Global Phylogeny and Body-form Evolution in Scincid Lizards

National Science Foundation Research Grant, REU Supplement. 1/07, pending, $5900.

National Science Foundation Research Grant. 1/04–1/09, $646,664.
Title: Assembling the Tree of Life: Collaborative Research: The Deep Scaly Project: Resolving Squamate Phylogeny Using Genomic and Morphological Approaches

National Science Foundation Research Grant. 9/01–9/04, $100,000.
Title: Evolution of the North American Whiptail Lizards (Teiidae: Cnemidophorus) and Re-evaluation of Unisexual Origins: A Multi-genic Approach

Faculty Development Award, SDSU. 12/00, $5000.

Australian Research Council International Research Exchange (IREX) Grant. 1/00–12/00, A$10,000. (With Dr. Michael Lee, University of Queensland)
Title: Morphological and Molecular Evolution in Reptiles

U.S. Geological Survey Species at Risk Grant. 1/99–12/00, $76,000. (with Dr. Robert Fisher, USGS and Dr. Jay Diffendorfer, SDSU)
Title: Population Status and Conservation of the Rosy Boa (Lichanura trivirgata).

National Science Foundation Research Grant. 8/97–8/00, $185,000.
Title: Phylogenetic Relationships Within the Australian Sphenomorphus Group (Squamata: Scincidae) and the Study of Limb Reduction.

Faculty Grant-in-Aid, SDSU. 12/96, $4920.
Research, Scholarship, and Creative Activity Award, SDSU. 11/96, $1700.
Faculty Development Award, SDSU. 11/96, $1500.

10 November, 2007
National Science Foundation Doctoral Dissertation Research Improvement Grant. 4/92, $12,000.
Title: Evolution of the Lizard Family Phrynosomatidae as Inferred from Nuclear and Mitochondrial Ribosomal DNA Sequences.

Research Fellowships:
South Australia Museum Visiting Fellowship. 9/99, A$3820.
Title: *Egernia* Systematics and the Phylogenetic Utility of Post-cranial Osteology. (unable to fulfill due to field accident)

Smithsonian Institution Postdoctoral Fellowship. 4/94, $27,000.
Title: The Use of Multiple Data Sets in Phylogenetic Analysis and the Phylogenetic Placement of the Limbless Squamates.

Center for Molecular Systematics Postdoctoral Fellowship, Victoria University of Wellington, New Zealand. 4/94 (declined).

Australian Museum Visiting Fellowship. 3/94 & 4/95 (both declined).

Kalbfleisch Research Fellowship, American Museum of Natural History. 4/93, $25,675.
Title: The Phylogenetic Placement of the Limbless Lineages Within the Squamata: Evidence from Molecules and Morphology.

Papers Presented at Scientific Meetings (past five years):
2005 (2): American Society of Ichthyologists and Herpetologists/Herpetologists’ League/Society for the Study of Amphibians and Reptiles (co-authored)

Symposium Presentations:

Invited Seminars:
2005: University of California, Riverside; California State University, Northridge.
2003: University of Kansas; Louisiana State University; University of California, Berkeley.

10 November, 2007
1997: Los Angeles County Museum of Natural History; California State University-Fullerton.
1996: Columbia University; University of Southern Mississippi; San Diego State University; University of Texas at Arlington.
1995: National Center of Biotechnology Information (GenBank); National Museum of Natural History.
1992: University of Texas at Austin.
1991: Louisiana State University.
1990: University of Texas at Austin.
1989: Louisiana State University.

Professional Activities and Service:
Reviewed research proposals for the National Science Foundation: 4/95, 10/95, 3/97, 4/98, 8/99, and 10/00, 9/01, 3/03, 4/04, 10/04, 9/05.
Served on the Systematic Biology Panel of the National Science Foundation: 10/98, 4/03, 10/04.
Board of Governors, American Society of Ichthyologists and Herpetologists. 12/01–present.
General Herpetology Sectional (=Associate) Editor for Copeia (published by the American Society of Ichthyologists and Herpetologists), 7/03–present.
Editorial Board for Herpetologica and Herpetological Monographs (published by the Herpetologists’ League), 7/04–present.
Chair of Student Awards Committee (STAC), American Society of Ichthyologists and Herpetologists, 1/02–7/03.
External PhD thesis reviewer, University of Adelaide, Australia, 4/02.

Society Affiliations:
American Society of Ichthyologists and Herpetologists
European Society for Evolutionary Biology
Herpetologists’ League
Society for Molecular Biology and Evolution
Society for the Study of Amphibians and Reptiles
Society for the Study of Evolution
Society of Systematic Biology
Southwestern Association of Naturalists

Articles in Refereed Proceedings and Journals:

10 November, 2007


amphibians and reptiles of North America north of Mexico: An update.  


FOREST ROHWER

Contact:
Phone: (619) 594-1336;
FAX: (619) 594-5676
Email: forest@sunstroke.sdsu.edu
Webpage: http://phage.sdsu.edu

Education:
University of California San Diego/San Diego State University Joint Doctoral Program in Molecular Biology, 09/92-07/97 advisor: Kathleen McGuire
University of Idaho, Letters and Science, 09/91-05/92
College of Idaho, BAs in Biology, Chemistry, and History, 09/87-05/91

Teaching Positions and Rank Held:
San Diego State University. Assistant Professor. 2003-present
San Diego State University. Adjunct Assistant Professor. 2001-2003
Scripps Institution of Oceanography. Postdoctoral researcher with Dr. Farooq Azam. 1997-2001

Awards and Honors
Canadian Institute for Advanced Research (CIFAR) Fellow in Integrated Microbial Biodiversity Program. 2007.
American Academy for Advancement of Science (AAAS) Fellow. 2006.
SDSU Foundation Technology Transfer Office Honorable Mention of Inventorship. 2002.
ARCS. 1995 and 1996. Achievement award for young scientists. SDSU.
Sigma Xi. 1993. Grant-in-aid for graduate students. SDSU.

Research Grants:
NSF DEB 0316518. Aquatic Phage Diversity. 08/03-07/07. $323,148. Rohwer (P.I.)
Moore Foundation. Uncultured viral diversity. 11/04-10/07. $1,000,000. Rohwer (P.I.)
NSF MCB-0604191. Ecological and evolutionary studies of prokaryotes and their viruses in a modern evaporative basin: Salton Sea, CA (9/06-8/09). Dave Valentine at UCSB is PI. Rohwer has a subcontract of $39,786.
Department of Commerce. Advanced Technology Program (ATP). Targeted Bacteriophage Therapeutics as Replacements for Conventional Antibiotics in Aquaculture. 1/05-12/07. $256,668. Rohwer (co-PI with Kent Sea Tech)
NSF 0308029. New Transmission Electron Microscope for a Core EM Facility. 05/03-04/05. $388,009. Rohwer (Co-P.I. with Steven Barlow (P.I.), Anca Segall, Terrence Frey, Sanford Bernstein)

NSF0421535. Acquisition of a Fluorescence Activated Cell Sorter (FACS) for SDSU Biology Department. 09/01/04 - 08/31/07. $325,097. (Co-P.I. with Kathie McGuire (P.I.), Anca Segall, David Lipson, Constantine Tsoukas)

NSF OCE 0137748. Stress-induced coral mortality: The role of opportunistic bacterial infections. 4/02-3/05. $391,715. Rohwer (P.I.)

Office of Naval Research through SPAWAR. Remote sensing of Biological warfare agents using immunomagnetic microsphere-based optical sensors. 10/02-09/04. $140,000 Rohwer (P.I.)

NSF OCE 0116900. Genomic sequencing of uncultured marine phage. 5/01-4/02. $70,000 Rohwer (Co-P.I. with Farooq Azam)

Publications:


> written up in Medical News Today
> written up in Science Today
> selected by the Faculty of 1000


> written up in Science Now;
http://sciencenow.sciencemag.org/cgi/content/full/2006/607/2
> featured in the Consortium for Oceanographic and Research Education (CORE; targetting congressional advisors)


> written up in Science Now


> written up in Spring 2004 Explorations. 18-28.


> written up in New Scientist "Crops leave surprises in our guts" (January 7, 2006)

> reported on by San Diego Union Tribune "Many organisms thrive in inhospitable stomach" (January 11, 2006)

> People's Daily Online (Jan. 12, 2006)

> March issue of Nature Reviews Microbiology


> written up in Nature Microbiology Reviews (2005) 3. 520.


> chosen as a Science News’ story of 2003

> 5 min documentary on the Canadian Discovery Channel


> reported in BBC News, UK; http://news.bbc.co.uk/1/hi/health/3208290.stm


> preview for Pedulla et al. (2003) Origins of highly mosaic mycobacteriophage genomes


> written up in BBC Wildlife
> Nature News May 2003
> Science News July 2003


> featured article in February 2000 Limnology and Oceanography
> also see "Tales of the Sea" (Jan. 2001) in the New Scientist and "The Jell-Ocean" (Oct. 4, 2000) in The San Diego Union-Tribune


**Book Chapters**


**Proceedings Articles**


**Letters, Meeting Reports, Applications**


**Publications in Preparation or Review**

Kunin, V, S He, F Warnecke1, SB Peterson, HC Garcia Martin, M Haynes, N Ivanova, LL Blackall, M Breitbart, F Rohwer, KD McMahon, P Hugenholtz (in prep) Comparison of two geographically remote bacterial populations reveals global dispersal and local predation pressure


**General Write-ups of the Lab/Interviews**


Live Science (June 2007; http://www.livescience.com/environment/070620_microbes_corals.html)

Science News (June 2, 2007)

Cosmos Online (February 2007; http://www.cosmosmagazine.com/node/1024)
Websites
The Phage Arboretum (http://salmonella.utmemb.edu/phage/tree/). This is a website for phage genome analyses and comparisons designed by Rob Edwards and myself. This site receives ~100 hits per day.
FastGroup II (http://phage.sdsu.edu/project1/fastgroup.html): This website dereplicates large libraries of 16S rDNAs and provides statistics on the microbial community. It is based on an algorithm developed in Seguritan and Rohwer (2001) FastGroup: A program to dereplicate libraries of 16S rDNA sequences. BMC Bioinformatics. 2 (9).

SDSU Service
CMB Master's Student Admission Committee (2003-)
Joint Doctoral Program Executive Committee (2004-)
Combined Innate Immunologist & Virology Search Committee (2006)
Microbiologist Search Committee (2007)
Radiation Safety Committee (2005-)
Biomathematician Search Committee (2006)

Professional Activities and Service
Lawrence Livermore National Laboratory. Scientific advisor for biodefense program. 2007.
Cyberinfrastructure for Advanced Marine Microbial Ecology Research and Analysis (CAMERA) at UCSD Calit2. San Diego, CA. 2006. Scientific Advisory Board member.
NSF Genomic Sequencing Panel. 2006. panel member.
CoML Coral Workshop planning committee (2004-); Planning meeting August 2004 on Coconut Island.

Ad hoc reviewer for:

Granting Agencies - Canon National Parks Science Scholars Program for the Americas, Department of Health and Human Services (Office of Public Health and Science), Israel Science Foundation, International Foundation for Science, National Science Foundation (Geosciences: Biological Oceanography & Biological Sciences: Division of Environmental Sciences; MCB: Microbial Genetics), National Geographic Society, National Oceanic and Atmospheric Administration (National Undersea Research Program; Harmful Algae Program), Natural Environment Research Council, USDA Initiative for Future Agriculture and Food System/NSF Microbial Sequencing Project

Professional Societies
American Association for the Advancement of Science (AAAS)
American Society for Microbiology (ASM)
The International Society for Reef Studies (ISRS)
Southern California Academy of Sciences
Sigma Xi

Presentations/Meetings
Auburn University. 2007. invited speaker.
Marine Biology Laboratory in Woods Hole. 2007. invited speaker for Microbial Diversity course.
Cold Spring Harbor Laboratory. 2007. invited speaker for Advanced Microbial Genetics.
Mel Simon's 70th Birthday meeting. San Diego, CA. 2007. participant.
University of South Florida. St. Petersburg, FL. 2007. invited speaker.
Georgia Tech. Atlanta, GA. 2007. invited speaker.
UC Irvine. 2006. invited speaker.
Metagenomics meeting at CalIT2. San Diego, CA. 2006. short talk and session leader.
OBC Terra Microbiology. Okazaki, Japan. 2006. invited speaker.
International Society of Microbial Ecology. Vienna, Austria. 2006. invited speaker, session organizer, roundtable presenter.
MSI CyberInfrastructure Conference. UCSD Supercomputer Center. 2006. invited speaker.
Cold Spring Harbor Laboratory. 2006. invited speaker for Advanced Sequencing Technologies and Advanced Microbial Genetics.
Texas/Evergreen Phage Meeting. Kingsville, TX. 2006. invited speaker and roundtable organizer.
National Center for Ecological Analyses and Synthesis (NCEAS). Santa Barbara, CA. 2006. invited speaker.
Lawrence Livermore National Laboratory. Livermore, CA. 2006. invited speaker.
Loyola University. Chicago, IL. 2006. invited speaker.
ACSESS. Computational Sciences SDSU. 2006. invited speaker.
Focus DX. Long Beach, CA. 2006. invited speaker.
American Society of Microbiology. Atlanta, GA. 2005. invited speaker (2 talks) and "Phage Art Show"
University of Illinois, Champaign-Urbana. 2004. invited speaker.
University of Minnesota. 2004. invited speaker.
UT Austin. 2003. invited speaker.
SDSU Biosymposium. 2003. invited speaker.
Molecular Genetics of Bacteria and Phages. Madison, WI. 2003. speaker.
Los Angeles County Museum. 2003. invited speaker.
San Diego State University. Biology Department. 2003. invited speaker.
Evolutionary Biology Joint Doctoral Proposal:

Kalmar University, Sweden. 2002. invited speaker.
American Society for Microbiology General Meeting. Salt Lake City. 2002. poster.
San Diego Microbiology Group Annual Meeting. 2002. speaker.
American Society for Microbiology - General Meeting. Orlando. 2001. invited speaker.
University of Hawaii, Manoa. Microbiology Dept. 2001. invited speaker.
University of Massachusetts, Amherst. Microbiology Dept. 2001. invited speaker.
American Society of Limnology and Oceanography. 2001. speaker.

Students mentored at SDSU (underrepresented minority student *)

Undergraduates:

Linda Wegley (CMB; 2001-2003), Mike Parks (CMB; Fall 2001), Fernando Ivan Zurito* (CMB; Fall 2001), Adrianne Holman (CMB; Fall 2001), Joanalyn Barcas (CMB; Fall 2001), Regina Hernandez* (CMB; Fall 2001), Gordafaried Deyanat-Yazdi (CMB; 2001), Masturah Mojadedi (CMB; Spring 2002), Maren Spillane (CMB; Summer 2002-Spring 2003), Serena Telles (CMB; Spring 2003), Heather Balsley (CMB; Spring & Summer 2003), Gina Stanton (CMB; Spring 2003), Suzanne Carlson (CMB; Spring 2003), Talisha Allen-Nelson (CMB; Spring 2003)*, Danielle Augustin (CMB; Spring 2003)*, Julie Roark (CMB; Summer 2003), Emiko Sano (CMB; 2003-2004), Marc Matanza (CMB; Fall 2003), David Bangor (Math; 2003-), Marina Teissere (CMB; 2004), Morrigan Shaw (Bridges Program, 2004-2005)*, John Boreham (CMB; 2005), Tuong Tran (CMB; 2005), Betty Chau (CMB; 2005-), Jesimel "Jesi" Marcelo (CMB; 2006-2007)*


Doctoral Students: Davey Kline (Marine Bio; SIO;2001-2005), Mya Breitbart (CMB; 2001-2006), Veronica Casas* (CMB; 2003-2005; moved to Maloy lab), Beltran Rodriguez
Brito (Comp Sci; 2003-), Angela Cone (rotation student, Fall 2001), Florent Angly (Comp Sci; 2005-), Steve Rayhawk (Comp Sci; 2005-)

Foreign Exchange Graduate Students: Florent Angly (Computer Sciences; France; 2004-2005), Mohammed Farook Mohammed Fairoz (Coral reef microbiology; Sri Lanka; 2005-)


Post-docs and Technicians

Student Presentations and Awards
Florent Angly - American Society of Limnology and Oceanography. Santa Fe, NM. 2007. speaker.
- Metagenomics meeting at CalIT2. San Diego, CA. 2006. poster. travel scholarship winner!
- San Diego Microbiology Group Annual Meeting. 2006. poster.
- ACSESS Computational Sciences symposium. 2006. poster.

- Undergraduate Research Symposium. SDSU. 2004. poster. 3rd place.
Mya Breitbart - Environmental Protection Agency STAR Fellowship 2003-2006.
- ASLO Annual meeting. 2006. poster.
- University of South Florida. 2005. invited speaker.
- Bermuda Biological Research Station. 2005. invited speaker.

10 November, 2007
- Oceans 2003. poster.
- American Society of Microbiology Annual Meeting. 2003. poster
- California State University Student Research Competition. 2003. speaker.
- American Society of Limnology and Oceanography. 2003. speaker
- TIGR/ASM Small Genomes. 2003. poster
- American Geophysical Union. 2003. poster
- American Society for Microbiology. 2002 poster.

Angela Cone - American Society of Limnology and Oceanography. 2002. poster.

- SDSU Undergraduate Symposium. 2006. poster. First Prize!
- West Coast Biological Sciences Undergraduate Research Conference. Point Loma Nazarene College. 2006. poster.

Srividya Dasari - San Diego Microbiology Group Annual Meeting. 2006. poster.
- Metagenomics meeting at CalIT2. San Diego, CA. 2006. poster.
- San Diego Microbiology Group Annual Meeting. 2006. speaker.

- Metagenomics meeting at CalIT2. San Diego, CA. 2006. poster.
- San Diego Microbiology Group Annual Meeting. 2006. speaker.

Mike Furlan - Texas/Evergreen Phage Meeting. 2006. poster.
- San Diego Microbiology Group Annual Meeting. San Diego. 2007. poster. FIRST PRIZE!

Evolutionary Biology Joint Doctoral Proposal:


Linlin Li - Metagenomics meeting at CalIT2. San Diego, CA. 2006. poster.


Kristen Marhaver - ASLO Annual Meeting. Honolulu, HI. 2006. speaker. Outstanding Student Paper Award!

Mohammed Farook Mohammed Fairoz - non-traditional in Sri Lanka; 2005
- International meeting of coral reef managers. Cozumel, Mexico. 2006. speaker.
- International Society for Reef Studies meeting. Bremen, Germany. 2006. speaker.


Olga Pantos - ASLO Annual meeting. 2006. poster.

Steve Rayhawk - Texas/Evergreen Phage Meeting. 2006. poster.

- Texas/Evergreen Phage Meeting. 2006. speaker and poster.


Jennifer Smith - collaborator from NCEAS/UCSB
  > Best young investigator presentation!
- American Society of Limnology and Oceanography. 2006. poster.

- Association for Women in Science Community College Scholarship. 2005.
- Psi-Beta Psychology Honor's Scholarship. 2005.
- American Society for Microbiology Undergraduate Research Fellowship. 2005.
- Bridges to the Future Minority Biomedical Research Program. 2005.

- ASM Annual meeting. Atlanta, GA. 2005. poster.

Tuong Tran - San Diego Microbiology Group Annual Meeting. San Diego. 2006. poster.

- Metagenomics meeting at CalIT2. San Diego, CA. 2006. poster.

- Metagenomics meeting at CalIT2. San Diego, CA. 2006. poster.
- ASLO Annual meeting. 2006. participant.
- International travel award from SDSU College of Sciences. 2005.
- California State University Student Research Competition. 2003. speaker.

MICHAEL GEORGE SIMPSON

Contact:
Phone: 619.594.4479
Fax: 619.594.5676
Email: msimpson@sunstroke.sdsu.edu

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Florida</td>
<td>1974-1976</td>
<td>BS</td>
<td>Botany</td>
</tr>
<tr>
<td>University of North Carolina-Chapel Hill</td>
<td>1976-1979</td>
<td>MS</td>
<td>Botany</td>
</tr>
<tr>
<td>Duke University</td>
<td>1979-1983</td>
<td>PhD</td>
<td>Botany</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Date</th>
<th>Major Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albright College</td>
<td>Assistant Professor</td>
<td>1983-1986</td>
<td>Biology</td>
</tr>
<tr>
<td>San Diego State University</td>
<td>Associate Professor</td>
<td>1986-1990</td>
<td>Biology</td>
</tr>
<tr>
<td>San Diego State University</td>
<td>Professor</td>
<td>1990-present</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Research Grants:
None at present

Research Fellowships:
None

Papers Presented at Scientific Meetings (past five years):


Symposium Presentations:

Floral morphology, anatomy, and character evolution in the Commelinid monocots.

Invited Seminars:

Phylogeny and evolution of the Bloodworts (Haemodoraceae) from a combined molecular/morphological analysis. Cornell University, 7 November 2006.
Department of Botany, University of California, Davis. 3 November 1989. "Phylogeny of the monocotyledons."
Department of Biology, California State University-Fullerton, Fullerton, CA. Dec. 1987. "Evolution and classification of the Haemodoraceae (Bloodworts)."
Department of Botany, National Museum of Natural History, Smithsonian Institution, July 1982. "Evolution and Systematics of the Haemodoraceae"

Professional Activities and Service:

Society Affiliations:
American Society of Plant Taxonomy
California Native Plant Society

Articles in Refereed Proceedings and Journals:


Book:

Contact Information:
Phone: 619-594-7036
Fax: 619-594-5676
Email: ewaters@sciences.sdsu.edu

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Degree</th>
<th>Year Awarded</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington Univ.</td>
<td>Ph.D.</td>
<td>1993</td>
<td>Evolutionary Biology</td>
</tr>
<tr>
<td>North Carolina State U.</td>
<td>M.S.</td>
<td>1986</td>
<td>Botany</td>
</tr>
<tr>
<td>Grinnell College</td>
<td>B.A.</td>
<td>1983</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Date</th>
<th>Major Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego State University</td>
<td>Assistant Prof.</td>
<td>2002- Present</td>
<td>Biology</td>
</tr>
<tr>
<td>Diversa Corporation</td>
<td>Scientist</td>
<td>2000-2002</td>
<td>Bioinformatics</td>
</tr>
<tr>
<td>Marquette University</td>
<td>Assistant Prof.</td>
<td>1997-1999</td>
<td>Biology</td>
</tr>
</tbody>
</table>

Research Grants:

Funded External Research Grants:

CSUPERB Towards identifying novel genes and pathways in plant cold and freezing stress tolerance $13,000 for 18 months (end date May 31 2008)

CSUPERB Thermal tolerance in Arabidopsis thaliana: Undergraduate Research in Plant Biotechnology. $10,000 for one year (end date May 31 2005).

NSF POWRE Origin of the Plant Small Heat Shock Proteins $181,496 for two years (end date Sept. 30 2004).

Funded Internal Research Grants:


Evolutionary Genomic Studies of Californian Arabis species. Faculty Development Program Committee $5,000 Spring 2005.


Research Fellowships:
Young Investigators Fellowship for participation in US-Japan Binational Workshop on Molecular Evolution, Hayama, Japan, August 1995.

Post Doctoral Fellowship, NSF Research Training Group in the Analysis of Biological Diversity, University of Arizona. 1993-1995,

Morris B. Rittner Fellowship, Washington University.

National Institute of Health Trainee in Genetics, Washington University.

**Papers Presented at Scientific Meetings (past five years):**


**Symposium Presentations:**


The origin of the small heat shock proteins in plants. Workshop: Small HSPs: the forgotten chaperones. First International Congress on Stress Responses in Biology and Medicine Quebec Canada September 2003

Evolution Symposium. The Botanical Society of America Meeting, Montreal Canada, August, 1997


**Invited Seminars:**


The heat shock response in *Funaria hygrometrica*: Molecular Evolution and Genomics. Department of Biology, University of San Diego, October 1999.


The heat shock response of *Funaria hygrometrica*. Department of Biology, University of North Dakota. September 1998.


A phylogenetic approach to the evolution of the heat shock response in plants. Laboratory of Plant Molecular Biology Kyoto University, Kyoto, Japan. August 1995.

Professional Activities and Service:

Society Affiliations:
American Association for the Advancement of Science
Association of Women in Science
American Society of Plant Biologists
Society for the Study of Molecular Biology and Evolution

Articles in Preparation:


Articles Under Review:

Starrett J. and Waters E. Positive natural selection has driven the evolution of the Hsp70s in *Digueti* spiders. Under Review: Biology Letters

Waters, E and Aevermann, BD. Comparative Genomic Analysis of the *Oryza sativa* and *Arabidopsis*

Articles in Refereed Proceedings and Journals:
Renner, T and Waters E. Comparative genomic analysis of the HSP70s in five diverse algal species. Cell Stress & Chaperones. Accepted for Publication


**Patent Applications:**


ROBERT W. ZELLER

Contact:
Phone: 619 594 6458
Fax: 619 594 5676
Email: rzeller@sciences.sdsu.edu
Web Page: http://www.bio.sdsu.edu/faculty/zeller.html

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston University</td>
<td>1984-1988</td>
<td>B.A.</td>
<td>Biology</td>
</tr>
<tr>
<td>UC San Diego</td>
<td>1995-2000</td>
<td>Postdoc</td>
<td>Developmental Biology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Date</th>
<th>Major Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego State University Embryology Course, Woods Hole</td>
<td>Asst. Prof.</td>
<td>2001-Pres</td>
<td>Developmental Biology</td>
</tr>
<tr>
<td>University of California, Los Angeles</td>
<td>Asst. Prof.</td>
<td>1998-2002</td>
<td>Developmental Biology</td>
</tr>
</tbody>
</table>

Research Grants:

Funded:
NSF IBN0347937: “CAREER: Development of the Ascidian Peripheral Nervous System”

CSUPERB Faculty seed grant. “A Bioinformatics Approach to Study Gene Regulatory Networks in Ascidian Embryos.” $15,000 2002


Pending:


Fellowships and Awards:
1984-1988 Boston University Trustee Scholar.
1987 Elected to Phi Beta Kappa.
1988 Graduated Summa cum laude with Distinction in Biology from Boston University.
1988-1992 NIH NRSA Graduate Student Training Grant NIH 5 T32 GM07616, Caltech.
1993-1994 ONR AASERT Supplemental Grant N00014-93-1-1400, Caltech.
1994-1998 NIH NRSA Postdoctoral Fellowship NIH 1 F32 GM16843-01, UCSD.
2006 San Diego State University Department of Biology Teacher-Scholar Award.

Papers Presented at Scientific Meetings (past five years):

**Invited Seminars (past 5 years):**

2. Scripps Institution of Oceanography, La Jolla, CA. April, 2006.

**Professional Activities and Service:**
National Science Foundation Panel Member, Oct., 2006.
Ad hoc reviewer for Development.
Ad hoc reviewer for Developmental Biology
Ad hoc reviewer for Developmental Dynamics
Ad hoc reviewer for Evolution and Development
Ad hoc reviewer for genesis.
Ad hoc reviewer for Nucleic Acids Research.
Ad hoc reviewer for National Science Foundation.
Ad hoc reviewer for Natural Sciences and Engineering Research Council of Canada (NSERC)

**Society Affiliations:**
Society for Comparative and Integrative Biology.
Society for Developmental Biology
American Association for the Advancement of Science

**Articles in Refereed Proceedings and Journals:**

10 November, 2007


506
Appendix J. University of California, Riverside Faculty Vitae
MICHAEL FRED ALLEN

Contact:
- Phone: 951-827-5494
- Fax: 951-827-4265
- Email: michael.allen@ucr.edu

Education:
- Ph.D. Botany University of Wyoming 1980
- M.S. Botany University of Wyoming 1977
- B.S. Biology Southwestern College, KS 1974

Faculty Positions and Rank Held:
- Chair, Department of Plant Pathology, University of California-Riverside, 2004-present
- Director, Center for Conservation Biology, University of California-Riverside. 1998-present
- Senior Professor, Depts of Plant Pathology and Biology, University of California-Riverside 2003-present
- Professor, Depts of Plant Pathology and Biology, University of California-Riverside. 1998-present
- Professor, Dept of Biology, San Diego State University. 1991-1999
- Program Officer, Division of Environmental Biology, National Science Foundation. 1993-1995.
- Associate Professor, Dept. of Biology, San Diego State University. 1988-91
- Research Assoc, Dept. of Plant Pathology, University of Nebraska. 1980-1981.

RESEARCH ACTIVITIES

Grants in Progress:
- The nitrogen cycle of a semi-arid grassland: A fungal loop?. $120,000 (2005-6), National Science Foundation, R.L. Sinsabaugh PI, M.F. Allen, S.L.Collins, and D.T. Hanson, Co-PIs.
- Impact of hurricane Wilma, a large "infrequent" enrichment disturbance on tropical seasonal forest: Establishing the legacy effect on the post-disturbance mosaic. $94,236 (2006-2008). National Science Foundation. M.F. Allen

Grants Completed:


Western Riverside County and Sierra Nevada Wildlife Assessment Project. $331,032 (2002-2004). California Department of Fish and Game. M.F. Allen.

Water dynamics and management during the establishment of tree species in agroforestry systems of the Yucatan dry tropics. $24,987 (2001-2), UC-MEXUS. M.F. Allen, J.I. Querejeta, and J. Jimenez (UADY).

Biological monitoring-habitat relationships development, and working group establishment. $331,000 (2002-4), Coachella Valley Association of Governments. M.F. Allen.


A biodiversity survey of poorly-known taxa from Quintana Roo, Mexico. $15,000 (2000-2001) UC MEXUS-CONACYT. A. Gomez-Pompa and M.F. Allen.


Development of methods for tracking genes of parasitic and mutualistic fungi in a chaparral ecosystem. SDSU Grant-in-aid. $2,000 (1/1/89-6/30/90) M.F. Allen.
Reestablishment of mycorrhizae on Mount St. Helens. USDA Forest Service. $1,000 (6/90-12/90). M.F. Allen.
A comparison of current and alternative practices in roadside revegetation. CALTRANS. $50,000 (1/89-12/90) E.B. Allen and M.F. Allen.


Establishment of and plant responses to exotic VA mycorrhizal fungi. USU University Faculty Research Grant $10,613 (1986-87) M.F. Allen.


PROFESSIONAL AWARDS
American Association for the Advancement of Science Fellow 2005
Southwestern College Natural Sciences Hall of Fame, 2003.
Chevron Conservation Award-1999
Mycological Society of America Graduate Fellowship-1979.
PROFESSIONAL ACTIVITIES

Member: Ecological Society of America, Soil Science Society of America, Society for Ecological Restoration, British Mycological Society, Society for Conservation Biology, Mycological Society of America, American Phytopathological Society, American Association for the Advancement of Science, American Institute of Biological Sciences, Sigma Xi, Torrey Botanical Club.

Program Director, National Science Foundation, 1993-1995. Program Director, Long-Term Programs in Environmental Biology. Programs Managed: Ecosystems Studies, Long-Term Ecological Research (LTER), Land-Margin Ecological Research (LMER), Long-Term Research in Environmental Biology (LTREB), Conservation and Restoration Biology (CRB).


Advisory Panel for the Evolutionary and Population Ecology Program, Division of Environmental Biology, National Science Foundation, 2006.

Chair, Scientific Review panels for Multiple Species Habitat Conservation Plans for western Riverside County, Northern and Eastern Colorado Desert.

Participant, in North American Carbon Program, US-Mexico Science Coordination Workshop, October 2004, Mexico City

Participant, National Center for Ecological Synthesis and Analysis workgroup on Microbes and Ecosystems: 2004-present, Santa Barbara.

Participant in workshop on Use of molecular techniques in Ecology, Sponsored by the U.S. National Science Foundation and European Union, October 1999.

Participant in workshop on Roots. 5th New Phytologist Symposium sponsored by GCTE (Global Change in Terrestrial Ecosystems), Townsend, TN, October 1999.

Advisory Panel for EPSCoR Program, National Science Foundation, 2005.


Panelist, Workshop of Conceptual Issues in Restoration Ecology, National Science Foundation, NCEAS, Santa Barbara, CA April 1996.


Advisory Panel for the Ecology Program, Division of Environmental Biology, National Science Foundation, 1996-2000.


Advisory Panel for the US Department of Agriculture National Research Initiative, Ecosystem Sciences. 1991


Panelist, Workshop on the influence of increasing CO2 on belowground processes, Michigan Biological Station, May 1993.


Editorial Board, The Biology and Fertility of Soils.
Associate Editor, *Vadose Zone*, 2006-present.

**PUBLICATIONS**

**Books:**

**Referred Papers and Book Chapters:**


Osornio. Lowland Maya Area: Three millennia at the human-wildland interface. Haworth Press, N.Y.


515


DOUGLAS L. ALTSHULER

CONTACT
Department of Biology  Phone: (951) 827-3937
University of California, Riverside  Fax: (951) 827-4286
Riverside, California  92521  E-mail: douga@ucr.edu

EDUCATION AND TRAINING
1994 - 1996  M.Sc. in Biology, Purdue University. Advisor: Richard D. Howard

PROFESSIONAL APPOINTMENT
2006 – present: Assistant Professor, Department of Biology, University of California, Riverside.

AWARDS, FELLOWSHIPS, AND RESEARCH GRANTS
2007    University of California, Regents’ Faculty Fellowship
2006    George A. Bartholomew Award for Research in Comparative Physiology (SICB) Invited Participant, Neural Systems and Behavior Course (Marine Biol. Lab.)
2004    National Science Foundation, Symposium Funding
2003    Center for Field Research, Earthwatch Grant
2002    National Institutes of Health, National Service Research Award
2001    Austin Sierra Club, John Muir Award for Outstanding Service Invited Participant, Comparative Neotropical Biology Course (OTS/STRI)
2000    University of Texas, Brunton University Fellowship
1999    National Science Foundation, Dissertation Improvement Grant
1998    University of Texas, Continuing Fellowship
1998    Center for Field Research, Earthwatch Grant
1998    Explorers Club, Exploration Fund
1998 – 2001 University of Texas, Summer Graduate Fellowships (four separate awards)
1998 - 1999 Sigma Xi, Grants-in-aid-of-Research (two separate awards)
1997    University of Texas, Travel Fellowship
1997 - 2001 University of Texas, Research Support Grants (five separate awards)
1996    Smithsonian Tropical Research Institute, Short-term Fellowship
1994    Purdue University, Frederick N. Andrews Fellowship

TEACHING AND TRAINING
Undergraduate Courses: Functional Anatomy of the Vertebrates, Comparative Biomechanics Graduate Course: Evolutionary Physiology
Postdoctoral sponsorship: K. Welch (Summer 2007 – present)

UNIVERSITY SERVICE
Biology Award Committee
Biology Seminar Committee
Graduate Program Seminar Committee
**INVITED PRESENTATIONS (last five years)**

2007
- Department of Earth and Biological Sciences, Loma Linda University
- Bartholomew Award Lecture, Society for Int. & Comp. Biol. (Phoenix, AZ)
- Center for Conservation and Research for Endangered Species, San Diego Zoo
- Department of Ecology and Evolutionary Biology, UCLA
- Department of Ecology, Evolution, and Marine Biology, UC Santa Barbara

2006
- Department of Biology, California State University, Fresno
- Department of Biology, Florida State University
- Department of Biology, Harvey Mudd College
- Department of Biology, State University of New York, New Paltz
- Department of Biology, Union College
- Department of Biology, University of California, Riverside
- Department of Biology, University of Notre Dame
- School of Natural Sciences, University of California, Merced

2005
- Department of Biology, Colorado State University
- Department of Biology, University of North Carolina
- Society for Integrative and Comparative Biology (San Diego, CA)

2004
- Department of Ecology and Evolutionary Biology, UC Irvine
- International Congress of Vertebrate Morphology (Boca Raton, FL)
- Festival of Hummingbirds (Tucson, AZ)

2003
- Department of Biology, UC Riverside
- Pasadena Audubon Society
- Society for Experimental Biology (Southampton, United Kingdom)

2002
- Association for Tropical Biology (Panama City, Panama)
- Oakland Zoo

**REVIEWING ACTIVITIES**

Academic Journals: *American Naturalist; Biotropica; Entomologia generalis; Journal of Experimental Biology; Journal of Zoology; Nature; PLoS Biology; Proceedings of the National Academy of Sciences USA; Proceedings of the Royal Society of London B; Science; Quarterly Review of Biology; Wilson Bulletin*

Granting Agencies: Earthwatch Institute; National Geographic Society; National Science Foundation

**PROFESSIONAL SOCIETIES**

American Association for the Advancement of Science
American Society of Naturalists
International Society for Neuroethology
Society for Integrative & Comparative Biology
Society for Neuroscience

**PEER-REVIEVED PUBLICATIONS**

In Review

2007


**OTHER PUBLICATIONS**

2006  
[Book Review]


2003  
[Commentary]

1999  
MARK A. CHAPPELL

Contact:
Phone: 951 827-7709
Fax: 951 827-4286
Email: chappell@ucr.edu
Web Page: http://www.biology.ucr.edu/people/faculty/Chappell.html

RESEARCH
Evolutionary and ecological physiology using a variety of organisms ranging from insects to birds and mammals. Major research topics include adaptation to temperature and high altitude, limits to energy metabolism, and the energy costs of activity in ecologically-relevant contexts.

EDUCATION
1977 Ph.D. – Biology, Stanford University, Stanford, California
1973 B.A. – Biology, University of California, Santa Cruz, California

POSITIONS HELD
Professor I, II, III, IV 1992-Present University of California, Riverside – Department of Biology

Department Vice Chair 2003-Present University of California, Riverside – Department of Biology

Associate Dean 2001-2003 University of California, Riverside – College of Natural & Agricultural Sciences

Department Chair 1994-1998,1999-2001 University of California, Riverside – Department of Biology

Associate Professor I, II 1986-1982 University of California, Riverside – Department of Biology

Staff Scientist Fall 1981, Summer 1985 University of California Riverside – White Mountain Reserve

Assistant Professor II, III, IV 1980-1986 University of California, Riverside – Department of Biology

Visiting Assistant Professor 1980 University of California, Riverside – Department of Biology

Postdoctoral Researcher 1979-1980 University of California, Los Angeles

Postdoctoral Researcher 1978 University of Alaska, Fairbanks and Naval Arctic Research Laboratory

PROFESSIONAL SERVICE
Editorial board service:
Handling Editor, Oecologia, continuing since 2001
Advisory Board, Journal of Comparative Physiology B, continuing since 2000
Editorial Board, Physiological and Biochemical Zoology, August 2007 - Present

Ad hoc manuscript reviews (more than 170 since 2003) for 31 journals, including (incomplete list):

Grant proposal reviews
SOFTWARE

1. 2000-present; most recent upgrades August 2007
   Macintosh Platform Software. I continue to support and upgrade a package of data acquisition and analysis programs available as 'freeware' on the Web (http://warthog.ucr.edu). Although somewhat specialized for studies of gas exchange physiology, the programs are widely applicable to a variety of uses involving recording from scientific instruments and then analyzing results in a time-based graphical (“stripchart”) format. Known users number at least 40 worldwide (there may be more since I do not keep track of downloads), and the software is used for both teaching and research. During the past few years, major accomplishments include
   • Addition of several new acquisition and analysis functions, including telemetric heart-rate monitoring
   • Interfacing to several new analog-to-digital boards
   • A n upgraded application for 2-dimensional motion analysis from video records (position, speed, acceleration, distance, etc.)
   • Porting to a new operating system (Mac OS X in various versions), which required extensive re-writing of all of three programs (the older versions continue to be supported).

JOURNAL ARTICLES (Technical/Refereed)


10. 1983  Chappell, M. A.  Metabolism and thermoregulation in desert and montane grasshoppers.  

31:1088-1093.

and temperature regulation of California gull chicks (Larus californicus) in a desert rookery.  
Physiological Zoology 57(2):204-214.

13. 1984  Chappell, M. A.  Temperature regulation and energetics of the solitary bee Centris Pallida during 

14. 1984  Chappell, M. A.  Maximum oxygen consumption during exercise and cold exposure in deer mice, 


16. 1984  Chappell, M. A. and D. S. Holsclaw.  Effects of wind on thermoregulation and energy balance in 

17. 1984  Chappell, M. A.  Thermoregulation and energetics of the green fig beetle (Cotinus texana) during 

18. 1985  Chappell, M. A.  Effects of ambient temperature and altitude on ventilation and gas exchange in 
deer mice (Peromyscus maniculatus).  Journal of Comparative Physiology B 155:751-758.

19. 1986  Hayes, J. P. and M. A. Chappell.  Effects of cold acclimation on maximum oxygen consumption 
during cold exposure and treadmill exercise in deer mice, Peromyscus maniculatus.  Physiological 
Zoology 59:473-481.


and temperature effects.  Journal of Comparative Physiology B 157:227-235.

23. 1987  Ellis, T. M. and M. A. Chappell.  Metabolism, temperature relations, maternal behavior, and 
reproductive energetics in the ball python (Python regius).  Journal of Comparative Physiology B 
157:393-402.

24. 1987  Chappell, M. A. and K. R. Morgan.  Temperature regulation, endothermy, resting metabolism, and 
flight energetics of tachinid flies (Nowickia sp.).  Physiological Zoology 60:550-559.

(Peromyscus maniculatus):  physiology of beta-globin variants and alpha-globin recombinants. 


In Press


In Review


75. 2007 Wiersma, P., Chappell, M.A., Williams, J.B. Cold and exercise-induced peak metabolic rates in tropical birds. Submitted to PNAS. 33 ms. pages.


JOURNAL ARTICLES (Technical/Non-Refereed)


INVITED CHAPTERS/CHAPTERS IN EDITED BOOKS (Technical/Refereed)

• 1986 Chappell, M. A. Physiological ecology (animal). In Encyclopedia of Science and Technology, 6th ed. McGraw-Hill. 6 pages


• 2002  Chappell, M. A.  Chapter 40, Introduction to Animal Structure and Function.  In: Biology, 6th edition (Neil Campbell, editor), pages 844-847. This textbook is for college-level life science majors (this is the most popular such text worldwide). I provided the text, including several new figures.

• 2002  Chappell, M. A.  Chapter 41: Animal Nutrition.  In: Biology, 6th edition (Neil Campbell, editor), pages 850-870. This textbook is for college-level life science majors (this is the most popular such text worldwide). I provided complete chapter texts, including several new figures.

• 2002  Chappell, M. A.  Chapter 42: Circulation and Gas Exchange.  In: Biology, 6th edition (Neil Campbell, editor), pages 871-899. This textbook is for college-level life science majors (this is the most popular such text worldwide). I provided complete chapter texts, including several new figures.

• 2002  Chappell, M. A.  Chapter 44: Controlling the Internal Environment.  In: Biology, 6th edition (Neil Campbell, editor), pages 925-954. This textbook is for college-level life science majors (this is the most popular such text worldwide). I provided complete chapter texts, including several new figures.

BOOK REVIEWS (Technical/Non-Refereed)


OTHER

NORMAN C. ELLSTRAND

CONTACT:

Phone: 1-951-827-4194
Email: NORMAN.ELLSTRAND@UCR.EDU
Mail: Department of Botany & Plant Sciences, University of California, Riverside, California 92521-0124, U.S.A.

POSITIONS:

Professional track
1979-86 Assistant Professor of Plant Ecology, UCR
1986-91 Associate Professor of Genetics, UCR
1991-present Professor of Genetics, UCR

Administrative
1994-96 Vice-Chair, Department of Botany and Plant Sciences, UCR
1996-97 Chair, Conservation Biology Program, UCR
1997-98 Founder & Acting Director, Center for Conservation Biology, UCR
2000-03 Founder & Acting Director, Biotechnology Impacts Center, UCR
2003-present Director, Biotechnology Impacts Center, UCR

Visiting, Adjunct, Etc.
1978-79 Research Associate, Duke University
1981 Visiting Research Associate, University of Canterbury, New Zealand
1987 Visiting Research Associate, University of California Berkeley
1992 Visiting Scientist, Rancho Santa Ana Botanic Garden
1993 Visiting Scientist, Uppsala University, Sweden
1998-99 Visiting Researcher, University of California Irvine
2005-06 Visiting Professor, Keck Graduate Institute of Applied Life Sciences
2006-present Adjunct Professor, Keck Graduate Institute of Applied Life Sciences
2007-present Research Associate, Rancho Santa Ana Botanic Garden

EDUCATION:

1974 B. S. in Biology with highest honors -- University of Illinois, Urbana
1978 Ph.D. in Biology -- University of Texas, Austin
AWARDS AND HONORS:

1974-77 University Fellowship, University of Texas
1976-78 NSF Predoctoral Fellowship for Study in the Field Sciences
1977-78 PHS Genetics Training Grant
1981 University of California Regents Junior Faculty Fellowship
1984 Researcher of the Year, California Rare Fruit Growers
1988 Commencement speaker, Department of Botany, University of California, Berkeley
1988 Eminent Ecologist, W. K. Kellogg Biological Station
1992 Award of Honor, California Cherimoya Association
1992 National Science Foundation Mid-Career Fellow
1993 J. William Fulbright Fellow
1997 Graduate, ESCOP/ACOP Leadership Development Program
1998 Distinguished speaker, Ecological Genetics Group Meeting, St. Andrews, UK
2000 Elected Fellow of the American Association for the Advancement of Science
2003 Keynote speaker, European Science Foundation Meeting on Introgression from Genetically Modified Plants into Wild Relatives and its Consequences, Amsterdam
2004 First Annual Darwin’s Birthday Speaker, Victory Valley College
2004 Manley Lecture, University of California, Santa Barbara
2004 Dissertation Advisor/Mentoring Award, University of California, Riverside
2005 Staniforth Lecture, Iowa State University
2005 Keynote speaker, North Central Weed Science Society Meeting on Crop Gene Flow and the Occurrence and Consequences of Gene Introgression between Crops and Their Sexually Compatible Relatives
2006 ISIHighlyCited, 2006-present
2007 University of Virginia, Department of Biology, Annual Graduate Students and Post-doctorals Speaker for 2007

CURRENT TEACHING:

Human Heredity (for non-majors)
Risks and Benefits of Agricultural Biotechnology
Applied Evolutionary Genetics

HONORARY SOCIETIES:

Phi Beta Kappa, Phi Kappa Phi, Sigma Xi
INVITED SYMPOSIUM PRESENTATIONS (also, see keynotes and named lectures above in 
“Awards and Honors”):

1983 Paternal fitness and gene flow measurements using electrophoretic analysis. 
Ecological Society of America/Botanical Society of America

1987 Long distance romances: the evolutionary significance of interpopulational gene 
flow. Society for the Study of Evolution/American Society of Naturalists

1987 The long and the short of it: the impact of plant mating systems in population 
agrogenetics. 
Ecological Society of America/Botanical Society of America

1988 Using paternity analysis to measure the risk of escape of engineered genes and to 
develop strategies for reducing that risk. Association for Tropical Biology, 
Organization for Tropical Studies, American Society of Plant Taxonomists, & 
Botanical Society of America

1990 Gene flow among populations. International Union of Forestry Research 
Organizations

1990 Gene flow by pollen and plant conservation genetics. Royal Swedish Academy of 
Sciences

1995 Will transgenes escape into natural populations? Botanical Society of America

1996 Thinking beyond transgenes. Botanical Society of America

1998 Some ecological genetic consequences of gene flow between crops and their wild 
relatives. Ecological Genetics Group (EGG) Meeting.

2000 Hybridization as a stimulus for the evolution of invasive success in exotic plants. 
National Academy of Sciences

2001 Crop transgenes in natural populations, American Chemical Society

2001 Any risks for transgenic insects? Lessons from two decades of thinking 
about transgenic plants. Entomological Society of America

2002 Gene flow from transgenic crops to wild relatives: what have we learned, what do 
we know, what do we need to know? USDA sponsored Transgene Flow Workshop. Ohio 
State University, Columbus.


2003 After centuries for introgression from domesticated plants into wild relatives, what’s next?
   European Science Foundation. Amsterdam.

2003 When crop (trans)genes wander, should we worry? Gordon Conference on Agricultural Science, Ventura, California

REVIEWER AND CONSULTANT:

Editorial Boards:
Molecular Ecology

For numerous public and private granting agencies:
Agricultural and Food Research Council (UK) American Philosophical Society Council for International Exchange of Scholars Environmental Protection Agency Fulbright Program Genome Research Programme of the Academy of Finland Hong Kong Research Grants Council Israel Science Foundation J. S. Guggenheim Memorial Foundation Loma Linda University Faculty Research Committee MONTS EPSCoR National Aeronautics & Space Administration National Geographic Society National Science Foundation Natural Environment Research Council (UK) Natural Sciences and Engineering Research Council of Canada Organization for Tropical Studies, Inc. Seaver Science Research Fund United States Department of Agriculture Whitehall Foundation

For publishing houses:

For dozens of scholarly, professional, and popular periodicals
For governmental organizations, NGOs, and other public policy bodies:

Boulder [Colorado] County Commissioners' Office
Californians for GE-Free Agriculture
Center for Food Safety
Chromatin, Inc
Council for Environmental Cooperation
Environmental Commons
Environmental Defense Fund
Friends of the Earth
Greenpeace
GE Free Sonoma
Grocery Manufacturers Association
Hybridgene, Inc
International Center for Technology Assessment
Lundberg Family Farms
Mark M. Mahady & Associates, Inc.
Monsanto Company
National Research Council
National Wildlife Federation
Occidental Arts and Ecology Center
SLO GE Free
Pew Initiative on Agriculture and Biotechnology
The Edmonds Institute
Union of Concerned Scientists
U. S. Congressional staff
U. S. Congress Office of Technology Assessment
U. S. Department of Agriculture
Weyerhaeuser Company
MAJOR (>$10,000) RESEARCH GRANTS AND CONTRACTS:

1980-84 Co-principal investigator, USDA "Effects of recombination rate on selection response in grain sorghum" (w/ K. Foster) $80,000

1983-85 Principal investigator, National Science Foundation "Spatial, genetic, and temporal correlates of realized paternal gene flow in natural populations of wild radish, Raphanus sativus" $43,400

1985-90 Principal investigator, National Science Foundation "Spatial, genetic, and temporal correlates of realized paternal gene flow in natural populations of wild radish, Raphanus sativus" $194,090

1986-89 Collaborating investigator, National Science Foundation "Male fitness components in wild radish, Raphanus sativus (Brassicaceae)" (w/ M. Stanton) $133,193

1988-91 Co-Principal investigator, UC Biotechnology Research & Education Program Training Grant, "Recombinant plants and bacteria in agricultural biotechnology: stability of their genes in the environment" (w/ D. Focht, D. Cooksey, W. Dawson, & J. Menge) $340,640

1991-96 Principal investigator, Metropolitan Water District of Southern California, "Conservation biology of five rare plant species at the Shipley-Skinner Reserve" $95,000

1992-93 Co-Principal Investigator, Skogs-och Jordbrukets Forskningsråd (Sweden), "Evaluating the opportunities for the escape of engineered crop genes", (w/ H. Prentice) SKr 92,795

1994-95 Principal Investigator, USDA "Potential for crop transgene escape and persistence in weedy populations", $31,981

1994-96 Co-Principal Investigator, California Department of Fish & Game "Investigation into the population biology of Dodecahema leptoceras (slender horned spineflower)" $32,630 (w/ R. Whitkus)

1994-96 Co-Principal Investigator, USDA "Genetic and fitness consequences of transplantation in coastal sage scrub", $270,000 (w/ A. Montalvo)

1995-98 Co-Principal Investigator, Metropolitan Water District of Southern California “Genetic and fitness consequences of transplantation in coastal sage scrub” $99,470 (w/ A. Montalvo)

1997-01 Principal Investigator, US EPA “The structure of diversity: implications of reserve design” $272,495

1999-00 Collaborating Investigator, MWD, “Scientific review and research on the MWD Eastside landscaping project” $363,316 (w/ A. Montalvo).

2000-01 Principal Investigator, UC MEXUS, "Biodiversity in maize and teosinte populations: screening for molecular markers to measure genetic variation and gene flow" $14,986.

2000-03 Principal Investigator, USDA “Factors Affecting Gene Flow and Introgression into Natural Populations” $215,000

2001-02 Collaborator, “Coadaptation between California poppy (Eschscholzia californica) and their mycorrhizal symbionts to serpentine soils in the Western Riverside County Multi-Species Reserve and relevance to restoration of populations” $15,000 CNAS MWD Endowment (w/ A. Montalvo)
2002-05 Principal Investigator, USDA “Gene flow potential and establishment of a transgene into cultivated landraces” $300,000

2003-06 Principal Investigator, USDA “Genetic correlates of weediness in cereal rye (Secale cereale)” $140,000

2004-08 Principal Investigator, NSF, “Spatiotemporal dynamics of engineered crops genes: Biological and human constraints and consequences”, $1,545,268

PUBLICATIONS:


Ellstrand NC. 1983. Why are juveniles smaller than their parents? Evolution 37:1091-1094

Ellstrand NC, Foster KW. 1983. Impact of population structure on the apparent outcrossing rate of grain sorghum (Sorghum bicolor). Theoretical and Applied Genetics 66:323-327

selection hypothesis. *Evolution* 38:103-115


Ellstrand NC. 1984. It has been said. *Perspectives in Biology and Medicine* 27:588


Ellstrand NC, Lee JM. 1986. Cherimoyas: Past, present...and quite a future in


Ellstrand NC, Lee JM. 1986. Cherimoya fruit set: Differences among varieties at South Coast Field Station. *California Rare Fruit Growers Newsletter* 18(2):18-19


Ellstrand NC, Lee JM, Keeley JE, Keeley SC. 1987. Ecological isolation and introgression: biochemical confirmation of introgression in an *Arctostaphylos*


Ellstrand NC. 1989. Developing the potential of cherimoya as an ornamental and commercial species for California. 1988-89 Annual Report of Turfgrass & Ornamentals Research, pp. 44-45 Citrus Research Center and Agricultural Experiment Station, University of California, Riverside. University of California Cooperative Extension


Castillo. pp. 81-84 Mexico: CIMMYT


Ellstrand NC. 1998. Faculty favorites: “Instructions to the cook” Fiat Lux 8(2):31


of hybrids between transgenic sugar beet and Swiss chard. *Ecological Applications* 11:142-147


DAPHNE JANICE FAIRBAIRN, B.Sc., Ph.D

Contact:
Dr. Daphne Fairbairn,
Department of Biology,
University of California,
900 University Avenue,
Riverside, California 92521
USA

E-mail: daphne.fairbairn@ucr.edu
Phone: 951 827 4791
Web page: http://www.biology.ucr.edu/people/faculty/Fairbairn.html

PROFESSIONAL BACKGROUND AND QUALIFICATIONS

Degrees received:
1971  B.Sc. (Hons.), Biology, Carleton University, Ottawa, Canada.
1976  Ph.D., Zoology, Institute of Animal Resource Ecology, University of British Columbia, Vancouver, Canada (Supervisor: C. J. Krebs)

Positions held:
1976-77  NSERC Postdoctoral Fellow, Institute of Animal Resource Ecology, University of British Columbia, Vancouver, Canada (Supervisor: W. G. Wellington)
1977-78  Assistant Professor, Department of Zoology, University of Alberta, Edmonton, Canada
1978-80  Research Scientist and Section Head, Biochemical Systematics, Fisheries and Oceans Canada, St. John's, Newfoundland
1980-82  Assistant to the Editor, Canadian Journal of Fisheries and Aquatic Sciences, Fisheries and Oceans Canada
1982-87  Assistant Professor, Department of Biology, Concordia University, Montreal, Quebec, Canada
1987-94  Associate Professor, Department of Biology, Concordia University, Montreal, Canada
1988-89  Visiting Scientist (sabbatical leave), Department of Entomology, University of California, Davis, California
1994-2001  Professor, Department of Biology, Concordia University, Montreal, Canada
1998-2000  Chair, Department of Biology, Concordia University, Montreal, Canada
2001 -  Professor, Department of Biology, University of California, Riverside, California
AWARDS, PRIZES AND SCHOLARSHIPS

Professional awards
Concordia Council on Student Life Teaching Excellence Award (1994)
Faculty of Arts & Science nominee for a Concordia University Research Award (1997)

Prizes and medals
University Medal in Science (1971).

Postdoctoral fellowship
NSERC Postdoctoral Fellowship (1976-77)

Postgraduate scholarship
1967 Science and Engineering Scholarship (1971-75)

Undergraduate scholarships (1967-71)
Ontario Scholarship
Maxwell MacOdrum Scholarship
Dr. F. W. C. Mohr Scholarship
Francis C. C. Lynch Scholarship
James A. Gibson Scholarship
Soil Conservation Society of America Scholarship

PROFESSIONAL CONTRIBUTIONS TO THE ACADEMIC COMMUNITY

Editorial and executive positions:
- Executive Committee of the Canadian Council of University Biology Chairs, 1999-2000
- Secretary, Society for the Study of Evolution, 1997-1999
- Chair, Theodosius Dobzhansky Prize Committee, Society for the Study of Evolution, 1997-1999
- Program Organizer, Joint meeting of the Society for the Study of Evolution, American Society of Naturalists, and Society of Systematic Biologists, Vancouver, Canada, 1998
- Associate Editor, Evolution, 1994 - 1996
- Associate Editor, Ecoscience, 1993 – 1999

Committee membership
- International Affairs Committee of the Society for the Study of Evolution, 2007-

Symposia and workshops organized:
- Integrative Studies of Evolutionary Processes: Symposium sponsored by the Journal of Evolutionary Biology and the European Society for Evolutionary Biology at the annual joint meeting of the Society for the Study of Evolution, the American Society of Naturalists and the Society for Systematic Biology, Stony Brook, NY, June 2006. 8 participants.
- Evolution of Sexual Size Dimorphism: International workshop at Monte Verita, Ascona, Switzerland. Sponsored by the Association for the Study of Animal Behaviour, the Centro Stefano Franscini, the Swiss National Fund, the Swiss Academy of Natural Sciences, the Swiss Zoological Society and the Zoological Museum of the University of Zurich. Jointly organized by W. U. Blanckenhorn, D. J. Fairbairn and T. Székely. August 2005. 44 participants.
- Sexual Selection and the Evolutionary Dynamics of Primary and Secondary Sexual Traits in Insects and Spiders. Symposium at the XXII International Congress of Entomology, Brisbane, Australia, August 2004. 19 participants.
External appraisal committees for academic departments

- Department of Biology, University of Regina, Saskatchewan (Committee Chair) 2000
- Department of Zoology, University of British Columbia 2000
- Department of Biological Sciences, Simon Fraser University, British Columbia 1999

Grant selection committees:


Reviewer for the following granting agencies:

- Natural Sciences and Engineering Research Council of Canada
- Australian Research Council
- Killam Program, Canada Council for the Arts
- National Geographic Society (US)
- Natural Environment Research Council (UK)
- National Science Foundation (USA)
- Natural Environment Research Council (UK)
- Research Council for Earth and Life Sciences (Netherlands)
- South Carolina Experimental Program to Stimulate Competitive Research

Reviewer for the following journals (1998-2007):

- American Naturalist
- Australian Journal of Zoology
- Behavioral Ecology
- Biological Journal of the Linnean Society
- Canadian Journal of Fisheries & Aquatic Sciences
- Canadian Journal of Zoology
- Ecological Entomology
- Ecology
- Entomologia Experimentalis et Applicata
- Ethology
- Evolution
- Evolution and Development
- Evolutionary Ecology Research
- Functional Ecology
- Genetica
- Herpetologica
- Journal of Evolutionary Biology
- Journal of Insect Behavior
- Journal of Genetics
- Nature
- Oecologia
- Oikos
- Proceedings of the National Academy of Sciences
- Proceedings of the Royal Society B
- Quarterly Review of Biology
- Trends in Ecology and Evolution
- Zoology

Reviewer for the following texts:

Research grants (external sources only):

<table>
<thead>
<tr>
<th>grant</th>
<th>year</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSERC Operating Grant (Canada)</td>
<td>1983</td>
<td>$12,720</td>
</tr>
<tr>
<td>NSERC Equipment Grant (Canada)</td>
<td>1983</td>
<td>$10,191</td>
</tr>
<tr>
<td>NSERC Operating Grant (Canada)</td>
<td>1984-87</td>
<td>$45,000</td>
</tr>
<tr>
<td>NSERC Operating Grant (Canada)</td>
<td>1987-90</td>
<td>$60,000</td>
</tr>
<tr>
<td>NSERC Equipment Grant (Canada)</td>
<td>1987</td>
<td>$20,116</td>
</tr>
<tr>
<td>(P.I., with E. Maly, P. Widden)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSERC Operating Grant (Canada)</td>
<td>1990-93</td>
<td>$105,000</td>
</tr>
<tr>
<td>NSERC Research Grant (Canada)</td>
<td>1993-97</td>
<td>$105,000</td>
</tr>
<tr>
<td>NSERC Equipment Grant (Canada)</td>
<td>1993</td>
<td>$19,975</td>
</tr>
<tr>
<td>FCAR Equipe Grant (Quebec)</td>
<td>1994-97</td>
<td>$144,000</td>
</tr>
<tr>
<td>(with J. McNeil [P.I.], P. Albert, D. Roff)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSERC Collaborative Projects Grant (Canada)</td>
<td>1994-99</td>
<td>$390,000</td>
</tr>
<tr>
<td>(with D. Roff [P.I.])</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSERC Research Grant (Canada)</td>
<td>1997-2001</td>
<td>$138,600</td>
</tr>
<tr>
<td>FCAR Equipe Grant (Quebec)</td>
<td>1997-2000</td>
<td>$120,000</td>
</tr>
<tr>
<td>(with J. McNeil [P.I.], P. Albert, D. Roff)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSF DEB-0445140-004</td>
<td>2005-2010</td>
<td>$623,576</td>
</tr>
<tr>
<td>(P.I. with D. Roff [co-PI]*)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This is an equal collaboration: Roff was P.I. until June 2007, Fairbairn is PI through 2010.

Books:


Papers in refereed journals:


**Invited papers in refereed journals:**


73. Roff, D. A. and D. J. Fairbairn. 2007c. Laboratory evolution of the migratory polymorphism in the sand cricket: combining physiology and quantitative genetics. Physiological and Biochemical Zoology 80: 358–369

**Book Chapters:**


**Book Box:**

Published book reviews:


Invited Symposium Presentations:

8. Fairbairn, D. J. 2004. The coevolution of body size in males and females: Rensch’s rule revisited. ASN Vice President’s Symposium, Joint meeting of the Society for the Study of Evolution, Society for Systematic Biologists, and American Society of Naturalists, Fort Collins, CO.


**Contributed Conference Presentations:**


17. Fairbairn, D. J. and D. Yadlowski, 1994. Do threshold traits evolve through shifts in the threshold or through changes in the underlying distribution: a case study of wing dimorphism in the sand cricket, *Gryllus firmus*. Joint meeting of the American Society of Naturalists, the Society for the Study of Evolution, the Society for Molecular Biology and Evolution, and the Society of Systematic Biologists, Athens, Georgia.


44. Roff, D. A. 2007. Laboratory evolution of trade-offs 2: Combining quantitative genetics with functional constraints to predict changes in dispersal ability. Western Evolutionary Biology Meeting, UC Irvine.
45. Fairbairn, D. J. and D. A. Roff. 2007. Laboratory evolution of trade-offs 1: Testing predictions from quantitative genetics on the loss of dispersal capacity. 10th Congress, European Society for Evolutionary Biology, Uppsala, Sweden.
46. Roff, D. A. and D. J. Fairbairn. 2007. Laboratory evolution of trade-offs 2: Combining quantitative genetics with functional constraints to predict changes in dispersal ability. 10th Congress, European Society for Evolutionary Biology, Uppsala, Sweden.

Invited seminars at academic institutions:

1. 1988 Department of Biology, McGill University, Montreal, Quebec, Canada
2. 1989 Department of Zoology, University of British Columbia, Vancouver, Canada
3. 1989 Department of Biological Sciences, Simon Fraser University, Burnaby, B. C., Canada
4. 1989 Ecology and Evolution Group, University of California at Davis, CA, USA
5. 1989 Department of Entomology, University of Maryland, College Park, MD, USA
6. 1990 Department of Biology, Carleton University, Ottawa, Ontario, Canada
7. 1990 Department of Biology, Queen's University, Kingston, Ontario, Canada
8. 1992 Department of Biology, York University, Toronto, Ontario, Canada 9. 1992 Department de Biologie, Université de Laval, Québec, Canada
10. 1992 Department of Biology, McGill University, Montreal, Quebec, Canada
11. 1993 Department of Ecology and Evolution, Princeton University, Princeton, NJ, USA
12. 1993 Department of Ecology and Evolution, State University of New York, Stony Brook, USA
13. 1994 Museum of Zoology and Institute of Zoology, University of Zurich, Switzerland
14. 1994 Department of Population Biology, Institute of Zoology, University of Berne, Switzerland
15. 1994 Zoology Institute, University of Basel, Switzerland
16. 1995 Department of Zoology, University of Toronto, Toronto, Ontario, Canada
17. 1995 Evolutionary Biology Seminar Series, Royal Ontario Museum, Toronto, Ontario, Canada
18. 1995 Department of Biology, University of Missouri, Columbia, MO, USA
19. 1997 Department of Biological Sciences, Simon Fraser University, Burnaby, B.C., Canada
20. 1998 Department of Biology, Queens University, Kingston, Ontario, Canada
21. 1998 Department of Biology, University of Sherbrooke, Quebec, Canada
22. 1999 Department of Zoology, University of Toronto, Ontario, Canada
23. 1999 Department of Biology, University of California at Riverside, Riverside, California
24. 2000 Department of Biology, University of California at Riverside, Riverside, California
25. 2001 Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, Arizona
26. 2003 Animal Behavior Graduate Group, University of California, Davis, California
27. 2003 Department of Ecology and Evolutionary Biology, University of California, Irvine, California
28. 2003 Department of Biology, University of Windsor, Ontario, Canada
29. 2004  Department of Entomology, University of California, Riverside.
30. 2007  Institute of Evolutionary Biology, University of Edinburgh, Scotland, UK (August 2007)
31. 2007  Department of Biology, California State University at San Diego (Sept. 2007)
32. 2007  Department of Biology, University of Missouri, Columbia (Oct. 2007)

GRADUATE AND POSTDOCTORAL SUPERVISION

Postdoctoral fellows:
Dr. Wolf Blanckenhorn, Ph.D. State University of New York at Albany, NSERC International Postdoctoral Fellowship, 1991-93
Dr. Grey Stirling, Ph.D. University of Maryland, 1994 – 98 (co-supervised with D. A. Roff, McGill University)
Dr. Nayer Zahiri, Ph.D. McGill University, 1998 – 99
Dr. Becky Talyn, Ph.D. University of Maine, 2002/03
Dr. Angeline Bertin, Ph.D. University of Bourgogne, France, 2002/03
Dr. Tami Panhuis, Ph.D. University of California, Riverside, 2005

Ph.D. graduates and dissertation titles:
5. Gershman, S. The reproductive consequences of multiple mating and partner novelty in female Gryllus vocalis field crickets, UCR, June 2007 (co-supervised with Marlene Zuk).

Masters graduates and thesis titles:


12. Gelinas, Malorie, Quantitative genetics of phenotypic plasticity in fecundity in the sand cricket *Gryllus firmus*. McGill University, July 2001. (co-supervised with D. A. Roff)

**Graduate students in progress at UCR:**

Ph.D. - Libby King  
- Matthew Wolak  
- Charlotte Ellis  
M.Sc. - Kiri Nhong

---

**COURSES TAUGHT**

<table>
<thead>
<tr>
<th>Course title</th>
<th>University</th>
<th>Level</th>
<th>Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanity and the Biosphere</td>
<td>U of Alberta</td>
<td>non-majors</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Comparative Anatomy of the Vertebrates</td>
<td>U of Alberta</td>
<td>junior</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Ecological Genetics</td>
<td>Concordia/UBC</td>
<td>senior</td>
<td>12 - 20</td>
</tr>
<tr>
<td>Biostatistics</td>
<td>Concordia</td>
<td>sophomore-junior</td>
<td>50 - 85</td>
</tr>
<tr>
<td>Biostatistics</td>
<td>Concordia</td>
<td>junior-senior</td>
<td>60 - 120</td>
</tr>
<tr>
<td>Evolutionary Ecology</td>
<td>Concordia</td>
<td>junior-senior</td>
<td>35 - 55</td>
</tr>
<tr>
<td>Techniques in Ecology</td>
<td>Concordia</td>
<td>senior</td>
<td>16 - 17</td>
</tr>
<tr>
<td>Current Advances in Ecological Research</td>
<td>Concordia</td>
<td>senior</td>
<td>10 - 15</td>
</tr>
<tr>
<td>Special Topics in Ecology</td>
<td>Concordia</td>
<td>graduate</td>
<td>3 - 10</td>
</tr>
<tr>
<td>Evolution</td>
<td>Concordia/UCR</td>
<td>junior-senior</td>
<td>35 - 90</td>
</tr>
<tr>
<td>Freshman Advising Seminar</td>
<td>UCR</td>
<td>Freshman</td>
<td>21</td>
</tr>
<tr>
<td>Introductory Evolution and Ecology</td>
<td>UCR</td>
<td>sophomore</td>
<td>280-330</td>
</tr>
<tr>
<td>The Biology of Human Problems</td>
<td>UCR</td>
<td>senior</td>
<td>21</td>
</tr>
<tr>
<td>The Theory of Evolution</td>
<td>UCR</td>
<td>graduate</td>
<td>11 -15</td>
</tr>
</tbody>
</table>

---

**SERVICE TO THE UNIVERSITY**

**Departmental**

- *Concordia:* Standards Committee  
  Curriculum Committee  
  1982-85  
Co-ordinator of Honours Program 1986-88
Ph.D. Proposal Committee 1987-95
Search Committee for Molecular Biologist 1989-90
Research Committee 1990-91
Behavior, Ecology and Evolution seminar co-ordinator 1990-96
Personnel Committee 1991-93, 1998-

2000
Search Committee for Behavioral Ecologist (Chair) 1991-92
Search Committee for Ecologist 1993-94
Planning and Priorities Committee 1997-98, 2000/01
Department Chair 1998-2000
Personnel Committee (Chair) 2000/01
Departmental Appraisal Committee 2000/01

**UCR:**
Biology Teaching Committee (Chair) 2002 – 2004
Graduate Advisory Committee 2004/5
Participant in the Evolution, Ecology and Organismal Biology Graduate Program 2001-present
Academic advising (Biology/Biological Sciences) 2002- present

**Faculty or College**

**Concordia**
Dean's Advisory Committee on Computers 1983-84
Dean's Advisory Committee on Promotion and Merit 1984-85
Selection Committee for Chair of Geography 1984-85
General Research Fund Evaluation Committee 1990-91
General Research Fund Evaluation Committee (Chair) 1991-92
Faculty Tenure Committee 1990-92
Faculty Curriculum Committee 1992-93
Tenure nominating committee 1993-94
Committee to supervise elections 1993-94
Personnel Committee (Geology), Special Consultant 1993-94
Search Committee for Chair of Geography 1994-95
Dean's Advisory Committee on the future of Arts and Science 1995
Biology representative, Arts and Science Faculty Council 1998-2000

**UCR**
Search Committee for Entomology 2002
Ecology and Evolution Focus Group 2003-2005
CNAS Scholarship Committee 2005/6
Search Committee, Entomology 2005/6
Center for Conservation Biology Steering Committee 2005 – present
Biological Sciences Committee-in-Charge (representing the Evolutionary Biology Track) 2006-present
Executive Committee of the College of Natural and Agricultural Sciences (representing Biology) 2006-present
Life Sciences Core Advisory Committee 2007

**University**

**Concordia** NSERC Scholarship Committee 1982-84, 1986-88
Fellow of the Science College 1983-85
Senate Academic Services Committee 1990-91
Evaluation Committee for Seagram Research Awards 1992-95
Council of the School of Graduate Studies 1992-93
Steering Committee of the Council of the School of Graduate Studies 1992-93
Selection Committee for Governor General's Gold Medal 1993-95
Senate Finance Committee 1997-2001
Natural Reserve System Advisory Committee 2002 – present
Senate Physical Resources Planning Committee 2004 – 2006
Search committee for Dean of the College of Natural and Agricultural Sciences 2006/7
THEODORE GARLAND, JR.

Contact:
Office Phone: (951) 827-3524
Lab Phone: (951) 827-5724
Facsimile: (951) 827-4286 = Dept. office (not confidential)
Email: tgarland@ucr.edu
http://www.biology.ucr.edu/people/faculty/Garland/SelPubs.html

EDUCATION
1974-78 B.S., Zoology (highest honors; G.P.A. 3.91), University of Nevada-Las Vegas
1978-80 M.S., Biology (G.P.A. 4.00), University of Nevada-Las Vegas
    Major Advisor: W. Glen Bradley (deceased)
1983-84 Visiting Fulbright Scholar, University of Wollongong, Australia
    Host: Anthony J. Hulbert
1980-85 Ph.D., Biological Sciences (G.P.A. 4.00), University of California, Irvine
    Major Advisor: Albert F. Bennett
        (committee included Stevan J. Arnold and Richard E. MacMillen)
1985-87 Postdoctoral Research Associate, University of Washington
    Advisor: Raymond B. Huey

FACULTY AFFILIATIONS
U.C., Riverside
2001- Evolution and Ecology Graduate Research Unit
2004- University of California Intercampus Research Program on Experimental Evolution (UCIRPEE), Associate Director and Webmaster
2004- Graduate Program in Genetics, Genomics, and Bioinformatics

U.W.-Madison
1988-02 Biometry Master's Program, University of Wisconsin-Madison
1988-02 Institute on Aging, University of Wisconsin-Madison
1988-02 Tropical Studies Group (Institute for Environmental Studies), U.W.-Madison
1990-02 Conservation Biology and Sustainable Development Master's Program, U.W.-Madison
1995-02 Sewall Wright Institute of Quantitative Biology and Evolution, U.W.-Madison

PROFESSIONAL EXPERIENCE
1975-80 Technician/Receptionist, Blue Cross Animal Hospital, Las Vegas, Nevada
1976-77 Volunteer Curator, Las Vegas Valley Zoo
1978 Biological Technician, U.S. Environmental Protection Agency Environmental Monitoring and Support Lab., Las Vegas, Nevada
1979-80 President, Southern Nevada Herpetology Association
1978-80 Assistant Curator, Vertebrate Museums, University of Nevada-Las Vegas
1978-80 Teaching Assistant, University of Nevada-Las Vegas
1980-85 Teaching Assistant, University of California, Irvine
1983-84 Visiting Fulbright Scholar, University of Wollongong
1985 Visiting Scholar, Department of Biology, University of Chicago
1985-87 Postdoctoral Research Associate, Dept. of Zoology, University of Washington
1986-87 Lecturer, Department of Zoology, University of Washington
1987 Lecturer, Department of Ecology and Evolutionary Biol., Univ. of Calif., Irvine
1987-93 Assistant Professor, Dept. of Zoology, University of Wisconsin-Madison
1991-92 Assistant/Associate Program Director, Population Biology and Physiological Ecology Program, National Science Foundation
1993 Visiting Professor, Ecole Normale Superieure, Paris, Laboratoire D'Ecologie
1993-99 Associate Professor, Department of Zoology, University of Wisconsin-Madison
1995 Visiting Professor, Instituto Nacional de Pesquisas da Amazonia, Dept. de Ecologia, Manaus, Brazil
1996-97 Visiting Professor of the Facultad de Quimica, Bioquimica y Farmacia of the University of San Luis, Argentina
1999-02 Professor, Department of Zoology, University of Wisconsin-Madison
2001- Professor, Department of Biology, University of California, Riverside

**RESEARCH FUNDING**

**Extramural**
1982 J. S. Noyes Foundation Grant for field research in Costa Rica ($1,600)
1982 N.S.F. Doctoral Dissertation Improvement Grant, DEB-8214656 ($6,371)
   "Ecological and Behavioral Correlates of Body Size and Locomotory Performance in Lizards"
1983 Fulbright Full Grant to Australia ($8,000)
1987 Theodore Roosevelt Memorial Fund, Amer. Museum Natural History ($800)
1987 Travel Award, 2nd International Conference on Quantitative Genetics ($500)
1988 Travel Award, 2nd International Congress of Comparative Physiology and Biochemistry ($154)
1990-91 N.S.F. Systematic Biology Program, BSR-9006083 ($20,000)
   "Correlated Evolution of Continuous Traits: A Simulation Study"
1991-92 N.S.F. Systematic Biology Program, BSR-9146864 ($10,000)
   "Research Experiences for Undergraduates" Supplement to BSR-9006083
1991-96 N.S.F. Population Biology and Physiological Ecology Program - Presidential Young Investigator Award, (BSR)IBN-9157268 ($25,000/year base plus up to $37,500/year in matching funds) "Studies in Evolutionary Physiology"
1991-95 N.S.F. Biological Basis of Behavior Program, (BNS)IBN-9111185 ($175,990)
   "Genetic and Physiological Bases of Wheel-Running Behavior"
1993-95 N.S.F. Systematic Biology Program, DEB-9220872 ($47,777) "Phylogenetic Analyses of the Evolution of Continuous Characters" (renewal of BSR-9006083)
1995 N.S.F. Ecological and Evolutionary Physiology Program, IBM-9541705 ($7,184)
   "Research in Undergraduate Institutions" Supplement to IBM-9541705 for David S. Hinds, California State University, Bakersfield
1995 N.S.F. Animal Behavior Program, IBM-9542232 ($3,000)
   "Research Experiences for Undergraduates" Supplement to IBM-9111185
1995-97 N.S.F. Systematic Biology Program, DEB-9509343 ($56,224) "Phylogenetic Analyses of the Evolution of Continuous Characters" (renewal of DEB-9220872)
1996 N.S.F. Graduate Research Fellowship to Kevin E. Bonine
1997-99 N.S.F. Ecological and Evolutionary Physiology Program, IBM-9723758 ($40,000), "Morphological and Physiological Correlates of Locomotor Performance in Phrynosomatid Lizards"
1998-00 N.S.F. Animal Behavior Program, IBM-9728434 ($159,427)
   "Responses to Artificial Selection for Voluntary Activity in House Mice"
1999-02 N.I.H. Postdoctoral Individual National Research Service Award awarded to Dr. Anne M. Bronikowski (Ph.D., University of Chicago 1997) to study interactions between wheel running, reproduction, and aging in our selected lines of house mice. PHS-NIH Award # 1 F32 AG05784. "Energy expenditure and aging in Mus"

2000 N.S.F. Graduate Research Fellowship to Ronald W. Sutherland
2000 N.S.F. Animal Behavior Program, IBM-0041804 ($5,000) "Research Experiences for Undergraduates" Supplement to IBM-9728434

2000-02 N.S.F. Systematic Biology Program, DEB-9981967 changed to DEB-0196384 ($70,000) "Phylogenetic Analyses of the Evolution of Continuous Characters" (renewal of DEB-9509343) with co-PI Anthony R. Ives.

2000-01 N.I.H. New Program Development supplement award "Mice Selected for Hyperactivity as a Novel Model of ADHD." ($50,000 direct costs) This was a component of the Waisman Center's base grant, titled "Wisconsin Center on Mental Retardation: Core Support" (Terrence R. Dolan, P.I.). Grant Number P30 HD03352.

2001 N.I.H. Predoctoral Individual National Research Service Award awarded to Justin S. Rhodes. PHS-NIH Award # 1 F31 NS 42872. "The neural basis of hyperactive wheel running in mice."

2002 N.S.F. Ecological and Evolutionary Physiology Program, IBM-0212567 ($375,000) "Responses to Artificial Selection for Voluntary Activity in House Mice"

2003 Shipley Skinner-Riverside County Endowment Award to J. L. Bunkers (Ph.D. student) and T. Garland, Jr. "Effects of habitat disturbance on stress and reproduction in desert iguanas" ($5,990)

2003 N.S.F. Ecological and Evolutionary Physiology Program, IBM-0331571 ($11,394) John G. Swallow (University of South Dakota) was PI; I was co-PI. "SICB Symposium Support: Selection Experiments as a Tool in Evolutionary and Comparative Physiology, January 5-9, 2004"

2004 N.S.F. Population Biology and Systematic Biology Programs, DEB-0416085 ($800,004)
1 Sept. 2004 - 31 Aug. 2009
David N. Reznick is P.I.; Mark S. Springer and I are co-PIs. "The Evolution of Placentas in the Poeciliid Fishes: An Empirical Study of the Evolution of Complexity"

2005 Pending - N.S.F. Environmental and Structural Systems Cluster, IOB-0543429 ($451,820) "Responses to Selective Breeding for High Voluntary Activity in House Mice"

**Intramural**

1980 Research and Travel Grant, U.C., Irvine ($200)
1981 Research and Travel Grant, U.C., Irvine ($375)
1981 Inter-Campus Travel Funds, U.C., Irvine ($450)
1982 Research and Travel Grant, U.C., Irvine ($816)
1982 University of California Patent Funds Award ($2,008)
1984 Research and Travel Grant, U.C., Irvine ($350)
1984 Inter-campus Travel Funds, U.C., Irvine ($100)
1987 N.I.H. Biomedical Research Support Grant, funds administered by University of Wisconsin Graduate School ($5,740)
1988 Graduate School Research Committee, University of Wisconsin ($16,310)
1988 Graduate School Travel Award, University of Wisconsin ($600)
1989 Graduate School Research Committee, University of Wisconsin ($16,866)
1989  N.I.H. Biomedical Research Support Grant, funds administered by University of Wisconsin Graduate School ($6,489)
1989  Graduate School Travel Award, University of Wisconsin ($951)
1990  Graduate School Research Committee, University of Wisconsin ($10,000)
1992  Graduate School Research Committee, University of Wisconsin ($8,317)
1993  Graduate School Travel Award, University of Wisconsin ($1,000)
1994  Graduate School Research Committee, University of Wisconsin ($10,000)
1994  H. I. Romnes Faculty Fellowship, Wisconsin Alumni Research Foundation via Graduate School Research Committee, University of Wisconsin ($40,000)
1996  Graduate School Research Committee, University of Wisconsin ($6,602 + fringe)
1997  Graduate School Research Committee, University of Wisconsin ($14,427 + fringe)
1998  Graduate School Travel Award, University of Wisconsin ($500)
1998  Vilas Associates Program, Wisconsin Alumni Research Foundation, University of Wisconsin (2/9 summer salary for two years plus $5,000 per year research support)
2000  Wisconsin/Hilldale Undergraduate/Faculty Research Award to Jason G. Belter and T. Garland, Jr. ($3,000 stipend plus $1,000 supplies)
"Expression of Heat Shock Proteins in House Mice: Effects of Voluntary Exercise and of Genetic Selection for High Activity Levels"

AWARDS AND FELLOWSHIPS
1974  Rotary Club Scholarship, U.N.L.V.
1974-78  Dean's Honor List, U.N.L.V.
1975  East African Natural History Safari Scholarship, U.N.L.V.
1976  Charter Member, Alpha Epsilon Delta, U.N.L.V.
1977  Elected Phi Kappa Phi, U.N.L.V.
1980  Regent's Fellowship, U.C., Irvine
1981  Honorable Mention, Edward A. Steinhaus Teaching Award, U.C., Irvine
1982  University of California Patent Funds Award
1982  N.S.F. Doctoral Dissertation Improvement Grant
1983  Fulbright Predoctoral Grant, Australia
1984  Who's Who in American Colleges and Universities
1985  Regent's Dissertation Fellowship, U.C., Irvine
1985  Edward A. Steinhaus Teaching Award, U.C., Irvine
1985  Outstanding Graduate Student Scholar Award, U.C., Irvine
1986  Alternate Fellow (no funding), N.S.F. Fellowship in Environmental Biology
1991  Presidential Young Investigator Award, National Science Foundation
1991  Nominated to run for Councilor of the Society for the Study of Evolution
1994  H. I. Romnes Faculty Fellowship, Wisconsin Alumni Research Foundation
1998  Vilas Associates Program, Wisconsin Alumni Research Foundation

INVITED LECTURES, SEMINARS, WORKSHOPS, AND COURSES (PAST 5 YEARS)
2003  University of California, Irvine: Multidisciplinary Exercise Science Seminar
2003  Brown University: Department of Ecology and Evolutionary Biology (invited by the graduate students)
2004  University of British Columbia: Keynote Speaker for Annual Zoology Graduate Student Symposium
2005  University of California, Riverside: Genetics, Genomics, and Bioinformatics Graduate Program
2005  Harbor-UCLA Medical Center, Basic Science Conference

571
2005 UCLA: Ecology and Evolutionary Biology
2005 University of Nevada-Las Vegas: Department of Biological Sciences (two seminars)

SOCIETY OR OTHER MEETINGS ATTENDED (PAST 5 YEARS)


NATIONAL/INTERNATIONAL SERVICE
1991-93 Member, Standing Committee on Comparative Physiology and Biochemistry and Standing Committee on Quantitative and Evolutionary Morphology, Systematics Agenda 2000: Integrating Biological Diversity and Societal Needs --
A Systematics Priorities Initiative by the American Society of Plant Taxonomists, Society of Systematic Biologists, Willi Hennig Society

1993-2000 Associate Editor, The American Naturalist
1997-2004 Editorial Board, Physiological and Biochemical Zoology
1999- Editorial and Advisory Board, Zoology
2000- Editorial Board, Journal of Morphology
2000-2002  Associate Editor, *Evolution*
2005-     Associate Editor, *Physiological and Biochemical Zoology*

**MAJOR INTRAMURAL SERVICE**

**U.C., Riverside**
2001-2004  Graduate Advisory Committee
2002-03    Departmental Seminar Committee (Biology 252)
2003-      Departmental Web Master (with M. A. Chappell)
2003-      Institutional Animal Care and Use Committee, Alternate Member for the Department of Biology
2005-      Graduate Advisory Committee
2005-      Evolutionary Ecology Search Committee

**U.W.-Madison**
1993-95    Graduate Admissions Chair, Department of Zoology
1993-01    Teaching Assistantship Awards and Assignments, Department of Zoology
1994-99    Biotron Advisory Committee, Graduate School
1996-00    Animal Care and Use Committee, College of Letters and Science
1996-99    Graduate School Research Committee
1999-00    Chair, Comparative/Evolutionary Physiology Search Committee

**Reviewer For**

1985  *Evolution* (2 manuscripts), *Fieldiana Zoology, Paleobiology*
(2 proposals after returning to Madison in September; several in-house reviews were performed while serving at N.S.F.)

1993

*American Naturalist* (1 manuscript other than as part of my editorial duties),

1994

*Ecology, Herpetological Monographs, Journal of Comparative Psychology, Physiological Zoology, Systematic Biology, Science* (3 technical comments), Wisconsin Sea Grant College Program, National Science Foundation (5 proposals)

1995


1996


1997


1998


1999


2000


2001


2002

*American Journal of Primatology, American Naturalist, Ecology Letters, Oecologia, University of Chicago Press, Biotechnology and Biological Sciences Research Council (U.K.), National Science Foundation*

2003


2004


2005

*American Naturalist, American Journal of Physiology - AJP: Regulatory, Integrative and Comparative Physiology, Behavioral Ecology* (3 manuscripts),
SOCIETY MEMBERSHIPS (current and previous)
American Physiological Society
American Society of Ichthyologists and Herpetologists
Behavior Genetics Association
National Geographic Society
Organization for Tropical Studies
Society for Integrative and Comparative Biology
Society for the Study of Evolution

PUBLICATIONS (undergraduate co-authors are underlined)

Theses

Articles
PDF files of most are available at:


**Software Publications**


**Book Reviews and Other Publications**


Photograph of the lizard *Moloch horridus* provided for:


**Manuscripts Currently in Review or in Revision**


**Manuscripts in Preparation from Completed Projects**

Bonine, K. E., and T. Garland, Jr.  In revision. Do speed and endurance trade off in lizards (Squamata)?


**Other Laboratory Publications**


Koteja, P. In preparation. Generating mass-independent data: which body mass?

Perry, G., and K. P. Levering. In revision. Identifying sexually selected traits from allometry in the lizard *Anolis cristatellus* Dumeril and Bibron (Iguania). *Biological Journal of the Linnean Society*.


**Published Abstracts**


JOHN GATESY

CONTACT:
   Phone : (951) 827-3800
   FAX : (951) 827-4286
   Email: john.gatesy@ucr.edu

EDUCATION:
Yale University  1990-93  Ph. D.  Geology and Geophysics)
Yale University  1988-90  M. Phil. Geology and Geophysics)
University of Virginia  1982-86  B. A.  Biology

TEACHING POSITIONS:
UC Riverside  Assistant Professor  2003-2007  Biology
UC Riverside  Associate Professor  2007 onwards  Biology

RESEARCH GRANTS:
2002  "Phylogenetic utility of rapidly evolving mammalian reproductive proteins" (University of California, Riverside - NSF Systematics Panel Grant - sole P.I. with co P.I., W. Swanson–three years of supplies, salary, and student stipends - $230,000)

2002  "Taxonomy, phylogeny, and the evolution of feeding strategies in fossil and living mysticete cetaceans" (University of California, Riverside - NSF Systematics Panel Grant - P.I. with second and third P.I.s, A Berta and T. Demere –three years of supplies, salary, and student stipends - ~$360,000)

2002  "Archosaur phylogeny: A total evidence approach at fine taxonomic levels" (University of California, Riverside - NSF Tree of Life Systematics Panel Grant - collaborative research, P.I. with lead P.I. Mark Norell, four other P.I.s, and two coPIs at five other institutions–five years of supplies, travel, and salaries - ~$2,020,000)

2002  "Phylogenetic analysis of genome size evolution in Fugu rubripes" (University of California, Riverside Genomics Institute Core Facility funding - $4,750)

1999  "Cetacean phylogeny: A reconciliation of fossil and neontological data and the importance of taxonomic sampling" (University of Wyoming - NSF Systematics Panel Grant - P.I. with second P.I., M. O’Leary –three years of supplies and two years of post doc salary - $190,000)

1995  "Milk protein origins" (University of Arizona - NSF Systematics Panel Grant, sole P.I. - two years of supplies and one year of post doc salary - $90,000)

1994  "The origin of k-casein in mammals" (University of Arizona Small Grants recipient - $5,000)

RESEARCH FELLOWSHIPS:
1993  Postdoctoral Fellow for the Analysis of Biological Diversification Research Training Grant-NSF (University of Arizona - two years of supplies and salary - ~$62,000)

1993  Kalbfleisch Postdoctoral Fellow (American Museum of Natural History - supplies and one year of salary - ~$32,000)

1988-1991  Graduate Fellowship (Yale University)
PAPERS PRESENTED AT SCIENTIFIC MEETINGS (past 5 years):


SYMPOSIUM PRESENTATIONS (past 5 years):


INVITED SEMINARS (past 5 years):

2006  J. Gatesy. A phylogenetic blueprint for a modern whale. *Colorado State University, Department of Biology*.


2003  J. Gatesy. Cryptic support in phylogenetic supermatrices: Hidden information in molecules, aquatic specializations in cloven-hooved proto-whales, and
elongate snouts in "true" gavials. University of Minnesota, Department of Ecology, Evolution, and Behavior.

2003 A. Berta, T. Demere, and J. Gatesy. The origin and evolution of baleen whales. San Jose State University, Department of Biology.

2003 J. Gatesy. Cryptic support in phylogenetic supermatrices. Brigham Young University, Department of Zoology.


2002 J. Gatesy. A phylogenetic blueprint for a modern whale. CUNY Queens, Department of Biology.


SERVICE:
National Science Foundation grant review panel member
Reviews for >30 different scientific journals

ARTICLES IN REFEREED PROCEEDINGS AND JOURNALS (last 10 years):


2000  

1999  

1999  

1998  

1997  

1997  

1996  
J. Gatesy, C. Hayashi, M. Cronin, and P. Arctander.  Evidence from milk casein genes that cetaceans are close relatives of hippopotamid artiodactyls.  Molecular Biology and Evolution 13(7): 954-963.
CONTACT:
phone: 951-827-4322
fax: 951-827-4286
email: Cheryl.Hayashi@ucr.edu

EDUCATION
1996 Ph.D. in Biology, Yale University, through a joint program with the American Museum of Natural History
1988 B.S. in Biology, Yale University

EMPLOYMENT
since 7/2006 Associate Professor of Biology, U.C. Riverside
4/2001-6/2006 Assistant Professor of Biology, U.C. Riverside
1998-2001 Postdoc, Dept. of Molecular Biology, Univ. of Wyoming
1996-1998 NSF/Sloan Postdoctoral Fellow in Molecular Evolution, Univ. of Wyoming

RESEARCH GRANTS

National Science Foundation ($7,875) REU Supplement to NSF award on Silk Protein Evolution. April 2005 to August 2006.

National Science Foundation ($191,120) Integrative Studies of Wolbachia-Eukaryotic Interactions: Genomes to Communities and Back. I am a collaborator on this NSF FIBR award. Lead PI is Jack Werren, University of Rochester. October 2003 to September 2008.


**RESEARCH FELLOWSHIPS**

NSF/Sloan Postdoctoral Fellowship in Molecular Evolution ($80,000), January 1996 to June 1998.

NSF Dissertation Improvement Grant ($10,000), May 1994 to May 1996.

NSF Graduate Fellowship, July 1989 to June 1993.

NATO Advanced Studies Institute Fellowship, July 1990.

**INVITED PRESENTATIONS (PAST 5 YEARS)**

Hayashi, C. 2006 (Feb. 21). Spider silks: evolutionary analyses of silk sequences and material properties. Department of Biology, Colorado State University, Fort Collins.


Hayashi, C. 2004 (Sept. 8). *Characterizing the diversity of the silk gene family*. Army Research Office workshop on the production of recombinant spider silk proteins. Quedlinburg, Germany.

Hayashi, C. 2003 (Dec. 4). *Molecular evolution of the spider silk gene family.* Departmental seminar at New Mexico State University, Las Cruces.

Hayashi, C. 2003 (Nov. 13). *Diversification of the spider silk gene family.* Departmental seminar at Clemson University, Clemson.


Hayashi, C. 2003 (Apr. 3) *Modular Molecular Evolution of the Spider Silk Gene Family.* Department of Integrative Biology, Brigham Young University, Provo.


Hayashi, C. 2003 (Feb. 3) *Evolution of the Spider Silk Gene Family.* Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor.

Hayashi, C. 2002 (Oct. 30) *Evolution of the Spider Silk Gene Family.* Department of Biology, California State University, Fullerton.

Hayashi, C. 2002 (May 29) *Diversity and Conservation of Sequences in the Spider Silk Gene Family.* Department of Biological Chemistry, College of Medicine, University of California, Irvine.

Hayashi, C. 2002 (May 24) *Diversity and Conservation of Sequences in the Spider Silk Gene Family.* Department of Biology, California State University, San Bernardino.


Hayashi, C. and W. Swanson. (Jan. 24) *Repetitive sequences.* Department of Biology, University of California, Riverside, CA.

Hayashi, C. 2001 (Dec. 13) *Diversity and Conservation of Sequences in the Spider Silk Gene Family.* Marine Science Institute, University of California, Santa Barbara, CA.

Hayashi, C. 2001 (Dec. 10) *Diversity and Conservation of Sequences in the Spider Silk Gene Family.* Department of Biology, San Diego State University, CA.


Hayashi, C. 2001 (Oct. 29) *Diversity and Conservation of Sequences in the Spider Silk Gene Family.* Department of Entomology, University of California, Riverside.

**TEACHING**

University of California, Riverside (teaching evaluations available upon request)

*Evolutionary Biology* (Biol 105, undergraduate lecture course): co-taught with D. Fairbairn in Winter ’02, Winter ’03, Winter ’04; co-taught with T. Garland in Winter ’05, upcoming Fall ’05.

*Introduction to Genomics and Bioinformatics* (Biol 119, undergraduate lecture course): co-taught with L. Nunney in Spring ’04, Spring ’05, upcoming Spring ’06. Nunney and I developed the lectures and weekly computer exercises for this new course.


*Biology of Human Problems* (Biol 110, undergraduate seminar): Spring ’03 seminar emphasizing critical thinking and scientific methods.

**PROFESSIONAL SERVICE**

Associate Editor of *Molecular Phylogenetics and Evolution*. I handle manuscripts on the phylogenetic relationships of invertebrates. January 1, 2003 to present.


Reviewed proposals for the *Army Research Office*, *National Science Foundation*, *Murdock College Research Program for Life Sciences*, *South Carolina DOD/EPSCOR*, and *U.S. Civilian Research and Development Foundation for the Independent States of the Former Soviet Union*.

Member of U.C. Riverside’s *Biology Graduate Advisory Committee*, *the interdepartmental graduate program in Genetics, Genomics, and Bioinformatics Graduate Advisory Committee*, *Academic Senate Affirmative Action and Diversity Committee*; and *the Genomics Institute Core Instrumentation Advisory Committee*

**MEDIA**

**PUBLICATIONS**


**U.S. PATENTS**

Provisional patent application. Spider silk encoding protein encoding nucleotides and polypeptides. (with J. Garb, through the U.C. Office of Technology Transfer)

In review. Spider silk protein encoding nucleic acids, polypeptides, antibodies and methods of use thereof. (with R. Lewis, J. Gatesy, D. Motriuk, University of Wyoming)
NIGEL CHARLES HUGHES

CONTACT:
Telephone: 951 827-3098
Fax: 951 827-4324
e-mail: nigel.hughes@ucr.edu

EDUCATION
Undergraduate:
B.Sc. (Honors) University of Durham, U.K., Geology, 1982-1985

Graduate:
Certificate Visva-Bharati University, Bengali, 1985-1986
Santiniketan, West Bengal, India.
Ph.D. University of Bristol, U.K., Geology, 1986-1990
The Upper Cambrian trilobite Dikelocephalus minnesotensis and its geological setting. Advisor: Prof. D.E.G. Briggs FRS.

Appointments:
Visiting Assistant Professor in Paleontology, Trinity College, University of Dublin, Ireland. 1989 - 1990.


Research Associate, Department of Paleobiology, Smithsonian Institution. 1994 -

Adjunct Assistant Professor, University of Cincinnati, U.S.A. December 1993 - 1997.

Associate Curator, Cincinnati Museum Center, U.S.A. 1997.

Research Associate, Cincinnati Museum Center. 1997 -

Associate Professor, University of California, Riverside. 1997 – 2003

Professor, University of California, Riverside. 2003 –


Cooperative Faculty Member - Ecology, Evolution, and Organismal Biology Graduate Program. University of California, Riverside. 2005 -

Awards/Grants:


The Procter & Gamble Company. $8,000. February 1996. P.I. *Cincinnati Fossil Festival.*


University of California, Riverside, Academic Senate. $1,300. June 2000. P.I. Taxonomic revision of saukiid trilobites and its paleogeographic implications


**Honors:**

College Exhibition (prize) for academic excellence. St. Chad’s College, University of Durham, 1984 - 1985.

President's Award, Palaeontological Association, U.K., December 1993.


Appointed Corresponding Member, International Subcommission on Cambrian Stratigraphy, January 1999.

Elected Life Fellow, Geological Society of India, June 1999.

Elected Board Member, Institute for Cambrian Studies, September 1999.

Elected Councilor-at-large (under 40), Paleontological Society, October 1999.

**Refereed Abstracts (last five years):**

Henderson, W.G and Hughes, N.C. 2001

Hughes, N.C.  Fusco, G. and Minelli, A. 2001
The dynamics of post-cephalic segment accretion in trilobites. *Third International Conference on Trilobites and Their Relatives, University of Oxford, Abstracts*: 15

The oldest and youngest Cambrian trilobites from the Himalaya. *Third International Conference on Trilobites and Their Relatives, University of Oxford, Abstracts*: 16

Hunda, B.R. and Hughes, N.C. 2001

Hughes, N.C., Myrow, P.M. Thompson, K.R., Williams, I.S. Paulsen, T. and Parcha, S.K. 2001

Hunda, B.R. and Hughes, N.C. 2001

Hughes, N.C. 2002.

Snell, K.E., Myrow, P.M. Hughes, N.C., Paulsen, T.S., and Parcha, S.K. 2002
Stratigraphy and sedimentology of Middle to Upper Cambrian strata, Zanskar region, Indian Himalaya. *Geological Society of America Abstracts with Programs 34*: A279.


Heim, N.A. and Hughes, N.C.2002

Hunda, B.R. and Hughes, N.C. 2002
Miniaturization of the trilobite Flexicalymene: is there heterochrony in the Cincinnatian Series? Geological Society of America Abstracts with Programs 34:A32.

Henderson, W.G. and Hughes, N.C. 2002
Late Cambrian trilobites (Saukidae) and their implications for paleogeography and paleoenvironmental reconstructions. Geological Society of America Abstracts with Programs 34:A266.

Sell, B.K. and Hughes, N.C. 2003
Cambrian trilobites and stratigraphic correlations within Tethyan Himalaya. Geological Society of America Abstracts with Programs 34:A266.

Hanke, B. R. and Hughes, N.C. 2003
Morphological changes in Flexicalymene (Trilobita) from the Cincinnatian Series: geographic variability and the effects of temporal averaging on microevolutionary patterns. Geological Society of America Abstracts with Programs 34:A166.

Hughes, N.C., Fusco, G. and Minelli, A 2004


Hughes N.C. 2005
Historical experiments in terminal growth, segmentation, and body plan regionalization

Jacobs, D.K., Hughes, N.C. and Winchell, C.J. 2005
Terminal addition and the evolution of bilaterian form. Society of Integrative and Comparative Biology, Annual Meeting Final Program and Abstracts, 2005 volume, 162.

Hughes, N.C. Myrow, P.M. and Jiang, G. 2005

Myrow, P.M. Hughes, N.C. Fanning, M., Bhargava, O.N., Tangri, S.K. 2005

Jacobs, D.K. and Hughes, N.C. 2005

606
Terminal addition, the Cambrian radiation and the Phanerozoic evolution of bilaterian form. *Geological Society of America Abstracts with Programs* **37**:A57.

**Invited Seminars and Symposium Presentations:**

1987  
University of Chicago

1988  
American Museum of Natural History
University of Wisconsin, Madison

1989  
Bath Geological Society
University of Bristol
Field Museum of Natural History, Chicago
University of Leeds
Trinity College, University of Dublin

1990  
University of Cork
Jadavpur University, Calcutta
Presidency College, Calcutta
Visva-Bharati University, West Bengal
University of Lucknow
Queensland Museum

1991  
University of Cambridge
Trinity College, University of Dublin
University of Chicago
University of California, Riverside

1992  
University of Queensland
University of Sydney

1993  
Cincinnati Museum of Natural History
University of Wisconsin, Madison
University of Alberta, Edmonton
Paleontological Society of Washington, Smithsonian Institution
Harvard University
University of Cincinnati
Museum of Comparative Zoology, Harvard University

1994  
Wadia Institute of Himalayan Geology, DehraDun
Ohio State University, Columbus

1995  
College of Wooster, Ohio
University of Cincinnati
Lyell Meeting, Geological Society of London
University of Southern California
Mt. St. Joseph's College, Cincinnati
Karlov University, Prague
Kenyon College, Ohio

1998  
University of California, Los Angeles
GSA Cordilleran Section, Long Beach

1999  
San Diego State University
California State University, Fullerton

2000  
Scripps Institute of Marine Science, University of California

2001  
Dept. of Geophysical Sciences, University of Chicago
*Developmental Basis of Evolutionary Change meeting*. Biosciences Division, University of Chicago

2002  
University of California, Davis
Evolution of Development Annual Seminar, University of California, San Francisco
2003 Pomona College
University of Leicester
University of Padova
University of Montpellier II
Developmental Basis of Evolutionary Change meeting. Biosciences Division, University of Chicago
University of Iowa
2004 Evolution and Development Seminar Harvard University
Amherst College
Colorado College
2005 Seilacher Symposium, Yale University

Professional Activities and Service:
1992 Session chair, Patterns of Evolution, GSA Annual Meeting, Cincinnati
1994 Session chair, Paleontology/Paleobotany, GSA Annual Meeting, Seattle
1995 Session chair, Ordovician faunas: diversity, ecology, and extinction. 7th International Ordovician Meeting, Las Vegas
1995-97 Member of Joint Technical Program Committee of GSA
1995-97 Member of Paleontological Society's Committee on Collections
1995-96 Coordinator of Paleontological Society's Fossil Festival, Cincinnati
1996- Co P.I. and organizer of national NSF workshop on curatorial standards and databases in invertebrate paleontology, Washington D.C.
1997 Panel member. Biotic Surveys and Inventories program. National Science Foundation.
1997- Paleontological Society's Distinguished Speaker Program.
1997 Committee Member, 2nd International Conference on Trilobites, St. Catherines, Ontario.
1. 1998-2000 Member, Student Grants Committee, Paleontological Society
2. 1. Councilor-at-large (under 40), Paleontological Society
2003-2005 Committee Member, Strimple Award, Paleontological Society
2004- Member, Editorial Board, Systematic Biology
2005 Editor Evolution & Development issue of “Metazoan terminal addition and the evolution of metazoan body organization”, resulting from SICB symposium on the same topic held in San Diego in Jan 2005.

Peer Reviews:
Refereed Publications in Journals and Books:

1. Hughes N.C. and Rushton A.W.A. 1990
   Computer-aided reconstruction of a late Cambrian ceratopygid trilobite from Wales and its phylogenetic

   Late Cambrian (post-Idamean) trilobites from the Higgins Creek area, western Tasmania. *Memoirs of the
   Queensland Museum* **30**:455-485.

3. Hughes N.C. 1991

   Trace fossils from the Phe Formation (Lower Cambrian), Zanskar valley, northwestern India. *Memoirs of the
   Queensland Museum* **32**:139-144.

5. Hughes N.C. and Jell P.A. 1992
   A statistical/computer graphic technique for assessing variation in tectonically deformed fossils and its

6. Hughes N.C. 1993
   Distribution, taphonomy, and functional morphology of the Upper Cambrian trilobite *Dikelocephalus*.
   *Milwaukee Public Museum Contributions in Biology and Geology* **84**:1-49.

7. Labandeira C.C. and Hughes N.C. 1994
   Biometry of the Late Cambrian trilobite *Dikelocephalus*, and its implications for trilobite systematics.

8. Hughes N.C. 1994
   Ontogeny, intraspecific variation, and systematics of the Late Cambrian trilobite *Dikelocephalus*.
   *Smithsonian Contributions to Paleobiology* **79**:1-89.

   Palaeoecology of Cambro-Ordovician nearshore sandstones: trace fossil evidence from Mootwingee,


Circumocular suture and visual surface of "Cedaria" woosteri (Trilobita, Late Cambrian) from the Eau Claire Formation, Wisconsin. *Journal of Paleontology* 71:103-107.

Stratigraphy and sedimentology of the St. Lawrence Formation, Upper Cambrian of the northern Mississippi Valley. *Milwaukee Public Museum Contributions in Biology and Geology* 91:1-50.


17. Hughes N.C. 1997


20. Webster M. and Hughes N.C. 1999


22. Hughes N.C.1999


31. Hughes N.C. 2002
Late Middle Cambrian trace fossils from the *Lejopyge armata* horizon, Zanskar Valley, India, and the use of Precambrian/Cambrian ichnostratigraphy in the Indian subcontinent. *Special Papers in Palaeontology* **67**:135-151.

32. Hughes N.C. 2003


34. Minelli A., Fusco G. and Hughes N.C. 2003

35. Hughes N.C. 2003
Trilobite tagmosis and body patterning from morphological and developmental perspectives. *Integrative and Comparative Biology* **43**:185-206.


37. Fusco, G. Hughes, N.C, Webster, M, and Minelli, A. 2004
38. Hughes, N.C. and Heim, N.A. 2005

Early Tsanglangpuan (late early Cambrian) trilobites from the Nigali Dhar syncline and the Cambrian biostratigraphy of the Tal Group, Lesser Himalaya, India. *Geological Magazine* **142:** 57-80.


Terminal addition, the Cambrian radiation and the Phanerozoic evolution of bilaterian form. *Evolution and Development* **7:** 498-514.

42. Simpson, A., Hughes, N.C., Kopaska-Merkel, D.C. and Ludvigsen, R. 2005
Development of the caudal exoskeleton of the pliomerid trilobite *Hintzeia plicamarginis* new species. *Evolution and Development* **7:** 528-541.

43. Hughes, N.C. 2005

Stratigraphy and depositional history. of the northern Indian Himalaya, Spiti Valley, north-central India. *Geological Society of America Bulletin* **118:** 491-510.

Cambrian depositional history of the Zanskar Valley region of Indian Himalaya: Tectonic implications. *Journal of Sedimentary Research* **76:** 364-381.

Trilobite taphonomy and temporal resolution in the Mt. Orab Shale (Upper Ordovician, Ohio, U.S.A.). *Palaios* **21:** 26-45

Submitted:

Paulsen, T.S., Demosthenous, C.M., Myrow, P.M., Hughes, N.C., and Parcha, S.K.


Editorially Reviewed Papers:
47. Hughes N.C. and Fortey R.A. 1995
Sexual dimorphism in trilobites, with an Ordovician case study, 419-421. in Cooper J.C., Droser M.L.

48. Droser M.L. and Hughes N.C. 1995
Infaunal communities and tiering in Ordovician shallow marine terrigenous clastic and carbonate
settings: ichnofabric and trace fossil evidence, p. 405-408. in Cooper J.C., Droser M.L. and Finney S.C.

49. Hughes N.C. 2001
Morphometrics and intraspecific variation. in Briggs, D.E.G. and Crowther, P.R. *Palaeobiology: a


**Refereed Comments:**

Hughes N.C and Hughes S.M. 1993

**Popular Media Articles:**


**Published Reports, Reviews, Etc:**


6:137.

Hughes N.C. 1996. Cincinnati Fossil Festival: Professional and amateur geologists work together to


*Paleobiology* 24:534-536.

Hughes N.C. 1999. Presentation of the Paleontological Society Medal to Allison R. Palmer (speech)


SEUNG-CHUL KIM

Contact:
Phone: 951-827-2403
Fax: 951-827-4437
Email: sckim@ucr.edu
Web Page: http://plantbiology.ucr.edu/people/?Kim&show_for=new_window

Education:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Years Attended</th>
<th>Degree</th>
<th>Major Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sung Kyun Kwan University, Korea</td>
<td>1985-1989</td>
<td>BS</td>
<td>Biology</td>
</tr>
<tr>
<td>Kent State University, Kent, OH</td>
<td>1990-1992</td>
<td>MS</td>
<td>Botany</td>
</tr>
<tr>
<td>Ohio State University, Columbus</td>
<td>1992-1997</td>
<td>PhD</td>
<td>Plant Biology</td>
</tr>
</tbody>
</table>

Teaching Positions and Rank Held:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Date</th>
<th>Major Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kent State Univ.</td>
<td>Graduate Teaching Associate</td>
<td>1990-1992</td>
<td>General Biology</td>
</tr>
<tr>
<td>Ohio State Univ.</td>
<td>Graduate Teaching Associate</td>
<td>1992-1995</td>
<td>General Plant Biology, Local Flora</td>
</tr>
<tr>
<td>Ohio State Univ.</td>
<td>Graduate Teaching Associate</td>
<td>1996-1997</td>
<td>General Plant Biology, Local Flora</td>
</tr>
<tr>
<td>UC Riverside</td>
<td>Assistant Professor</td>
<td>2001-present</td>
<td>Spring Wildflowers, Taxonomy of Flowering Plants</td>
</tr>
</tbody>
</table>

Research Grants:

- 2004-2006 UC MEXUS (Evolutionary Relationship between Wild and Cultivated Peppers (*Capsicum annuum* L.) in Mexico using a DNA Sequence of Low Copy Nuclear Gene and Microsatellite Data; $11,953; M. Roose (co-PI)
- 2001-2005 USDA(Introgression and the evolution of Weedy Sunflowers), $285,000; L. Rieseberg and K. Clay (co-Pis)
- 1997-1999 National Science Foundation and Alfred P. Sloan Foundation Postdoctoral Research Fellowship in Molecular Evolution. $80,000
- 1995-1997 National Science Foundation Doctoral Dissertation Improvement Grant (with D. J. Crawford). $10,000
- 1994 Beatley Herbarium Award. The Ohio State University Herbarium(OS). $1,500
- 1993 Tinker/LASP Travel Grants. Latin American Studies Program, Tinker Foundation (The Ohio State University). $1,200

Research Fellowships:

- 1997-99 National Science Foundation and Alfred P. Sloan Foundation Postdoctoral Fellowship in Molecular Evolution.

Papers Presented at Scientific Meetings (past five years):
Aguilar-Melendez A., S.-C. Kim, and M. L. Roose. 2006. Ethnobotanical and molecular data


**Symposium Presentations:**

2005 Genetic architecture of species differences in the woody *Sonchus* alliance in the Canary Islands. Botanical Society of America, Austin, Texas. (Invited Symposium)

1996 Symposium "Fauna and Flora of the Atlantic Islands". Canary Islands, Spain. "The origin and evolution of *Sonchus* and allied genera in the Macaronesia: Molecular evidence for rapid radiation".

**Invited Seminars:**

2004 Department of Life Sciences, CheonBuk National University, Korea. "What can molecular markers tell us about plant speciation on islands and hybridization in plant evolution". (December 15, 2004)


2004 Department of Life Sciences, Ewha Womans University, Seoul, Korea. "What can molecular markers tell us about patterns and processes of plant evolution?". (March 18, 2004)

2003 Department of Biology, Sung Kyun Kwan University, Seoul, Korea. "Origin and adaptive radiation of tree lettuces in Macaronesia". (September 8, 2003)


2002 Rancho Santa Ana Botanic Garden. “Genetic architecture and introgression in the annual sunflower species.”

2001 Department of Biology, Sung Kyun Kwan University, Seoul, Korea. “Genetic architecture and introgression in the annual sunflower species.”

2001 Department of Biology, La Sierra University, Riverside, CA. “Origin and evolution of tree sowthistle in the Macaronesian islands.”

2000 Univ. California, Riverside, CA. – Job Interview Seminar (Department of Botany and Plant Sciences)

2000 Univ. Colorado, Boulder, CO. - Job Interview Seminar (Department of EPO Biology)

2000 Univ. Iowa, Ames, IA. - Job Interview Seminar (Department of Biology)

1999 Univ. Kansas, Lawrence, KS. - Job Interview Seminar (Department of Ecology and
Evolutionary Biology)

1998 Department of Biology, Indiana University, Bloomington, IN. “Adaptive radiation of the woody *Sonchus* and allied genera (Asteraceae) in the Macaronesian islands.”

1994 Department of Biology, Sung Kyun Kwan University, Seoul, Korea. "The origin and extensive radiation of *Sonchus* in the Macaronesian islands: Inferred from ITS sequences".

1992 Department of Biological Sciences, Kent State University, Kent, OH. "Palynology and pollen dimorphism in the genus *Lagerstroemia* (Lythraceae): Systematic implications.

**Professional Activities and Service:**


Grant Reviewer: Ohio Plant Biotechnology Consortium, National Science Foundation (Population Biology Program)

American Society of Plant Taxonomists: Nominations Committee, 2005-present

**Society Affiliations:**

The Botanical Society of America (Systematics Section)
The American Society of Plant Taxonomists
Society of Systematic Biologists
The Society for the Study of Evolution
The Plant Taxonomic Society of Korea

**Articles in Refereed Proceedings and Journals:**


Leonard Nunney

Contact Information:
Dept. of Biology, University of California, Riverside, Ca 92521.
Tel: (951) 827 5011 e-mail: leonard.nunney@ucr.edu
Web page: http://biology.ucr.edu/people/faculty/Nunney.html

Employment:
7/1993 to present  Professor, Dept. of Biology, UC Riverside, CA.
7/1987 to 6/1993  Associate Professor, Dept. of Biology, UC Riverside, CA.
7/1981 to 6/1987  Assistant Professor, Dept. of Biology, UC Riverside, CA.
9/1980 to 6/1981 Visiting Lecturer, Dept. of Biology, UC Riverside, CA.
9/1974 to 8/1978 University Demonstrator, Dept of Zoology, University of Edinburgh

Education/Training:
Ph.D., 1977. Genetics, University of Nottingham, England with Prof. Bryan C. Clarke
B.Sc., 1970. Biology, University of Sussex, England

Professional Activities (since Jan 2000)
Associate Editor, Evolution (-2000, recalled 2002)
Fellow, AAAS, elected 2003.
Tenure & Professorial Promotion Reviews = 8.
Reviewer for: American Naturalist, Conservation Biology, Conservation Genetics, Current
Biology, Ecology, European Journal of Entomology, Evolution, Evolutionary Ecology Research,
Biology, Journal of Theoretical Biology, Molecular Ecology, Nature Genetics, Nature Reviews
Genetics, Philosophical Transactions of the Royal Society, Proceedings of the National
Letters, Public Library of Science Biology, Science, Theoretical Population Biology, Trends in
Ecology and Evolution.
Invited seminars: UC Irvine, UC San Diego, UC Davis, Univ. North Dakota, Australian National
University, University of Lausanne, USGS (Colorado). Center for Research on Endangered
Species (San Diego Zoological Soc.), Univ. Maryland/National Zoological Park.
Invited Symposium Talks: Chicago Botanic Gdns (2000); European Society for Evolutionary
Biology , Aarhus (2001); European Society for Evolutionary Biology, Leeds (2003); European
Society for Evolutionary Biology, Krakow (2005); Linnean Society, London (2005)
ConferenceTalks: Evolution Soc., Bloomington (2000); California Population & Evolutionary
Genetics Group, UCSB (2001); Evolution Soc., Champaign (2002), American Soc. of
Naturalists, Banff (2002); CDFA Pierce Disease Symposium, San Diego (2002); Population
Genetics Group, Sussex (2003); Molecular Biology & Evolution, Penn State (2004); Molecular Biology & Evolution, Tempe (2006); Evolution Soc., Stony Brook (2006); CDFA Pierce Disease Symposium, San Diego (2006)

**Graduate (PhD) Student Training:**
Laramy Enders (current)
Senanu Pearson (current)
Curt Adams (current)
Kurt McKean (2003) Asst. Prof., SUNY- Albany

Graduate Student Committees: 44 other students since 2000.

**Teaching:**
Course taught on a regular basis:

Biol 108 Introductory Population Genetics (enrollment about 60 juniors/seniors)

Biol 119 Introduction to Genomics and Bioinformatics (alt years, taught with C. Hayashi)
(enrollment about 30 juniors/seniors)

Biol 214 Evolutionary Genetics (graduate core course – alt years, taught with D. Roff)
(enrollment about 15 PhD students).

**Publications (since 2000):**


Timothy D. Paine

Contact:
Department of Entomology, University of California, Riverside, CA 92521;
Phone: (951) 827-5836; Fax: (951) 827-3086; email: “timothy.paine@ucr.edu”

Education:
1973  B.A.  University of California, Davis.  History (Honors)
1973  B.S.  University of California, Davis.  Entomology (High Honors)
1981  Ph.D.  University of California, Davis  Entomology

Employment / Appointment History:
Dept of Entomology, University of California, Riverside
1986-1992  Assistant Professor and Assistant Entomologist
1992-1995  Associate Professor and Associate Entomologist
1995-present  Professor (.25 IR) and Entomologist (.75 OR)
9/93-8/95, 12/96-6/97  Vice-Chair, Dept of Entomology, UC Riverside
7/97-6/03  Chair, Dept of Entomology, UC Riverside
9/03- 6/05  Director, UC Riverside Center for Invasive Species Research
7/05- Present  Program Leader, UC Division of Agriculture and Natural Resources, Agricultural Policy and Pest Management

Professional Activities (Past 10 years):
Manuscripts Reviewed:  126
Grants Reviewed:  515
Editor:  Associate Editor California Agriculture, Co-Editor Journal of Insect Behavior
Invited Presentations:  216
Other Presentations:  72
Grants Received: in excess of $2.4 million

Publications:
115 Scientific refereed journal articles; 2 Edited books; 50 Invited chapters, monographs, or proceedings articles; 68 Technical publications

Honors and Awards:
1988 U.C. Ornamental Horticulture Education Continuing Conference Service in Counties Award
1990-91 Centinela Chapter California Association of Nurserymen Research Award
1990-91 Orange County Chapter California Association of Nurserymen Research Award
1992 U.S.D.A. Distinguished Service Team Award for Environmental and Natural Resource Protection
1992 California Association of Nurserymen Annual Research Award
1995 Pacific Branch Entomological Society of America Distinguished Teaching Award.
1996 Western Chapter International Society of Arboriculture Award for Arboricultural Research
1997 Pacific Branch Entomological Society of America Distinguished Teaching Award.
1998 University of Queensland Travel Award for International Collaborative Research
1999-2000 President, Pacific Branch of the Entomological Society of America
1999 Entomological Society of America Recognition Award in Urban Entomology
2001 Norman Jay Colman Research Award, American Nursery & Landscape Association
2004 University of Pretoria South Africa Hans Merensky Fellow Visiting Scientist
2004 U.C Riverside Distinguished Teaching Award
2005 Fellow, American Association for the Advancement of Science
2006 Pacific Branch Entomological Society of America Distinguished Teaching Award
2006 Fellow, Entomological Society of America

**Major Research Interests:**
Integrated management of insects affecting woody ornamental landscape plants, nurserystock, and urban or recreational forests; Impact of environmental stress on phytophagous insects; Insect - plant - microorganism interactions; Chemical ecology; Biological Control

**Relevant Publications:**
Richard A. Redak

CONTACT:
Phone: 951-827-7250
Fax: 951-827-3086
Email: richard.redak@ucr.edu
Web Page: http://www.facultydirectory.ucr.edu/cgi-bin/pub/public_individual.pl?faculty=665

EDUCATION:
B.S. 1979. Department of Biology, University of New Mexico, Albuquerque, NM.
M.S. 1982. Department of Biology, University of New Mexico, Albuquerque, NM.

PROFESSIONAL EXPERIENCE:
1990-1997: Assistant Professor, Department of Entomology, University of California, Riverside.
1997-2002: Associate Professor, Department of Entomology, University of California, Riverside
2002-present: Professor, Department of Entomology, University of California, Riverside
2004-present: Vice Chairman, Department of Entomology, University of California, Riverside

RESEARCH INTERESTS:

AWARDS:
California Association of Nurserymen Education & Research Award, Centinela Chapter
1994
California Association of Nurserymen Education & Research Award, Centinela Chapter
1995
California Association of Nurserymen, Researcher of the Year Award, 2002

PUBLICATIONS:
REFERRED: Scientific Papers:
Published:


**Invited Chapters and Review Articles:** Not refereed unless indicated with an R

**Published:**


Proceedings of Symposia or Technical Meetings: Not refereed unless indicated with an R

Published:


**Technical Publications:** Not refereed unless indicated with an R


**Semi-Technical Publications:** Not refereed unless indicated with an R

**Published:**


**Technical Reports:** Not refereed unless indicated with an R

**Issued:**


Abstracts: Not refereed unless indicated with an R

Published:


**Electronic Publications:** Not reviewed unless indicated with an R.

**Published:**

UNIVERSITY AND PUBLIC SERVICE (last 5 years)

- **Departmental:**
  - Member, Seminar and Special Lectures Committee, 2003-2005.
  - Member, Instructional and Student Affairs Committee, 1997-2003.
  - Chair, Instructional and Student Affairs Committee, 2003-2004
  - Member, eight Ad hoc Merit Review Committees, 1999-present.
  - Chair, three Ad hoc Merit/Promotion Review Committees, 2004-present.
  - Member, Search Committee for Population Geneticist, 2000
  - Vice Chair, Department of Entomology, July 2004-present.
  - Member, Chair’s Advisory Committee, 2003-present.

- **College:**
  - Member, Committee in Charge for the Biological Sciences Major, 1998-2000.
  - Undergraduate Advisor, Interdepartmental Undergraduate Program in Biological Sciences, 1999-present.
  - Member, Executive Committee, College of Natural and Agricultural Sciences (2001-2003)
  - Chair, Faculty of the College of Natural and Agricultural Sciences (2003-2006)
  - Chair ex officio, Executive Committee, College of Natural and Agricultural Sciences (2003-2006)
  - Undergraduate Advisor, Interdepartmental Undergraduate Program in Biological Sciences, 1999-present.
  - Outside Member, Search Committee for Conservation Biologist, 2005-2007

- **Campus:**
  - Chair, Office of the Vice Chancellor Research Review Committee for the Center for Exotic Pest Research, 2001-2002
  - Member, UCR Academic Senate Committee on Physical Resources Planning, 2000-present
  - Chair, Center for Conservation Biology Steering Committee, 1998-present.
  - Member, Center for Conservation Biology Steering Committee, 1997-present.
  - Member Center for Conservation Biology Gary Wanczuk Memorial Scholarship Committee, 2001
  - Intermittently 2004-present
  - Member UCR Natural Reserve System Campus Advisory Committee, 1999-present.
  - Chair, Center for Conservation Biology, Shipley-Skinner Reserve - Riverside County Endowment Research Allocation Committee, 2003-present
  - Member UCR Natural Reserve System Campus Advisory Committee, 1999-present.
  - Vice Chair, UCR Academic Senate, 2007.
  - Chair UCR Committee on Faculty Welfare, 2007-2008.
  - Member, Advisory Committee, UCR Academic Senate 2003-present.
  - Member, Four, Ad-Hoc Promotion/Tenure Committees, 2000-2006
  - Ad-Hoc, One 5-year Appraisal Committee, 2000
UC System-Wide:
Chair, UC Division Agricultural and Natural Resources (DANR) Glassy-winged Sharpshooter and the Diseases They Transmit Workgroup, July 1999-July 2001
Co-Chair UC DANR Glassy-winged Sharpshooter and the Diseases They Transmit Workgroup, July 2001- present
Member, DANR, Program, Planning Advisory Committee for Natural Resources, 1998-2000.
Extramural Reviewer for UC Cooperative Extension Advisor Promotion File, 2001
Member, UC Pierce's Disease Research and Emergency Response Task Force, October 1999-April 2000.

Statewide:
Member, California Department of Food and Agriculture Glassy-winged sharpshooter/Pierce's Disease Task Force, August 1999-December 1999.
Member, California Department of Food and Agriculture Glassy-winged sharpshooter Scientific Review Committee, May 2000-present
Member, Citrus Research Board Glassy-winged sharpshooter Advisory Committee, July 2000-present
Member, Scientific Advisory Committee, Riverside County Habitat Conservation Plan, 2001-present

National/International:
Member, Entomological Society of America, Governing Board, 1999-2002.
Subject Editor (Community and Population Biology), Environmental Entomology, Jan. 2004-present.

Public Service:
Member, Scientific Advisory Committee, Riverside County Multi-species Habitat Conservation Plan, County of Riverside, 1997-present.
Member, Metropolitan Water District Southwestern Riverside Multi-Species Reserve Scientific Advisory Committee. Metropolitan Water District of California, Los Angeles, CA, 1998-present.

PROFESSIONAL ACTIVITY (2000-present)

- **Reviewer, manuscripts:** Annals Entomological Society of America; Biological Conservation; Biological Control; California Agriculture; Conservation Biology; Crop Protection; Ecological Monographs, Ecology; Environmental Entomology, Entomologia experimentalis et applicata; Florida Entomologist; Functional Ecology; International Journal of Pest Management; Journal of Arid Environments; Journal of Chemical Ecology; Journal of Economic Entomology; Journal of Insect Behavior; Journal of Kansas Entomological Society; Journal of Orthopteran Research; Oecologia; Pan-Pacific Entomologist; Proceedings of the National Academy of Science; Western North American Naturalist

- **Reviewer, grant proposals for:** Department of Energy National Institute for Global Environmental Change; Environmental Protection Agency NCER Program; NSF Division of Environmental Biology; UC Center for Invasive Species Research Exotic Pests and Diseases Research Program; UC-DANR Pierce's Disease Research Program; UCR Dept Entomology AES/Hatch grants; USDA Cooperative State Research, Education and Extension Service, Small Business Innovation Research Program; USDA National Research Initiative Cooperative Grants Program (USDA-NRICGP) for Entomology/Nematology, USDA-NRI Competitive Grants Program for Natural Resources and the Environment: Managed Ecosystems

- **Editorial Responsibilities:** Subject Editor (Community and Population Biology), Environmental Entomology, Jan. 2004-present.

PRESENTATIONS (Jan 2000-present)

- **Invited Talks:** (presenter is listed first unless otherwise noted by underline):


- **Other Presentations:** (presenter is listed first unless otherwise noted by underline):


Montreal, Quebec, Canada. Dec., 3-6, 2000.


Bethke, J. A., F. J. Byrne, R. D. Oetting, and R. A. Redak. “Optimizing the use of the neonicotinoids against the sweetpotato whitefly, Bemisia tabaci Gennadius, Q-
biotype in ornamental production.” Annual Meeting of the Entomological Society of America. Indianapolis, IN. Nov. 10-13, 2006


<table>
<thead>
<tr>
<th>AGENCY</th>
<th>TITLE</th>
<th>DATES</th>
<th>AMOUNT</th>
<th>PI STATUS</th>
<th>OTHER INVESTIGATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Water District of So. Calif.</td>
<td>&quot;Animal Responses to Weed Control as a Restoration Technique in Coastal Sage Scrub&quot;</td>
<td>10/1/99-9/30/02</td>
<td>$359,100</td>
<td>PI</td>
<td>E. A. Allen, J. T. Rotenberry (Co-PIs)</td>
</tr>
<tr>
<td>California Department of Food and Agriculture</td>
<td>&quot;Impact of Layering Control Tactics on the Spread of Pierce's Disease by the Glassy-Winged Sharpshooter&quot;</td>
<td>5/1/00-4/30/03</td>
<td>$359,984</td>
<td>PI</td>
<td>None</td>
</tr>
<tr>
<td>California Department of Food and Agriculture</td>
<td>&quot;Seasonal Changes in the Glassy-Winged Sharpshooter's Age Structure, Abundance, Host Plant Use, and Dispersal&quot;</td>
<td>5/1/00-4/30/03</td>
<td>$225,000</td>
<td>Co-PI</td>
<td>R. F. Luck (PI), M. S. Hoddle (Co-PI)</td>
</tr>
<tr>
<td>California Department of Food and Agriculture</td>
<td>&quot;Biological Control of Glassy-Winged Sharpshooter in California: One Cornerstone for the Foundation of an IPM program&quot;</td>
<td>5/1/00-4/30/03</td>
<td>$372,967</td>
<td>Co-PI</td>
<td>M. S. Hoddle (PI), R. F. Luck (Co-PI)</td>
</tr>
<tr>
<td>California Department of Food and Agriculture</td>
<td>&quot;Glassy-Winged Sharpshooter Pesticide Screening: Reduced Risk&quot;</td>
<td>5/1/00-4/30/01</td>
<td>$155,495</td>
<td>PI</td>
<td>None</td>
</tr>
<tr>
<td>AGENCY</td>
<td>TITLE</td>
<td>DATES</td>
<td>AMOUNT</td>
<td>PI STATUS</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>-------------------</td>
<td>------------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USDA-APHIS</td>
<td>&quot;Area Wide Management of Glassy-Winged Sharpshooter: A Pierce's Disease Vector&quot;</td>
<td>1/1/01-12/31/01</td>
<td>$299,313</td>
<td>Co-PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: N. Toscano (PI), M. Blua, and R. Hix (Co-PIs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Vineyard Foundation</td>
<td>&quot;Developing an Integrated Pest Management Solution for Pierce's Disease Spread by the Glassy-Winged Sharpshooter in Temecula, CA&quot;</td>
<td>2/00-1/01</td>
<td>$218,452</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: H. Costa, M. Hoddle, D. Cooksey, B. Kirkpatrick, N. Toscano (Co-PIs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Vineyard Foundation</td>
<td>&quot;Impact of Glassy-Winged Sharpshooter on Pierce's Disease Spread in California and New Approaches to Disease Management.&quot;</td>
<td>7/99-6/00</td>
<td>$22,500</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USDA-UC Viticulture Consortium</td>
<td>&quot;Impact of Glassy-Winged Sharpshooter on Pierce's Disease Spread in California and New Approaches to Disease Management.&quot;</td>
<td>7/99-6/00</td>
<td>$22,500</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Association of Nurserymen</td>
<td>&quot;Mechanisms of Host-Plant Resistance to Silver Leaf Whitefly: Adult feeding and Preference&quot;</td>
<td>4/1/00-3/31/01</td>
<td>$19,000</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGENCY</td>
<td>TITLE</td>
<td>DATES</td>
<td>AMOUNT</td>
<td>PI STATUS</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>---------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>California Association of Nurserymen</td>
<td>&quot;Biological Control of Glassy-Winged Sharpshooter.&quot;</td>
<td>4/1/00-3/31/01</td>
<td>$20,000</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: M. Hoddle (Co-PI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Association of Nurserymen</td>
<td>&quot;Host Plant Resistance to Silverleaf Whitefly.&quot;</td>
<td>4/1/99-12/31/00</td>
<td>$17,500</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Department of Transportation</td>
<td>&quot;Controlling the Spread of Xylella fastidiosa, The Causal Agent of Oleander Leaf Scorch, by Disrupting Vector Acquisition and Transmission&quot;</td>
<td>12/1/00-11/30/01</td>
<td>$47,686</td>
<td>Co-PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: M. Blua (PI), and H. Costa (Co-PI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UC-DANR</td>
<td>&quot;UC Workgroup for the Glassy-Winged Sharpshooter and the Diseases It Transmits&quot;</td>
<td>7/1/00-6/30/01</td>
<td>$39,662</td>
<td>Workgroup Chair</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: Various, up to 100 others. I wrote the grant, funds are for workgroup purposes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Department of Food and Agriculture</td>
<td>“Impact of Screen Barriers and Trap Crops on Infestation of a Nursery Yard by the Glassy-Winged Sharpshooter”</td>
<td>5/1/02-12/30/04</td>
<td>$65,512</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: M. J. Blua (Co-PI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UC-DANR/USDA CSREES Pierce’s Disease Control Program</td>
<td>Relationships Between Total Population Counts of Glassy-Winged Sharpshooters and Numbers Obtained From Various Sampling Methods</td>
<td>7/1/02-12/30/04</td>
<td>$63,7957</td>
<td>Co=PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: M. J. Blua (PI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGENCY</td>
<td>TITLE</td>
<td>DATES</td>
<td>AMOUNT</td>
<td>PI STATUS</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------</td>
<td>----------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>UC-DANR/USDA CSREES Pierce’s Disease</td>
<td>Developing a Method to Detect Xylella fastidiosa in the Glassy-Winged</td>
<td>7/1/02-12/30/04</td>
<td>$51,676</td>
<td>Co-PI</td>
<td></td>
</tr>
<tr>
<td>Control Program</td>
<td>Winged Sharpshooter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Department of Food and</td>
<td>Other Investigators: M. J. Blua (PI) ”Toward a Standardized Treatment</td>
<td>6/1/03-12/30/04</td>
<td>$79,795</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>Protocol to Eliminate Glassy-winged Sharpshooter Egg Masses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>in Commercial Nursery Stock ”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Riverside County Multispecies</td>
<td>“Developing methodology for monitoring arthropods within multi-species</td>
<td>9/30/02-6/1/05</td>
<td>$100,000</td>
<td>Co-PI</td>
<td></td>
</tr>
<tr>
<td>Habitat Conservation Plan/California</td>
<td>“Monitoring arthropods within multi-species habitat conservation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department of Fish &amp; Game</td>
<td>plans”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Cut Flower Commission</td>
<td>Other Investigators: M. F. Allen (PI) “Resistance to Biological</td>
<td>2/1/04-1/30/05</td>
<td>$15,635</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control of the Two-spotted Spider Mite in Roses.”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: R. Stouthamer (Co-PI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Univ. Calif. Pierce’s Disease</td>
<td>Understanding and Curtailing Oviposition by Homalodisca</td>
<td>7/1/06-6/30/07</td>
<td>$82,953</td>
<td>Co-PI</td>
<td></td>
</tr>
<tr>
<td>Research Prog.</td>
<td>coagulata on Nursery Plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Investigators: M. Blua Stouthamer (PI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan Water District-UCR</td>
<td>Incorporating Larval Host Plant Plantago erecta Niche Models into</td>
<td>9/1/06-8/31/07</td>
<td>$15,000</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td>Endowment</td>
<td>Quino Checkerspot (Euphydryas editha quino) Niche Models to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calif. Dept. Food &amp; Agriculture</td>
<td>Non-Target effects of Sugar Beet Leafhopper Control: Implications</td>
<td>10/1/04-12/31/07</td>
<td>$270,150</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>for the Blunt-Nosed Leopard Lizard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USDI Desert Cooperative Ecosystems</td>
<td>“Urban Edge Effects within Desert Ecosystems: Impact on Arthropods”</td>
<td>3/1/07-2/28/08</td>
<td>$12,000</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td>Studies Unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGENCY</td>
<td>TITLE</td>
<td>DATES</td>
<td>AMOUNT</td>
<td>PI STATUS</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------</td>
<td>------------------</td>
<td>---------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>Various Donors</td>
<td>Biology, Ecology and Control of Insect Pests on Ornamental Crops</td>
<td>7/1/97- Present</td>
<td>$220,640</td>
<td>PI</td>
<td></td>
</tr>
<tr>
<td>Various Donors</td>
<td>Biology, Ecology and Control of Glassy-winged sharpshooter</td>
<td>7/1/99- Present</td>
<td>$56,000</td>
<td>PI</td>
<td></td>
</tr>
</tbody>
</table>
HELEN MAY REGAN

Contact:
Email: helen.regan@ucr.edu
Phone: +1 951 827 3961
Fax: +1 951 827 4286
Web: http://www.biology.ucr.edu/people/faculty/Regan.html

Education
   Title: Symplectic integration of Hamiltonian Partial Differential Equations

Career History
July 2007 – present. Assistant Professor, Biology Department, University of California Riverside, CA, USA.
January 2003 – June 2007. Assistant Professor, Ecology Program, Biology Department, San Diego State University, CA, USA
December 2000 – October 2002. Postdoctoral Research Fellow, National Center for Ecological Analysis and Synthesis, University of California Santa Barbara, CA, USA
May 1997 – April 1999. Research Fellow, School of Botany, The University of Melbourne, Parkville, Vic 3052, Australia.
August 1996 - March 1997. Numerical Analyst, Chemistry Department, Macquarie University, Sydney, NSW 2109, Australia.
May 1984 - May 1986. Technical Assistant, Department of Obstetrics and Gynaecology, University of Melbourne, Australia

Funding
Pending. NSF Directorate of Biological Oceanography. Collaborative research: integrating empirical and modeling approaches to study the effects of seagrass habitat structure on predator-prey dynamics. (co-PI)
Pending. NSF Directorate of Biological Sciences. The persistence of biodiversity in southern California under future land-change scenarios. (PI)
2007-2009. San Diego Unified Port District. Seagrass in San Diego Bay: assessing eelgrass habitat function for recreationally important species. (co-PI) $137,000 USD.


2005-2006. San Diego Tracking Team. *SDTT Data Analysis Project.* (Funding for MS student). $15,876 USD.


2005. SDSU Research Foundation Grant-in-Aid. *From individuals to populations: how much detail is necessary in population models of threatened plants?* (PI). $3,900 USD.

1998. Cooperative Research Centre for Catchment Hydrology, Australia. *Multi-criteria decision analysis for project selection.* (PI) $1,100 AUD.

1997-1999. Postdoctoral Fellowship Award at the Centre for Mathematics and its Applications, The Australian National University, Canberra, ACT (declined). $135,000 AUD.

1993-1996. Australian Postgraduate (Research) Award (with Stipend) for studies towards a PhD at the University of New England. $56,000 AUD.


Awards

2007. Outstanding Faculty Member Award. College of Sciences, San Diego State University.


Teaching Experience


*Biostatistics:* (San Diego State University 2004-2007)

*Population Modeling:* (San Diego State University 2003-2007; The University of Melbourne 1998, 1999; University of California Santa Barbara 2001)

*Conservation Planning:* (San Diego State University 2006)

*Decision Theory:* (University of Tasmania 2000; The Central Institute for Higher Tibetan Studies, Sarnath, India 1999; The University of Melbourne 1998)

*Environmental Risk Assessment:* (The University of Melbourne 1998, 1999)

*Teaching Assistantships* (Latrobe University and the University of New England 1992–1996)

- 1st year Pure Mathematics: Calculus, Linear Algebra, Set Theory, Probability Theory, Differential Equations;
- 1st year Discrete Mathematics;
- Mathematics and Statistics for the Biological Sciences and Rural Science Mathematics;
- 2nd year Multivariable Calculus;
- 3rd year Computational Mathematics.

*Kids Do Ecology:* (NCEAS, UC Santa Barbara & Monroe Elementary School, Santa Barbara, 2001) “Scientist in the classroom”.

660
Professional Activities
Scientific Community
2006-present. Member of the Standards and Petitions Working Group, Biodiversity Assessments Subcommittee of the IUCN Species Survival Commission.
2006-present. Member of the Australian Centre of Excellence for Risk Analysis. Dept of Agriculture, Fisheries and Forestry, Australian Government.
2006-present. Member of the Working Group Decision making for complex problems in conservation at the Australian Research Council Centre of Excellence for Mathematics and Statistics of Complex Systems, University of Melbourne, Australia.
2005. Member of the working group Decision making for complex problems in conservation at the Australian Research Council Centre of Excellence for Mathematics and Statistics of Complex Systems, University of Melbourne, Australia.
2002-2004. Member of the working group Setting priorities and making decisions for conservation risk management at the National Center for Ecological Analysis and Synthesis, University of California Santa Barbara, CA.
2001-2002. Member of the working group Systematic Conservation Planning and the California Legacy Project (CLP) at the National Center for Ecological Analysis and Synthesis, University of California Santa Barbara, CA.
2000-2002. Member of the working group Developing and testing methods for classifying species conservation status and estimating risk, at the National Center for Ecological Analysis and Synthesis, University of California Santa Barbara, CA.
2000-2001. Member of the working group Review of Forest Service species viability assessment processes, at the National Center for Ecological Analysis and Synthesis, University of California Santa Barbara, CA.


1998. Panelist for Industrial Risk Management seminar, Environmental Futures Forum, September 21 and 22, organised by the Victorian Environmental Protection Authority, held at the University of Melbourne, Australia.


University (SDSU)
2005. Seminar Organizer, Ecology and Evolutionary Biology, SDSU.
2005. Faculty Panel Member. Crisis Carnival 2005 – (Re) Presenting Earth. 13th Annual Interdisciplinary Graduate Student Conference. Dept. of Rhetoric and Writing Studies, Dept of English and Comparative Literature, SDSU.

Student Supervision
2005 - 2007. Katie Steele (PhD Philosophy, Univ. of QLD, Australia).
2004 – 2007. John Crookston (MS Ecology, SDSU); Lisa Markovchick-Nicholls (MS Ecology, SDSU); Toni Mizerek (MS Ecology, SDSU).

Graduate Committees
2006-present. Thomas Anderson (MS Ecology, SDSU), Eliza Moore (MS Ecology, SDSU), Ryan Bart (MS Geography, SDSU), Kelly Kreueger (MS Anthropology, SDSU), Nathan Mendenhall (MS Geography, SDSU)
2006. Kate Newman (MS Ecology, SDSU), Scott Valentine (MS Geography, SDSU)
2004-2005. Robin Clark (MS Geography, SDSU)
2004. Catherine Yamada (MS Ecology, SDSU)

Peer Review
Biological Conservation; Conservation Biology; Diversity and Distribution; Ecological Applications; Ecological Modelling; Ecological Monographs; Ecology; Ecology Letters; Journal of Environmental Management; Environmental Toxicology and Chemistry; Human and Ecological Risk Assessment; IEEE Transactions on Systems, Man, and Cybernetics; Integrated Environmental Assessment and Management; Natural Resource Modeling; Oikos;
Membership in Professional Societies
Society for Conservation Biology
Ecological Society of America
Association for Environmental Health and Sciences
Society for Environmental Toxicology and Chemistry

Honorary Appointments
2007-present. Honorary Associate, School of Philosophical and Historical Inquiry. University of Sydney, NSW, Australia.
2007-present. Senior Fellow, Department of Mathematics and Statistics, The University of Melbourne, Australia.
September 2000. Visiting scholar at the School of Philosophy, University of Tasmania, Australia.

Publications (* denotes student authorship)
Refereed Papers


Awarded Ecological Risk Assessment Paper of Year 2002 in *Journal of Human and Ecological Risk Assessment*


Submitted Papers


Manuscripts in Preparation
Regan, H.M., D.A. Keith, M. Tozer, T.J. Regan and N. Tootell*. The use of fire to combat disease: turning synergisms between threats into conservation management. (in prep.)
Regan, H.M., T.J. Regan and T. Mizerek*. Sensitivity of endangered species protocols to data quality and quantity. (in prep.)
Mizerek, T.*, H.M. Regan and K. Hovel. The effects of habitat fragmentation and harvesting on blue crab population dynamics in Chesapeake Bay. (in prep).
Crookston, J.B.*, H.M. Regan and J. Franklin. The effects of habitat fragmentation and altered fire regime on an obligate seeder. (in prep.)

**Book Reviews**

**Technical Reports and Conference Proceedings**


**Conference Presentations**


goals for populations (abstract of poster). In SETAC Europe 14th Annual Meeting, Volume of Abstracts, Prague, Czech Republic, April 2004.


Invited Seminars
2007 University of Sydney, Australia
2007 University of Maryland, MD, USA
2007 University of California, Riverside, CA, USA
2006 Conservation and Research for Endangered Species, San Diego Zoo, USA
2006 Scripps Institute of Oceanography, University of California, San Diego, USA
2005 University of California, Davis, CA, USA
2005 University of British Columbia, Vancouver, Canada
2005 University of Missouri, Columbia, Missouri, USA
2005 University of Melbourne, VIC, Australia.
2005 U.S. Environmental Protection Agency, Cincinnati, OH, USA
2005 California Native Plant Society, San Diego Chapter, CA, USA
2004 BioSymposium, San Diego State University, CA, USA
2004 University of Queensland, QLD, Australia
2003 Ecology and Evolution Seminar Series, San Diego State University, CA, USA
2003 Computer Science Colloquium, San Diego State University, CA, USA
2003 University of California San Diego, CA, USA
2002 New South Wales National Parks and Wildlife Service, NSW, Australia
2002 National Marine Fisheries Service, Seattle, WA, USA
2001 San Diego State University, CA, USA
2001 University of California Santa Barbara, CA, USA
2000 University of Tasmania, Hobart, TAS, Australia
1999 University of Melbourne, VIC, Australia
1998 University of Melbourne, VIC, Australia
1996 Latrobe University, Melbourne, VIC, Australia
1996 The Australian National University, Canberra, ACT, Australia
1996 University of New England, Armidale, NSW, Australia
DAVID N. REZNICK

Contact:
Phone: (951) 827-5820
Email: david.reznick@ucr.edu

EDUCATION:
A.B. Washington University, 1974 (Biology)
Ph.D. University of Pennsylvania, 1980 (Biology)

POSITION:
1994-present Professor of Biology, Department of Biology, University of California, Riverside
1989-1994 Associate Professor of Biology, Department of Biology, University of California, Riverside
1984-89 Assistant Professor of Biology, Department of Biology, University of California, Riverside
1982-84 Assistant Research Scientist, Department of Zoology, University of Maryland, College Park, Maryland
1980-82 Research Associate, Academy of Natural Sciences of Philadelphia, Benedict Estuarine Research Laboratories, Benedict, Maryland

ACADEMIC HONORS, FELLOWSHIPS AND AWARDS
Phi Beta Kappa, 1974
Summa Cum Laude, 1974
NIH Trainee in Genetics, 1976-1978
Sigma Xi Outstanding Dissertation Award - University of Pennsylvania Chapter, 1981
Visiting Research Fellow, University of Melbourne, Melbourne, Australia, 1998
Distinguished Visiting Professor, University of Miami, 1998-1999, Academic Year
Guest Professor, University of Konstanz, 1999
Fellow of the American Association for the Advancement of Science, 1998
Faculty Research Lecturer, UC Riverside, 1998
Walton Lecturer, Mountain Lake Biological Station and U. VA., 1999
Edward Sturtevant Hathaway Lectureship, Tulane University, 2002
Edward Osborne Wilson Naturalist Award, American Society of Naturalists, 2003
<table>
<thead>
<tr>
<th>Year</th>
<th>Grant Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>Theodore Roosevelt Memorial Fund</td>
<td>$600</td>
</tr>
<tr>
<td>1976</td>
<td>Sigma Xi Grant in Aid of Research</td>
<td>$100</td>
</tr>
<tr>
<td>1978-79</td>
<td>National Science Foundation Doctoral Dissertation Improvement Grant, $1,600.</td>
<td></td>
</tr>
<tr>
<td>1980-82</td>
<td>National Science Foundation Grant DEB 80-17011. &quot;The effects of predation on life</td>
<td>$85,000</td>
</tr>
<tr>
<td></td>
<td>history evolution in guppies (<em>Poecilia reticulata</em>)&quot; (with Dr. Michael Hirshfield,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>co-principal investigator), $85,000.</td>
<td></td>
</tr>
<tr>
<td>1983-86</td>
<td>National Science Foundation Grant DEB-82-14655. &quot;The impact of predation on life</td>
<td>$142,000</td>
</tr>
<tr>
<td></td>
<td>history evolution in guppies (<em>Poecilia reticula</em>),&quot; $142,000. [Note: $56,000 in</td>
<td></td>
</tr>
<tr>
<td></td>
<td>residual funds were transferred to the University of California, Riverside to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>support the same research program from 1985-1987. The new grant number was</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BSR-84-16599.]</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td>University of California, Riverside, Academic Senate Research Grant, $1,200.</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>University of California, Riverside, Academic Senate Research Grant, $1,400.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Riverside, Faculty Minigrant - Vertebrate Functional</td>
<td>$298</td>
</tr>
<tr>
<td></td>
<td>Anatomy Teaching Aids, $298.</td>
<td></td>
</tr>
<tr>
<td>1986</td>
<td>University of California, Riverside, Academic Senate Research Grant, $1,200.</td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>University of California, Riverside, Academic Senate Research Grant, $1,200.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Riverside, Faculty Fellowship, $2,400.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Division of Agriculture and Natural Resources, Mosquito</td>
<td>$4,885</td>
</tr>
<tr>
<td></td>
<td>Control Research, $4,885.</td>
<td></td>
</tr>
<tr>
<td>1987-89</td>
<td>National Science Foundation Grant BSR-8620463. &quot;Life History Evolution in Guppies,&quot;</td>
<td>$80,000</td>
</tr>
<tr>
<td></td>
<td>$80,000.</td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>University of California, Division of Agriculture and Natural Resources, Mosquito</td>
<td>$8,171</td>
</tr>
<tr>
<td></td>
<td>Control Research, $8,171.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Riverside, Academic Senate Research Grant, $1,200.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Riverside, Academic Senate Travel Grant, $750.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Riverside, Faculty Minigrant - Vertebrate Functional</td>
<td>$285</td>
</tr>
<tr>
<td></td>
<td>Anatomy Teaching Aids, $285.</td>
<td></td>
</tr>
</tbody>
</table>

1989 University of California, Riverside, Academic Senate Research Grant, $1,400. University of California, Riverside, Academic Senate Travel Grant, $750. National Science Foundation Grant. Research Experience for Undergraduates, $8,000.

1990 University of California, Riverside, Academic Senate Research Grant, $700. University of California, Riverside, Academic Senate Travel Grant, $700. National Science Foundation Grant. Research Experience for Undergraduates, $4,000.

1991 University of California, Riverside, Academic Senate Research Grant, $1,350. University of California, Riverside, Academic Senate Travel Grant, $300. Sutter-Yuba Mosquito Abatement District research grant: "Factors which influence the survival and reproduction of Gambusia affinis used for the biological control of mosquitoes. $3,250

1992 National Science Foundation Grant. Research Experience for Undergraduates, $4,000. University of California, Riverside, Academic Senate Research Grant, $1,300. University of California, Riverside, Academic Senate Travel Grant, $700.

1992-94 National Science Foundation Grant (DEB-9119432). "Life history evolution in Trinidadian guppies (Poecilia reticulata)," $256,000 (initiated 3/1/92).

1993 University of California, Riverside, Academic Senate Research Grant, $1,300. University of California, Riverside, Academic Senate Travel Grant, $500. National Science Foundation Grant. Research experience for Undergraduates. $8,000

1994 University of California, Riverside, Academic Senate Research Grant, $1,000 University of California, Riverside, Academic Senate Travel Grant, $500
<table>
<thead>
<tr>
<th>Year</th>
<th>Funding Source</th>
<th>Title</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994-97</td>
<td>National Institutes of Health (1F32GM16990).</td>
<td>&quot;Genetic variation in maturation and secondary sex traits.&quot; (With postgraduate researcher, Kim Hughes.)</td>
<td>$52,300</td>
</tr>
<tr>
<td>1995</td>
<td>University of California, Riverside, Academic Senate Research Grant</td>
<td>$1,300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Riverside, Academic Senate Travel Grant</td>
<td>$500</td>
<td></td>
</tr>
<tr>
<td>1995-98</td>
<td>National Science Foundation (DEB-9419832).</td>
<td>&quot;The role of population density and resource limitation in predator/prey-mediated life history traits&quot;.</td>
<td>$311,999</td>
</tr>
<tr>
<td></td>
<td>National Science Foundation (DEB-9419832).</td>
<td>&quot;Research Experience for Undergraduates - The role of population density and resource limitation in predator/prey-mediated life history traits&quot;.</td>
<td>$15,000</td>
</tr>
<tr>
<td>1995-97</td>
<td>National Science Foundation (IBN-9520673).</td>
<td>&quot;Doctoral Dissertation Research: Causes and consequences of morphological variation within fence lizard populations&quot;. (With graduate student, Ken Halama.)</td>
<td>$3,548</td>
</tr>
<tr>
<td>1996</td>
<td>University of California, Riverside, Academic Senate Research Grant</td>
<td>$1,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of California, Riverside, Academic Senate Travel Grant</td>
<td>$700</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>University of California, Academic Senate Research and Travel Grant</td>
<td>$800</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>Australian Research Council (Graeme Watson, P.I.).</td>
<td>Plasticity in Larval Development in Crinia signifera.</td>
<td>$17,000</td>
</tr>
<tr>
<td></td>
<td>University of California, Academic Senate Research and Travel Grant</td>
<td>$2,000</td>
<td></td>
</tr>
<tr>
<td>1998-00</td>
<td>National Science Foundation (DEB-9801492).</td>
<td>Dissertation Research: Evolution of offspring size in the Trinidadian guppy Poecilia reticulata. (With graduate student Farrah Bashey).</td>
<td>$10,000</td>
</tr>
<tr>
<td>1998-02</td>
<td>National Science Foundation (DEB-9707473).</td>
<td>Evolution of Aging in Guppies (Poecilia reticulata).</td>
<td>$400,001</td>
</tr>
<tr>
<td></td>
<td>National Science Foundation (DEB-9707473).</td>
<td>REU: The role of senescence in life history evolution.</td>
<td>$20,000</td>
</tr>
<tr>
<td>1999</td>
<td>University of California, Academic Senate Research and Travel Grant</td>
<td>$1,600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Science Foundation (DBI9804130).</td>
<td>Postdoctoral research fellowship in biosciences related to the environment for FY 1998&quot;. (With Postdoc Doughty).</td>
<td>$2,000</td>
</tr>
<tr>
<td>2000</td>
<td>University of California, Academic Senate Research and Travel Grant</td>
<td>$1550</td>
<td></td>
</tr>
</tbody>
</table>
National Science Foundation/SGER (DEB-9986801).  ASGER: Comparative studies of senescence in natural populations of guppies, $27,212

2000-2002 National Science Foundation (DEB-0073231), Dissertation Research: Secondary reproductive characteristics, and biogeograph of the Poeciliid fish genus Lima. (With graduate student A. Hamilton) $9,600

2002 University of California, Academic Senate Research and Travel Grant, $2,000

2001-2004 National Science Foundation – Collaborative Research. The evolutionary interplays between life histories, morphology, performance and behavior in Trinidadian Guppies. $333,139. PI – David Reznick, Co-PI – Cameron Ghalambor


2004 University of California, Academic Senate Research and Travel Grant, $1454


TEACHING EXPERIENCE

Undergraduate


Graduate


PROFESSIONAL ACTIVITIES

Associate Editor, Evolution (1990-1993)
Associate Editor, Ecology (1995-2001)
Associate Editor, American Naturalist (2004-)

Reviewer of grants for: Australian Research Council, Leverhulme Trust, National Geographic Society, NERC (Great Britain), Netherlands Organization for Scientific Research, NSF, NSERC (Canada), Swiss National Science Foundation, US-Israel Binational Science Foundation


UNDERGRADUATE STUDENTS IN LABORATORY

I employ an average of eight students at a time as research assistants and sponsor an average of three per year as independent study students.

PROFESSIONAL SOCIETIES

Society for the Study of Evolution, American Society of Naturalists, AAAS

PUBLICATIONS


Reznick, D. N. "Grandfather effects": the genetics of inter-population differences in offspring size in the mosquito fish Gambusia affinis. Evolution 35:941-953.


Reznick, D. N. Genetic determination of offspring size in the guppy (Poecilia reticulata). American Naturalist 120:181-188.


1987 **Reznick, D. N.** and **B. Braun.** Fat cycling in the mosquitofish (*Gambusia affinis*): is fat storage a reproductive adaptation? Oecologia 73:401-413.


Reznick, D. N. New model systems for studying the evolutionary biology of aging. Genetica 91:79-88.


2001


2002

Bronikowski, AM; Clark, ME; Rodd, FH; Reznick, DN. Population-dynamic consequences of predator-induced life history variation in the guppy (Poecilia reticulata) Ecology 83:2194-2204.


2003


2004


2005


Reznick, D. N., M. J. Bryant, and D. Holmes. The evolution of senescence and post-reproductive lifespan in guppies (Poecilia reticulata). PLOS-Biology 4: 136-143

Millar NP, Reznick DN, Kinnison MT, et al. Disentangling the selective factors that act on male colour in wild guppies: OIKOS 113 (1): 1-12


Reznick, DN, E. Schultz, S. Morey and D. Roff. On the virtue of being the first born: the influence of date of birth on fitness in the mosquitofish, Gambusia affinis. Oikos, in press.


Book Reviews


* undergraduate co-authors
Derek A. Roff

CONTACT
Phone: 951-827-2437
Email: Derek.Roff@ucr.edu

EDUCATION:
B.Sc. (Hons.), Sydney University, 1968-71
Ph.D., University of British Columbia, 1972-76

EXPERIENCE

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATES</th>
<th>INSTITUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Student</td>
<td>1972</td>
<td>Biology Department, Sydney University</td>
</tr>
<tr>
<td>Graduate Student</td>
<td>1972-1976</td>
<td>Institute of Animal Resource Ecology, University of British Columbia</td>
</tr>
<tr>
<td>Visiting fellowship at Government</td>
<td>1978</td>
<td>Regina Agricultural Research Station</td>
</tr>
<tr>
<td>Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section Head,</td>
<td>1978-1980</td>
<td>Fisheries and Oceans, Population Mechanism, Newfoundland</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>1980-1984</td>
<td>Biology Department, McGill University</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>1985-1990</td>
<td>Biology Department, McGill University</td>
</tr>
<tr>
<td>Professor</td>
<td>1990-2001</td>
<td>Biology Department, McGill University</td>
</tr>
<tr>
<td>Professor</td>
<td>2001-</td>
<td>Biology Department, UC Riverside</td>
</tr>
</tbody>
</table>
ADMINISTRATIVE RESPONSIBILITIES

**Internal (McGill)**
- Technical Services Committee 1982-1983
- Faculty of Science Committee on computing 1984-1986
- Committee for the purchase of microcomputers 1985-1986
- Curriculum Committee 1986-Present
- Seminar Committee 1986-1987
- Cyclic Review Committee for Entomology Dept., Macdonald College 1991
- Library Committee 1992
- Graduate Training Committee 1992, 1999-
- Seminar Organiser 1995-1997

**External**
- NSERC DFO/Subvention Program Committee 1990-1992
- NSERC Operating Grant Panel (Population) 1990-1993
- Chair, Major Installation NSERC Grant Committee for DNA lab, McMaster University 1992

PRESENT EDITORIAL POSITIONS

Evolution
Journal of Evolutionary Biology
Evolutionary Ecology Research (previously Evolutionary Ecology)
Researches in Population Ecology
Entomological Science
### RESEARCH GRANTS HELD

<table>
<thead>
<tr>
<th>GRANT</th>
<th>YEARS</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract for analysis of harp seal population</td>
<td>1981-1982</td>
<td>$22,500</td>
</tr>
<tr>
<td>dynamics DSS #085C.FPOOL-0-3330</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Further contract for above DSS #095C.FPOOL-2-3289</td>
<td>1982-1983</td>
<td>$20,430</td>
</tr>
<tr>
<td>Operating grant from NSERC</td>
<td>1981-1984</td>
<td>$20,000/year</td>
</tr>
<tr>
<td>Operating grant from NSERC</td>
<td>1984-1987</td>
<td>$32,000/year</td>
</tr>
<tr>
<td>Operating grant from NSERC</td>
<td>1987-1990</td>
<td>$35,000/year</td>
</tr>
<tr>
<td>Operating grant from NSERC</td>
<td>1990-1993</td>
<td>$45,000/year</td>
</tr>
<tr>
<td>Operating grant from NSERC</td>
<td>1993-1996</td>
<td>$52,337/year</td>
</tr>
<tr>
<td>Operating grant from NSERC</td>
<td>1997-</td>
<td>$57,000/year</td>
</tr>
<tr>
<td>FCAR (with 3 collaborators)</td>
<td>1994-1996</td>
<td>$48,000/year</td>
</tr>
<tr>
<td>FCAR (with 3 collaborators)</td>
<td>1997-</td>
<td>$40,000/year</td>
</tr>
<tr>
<td>Collaborative NSERC grant (with Dr. D. Fairbairn)</td>
<td>1995-1999</td>
<td>$76,873/year</td>
</tr>
<tr>
<td>NSERC Equipment grant</td>
<td>1991</td>
<td>$15,287</td>
</tr>
<tr>
<td>NSERC Equipment grant</td>
<td>1992</td>
<td>$21,226</td>
</tr>
<tr>
<td>NSERC Equipment grant</td>
<td>1994</td>
<td>$45,810</td>
</tr>
<tr>
<td>NSERC Equipment grant</td>
<td>1996</td>
<td>$24,830</td>
</tr>
<tr>
<td>NSF Y772379 (with G. Davidowitz &amp; F. Nijhout)</td>
<td>2003-2005</td>
<td></td>
</tr>
</tbody>
</table>

### CONSULTING

<table>
<thead>
<tr>
<th>YEARS</th>
<th>REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-1983</td>
<td>Government contract for analysis of harp seal population dynamics</td>
</tr>
<tr>
<td>NAME</td>
<td>DEGREE</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Daniel Heath</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Timothy Mousseau</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Patrick Shannon</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Michael Bradford</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Karen Heshka</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Note - No students accepted in 1988-1989 because of sabbatical</td>
<td></td>
</tr>
<tr>
<td>Andrew Simons</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Richard Preziosi (co-supervised with Dr. Fairbairn)</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Ilana Weigensberg</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Peter Crnorkrak</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>James Tucker (co-supervised with Dr. Fairbairn)</td>
<td>Msc.</td>
</tr>
<tr>
<td>Marc Derose</td>
<td>MSc.</td>
</tr>
<tr>
<td>Serge Mostowy (co-supervised with Dr. Fairbairn)</td>
<td>MSc.</td>
</tr>
<tr>
<td>Malorie Gelines (co-supervised with Dr. Fairbairn)</td>
<td>MSEe</td>
</tr>
<tr>
<td>Mathieu Begin</td>
<td>PhD</td>
</tr>
<tr>
<td>Natalia Sokolovska</td>
<td>MSc.</td>
</tr>
</tbody>
</table>


POST DOCTORAL FELLOWS IN MY LAB

<table>
<thead>
<tr>
<th>NAME</th>
<th>YEARS</th>
<th>FATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yves Carrière</td>
<td>1992-1996</td>
<td>Asst. Prof., University of Arizona</td>
</tr>
<tr>
<td>Yoshinari Tanaka</td>
<td>1994-1996</td>
<td>Research Scientist, Inst. of Env. Sci. &amp; Tech., Japan</td>
</tr>
<tr>
<td>Gray Stirling (co-supervised with Dr Fairbairn)</td>
<td>1994-2000</td>
<td>Part time lecturer at McGill</td>
</tr>
<tr>
<td>Peter Crnorkrak</td>
<td>1998-2000</td>
<td>Presently doing a postdoc at University of Toronto</td>
</tr>
<tr>
<td>Denis Reale</td>
<td>1999-2001</td>
<td></td>
</tr>
</tbody>
</table>

PUBLICATIONS

1973

1974

1975

1976

1977

1978

1980


2014


---

1986


---

1987


---

1988


---

1989


---

1990


---

1991


---

1992


---

1993


1994


1995


1996


1997


1998


1999


2001


2002


2003


-------------------------------------------------------------------------------------------------------------------------------

2004


-------------------------------------------------------------------------------------------------------------------------------

2005


-------------------------------------------------------------------------------------------------------------------------------

2006


2007

BOOKS
Roff, D. A. 2001. Life History Evolution Sinauer

REVIEWS
TECHNICAL REPORTS


PAPERS ORIGINATING FROM WORK COMPLETED DURING THE TENURE WITHIN MY LAB


SOLICITED CONFERENCE PRESENTATIONS


Roff, D. A. and D. J. Fairbairn. 2007. A quantitative genetic approach to understanding human-induced changes in fish life histories. Six decades of fishery genetics: A retrospective view and vision for
47 OTHER CONFERENCE PRESENTATIONS (1985-2006)

SUBJECTS TAUGHT

Fisheries Management
Resource Biology
Organismal Biology
Genetics
Basic Genetics
Population Ecology
Ecology Field Course
Population Ecology
Model Building In Ecology, Evolution and Behaviour
Laboratory Course in Biology of Organisms
Quantitative Research Techniques in Ecology and Behaviour
Independent Studies
Evolution of Life Cycles
Statistical Approaches in Ecology and Evolution
Quantitative Genetics
Conservation Genetics
Biostatistical Analysis
JOHN T. ROTENBERRY

Contact:
Phone: (951)-827-3953
E-mail: john.rotenberry@ucr.edu

ACADEMIC DEGREES

<table>
<thead>
<tr>
<th>Degree</th>
<th>Year</th>
<th>Institution</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>1978</td>
<td>Oregon State University</td>
<td>Ecology</td>
</tr>
<tr>
<td>M.S.</td>
<td>1974</td>
<td>Oregon State University</td>
<td>Ecology</td>
</tr>
<tr>
<td>B.A.</td>
<td>1969</td>
<td>University of Texas (Austin)</td>
<td>Zoology</td>
</tr>
</tbody>
</table>

ACADEMIC POSITIONS

Professor of Biology, University of California, Riverside, 1994 - present.

Associate Director, Center for Conservation Biology, University of California, Riverside, 1997 - present

Director, Natural Reserve System, University of California, Riverside, 1990 - present.

Associate Professor of Biological Sciences, Bowling Green State University, 1980 - 1990

Adjunct Professor of Biology, Boise State University, 1990 - 1996.

Adjunct Professor of Biology, University of New Mexico, 1987-1988 (sabbatical leave).

RESEARCH INTERESTS

Community Ecology and Conservation Biology, particularly how environmental factors interact to determine species diversity and community composition, and how the relative importance of those factors varies. My research has focused on semi-arid shrublands throughout the West, with emphasis on birds and plant communities; and conservation biology of vertebrates from a landscape ecological perspective.

Avian Ecology, particularly behavioral aspects such as habitat and diet selection, reproductive biology, and community ecology. Especially interested in modelling habitat associations of passerine birds and documenting changes in these associations through time and space.
Multivariate Statistics, especially application of multivariate statistical analysis to biological problems, and the conceptualization of ecological systems in a multivariate framework.

PROFESSIONAL SOCIETIES

Ecological Society of America, American Ornithologists' Union (Fellow), Society of Sigma Xi, Association of Field Ornithologists, American Society of Naturalists, Cooper Ornithological Society (Life Member, Honorary Member), American Institute of Biological Sciences, Institute for Bird Populations, International Society for Behavioral Ecology, American Association for the Advancement of Science (Fellow)

HONORS AND AWARDS

Fellow, American Ornithologists' Union, 2000
Fellow, American Association for the Advancement of Science, 2002
Honorary Member, Cooper Ornithological Society, 2003
President-Elect, Cooper Ornithological Society, 2004
Lifetime Achievement in Ecology Award, PRBO Conservation Science, 2007


RESEARCH GRANTS AND CONTRACTS

Current


National Science Foundation. National Science Technology Center for Embedded Networked Sensing. $875,329. 1 August 2002 – 31 July 2007. Renewed: $1,349,740; 1 August 2007 – 31 July 2012. UCR PI’s M. Hamilton, J. Rotenberry, M. Allen. In collaboration with 5 additional institutions and 31 additional PIs; the non-UCR portion is for ~$45,000,000 during the same 10-yr period.

Previous

California Department of Fish and Game. Sierra Montane Meadow and Desert Plant Assessment Project. $151,614. 1 May 2005 – 30 June 2007. PI’s J. Rotenberry, M. Morrison.


California Department of Fish and Game. Autecological studies of sensitive coastal sage scrub target birds and mammals. $85,000. 1 January 1995 - 31 December 1995. PI’s J. Rotenberry, M. Price.


PUBLICATIONS

Technical Papers


**Book Reviews**


**Popular Article**

PAPERS AND SEMINARS PRESENTED

I have authored or coauthored approximately 130 papers or posters that have been presented at professional meetings and symposia since 1974.

Additionally, since 1980 I have presented 42 invited seminars to departments at various colleges and universities in the United States, Canada, England, Australia, Sweden, Finland, Denmark, and New Zealand. A detailed list of all papers and seminars presented is available on request.

RESEARCH IN PROGRESS

The interface between conservation biology and landscape composition and structure. In particular, we are investigating ecological mechanisms producing “edge effects” in natural areas adjacent to a spectrum of urban development and activity. In related projects we are also examining plant and animal communities within riparian areas in urbanizing landscapes (with multiple collaborators).

Developing, refining, and implementing new approaches to modeling habitat associations of animals and plants. We intend to apply these models to current problems in conservation of species and selection and design of natural reserves, and to understanding the niche relationships of species as a major component of their basic ecology. Initially regional, this project now includes work throughout Baja California and US-Mexico borderlands (with K. Preston, R. Estrella-Rodriges, and others).

Impacts of habitat alteration (primarily due to fire, grazing, and military activities) on distribution and abundance of passerines in shrubsteppe habitat. Our particular interest is how landscape level changes in habitat influence ecology and reproductive success (with S. Knick and others).

Impacts of phonotactic parasitoid flies on ecology, behavior, and evolution of an acoustically signalling cricket. Specifically, how does song structure vary under conflicting pressures of natural and sexual selection (with M. Zuk and L. Simmons).

As a component of the NSF-supported National Technology Science Center for Embedded Networked Sensors, our primary scientific objective is to design, develop, evaluate, and deploy densely distributed, continuously operating, long-lived, wireless sensor networks appropriate for measuring diverse environmental, physiological, and ecological variables within natural ecosystems (with M. Hamilton and M. Allen).

TEACHING EXPERIENCE AND ACADEMIC ADVISING

During my tenure at Bowling Green State University, my principal academic duties involved graduate instruction. The major courses that I taught were Population and
Community Ecology, Biostatistics (univariate, inferential), Advanced Biostatistics (multivariate, descriptive), and Ornithology (graduate/advanced undergraduate). Additionally, each year I directed a graduate seminar on some topic in community ecology. I also taught an undergraduate course in population and community ecology and participated in an environmental sciences course for non-biology majors.

At UC-Riverside I have taught a course in vertebrate natural history for non-biology majors, and regularly taught a portion of the undergraduate core course in population biology. I now teach an upper-division field course on evolutionary ecology of terrestrial vertebrates. I also teach an annual graduate seminar in ecology, participate in two graduate core courses in general ecology and population and community ecology, and have created a new graduate course in ecological multivariate analysis.

Since 1982 I have signed 30 Ph.D dissertations (10 as major advisor) and 44 M.S. theses (15 as major advisor). Currently I have 10 Ph.D and 4 M.S. students, and serve on an additional 2 Ph.D. and 1 M.S. committees.

ACADEMIC SERVICE

I normally referee 10-15 manuscripts per year for journals of professional societies and for government agencies. I also serve as ad hoc reviewer of 1-2 proposals per year for National Science Foundation. I also served as a Consulting Editor to Studies in Avian Biology No. 13, Avian Foraging: Theory, Methodology, and Applications.

Beginning March 1993 I began service as Editor of Studies in Avian Biology, a monograph series published by the Cooper Ornithological Society. Since then I have published nine symposia proceedings and two monographs, and currently have one monograph and two symposia in press. I end my tenure as editor in January 2004, to become President-Elect for the Cooper Society, to serve as president 2005-2007.

From November 1992 through March 1996 I served as a member of the Board of Editors for Ecology/Ecological Monographs. In that capacity I reviewed approximately 35 manuscripts per year, with responsibility for final rejection/acceptance of manuscripts. In July 1997 I was invited to serve on the board as an “Editor Emeritus” for a limited number of manuscripts in avian ecology.

I served on the National Science Foundation's panels for Conservation and Restoration Biology, December 1993 and January 1995.

At Bowling Green I served on a variety of elective and appointive departmental and university service committees between 1980-1989 (17 committee-years), most notably Honors (3 years), Library (7 years), and Executive (2 years). I also served on two chair selection/evaluation and two faculty search committees.
At UC Riverside I have served on several faculty search committees, on the Chancellor's Advisory Committee for Non-Senate Academic Affairs, and on a College Task Force that created an undergraduate program in Conservation Biology. I am Campus Director of the UCR Natural Reserve System and serve as UCR's representative to the University-wide NRS Advisory Committee (Fall 1991 - present). I am also Associate Director, UCR Center for Conservation Biology.


ADMINISTRATIVE EXPERIENCE

Academic Coordinator and Director of the UC-Riverside Natural Reserve System (1990 – present). My office on the Riverside campus bears administrative responsibility for eight of the 34 reserves maintained by the University of California system. I provide leadership to a diverse staff of resident reserve directors and stewards (12 total), integrate reserve functions with a variety of campus instructional and research activities, supervise a total budget of about $750,000, and represent the campus interests on the University-wide advisory committee.

At the request of the UC-NRS Systemwide Director I chaired a committee to provide an external 10-year review of UCSB’s Coal Oil Point Reserve in fall 2003, and of UCSD’s four reserves in winter 2006. I currently serve as chair of the Ad Hoc Bond Fund Evaluation Committee, which reviews systemwide reserve applications for matching funds for facilities development funded through Proposition 84 ($25 million).

PUBLIC SERVICE

Named member to the Management Board of the Sonoran Joint Venture. The SJV is a binational organization that integrates strategies, goals, and objectives of existing regional, national, and international bird conservation plans and programs into a single strategic effort to address regional bird conservation needs in the southwestern U.S. and northwestern Mexico (March 2006 – present).

Named member to the inaugural Science Advisory Committee, Audubon California. The mission of Audubon California, a component of the National Audubon Society, is to conserve and restore California’s natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth’s biological diversity (September 2002 – present).

Named a scientific advisor to the California Natural Community Conservation Planning Program, to advise California Department of Fish and Game, US Fish and Wildlife
Service, and USGS Biological Resources Division on ecology and conservation biology, to assist in developing plans for research relating to management, and to review regional conservation plans (June 1994 - present).

Elected member of the Board of Directors of Point Reyes Bird Observatory, a non-profit organization dedicated to avian research and conservation throughout the Pacific Rim and Antarctica (July 1991 - 1999).

Appointed member of the Riverside County Habitat Conservation Agency Technical Advisory Committee, overseeing the development of a large scale, long term habitat conservation plan for endangered species in western Riverside county (January 1991 - 1998).
JOEL L. SACHS

Contact:
Tel: 951-827-6357
Fax: 951-827-4286
E-mail: joels@ucr.edu

Education:
University of Iowa  Biology  BA, 1993
University of North Dakota  Zoology  MS, 1998
University of Texas  Integrative Biology  Ph.D. 2004
University of California-Riverside  Biology  Assistant Professor 2007-

Research Experience:
Undergraduate Lab Assistant to Paul Rudolph, Ph.D. Department of Biology
University of Iowa- Taxonomy of bassomatophoran snails 1992-1993
Research Assistant- University of Iowa Hospitals and Clinics- Department of
Psychiatry-Michael Miller, Ph.D. The effects of ethanol on the neural
development of rats, a cytochemical analysis of NGF and its receptors
in developing rats. 1993-1995
Master’s Research- University of North Dakota- Department of Biology
The evolution of colonial breeding in birds: A Test of hypotheses with the
red-necked grebe.  C. R. Hughes, Advisor. 1995-1998
Senior Research Assistant- Oregon Health Sciences University- Neurological
Sciences Institute. Differential Display-RT-PCR analysis on photoreceptor cells
of *Xenopus laevis* and sacculus hair cells of *Carassius auratus*. 1998-1999
Ph.D. Research- University of Texas, Department of Integrative Biology-
Cooperation and conflict between organisms: model systems and theory.

Research Experience continued:
Postdoctoral Fellow- University of California-Berkeley, Department of Integrative Biology,
Evolution of cooperation and conflict: legume-rhizobium symbioses.
Assistant Professor- University of California-Riverside, Department of Biology
Beginning July, 2007

Teaching Experience:
University of North Dakota. Department of Zoology - Teaching Assistant. 1995-1998
   Introductory Biology Lab I & II- One semester each
   Ecology; Field & Lab Course- Two semesters
   Computer Technical Assistant- Web page development and maintenance.
Oregon Health Science University- Neurological Sciences Institute. – Lab Mentor. 1998  
NSI Summer Internship Program for Undergraduates.  
University of Texas. Department of Integrative Biology – Teaching Assistant 1999-2002  
– Assistant Instructor 2002-2004
Non-majors Biology: Critical thinking - four semesters  
Ornithology – three semesters  
University of California – Berkeley. Undergraduate Research Apprenticeship Program.  
– Research Mentor 2005-Present

Field Experience:  
University of Iowa. 1994. Project Bluebird. Set up and monitored experimental nesting sites for  
recovering eastern-bluebird (*Sialia sialis*) populations in Johnson County, IA.  
gathering census data on red-necked grebes (*Podiceps grisegena*) at Lake Osakis, MN.  
jellyfish (*Cassiopea xamachana*) and their algal symbionts (*Symbiodinium microadriaticum*).  
University of Texas. 2003-2004. Team survey leader. Avian species diversity and demography  
study on several U.S. National Guard bases in Texas (Camp Swift and Camp Mabry)  
University of California– Berkeley. 2004-Present. Field collection of *Lotus* and *Lupinus* species  
for lab isolation of rhizobia. Bodega Marine Lab and Sonoma Coast State Park, California.

Grants and Awards:  
University of Iowa Dean’s List- Three semesters 1990-1993.  
University of North Dakota. APSAC Field Research Grant. 1995.  
University of North Dakota. Perfect GPA. 1995-1998  
Dean’s Excellence Fellowship, College of Natural Sciences, University of Texas 1999-2002.  
Excellence in Teaching Award-Nomination, Integrative Biology, University of Texas 2001.  
Gordon Conference Presenter’s Travel Award, University of Texas 2002.  
Carl Gottfried Hartman Graduate Fellowship, $5,000, University of Texas 2003.
Grants and Awards continued:  
Bess Hefflin Fellowship, $17,000 University of Texas 2003  
NSF Doctoral Dissertation Improvement Grant- *Experimental selection for cheating in a  
mutualistic symbiont.* 2003-2004. $9,212  
NIH Postdoctoral Fellowship. Ruth Kirschstein National Research Service Award- *The  
evolution of parasitism in rhizobial bacteria.* 2006-2008. $99,224

Peer reviewed publications:  
10-Sachs, J.L. and Rubenstein, D. R.. 2007. The evolution of cooperative breeding; is there  
cheating?. *Behavioral Processes* 76:131-137.  


**Book Reviews:**


**Press/Scientific Coverage**


**Scientific Presentations:**


“Cooperation and Conflict between two bacteriophages: an Experimental System.”

Meeting, Champaign, IL. July 2002.

“Selection for cheating in a mutualistic symbiont.” Rice University. 7, April 2003
“Selection for cheating in a mutualistic symbiont.” University of Texas. 21, April 2003.
“Selection for cheating in a mutualistic symbiont.” Society for the Study of Evolution

“Experimental selection for cheating in an algal symbiont” International Symbiosis Society

“The evolution of cooperation” University of Texas, Behavioral ecology lecture.
September 23, 2003

“Experimental evolution of cooperation and conflict” University of California-Berkeley.
October 16, 2003

“The evolutionary origins of cooperation” University of Texas, Dissertation defense.

“De novo evolution of cooperation between genomes” Society for the Study of Evolution

“Experimental evolution of conflict mediation” Experimental Evolution Workshop, Fribourg,
Switzerland. October 5 2004.

“In vitro evolution of cooperation and conflict” Rutgers University, NJ. April 26 2005.
“In vitro evolution of conflict mediation” Symposium on Conflict Resolution,
Wissenschaftskolleg Berlin, Germany, May 6 2005.

“In vitro evolution of conflict mediation” Max-Planck-Institut für Entwicklungsbiologie,
Tuebingen, Germany, May 9 2005.

“Mutualism Breakdown” Ecology Society of America Meeting Symposium on mutualists as
parasites, Montreal, Canada, August 8, 2005

“In vitro evolution of cooperation and conflict” University of California-Santa Cruz.
October 27, 2005.

**Membership in Professional and Honor Societies:**
Society For the Study of Evolution 2000-Present.
Gamma Beta Phi Society 2003-Present.
National Geographic Society 2005-Present
Sigma Xi 2005-Present

**Collaborators:**
Deborah Buitron, North Dakota State University
James J. Bull (Ph.D. Major Advisor)
Kevin R. Foster, Harvard University & Rice University
Colin R. Hughes, (Masters Advisor) Florida Atlantic University
Ulrich G. Mueller, University of Texas
Gary Nuechterlein, North Dakota State University
Ellen Simms, (Post-doc Advisor) University of California-Berkeley
Journal Clubs lead and organized:
University of Texas. 2003-2004. Started a student only journal club discussing molecular evolution, population genetics and experimental evolution.

Service for Journals and Funding Agencies:
Mark S. Springer

Contact:
Phone: 951-827-6458
Fax: 951-827-4286
Email: mark.springer@ucr.edu

Education:
1981 California State Polytechnic University, Biological Sciences, B.S.
University of California, Riverside, Biology, Ph.D.
University of California, Riverside, Geological Sciences, M.S.
California Institute of Technology, Division of Biology, Postdoctoral Fellowship

Present Position:  Professor, Department of Biology, University of California, Riverside

Grants, Awards, Honors:
1985-1987: National Science Foundation Dissertation Improvement Grant, “DNA hybridization of phalangeroid marsupials” (co-PI)
1988-1991: National Institutes of Health Postdoctoral Training Grant
1994-1998: National Science Foundation Grant, “Reconstructing phylogenetic frameworks using marsupials as a test system, with implications for marsupial biogeography and the evolution of morphological and molecular characters” (PI)
1993-1996: Alfred P. Sloan Foundation, Young Investigator Award in Molecular Evolution, “Molecular evolutionary studies in mammalian and echinoderm systems” (PI)
1999-2003: National Science Foundation Grant, “Molecules, morphology, and the evolutionary radiation of placental mammals” (PI)
2002: Elected Fellow, AAAS
2002-2003: UC Cancer Research Coordinating Committee, “Molecular evolution of breast tumor suppressor genes and proteins” (PI)

Invited Presentations (2001-present):
University of Texas, Austin (Distinguished Lecturer in Geology, 2001)
International Conference on Primate Origins and Adaptations (Chicago, 2001)
Symposium on Mammalian Evolution (Molecular Biology and Evolution Meetings, Sorrento, Italy, 2002)
Symposium on Placental Mammal Evolution (Society of Vertebrate Paleontology, Norman, Oklahoma, 2003)
University of California, Berkeley (Mammal Evolution Symposium Honoring Professor William Clemens, 2003)
California State Polytechnic University (Biology Department, 2003)
University of California, Los Angeles (Department of Ecology and Evolutionary Biology, 2004)
Gradfest Keynote Speaker (Evolution and Ecology GRU, UC Riverside, 2004)
San Bernardino County Museum (Distinguished Lecturer Series, 2004)

Editorships and Other Professional Activities:
Editor-in-Chief, Journal of Mammalian Evolution
Vice President, Society for the Study of Mammalian Evolution
Member, ad hoc Advisory Committee for the Mammalian Genome Initiative
(Whitehead/MIT Center for Genome Research)
Guest co-editor, August 2003 issue of Molecular Phylogenetics and Evolution on the Sorrento Mammal Evolution Conference.
White paper submitted to NIH (“Proposal for complete sequencing of the genome of a marsupial: The gray, short-tailed opossum, Monodelphis domestica”, I am one of 10 co-authors); this proposal was successful and the complete genome of the short-tailed opossum is now being sequenced by the Broad Institute

List of Publications:

Journal Articles (Technical, Refereed)


**Journal Articles (Technical, Non-Refereed)**


**Refereed Chapters in Edited Books**


**Book Reviews**


P. Kirk Visscher

Contact:
Department of Entomology
University of California, Riverside
Riverside, CA 92521
Telephone (951) 827-3973
Eaddress: visscher@mail.ucr.edu

Residence:
393 Two Trees Rd.
Riverside, CA 92507
Telephone (951) 686-0588

Education:
M.S.  Cornell University, Ithaca, NY.  January, 1982
Major:  Entomology
Thesis title: Foraging strategy of honey bee colonies in a temperate deciduous forest.
Ph.D.  Cornell University, Ithaca NY.  August 1985
Major:  Entomology
Minors:  Ecology, Behavioral Biology
Dissertation title: Genetic structure and kinship discrimination in honey bee colonies.

Employment:
1989-present  Assistant and Associate Professor, University of California, Riverside
1987-1989 Postdoctoral Associate, Section of Neurobiology and Behavior, Cornell
University
1986-1987 Visiting Fellow, Department of Entomology, Cornell University.
1986 (fall)  Lecturer, Department of Physical Therapy, Ithaca College
1986 (spring) Lecturer, Section of Neurobiology and Behavior, Cornell University
1985 (fall) Research--Universidade de São Paulo, Brazil
1985 (spring) Graduate Research Assistant, Dept. of Entomology, Cornell University.
1983-1984 Teaching Assistant, Dept. of Neurobiology and Behavior, Cornell
University
1979-1983 Graduate Fellow, Cornell University

Awards and distinctions:
2006  Elected Fellow of the American Association for the Advancement of
Science
1997  President, North Amerian Section International Union for the Study of
Social Insects
1997  President, Section Cb, Entomological Society of America
1995  Secretary Section Cb Entomological Society of America
1993  Superior Service award. United States Department of Agriculture
1982-83 A.S. Olmstead Fellowship, Cornell University
1982 Fuertes Prize, first place (Cornell Sigma Xi writing competition)
1979-82 A.D. White and Sage Graduate Fellowships, Cornell University
1971  National Merit Scholar
Research Background and Publications:

Genetic structure and inter-individual conflicts of interest in honey bee colonies.


Foraging behavior and ecology of honey bee colonies


Biology of swarming and life history strategy of honey bee colonies


**Defensive behavior in social insects**


Social organization of hygiene and removal of the dead in honey bee colonies


Behavior and ecology of solitary bees


Biology and control of Africanized honey bees


Social wasp biology


Other research projects


Popular and extension publications, and reviews


William E. Walton

Contact: Department of Entomology and the Conservation Biology Program
University of California, Riverside, CA 92521
Voice: (951)827-3919, Facsimile: (951)827-3086
Email: William.walton@ucr.edu,
web page: http://faculty.ucr.edu/~walton/

Education:
Ph.D., 1986, University of Maryland, College Park, MD; Major: Zoology; Aquatic Ecology
M.S., 1982, University of Maryland, College Park, MD; Major: Zoology
B.S., 1979, University of Rhode Island, Kingston, R.I.; Major: Zoology

Professional Positions Held:
2005-present Professor, Dept. of Entomology, University of California (UCR), Riverside, CA 92521.
2001-2005 Associate Professor, Dept. of Entomology, Univ. of California, Riverside, CA 92521.
1995-2001 Assistant Professor, Dept. of Entomology, Univ. of California, Riverside, CA 92521.
1992-1994 Program Coordinator, Howard Hughes Medical Institute Undergraduate Research
Fellowships, Office of the Dean in the College of Life Sciences, and
Lecturer, Department of Zoology and the Biological Sciences Program, University of
Maryland (UMCP), College Park, MD 20742.
1994 Visiting Scientist (summer), Center for Great Lakes Studies, University of Wisconsin-
Milwaukee (UWM), Milwaukee, WI 53204.
1990-92 Research Associate, Center for Great Lakes Studies, University of Wisconsin-
Milwaukee, Milwaukee, WI 53204.
1987-90 Postdoctoral Entomologist, Dept. of Entomology, Univ. of California, Riverside, CA
92521.
1986-88 Research Associate (summer), Section of Ecology and Systematics, Cornell University,
Ithaca, N.Y. 14853.
1987 Instructor, Department of Zoology, University of Maryland, College Park, MD 20742.
1979-86 Graduate Teaching Assistant or Graduate Research Assistant: Dept. of Zoology, Univ.
of Maryland, College Park, MD 20742. Thesis Advisor: J. David Allan
1984 Professional Zoologist (summer), Biotic Systems and Resources, National Science
1978-79 Research Assistant, Dept. of Zoology, Univ. of Rhode Island, Kingston, R.I. 02881.
1978-79 Biological Aide, Marine Culture Branch, U.S. Environmental Protection Agency,
Environmental Research Laboratory, Narragansett, R.I. 02880.

Professional Societies:
American Mosquito Control Association
American Society of Limnology and Oceanography
Ecological Society of America
Entomological Society of America
International Society of Theoretical and Applied Limnology
Gamma Sigma Delta
Mosquito and Vector Control Assoc. of CA
North American Benthological Society
Phi Beta Kappa
Sigma Xi
Society for Vector Ecology

Courses Taught:
Advisees:
Post-doctoral Scientists/Staff Research Associates:
   Margaret C. Wirth, Ph.D. (1996-present)
Graduate Students:
   Donald Beasley, M.S. (2006-present)
   Anita Gordillo, M.S. (2005-2007)
   David Heft, M.S. (1996-2001)
   Jennifer Henke, Ph.D. (2005-present)
   Joshua Jiannino, M. S. (1999-2001)
   David Popko, M.S. (2002-2005)
   Alex Van Dam, M.S. (2004-2007)
   Adena Why, M.S. (2007-present)
Guidance, Thesis/Dissertation or Qualifying Exam Committee Member for 10 additional
   Entomology, 9 Biology and 2 Environmental Sciences graduate students
Undergraduate Research Projects
   Karrie Chan, Jonalle Haug, Pallavi Kaipa, Meenu Mittal, Ngoc Nguyen, Louie Randall,
   Michelle Sanford (UCR)
   Jamie Emiley, James Scopes, Christie Snowden (UWM)
   Susan Compton, Lynn Donnelly (UMCP)
External Examiner: The University of Newcastle (1); University of Queensland (2);
   University of Sydney (3)

Current Grant Support:
PI: W. E. Walton
Source: U.C. Mosquito Research Program
Amount: $92,000
Period: 7/1/05-6/30/08
Title: “Efficacy of Larvivorous Fishes Used in IPM Programs Against West Nile Vectors
Inhabiting Constructed Treatment Wetlands.”
Objectives: This project examines the efficacy of a native larvivorous fish for mosquito control and effects of spatial scale of vegetation planting on the efficacy of biological control agents for West Nile Virus vectors.

PI: W. E. Walton
Source: Coachella Valley Mosquito and Vector Control District
Amount: $152,508
Period: 7/1/05-6/30/08
Title: Grant-in-aid: Treatment wetlands research
Objectives: This project examines the efficacy of a native larvivorous fish for mosquito control and native vegetation on WNV vectors.

PI(s): J. Olsen (Texas A&M); M. Meisch (U. Arkansas), S. Lawler (U.C. Davis), L. Godfrey (U.C. Davis), W. Walton (U. C. Riverside), M. Stout (LSU), M. Way (Texas A&M), R. Novak (IL Nat. Hist. Sur.), A. Ali (U. Florida), J. Berhardt (U. Arkansas), J. Robbins (Mississippi SU)
Source: U.S.D.A. Regional Research Grant
Amount: $550,000
Period: 10/1/06-9/30/11
Title: "Mosquito and Agricultural Arthropod Pest Management in Ricelands"
Objectives: This project examines the control of arthropod pests of rice and the ecology and control of mosquitoes in ricelands and wetlands. The project is a collaborative effort of personnel at several Agricultural Experiment Stations in the U.S.

PI(s): B. A. Federici (PI), W. E. Walton (Co-PI)
Source: National Institutes of Health
Amount: $1,631,285
Period: 7/1/05-7/30/10
Title: "Molecular Improvement of Bacterial Mosquito Larvicides."
Objectives: This project examines the toxicity and cross-resistance of genetically engineered strains of the mosquito-specific larvicidal bacterium Bacillus sphaericus.

Scientific Publications:

Published:


**Submitted:**


60. Peck, G. W. and W. E. Walton. Effect of Mosquitofish (Gambusia affinis) and Sestonic Food Abundance on the Invertebrate Community within a Constructed Treatment Wetland. Freshwater Biology. 49 manuscript pages.

**Invited Chapters and Review Articles:** Not refereed unless indicated with an R

**Published:**


**Proceedings of Symposia or Technical Meetings:** Not refereed unless indicated with an R
Published:


**Reviewing Activities:**
Subject Editor: Annals of the Entomological Society of America  
Editorial-Review Board: Proceedings of the Mosquito and Vector Control Association of California

- Annals of the Entomological Society of America  
- Archives of Environmental Contamination and Toxicology  
- Australian Journal of Ecology  
- Biological Control  
- Bulletin of Environmental Contamination and Toxicology  
- Bulletin of the Society for Vector Ecology  
- Canadian Journal of Fisheries and Aquatic Sciences  
- Canadian Journal of Zoology  
- Ecology  
- Environmental Entomology  
- Environmental Microbiology  
- Evolution  
- Hydrobiologia  
- Journal of the American Mosquito Control Association  
- Journal of Insect Behavior  
- Journal of Insect Pathology  
- Journal of Medical Entomology  
- Journal of Vector Ecology  
- Limnology and Oceanography  
- Memórias do Instituto Oswaldo Cruz  
- National Science Foundation  
- Oecologia  
- Proceedings of the Mosquito and Vector Control Association of California  
- Restoration Ecology  
- U.S.D.A. Exotic Pest Research Program  
- Wetlands
MARLENE ZUK

Contact:
Telephone (951) 827-3952; FAX (951) 827-4286
email: marlene.zuk@ucr.edu

EDUCATION
B.A. 1977 University of California, Santa Barbara Biology
M.S. 1983 University of Michigan Biology
Ph.D. 1986 University of Michigan Zoology
   Dissertation title: Sexual selection, mate choice and gregarine parasite levels in the
   field crickets Gryllus veletis and G. pennsylvanicus.

PROFESSIONAL EXPERIENCE
2005 –  Associate Vice Provost for Faculty Equity and Diversity, University of
   California, Riverside
1998 –  Professor, Dept. of Biology, University of California, Riverside.
1999  Visiting Professor, Uppsala University, Sweden
1996, 2004 Visiting Scientist, University of Western Australia
1994 – 1998 Associate professor, Dept. of Biology, University of California, Riverside.
1989 – 1994 Assistant professor, Dept. of Biology, University of California, Riverside.
1987 - 1989 Post-doctoral associate and adjunct assistant professor, University of New
   Mexico.

GRANTS AWARDED
National Geographic Society: “Silent night: rapid adaptive loss of calling in a field cricket”,
   2005-2006
National Science Foundation: “Collaborative Research: Reproductive Behavior and Pathogen
   Resistance”, 2003-2006 (with REU supplements)
Smithsonian Tropical Research Institute: Visiting Senior Scientist award for field studies in
   Panama, 2003
National Science Foundation: “Sexual selection and the evolution of disease susceptibility”,
   2000-2002
National Science Foundation: “Female variability and the nature of male quality”, 1996-1999
   (with REU supplements).
National Science Foundation, “The evolution of intelligence in response to social complexity”,
   1996-1999, K. Holekamp, P.I.; L. Smale and M. Zuk, co-PIs. This award was funded
   through Michigan State University.
National Science Foundation: “Endocrine and immune system effects on sexual selection”,
National Science Foundation, "The role of parasites in population regulation", Young
   Investigator Award, 1992-1997 (with REU supplements).
National Science Foundation: "Sexual Selection: Empirical evaluation of the ideas" (R. Thornhill
Affirmative action career development award, University of California, Riverside, 1990.
Intramural research grants, University of California, Riverside, 1990 - 2003.
National Geographic Society, "Acoustically-orienting parasitoid flies and their cricket hosts",

HONORS AND AWARDS
2003  Exemplar award, Center for the Integrative Study of Animal Behavior, Indiana University
1999  Elected Fellow, AAAS
1999  Honorary member, Golden Key Honor Society
1996  Quest Award for distinguished contribution, Animal Behavior Society
1996-1998 Sigma Xi National Lectureship
1992-1997 National Science Foundation Young Investigator Award
1988  Outstanding Young Investigator Prize, American Society of Naturalists

CONTRIBUTED PAPERS PRESENTED AT MEETINGS (last 5 years)
July 2002: Animal Behavior Society, Bloomington, IN (invited symposium presentation)
July 2002: International Society for Behavioral Ecology, Montreal, Canada
June 2003: Gruter Institute for Law and Behavioral Research Squaw Valley Conference (invited speaker)
July 2003: Workshop: Sexual and immune dimorphism in parasitic diseases of mammalian hosts (invited speaker), Cuernavaca, Mexico
August 2005: American Ornithologists’ Union, Santa Barbara CA (invited symposium presentation)

INVITED SEMINARS (from ~ last 5 years)
Male immunity and sexual selection in red jungle fowl
January 2001: Department of Ecology and Evolution, Rice University, Houston, TX
    Acoustically-orienting Parasitoids and Cricket Hosts
    April 2000: Department of Neurobiology and Behavior, Cornell University, Ithaca NY
    April 2000: Institute of Ecology, University of Bergen, Bergen, Norway
January 2001: Department of Ecology and Evolution, Rice University, Houston, TX
October 2001: Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ
February 2002: Department of Ecology, Evolution & Marine Biology, University of California, Santa Barbara, CA
October 2002: Department of Zoology, University of Florida, Gainesville, FL
February 2003: Smithsonian Tropical Research Institute, Panama
February 2003: University College London, U.K.
April 2003: Department of Biology, University of Indiana, Bloomington, IN
April 2003: Department of Zoology, Göteborg University, Sweden
October 2005: Department of Biological Sciences, University of Montana, Missoula MT

Sex differences and evolution: notes of a Darwinian feminist
March 2000: Ecology and evolution lunch bunch, University of California, Riverside

Parasites, immunity, and the evolution of behavior
February 2001: Plenary speaker, International Oikos meeting, Uppsala, Sweden

Role models and model systems: the use of males and females in evolution
April 2000: Center for Women’s and Gender Research, University of Bergen, Bergen, Norway.
    Conference: Feminism 2000: Biology, Technology, Politics (keynote speaker)
March 2001: Dean’s Lecture Series, University of Western Australia, Perth, Western Australia
February 2002: 10th Annual Women in Science and Engineering Conference (invited speaker),
College Station, Texas
Sexual selection, life history, and immunity
April 2001: invited speaker, W.D. Hamilton International Symposium, Center for the Integrative
Study of Animal Behavior, Bloomington, Indiana
Sexual selections: what we can and can’t learn about sex from animals
November 2002: Meet the Authors lecture series, UCR Library Special Collections
University, Corvallis, OR
February 2003: Darwin’s Birthday conference, Biology 03, University of Zurich, Zurich,
Switzerland
March 2003: Convocation lecture, Grinnell College, Grinnell, IA
April 2003: Kinsey Institute Women’s Sexualities celebration, Indiana University, Bloomington,
IN (Co-sponsored by Women in Science, Biology Department)
September 2003: Human Behavior and Evolution program, Department of Psychology,
University of Michigan
March 2002: invited speaker, Bridging the Great Divide: Robert S. McElvaine’s Eve’s Seed and
the quest to bring together biology, anthropology, religion, and history. Millsaps College,
Jackson, MS
April 2004: plenary speaker, Australasian Society for the Study of Animal Behaviour annual
meeting, Adelaide, Australia
May 2004: Anatomy and Human Biology Department, University of Western Australia, Perth,
Australia
July 2004: West Australia Sexology Society, Perth, Australia
October 2004: Distinguished Scientists Lectures, Santa Monica College, Santa Monica, CA
February 2005: Keynote speaker, 6th Annual Phi Sigma Biological Sciences Research
Symposium, Illinois State University
April 2005: Keynote speaker, Women in Science at University of Idaho lecture series, University
of Idaho, Moscow ID
October 2005: President’s Lecture, University of Montana, Missoula MT
October 2005: LIFE Society, University of California, Riverside Extension

OUTREACH AND PUBLIC SERVICE
March 2003: Presentation to UCR Retirees’ Association
November 2002: Meet the Authors lecture series, UCR Library Special Collections
November 2001: ALPHA Center talk on Science and Scientists, University of California,
Riverside
November 2002: Sally Ride Science Festival, University of California, Riverside (workshop
leader)
January 2003: Participation in Bill Nye television show, The Eyes of Nye, in segment on “The
evolution of sex”, first aired on PBS in 2005
2002-present: interviews for various radio and magazine outlets, including NPR stations in San
Francisco, Pasadena, and Berkeley; Pacifica radio in New York; Glamour, Esquire, the
Advocate, Outside

PROFESSIONAL SOCIETIES AND EDITORIAL EXPERIENCE
Member: American Association for the Advancement of Science, Animal Behavior Society, Society for the Study of Evolution, Orthopterists' Society, International Society for Behavioral Ecology, Sigma Xi, National Center for Science Education

Offices held:
- Treasurer, Animal Behavior Society, 1997-2000
- Council Member, Society for the Study of Evolution (2005-2008)

Editor:
- Behavioral Ecology 2002 – present

Associate Editor:
- Evolution 2002

Reviewer for the following journals:

I have reviewed grant proposals for the National Science Foundation, the National Science and Engineering Research Council of Canada, the Australian Research Council, the Swiss National Science Foundation, the National Geographic Society, and the Animal Behavior Society

Service on grant review panels for the National Science Foundation in 1994-1999 (Animal Behavior, Evolution and Systematics) and on the Scientific Advisory Board for the National Evolutionary Synthesis Center (2005-present)

PUBLICATIONS
Tregenza, T., Simmons, L.W., Wedell, N., and Zuk, M. in press. Female preference for male courtship song and its role as a signal of immune function and condition. *Animal Behaviour*

**BOOK REVIEWS**

EDITED VOLUMES

BOOKS
Zuk, M. 2002. Sexual Selections: what we can and can’t learn about sex from animals. University of California Press.
### Academic Computing and Informational Technology

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. JESKE, CHAIR (STATISTICS)</td>
<td>11/05/07</td>
<td>02/08/08</td>
<td>03/03/08</td>
<td>04/09/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.A. BIGGS (HISTORY)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. GREENSTEIN (MATHEMATICS)</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. KRISHNAMURTHY (COMP SCI &amp; ENG)</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-H. LEE (ECONOMICS)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. J. MUELLER (CHEMISTRY)</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. PAVLOU (AGSM)</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. SIMUNEK (ENV. SCIENCES)</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. M. JACKSON, UNIV. LIB. EX OFF (LIB. ADMIN)</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. J. ROWLEY, EX OFF (DIR, ACC)</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS: W. TAYLOR</td>
<td>N/A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA:</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Academic Freedom

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. L. RUSSELL, CHAIR (SOCIOLOGY)</td>
<td>02/15/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X. LIU (BIOCHEMISTRY)</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. A. WEBER (HISTORY)</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. D. HARE, EX OFF (ENTOMOLOGY)</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. REDAK, EX OFF (ENTOMOLOGY)</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS: L. HOLNESS</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA:</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Academic Personnel (2007-2008)

<table>
<thead>
<tr>
<th>Name</th>
<th># of Mtgs</th>
<th># of Files</th>
<th>Attended</th>
<th>Reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. CHASE-DUNN, CHAIR (SOCIOLOGY)</td>
<td>31</td>
<td>226</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. F. BOCKAN (CHEMISTRY)</td>
<td>31</td>
<td>51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. F. CRANOR (PHILOSOPHY)</td>
<td>30</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W. T. FRANKENBERGER (ENV. SCI) (F/W ONLY)</td>
<td>15 (F&amp;W)</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. A. KEA (HISTORY)</td>
<td>21 (F QT LV)</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. MAHALINGAM (MECH. ENG.)</td>
<td>30</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. MONTGOMERY (AGSM)</td>
<td>29</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N. RAHIDELI (BOTANY &amp; PLANT SCIENCES)</td>
<td>26</td>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. E. RUSH (MATHEMATICS)</td>
<td>31</td>
<td>51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. S. SPRING (BIOLOGY)</td>
<td>31</td>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. SUEDERBURG (ART)</td>
<td>31</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

762
### CHARGES

<table>
<thead>
<tr>
<th>S. N. THOMPSON, CHAIR (ENTOMOLOGY)</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. ARRIZON (WOMEN'S STUDIES)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. P. BRENNAN (HISTORY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. N. CURRIE (CBN)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. B. KRONENFELD (ANTHROPOLOGY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. A. NASH (GSOE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. V. YATES (ENV. SCIENCES)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### COMMITTEES

<table>
<thead>
<tr>
<th>J. M. GANIM, CHAIR (ENGLISH)</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. C. ARNOLD (STATISTICS)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>R. A. CARDULLO (BIOLOGY)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>R. J. DEBUS (BIOCHEMISTRY)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>K. PYKE (SOCIOLOGY)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>F. M. SLADEK (CBN)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>M. SPERLING (GSOE)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>A. ULLAH (ECONOMICS)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>G. WATSON (PHILOSOPHY) (W/S)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
</tbody>
</table>

### COURSES

<table>
<thead>
<tr>
<th>G. E. HAGGERTY, CHAIR (ENGLISH)</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. CLARE (PHYSICS)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>A. E. GOLDBERG (HISTORY)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>R. LYSLOFF (PHILOSOPHY) - (S ONLY)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>B. K. MISHRA (AGSM)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>R. O'CONNOR (EDUCATION)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>Y. S. POON (MATHEMATICS)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>Z. XU (ELEC. ENG.)</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
<td>DATE</td>
</tr>
<tr>
<td>Date</td>
<td>Dististinguished Campus Service Award</td>
<td>Chair</td>
<td>Department</td>
<td>Chair</td>
<td>Department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------</td>
<td>-------------</td>
<td>------------------------</td>
<td>-------------</td>
<td>------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/22/08</td>
<td></td>
<td>J. Trumble</td>
<td>Entomology</td>
<td>J. C. Briggs</td>
<td>English</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>R. Redak</td>
<td>Entomology</td>
<td>G. W. Scott</td>
<td>Adj/CNAS Chemistry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>T. Shapiro</td>
<td>Comp. Lit &amp; For. Lang</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Dististinguished Teaching</th>
<th>Chair</th>
<th>Department</th>
<th>Chair</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/05/08</td>
<td></td>
<td>N. L. Schiller</td>
<td>Biomedical</td>
<td>M. R. Dimatteo</td>
<td>Psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S. L. Fedick</td>
<td>Anthropology</td>
<td>S. Ghosh</td>
<td>Statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y. Wu</td>
<td>Comp. Lit &amp; For. Lang</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS: GSA:</td>
<td></td>
<td>AS:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Diversity &amp; Equal Opportunity</th>
<th>Chair</th>
<th>Department</th>
<th>Chair</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/11/07 06/15/07</td>
<td></td>
<td>N. E. Beckage</td>
<td>Entomology</td>
<td>J. E. Allison</td>
<td>Political Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J. Halebian</td>
<td>Agsm</td>
<td>C. Y. Hayashi</td>
<td>Biology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J. Levy</td>
<td>History</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>J. M. Mcmullan</td>
<td>Anthropology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M. Pianca</td>
<td>Hispanic Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS:</td>
<td></td>
<td>GSA:</td>
<td>B. Fierro</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Diversity &amp; Equal Opportunity</th>
<th>Chair</th>
<th>Department</th>
<th>Chair</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/31/07 11/27/07 01/25/08 02/08/08</td>
<td></td>
<td>J. E. Allison</td>
<td>Political Science</td>
<td>L. Barrett</td>
<td>English</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Echverria</td>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>L. Fernandez</td>
<td>Env. Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>J. Mcmullan</td>
<td>Anthropology</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. Rodriguez</td>
<td>Ethnic Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS:</td>
<td></td>
<td>GSA:</td>
<td>B. Fierro</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Each CEP program review subcommittee A, B, and C will have met 8-10 times in the academic year in addition to the regular meetings.

<table>
<thead>
<tr>
<th>EDUCATIONAL POLICY</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. KELLER, CHAIR (PHILOSOPHY)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>S. J. WIMPENNY, VICE CHAIR (PHYSICS)</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
</tr>
<tr>
<td>T. BANDYOPADHYAY (ECONOMICS)</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
</tr>
<tr>
<td>B. BHANU (ELEC. ENG.)</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>G. E. HAGGERTY (ENGLISH)</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>D. SCHULTZ (MATHEMATICS)</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>S. C. STRAIGHT (CREATIVE WRITING)</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>J. S. WILLS (GSOE) (W &amp; S ONLY)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>Z. YANG (BOTANY &amp; PLANT SCIENCES)</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>P</td>
</tr>
<tr>
<td>GSA: CRAIG MCLAREN</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

Each CEP program review subcommittee A, B, and C will have met 8-10 times in the academic year in addition to the regular meetings.
Each CEP program review subcommittee A, B, and C will have met 8-10 times in the academic year in addition to the regular meetings.
<table>
<thead>
<tr>
<th>Name</th>
<th>Department/Program</th>
<th>Status</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. M. GANIM</td>
<td>ENGLISH</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. HALEBLIAN</td>
<td>AGSM</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. JESKE</td>
<td>STATISTICS</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. KELLER</td>
<td>PHILOSOPHY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. J. LOVATT</td>
<td>BOTANY &amp; PLANT SCIENCES</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. MITCHELL</td>
<td>GSOE</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. L. MOLLE</td>
<td>COMP. SCI. &amp; ENG.</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. W. NORMAN</td>
<td>BIOCHEMISTRY</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. P. NUNNEY</td>
<td>BIOLOGY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. C. PATTERSON</td>
<td>ANTHROPOLOGY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. REDAK</td>
<td>ENTOMOLOGY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. M. SADLER</td>
<td>EARTH SCIENCES</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. SHAPIRO</td>
<td>COMP. LIT &amp; FOR. LANG</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. VAFAI</td>
<td>MECHANICAL ENG.</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. M. VAHID</td>
<td>COMP SCI &amp; ENG.</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. M. WALKER</td>
<td>BIOMEDICAL SCIENCES</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. WILLIS</td>
<td>ENGLISH</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. REDAK, CHAIR</td>
<td>ECONOMICS</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. ATKINSON</td>
<td>ENV. SCIENCES</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. L. RABENSTEIN</td>
<td>GRAD DIV. DEAN</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N. RAIKHEL</td>
<td>BOTANY &amp; PLANT SCIENCES</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. H. TURNER</td>
<td>SOCIOLOGY</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. L. HENRY, CHAIR</td>
<td>BIOCHEMISTRY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. M. FISCHER</td>
<td>PHILOSOPHY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. GARLAND</td>
<td>BIOLOGY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. F. GINTER</td>
<td>CHASS DEAN'S OFFICE</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. V. KENT</td>
<td>HISTORY</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. MAYERS</td>
<td>AGSM</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. L. PAGE</td>
<td>CHASS STUDENT AFFAIRS</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA: MATT WILEY</td>
<td></td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FACULTY RESEARCH LECTURER

<table>
<thead>
<tr>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/15/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FACULTY WELFARE

<table>
<thead>
<tr>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/20/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FACULTY WELFARE

<table>
<thead>
<tr>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/28/07</td>
<td>11/06/07</td>
<td>12/04/07</td>
<td>01/03/08</td>
<td>02/06/08</td>
<td>02/22/08</td>
<td>04/29/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R. REDAK, CHAIR (ENTOMOLOGY)
P

J. CHEN (ELEC. ENG.)

M. MARTINS-GREEN (CBN)
P

T. H. MORTON (CHEMISTRY)

S. NESS (ANTHROPOLOGY)

T. GARLAND
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
</tbody>
</table>

**Graduate Council Dates:**

- **05/02/07**
- **05/23/07**
- **06/11/07**
- **10/17/07**
- **11/14/07**
- **12/12/07**
- **01/23/08**
- **02/27/08**
- **03/19/08**
- **04/23/08**

**Notations:**

- *S = On sabbatical*
- **New GSA President, Alex Cortez attended for Kyle Van Dolah**
- **Dr. Barish was not appointed to the Council until mid-December**
- **New GSA President, Alex Cortez attended for Kyle Van Dolah**
- **Dr. Ashmore resigned from the Council in late October**
- **Dr. Maduro was not appointed to the Council until late October**

---

768
<table>
<thead>
<tr>
<th>Role / Position</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. H. RECK, CHAIR (PHILOSOPHY)</td>
<td>10/09/07</td>
<td>12/05/07</td>
<td>01/24/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. M. ETHELL (BIOMEDICAL SCIENCES)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-L. LI (BOTANY &amp; PLANT SCIENCES)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. XU (MECH ENG)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y. YE (COMP LIT. &amp; FOR. LANG.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. ZANELLO (BIOCHEMISTRY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. TOMOFF, EX OFF, DIR. EAP (HISTORY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. A. DUFFY (INTERIM DEAN. UNIV EXT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. PRATT, INT. INTERNATIONAL EDU DIR.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. ELTON, INTERNATIONAL SVCS. DIR.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS: GISELLE HERNANDEZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. M. CROHN, CHAIR (ENV. SCIENCES)</td>
<td>09/20/07</td>
<td>02/06/08</td>
<td>03/18/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. C. BAEZ (MATHEMATICS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. L. CROWDER (ETHNIC STUDIES)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. HARRIS (ENGLISH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. HUGHES (RELIGIOUS STUDIES)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. N. KOROTKOV (ELEC. ENG.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. M. JACKSON, EX OFF (UNIV. LIB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIB. REP. M. BRONOEI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS: SHABNAM KARIMKHANI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. VAFAI, CHAIR (ELEC. ENG.)</td>
<td>11/02/07</td>
<td>11/29/07</td>
<td>02/04/08</td>
<td>02/06/08</td>
<td>4/1/2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. J. KPOSOWA (SOCIOLGY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. S-K MA (PHYSICS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. MICHELS (HISTORY) (S)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. T. ROTENBERRY (BIOLOGY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. ZAKI (ART)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. SAUER (BIOCHEMISTRY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. W. NORMAN, CHAIR (BIOCHEMISTRY)</td>
<td>10/11/07</td>
<td>10/18/07</td>
<td>10/25/07</td>
<td>11/08/07</td>
<td>11/15/07</td>
<td>11/29/07</td>
<td>12/06/07</td>
<td>12/13/07</td>
<td>01/11/08</td>
</tr>
<tr>
<td>W. CHEN (CHEMICAL ENGINEERING)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. A. FARRELL (ELEC. ENG.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

769
<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PLANNING AND BUDGET</strong></td>
<td>02/08/08</td>
<td>02/19/08</td>
<td>02/22/08</td>
<td>03/07/08</td>
<td>03/26/08</td>
<td>04/01/08</td>
<td>04/15/08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. W. Norman, Chair (Biochemistry)</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>W. Chen (Chemical Engineering)</td>
<td>P</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>P</td>
</tr>
<tr>
<td>J. A. Farrell (Elec. Eng.)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>M. Gauvain (Psychology)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>S. Ghosh (Statistics)</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>P. D. Hoffman (Philosophy)</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>C. J. Lovatt (Botany &amp; Plant Sciences)</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>C. Rudolph (Art History)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>S. Srinivasan (AGSM)</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td><strong>PREPARATORY EDUCATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. Shapiro, Chair (Comp Lit &amp; For. Lang.)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>D. Willis, Acting Chair (English)</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>D. R. Cocker (Chem/Env. Eng.)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>S. Ghosh (Statistics)</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>C. J. Lovatt (Botany &amp; Plant Sciences)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>C. Rudolph (Art History)</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>S. Srinivasan (AGSM)</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td><strong>PRIVILEGE AND TENURE</strong></td>
<td>10/17/07</td>
<td>04/09/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. D. Hare, Chair (Entomology)</td>
<td>P</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W. J. Farmer (Env. Sciences)</td>
<td>P</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. A. Graham (Philosophy)</td>
<td>P</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. I. Hatton (CBN)</td>
<td>P</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. D. Lippit (Economics)</td>
<td>P</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. Przybusinski (Computer Science)</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Ghosh, Acting Chair (Statistics)</td>
<td>A</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

770
### Research

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>K. TOMOFF</td>
<td>HISTORY</td>
<td>06/01/07</td>
<td>06/08/07</td>
</tr>
<tr>
<td>A. BALANDIN</td>
<td>ELECTRICAL ENGINEERING</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>X. CUI</td>
<td>STATISTICS</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>J.C. LAUREN</td>
<td>POLITICAL SCIENCE</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>J. MCDANIEL</td>
<td>RELIGIOUS STUDIES</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>E. REESE</td>
<td>SOCIOLOGY</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>M. L. ROOSE</td>
<td>BOTANY &amp; PLANT SCIENCES</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>L. SAAVEDRA</td>
<td>MUSIC</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>A. DEOLALIKAR</td>
<td>ECONOMICS</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>M. EL HAFSI</td>
<td>AGSM</td>
<td>A</td>
<td>P</td>
</tr>
<tr>
<td>J.C. LAUREN</td>
<td>POLITICAL SCIENCE</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>J.G. MILLAR</td>
<td>ENTOMOLOGY</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>M.C. PIRRUNG</td>
<td>CHEMISTRY</td>
<td>A</td>
<td>P</td>
</tr>
<tr>
<td>L. SAAVEDRA</td>
<td>MUSIC</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>J.H. SANDHOLTZ</td>
<td>GSOE</td>
<td>P</td>
<td>P</td>
</tr>
</tbody>
</table>

### Rules and Jurisdiction

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. GORECKI</td>
<td>HISTORY</td>
<td>02/07/08</td>
<td>05/02/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. J. CLOSE</td>
<td>BOTANY &amp; PLANT SCIENCES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. S. JACOBS, SEC/PARL.</td>
<td>RELIGIOUS STUDIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Committee conducted business by email and telephone.

### Scholarships and Honors

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. WU</td>
<td>CHEMICAL/ENV. ENG.</td>
<td>04/25/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. ASAEDA</td>
<td>MATHEMATICS</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. E. BLOOM</td>
<td>COMP LIT &amp; FOR. LANG.</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. BOMBERY</td>
<td>ETHNIC STUDIES</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. PALARDY</td>
<td>SCHOOL OF EDUCATION</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N. SATO</td>
<td>BIOCHEMISTRY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. ZHANG</td>
<td>CHEMISTRY</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. ZIEGER</td>
<td>ENGLISH</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. SANDOVAL, EX OFF</td>
<td>VC-STUDENT AFFAIRS</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. L. HAYES, EX OFF</td>
<td>FINANCIAL AID</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS:</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA:</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Undergraduate Council

<table>
<thead>
<tr>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/12/07</td>
<td>11/06/07</td>
<td>12/14/07</td>
<td>01/22/07</td>
<td>02/12/08</td>
<td>03/27/08</td>
<td>771</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>P.M. SADLER, CHAIR (EARTH SCIENCES)</td>
<td>BOARS</td>
<td>P</td>
<td>P</td>
<td>NO MTG</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>C. ALLGOR (HISTORY) (W)</td>
<td></td>
<td>A</td>
<td>A</td>
<td>ON LEAVE</td>
<td>RESIGNED</td>
<td>RESIGNED</td>
<td>RESIGNED</td>
</tr>
<tr>
<td>C. AMRHEIN (ENV. SCIENCES)</td>
<td></td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>P</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>P. CHATTERJEE (WOMEN'S STUDIES)</td>
<td></td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>M. FALOUTSOS (COMPUTER SCIENCE)</td>
<td></td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>J.M. HERATY (ENTOMOLOGY)</td>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>P.M. JOHNSON (POLITICAL SCIENCE) (F)</td>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>A</td>
</tr>
<tr>
<td>V.L. NYITRAY (RELIGIOUS STUDIES)</td>
<td></td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>J.W. SANDOVAL, EX OFF. (VC-STUDENT AFFAIRS)</td>
<td></td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>AS: RICHARD SCOTEEN (W08)</td>
<td></td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td><strong>UNIVERSITY EXTENSION</strong></td>
<td><strong>DATE</strong></td>
<td><strong>DATE</strong></td>
<td><strong>DATE</strong></td>
<td><strong>DATE</strong></td>
<td><strong>DATE</strong></td>
<td><strong>DATE</strong></td>
<td><strong>DATE</strong></td>
</tr>
<tr>
<td>J. SILVA-RISSO, CHAIR (AGSM)</td>
<td>10/18/07</td>
<td>01/25/08</td>
<td>04/23/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. CANALIZO (PHYSICS)</td>
<td></td>
<td>P</td>
<td>A-REVIEWED</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. CHAUVEY (ECONOMICS)</td>
<td></td>
<td>P</td>
<td>P</td>
<td>A-REVIEWED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W. W. MEGENNEY (HISPANIC STUDIES)</td>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. M. PERRING (ENTOMOLOGY)</td>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. L. SWANSON (GSOE)</td>
<td></td>
<td>A</td>
<td>A-REVIEWED</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS:</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSA:</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>