

pioneered in the development of electron-electron colliders and electron-positron colliders. In 1976 he shared the Nobel prize in physics with Samuel C. C. Ting of MIT for the discovery of the ψ/J particle.

On 31 October a groundbreaking ceremony was held for the SLAC Linear Collider, a \$113-million project conceived by Richter. SLC is a single-pass linear collider that will have 50-GeV electrons colliding with 50-GeV positrons.

Richter was a student at MIT, getting his BS in 1952 and his PhD in 1956. Since 1956 he has been at Stanford, joining SLAC in 1963, where he has been a full professor since 1967.



RICHTER

OSA elects Bennett vice president

The Optical Society of America has elected Jean M. Bennett to be its vice president in 1984. Bennett, who is a physicist and research scientist at the Michelson Laboratory of the Naval Weapons Center, will become president-elect in 1985 and president in 1986. She will succeed Donald R. Herriott of the Perkin-Elmer Corporation, who will be president in 1984, and Robert R. Shannon, professor at the Optical Sciences Center of the University of Arizona, who will be president in 1985.

Bennett received a BA from Mt. Holyoke College in 1951, and, from Pennsylvania State University, an MS in 1953 and a PhD in physics in 1955. She worked for the Wright Air Development Center from 1955 to 1956, when she joined the Naval Weapons Center as a physicist. Her research has concentrated on the optical properties of solids, solid-state physics, interferometry and thin films.

In the same election, new members were chosen as directors-at-large of the OSA Board: James B. Breckinridge (Jet Propulsion Lab), Richard K. Chang (Yale University) and William T.

Rhodes (Georgia Institute of Technology). Paul L. Kelley (MIT Lincoln Lab) was elected as the new editor of *Optics Letters* and member of the Board, and Jay M. Eastman (Optel Systems, Inc) is the new chairman of the Technical Council. He will also serve on the Board. *Optics News* is also getting a new editor: John N. Howard (Air Force Geophysics Lab) will edit that magazine as well as *Applied Optics*.



BENNETT

AIP Corporate Associates at Xerox

The physics of information technology was the theme of the annual AIP Corporate Associates meeting, held at the Xerox Palo Alto Research Center 25-26 October. Among the 180 persons attending were leaders of industry, heads of graduate physics departments and government officials.

John Hopfield (Caltech) discussed his work on collective computational properties of neuronal networks. These properties, Hopfield said, can account for the intactness of memories, that the human brain is content addressable,

that it can learn sequences and is damage resistant. He believes that the bridge between conventional computers and neurobiology is statistical physics and the spin glass.

Scott Kirkpatrick (IBM, Yorktown Heights) discussed the use of Monte Carlo techniques in circuit design (PHYSICS TODAY, May 1982, page 17). Michael Kriss (Eastman Kodak) described Eastman Kodak's work on modern color photographic systems and dealt with the question: will electronic image-processing systems replace sil-

ver halide systems or will a hybrid be the system of the future?

Bela Julesz (Bell Labs) described his work on a "texton" theory of visual perception. He and his collaborators have found two visual systems—a preattentive system that is parallel, instantaneous and processes the entire visual field at once, and an attentive system that serially searches by focal attention in 50-millisecond steps limited to a small aperture. Textons are the atoms of preattentive vision and are characterized by elongated blobs, terminators and crossings of elongated blobs. The preattentive system ignores relative positions between textons, but can count textons; the preattentive system directs focal attention to the loci where the textons differ.

An overview of research at Xerox PARC was provided by William J. Spencer, who manages the center. Organizationally, PARC is divided into laboratories for general sciences (including semiconductor properties, surfaces, integrated optoelectronics), optical sciences, integrated circuits, integrated design, computer sciences and a laboratory for cognitive and instructional sciences and software concepts. William Verplank demonstrated the Xerox 8010 STAR Office System and Math Package, William Paxton discussed Cedar computer graphics and Bernardo Huberman talked on the dynamics of complex adaptive automata. During a tour Gary Starkweather described laser printing research, Robert Nemanich and David Biegelsen discussed thin-film structures and Thomas Paoli described high-power GaAs lasers (including a chip containing several quantum wells that emits 2.5 W of cw optical power).

During the conference banquet, the AIP Prize for Industrial Applications of Physics was awarded to Joseph E. Killpatrick and Frederick Aronowitz (see the story on page 60); the AIP-US Steel Foundation Science Writing Award in Physics and Astronomy was awarded to Abraham Pais (PHYSICS TODAY, October, page 58). The after-dinner speaker was Robert R. Wilson, who discussed neutrino exploration of the Earth (August, page 20).

Lectures on frontiers of physics included Luis Alvarez (University of California, Berkeley) on asteroids and dinosaurs, Mildred S. Dresselhaus (MIT) on modifications to the properties of materials by intercalation, Arthur L. Schawlow (Stanford) on precision laser spectroscopy, Paul Lauterbur (SUNY, Stony Brook) on nmr imaging and spectroscopy and Douglas J. Scalapino (University of California, Santa Barbara) on special computing machinery for physics (PHYSICS TODAY, May, page 44).



Coffee break at Xerox Palo Alto Research Center, where AIP Corporate Associates met.

Other speakers were John Crowley (Association of American Universities) on laboratory instrumentation needs of universities and Cecily Selby (National Science Board Commission on Pre-College Education) on pre-college physics education for the future (PHYSICS TODAY, November, page 49).

For the first time, the American Institute of Physics is offering for sale or rental 45-minute-long videotapes of most of the talks at the Corporate

Associates meeting. The talks available are by Hopfield, Kirkpatrick, Kriss, Julesz, Wilson, Dresselhaus, Schawlow, Lauterbur and Scalapino. Tape rental for two weeks is \$85 per tape and the cost of a single tape (any format) is \$200. For four tapes there is a 25% discount. Shipping charges are \$4 for a single tape and \$10 for three or more. Tapes may be ordered from David Kalson, AIP, 335 East 45th St., New York, NY 10017.

—GBL

AIP industrial applications prize

Joseph E. Killpatrick and Frederick Aronowitz are the 1983 winners of the AIP Prize for Industrial Applications of Physics.

They received the prize at the 1983 meeting of the AIP Corporate Associates at the Xerox Palo Alto Research Center on 25 October. Awarded biennially on behalf of the Corporate Asso-

ciates since 1977, the prize is sponsored this year by General Motors.

Killpatrick and Aronowitz are recognized for work they did together at Honeywell Systems and Research Center. Killpatrick is a principal research fellow there; Aronowitz, now at Raytheon, was physical sensors section chief. They are cited for "their leadership of



AIP Prize for Industrial Applications of Physics was awarded to Frederick Aronowitz (left) and Joseph E. Killpatrick at the AIP Corporate Associates meeting on 25 October 1983.

research on physics of the laser gyro and of its successful development into a major product line which has significantly upgraded the performance and utility of inertial guidance systems."

Killpatrick received his BS in electrical engineering at the University of Illinois in 1955, when he joined Honeywell as a research engineer. He has held a variety of research positions there, attaining his present one in 1974. He holds five key patents in laser gyro navigational systems.

Aronowitz received a BS in physics from the Polytechnic Institute of Brooklyn in 1956 and a PhD in physics from New York University in 1969. He worked at Honeywell from 1962, becoming section head in 1978. He has been involved in research and development of the laser gyro since 1963.

The research by Killpatrick and Aronowitz that led to the ring laser gyro began in the early 1960s. The device detects and measures rotation rates by observing the interference of two laser beams traveling in opposite directions around a closed triangular path. The phase difference is measured by an optical detector and converted to a digital signal for computer processing. Combinations of ring laser gyros and linear accelerometers form the basis of new high-performance inertial navigation systems for aircraft.

Education

Layman is Washington representative of AAPT

The Executive Board of the American Association of Physics Teachers has appointed John W. Layman to represent the Association in Washington, D.C.

Layman, associate professor of physics and science education at the University of Maryland, was president of AAPT in 1982 and past-president in 1983. He is currently a member of the Governing Board of the American Institute of Physics and of the AIP Manpower Committee.

As Washington representative, he will continue activities he has been pursuing, in a new official capacity. Working from his university office in College Park, Maryland, he is gathering information on developments in science education occurring at the Federal level, disseminating the information to AAPT officers and members, giving testimony and representing AAPT at meetings of government agencies, and cooperating with Washington-based societies, such as the American Association for the Advancement of Science and the National Science Teachers' Association. □