APS Presents Awards at Montreal Meeting

The American Physical Society honors the recipients of several of its awards, prizes, and medals at the annual March meeting in Montreal this month from the 22nd to the 26th (see the meeting preview on page 65).

The Biological Physics Prize goes to **Peter G. Wolynes**, professor of chemistry, biochemistry, and physics at the University of California, San Diego. He is being cited for his "conceptual breakthroughs in protein dynamics and protein folding" and his "critical insights toward the understanding of how proteins work at the most fundamental level."

Tom C. Lubensky and **David R. Nelson** are corecipients of the Oliver E. Buckley Prize in Condensed Matter Physics for 2004. They share the prize for their "seminal contributions to the theory of condensed matter systems including the prediction and elucidation of the properties of new, partially ordered phases of complex materials." Lubensky is the Mary Amanda Wood Professor of Physics and chair of the physics and astronomy department at the University of Pennsylvania. Nelson is Mallinckrodt Professor of Physics and professor of applied physics at Harvard University.

Paul Julienne, a NIST fellow, is being honored with the society's Davisson–Germer Prize in Atomic or Surface Physics for his "pioneering studies of the theory of ultracold atomic collisions and its applications to precision metrology and quantum gas dynamics."

James P. Wolfe collects the Frank Isakson Prize for Optical Effects in Solids for his "contributions to the fundamental understanding of excitonic matter and ballistic phonons in semiconductors, made possible by pioneering development of graphic imaging techniques." Wolfe is a professor of physics at the University of Illinois at Urbana-Champaign.

Loren Pfeiffer is being recognized with the James C. McGroddy Prize in New Materials for his "outstanding innovations in molecular beam epitaxy technology and semiconductor materials design that have changed our understanding of the physics of lower-dimensional electron systems." He is a distinguished member of the technical staff in the semiconductor physics research division at Bell Labs, Lucent Technologies.

John Cardy receives the Lars Onsager Prize for his "profound and original applications of conformal invariance to the bulk and boundary properties of two-dimensional statistical systems." Cardy is a professor of physics at Oxford University and a senior research fellow at All Souls College, Oxford.

The George E. Pake Prize goes to **Robert M. White**, University Professor of Electrical and Computer Engineering and Engineering and Public Policy at Carnegie Mellon University. He is being honored for his "visionary leadership as the first Undersecretary of Commerce for Technology, for his outstanding research on the theory of magnetic data storage, and for his leadership at Control Data Corp and Xerox."

"Trailblazing contributions in the fields of surface-enhanced Raman scattering and nanoparticle optics" garners the society's Earle K. Plyler Prize for Molecular Spectroscopy for **Richard P. Van Duyne**, Charles E. and Emma H. Morrison Professor of Chemistry at Northwestern University.

Timothy P. Lodge, Distinguished McKnight University Professor of Chemistry at the University of Minnesota, Minneapolis, takes home the Polymer Physics Prize for his "outstanding contributions to the fundamental understanding of polymer chain diffusion and segmental-chain dynamics."

Farid Abraham is the winner of the Aneesur Rahman Prize for Computational Physics for his "landmark simulations of fracture, [two-dimensional] melting, and properties of membranes." Abraham is a senior research staff member at IBM's Almaden Research Center in San Jose, California.

Nancy Haegel receives the Prize to a Faculty Member for Research in an Undergraduate Institution. She is being cited for her "important contributions to semiconductor materials and semiconductor device physics" and for her "enthusiastic and sustained involvement of undergraduates in her research." Haegel is a professor of physics at the Naval Postgraduate School in Monterey, California.

APS's David Adler Lectureship Award in the Field of Materials Physics goes to **Chia-Ling Chien** for his "path-breaking research in magnetic nanostructures" and his "outstanding mentoring and lecturing in materials physics." Chien is the Jacob L. Hain Professor of Physics and Astronomy at Johns Hopkins University.

The recipient of the John H. Dillon Medal for Research in Polymer Physics for 2004 is **Marcus Müller**, theoretical physicist at Johannes Gutenberg University in Mainz, Germany. He is being recognized for the "development of powerful analytic and computational methods and their application to the structure and dynamics of polymers."

Virgil Elings is being honored with the Joseph F. Keithley Award for Advances in Measurement Science for his "development of scanning probe microscopy through numerous inventions and improvements that led to its commercialization and for providing a role model of the physicist entrepreneur." Elings is the founder of Digital Instruments and cofounder of Nano-Devices Inc and First Nano Inc.

APS gives its Nicholas Metropolis Award for Outstanding Doctoral Thesis Work in Computational Physics to **Frans Pretorius**, Richard Chase Tolman Postdoctoral Fellow at Caltech. He is being recognized for "innovative developments in numerical relativity including adaptive mesh refinement techniques, black hole excision methods, and visualization software for the community." His thesis adviser was Matthew W. Choptuik at the University of British Columbia.

The LeRoy Apker Award for undergraduate research at a non–PhD-granting institution goes to **Nathaniel Stern** for his thesis entitled "Exchange Anisotropy and Giant Magnetoresistance in Thin-Film Spin Valves Containing Ultrathin IrMn Antiferromagnetic Layers." Stern, now a graduate student at the University of California, Santa Barbara, wrote his thesis at Harvey Mudd College in Claremont, California, under the supervision of James Eckert and Patricia Sparks.

German Physical Society Bestows Honors

At its spring meeting in Munich later this month, the German

Physical Society will recognize the following individuals for their achievements in physics.

Klaus Hepp will receive the Max Planck Medal, the society's highest award for theoretical physics, for his "path-breaking contributions to quantum field theory and his research in the areas of laser physics and neuroscience." Hepp is a professor emeritus of theoretical physics at ETH Zürich.

The society's top honor for experimental physics, the Stern–Gerlach Medal, will go to **Frank Steglich**, director of the Max Planck Institute for Chemical Physics of Solids in Dresden. He is being recognized for his "pioneering discovery of superconductivity in the heavy-fermion metal $CeCu_2Si_2$ and for his seminal contributions to condensed matter physics, in particular, magnetism and superconductivity in strongly correlated electron systems."

The Gentner–Kastler Prize, awarded jointly by the German Physical Society and the French Physical Society, will go to **Dominique Langevin** for her "outstanding contributions to soft matter physics, including emulsions, foams and such phenomena [as] capillary waves." She is a professor at the Laboratory of Solid State Physics at the University of Paris–South in Orsay, France.

Klaus Blaum will receive the Gustav–Hertz Prize for his "excellent research on the measurement of the masses of short-lived atomic nuclei." He is a research fellow at CERN in Geneva, Switzerland.

Hans-Joachim Wilke, professor of physics education at the Technical University of Dresden, will receive the Robert Wichard Pohl Prize for his "outstanding contributions to physics education and for communicating physics to the general public."

The Walter Schottky Prize will be presented to **Markus Morgenstern**. A senior scientist in the Institute of Applied Physics at the University of Hamburg, he is being honored for his "excellent research on the electronic properties of semiconductors."

Myrjam Winning, who is completing her *habilitation* thesis and is a leader of the crystal plasticity research group at the Institute of Physical Metallurgy and Metal Physics at the University of Aachen, will receive the Hertha Sponer Prize. She is cited for her "seminal contributions to metallurgy and material sciences, in particular for her research on grain boundaries."

During a ceremony in January, **Matthias Scheffler** was honored with the Max Born Prize, given jointly by the German Physical Society and the UK's Institute of Physics. He was cited for his "outstanding contributions to theoretical surface physics, in particular for the combination of density-functional theory and statistical mechanics to describe crystal growth and catalysis processes." Scheffler is director of the Fritz Haber Institute of the Max Planck Society in Berlin.

Obituaries

Hermann Anton Haus

Hermann Anton Haus

Hermann Anton Haus, a prolific contributor to emerging technologies in optics for more than 50 years, died on 21 May 2003 of a heart attack at his home in Lexington, Massachusetts, following his routine bicycle commute from MIT.

Hermann was born in Ljubljana, Slovenia, on 8 August 1925. When the Communists expelled the German-speaking population from Yugoslavia shortly after the end of World War II, Hermann and his mother were taken from their home in the middle of the night and shipped by rail to Austria with other refugees. On the refugee train, he met a chemist who had lost a lifetime's worth of notes. Then, Hermann said, he realized that the only thing you can count on is the knowledge you carry in your head. That realization inspired his love for elegant theoretical descriptions that he could derive from basic principles, and his insistence on giving his classroom lectures without notes.

After beginning his university studies in Austria, Hermann wrote to General Mark Clark, commander of US forces, to ask for help in getting to the US. According to Hermann, his English was passable at that point. He had learned it by reading *Gone With the Wind*. After attending the Technical University of Graz and the Technical University of Vienna, he came to this country and received his BS from Union College in Schenectady, New York, in 1949. In 1951, he was graduated from Rensselaer Polytechnic Institute with an MS in electrical engineering and came to MIT, where he earned his DSc in the same field. His thesis research, under L. J. Chu, focused on the propagation of signals and noise along electron beams at microwave frequencies.

Hermann joined the electrical engineering faculty at MIT in 1954. He was promoted to associate professor in 1958, to professor in 1962, to Elihu Thomson Professor in 1973, and to Institute Professor in 1987.

The study of noise was an early and recurrent theme in Hermann's research. In his graduate work and as a young professor in the 1950s, Hermann investigated noise in microwave traveling wave tubes and other electronic amplifiers, obtained simple formulations for optimum performance, and, with Richard Adler, established the concept of "noise measure." In the 1960s, shortly after the invention of the laser, he extended his studies to quantum systems, and he and James Mullen showed that the noise power in a single mode amplifier, with gain G and bandwidth B, had to be greater than $(G - 1)\hbar\omega_0 B$. With Charles Freed, he carried out the first experimental observations of quantum noise in a laser oscillator by showing that the photon statistics in a helium–neon laser changed from degenerate Bose–Einstein below threshold to Poisson above.

In the 1970s, Hermann produced his seminal and definitive analyses of modelocking, the process by which short pulses are generated in lasers. His "slow absorber" theory provided the basis for the description of dye laser systems that produced the first subpicosecond pulses and for his demonstration of the picosecond modelocked semiconductor diode laser. His "fast absorber" theory, which he developed to describe early solid-state laser experiments, has become—with its extension to additive pulse modelocking and Kerr lens modelocking—the basis