

we hear
that

APS announces 2007 award winners

Some 37 prizes and awards are being distributed to 50 recipients this year by the American Physical Society.

Eric Lauga receives the Andreas Acrivos Dissertation Award in Fluid Dynamics. His award is based on his dissertation on "slip and mixing relevant to micron-scale geometries." Lauga worked under the direction of Michael P. Brenner and Howard A. Stone in the division of engineering and applied sciences at Harvard University. He is now an assistant professor of applied mathematics at MIT.

Samuel D. Bader is honored with the David Adler Lectureship Award in Materials Physics "for spirited lectures, writing and experimental research in the area of nanomagnetism, magnetic films, multilayers and surfaces of metallic systems, including championing the surface magneto-optic Kerr effect approach," according to the APS citation. He is an Argonne National Laboratory Distinguished Fellow, leader of the lab's magnetic films group, associate director of its materials science division, and chief scientist of the new Center for Nanoscale Materials.

The Hans A. Bethe Prize goes to **James R. Wilson** "for his work in nuclear astrophysics and numerical work on supernovae core collapse, neutrino transport, and shock propagation." Wilson is a staff scientist at Lawrence Livermore National Laboratory in California and a University of Notre Dame adjunct professor of physics.

Stuart J. Freedman, the Luis W. Alvarez Chair in Experimental Physics at the University of California, Berkeley, is awarded the Tom W. Bonner Prize in Nuclear Physics. Freedman is being honored "for his contributions to neutrino physics and the study of weak interactions, in particular for his leading role in the KamLAND experiment, as well as for his work on precision measurements of the beta decay of the neutron."

Gabriela González is granted the Edward A. Bouchet Award "for her significant impact on the field of gravitation wave physics through her many important technical and scientific contributions to the Laser Interferometer Gravitational-Wave Observatory (LIGO) and for communicating the excitement of this field to the scientific community and the public." She is an associate professor of physics at Louisiana State University.

James C. Bergquist takes home the Herbert P. Broida Prize "for seminal contributions to ultra-high-resolution laser spectroscopy and the realization of accurate optical frequency standards." He is a physicist at NIST in Boulder, Colorado.

The three recipients of the Oliver E. Buckley Condensed Matter Prize are **James P. Eisenstein**, **Steven M. Girvin**, and **Allan H. MacDonald** "for fundamental experimental and theoretical research on correlated many-electron states in low dimensional systems." Eisenstein is the Frank J. Roshek Professor of Physics and Applied Physics at Caltech; Girvin is Eugene Higgins Professor of Physics and Applied Physics at Yale University; and MacDonald is a professor of physics at the University of Texas at Austin.

Matthew G. Bunn receives the Joseph A. Burton Forum Award "for his outstanding contributions in helping to formulate policies to decrease the risks of theft of nuclear weapons and nuclear materials, and his effective communication of these proposals to Congress and the public." He is a senior research associate in the Project on Managing the Atom at Harvard University's John F. Kennedy School of Government.

The Davisson-Germer Prize in Atomic or Surface Physics is being bestowed on **Franz Himpel** "for pioneering investigations of the electronic structure of surfaces, interfaces, adsorbates, and nanostructures." Himpel is the Ednor M. Rowe Professor of Physics at the University of Wisconsin-Madison.

Darrin J. Pochan, associate professor of materials science and engineering at the University of Delaware, wins the John H. Dillon Medal "for advancing our understanding of the physics of assembly and chain conformation of synthetic polypeptides."

Kathryn K. S. Miknaitis and **Magdalena Djordjevic** receive the Dissertation Award in Nuclear Physics. Miknaitis, a University of Washington graduate student who worked under the direction of John F. Wilkerson, is being honored for her dissertation work in which she analyzes "salt-phase data

from the Sudbury Neutrino Observatory to identify day-night variations in the rate of neutrino interactions" and uses those data to "search for change in the flavor composition of neutrinos" that traverse Earth. Djordjevic, a graduate student at Columbia University who worked under the direction of Miklos Gyulassy, receives hers "for her dissertation presenting a theoretical treatment of heavy quark energy loss in a strongly interacting quark-gluon plasma in which the gluon radiative energy loss was solved to all orders in opacity."

The Einstein Prize goes to corecipients **Ronald Drever**, professor of physics emeritus at Caltech, and **Rainer Weiss**, professor of physics emeritus at MIT, "for fundamental contributions to the development of gravitational wave detectors based on optical interferometry, leading to the successful operation of [LIGO]."

The Excellence in Physics Education Award is conferred on the Physical Science Study Committee and its implementers: **John H. Dodge**, **A. P. French**, **Robert Gardner**, **Edwin (Ned) Goldwasser**, **Robert Hulsizer**, **John G. King**, and **Uri Haber-Schaim**. The PSSC, started in 1956, is a group of university physics professors and high-school physics teachers dedicated to reforming the teaching of introductory physics. According to the APS citation, the PSSC is honored for "the revitalization of subject matter through the involvement of teachers and researchers at all levels, the elevation of the instructional role of the laboratory, the development and utilization of innovative instructional media, and the emphasis on discipline-centered inquiry and the nature of physics."

William K. Wootters is honored with the Prize for a Faculty Member for Research in an Undergraduate Institution "for his pioneering work on quantum teleportation, his widely cited contributions to quantum information theory, and his prolific engagement of undergraduate students in this research." He is the Barclay Jermain Professor of Natural Philosophy in the department of physics at Williams College in Williamstown, Massachusetts.

Amy Barger, an associate professor in the astronomy department at the University of Wisconsin-Madison, receives the Maria Goeppert-Mayer Award "for her pioneering efforts in using observational cosmology to provide new insight into the evolution of black holes, star formation rates, and galaxies."

Juan Maldacena and **Joseph Polchinski** are each being awarded the Dannie Heineman Prize for Mathematical Physics “for profound developments in mathematical physics that have illuminated interconnections and launched major research areas in quantum field theory, string theory, and gravity.” Maldacena is a professor at the Institute for Advanced Study in Princeton, New Jersey. Polchinski is a professor of physics at the University of California, Santa Barbara, and a member of the Kavli Institute for Theoretical Physics.

Kent D. Irwin is being honored with the Joseph F. Keithley Award for Advances in Measurement Science “for the development of SQUID multiplexers used in large-format arrays of superconducting transition-edge sensors that have impacted such fields as particle physics, astronomy, materials analysis, cosmology, and nuclear physics.” Irwin leads the quantum sensors project at NIST in Boulder, Colorado, and is an adjunct professor of astrophysics and planetary science at the University of Colorado.

The Irving Langmuir Prize in Chemical Physics goes to **Gabor Somorjai**, a professor of chemistry at the University of California, Berkeley, and a faculty senior scientist in the materials sciences division of Lawrence Berkeley National Laboratory. He is being honored “for his pioneering research in surface chemistry and delineation of catalytic mechanisms.”

Lisa Randall, a professor of theoretical physics at Harvard University, wins the Julius Edgar Lilienfeld Prize “for her pioneering work on particle physics and cosmology, and her tireless efforts to inspire and engage both specialist and nonspecialist, by allegory and fact through publications and presentations.”

The two recipients of the James C. McGroddy Prize for New Materials are **Joel S. Miller** and **Arthur J. Epstein** “for discovery and characterization of organic-based magnets, and for observation and study of predictable and previously unknown magnetic phenomena in these fascinating materials,” which led to new science and the possibility of creative new technologies. Miller is a Distinguished Professor in the department of inorganic, organic, physical, and materials chemistry at the University of Utah, and Epstein is a Distinguished University Professor at the Ohio State University.

The Nicholas Metropolis Award for Outstanding Doctoral Thesis Work in Computational Physics goes to **Chengkun Huang**, a postdoc researcher in the plasma theory and simulation

group in the physics department at UCLA. The award is “for his innovative work in plasma physics that led to the development of the QuickPIC code that has revolutionized the simulation of plasma-based accelerator research.”

A. Brooks Harris, a professor of theoretical condensed-matter physics at the University of Pennsylvania, is given the Lars Onsager Prize “for his many contributions to the statistical physics of random systems, including the formulation of the Harris criterion, which has led to numerous insights into a variety of disordered systems.”

Max Jammer receives the Abraham Pais Prize for History of Physics “for his groundbreaking historical studies of fundamental concepts in physics, including his comprehensive account of the development of quantum mechanics.” Jammer has written numerous books, including the recently published *Einstein and Religion: Physics and Theology* (Princeton University Press, 2002).

The George E. Pake Prize is being awarded to **Mark Kryder** “for his leadership and research in high-density magnetic and magneto-optic data and storage.” He is University Professor of Electrical and Computer Engineering at Carnegie Mellon University and chief technical officer and senior vice president of research at Seagate Technology.

Three people will jointly receive this year’s W. K. H. Panofsky Prize in Experimental Particle Physics. **Italo Mannelli**, **Heinrich Wahl**, and **Bruce Winstein** win “for leadership in the series of experiments that resulted in a multitude of precision measurements of properties of neutral K mesons, most notably the discovery of direct *CP* violation.” Mannelli is a professor of physics at the University of Pisa/INFN in Italy; Wahl is a professor of physics at the University of Ferrara, also in Italy; and Winstein is the Samuel K. Allison Distinguished Service Professor in the department of physics and the Enrico Fermi Institute at the University of Chicago.

David DeMille is being honored with the Francis M. Pipkin Award “for wide-ranging studies of fundamental symmetries in atoms and molecules, including novel approaches to searches for the electric dipole moment of the electron and investigations of parity nonconservation and the spin-statistics connection.” DeMille is a professor of physics at Yale University.

The Earle K. Plyler Prize for Molecular Spectroscopy goes to **Timothy S. Zwieter**, a professor of physical chemistry at Purdue University. His prize is for “the design and implementation of multiple



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resonance methods that elucidate the potential energy landscapes of flexible biomimetic molecules and their hydrates by optical control of isomer populations.”

Glenn Fredrickson wins the Polymer Physics Prize “for insightful and predictive theories regarding the thermodynamics and dynamics of macromolecular systems.” He is a professor of chemical engineering at the University of California, Santa Barbara.

Jun Ye, a JILA fellow and associate professor adjoint of the physics department at the University of Colorado, Boulder, receives the I. I. Rabi Prize in Atomic, Molecular, and Optical Physics. Ye is being recognized “for advances in precision measurement, including techniques for stabilizing and measuring optical frequencies, controlling the phase of femtosecond laser pulses, and measuring molecular transitions.”

Daniel Frenkel is being honored with the Aneesur Rahman Prize for Computational Physics “for groundbreaking contributions to computational physics through the development of novel methodologies and algorithms to probe soft matter systems, thereby providing understanding of their diverse behaviors.” He is a researcher at the FOM Institute for Atomic and Molecular Physics in Amsterdam.

The J. J. Sakurai Prize for Theoretical Particle Physics goes to **Stanley Brodsky** “for applications of perturbative quantum field theory to critical questions of elementary particle physics, in particular to the analysis of hard exclusive strong interaction processes.” Brodsky is a professor in SLAC’s theoretical physics group.

Szymon Suckewer wins the Arthur L. Schawlow Prize in Laser Science “for pioneering contributions to the generation of ultra-short wavelength femtosecond lasers and x-ray microscopy.” Suckewer is a professor of mechanical and aerospace engineering at Princeton University.

Dennis E. Grady receives the Shock Compression Science Award “for his pioneering contributions into the fundamental principles controlling dynamic failure and fragmentation, [for] developing a large database of the dynamic response of brittle materials, and [for] identifying a universal relationship between shock wave structure and its amplitude.” He is an associate and principal scientist with Applied Research Associates in Albuquerque, New Mexico.

The Leo Szilard Lectureship Award goes to **James E. Hansen**, head of NASA’s Goddard Institute for Space Studies in New York City and an ad-

junct professor in the Earth and environmental sciences department at Columbia University. He receives this award “for his seminal contributions to climate physics, especially the incorporation of radiative transfer in climate models, and his tireless efforts to bring the results of climate science to the attention of policymakers and the public.”

The John Wheatley Award is bestowed on **F. Bary Malik**, emeritus research professor in theoretical nuclear and atomic physics at Southern Illinois University at Carbondale. He receives the award “for his extensive contributions to developing physics and inspiring physicists in emerging nations through insightful personal collaboration, continuing education of graduate students, creation of research centers and groups in developing countries, organization of international meetings, and attracting resources in the USA and internationally to sustain all these activities for over thirty years.”

The Robert R. Wilson Prize for Achievement in the Physics of Particle Accelerators is being presented to **Lee C. Teng**, who retired from Argonne National Laboratory in 2005. He is being honored “for invention of resonant extraction and transition crossing techniques critical to hadron synchrotrons and storage rings, for early and continued development of linear matrix theory of particle beams, and for leadership in the realization of a facility for radiation therapy with protons.”

NAE hands out awards

The National Academy of Engineering has bestowed its highest honors in recognition of achievements that have revolutionized how people use information and that have opened new medical applications of biomechanics, among other milestones. Two of the recipients do physics-related work. The awards were presented in February during a ceremony in Washington, DC.

The NAE awarded its Charles Stark Draper Prize—a \$500 000 annual award that honors engineers whose accomplishments have significantly benefited society—to **Timothy Berners-Lee** “for developing the World Wide Web.” Berners-Lee is the director of the World Wide Web Consortium and a senior researcher at MIT’s Computer Science and Artificial Intelligence Laboratory, where he holds the 3Com Founders chair and leads the decentralized information group. He is also a professor of