

ment of mechanical engineering and materials science at Duke University, was cited for his "contributions to active adaptive noise control."

ASA awarded an honorary fellowship, given occasionally to individuals who have attained eminence in acoustics or have rendered outstanding service to acoustics, to **Carleen M. Hutchins** in recognition of "her unique role in combining the art of violin making with the science of acoustics." Hutchins is a violin maker and acoustics researcher who cofounded the Catgut Acoustical Society, based in Montclair, New Jersey.

David E. Weston received the Helmholtz-Rayleigh Interdisciplinary Silver Medal, given for contributions to acoustical oceanography and underwater acoustics, for his "seminal work on the physics of explosive sources, scattering and the horizontal refraction of sound." Weston formerly worked for the UK's Admiralty Research Laboratory in Teddington and is now a consultant with BAeSEMA in London.

Engineering Excellence Awards Given by OSA

At its annual meeting in Baltimore last October, the Optical Society of America presented its 1998 Engineering Excellence Awards to Lee Shiozawa and Kenneth Walker for their achievements in optical engineering.

Shiozawa, chairman and chief scientist for Cleveland Crystals Inc in Cleveland, Ohio, was recognized for his "45 years of research improving electro-optics and nonlinear optical crystals for applications from the ultraviolet to the far infrared."

Head of the optical fiber research department at Lucent Technologies, Walker was recognized for his contributions to optical fiber manufacturing. His work has resulted in "an improved understanding of optical fiber fabrication, improved production processes and new fiber designs."

IN BRIEF

On January 19, **J. Murray Gibson** will become the director of the materials science division of Argonne National Laboratory. He is replacing **Bobby Dunlap**, who will remain at Argonne for several months to ease the transition. Gibson was formerly a professor in the departments of physics and of materials science and engineering at the University of Illinois at Urbana-Champaign and associate di-

rector of the university's Frederick Seitz Materials Research Laboratory.

Riccardo Giacconi has been appointed president of Associated Universities, Inc, the nonprofit corporation that operates the National Radio Astronomy Observatory. Currently the director general of the European Southern Observatory, Giacconi will assume his new position in July 1999, replacing interim president **Martha P. Haynes**.

At the 20th International Free-Electron Laser Conference, held at Jefferson National Laboratory last August, **John Walsh**, a professor of physics at Dartmouth College, received the annual International Free-Electron Laser Prize in recognition of "his outstanding leadership in research and teaching in the field of free-electron lasers." The

award consisted of an engraved clock, a certificate and \$20 000.

Last September, **Carl Strawbridge** became the project manager for the Spallation Neutron Source at the Oak Ridge National Laboratory. He was previously the vice president for quality and information systems at VP Buildings Inc in Memphis.

At the 47th Annual Denver X-Ray Conference in Colorado Springs, Colorado, in August, the International Centre for Diffraction Data presented the J. D. Hanawalt Award to **Herbert E. Göbel**, a physicist working at Siemens AG in Munich, Germany. The award, consisting of a citation and \$1000, is given every three years for important recent contributions to the field of x-ray powder diffraction.

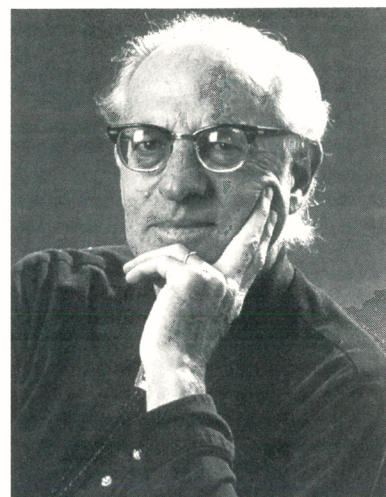
OBITUARIES

Frederick Reines

Frederick Reines, a pioneer in the field of neutrino physics and an ardent investigator of fundamental conservation laws, died on 26 August 1998 in Orange, California, after a long illness. By showing that it was possible to detect and study neutrinos experimentally, Reines opened the door to a new, fertile and exciting area of elementary particle physics. In 1995, Reines was a cowinner of the Nobel Prize in Physics for the first detection of the neutrino, accomplished in 1956 with his Los Alamos Scientific Laboratory colleague the late Clyde L. Cowan Jr.

Reines was born on 16 March 1918 in Paterson, New Jersey, of parents who had emigrated to the US from a small town in Russia. After receiving an undergraduate degree in engineering and an MSc in mathematical physics from Stevens Institute of Technology, in 1939 and 1941, respectively, Reines undertook graduate study in physics at New York University. There, he worked on experimental cosmic-ray physics under Serge A. Korff and eventually wrote a theory-based PhD thesis entitled "The Liquid Drop Model for Nuclear Fission" under Robert D. Present. The topic was timely, and, even before completing the thesis in 1944, he was recruited to work on the Manhattan Project in the theoretical division of the Los Alamos Scientific Laboratory under Richard Feynman.

A year later, he became a group leader in the division and embarked on a career at the scientific lab (the forerunner of Los Alamos National Laboratory) that spanned 15 years and included directing the Atomic Energy



FREDERICK REINES

Commission's Operation Greenhouse experiments on Eniwetok and studying bomb tests on Bikini and in Nevada. During that period, he wrote a study on the Mach effect and the height of bomb bursts with John von Neumann. Reines later served as a delegate to the 1958 Atoms for Peace Conference in Geneva.

Until its detection, the neutrino enjoyed an anomalous status. It was postulated by Wolfgang Pauli in 1930 to solve the problem of the apparent violation of conservation laws in nuclear beta decay, and was named by Enrico Fermi, who incorporated it into his 1934 theoretical formulation of the weak process. However, most physicists thought the neutrino interacted far too weakly to be detectable. To Reines, this situation was philosophically intolerable, for it endowed the