

until 1957. He became vice-president of Hewlett-Packard in 1957. In 1983 he retired from Hewlett-Packard and became head of the Ames center's SETI-program office.

Antoni Zygmund, professor emeritus of mathematics at the University of Chicago, was honored for his "outstanding contributions to Fourier analysis and its applications to partial differential equations and other branches of analysis. He created the strongest school of analytical research in the contemporary mathematical world." Zygmund received his PhD in mathematics in 1923 from the University of Warsaw in Poland. He taught mathematics at the Warsaw Polytechnic School from 1923 until 1930, when he became a professor at Wilno University. He taught at Mount Holyoke College from 1940 until 1945, and then became a professor at the University of Pennsylvania. In 1947 he became a professor at the University of Chicago, and in 1967 was named Swift Distinguished Service Professor of Mathematics.

National Academy of Sciences elects new members

The National Academy of Sciences has elected 59 new members, including the following researchers in physics or related fields: Peter J. Bickel, dean of physical sciences at the University of California in Berkeley; Walter Lyons Brown, head of the department of radiation-physics research at AT&T Bell Laboratories; Gerard H. deVaucouleurs, professor of astronomy, University of Texas in Austin; Gert Ehrlich, professor of metallurgy, University of Illinois at Urbana; David J. Gross, professor of physics, Princeton University; Robert W. Hellwarth, professor of electrical engineering and physics, University of Southern California; Ira Herskowitz, vice-chairman of the department of biochemistry and biophysics in the school of medicine of the University of California in San Francisco; Bertil Hille, professor of physiology and biophysics, University of Washington in Seattle; Yuet Wai Kan, professor of medicine, laboratory medicine, and biochemistry and biophysics, University of California in San Francisco; Daniel Kleppner, professor of physics, Massachusetts Institute of Technology; Brian W. Matthews, professor of physics, University of Oregon in Eugene; Frank B. McDonald, chief scientist at NASA headquarters in Washington, DC; John C. Moll, director of integrated-circuit-structures research at Hewlett-Packard Corporation, Palo Alto, California; C. Bradley Moore, professor of chemistry, University of California in Berkeley; Robert C. Richardson, professor of

physics, Cornell University; David N. Schramm, professor of astronomy and astrophysics, University of Chicago; Joseph V. Smith, professor of physical sciences, University of Chicago; and Karen Uhlenbeck, professor of mathematics, University of Chicago.

Gravity Foundation essay awards for 1986

The Gravity Foundation presented its 1986 essay awards to the following individuals: M. J. Bowick, L. Smolin and L. C. R. Wijewardhana (Yale University) shared the \$1500 first prize for their essay "Does string theory solve the puzzles of black hole evaporation?" in which they suggest that the massive modes of closed superstring theories may play a crucial role in the last stages of black-hole evaporation. Itzhak Bars and Matt Visser (University of Southern California, Los Angeles) shared the \$500 second prize for "Feeble forces and gravity." Gordon D. Pusch (Virginia Polytechnic Institute and State University, Blacksburg) received the \$200 third prize for "A new test of the weak equivalence principle." Lawrence H. Ford (Tufts University) received the \$150 fourth prize for "Does $\Omega > 1$ imply that the universe will expand forever?" Richard L. Davis (Stanford University) won the \$100 fifth prize for "Cosmological textures."

AVS selects Testoni as 1985 Varian Fellow

The American Vacuum Society has selected Anne L. Testoni, a graduate student at Northwestern University, as its 1985 Russell and Sigurd Varian Fellow for developing a pulse-counting, low-energy electron diffractometer to enable her to measure the role of surface defects in surface processes such as oxidation. The award, which consists of a \$1500 fellowship and a scale model of the pump invented in 1957 by Varian, recognizes excellence in graduate studies in vacuum science and technology; it was established in 1983 by Varian Associates to honor the company's founders.

New members for Academy of Arts and Sciences

The American Academy of Arts and Sciences has elected the following members: Ralph A. Alpher, a physicist at the General Electric Research and Development Center (Schenectady, New York); Daniel Z. Freedman, professor of applied mathematics at the Massachusetts Institute of Technology; Feza Gursey, professor of physics at

Yale University; Daniel Kleppner, professor of physics at MIT; Albert Joseph Libchaber, professor of physics at the University of Chicago; Ricardo Miledi, professor of biophysics at the University of California in Irvine; John Hamilton Reynolds, professor of physics at the University of California in Berkeley; Manfred Robert Schroeder, member of the technical staff in the Information Principles Research Laboratory of AT&T Bell Laboratories (Murray Hill, New Jersey); Charles Vernon Shank, director of the electronics-research lab of AT&T Bell Labs (Holmdel, New Jersey); and Joseph Smagorinsky, director emeritus of the geophysical fluid-dynamics lab of Princeton University. Paul J. Crutzen, professor of astronomy and earth sciences at the Max-Planck-Institut für Chemie (Mainz, Federal Republic of Germany), and Gerard 't Hooft, professor of theoretical physics at the State University of Utrecht (The Netherlands), were elected as foreign honorary members of the academy.

in brief

Jacek K. Furdyna, former director of Purdue University's materials-research laboratory, will join the University of Notre Dame in January 1987 as Aurora and Tom Marquez University Professor. Furdyna's research is on dilute magnetic semiconductors.

J. H. Carver, director of the Research School of Physical Sciences at the Australian National University in Canberra, **D. B. Melrose**, professor of theoretical physics in the School of Physics of the University of Sydney, and **E. Weigold**, professor of physics in the School of Physical Sciences of Flinders University in South Australia, have been elected fellows of the Australian Academy of Science.

Charles T. Prewitt, formerly professor of earth science and materials science at the State University of New York at Stony Brook, became director of the Carnegie Institution's Geophysical Laboratory on 1 July 1986. He succeeds the retiring director, Hatten S. Yoder Jr, who had been director of the lab since 1971.

obituaries

W. James Lyons

W. James Lyons, formerly director of research in physics at the Textile