

WE HEAR THAT

National Medals of Science and Technology Awarded

On 18 October President Clinton bestowed National Medals of Science on eight individuals and National Medals of Technology on three individuals, two companies and one team. Recipients of the science medals included **Hans Dehmelt**, **Peter Goldreich**, **Hermann Haus**, **Isabella Karle**, **Louis Nirenberg** and **Alexander Rich**. Those earning technology medals included the team of **Praveen Chaudhari**, **Jerome J. Cuomo** and **Richard Gambino**, who had worked together at the IBM Corp's T. J. Watson Research Center in Yorktown Heights, New York.

Dehmelt, who is the Boeing Distinguished Professor of Physics at the University of Washington, was cited for "his pioneering achievements in perfecting electromagnetic traps for precision studies of single ions, electrons and positrons, culminating in the measurement to unprecedented accuracy of the magnetism of the free electron and positron."

Goldreich, who is Lee A. DuBridge Professor of Astrophysics and Planetary Sciences at Caltech, was recognized for "his profound and lasting contributions to planetary sciences and astrophysics, providing fundamental theoretical insights for understanding the rotation of planets, the dynamics of planetary rings, pulsars, astrophysical masers, the spiral arms of galaxies and the oscillations of the Sun."

The medal went to Haus, who is the Institute Professor of Electrical Engineering at MIT, for "his fundamental and seminal research contributions to the field of quantum electronics, noise and ultra-fast optics; and for his service to the engineering profession through teaching."

The citation praised Karle, senior scientist at the Naval Research Laboratory in Washington, DC, for "the development and application of a method for determining essentially equal-atom crystal and molecular structures by x-ray analysis, thereby having a profound effect on the practice of organic and biological chemistry."

Nirenberg, a professor of mathematics at the Courant Institute of New York University, received his medal for "fundamental contributions

to linear and nonlinear partial differential analysis, thus having a decisive impact on the development of mathematics and its applications over a period of years."

Rich, who is the William Thompson Sedgwick Professor of Biophysics at MIT, was honored for "his numerous fundamental contributions to our knowledge of the structure and function of DNA and RNA, the central information carriers in living systems."

The citation that accompanied the Medal of Technology given to Chaudhari, Cuomo and Gambino praised the trio for "their discovery and development of a new class of materials—the amorphous magnetic materials—that are the basis of erasable, read-write, optical storage technology, now the foundation of the worldwide magneto-optic disk industry." Chaudhari is a research staff member at the IBM research center. Cuomo is now Distinguished Research Professor in the materials science and engineering department at North Carolina State University at Raleigh. Gambino has become a professor in the materials science and engineering department at the State University of New York at Stony Brook and principal research scientist and director of the university's laboratory for magneto-optical materials.

Heeger Garner's Balzan Prize

One of three 1995 Balzan Prizes, worth 350 000 Swiss francs each, has been given to **Alan Heeger**, a professor of physics and materials at the University of California, Santa Barbara, and director of the university's Institute for Polymers and Organic Solids. He is cited for "his outstanding contributions to materials science and his leadership in disciplines which merged in the new and interdisciplinary field of the semiconducting and metallic polymers." The citation goes on to say that "he has thoroughly covered this new field from the founding discoveries to the realization of new materials exploitable by both high-tech and consumer products industries." The prizes are awarded annually by the International Balzan Foundation.

AAPT Honors Zollman and Franken

At the summer meeting of the American Association of Physics Teachers, held in Spokane, Washington, **Dean A. Zollman**, a professor of physics at Kansas State University, received the Robert A. Millikan Medal. Zollman has studied the application of computers and video discs in physics teaching, the medal citation said, and he has been a "persuasive advocate of the workshop as a means of introducing new discoveries and approaches into the physics classroom."

Also at the summer meeting, **Peter A. Franken**, a professor of physics at the University of Arizona, gave the Klopsteg Memorial Lecture. Franken, whose research has been in spectroscopy, nonlinear optics, image processing and optical instrumentation, spoke on the topic of "Municipal Waste, Recycling and Nuclear Garbage."

APS Presents Awards at Division Meetings

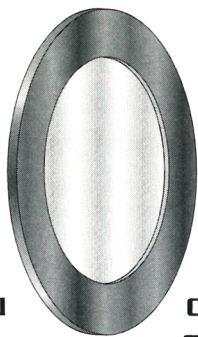
During the past several months the American Physical Society has recognized a number of individuals for their contributions to physics.

At the Conference on Shock Compression of Condensed Matter, held in Seattle, Washington, in August **Thomas J. Ahrens** received the Shock Compression Science Award. Ahrens, a professor of geophysics at Caltech, was commended for "his outstanding contributions to the understanding of matter under shock compression and its application to problems in planetary physics."

At the Interdisciplinary Laser Science Conference held in Portland, Oregon, in September, the Arthur L. Schawlow Prize in Laser Science was presented to **Richard E. Slusher**, head of the optical physics research department at AT&T Bell Laboratories in Murray Hill, New Jersey. The award citation praised Slusher's "seminal contributions to a broad range of optical physics: nonlinear optics in semiconductors leading to the spin flop laser, CO₂ laser diagnostics of fusion plasmas, microcavity lasers and particularly the experimental realization of squeezed light."

At the meeting of the APS fluid dy-

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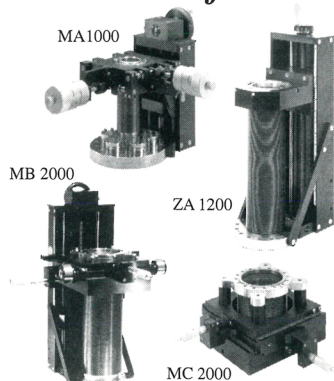
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namics division this month in Irvine, California, the Fluid Dynamics Prize will be presented to **Harry L. Swinney**, who was chosen for "his definitive characterizing [of] the onset of turbulence, his pioneering investigations of chaotic advection and fluid dynamics in rotating flows, and his discoveries and insights concerning pattern formation in chemical dynamics using novel experimental devices." The award citation also notes Swinney's efforts "to bridge the gap between nonlinear dynamical systems theory and laboratory investigations of flow phenomena." Swinney holds the Sid Richardson Foundation Regents Chair in the physics department at the University of Texas, Austin.

Also at the fluid dynamics meeting, **Katepalli R. Sreenivasan**, Harold W. Cheel Professor of Mechanical Engineering, Physics and Applied Physics at Yale University, will receive the Otto Laporte Award. APS is recognizing Sreenivasan for his "pivotal experimental studies on the statistical geometry of turbulent flows, for fundamental work on the multifractal description of turbulence and for services to the fluid dynamics community."

Joseph A. Johnson III will be presented with the Visiting Minority Lectureship Award at the fluid dynamics meeting. Johnson, who is Distinguished Professor of Science and Engineering at Florida A&M University and director of the NASA-FAMU Research Center for Nonlinear and Nonequilibrium Aeroscience, is being cited for his "outstanding research achievements in investigation of turbulent and nonequilibrium fluids and for contributions to the development of minority scientists and engineers."

At the APS division of plasma physics meeting, to be held this month in Louisville, Kentucky, the James Clerk Maxwell Prize will be presented to **Francis F. Chen**, professor emeritus and research professor of electrical engineering at the University of California, Los Angeles. APS is recognizing Chen for his "fundamental contributions to plasma physics in such diverse areas as magnetic confinement devices, laser-plasma interactions, novel plasma-based accelerators and sources for plasma processing." Chen is also recognized for his work on electrostatic probes, low-frequency fluctuations in magnetized plasma, parametric instabilities in laser-plasma interactions, and helicon plasma sources, and for his textbook *Introduction to Plasma Physics and Controlled Fusion*.

Also to be honored at the plasma physics meeting is a group of researchers from Lawrence Livermore National

Laboratory and the University of Rochester. **S. Gail Glendinning**, **Steven W. Haan**, **Joseph D. Kilkenny**, **James P. Knauer**, **David H. Munro**, **Bruce A. Remington**, **Charles P. Verdon**, **Russell J. Wallace** and **Steven V. Weber** will receive the Award for Excellence in Plasma Physics Research for their "outstanding theoretical work, computational design and analysis and experimental work leading to quantitative and predictive understanding of the Rayleigh-Taylor instability in high-energy density plasmas." Glendinning, Haan, Kilkenny, Munro, Remington, Wallace and Weber are at Lawrence Livermore. Knauer and Verdon are with Rochester's laboratory for laser energetics.

The Simon Ramo Award, which recognizes outstanding doctoral thesis research in plasma physics, will also be given at the plasma physics meeting. This year's recipient is **Christopher D. Decker**, who was chosen for "advancing the understanding and predictive computer modeling of the interaction of short-pulse, high-intensity laser light with plasma, including the effects of Raman forward scattering, nonlinear group velocity, relativistic self-focusing and nonlinear collisional absorption at ultrahigh intensity." Decker received his doctorate under Warren B. Mori of the University of California, Los Angeles, and is now a postdoctoral fellow at Lawrence Livermore National Laboratory.

OSA Announces Recipients of Several Awards

The Optical Society of America recently announced the winners of several of its awards. This year's Edwin Land Prize, which recognizes scientific and technological creativity in industry, public policy or education, goes to **Ichiro Endo** and **John Vaught** for "their independent inventions of bubble-jet and thermal ink jet technology, which created a new \$3 billion printer industry and enabled low-cost and color printers to be attached to every personal computer." Endo is managing director and chief executive of Canon's office imaging products operations, in Atsugi, Japan. Vaught, formerly with Hewlett-Packard Laboratories, now operates his own firm, Vaught Concepts, in Wellington, Nevada.

Joseph W. Goodman, chairman of the electrical engineering department at Stanford University, is this year's recipient of the Esther Hoff-