

WE HEAR THAT

Lawrence Awards Honor Work in Atomic Energy

In February, the US Department of Energy announced the names of individuals who will receive the E. O. Lawrence Awards, given annually for outstanding accomplishments in seven aspects of atomic energy: physics, life sciences, chemistry, national security, environmental science and technology, materials research and nuclear technology. In a ceremony this spring, DOE will present gold medals and \$15 000 checks to the winners. The recipients include five individuals who are receiving the award for physics-related work.

Charles Alcock will receive the award in the physics category for "his scientific and technological leadership in making the first definitive observations of Massive Compact Halo Objects (MACHO) that may account for a significant fraction of 'dark matter' in the universe." Alcock is head of the Institute for Geophysics and Planetary Physics at Lawrence Livermore National Laboratory.

The award in the chemistry category will go to **Thomas Dunning**, the director of the Environmental Molecular Sciences Laboratory at the Pacific Northwest National Laboratory. Dunning is being honored for "his electronic structure calculations on molecules. [His] work has been applied in laser technology, combustion chemistry and environmental chemistry."

The national security award will be presented to **Charles V. Jakowatz**, the manager of the signal processing research department at Sandia National Laboratories, for "his work in advancing the use of synthetic aperture radar (SAR) for imaging arms control, nonproliferation and other national security applications. [His] work makes it possible to use SAR to produce highly accurate terrain elevation maps, as well as to detect very subtle physical changes on the earth's surface."

Sunil K. Sinha is to receive the materials research award for "developing new techniques for using x-rays and neutron scattering to learn details about the structure of many materials." Sinha is associate director of the experimental facilities division of the Advanced Photon Source at Argonne National Laboratory.

The winner in the nuclear technology category is **Theofanis G. Theofanous**, who is a professor in the de-

partments of chemical engineering and of mechanical and environmental engineering and the director of the Center for Risk Studies and Safety at the University of California, Santa Barbara. He is being recognized for "inventing the Risk-Oriented Accident Analysis Methodology (ROAAM) and for fundamental insights into the progression of severe nuclear reactor accidents."

AGU Honors Eight in San Francisco

One of the highlights of the American Geophysical Union's fall meeting in San Francisco last December was the presentation of several medals and other honors.

Eugene M. Shoemaker received the William Bowie Medal, AGU's top honor, for "his pioneering studies of extraterrestrial objects throughout the Solar System, both in space and on planetary surfaces." Shoemaker is an emeritus scientist of the US Geological Survey and a staff member at Lowell Observatory.

The James B. Macelwane Medal was presented to **David Bercovici**, an associate professor of geology and geophysics at the University of Hawaii at Manoa. AGU cited him for "basic and insightful contributions to our understanding of the dynamics of the mantle and lithosphere." (Two other Macelwane medalists were honored at the AGU spring meeting in 1996.)

Hiroo Kanamori was given the Walter H. Bucher Medal for his "outstanding contributions in the use of seismological methods to study the physics of earthquakes and the tectonic processes that cause them." Kanamori is the director of the Seismological Laboratory at Caltech and a professor of geophysics there.

The 1996 recipient of the Maurice Ewing Medal, given jointly by the US Navy and AGU, was **Walter C. Pitman III**, a research scientist at Columbia University's Lamont-Doherty Earth Observatory. Pitman garnered the medal for his "pioneering studies of marine magnetic anomalies and their use in the construction of the magnetic polarity time scale and its application to the tectonic history of the Earth and sea level change."

The Robert E. Horton Medal went to **Mark F. Meier** for "his fundamental contributions on hydrological processes in glaciology and his path-setting research on glacier flow instabilities." Meier is an emeritus professor of geo-

logical sciences and a fellow of the Institute of Arctic and Alpine Research at the University of Colorado at Boulder.

Thomas J. Ahrens was given the Harry H. Hess Medal for "his fundamental contributions to our understanding of the formation and evolution of planetary bodies, particularly through the use of innovative shock-wave experiments." Ahrens is a professor of geophysics at Caltech.

AGU presented the Waldo E. Smith Medal to **Ned A. Ostenso**, citing "his 30-year Washington career dedicated to improving the quality of the Earth sciences through careful, imaginative and humane administration, direction and nurturing of government grant programs, federal laboratories and research programs and for his contributions to the health of [AGU]." Ostenso, who is retired, was the assistant administrator for oceanic and atmospheric research at the National Oceanic and Atmospheric Administration.

The Roger Revelle Medal was presented to **Robert E. Dickinson**, a regents professor in the department of atmospheric science at the University of Arizona. Dickinson was cited for his "contributions characterized by both great breadth and remarkable depth, including the study of future climate change, biometeorology and vegetation-climate interaction, upper atmosphere research, polar climates, aerosols and biomass burning, the general circulation of the atmosphere, the atmosphere of Venus, the climate of the early Earth and the characteristics of spiral galaxies."

Engineering Academy Names New Members

The National Academy of Engineering announced in February that its members had elected 85 new members and eight foreign associates. The inductees will enlarge the academy to 1893 US members and 153 foreign members. The newly elected engineers include

Pallab K. Chatterjee, the president of the personal productivity products division at Texas Instruments Inc in Dallas, Texas.

Steven F. Clifford, director of the National Oceanic and Atmospheric Administration's Environmental Technology Laboratory in Boulder, Colorado.

William E. Kastenbergh, a professor in and chairman of the department of nuclear engineering at the University of California, Berkeley.

Larry Lake, holder of the W. A. (Tex) Moncrief Centennial Endowed Chair and the chairman of the department of petroleum and geosystems engineering at the University of Texas at Austin.

Margaret A. LeMone, a senior scientist in the mesoscale-microscale meteorology division of the National Center for Atmospheric Research in Boulder, Colorado.

Robert E. McIntosh, a professor of electrical and computer engineering at the University of Massachusetts at Amherst.

Parviz Moin, a professor in the department of mechanical engineering at Stanford University.

Julio Ottino, a professor and chairperson of the department of chemical engineering at Northwestern University.

R. Fabian Pease, a professor of electrical engineering at Stanford University.

Isaac Sanchez, the Cullen Trust Professor of Engineering in the chemical engineering department at the University of Texas at Austin.

Donald R. Scifres, the founder, president and chief executive officer of SDL Inc (formerly Spectra Diode Laboratories) in San Jose, California.

Matthew Tirrell, a professor and head of the department of chemical engineering and materials science at the University of Minnesota.

Theodore Van Duzer, a professor in the graduate school of the department of electrical engineering and computer science at the University of California, Berkeley.

The new foreign associates include

Hans G. Hornung, the C. L. "Kelly" Johnson Professor of Aeronautics and director of the graduate aeronautical labs at Caltech.

Herbert Kroemer, a professor in the departments of electrical engineering and of materials at the University of California, Santa Barbara.

IN BRIEF

In January, the Woods Hole Oceanographic Institution honored one of its own: **William J. Jenkins**, a senior scientist in Woods Hole's marine chemistry and geochemistry department, was selected to receive the institution's Henry Bryant Bigelow Award in Oceanography, which honors oceanographers around the world. Jenkins was cited, in part, for his "outstanding contributions to the development of the tritium-helium dating technique and its application to problems in ocean physics, biology and geochemistry."

The 1997 Holweck medal and prize has been awarded to **Jean-Pierre Briand**, a professor at the Pierre and

Marie Curie University (University of Paris VI) for his work on high-resolution x-ray spectroscopy. This award is given in odd-numbered years by the UK's Institute of Physics to a physicist from France; in even-numbered years, it is given by the French Physical Society to a physicist from the UK.

The 1997 Max Born medal and prize has been given to **Robin Marshall**, a professor of experimental physics at the University of Manchester, for his "outstanding contributions to particle physics, particularly in work concerned with the electroweak interaction." The German Physical Society gives this award to a British physicist in odd-numbered years, and the UK's Institute of Physics gives it to a German physicist in even-numbered years.

At the Pittcon 1997 meeting in Atlanta last month, the Spectroscopy Society presented its 1997 Maurice F. Hasler Award, sponsored by Fisons Instruments, to **Alan**

G. Marshall. The citation notes, in part, that Marshall "has developed and nurtured the important technique of Fourier Transform Ion Cyclotron Resonance Mass Spectrometry." Marshall is a professor of chemistry at Florida State University and director of the ion cyclotron resonance program at the National High Magnetic Field Laboratory in Tallahassee.

Quantum Design in San Diego, California, has added four physicists to its product development team in the last year or two. Each one came directly from his degree programs. They are: **Randall Black**, who earned a PhD from the University of Maryland at College Park in 1995; **Jost Diederichs**, who earned a doctorate at Washington University in 1996; **Stefano Spagna**, who got his PhD from the University of California, San Diego, in 1995; and **Kurt Jensen**, who completed his master's degree at Iowa State University in 1995.

OBITUARIES

Charles Palmer Bean

Charles Palmer Bean, an influential solid-state physicist with a unique understanding of science, died of a heart attack on 30 September 1996 while on a business trip to Washington, DC. In his distinguished career, he made seminal contributions to magnetism, superconductivity and biophysics, in addition to helping many colleagues mature into world renown.

Born in Buffalo, New York, in 1923, Charlie graduated from the University of Buffalo in 1947 with a BA in physics and received an MS and a PhD in physics from what is now the University of Illinois at Urbana-Champaign in 1949 and 1952, respectively. His first job was at the General Electric Research Laboratory in Schenectady, New York, and he stayed there until 1986, when he took early retirement and became an institute professor in the school of science at Rensselaer Polytechnic Institute. He became professor emeritus in 1993, when he "retired" for the second time.

Charlie had a major influence on the development of the GE lab in the late 1950s and early 1960s, at a time when industrial laboratories still engaged vigorously in basic research. He was one of the main reasons the laboratory became so prominent in the world, not only because of the excellence of his research, but also because he was a constant source of unbounded enthusiasm, inspiration and construc-



CHARLES PALMER BEAN

tive criticism. What he liked best was to work with other people, to prod and challenge his colleagues to do their very best. At that time, during a visit to Schenectady, Nevill Mott was asked to give his impression of the GE lab: "I am surprised," he replied, "that a second-rate place can do so much first-rate work!"

Charlie's research in magnetism started in 1951. His many pioneering contributions to this field included work on exchange anisotropy, rotational hysteresis, fine particle magnets, AC losses in transformer steel, nucleation of magnetic domains and the phenomenon of superparamagnetism (a term he coined). When ferromagnetic particles are sufficiently