Leon J. Bruner was appointed to the UCR Physics Department in July 1962 as an Assistant Professor II a scant two years after Riverside became a general campus of the University of California. He contributed to the Department's growth through his teaching and establishment of a research program in which graduate students actively participated. His graduate students have gone on to university faculty positions and to industrial research and development laboratories. Though Leon was a rather quiet person he was appointed to numerous Departmental and Academic Senate Committees. In addition he served as Physics Department Vice Chair for three years. As he became known in his new field of biophysics he was invited to review research proposals submitted to the U.S. Army Research Office and to the National Science Foundation. He was also asked to review manuscripts for eight different professional journals. In the 1980's he was invited to participate in the Department's Pre Engineering program both in creating courses for the program and in advising the pre-engineering students. His background in experimental physics research which included design and construction of mechanical systems and the development of electronic instrumentation were drawn upon as several members of the Physics Faculty contributed to the original proposals which led to the establishment of the College of Engineering at UCR.

His research was characterized by several major changes in emphasis. In his three years at IBM Watson Research Laboratory he continued work on his thesis area which included internal friction in face centered cubic and body centered cubic metals, dislocation damping in deformed copper and the effect of electric fields on the elastic constants of germanium. In addition he performed Nuclear Magnetic Resonance experiments on metallic Ni$^{61}$ and Fe$^{57}$ later being related to Mössbauer effect experiments in progress. Leon enjoyed telling the story about the factor of 4 errors they made in the calculation of the internal field in Fe$^{57}$. Their manuscript was returned for modifications at which point the original error was corrected. A another group published this same quantity obtained using a different experimental method obtaining Leon's "exact" numerical result including the original factor of 4 error. These authors published a correction at a later time in which Leon's paper was referenced.

Leon came to UCR with the intent of making a complete change in his research emphasis - he intended to develop a research program in biophysics emphasizing what could be learned about membrane transport functions from electrical measurements on semi permeable membranes. Many different flow and boundary layer conditions were explored first using thin films of the inorganic material AgBr since its bulk conduction mechanisms were well known. This system permitted study of processes taking place at the membrane-liquid interface. Building on these studies, Leon expanded his experimental repertoire to include bimolecular lipid membranes, an excellent physical model of real cell membranes. This system allowed him to apply his physics background
to investigate discrete charge effects on membrane conductance and the movement of hydrophobic ions and carriers across lipid bilayers.

In 1979 he received NSF funding to design and build apparatus for the study of electrical transport in lipid bilayers under elevated hydrostatic pressures up to 1,000 Atm. The results obtained were very productive particularly when measured against the great deal of technical difficulty that these experiments presented. In addition to the design and construction of the high-pressure system additional apparatus was developed which included a new type of proportional temperature controller, new electronics for the dynamic measurement of membrane I-V characteristics and special coaxial feed throughs for the high-pressure system.

He had the opportunity of returning to biophysics in 1989 when he received an invitation to attend a workshop on Electroreception at the Scripps Institution of Oceanography sponsored by ONR. He subsequently submitted successful grant proposals to ONR for the year 1990-91 and again in 1991-92. His approach as in much of his earlier work was to first develop a physical model, in this case a relaxation oscillator, for the electroreceptive system. It was built, tested and found to display an electric field sensitivity comparable to that exhibited by certain marine animals. Other experimental features of the model were studied and found to be in good agreement with theory. Though he retired in June 1992, he continued with in vitro noise studies in electroreceptors. Performing tests of the oscillator model in living system was an objective of his post retirement research.

Other research pursued at UCR led to papers entitled "Dielectrophoretic Precipitation of Silver Bromide Suspensions," "Complex Formation and Photo-reduction Processes in Sulfur Doped Silver Bromide," and "The Effect of Light, Temperature, and DDT poisoning on housefly locomotion and flight muscle activity." While his research took many different directions over the years his main interest and emphasis was in Biophysics.

After his retirement, Leon was "called back" to teach for an additional three years. He was always interested in new and different approaches to teaching. His publication "Complex impedance measurements" was based on a set of laboratory exercises designed to better teach these concepts. In connection with the UCR Biomedical program he took the lead in creating a special physics course for the Biomedical students which emphasized the fundamental elements of physics but used many examples from biophysics and medicine. His paper "Cardiovascular Simulator" describes a laboratory experiment in which both physics and medicine were emphasized. He had several Instructional Equipment Replacement and Instructional Improvement Grants designed to improve the student laboratory experience. In 1979 his proposal, "Energy Education in the Elementary Schools", was funded by the Department of Energy.

Leon Bruner was born an Albino and had the accompanying handicaps of poor vision and poor hearing. Throughout his life he refused to let these limitation interfere with what he wanted to accomplish. It was from his father that he developed the machine shop skills that were to benefit his research as a graduate student at the University of
Chicago and later as a faculty member at UCR. Leon was admired by students and colleagues alike, not only for what he achieved but also for what he had to overcome in leading a rich and productive life. He loved research and travel spending two sabbaticals in Southern Germany with his family. His host, Peter Läuger, a preeminent German biophysicist, once remarked that Leon was one of the best biophysicists in the world. He also spent a year at the Duke University Medical Center, where he made important contributions to the understanding of the role unstirred layers have in membrane permeation. The chair of the Duke Physiology Department was so impressed with Leon's use of physics in solving biological problems that he hired one of Leon's students as an Assistant Professor. Leon Bruner is survived by his wife Patricia and his two daughters, Anna Redd and Adele Hollis.

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