

## EPS Board Hands Out Prizes to Five

The European Physical Society's High Energy Physics Board honored five scientists for 2001 at the HEP-EPS conference in Budapest, Hungary, in July.

**Donald Perkins**, an emeritus professor of physics at the University of Oxford in the UK, garnered the EPS-HEP Prize for "his outstanding contributions to neutrino physics and for implementing the use of neutrinos as a tool to elucidate the quark structure of the nucleon."

The Young Physicist Prize went to **Arnulf Quadt** for research on the ZEUS experiment, which he did while at the University of Oxford. He specifically was recognized for "his outstanding contribution to the measurement of the  $F_2$  structure function in deep inelastic scattering and extending its measurement to low values of momentum transfer and fractional momentum  $x$ ." Quadt is now an assistant professor of physics at the University of Bonn in Germany.

**Steven Gubser**, a professor of theoretical physics at Caltech, was honored with the Gribov Medal for "his outstanding work that has revealed a deep connection between gauge theories and gravitational interactions in the framework of string theories. This made it possible to compute and understand interesting properties of a gauge theory in  $3 + 1$  dimensions from a gravitational theory in  $4 + 1$  dimensions."

**Erik Johansson** and **Christine Sutton** shared the Outreach Prize in High Energy Physics and Particle Astrophysics for "their innovative use of electronic and printed media to bring HEP to the wider public, including professional colleagues, students and schools, and, in particular, for their collaboration developing computer interactive packages for educational master classes." Johansson is a professor of particle physics at Stockholm University in Sweden. Sutton is a member of the particle physics group at the University of Oxford and a lecturer at St. Catherine's College, Oxford.

## IN BRIEF

This month, **Jeremiah P. Ostriker**, Charles A. Young Professor in the astrophysical sciences department at Princeton University, joins Cambridge University in the UK as the Plumian Professor of Astronomy

and Experimental Philosophy for a three-year term. Until this past August, he also was the provost at Princeton. Ostriker will return to Princeton after the position at Cambridge ends.

At the European Crystallographic Meeting in Krakow, Poland, in August, the European Crystallographic Association awarded this year's European Crystallography Prize to **Jochen R. Schneider**, head of the Synchrotron Radiation Laboratory (HASYLAB) at the German Electron Synchrotron (DESY) in Hamburg, Germany, and director of research for synchrotron radiation and free electron lasers at DESY. Schneider was honored for "his pioneering work on the application of gamma-ray spectroscopy and his high-energy synchrotron radiation studies, as well as his more recent involvement in the development of the free electron laser."

**Martin Newcomb** joins the University of Illinois at Chicago this fall as Liberal Arts and Sciences Distinguished Professor of Chemistry. Newcomb, whose research primarily involves physical studies of biological processes, had been a professor of chemistry at Wayne State University in Detroit, Michigan, since 1991.

In August, at a conference in Kyoto, Japan, the International Organization for Crystal Growth gave two prizes for outstanding contributions to the field. **Sam Coriell**, a researcher at NIST in Gaithersburg, Maryland, and **Don T. J. Hurle**, a professor of physics at the University of Bristol in the UK, jointly received the Frank Prize for research they presented at the conference. Coriell's winning paper was entitled "Applications of Morphological Stability Theory" and Hurle's was "Charged Native Point Defects in GaAs and Other III-V Compounds." The Laudise Prize went to **Georg Müller**, a professor of materials science at the University of Erlangen-Nürnberg in Germany, for his paper "Experimental Analysis and Modeling of Melt Growth Processes."

In June, the UK's Millennium Science Forum jointly awarded **Tokushi Kizuka** and **Katsuya Shimizu** this year's Sir Martin Wood Prize, which is given to a young Japanese researcher working in condensed matter science. Kizuka, an assistant professor of applied physics at Nagoya University, was recognized

for his research on direct atomistic observation of structural dynamics in solids. Shimizu, a research associate in the department of materials physics at Osaka University, was acknowledged for his research involving the search for superconductivity under ultrahigh pressure. Both recipients gave lectures on their award-winning research at Oxford and Cambridge universities. Oxford Instruments launched the Millennium Science Forum in 1999 to promote research in condensed matter science and to encourage scientific exchange between Japan and the UK.

**Ray Baughman**, who was previously a corporate fellow with Honeywell International in Morristown, New Jersey, recently moved to head a new nanotechnology institute and fill the Robert A. Welch Chair in Chemistry at the University of Texas at Dallas. **Anvar Zakhidov** joined Baughman to help start up the institute. Now a professor of physics at Texas, Zakhidov was formerly a senior principal scientist at Honeywell. Also on board as research scientists at the new institute are **Alan Dalton**, previously a research fellow in physics at Trinity College in Dublin, Ireland; **Igor Efimov**, who was a researcher with the University of Leicester in the UK; and **Edgar Munoz**, who was a PhD student at the Institute for Coal Research and the Institute of Materials Research of Aragon in Saragossa, Spain.

**James Peebles**, emeritus Albert Einstein Professor of Science at Princeton University, garnered the 2001 Harvey Prize in Science and Technology. At a ceremony in June, the Technion-Israel Institute of Technology presented Peebles the award in recognition of "his classic work on cosmic microwave background radiation and setting the physical basis for the hot Big Bang theory." The institute also praised him for "his seminal contributions to the understanding of the origin of our universe, the creation of the lightest elements, and the formation of galaxies and clustering" and for "his leadership in defining the challenges of modern cosmology during the last 40 years."

Of the eight 2001 Innovation Awards presented by *Discover* magazine in June, four were given for physics-related work. **Robert Wing-lee**, associate chair of the department of earth and space sciences at the University of Washington, Seattle, won in

the aerospace category for his development of M2P2, a mini-magnetospheric plasma propulsion system. In the communications category, **Aharon Agranat** was recognized for helping to develop Electroholography™, a method to interconnect electronic processors by holographic devices. He is the founder and director of Trellis Photonics, headquartered in Jerusalem, Israel, and holds the N. Jolla Chair of Applied Science at the Hebrew University of Jerusalem. **Joseph M. Jacobson** was honored in the electronics category for his innovation: printed inorganic chips. He is an associate professor at the MIT Media Laboratory. **Robert Wind** received the award in the health category for the development of the combined optical and magnetic resonance microscope. Wind is a staff scientist at the US Department of Energy's Pacific Northwest National Laboratory (PNNL) in Richland, Washington. At the same ceremony, the Christopher Columbus Fellowship Foundation presented the Christopher Columbus Foundation Award to **Richard A. Craig**, a staff scientist at PNNL, for developing the timed neutron detector. The foundation selected Craig from among the *Discover* awards nominees. The award has a cash prize of \$100 000.

## OBITUARIES

### Ugo Fano

**U**go Fano, professor emeritus of physics at the University of Chicago and a leader in theoretical atomic physics, died in Chicago on 13 February 2001 of complications from Alzheimer's disease.

Born in Turin, Italy, on 28 July 1912, Ugo was the son of a mathematics professor. He grew up in Turin and Villa Fano, near Verona, an estate that his grandfather acquired and the family continues to enjoy. The atmosphere of his childhood was intensely intellectual. Being somewhat sickly, he was tutored until he entered the fourth grade. From the time he received his first bicycle at age 12, he developed a love for the outdoors and for mountains—first hiking and then rock climbing, especially in the Dolomites.

While hiking in the summer of 1924, Ugo's father exchanged a few words with a group of young scientists from Rome. He later told Ugo that one of those scientists would go far—a

**T**his past June, **Erwin Frey** became a professor of theoretical physics at the Free University of Berlin and director of the theoretical physics department of the Hahn-Meitner Institute in Berlin. Frey, a theoretical biophysicist, was previously a Heisenberg fellow at both the Technical University of Munich and Harvard University.

**T**he Japan Academy presented nine prizes, including one for physics-related work, this past June at a ceremony in Tokyo. A Japan Academy Prize went to physics researcher **Atsuhiko Nishida**, who supervises the Japan Society for the Promotion of Science and is an emeritus professor at the Institute of Space and Astronautical Science in Sagami-hara, Japan. Nishida received the award for his studies on Earth's magnetospheric structure and plasma convection.

**I**n March, **Swapan Chattopadhyay** took his new post as associate director for accelerators with the Thomas Jefferson National Accelerator Facility (Jefferson Lab). He previously served as director of the Center for Beam Physics at Lawrence Berkeley National Laboratory and as a visiting professor of physics at the University of California, Berkeley.

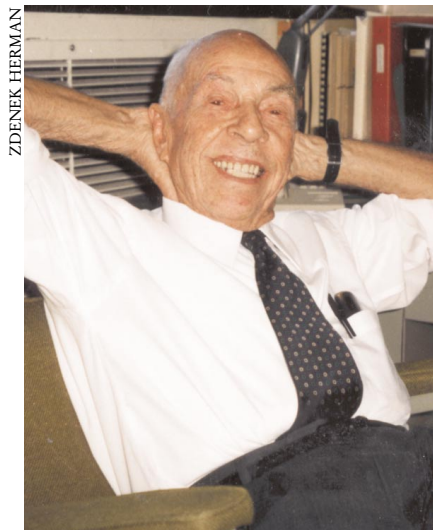
physics with Enrico Persico, who had moved to the University of Turin. In 1934, after Ugo had completed his doctorate in physics at the University of Turin in 17 months, Persico arranged for him to join Fermi's group in Rome.

With scientific excitement and great humor, Fermi led the group to explore new directions and then challenge each new idea until it was demonstrably sound. Fermi would test ideas for himself, but saw that each of the younger scientists went through the same process. One story Ugo enjoyed telling concerns work on interpreting strange-seeming shapes of spectral absorption lines. Ugo worked several weeks on the problem, discussing it with Fermi as he progressed. One day he suggested an approach to Fermi, who, the next day, put his head into Ugo's office and said, "Fano, you were right." Weeks later, with a satisfactory solution, Ugo proposed a joint paper, but Fermi said, "No, the usual acknowledgment would be fine." Not long after the paper appeared under Ugo's name alone, Ugo peeked into Fermi's notebook and found that Fermi had worked out the solution—in precisely the notation that had appeared in the published paper—the same day he told Ugo he was right.

In 1935, while a lecturer at the University of Rome, Ugo visited Göttingen, Germany, and Copenhagen, Denmark, and met Arnold Sommerfeld, Niels Bohr, Edward Teller, George Gamow, and other established scientists. Two years later, he moved to Leipzig, Germany, to work with Werner Heisenberg. There he interpreted nuclear quadrupoles by modeling nuclei as aggregates of alpha particles, as Teller and John Wheeler did at about the same time. Then, a seminar in Rome by Pascual Jordan in 1938 stimulated his interest in radiation biology and genetics, which would become central topics for his later research.

In 1935, Ugo left Italy, where the ethnic laws had made it impossible for him to work. First he went to Paris, where he collaborated with Pierre Joliot. Then he arrived in the US in 1939. He became a guest researcher at the Carnegie Institution of Washington (CIW). He received his first research position at CIW at Cold Spring Harbor in New York, but World War II intervened, so he began work on ballistics at the US Army's Aberdeen Proving Ground in Aberdeen, Maryland.

After the war, he returned to CIW



UGO FANO

man named Enrico Fermi, who would eventually become Ugo's mentor.

Ugo's school friends included Salvatore Luria. Ugo's older cousin Giulio Racah persuaded Ugo to study