Award to Gilles A. Daigle, the Silver Medal in Physical Acoustics to Mack A. Breazeale and the Silver Medal in Noise to William J. Galloway. Robert J. Urick received the Pioneers of Underwater Acoustics Medal.

Daigle, a researcher in the acoustics section of the National Research Council of Canada, received the Lindsay Award "for theoretical and experimental studies of the effects of micrometeorology and of the contours and acoustical properties of the ground on sound propagation outdoors." Daigle's research has had important social implications, including the prediction of noise levels around airports and highways, the citation noted.

In 1981 Daigle began his career at the National Research Council in Ottawa, where he was first a postdoctoral research associate and then an assistant research officer. Most recently he has been an associate research officer.

The physical acoustics medal went to Breazeale "for pioneering work on nonlinear phenomena in ultrasonic wave propagation in solids and liquids." From 1954 to 1962 Breazeale was on the faculty of Michigan State University. He then moved to the University of Tennessee, Knoxville, where he is now a professor of physics. The citation praised Breazale for making the University of Tennessee "one of the centers in physical acoustics." His research there has been on nonlinear acoustics of fluid media and crystalline solids.

Shortly after his arrival at the University of Tennessee, Breazeale also became a consultant to the solid-state physics division at Oak Ridge National Laboratory, where he has studied nonlinear distortion of ultrasonic waves in crystalline solids.

Galloway received the Silver Medal in Noise "for contributions to aircraft and traffic noise assessment and community noise reduction." The standard procedures now used to ensure that aircraft noise levels comply with the Federal Aviation Administration's limits are based largely on Galloway's work, the citation stated. He has also been active in efforts by government and industry to establish regulations for environmental noise exposure.

From 1951 to 1952 Galloway was a staff physicist with the US Army Signal Corps Engineering Laboratories at Fort Monmouth in New Jersey. In 1953 he began working for Bolt, Beranek and Newman Inc. He eventually became a vice president and principal scientist of the company's Los Angeles office. Galloway retired in 1982 and continues to work as a consultant.

The Pioneers of Underwater Acoustics Medal was presented to Urick "for his book *Principles of Underwater Acoustics* and his many experiments on sound propagation, scattering, reverberation and ambient noise." Much of Urick's work was done for the US Navy and "provided the foundation for countless system designs, modifications and improvements," the citation said. It also noted that the book, first published in 1967 and now in its third edition, "has become a standard reference text for . . . the design and utilization of sonar equipment."

Before becoming involved in underwater acoustics, Urick worked as a seismologist for Shell Oil and for Texas Company from 1936 to 1942. He then worked in various Navy laboratories, including the Naval Research Laboratory in Washington, DC, and the Naval Ordnance Laboratory in Silver Spring, Maryland. Since retiring in 1975, Urick has lectured on underwater acoustics at Catholic University of America.

IN BRIEF

James Bjorken has returned to SLAC as a member of the theory group, after a ten-year absence. Bjorken was most recently a member of the theory group at Fermilab.

David Arnett now has a joint appointment as a professor in the physics department of the University of Arizona and at the university's Steward Observatory. Before coming to Arizona, he was the B. and E. Sunny Distinguished Service Professor of Astronomy, Astrophysics and Physics at the University of Chicago and a member of the Enrico Fermi Institute.

The physics department of the University of Illinois at Urbana–Champaign has gained six new faculty members in the past two years. **Klaus Schulten,** who was an associate professor at the Technical University of Munich, is now a professor at Illinois; **David Ceperley,** formerly a staff scientist at Lawrence Livermore National Laboratory, joined the university as an associate professor; and **Tony Liss,** who recently completed a postdoctorate assignment at the University of Chicago, is now an assistant professor at Illinois. More recently, **George D. Gollin,** formerly an assistant professor at Princeton, joined the department as an associate professor; **Douglas H. Beck,** who was a senior research fellow at Caltech, joined as an assistant professor; and **Karl-Heinz A. Winkler,** previously the director of the Numerical Laboratory at Los Alamos, became a professor at Illinois.

J. Robert Dorfman, a theoretical physicist specializing in the statistical mechanics of nonequilibrium phenomena, has been appointed vice president for academic affairs and provost of the University of Maryland, College Park. Dorfman was formerly dean of the college of computer, mathematical and physical sciences at Maryland.

Charles C. Baker, who was director of the Argonne National Laboratory's fusion power program for 12 years, has become associate director for technology at the fusion energy division of the Oak Ridge National Laboratory.

Roger D. Blandford, a theorist who has worked on pulsars, cosmic jets and black holes, has been named the Richard Chace Tolman Professor of Theoretical Astrophysics at Caltech.

OBITUARIES

Frank J. Feigl

Frank J. Feigl died suddenly from a heart attack on 26 November 1988, at the age of 52. He was a professor of physics and chair of the physics department at Lehigh University. His research did much to advance the science of the defect properties of insulating thin films, typified by silicon dioxide on silicon in the metal–insulator–semiconductor configuration.

Feigl was born and raised in Chicago. He earned an AB in physics, *magna cum laude*, from the University of Notre Dame in 1958. He received his PhD in physics in 1965 from the University of Pittsburgh, where he studied defects in quartz by electron spin resonance. After a postdoctoral appointment at the University of Illinois, he joined the Lehigh faculty in 1967.

Feigl's research blossomed with Lehigh's growing reputation in the field of defects in semiconductors and insulators, and his activities contributed significantly to the establishment and development of the Sherman Fairchild Laboratory for Solid State Studies. Feigl's research activities were characterized by cooperative programs within, across and outside of academic boundaries. At various times his research programs involved scientists from IBM, the RCA Sarnoff

Research Center, AT&T Bell Laboratories, Brookhaven National Laboratory, the Honeywell Physical Sciences Center and the US Army Device Electronics Laboratory.

He and his students and colleagues investigated charge injection, trapping and detrapping in MOS systems using a variety of experimental techniques. His involvement with students and colleagues from other disciplines in these programs was significant. He also maintained a research program on the physics of point defects that led to widely accepted models of important defects in silicon dioxide materials.

Frank was an extraordinary person whose disarming demeanor and love of people endeared him to many. He could relieve tension with a quip while facing up to serious matters with good judgment and character. He believed strongly that the oftencited tension between teaching and research was fictitious: To him, university research meant a highly individualized form of teaching. The time and energy that he invested in his many graduate students as they became mature scientists testify to this belief. His research programs were designed to teach his students scientific methods and to provide the solid groundwork they needed for professional success.

Those who knew Frank will remember a highly professional scientist who treated others with respect, dignity and objectivity. His colleagues and friends deeply miss him.

GAROLD J. BORSE
SIDNEY R. BUTLER
W. BEALL FOWLER
YONG WOOK KIM
Lehigh University
Bethlehem, Pennsylvania
JOHN H. THOMAS III
David Sarnoff Research Center
Princeton, New Jersey

Bruce M. Barker

On 19 April 1988, Bruce M. Barker, a professor of astronomy at the University of Alabama in Tuscaloosa, died at the age of 54. Born in Chicago, Barker received his undergraduate and graduate degrees in physics at Wayne State University in Detroit. In 1965 he received his PhD with a dissertation entitled "Gravitational Interaction of Elementary Particles." This work was done under the guidance of Suraj N. Gupta, and their work together represents a pioneering effort in quantum gravity. Barker next spent two years as a postdoctoral fellow at the University of Windsor in Canada, and a further two years