

WE HEAR THAT

AGU SALUTES OUTSTANDING WORK IN GEOPHYSICS

At last month's meeting of the American Geophysical Union, held in San Francisco, six individuals received medals for their achievements.

The 1990 Fleming Medal for research in geomagnetism, atmospheric electricity and aeronomy was presented to Kenneth M. Creer, a professor of geophysics at the University of Edinburgh. The award citation praised Creer for introducing the concept of representing paleomagnetic data by plotting apparent-polar-wander curves; he also calculated the first such curve for any continent, the citation said, providing "the basis for the first physical test of Wegener's hypothesis of continental drift" (the concept of fragmentation and movement of land masses on the surface of the Earth). In recent years he has concentrated on geomagnetic and paleoclimatic applications of paleomagnetism.

Creer received a PhD in geophysics from Queens' College, Cambridge, in 1954. From 1967 to 1973 he was a professor of magnetism at the University of Newcastle-on-Tyne. Since 1973 he has been at Edinburgh.

Also at the December meeting, Macelwane Medals were given to three individuals: Ellen M. Druffel of Woods Hole Oceanographic Institution, Steven M. Gorelick of Stanford University and Paul Segall of the US Geological Survey. The Macelwane Medal recognizes outstanding work by young researchers.

Druffel's award citation praised her use of radiocarbon from thermonuclear bombs and natural sources "to detect, explain and predict oceanographic and climatic processes." She has applied this technique to a number of problems, including reconstruction of El Niño-Southern Oscillation events and measurements of carbon dioxide created by fossil fuel burning and by natural sources during the past 150 years.

Druffel received a PhD in chemistry from the University of California, San Diego, in 1980. In 1981 she joined

Woods Hole, where she is now an associate scientist.

Gorelick, a specialist in hydrogeology and groundwater systems, was cited for his development of an aquifer simulation and management method "capable of including both a nonlinear objective function and nonlinear constraints." He also developed a statistical technique for estimating the transport parameters.

Gorelick received a PhD in geology from Stanford in 1981. From 1981 to 1988 he worked at the US Geological Survey in Menlo Park, California, after which he became a professor in the applied Earth sciences department at Stanford.

Segall has made "critical contributions to fields as diverse as the evolution of faults and joints, seismic activity induced by fluid extraction, and inversion of geodetic data," the award citation said. He is currently using data from the Global Positioning System to study crustal movements on the San Andreas Fault and around the Hawaiian volcanoes.

Segall received a PhD in geology from Stanford University in 1981. He is now a geophysicist with the USGS and an associate professor of geophysics at Stanford.

The biennial Waldo E. Smith Medal, which recognizes extraordinary service to geophysics, was given to Naoshi Fukushima, a professor emeritus of geophysics at the University of

Tokyo. Fukushima is known for his pioneering work in studying geomagnetic disturbance and ionospheric electric currents. AGU cited him for "creating a sense of community among international geophysicists," in particular, for his contributions to the International Association of Geomagnetism and Aeronomy, of which he was secretary general from 1975 to 1983.

Fukushima received a doctorate in geophysics from the University of Tokyo in 1953, after which he joined the faculty there. He became a professor of geophysics in the university's Geophysics Research Laboratory in 1965 and director of the lab in 1973.

Carl I. Wunsch of MIT received the 1990 Maurice Ewing Medal, awarded jointly by AGU and the US Navy for leadership in marine geophysics. The citation called Wunsch's 1978 paper on the application of inverse theory to the circulation of the North Atlantic "probably [the] most influential" of his contributions to physical oceanography. The citation also praised Wunsch's leadership in organizing the World Ocean Circulation Experiment.

After earning a PhD in geophysics from MIT in 1966, Wunsch joined the faculty there. He is currently Cecil and Ida Green Professor of Physics and Oceanography in the department of Earth, atmospheric and planetary sciences at MIT.

ACOUSTICAL SOCIETY RECOGNIZES RESEARCH AND SERVICE

At the Acoustical Society of America meeting held in San Diego in November, several individuals were recognized for their contributions to the field and to the society.

Richard V. Waterhouse of American University received the Walter Clement Sabine Award for his "fundamental contributions to the under-

standing of sound fields in rooms." Waterhouse's research in architectural acoustics has centered around making accurate measurements in sound-wave fields in enclosures, the award citation said. During the past decade, he has been developing techniques for mapping sound intensity streamlines and methods for comput-

ing and displaying sound waves near rigid spheres, cylinders and constrained elastic plates. These methods are useful in underwater acoustics applications such as detecting and locating submarines.

Waterhouse received a PhD in physics from the Catholic University of America in 1959. From 1951 to 1959 he was a research physicist at the National Bureau of Standards. In 1963 he joined the faculty at American University, where he is now professor emeritus of physics. He received a DSc from Oxford University in 1983.

Also at the November meeting, Ivan Tolstoy was presented with the Pioneers of Underwater Acoustics Medal for his "innovative studies in oceanic, atmospheric and seismic wave propagation." Among his achievements was the 1963 publication of a generalized theory of wave propagation in stratified media, which "provided the starting point for most astrophysical models of the waves in Jovian atmospheres," the award citation said. Tolstoy has also contributed to the theory of forward scattering at rough surfaces.

After receiving a PhD in geophysics from Columbia University in 1950, Tolstoy joined Columbia's Hudson Laboratories. He was a professor of ocean engineering at Hudson Labs when they closed in 1968. After that he held professorships at Florida State University, the University of Leeds and the Naval Postgraduate School in Monterey, California. In 1978 Tolstoy left academia and moved to Knockvennie, Scotland, where he continues to do research on acoustics and the history of science.

David M. Green of the University of Florida was selected to receive the Silver Medal in Psychological and Physiological Acoustics for his "outstanding experimental and theoretical contributions to hearing research and its methodology." The award citation praised Green's wide range of research in psychoacoustics, including his work on the application of signal detection theory, which has had "a profound influence on the methodologies used in experimental psychology." Green's current research involves the detection of small changes in complex acoustic spectra.

Green earned a PhD in psychology from the University of Michigan in 1958. He then held positions at MIT; the University of Pennsylvania; University of California, San Diego; and Harvard University. In 1985 he became a graduate research professor in the psychology department at the University of Florida.

ASA presented Wesley L. Nyborg of the University of Vermont with the Silver Medal in Physical Acoustics and Bioresponse to Vibration for his "technical contributions in the application of physical acoustics to biology and medicine." Nyborg has studied the thermal and nonthermal mechanisms responsible for biological effects of ultrasound. Since 1980 he has headed scientific committee 66 of the National Council for Radiation Protection and Measurements, which prepared a report entitled "Biological Effects of Ultrasound Mechanisms and Clinical Implications" and is now working on guidelines for patient exposure to ultrasound. The citation called Nyborg's involvement with the committee "perhaps his greatest single service" to the field.

Nyborg received a PhD in physics from Pennsylvania State University in 1947. In 1950 he joined the faculty at Brown University, and in 1960 he became a professor of physics at Vermont.

The Acoustical Society also presented its Distinguished Service Citation to Murray Strasberg for "over four decades of devoted service to the society, particularly as its secretary." Strasberg was a member of the ASA executive council from 1969-72; president from 1974-75; and secretary from 1987 to the present. He has also served on the editorial board and several committees of the society and has represented ASA on the AIP governing board.

Strasberg, a specialist in underwater acoustics and hydrodynamic noise, received a PhD in physics from Catholic University in 1956. He is currently a senior research scientist at the David Taylor Research Center in Bethesda, Maryland.

AAS DIVISIONS APPLAUD NOTABLE CONTRIBUTIONS

The division for planetary sciences and the division on dynamical astronomy of the American Astronomical Society recently recognized several individuals for outstanding contributions.

At the October meeting of the division for planetary sciences, Victor S. Safronov of the Institute of the Physics of the Earth in Moscow accepted the Gerard P. Kuiper Prize, which recognizes a scientist who has greatly advanced the understanding of the field. Safronov studied quantitatively the main stages of evolution of the solar nebula and helped develop

the basic theory for the formation and interaction of planetesimals and the subsequent growth of planets.

Safronov earned his doctoral degree in physical and mathematical sciences in 1948. He then began working in the department of the origin of the Earth at the Institute of the Physics of the Earth. He became the department's head in 1983.

Also at the planetary sciences division meeting, David J. Tholen of the University of Hawaii received the 1990 Harold C. Urey Prize, which recognizes achievement by a young scientist. Tholen developed a taxonomy based on the optical properties of asteroid spectra that is now widely used in physical studies of asteroids. He has also studied and made extensive high-precision photometric observations of the recently concluded six-year-long series of mutual eclipse and occultation phenomena of Pluto and its satellite Charon.

Tholen received a PhD in planetary sciences from the University of Arizona in 1984. Since 1983 he has worked at the University of Hawaii's Institute for Astronomy, where he is currently an associate astronomer.

The AAS division on dynamical astronomy has selected Donald Lynden-Bell of the University of Cambridge to receive the 1991 Dirk Brouwer Award. Lynden-Bell, who will receive the award at an upcoming meeting of the division, has been prominent in the study of stellar dynamics during the past three decades. One of his major contributions was to the black hole accretion disk theory of quasars; he was among the first to argue that very massive black holes are the power source for quasars, a concept that is now the standard model for quasars. More recently he has been studying the perturbations of the velocity field of elliptical galaxies.

Lynden-Bell received a PhD in theoretical astronomy from Cambridge in 1960. From 1965 to 1972 he was a principal scientific officer at the Royal Greenwich Observatory. In 1972 he became a professor of astrophysics at Cambridge.

OBITUARIES

Robert N. Noyce

Robert Noyce died suddenly on 3 June 1990 at his home in Austin, Texas, where he had lived since becoming president of Sematech two years ago. His career as a physicist, inventor and entrepreneur was closely tied to the development of the semiconductor industry.