The John Adam Fleming Medal was presented to **Donald M. Hunten**, the Regents Professor of Planetary Sciences at the University of Arizona. Hunten's contributions "are evident everywhere in the record of terrestrial and planetary aeronomy," the medal citation stated, noting in particular his development of the theory of diffusion-limited escape and the subsequent analysis of escape of hydrogen from the planets.

**Ignacio Rodriguez-Iturbe**, the R. P. Gregory Professor of Civil Engineering at Texas A&M University, garnered the Robert E. Horton Medal, given for outstanding work in hydrology. According to the medal citation, Rodriguez-Iturbe "has led the revolution in fluvial geomorphology from the late 1980s to the present by developing a whole new theory of river basin organization and evolution."

The Harry H. Hess Medal was presented to **David J. Stevenson**, the George Van Osdol Professor of Planetary Science at Caltech. The medal citation praised Stevenson's development of "ongoing models of the planets, satellites and dwarf stars [and] his exceptional ability to assimilate the work of others and to use it to achieve new depths of understanding."

The Walter Sullivan Award for Excellence in Science Journalism went to **Kevin Krajick**, a freelance science writer, for his article on recent investigations into gas hydrates, vast deposits of which lie beneath the seafloor. Entitled "The Crystal Fuel," the article appeared in the May 1997 issue of *Natural History*.

## Anderson, Dziewonski Receive Crafoord Prize

Although the Royal Swedish Academy of Sciences does not award Nobel Prizes for astronomy, biosciences, geophysics or mathematics, the academy does recognize those fields with its handsomely endowed Crafoord Prize. The 1998 Crafoord Prize, worth $500 000, will be presented to geophysicists **Don L. Anderson** and **Adam Dziewonski** in a ceremony this September. Anderson is the Eleanor and John R. McMillan Professor of Geophysics at Caltech and Dziewonski is the Frank B. Baird Jr Professor of Science in Harvard University's department of Earth and planetary sciences.

DON L. ANDERSON

ADAM DZIEWONSKI

The academy is honoring Anderson and Dziewonski for "their fundamental contributions to our knowledge of the structures and processes in the interior of the Earth." The two researchers have worked both together and separately to study earthquakes. They have used seismological studies to develop models of the organization of the Earth and the dynamics of its processes. According to the citation, Anderson and his group have studied changes in Earth's composition arising because of the pressure deep in the planet's mantle; they have shown that changes in the composition of the mantle may explain the occurrence of tensions in Earth's crust that can lead to earthquakes. Anderson and his coworkers have also used seismic data to study convection currents in the mantle and, more recently, they have used geochemical and chemical-isotope methods to look at the geophysical development of Earth and other planets.

Dziewonski has used the speed and nature of seismic waves to learn more about the temperatures and mineral densities within Earth. The academy credits Dziewonski and his coworkers with developing global seismic tomography, a technique corresponding to computed tomography in medicine. In earlier work, according to the academy's citation, by studying the 1964 Alaska earthquake, Dziewonski and his colleagues formed a picture of the planet's interior, with its solid inner core and a fluid outer core consisting chiefly of iron. Outside the core are the mantle and the crust, composed chiefly of silicates. Recently, Dziewonski and his colleagues observed that the inner core is rotating 2–3 degrees per year faster than the mantle and crust. (See PHYSICS TODAY, September 1996, page 17.)

## Academy of Sciences Adds to Its Ranks

At its annual meeting in April, the National Academy of Sciences elected 60 new members and 15 foreign associates from 10 countries. The total number of academy members now stands at 1798 and its foreign associates number 310. Among the newly named members are

**David E. Aspnes**, a professor of physics at North Carolina State University at Raleigh

**Bruce J. Berne**, a professor of chemistry at Columbia University

**A. Welford Castleman**, the Evan Pugh Professor in the chemistry department at Pennsylvania State University

**William L. Chameides**, a Regents' Professor in the School of Earth and Atmospheric Sciences at the Georgia Institute of Technology

**Ingrid Daubechies**, a professor of mathematics and the director of the program in applied and computational mathematics at Princeton University

**Norval E. Fortson**, a physics professor at the University of Washington

**Donald A. Gurnett**, the Carver/Van Allen Professor of Physics at the University of Iowa

**John M. Hayes**, a senior scientist in the department of geology and geophysics at the Woods Hole Oceanographic Institution in Woods Hole, Massachusetts

**Roman Jackiw**, the Jerrold Zacharias Professor and the chair of the physics department at the Center for Theoretical Physics at MIT

**Thomas H. Jordan**, the Robert Shrock Professor and head of the department of Earth and planetary sciences at MIT

**Robert P. Kirshner**, a professor of astronomy and chair of the astronomy department at Harvard University

**Miles V. Klein**, a professor of physics and director of the Science and Technology Center for Superconductivity at the University of Illinois at Urbana-Champaign

**James M. Moran**, a professor and senior radio astronomer at the Harvard–Smithsonian Center for Astrophysics in Cambridge, Massachusetts

**William R. Schowalter**, the dean of the College of Engineering at the University of Illinois at Urbana-Champaign

**Lu Jeu Sham**, a professor of physics at the University of California, San Diego

**Paul J. Steinhardt**, the Mary Amanda Wood Professor of Physics at the University of Pennsylvania

**Melvin E. Stern**, a distinguished research professor in the department of oceanography at Florida State University

**Michael S. Witherell**, a professor of physics at the University of California, Santa Barbara

**Andrew C. Yao**, the William and Edna Macaleer Professor of Engineering and Applied Science in the department of computer science at Princeton University

Newly elected foreign members of the National Academy include

**Edward Irving**, an emeritus scientist at the Pacific Geoscience Centre of the Geological Survey of Canada in Sidney, British Columbia

**Olli V. Lounasmaa**, a professor of physics at the Helsinki University of Technology in Espoo, Finland

**Roger Penrose**, the Rouse Ball Professor of Mathematics at University of Oxford in the UK

**Yasuo Tanaka**, a senior scientist at the Max Planck Institute for Extraterrestrial Physics in Garching, Germany.

## IN BRIEF

At a conference in Boston in April, **Peter Clarke** received the Nathaniel H. Sugerman Memorial Award from the Society of Vacuum Coaters. Clarke is the founder and president of Sputtered Films, Inc, in Santa Barbara, California.

In June, **Jacqueline Krim**, formerly a professor of physics at Northeastern University, joined the physics faculty at North Carolina State University.

Beating out other journals of science as well as those of medicine, the humanities and the arts, *Geophysical Research Letters* has won the award for the best single issue of a journal in 1997. The award, given annually by the professional and scholarly publishing division of the Association of American Publishers, honored the 15 November 1997 issue, which featured groups of papers on three subjects: record low levels of ozone in the Arctic, Indian Ocean circulation and the corona's influence on solar wind acceleration. GRL is published by the American Geophysical Union.

In a ceremony on 27 June, **Rolf Landauer** received the 1998 Edison Medal from the Institute of Electrical and Electronics Engineers (IEEE) for "his pioneering contributions to the physics of computing and conduction." Landauer is an IBM fellow at IBM's T. J. Watson Research Center in Yorktown Heights, New York.

IEEE's Engineering in Medicine and Biology Society has given a Career Achievement Award to **J. Lawrence Katz**, a professor of biomedical engineering at Case Western Reserve University. Katz was recognized for his use of ultrasonic wave propagation and scanning acoustic microscopy to study the relationship between the structure and properties of bone and teeth, with a view to developing biomaterial replacements.

Columbia University has added two Bell Laboratories researchers to the ranks of its faculty. **Aron Pinczuk** and **Horst Stormer** are now professors in the departments of physics and of applied physics, although they both remain affiliated with Bell Labs.

**Donald Lynden-Bell** has garnered the 1998 Catherine Wolf Bruce Medal, given by the Astronomical Society of the Pacific. The society is honoring Lynden-Bell, a professor of astrophysics at the University of Cambridge in the UK, for his lifetime contributions to astronomy. The citation notes that his contributions are exceptional in their scope, ranging from mathematical physics through observational astronomy.

# OBITUARIES

## David Norman Schramm

On 19 December 1997, David Norman Schramm was killed when the twin-engine plane he was piloting crashed near Byers, Colorado. Schramm had been a faculty member at the University of Chicago since 1974 and, at the time of his death, was the Louis Block Distinguished Service Professor in the Physical Sciences and the university's vice president for research. One of the foremost cosmologists and most influential astrophysicists of his generation, Schramm was a statesman of science and a vocal advocate for the importance of basic research.

Schramm was born in St. Louis, Missouri, on 25 October 1945. His physics career began at MIT, where he received his SB in 1967 (and also was a national collegiate heavyweight champion in Graeco-Roman wrestling). He went next to Caltech, where the breadth of his interests and his exceptionally vigorous scientific energy led to his being supervised by two physicists of great stature—Jerry Wasserburg and the late Willy Fowler. At a memorial session held for Schramm at the January 1998 meeting of the American Astronomical Society, Wasserburg recalled graduate student Schramm arriving at his home one evening with a large box filled with computer output and announcing that they would write a paper that evening. Schramm earned his PhD in physics in 1971.

While at Caltech, Schramm's research focused on nuclear astrophysics.