

WE HEAR THAT

NAS Elects New Members

In April the National Academy of Sciences announced the election of 60 new members and 15 foreign associates from eight countries in recognition of their distinguished and continuing achievements in original research. Eighteen of the new members do physics-related research:

Arthur Ashkin, a member of the technical staff at Lucent Technologies, Bell Laboratories, in Holmdel, New Jersey.

Roger A. Chevalier, the W. H. Vanderbilt Professor of Astronomy at the University of Virginia.

Robert N. Clayton, the Enrico Fermi Distinguished Service Professor in the department of chemistry and geophysical sciences at the University of Chicago.

Charles S. Cox, a professor emeritus at the Scripps Institution of Oceanography (part of the University of California, San Diego).

Herman Z. Cummins, a distinguished professor of physics at the City University of New York's City College.

Alan M. Dressler, a member of the scientific staff at Carnegie Observatories.

Zachary Fisk, a professor of physics at Florida State University.

James E. Hansen, head of the NASA Goddard Institute for Space Studies in New York City.

William Happer, Jr., a professor of physics at Princeton University.

Nancy J. Kopell, a professor of mathematics at Boston University.

Johanna M. H. Levelt Sengers, a guest researcher in the thermophysics division of the National Institute of Standards and Technology in Gaithersburg, Maryland.

Jerry E. Nelson, a professor of astronomy at the University of California, Santa Cruz, and an astronomer at the nearby Lick Observatory.

Neil D. Opdyke, a professor of geology at the University of Florida.

Alvin V. Tollestrup, Scientist III at Fermilab.

Richard A. Webb, the Alford Ward Chair Professor of Semiconductor Physics in the Center for Superconductivity Research at the University of Maryland at College Park.

John R. Winckler, an emeritus professor of physics in the school of physics and astronomy at the University of Minnesota.

John T. Yates, Jr., director of the Surface Science Center and R. K. Mel-

lon Professor in the departments of chemistry and of physics and astronomy at the University of Pittsburgh.

George Zweig, a senior fellow at Los Alamos National Laboratory.

Among the newly elected foreign associates are

Samuel F. Edwards, Cavendish Professor of Physics at the University of Cambridge in England.

Hartmut Michel, director of the Max Planck Institute for Biophysics and professor at the University of Frankfurt in Germany

Venkataraman Radhakrishnan, director emeritus of the Raman Research Institute in Bangalore, India.

American Philosophical Society Adds to its Ranks

Meeting in late April, the American Philosophical Society elected 31 new resident members and 8 foreign members. Among those chosen as resident members were

Alfred Y. Cho, director of the semiconductor laboratory at Lucent Technologies, Bell Laboratories.

Peter D. Lax, a professor at the Courant Institute of New York University and director of the Courant Mathematics and Computing Laboratory.

Malvin A. Ruderman, the Centennial Professor of Physics at Columbia University.

John A. Simpson, the Arthur H. Compton Distinguished Service Professor of Physics Emeritus at the University of Chicago.

Don Craig Wiley, a professor of biochemistry and biophysics at Harvard University and an investigator at the Howard Hughes Medical Institute.

Gerald Holton, the Mallinckrodt Professor of Physics and Professor of History of Science Emeritus at Harvard University.

The new foreign members include **Aaron Klug**, president of the Royal Society and director of the Medical Research Council Laboratory of Molecular Biology at the University of Cambridge.

Raphael David Levine, a professor of theoretical chemistry and the Max Born Professor of Natural Philosophy at the Hebrew University of Jerusalem.

Robert Wilson, the Perren Professor of Astronomy at the University of London's University College London.

IN BRIEF

At the May dedication of the Keck II Telescope at the W. M. Keck Observatory on the summit of Mauna Kea in Hawaii, it was announced that **Frederic H. Chaffee** would become director of the observatory. Chaffee, who for the past 12 years has been director of the Multiple Mirror Telescope Observatory near Tucson, Arizona, will assume his new post upon the retirement in October of **Gerald M. Smith**, who has been the Keck project manager for 13 years.

The Overseas Chinese Physics Association has presented its Outstanding Young Researcher Award to **Hong-Wen Jiang**, an associate professor of physics at the University of California, Los Angeles, for "his contribution to research in the quantum Hall effect." The association's Achievement in Asia Award has been given to **Ching-Ming Wei** of the Institute of Physics of Academia Sinica (the Chinese Academy of Sciences) in Taipei, Taiwan, for "his contribution to surface structure physics using electron-emission holography."

David W. Fahey has been honored with the Henry G. Houghton Award given by the American Meteorological Society. Fahey, a research physicist in the meteorological chemistry group at NOAA's Aeronomy Laboratory in Boulder, Colorado, was selected for "his outstanding contributions to our understanding of the ozone layer through airborne observations and theoretical analyses."

Robert L. Byer received the 1996 Quantum Electronics Award from the IEEE Lasers and Electro-Optics Society in June at the joint Conference on Lasers and Electro-Optics and Conference on Quantum Electronics and Laser Science. Byer, who is director of Stanford University's Center for Nonlinear Optical Materials, was cited for "pioneering inventions and contributions to solid-state lasers, optical parametric oscillators and nonlinear optics."

Richard C. Canfield has joined the physics department at Montana State University in Bozeman as Research Professor of Physics. Canfield had been an astronomer at the Institute for Astronomy at the University of Hawaii in Honolulu.

The Royal Swedish Academy of Sciences has awarded its 1996 Aminoff

Prize to **Philip Coppens**, a distinguished professor in the chemistry department at the State University of New York at Buffalo, for "his contribution to the experimental measurement and theoretical understanding of elec-

tron density distributions in crystals." The 1995 prize went to **Hugo M. Rietveld** of the Dutch Reactor Center in Petten, the Netherlands, for developing a widely used method for analyzing powder diffraction patterns.

OBITUARIES

Roman Smoluchowski

Roman Smoluchowski died in Austin, Texas, on 12 January 1996.

Born in Zakopane, Poland, on 31 August 1910, he received his master's degree in physics from the University of Warsaw in 1933 and a doctorate in physics and mathematics from the University of Groningen in The Netherlands in 1935. He then worked for a year at the Institute for Advanced Studies in Princeton.

In 1936, Roman returned to Poland as head of the department of physics of metals at the University of Warsaw. Early during World War II, he escaped from German-occupied Poland, and an invitation from Princeton University to become an instructor in physics enabled him to come to the US, which then became his permanent home.

In 1941, Roman became a research physicist at the General Electric Research Laboratory in Schenectady, New York, and stayed until 1945. Between 1946 and 1959, he held professorships at the Carnegie Institute of Technology, first in metallurgy and eventually in physics. In addition, beginning in the early 1950s, he was associated with the solid-state physics group at Brookhaven National Laboratory, spending many summers there. In 1960, he returned to Princeton as a professor in the department of mechanical engineering and as the first director of the interdepartmental program in solid state and materials science. Roman remained its director until 1976.

At Princeton, Roman taught both undergraduate and graduate courses and maintained an active and prolific research program. He applied his knowledge of radiation damage phenomena to the structural nature of the lunar surface prior to the lunar landings during the Apollo missions. He also turned his attention to problems in solid-state astrophysics, including the gravitational collapse and the resulting interior structure and magnetic field of Jupiter and the outer planets. This work is now being tested with data from the Galileo spacecraft probe.

Roman retired from Princeton as professor of solid-state sciences emeritus in 1978 and became a professor of physics and astronomy at the University of Texas at Austin. In his later



ROMAN SMOLUCHOWSKI

work, he studied the interactions of dust and ice particles in space with their environment. This resulted in important new understandings of the properties of interstellar dust grains, planetary ring systems, the icy satellites of the outer planets and the thermal evolution of cometary nuclei.

During his scholarly career, Roman made important contributions to a number of areas: the role played by structural defects in the properties of solids, magnetism and order-disorder transformations in metals and alloys, the mechanisms of radiation damage, the formation mechanisms and stability of point defects in the alkali halides, the application of solid-state physics to the properties of biological hard tissue and materials problems in astrophysics. In the early 1960s, when several Brazilian universities were establishing modern research activities in materials science, Roman invited several physicists from Brazil to join his research activities in the US and also visited their home universities.

In the course of his career, he served on and chaired many advisory committees and boards for the National Research Council of the National Academy of Sciences, the Department of Defense, Oak Ridge National Laboratory and several educational institutions. He was the first chair (in 1947) of the division of condensed matter physics of the American Physical Society.

Roman was a pleasure to work with, although it was not always easy to match his enthusiasm, energy and insight. He and his wife Louise made their home a welcoming place to colleagues and students. Roman will be remembered as someone who lived a full and contributory life, and we shall never forget his warm personality, his charm and his infectious booming laugh.

ANITA COCHRAN

WILLIAM COCHRAN

University of Texas at Austin

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DAVID O. WELCH

Brookhaven National Laboratory

Upton, New York

PETER EISENBERGER

BARRIE S. H. ROYCE

Princeton University

Princeton, New Jersey

SERGIO MASCARENHAS

University of São Paulo

São Paulo, Brazil

George Bekefi

George Bekefi, a professor of physics at MIT since 1961, died on 17 August 1995 at the age of 70, following a battle with leukemia.

George was born to an artistic family in Prague, Czechoslovakia. Soon after the German occupation began in 1939, George made his way to England under the aegis of a private British organization that undertook to rescue Czech Jewish children. There he earned a BSc in physics from the University of London in 1948. Also in 1948, seeking adventures in the New World, George departed for Montreal, where he studied at McGill University. He received a PhD in physics in 1952 and stayed on as a lecturer and assistant professor. His research interests then were in electromagnetism, particularly the effects of wave diffraction on aberrations of optical systems.

In 1957, George joined Sanborn C. Brown and William P. Allis at MIT's Center of Gaseous Electronics in the Research Laboratory of Electronics (RLE). Gaseous electronics soon began to play an important role in the operation of the newly discovered laser, in which the ionized gas became the lasing medium. These MIT studies were eventually incorporated in a book that George edited: *Principles of Laser Plasmas* (Wiley, 1976).

At the Second Conference on the Peaceful Uses of Atomic Energy, held in 1958 in Geneva, with controlled thermonuclear fusion declassified, new research vistas opened for many young scientists. At MIT, George and his students began to explore linear and