

# Spring 2002 Prizes and Awards

## APS Announces Spring 2002 Prize and Award Recipients

Thirty-seven APS prizes and awards will be presented during special sessions at three spring meetings of the Society: the 2001 March Meeting, 12-16 March, in Seattle, WA; the 2001 April Meeting, April 28 - May 1, in Washington, DC; and the 2001 meeting of the APS Division of Atomic, Molecular and Optical Physics, May 15-19, in London, Ontario, Canada. Citations and biographical information for each recipient follow. Additional biographical information and appropriate Web links can be found at the APS Web site (<http://www.aps.org>). Nominations for most of next year's prizes and awards are now being accepted. For details, see pages 7 and 8 of this of this insert.

### PRIZES

#### 2002 WILL ALLIS PRIZE

**Alan Garscadden**

*Air Force Research Laboratory*

*Citation:* "In recognition of his distinguished career in gaseous electronics, marked by a sustained creativity in linking fundamental processes to the macroscopic properties of gas discharges and plasmas, and for his dedicated role as an advocate for the field of gaseous electronics."

Garscadden received his Ph.D. in physics at Queens University, Belfast. Garscadden is presently Chief Scientist, Propulsion Directorate, Air Force Research Laboratory, Wright-Patterson AFB, Ohio, and Edwards AFB, California. He has published approximately 140 refereed publications, multiple book chapters, and consulted with various DoD technical programs involving diverse areas such as lasers, hypersonics, combusts, optical-and mass-spectroscopy and plasma sources.



#### 2002 HANS A. BETHE PRIZE

**Gordon Baym**

*University of Illinois*

*Citation:* "For his superb synthesis of fundamental concepts which have provided an understanding of matter at extreme conditions, ranging from crusts and interiors of neutron stars to matter at ultrahigh temperature."

Baym received his bachelor's degree in physics from Cornell University in 1956, his A.M. in mathematics from Harvard in 1957, and his Ph.D. in physics from Harvard in 1960. After a two year postdoc at the now Niels Bohr Institute in Copenhagen, and a year at the University of California in Berkeley, he came to the University of Illinois in 1963. His research spans condensed matter and statistical physics, including Bose-Einstein condensation in atomic vapors, astrophysics, nuclear physics, and the history of physics. He is a pioneer in the study of neutron stars — and more generally the nature of the matter under extreme conditions of density and pressure — and a leader in the con-



ception of the Brookhaven Relativistic Heavy Ion Collider (RHIC).

#### 2002 BIOLOGICAL PHYSICS PRIZE

**Carlos Bustamante**

*University of California, Berkeley*

*Citation:* "For his pioneering work in single molecule biophysics and the elucidation of the fundamental physics principles underlying the mechanical properties and forces involved in DNA replication and transcription."

Carlos Bustamante is a professor in the Departments of Physics and Molecular & Cell Biology of the University of California, Berkeley. He received a Ph.D. degree from Berkeley in 1981. In 1982 he joined Chemistry Dept. of the University of New Mexico as an assistant professor, becoming a full professor in 1989. In 1991 he joined the Chemistry Department at the University of Oregon and became investigator in the Institute of Molecular Biology of that institution where he remained until 1998 where he took up his present position at Berkeley. Bustamante's research is concerned with the development of novel methods of single molecule manipulation and detection and their application to investigate biochemical process. Optical tweezers, atomic force microscopy and single molecule fluorescence experiments are used in his laboratory to study protein and RNA folding, the mechanical properties of biomolecules and the mechanochemistry of molecular motors.



#### 2002 TOM W. BONNER PRIZE

**J. David Bowman**

*Los Alamos National Laboratory*

*Citation:* "In recognition of his leadership in performing precision measurements involving tests of fundamental symmetries, including his studies of parity non conservation in compound nuclei."

*Bio not available.*

#### 2002 OLIVER E. BUCKLEY PRIZE

**Jainendra Jain**

*Pennsylvania State University*

**Nicholas Read**

*Yale University*

**Robert Willett**

*Lucent Technologies*

*Citation:* "For theoretical and experimental work establishing the composite fermion model for the half-filled Landau level and other quantized Hall systems."

Jain received his Ph.D. in 1985 from the State University of New York, Stony Brook. He held postdoctoral positions at the University of Maryland and Yale University before joining the faculty of SUNY, Stony Brook. Since 1998, he has been at The Pennsylvania State University. He is also an Adjunct Professor at the Tata Institute of Fundamental Research,



Mumbai, India. Jain's most important contribution has been his introduction of electron-flux combinations called "composite fermions". Jain has extended and developed the theory of composite fermions into several directions, in particular, toward extracting detailed quantitative information which can be compared with exact results as well as experiment.

Read received his Ph.D. for work in Condensed Matter Theory in 1986 from Imperial College, London. He was a postdoctoral researcher at Brown University and MIT before joining the faculty of Yale University in 1988. Read's research has been mainly concerned with strongly interacting quantum many-particle systems in condensed matter physics. His recent work is concerned with disorder in noninteracting fermion systems.



Willett received his Ph.D. in physics from M.I.T. in 1988. From 1989 to 1990 he was a post-doctoral member of technical staff at Bell Laboratories, and he has remained as a member of technical staff at Bell Labs, now part of Lucent Technologies. Willett's current research interests focus on the physics of reduced dimension phenomena, and particularly in the use of nanoscale structures to experimentally examine these effects. Another current area of interest is the problem of decoherence in metals, where his group's efforts have included examination of nanoscale wires to expose dephasing phenomena. Further current research topics include conduction mechanisms in and manipulation of single molecules, and developing photonic band gap structures.



#### 2002 DAVISSON GERMER PRIZE

**Gerald Gabrielse**

*Harvard University*

*Citation:* "For pioneering work in trapping, cooling and precision measurement of the properties of matter and antimatter in ion traps."

*Bio not available.*

#### 2002 DANNIE HEINEMANN PRIZE

**Michael B. Green**

*Cambridge University*

**John H. Schwartz**

*California Institute of Technology*

*Citation:* "For their pioneering work in the development of superstring theory."

Green's early research was in elementary particle theory with special emphasis on string theory applied to the strong interactions. With John Schwarz, he developed superstring theory and elucidated its consistency as a perturbatively finite and anomaly free quantum theory of gravity. Subsequently he has been involved in unraveling the underlying geometrical structure of the theory by studying nonperturbative effects associated with stringy solitons and instantons.



Schwarz received his Ph.D. in 1966 from U.C. Berkeley. He joined Princeton University as a junior faculty member in 1966. In 1972 he moved to Caltech, where he has remained ever since. Schwarz has worked on superstring theory for almost his entire professional career. In 1984 Michael Green and he discovered an anomaly cancellation mechanism, which resulted in string theory becoming one of the hottest areas in theoretical physics. In 1989 he was awarded the Dirac Medal by the ICTP (Trieste, Italy).



#### 2002 FRANK ISAKSON PRIZE

**James Allen**

*University of Michigan*

**Thomas Timusk**

*McMaster University*

*Citation:* "For their outstanding contributions to the field of spectroscopy in strongly correlated electron systems leading to elucidation of many body physics."

Allen received his PhD in electrical engineering from Stanford University in 1968 and joined the research staff at MIT's Lincoln Laboratory, moving to Xerox's Palo Alto Research Center in 1973. In 1987 he joined the physics faculty at the University of Michigan, where he served as associate chair of the graduate program from 1990 to 1993.. Allen and his collaborators have employed resonance and inverse photoemission, x ray and optical spectroscopies to study the electronic structure of solids. His most recent focus is the use of angle resolved and resonant photoemission spectroscopy to elucidate quasi particle phenomena.



Timusk received his PhD in physics from Cornell University in 1961 and did postdoctoral research in Frankfurt, Germany, and the University of Illinois. He joined the faculty of McMaster University in 1965, where he has remained ever since. Using infrared radiation, he has worked on the spectra of defects in alkali halides, on quasi crystals, the cosmic microwave background radiation, and the propagation of radiation in insulating materials, such as fiber glass and goose down. His current work is in the area of exotic superconductors.



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2002 JAMES C. MCGRODDY PRIZE

**Sumio Iijima**  
NEC Corporation

**Donald S. Bethune**  
IBM Almaden Research Center

*Citation:* "For the discovery and development of single-wall carbon nanotubes, which can behave like metals or semiconductors, can conduct electricity better than copper, can transmit heat better than diamond, and rank among the strongest materials known."

No bio available for Sumio Iijima.

Bethune is a Research Staff Member at the IBM Almaden Research Center. He received his Ph.D. in physics from U.C. Berkeley in 1977 for research in nonlinear optics. He joined the IBM Watson Research Center, where he worked on laser spectroscopy, invented the 'Bethune dye cell,' and co-invented a nonlinear optical method for nanosecond recording of broadband infrared spectra. He moved to the IBM San Jose Research Laboratory in 1983, where he has worked on nonlinear optics, gas-surface interactions, and novel carbon materials such as C60, metallofullerenes, and single-wall nanotubes. Recently he joined the quantum information group, where he co-invented and built an autocompensating fiberoptic quantum cryptography system. They are currently developing methods for single photon detection, generation, and frequency conversion for use in systems for quantum information storage, transmission, and manipulation.



2002 LARS ONSAGER PRIZE

**Anatoly I. Larkin**  
University of Minnesota

*Citation:* "For elucidating roles of fluctuations and randomness in collective phenomena, including critical behavior of uniaxial ferroelectrics, dependence of critical exponents in four dimensions on symmetry, and how impurity pinning of vortices in superconductors destroys lattice order and controls critical currents."

Larkin received his M.S. from Moscow Engineering Physics Institute in 1956 and his PhD from the Kurchatov Institute of Atomic Energy in 1960, where he remained as a researcher until 1966. He headed the physics department at the Landau Institute of Theoretical Physics until 1995, when he accepted his current position as the William and Bianca Fine Professor of Physics at the University of Minnesota. He is a past recipient of the Humboldt Award and the Hewlett Packard Europhysics Prize, both in 1993.



2002 GEORGE E. PAKE PRIZE

**Paul M. Horn**  
IBM Corporation

*Citation:* "For his innovative contributions to the understanding of 1/f noise, the elucidation of surface phases and phase transitions, and his signal achievements in managing IBM Corporation's global research team."

Horn was named Senior Vice President of the IBM Corporation and Director of Research in January 1996, directing IBM's worldwide research program and helping guide IBM's overall technical strategy. In his 22 years with the company, Horn has been a champion for translating technology based research into marketplace opportunities. Trained as a solid state physicist he has held key management positions in science, semicon-



ductors, and storage, successfully applying these disciplines to solving real world technology problems. Prior to his present appointment, he was Vice President and Lab Director of the Research Division's Almaden Research Center in San Jose, California. Born in New York, Horn received his doctoral degree in physics from the University of Rochester in 1973. Prior to joining IBM in 1979, he was assistant and associate professor in the Physics Department and the James Franck Institute at the University of Chicago.

2002 W.K.H. PANOFSKY PRIZE

**Masatoshi Koshihba**  
**Kajita Takaaki**  
**Yoji Totsuka**  
University of Tokyo

*Citation:* "For compelling experimental evidence for neutrino oscillations using atmospheric neutrinos."

Koshihba graduated from the University of Tokyo and earned his Ph.D from University of Rochester. He was a physics professor at the University of Tokyo until the retirement on March 31, 1987. He created the underground facility Kamiokande to initiate neutrino physics.



Takaaki earned his undergraduate degree in 1981 from Saitama University and received his PhD from the University of Tokyo in 1986. He then became a research associate and then an associate professor at the university's Institute for Cosmic Ray Research. In 1999 he became director of the institute's Research Center for Cosmic Neutrinos, in addition to assuming full professorship. His research has focused on studying atmospheric neutrinos through the Kamiokanda and Super Kamiokande experiments.



Totsuka received his bachelor's degree in physics and PhD from the University of Tokyo in 1965 and 1972, respectively. He participated in the e<sup>+</sup>/e<sup>-</sup> experiments at the DESY facility in Germany in 1972, and the neutrino experiments and proton decay searches at the University of Tokyo's Kamiokande and Super Kamiokande experiments. He became a professor of the university's Institute for Cosmic Ray Research in 1988; assumed the directorship of the institute's Kamioka Observatory in 1995, and became director of the entire institute in 2001.



2002 EARLE K. PLYLER PRIZE

**Graham Fleming**  
University of California, Berkeley

*Citation:* "For his seminal work on chemical reaction dynamics in liquids and the dynamics of fundamental biological processes using femtosecond laser spectroscopy."

Fleming received his Bachelor of Science Degree from the University of Bristol (UK) in 1974. He was a postdoctoral fellow at Caltech and the University of Melbourne with G. Wilse Robinson. He then returned to the Royal Institution as Leverhulme Fellow until 1979 when he moved to the University of Chicago, where, in 1987, he was named the Arthur Holly Compton Distinguished Service Professor. In 1997 he moved to the University of California Berkeley and Lawrence Berkeley National Laboratory. He is currently Professor of Chemistry and Co-Director of the Institute for Bioengineering, Biotechnology and Quantitative Biomedicine, and Director of the Physical Biosciences Division at Lawrence Berkeley National Laboratory.



2002 POLYMER PHYSICS PRIZE

**Tom Witten**  
University of Chicago

*Citation:* "For outstanding theoretical contributions to the understanding of polymers and complex fluids."

Witten received his bachelor's degree in physics from Reed College in 1966. He received a PhD in physics in 1971 from the University of California, La Jolla in many-body theoretical physics. He did a postdoc in condensed matter theory at Princeton University and another in renormalized field theory at Saclay, France. Then he joined the physics faculty at University of Michigan. He left Michigan in 1982 to join the Corporate Research lab of the Exxon Corporation. In 1989 he joined the faculty of the Physics Department and the James Franck research institute of the University of Chicago. He is a fellow of the APS and gave the 1999 Paris-Sciences lectures at the Ecole Supérieure de Physique et Chimie Industrielles in Paris. He studies statistically structured forms of matter, such as diblock copolymer domain patterns, colloidal aggregates, and crumpled membranes.



2002 ANNESUR RAHMAN PRIZE

**David P. Landau**  
University of Georgia

*Citation:* "For the development of accurate Monte Carlo sampling and renormalization group techniques, the study of the kinetics of aggregation and gelation in polymer systems, and for numerous contributions to the development and application of molecular dynamics and kinetic Monte Carlo methods."

Landau received his PhD from Yale University in 1967 and spent a year doing postdoctoral research at CNRS Grenoble. He returned to Yale as a lecture before joining the faculty of the University of Georgia in 1969, where is currently a distinguished research professor and director of the Center for Simulational Physics. For the past 30 years, Landau has studied classical and quantum systems, emphasizing the importance of high quality simulations, coupled with theoretically grounded analysis, to describe diverse systems. With students and collaborators, he recently developed new spin dynamics methods and an improved Monte Carlo method that samples densities of states of statistical systems instead of probability distributions.



2002 J. J. SAKURAI PRIZE

**William J. Marciano**  
Brookhaven National Laboratory

**Alberto Sirlin**  
New York University

*Citation:* "For their pioneering work on radiative corrections, which made precision electroweak studies a powerful method of probing the Standard Model and searching for new physics."

Marciano received his B.S., M.S. and PhD degrees in physics from New York University, and joined the faculty of Rockefeller University in 1974. He then spent a year at Northwestern university before joining the scientific staff of Brookhaven National Laboratory in 1981, where he is currently a senior physicist. He has also been an adjunct professor at Yale University since 1990. His research interests span many aspects of elementary particle physics, including precision electroweak calculations, grand unified theories, neutrino physics, rare decays, and CP violation.

Born in Buenos Aires, Argentina, Sirlin received the degree of Dr. in Physical-

Mathematical Sciences in 1953. He was a fellow at the Centro Brasileiro de Pesquisas Fisicas in Rio de Janeiro, Brazil, where he attended some graduate courses and did research work. Sirlin then became a graduate student at Cornell, where he received the Ph.D. degree in 1958, remaining as a research associate for the following year. Sirlin became an Assistant Professor of Physics at NYU in 1959 and a full Professor in 1968. His main research interests have been in precision electroweak physics, other topics in weak interaction theory, the search for higher symmetries of the strong interactions, non-topological solitons, theorems on symmetry-breaking, some aspects of QCD, and the theoretical treatment of unstable particles.



2002 ARTHUR L. SCHAWLOW PRIZE

**Stephen E. Harris**  
Stanford University

*Citation:* "For outstanding contributions to fundamental and applied research into laser sources, nonlinear optics, extreme ultraviolet laser sources, and laser physics, including electromagnetically induced transparency and its application to lasing without inversion and to nonlinear optics at maximal coherence."

Harris is the Kenneth and Barbara Oshman Professor of Engineering at Stanford University with appointments in Electrical Engineering and Applied Physics. He received his B.S. degree in Electrical Engineering from Rensselaer Polytechnic Institute in 1959. During 1959-1960 he was a member of the technical staff at Bell Telephone Laboratories, where he worked on microwave masers. He studied at Stanford University, where he received his Ph.D. in Electrical Engineering in 1963 and joined the faculty. Harris is known for his early work on spontaneous parametric emission, frequency conversion in metal vapors, invention of the tunable acousto-optic filter, techniques for lasers and nonlinear optics in the extreme ultraviolet, and for more recent contributions to lasing without inversion, electromagnetically induced transparency, and slow light.



2002 FACULTY MEMBER FOR RESEARCH IN AN UNDERGRADUATE INSTITUTION PRIZE

**James Cederberg**  
St. Olaf College

*Citation:* "For his sustained and productive research in molecular beam spectroscopy and an extraordinary record of spurring interest in careers in physics through student participation in challenging experiments."

Cederberg received his PhD in physics from Harvard University in 1962 and spent the following year as a postdoctoral research associate and lecturer there. Since 1964 he has been on the faculty of St. Olaf College, where he is currently the Whittier Professor of Science. His current research project at St. Olaf began with the acquisition of an electronic resonance molecular beam spectrometer from Norman Ramsey's laboratory at Harvard in 1981. Since then it has been used to study the hyperfine spectra of molecules. A total of 65 undergraduate students have participated in the project over the last 20 years.



2002 GEORGE E. VALLEY PRIZE

**David Goldhaber-Gordon**  
Stanford University

*Citation:* "For the discovery and elucidation of the quantum Hall effect in a two-dimensional electron gas."

tion of the physics of the Kondo Effect in Single Electron Transistors.”

Goldhaber-Gordon received an AB in physics and an AM in history of science, both from Harvard University in 1994. He then pursued graduate studies in physics at the Massachusetts Institute of Technology. During his graduate work, he spent a crucial year at Israel's Weizmann Institute. After receiving his Ph.D. from MIT in 1999, he made the long trip back upstream as a junior fellow and chocolate steward of the Harvard Society of Fellows. In September 2001, he became an Assistant Professor in the Department of Physics and the Geballe Laboratory for Advanced Materials at Stanford University. In addition to studying quantum phenomena in mesoscopic semiconductor structures, he has a strong interest in applications of nanoelectronics. His collaborative review article on nanodevices for computing received an award from the MITRE Corporation as their best paper of 1997.



#### 2002 ROBERT R. WILSON PRIZE

**A.N. Skrinsky**

*Budker Institute of Nuclear Physics*

*Citation:* “For his major contribution to the invention and development of electron cooling and for his development and for his contributions to the physics of the electron positron colliders at the Budker Institute.”

After graduating from Moscow State University with an undergraduate degree in physics, Skrinsky was a junior researcher, becoming laboratory head of the Russian Academy of Science's Budker Institute of Nuclear Physics in 1961, where he has been director since 1978. He received his doctorate in physical and mathematical science in 1965, and currently chairs the academy's nuclear physics department. His primary research contributions include development of the electron electron and positron electron colliding beam method; development of the VEPP family of positron electron colliders and the cycles of hadron physics studies in annihilation processes; the application of polarized beams in storage rings; the application of synchrotron radiation sources; and free electron lasers.



#### AWARDS, MEDALS AND LECTURESHIPS

##### 2002 DAVID ADLER LECTURESHIP AWARD

**Chris G. Van de Walle**  
*XEROX*

*Citation:* “For his incisive theoretical contributions to the understanding of the behavior of hydrogen in semiconductors and heterostructure energy band diagrams and the exceptional exposition of this work in the scientific community.”

Van de Walle is a Principal Scientist at the Xerox Palo Alto Research Center. He received his Ph.D. in 1986 from Stanford University. Before joining Xerox PARC in 1991, he was a postdoctoral scientist at the IBM T. J. Watson Research Center, a Senior Member of Research Staff at Philips Laboratories, and an adjunct professor at Columbia University. Van de Walle develops and employs first-principles techniques to model the structure and behavior of semiconductors. He has performed extensive studies of semiconductor interfaces (including the development of a widely used model for band offsets) and of defects and impurities in semiconductors, with particular emphasis on doping problems and on the role of hydrogen. In recent



years he has focused his attention on wide-band-gap semiconductors.

##### 2001 LEROY APKER AWARD (NON PH.D. INSTITUTION)

**Robert Wagner**  
*Illinois State University*

*Citation:* “Intense Laser Physics Theory”

I will receive my undergraduate degree from Illinois State University in May of 2002. I have worked in the Intense Laser Physics Theory Unit at Illinois State from August of 1998 through the present. In addition to the Apker Award, I have also received a Barry Goldwater scholarship and I have been twice selected to present in the undergraduate research session of the DAMOP meetings in 1999 and 2001. My current research focuses on numerical simulations of cycloatoms. Cycloatoms can be created with a hydrogen atom in a linearly polarized laser and a static magnetic field orientated parallel to the magnetic field component of the laser beam. When the magnetic field is chosen such that the cyclotron frequency of the electron is close to the laser frequency, a resonance condition results that quickly accelerates the electron to a velocity close to the speed of light. When this occurs, the probability density function for the electron becomes “smeared out” into a ring-shaped distribution which rotates around the nucleus with the laser period.



##### 2001 LEROY APKER AWARD (PH.D. INSTITUTION)

**Kathryn Todd**  
*California Institute of Technology*

*Citation:* “Studies of Double-Layer Two-Dimensional Electron Gases”

Kathryn Todd received her B.S. degree in physics from Caltech, where she completed her thesis work under Professor Jim Eisenstein. She is currently a graduate student in physics at Stanford University.



##### 2002 EDWARD A. BOUCHET AWARD

**Oliver Keith Baker**  
*Hampton University*

*Citation:* “For his contribution to nuclear and particle physics; for building the infrastructure required for construction of advanced particle detectors; and for being active in outreach activities, both locally and nationally.”

After completing his undergraduate education at MIT in 1981, Baker earned his PhD degree in physics from Stanford University in 1987. He spent two years as a postdoctoral researcher at Los Alamos National Laboratory before joining the faculty of Hampton University in 1989, concurrently joining the physics staff at the Thomas Jefferson National Accelerator Facility. His scientific accomplishments include the first measurement of a nuclear resonance effect in atomic electron capture; the first accurate measurement of the muon sticking probability in muon catalyzed fusion; initiation of the ATLAS effort and securing the Physics Frontiers Center, both at Hampton University.

##### 2002 JOSEPH A. BURTON FORUM AWARD

**Adrian Melott**  
*University of Kansas*

*Citation:* “For his outstanding efforts in helping to restore evolution and cosmology to their proper place in the K-12 scientific curriculum. As both a distinguished cosmologist and respected member of the clergy, he played a key role in helping the

people of Kansas reverse their State Board of Education's anti-science action.”

Melott is currently Professor of Physics and Astronomy at the University of Kansas. He received an M.Div. from Starr King School for the Ministry in Berkeley, CA in 1971 and was for 7 years minister in a Unitarian Universalist church. He received his Ph.D. in physics at the University of Texas in 1981, and has pursued research in physics at the Universities of Chicago, Oxford, UC Santa Barbara, Moscow, and Cambridge. His research emphasis is the use of supercomputers to do massive simulations of the formation of structure in the Universe. Recently, he has become interested in uncovering correlations between the properties of objects on supercluster scales—separated by up to 100 million light years. He is a founding Board member of Kansas Citizens for Science. He recently co-authored a Sunday school curriculum “Celebrating Our Origins in the Universe”, which introduces the ideas of the Big Bang and the evolution of life to elementary school age children.



##### 2002 JOHN H. DILLON MEDAL

**Timothy J. Bunning**  
*Air Force Research Laboratory*

*Citation:* “For his outstanding accomplishments in developing polymer-based materials for optical applications and for elucidating the physics and chemistry underlying their formation.”

Bunning received his PhD in chemical engineering in 1992 from the University of Connecticut in Storrs, conducting his research onsite at the Hardening Materials Branch of the Wright Patterson Air Force Base in Dayton, Ohio, an organization whose interests lie in advanced active and passive optical materials. After a short post doc at Cornell University, he returned to the base, first as an onsite contractor for the Science Applications International Corporation (SAIC) and more recently as a government research engineer. His current research interests center around advanced polymer based photonic materials and component. He is currently the project leader for a diverse internal and external R&D effort that is developing new responsive materials and approaches for integration in optical sensing.



##### 2002 JOSEPH F. KEITHLEY AWARD

**Robert J. Soulen, Jr.**  
*Naval Research Laboratory*

*Citation:* “For developing low temperature noise thermometry to achieve an absolute thermometer which now defines the year 2000 International Temperature Scale between 1 mK and 1 K to an accuracy of 0.1%, and for other significant contributions to thermometry measurement over a distinguished career.”

Soulen received his PhD in physics in 1966 from Rutgers University and thereafter joined the National Bureau of Standards, where he held positions as a staff scientist as well as several management positions. In 1987 he joined the staff at the Naval Research Laboratory, serving in both scientific and managerial capacities. A prolific, award winning scientific writer, Soulen's research interests involve superconductivity and thermometry. He is presently investigating the use of a point contact between and superconductor and a ferromagnetic metal to measure the latter's spin polarization; and development of an explanation for enhanced superconductivity near a metal insulator transition.



##### 2002 MARIA GOEPPERT MAYER AWARD

**Deborah S. Jin**  
*National Institute of Standards & Technology*

*Citation:* “For her innovative realization and exploration of a novel quantum system, the degenerate Fermi atomic gas, and the scientific promise portended by her pioneering work.”

Deborah Jin graduated from Princeton University in 1990. In 1995 she received a Ph. D. from the University of Chicago, where she worked on experimental studies of exotic low temperature superconductors. From 1995 to 1997 she was a National Research Council research associate with NIST, working at JILA in Boulder, Colorado. At JILA Deborah worked with Dr. Eric Cornell and Prof. Carl Wieman on some of the first studies of dilute gas Bose-Einstein condensates. In 1997 she accepted a permanent position with NIST and began work on creating and exploring a dilute Fermi gas of atoms. Deborah is currently a JILA Fellow and an Assistant Professor Adjunct at the University of Colorado. She has received a Young Investigator Award from the Office of Naval Research and a Presidential Early Career Award for Scientists and Engineers. In 2001 she received the Samuel Wesley Stratton Award from NIST.



##### 2001 NICHOLSON MEDAL

**D. Allan Bromley**  
*Yale University*

*Citation:* “For his roles as a research scientist, an outstanding teacher, a supportive mentor and colleague, a leader of the physics community in this country and worldwide, and advisor to governments.”

Bromley is the first Sterling Professor of the Sciences at Yale; from 1994 to 2000 he served as Yale's Dean of Engineering. He was the first Cabinet level Assistant to the President of the United States for Science and Technology and Director of the White House Office of Science and Technology Policy (1989-1993). He received the B.Sc. degree from Queen's University in Canada in 1948 and the Ph.D. from the University of Rochester in 1952. He is a member of the National Academy of Sciences and in 1988 was awarded the National Medal of Science. He has served as President of the AAAS, of IUPAP, and of APS and holds 32 honorary doctorates from universities in Canada, China, France, Germany, Italy, South Africa and the United States. A distinguished nuclear physicist he is known as the father of modern heavy ion physics.



##### 2002 LEO SZILARD LECTURESHIP AWARD

**Henry Kelly**  
*Federation of American Scientists*

*Citation:* “For his exceptional efforts in informing and shaping government policy in arms control, the environment, information technology and energy policy while serving at the Solar Energy Research Institute, the Congressional Office of Technology Assessment, and the White House Office of Science and Technology policy.”

The author of numerous books and articles on issues in science and technology policy, Kelly received his PhD in physics from Harvard University in 1971. He is currently president of the Federation of American Scientists. Before joining the FAS in June 2000, he spent seven and a half years in the White House's Office of Sci-







For his original contributions to the development of ab initio quantum mechanical methods and their application to important chemical physics problems in rovibrational spectroscopy and the atmospheric sciences.

**Lee M. Howard**  
University of Georgia  
**Statistical & Nonlinear Physics**  
Developed the method of recurrence relations to study dynamic behavior in many particle systems. Established an equivalence between Fermi and Bose gases in two dimensions.

**Leemans Wim Pieter**  
Lawrence Berkeley National Laboratory  
**Physics of Beams**  
For pioneering experiments on the interaction of relativistic electron beams, lasers and plasmas, including femtosecond x-ray generation using Thomson scattering, plasma lens focusing, laser-plasma accelerators and advanced diagnostic techniques.

**Lele Sanjiva Keshava**  
Stanford  
**Fluid Dynamics**  
For his seminal contributions to the understanding of compressible turbulent flows and for his pioneering work in computational acoustics.

**Levine Zachary Howard**  
N.I.S.T.  
**Forum on Industrial and Applied Physics**  
For leadership in demonstrating x-ray tomography of integrated circuit interconnects with submicron resolution.

**Levinton Fred M.**  
Nova Photonic, Inc., Princeton, NJ  
**Plasma Physics**  
For his pioneering development of the Motional Stark Effect diagnostic technique for measuring local magnetic fields in a hot plasma and application of the technique to critical measurement of equilibrium, stability, and plasma turbulence suppression.

**Lewis Brenton Raymond**  
The Australian National University  
**Forum on International Physics**  
For his seminal studies of the electronic structure of atmospheric molecules, particularly O2, through high-resolution vacuum ultraviolet spectroscopy and coupled-channel calculations as well as for his major international efforts to organize global effort to investigate this problem.

**Linan Amable**  
School of Aeronautics, Madrid, Spain  
**Fluid Dynamics**  
For his seminal contributions to the aerodynamics of combustion, in particular to the structure and stability of diffusion flames, and for the other elegant applications of asymptotic methods of fluid mechanics.

**Lisy James Michael**  
University of Illinois  
**Chemical Physics**  
For his contributions to the field of ion cluster spectroscopy, establishing the connection between gas-phase species with aqueous solutions and biochemical systems, and demonstrating the contribution of internal energy in structural isomerization and dynamics.

**Lundberg Byron Gene**  
Fermi National Accelerator Laboratory  
**Particles & Fields**  
For his leadership of the experiment which gave the first direct evidence for the tau neutrino.

**Makri Nancy**  
University of Illinois  
**Chemical Physics**  
For developing novel real time path integral methods and decisively quantifying how condensed phase environments affect quantum barrier crossing and biological charge transfer.

**Marburger III John H.**  
Brookhaven National Laboratory  
**APS**  
For his contributions to laser physics and for his scientific leadership as Director of Brookhaven National Laboratory.

**Marks Laurence Daniel**  
Northwestern University  
**Materials Physics**  
For contributions to quantitative imaging and diffraction methods for determining the atomic structure of surfaces and bulk materials.

**McClelland John B.**  
Los Alamos National Laboratory  
**Nuclear Physics**  
For contributions to the development of novel instrumentation for measurement of spin observables in medium energy proton induced reactions.

**McFadden Geoffrey B.**  
N.I.S.T.  
**Fluid Dynamics**  
For fundamental insights into the effect of fluid flow on crystal growth and for an innovative approach to phase field methods in fluid mechanics.

**McIntyre Peter Mastin**  
Texas A & M University  
**Physics of Beams**  
In recognition of his contributions to the physics and technology of hadron colliding beams, including a succession of superconducting magnet technologies to push the energy frontier in hadron colliders.

**McNeil Laurie Elizabeth**  
University of North Carolina  
**Forum on Physics & Society**

For numerous contributions towards improving the climate for women in physics, including extending the Committee on the Status of Women in Physics Academic Site Visit Program and performing an extensive report on the dual-career couple problem.

**Mecking Bernhard Alfred**  
Thomas Jefferson National Accelerator  
**Nuclear Physics**  
For his contributions to electromagnetic nuclear physics, including leadership in the design and construction of the CEBAF Large Acceptance Spectrometer, CLAS.

**Mele Eugene J**  
Univ. of Pennsylvania  
**DCMP (Condensed Matter)**  
For his contributions to the theory of electronic phenomena in conducting polymers, fullerides and nanotubes.

**Meyer Jerry Richard**  
Naval Research Laboratory  
**Forum on Industrial and Applied Physics**  
For fundamental and applied contributions to the physics of semiconductor optical and electronic processes and devices, including new classes of midwave-infrared quantum well lasers.

**Mitchell John F.**  
Argonne National Laboratory  
**Magnetism & Its Application**  
For leading efforts in the synthesis and determination of structural and magnetic behavior of colossal magnetoresistive oxides and for enabling international efforts in the exploration of these correlated electron materials.

**Mitselmakher Guenakh**  
University of Florida  
**Particles & Fields**  
For his early measurement of the pion charge radius and for his leadership role in the design of innovative very high rate muon detectors at hadronic colliders.

**Monroe Donald Paul**  
Agere Systems  
**Forum on Industrial and Applied Physics**  
For contributions to understanding of physical mechanisms underlying electronic device performance and reliability.

**Munro David H.**  
Lawrence Livermore National Laboratory  
**Plasma Physics**  
For seminal contributions to the design of laser-driven Rayleigh-Taylor experiments, and to the analysis and design of shock-timing experiments for cryogenic inertial confinement fusion targets.

**Murnane Margaret Mary**  
University of Colorado  
**DAMOP (Atomic, Molecular, Optical)**  
For her major contributions to the optical physics and technology of the generation of ultrashort pulses of optical and x-ray radiation.

**Neil George R.**  
Thomas Jefferson National Accelerator Facility  
**Physics of Beams**  
For contributions to the development of physics and technology of Free Electron Lasers and for his leadership in demonstrating a high average power FEL.

**Neuberger Herbert**  
Rutgers University  
**Particles & Fields**  
For contributions to modeling multiple particle production, to defining the non-perturbative triviality bound on the Higgs mass and to a method of preserving exact chiral symmetry on the lattice.

**Norman Michael Lester**  
University of California, San Diego  
**Astrophysics**  
For his pioneering numerical hydrodynamic simulations in astrophysics and cosmology which elucidated the structure of extragalactic radio jets, the Lyman alpha forest, and the formation of primordial stars.

**Oitmaa Jaan**  
The University of New South Wales  
**DCMP (Condensed Matter)**  
For numerical and analytic theoretical studies of quantum spin and correlated fermion models.

**Olinto Angela Villela**  
University of Chicago  
**Astrophysics**  
For her many contributions to the advancement of particle astrophysics, from inflation to ultra-high-energy cosmic rays.

**Olvera de la Cruz Monica**  
Northwestern University  
**Polymer Physics**  
For her contributions to the understanding of polyelectrolytes, block copolymers and multicomponent polymer blends.

**Palmstrom Christopher J.**  
University of Minnesota  
**Forum on Industrial and Applied Physics**  
For his original work on metallic compound/compound semiconductor heterostructures and thin film interfacial analysis.

**Peggs Stephen G.**  
Brookhaven National Laboratory  
**Physics of Beams**  
For his important contributions to the study of nonlinear dynamical effects in accelerators and for his contributions to the successful design, construction and operation of the Relativistic Heavy Ion Collider.

**Peters Michael H.**  
Florida State University  
**Computational Physics**  
For contributions to the computational physics of aerosols and gas/solids systems and to computational non-equilibrium statistical mechanics of aerosols.

**Pincus Philip A.**  
University of California, Santa Barbara  
**Polymer Physics**  
For outstanding contributions to the theory of polymers, biopolymers, colloids, and complex fluids.

**Prakash Madappa**  
SUNY at Stony Brook  
**Nuclear Physics**  
For fundamental research into the properties of hot and dense matter, providing a basis for understanding relativistic heavy ion collisions and the structure and composition of neutron stars.

**Puri Ashok**  
University of New Orleans  
**Forum on Education**  
For enhancing the presence and quality of minority researchers in physics, for his efforts in support of science working with elementary and high school teachers, and for his innovative curriculum enhancement of a state-of-the-art laser laboratory.

**Raghavachari Krishnan**  
Bell Laboratories  
**Chemical Physics**  
For outstanding contributions to the development of accurate electronic structure theories and for innovative investigations of the structures, spectroscopy, and reactivity of clusters and surfaces.

**Rameika Regina Abby**  
Fermi National Accelerator Laboratory  
**Particles & Fields**  
For her crucial role in establishing the first direct evidence for the tau neutrino.

**Ramesh Ramamoorthy**  
University of Maryland  
**Materials Physics**  
For contributions to the materials physics of superconductivity, ferroelectric and magnetic perovskite oxide thin films and heterostructures.

**Rapaport Dennis Chaim**  
Bar-Ilan University  
**Computational Physics**  
For innovative contributions to applications, methodology and education in the field of molecular dynamics.

**Register Richard A.**  
Princeton University  
**Polymer Physics**  
For insightful experiments relating morphology with properties in polymeric melts and solids, and particularly block copolymers containing crystallizable blocks.

**Rehr John J.**  
University of Washington  
**DCMP (Condensed Matter)**  
For developments which led to a quantitative theory and analysis of extended x-ray absorption fine structure.

**Ren Shang-Fen**  
Illinois State University  
**Forum on International Physics**  
For her contributions to theoretical understanding of low-dimensional semiconductor systems, especially the vibrational properties in semiconductor superlattices, quantum wires, and quantum dots as well as for her many contributions promoting international scientific collaborations, such as through the National Science Foundation's Research Experience for Undergraduates program with East Asia.

**Rice Julia Elizabeth**  
IBM Almaden Research Center  
**Computational Physics**  
For pioneering the development of efficient algorithms for the analytic derivative method with electron correlation, and for the calculation of frequency dependent polarizabilities with accuracy comparable to experiment.

**Riecke Hermann**  
Northwestern University  
**Fluid Dynamics**  
For Pioneering work on pattern formation in nonlinear non-equilibrium systems, especially in Taylor-vortex flow, binary-mixture convection, and electro-convection in nematics.

**Rikvold Per Arne**  
Florida State University  
**Computational Physics**  
For innovative and significant computational studies in statistical and condensed-matter physics, materials science, and electrochemistry, including development of novel algorithms to study the decay of metastable phases of matter.

**Roberts Craig Darrian**  
Argonne National Laboratory  
**Few Body Systems Topical Group**  
For significant contributions to continuum modeling of QCD for hadron physics, linking both quark-gluon confinement and dynamical chiral symmetry breaking with light meson observables.

**Robicheaux, Jr. Francis J.**  
Auburn University  
**DAMOP (Atomic, Molecular, Optical)**  
For his theoretical contributions to a better understanding of quantal dynamics in atoms and molecules subject to time-dependent probes: including photo-ionization, photorecombination, pulsed field ionization, and electron-impact ionization.

**Roe Natalie Ann**  
Lawrence Berkeley National Laboratory  
**Particles & Fields**  
For her leadership in the design and construction of the BaBar silicon vertex detector, and her studies of BB mixing, oscillations, and CP violation in B meson decays.

**Ross Frances Mary**  
IBM T.J. Watson Research Center  
**Forum on Industrial and Applied Physics**  
For her pioneering contributions to in-situ studies of materials processes in the electron microscope.

**Ruchti Randal Charles**  
University of Notre Dame  
**Forum on Education**  
For providing forefront directed research experiences as a co-founder of QuarkNet for high school teachers in particle physics.

**Sachdev Subir**  
Yale University  
**DCMP (Condensed Matter)**  
For his contributions to the theory of quantum phase transitions and its application to correlated electron materials.

**Scherrer Robert J.**  
The Ohio State University  
**Astrophysics**  
For his significant contributions to a broad range of topics in cosmology including primordial nucleosynthesis, particle physics in the early universe, large-scale structure, topological defects, scalar field evolution and Cosmic Microwave Background anisotropies.

**Schmidt Kevin Edward**  
Arizona State University  
**Computational Physics**  
For his contributions to enhanced high accuracy computational methods and application in the simulation of electronic structure, nuclear matter and quantum fluids.

**Schubert E. Fred**  
Boston University  
**Forum on Industrial and Applied Physics**  
For pioneering contributions to the doping of semiconductors including delta doping, doping of compositionally graded structures resulting in the elimination of band discontinuities, and superlattice doping to enhance acceptor activation.

**Seideman Tamar**  
National Research Council  
**DAMOP (Atomic, Molecular, Optical)**  
For creative work in theoretical molecular physics, including coherent control of internal and external molecular degrees of freedom of molecules, control of surface reactions using an Scanning Tunneling Microscope, and time-resolved photoelectron spectroscopy.

**Sen Abhijit**  
Institute for Plasma Research, Bhat,  
**Plasma Physics**  
For outstanding contributions to lower hybrid / laser plasma interactions, nonlinear dynamics of coupled oscillators, physics of strongly coupled dusty plasmas and leadership of plasma research in India / developing world.

**Shandarin Sergei F.**  
University of Kansas  
**Astrophysics**  
For seminal work in the theory of gravitational instability, particularly our understanding of the formation of superclusters in the Universe.

**Shankar Ramamurti**  
Yale University  
**DCMP (Condensed Matter)**  
For his contributions to statistical physics and quantum many-body theory, including notable works on random magnetism, fermionic renormalization group theory and the Quantum Hall system; and for his outstanding contributions to physics pedagogy.

**Shoemaker David H.**  
MIT  
**Gravitational Topical Group**  
For his insightful work, experimental artistry, and leadership role in the LIGO gravity wave program.

**Shukla Padma Kant**  
Ruhr-Universitaet Bochum  
**Forum on International Physics**  
For theoretical investigations of an enormous variety of plasma phenomena in laboratory and space plasmas, including the prediction and exploration of waves in dusty plasmas.

**Sirota Eric B.**  
ExxonMobil Research & Eng. Company  
**DCMP (Condensed Matter)**  
For his pioneering use of x-ray scattering techniques in soft condensed matter, particularly regarding bulk and surface physics of alkyl-chain compounds.

**Slakey Francis**  
American Physical Society  
**Forum on Physics & Society**  
For developing effective grassroots advocacy within the American Physical Society and for forcefully and successfully advocating key APS positions on issues including the federal science budget.

**Smith Gregory Scott**  
Los Alamos National Laboratory  
**DCMP (Condensed Matter)**  
For scattering studies of the structure and interactions of surfactant membranes and polymeric films and for pioneering novel x-ray and neutron scattering techniques for studying surfaces and interfaces.

**Soni Amarjit**  
Brookhaven National Laboratory  
**Particles & Fields**

For contributions to studies of CP violation in b decays and the computation of weak matrix elements on the lattice.

**Suenaga Masaki**  
Brookhaven National Laboratory  
**Materials Physics**

For pioneering studies of the properties that control the critical current density of both low and high temperature superconductors.

**Swordy Simon Patrick**  
University of Chicago  
**Astrophysics**

For innovative measurements with detectors on the ground, on balloons, and in space that significantly advanced the understanding of the sources and galactic propagation of cosmic rays at high energies.

**Tata Xerxes Ramyar**  
University of Hawaii  
**Particles & Fields**

For seminal contributions in elucidation for experimental implications of weak scale supersymmetry and to strategies for searches for new physics at high energy colliders.

**Taylor Antoinette Jane**  
Los Alamos National Laboratory  
**Laser Science**

For pioneering developments of ultrafast optoelectronic techniques and their use in understanding dynamical processes in electronic materials and devices.

**Terris Bruce David**  
IBM Almaden Research Center  
**Forum on Industrial and Applied Physics**  
For the exploration of novel approaches to high density data storage.

**Teubner Peter John Osmond**  
The Flinders University of South Australia  
**DAMOP (Atomic, Molecular, Optical)**

For pioneering and outstanding contributions to experiments in electron scattering from atoms and molecules including the development of coincidence techniques and benchmark experiments on alkali targets.

**Tipton Paul L.**  
University of Rochester  
**Particles & Fields**

"For playing a lead role in the discovery and study of the top quark, and for his part in the construction of the SVX detector used in that discovery."

**Tosatti Erio**  
International School for Advanced Studies,  
**Forum on International Physics**

For his seminal contributions to the theory of solids, such as, the faceting, reconstruction, preroughening and melting of surfaces, and the multi-shell helical structure of gold nanowires, while also serving as a scientific leader in fostering international ties via worldwide collaborations and the organization of conferences.

**Tucker John R.**  
University of Illinois  
**DCMP (Condensed Matter)**

For discovery of new photon-assisted tunneling phenomena leading to quantum-noise-limited (sub)millimeter astronomical receivers, and other unique applications of quantum tunneling.

**Tuts Philip Michael**  
Columbia University  
**Particles & Fields**

In recognition of his contributions to elementary particles as a leader in the CUSB and D0 collaborations in designing, implementation of experiments and analysis of important data, including efforts that directly resulted in observation of the Upsilon double-prime and precision measurement of the W mass.

**van Bibber Karl Albert**  
Lawrence Livermore National Laboratory  
**Particles & Fields**

For his leadership role in an ultra-sensitive search for dark-matter axions, and the conception of other elegant experiments for detection of the axion.

**van Driel Henry**  
University of Toronto  
**Laser Science**

Professor Henry van Driel is a leading scientist in the field of experimental laser physics, having made significant contributions in the areas of ultrafast phenomena, nonlinear optics and laser physics.

**Veal Boyd William**  
Argonne National Lab  
**DCMP (Condensed Matter)**

For significant contributions to photoemission studies of transition and actinide metal compounds and for seminal studies and innovations within the YBCO family of cuprate high-temperature superconductors.

**Vergados John D.**  
University of Ioannina  
**Forum on International Physics**

For his important contributions to double beta decay and symmetries in weak interactions as well as for his strong support and development of international collaborations between Greece and other countries.

**Vishniac Ethan T.**  
Johns Hopkins University  
**Plasma Astrophysics**

For pioneering contributions to the study of blast-wave stability, the generation of secondary anisotropies in the microwave background, and the study of MHD turbulence and dynamos in astrophysical objects.

**Walmesley David George**  
Queen's University  
**DCMP (Condensed Matter)**

For fundamental experimental studies of superconductivity and for novel applications of electron tunneling.

**Walsworth, Jr. Ronald Lee**  
Harvard-Smithsonian Center for Astrophysics  
**Fundamental Const. Topical Group**

For the development and use of atomic clocks in tests of fundamental symmetries; and multidisciplinary applications of related technology.

**Wang Zhen-Gang**  
California Institute of Technology  
**Polymer Physics**

For theoretical contributions to the understanding of the morphology, fluctuation, metastability and kinetic pathways in microphase ordered block copolymers.

**Weber Eicke R.**  
UC Berkeley  
**Materials Physics**

For his pioneering studies of defects in semiconductors, in particular his research on the microscopic properties and gettering behavior of transition metal impurities.

**Wieman Howard Henry**  
Lawrence Berkeley National Laboratory  
**Nuclear Physics**

For the development of the time projection chamber into an essential tool for the study of relativistic heavy ion collisions.

**Williams Carl J.**  
N.I.S.T.  
**DAMOP (Atomic, Molecular, Optical)**

For definitive calculations of atomic collision processes, which have improved our understanding of photoassociation spectroscopy, dynamics of Bose-Einstein condensates, and effects of radiation retardation on atomic collisions.

**Wilson James Randall**  
Princeton Plasma Physics Laboratory  
**Plasma Physics**

In recognition of his major pioneering contributions made to the application of and understanding of radio frequency heating and current drive in reactor grade deuterium and deuterium-tritium plasmas.

**Wingreen Ned S.**  
NEC Research Institute  
**Biological Physics**

For contributions to the fundamental understanding of protein folding and design, including theoretical insights into the selection of protein structures.

**Wu Ruqian**  
University of California, Irvine  
**Computational Physics**

For contributions to the understanding of magnetic, electronic, mechanical, chemical and optical properties of compounds, alloys, interfaces, thin films and surfaces using first-principles calculations and for development of the methods and codes for such calculations.

**Yethiraj Arun**  
University of Wisconsin  
**Polymer Physics**

For pioneering contributions in computational and theoretical polymers physics especially in the areas of polyelectrolytes, polymer blends, and confined polymers.

**Young Lloyd Martin**  
Los Alamos National Laboratory  
**Physics of Beams**

For his invention, development, and beam operation of the resonantly coupled RFQ structure, and for the new methods used to tune it and other RFQ structures.

**Zhang Shengbai**  
National Renewable Energy Laboratory  
**Computational Physics**

For contributions to the understanding of semiconductor defects, impurities, surfaces, interfaces, and high-pressure phases using first-principles calculations.

**Zhou Bing**  
University of Michigan  
**Particles & Fields**

For outstanding contributions and leadership in the development, construction, and exploitation of complex detectors in fundamental particle physics experiments.

**Zitzewitz Paul William**  
University of Michigan-Dearborn  
**Forum on Education**

For his many contributions to physics and science education for high school and middle school teachers and students, and for his many contributions to the Forum on Education.

# Nomination Announcements

## Call for Nominations for 2003 APS Prizes and Award

The following prizes and awards will be bestowed by the Society in 2001. Members are invited to nominate candidates to the respective committees charged with recommending the recipients. A brief description of each prize and award is given below, along with the addresses of the selection committee chairs to whom nominations should be sent. For complete information regarding rules and eligibility requirements for individual prizes and awards, please refer to the Prize and Awards page on the APS Web site at <http://www.aps.org>.

**NOMINATION DEADLINE IS JULY 2, 2001, UNLESS OTHERWISE INDICATED.**

### PRIZES

#### HANS A. BETHE PRIZE

Endowed by contributions from the Division of Astrophysics, the Division of Nuclear Physics and friends of Hans Bethe.

Purpose: To recognize outstanding work in theory, experiment or observation in the areas of astrophysics, nuclear physics, nuclear astrophysics, or closely related fields.

Send name of proposed candidate and supporting information to: Katherine Gebbie;

B160 Phys; NIST; 100 Bureau Dr MS 8400; Gaithersburg, MD 20899-8400; Phone (301) 975-4200; Fax (301) 975-3038; Email [gebbie@nist.gov](mailto:gebbie@nist.gov)

#### TOM W. BONNER PRIZE IN NUCLEAR PHYSICS

Endowed by friends of Tom W. Bonner.

Purpose: To recognize and encourage outstanding experimental research in nuclear physics, including the development of a method, technique, or device that significantly contributes in a general way to nuclear physics research.

Send name of proposed candidate and supporting information to: T.W. Donnelly; Ctr for Theor Phys 6-300; MIT; 77 Massachusetts Ave; Cambridge MA 02139; Phone (617) 253-4847; Fax (617) 253-8674; Email [DONNELLY@MITLNS.MIT.EDU](mailto:DONNELLY@MITLNS.MIT.EDU)

#### OLIVER E. BUCKLEY CONDENSED MATTER PHYSICS PRIZE

Endowed by AT&T Bell Laboratories.

Purpose: To recognize and encourage outstanding theoretical or experimental contributions to condensed matter physics.

Send name of proposed candidate and supporting information to: Doug Osheroff;

Dept of Phys; Stanford Univ; Stanford, CA 94305-4060; Phone (650) 723-4228; Fax (650) 725-6544; Email [Osheroff@Leland.Stanford.edu](mailto:Osheroff@Leland.Stanford.edu)

#### DAVISSON-GERMER PRIZE IN ATOMIC OR SURFACE PHYSICS

Established by AT&T Bell Laboratories (now Lucent Technologies).

Purpose: To recognize and encourage outstanding work in atomic physics or surface physics.

Send name of proposed candidate and supporting information to: Mara Prentiss; Dept of Phys; Harvard Univ; 17 Oxford Street; Cambridge, MA 02138; Email [prentiss@fas.harvard.edu](mailto:prentiss@fas.harvard.edu)

#### THE FLUID DYNAMICS PRIZE

Supported by friends of the Division of Fluid Dynamics and the American Institute of Physics journal Physics of Fluids.

Purpose: To recognize and encourage outstanding achievement in fluid dynamics research.

Send name of proposed candidate and supporting information to: Paul Steen; Dept of Chem Engr; Cornell Univ; Olin Hall; Ithaca, NY 14853; Phone (607) 255-4749; Fax (607) 255-9166; Email [phs7@cornell.edu](mailto:phs7@cornell.edu)

#### JAMES CLERK MAXWELL PRIZE

Supported by the Maxwell Technologies, Inc.

Purpose: To recognize outstanding contributions to the field of plasma physics.

Send name of proposed candidate and supporting information to: Wallace Manheimer; Code 6707; NRL; 4555 Overlook Ave SW; Washington DC 20375; Phone (202) 767-3128; Fax (202) 767-1607; Email [manheime@ccf.nrl.navy.mil](mailto:manheime@ccf.nrl.navy.mil)

#### DANNIE HEINEMAN PRIZE FOR MATHEMATICAL PHYSICS

Sponsored by the Heineman Foundation for Research, Educational, Charitable and Scientific Purposes, Inc.

Purpose: To recognize outstanding publications in the field of mathematical physics.

Send name of proposed candidate and supporting information to: Martin Gutzwiller; 370 Riverside Dr Apt 14B; New York, NY 10025; Phone (212) 662-1149; Fax (914) 945-2141; Email [MoonGutz@aol.com](mailto:MoonGutz@aol.com)

#### POLYMER PHYSICS PRIZE

Sponsored by the Ford Motor Company.

Purpose: To recognize outstanding accomplishment and excellence of contributions in high polymer physics research.

Send name of proposed candidate and supporting information to: Ralph Colby; Dept of Materials Sci & Engr; Pennsylvania State Univ; University Park PA 16802; Phone (814) 863-3457; Fax (814) 865-2917; Email [rhc@plmsc.psu.edu](mailto:rhc@plmsc.psu.edu)

#### JAMES C. MCGRODDY PRIZE FOR NEW MATERIALS

Endowed by IBM.

Purpose: To recognize and encourage outstanding achievement in the science and application of new materials.

Send name of proposed candidate and supporting information to: Tom Russell; Dept of Poly Sci & Engr; Univ of Mass; Silvio O' Conte Res Ctr; Amherst, MA 01003; Phone (413) 545-2680; Fax (413) 577-1510; Email [russell@mail.pse.umass.edu](mailto:russell@mail.pse.umass.edu)

#### LARS ONSAGER PRIZE

Endowed by Russell and Marion Donnelly.

Purpose: To recognize outstanding research in theoretical statistical physics including the quantum fluids.

Send name of proposed candidate and supporting information to: John Reppy; LASSP; Cornell Univ; Clark Hall; Ithaca, NY 14853-2501; Phone (607) 255-3777; Fax (607) 255-6428; Email [jdr13@cornell.edu](mailto:jdr13@cornell.edu)

#### GEORGE E. PAKE PRIZE

Deadline: April 1, 2002

Endowed by the Xerox Corporation.

Purpose: To recognize and encourage outstanding work by physicists combining original research accomplishments with leadership in the management of research or development in industry.

Send name of proposed candidate and supporting information to: Yang-Tse Cheng; MS 480-106-224; GM Res & Development Ctr; 30500 Mound Road; Warren, MI 48090-9055; Phone (810) 986-0939; Fax (810) 986-8697; Email [yang.t.cheng@gm.com](mailto:yang.t.cheng@gm.com)

**W.K.H. PANOFSKY PRIZE IN EXPERIMENTAL PARTICLE PHYSICS**

Endowed by the friends of W.K.H. Panofsky and the Division of Particles and Fields.

Purpose: To recognize and encourage outstanding achievements in Experimental Particle Physics.

Send name of proposed candidate and supporting information to: Bruce Winstein; Enrico Fermi Inst; Univ of Chicago; 5640 Ellis Ave; Chicago, IL 60637; Phone (773) 702-7594; Fax (773) 702-1914; Email [bruce@uchep.uchicago.edu](mailto:bruce@uchep.uchicago.edu)

**EARLE K. PLYLER PRIZE FOR MOLECULAR SPECTROSCOPY**

Sponsored by the George E. Crouch Foundation.

Purpose: To recognize and encourage notable contributions to the field of molecular spectroscopy.

Send name of proposed candidate and supporting information to: Paul Barbara; Dept of Chem and Biochem; Univ of Texas at Austin; Welch Hall; Austin, TX 78712; Phone (512) 471-2880; Fax (512) 471-3389; Email [p.barbara@mail.utexas.edu](mailto:p.barbara@mail.utexas.edu)

**ANEESUR RAHMAN PRIZE FOR COMPUTATIONAL PHYSICS**

Sponsored by the IBM Corporation and Argonne National Laboratory.

Purpose: To recognize and encourage outstanding achievement in computational physics research.

Send name of proposed candidate and supporting information to: Priya Vashishta; Phys Dept; Louisiana State Univ; 202 Nicholson Hall; Baton Rouge, LA 70803-4001; Phone (504) 388-1157; Fax (504) 388-5855; Email [PRIYAV@BIT.CSC.LSU.EDU](mailto:PRIYAV@BIT.CSC.LSU.EDU)

**J. J. SAKURAI PRIZE FOR THEORETICAL PARTICLE PHYSICS**

Endowed by the family and friends of J.J. Sakurai.

Purpose: To recognize and encourage outstanding achievement in particle theory.

Send name of proposed candidate and supporting information to: Roberto Peccei; Phys Dept; UCLA; 405 Hilgard Ave; Los Angeles CA 90024;

Phone (310) 825-1042; Fax (310) 825-9368; Email [Peccei@physics.ucla.edu](mailto:Peccei@physics.ucla.edu)

**ARTHUR L. SCHAWLOW PRIZE IN LASER SCIENCE**

Endowed by the NEC Corporation.

Purpose: To recognize outstanding contributions to basic research which uses lasers to advance our knowledge of the fundamental physical properties of materials and their interaction with light.

Send name of proposed candidate and supporting information to: Roger W. Falcone; Dept of Phys; UCB; 366 LeConte Hall # 7300; Berkeley CA 94720-7300; Phone (510) 642-3316; Fax (510) 643-8497; Email [rwf@physics.berkeley.edu](mailto:rwf@physics.berkeley.edu)

**PRIZE TO A FACULTY MEMBER FOR RESEARCH IN AN UNDERGRADUATE INSTITUTION**

Sponsored by the Research Corporation.

Purpose: To honor a physicist whose research in an undergraduate setting has achieved wide recognition and contributed significantly to physics and who has contributed substantially to the professional development of undergraduate physics students.

Send name of proposed candidate and supporting information to: Vijendra K. Agarwal; Assistant Provost; College of Staten Island; 2800 Victory Blvd; Staten Island, NY 10314; Email [agarwal@mnstate.edu](mailto:agarwal@mnstate.edu)

**ROBERT R. WILSON PRIZE**

Sponsored by friends of Robert Wilson.

Purpose: To recognize and encourage outstanding achievement in the physics of particle accelerators.

Send name of proposed candidate and supporting information to: Norbert Holtkamp; OS 481 Prince Crossing Rd; West Chicago, IL 60185; Phone (630) 840-6429; Fax (630) 840-6311; Email [n.holtkamp@worldnet.att.net](mailto:n.holtkamp@worldnet.att.net)

**AWARDS**

Award for Excellence in Plasma Physics Research

Deadline: April 1, 2002

Supported from friends of the Division of Plasma Physics.

Purpose: To recognize a particular recent outstanding achievement in plasma physics research.

Send name of proposed candidate and supporting information to: Ricardo Betti; Univ of Rochester; 233 Hoperman Bldg; Rochester, NY 14627; Phone (716) 275-5479; Fax (716) 256-2509; Email [betti@me.rochester.edu](mailto:betti@me.rochester.edu)

**LEROY APKER AWARD**

Deadline: June 14, 2002

Endowed by Jean Dickey Apker in memory of LeRoy Apker.

Purpose: To recognize outstanding achievement in physics by undergraduate students, and thereby provide encouragement to young physicists who have demonstrated great potential for future scientific accomplishment.

Send name of proposed candidate and supporting information to: Dr. Alan Chodos; American Physical Society; One Physics Ellipse; College Park, MD 20740; Attn: Apker Award Committee; Phone (301) 209-3233; Fax (301) 209-0865; Email [chodos@aps.org](mailto:chodos@aps.org)

**THE OTTO LAPORTE AWARD**

Endowed by the friends of Otto Laporte and the Division of Fluid Dynamics.

Purpose: To recognize outstanding research accomplishments pertaining to the physics of fluids.

Send name of proposed candidate and supporting information to: Charles Meneveau; Dept of Mech Engr; Johns Hopkins Univ; 3400 N Charles St; Baltimore MD 21218; Phone (410) 516-7802; Fax (410) 516-7254; Email [meneveau@jhu.edu](mailto:meneveau@jhu.edu)

**JOSEPH A. BURTON FORUM AWARD**

Endowed by Jean Dickey Apker.

Purpose: To recognize outstanding contributions to the public understanding or resolution of issues involving the interface of physics and society.

Send name of proposed candidate and supporting information to: Andrew Sessler; Univ of California; Lawrence Berkeley Lab MS71-259; One Cyclotron Rd; Berkeley CA 94720; Phone (510) 486-4992; Fax (510) 486-6485; Email [amsessler@lbl.gov](mailto:amsessler@lbl.gov)

**MARIA GOEPPERT-MAYER AWARD**

Sponsored by the GE Fund.

Purpose: To recognize and enhance outstanding achievement by a woman physicist in the early years of her career, and to provide opportunities for her to present these achievements to others through public lectures in the spirit of Maria Goeppert-Mayer.

Send name of proposed candidate and supporting information to: Julia M. Phillips; M/S 1427; PO Box 5800; Sandia National Lab; Albuquerque, NM 87185-1427; Phone (505) 844-1071; Email [jmphil@sandia.gov](mailto:jmphil@sandia.gov)

**JOSEPH F. KEITHLEY AWARD FOR ADVANCES IN MEASUREMENT SCIENCE**

Endowed by Keithley Instruments, Inc., and the Instrument and Measurement Science Topical Group (IMSTG).

Purpose: To recognize physicists who have been instrumental in the development of measurement techniques or equipment that have impact on the physics community by providing better measurements.

Send name of proposed candidate and supporting information to: Bruce Brandt; Nat'l High Magnetic Field Lab; Florida State Univ; 1800 E Paul Dirac Dr; Tallahassee, FL 32310-3704; Phone (850) 644-4068; Fax (850) 644-0534; Email [brandt@magnet.fsu.edu](mailto:brandt@magnet.fsu.edu)

**MEDALS AND LECTURESHIPS**

**DAVID ADLER LECTURESHIP AWARD**

Established by friends of David Adler.

Purpose: To recognize an outstanding contributor to the field of materials physics, who is noted for the quality of his/her research, review articles and lecturing.

Send name of proposed candidate and supporting information to: James Chelikowsky; Dept. of Chem. Engr. & Matr. Sci.; Univ. of Minnesota; Minneapolis, MN 55455; Phone: (612) 625-1313; Fax: (612) 626-7246; Email: [jrc@msi.umn.edu](mailto:jrc@msi.umn.edu)

**EDWARD A. BOUCHET AWARD**

Sponsored by the Research Corporation.

Purpose: To promote the participation of under-represented minorities in physics by identifying and recognizing a distinguished minority physicist who has made significant contributions to physics research.

Send name of proposed candidate and supporting information to: Ron Mickens; 2853 Chaucer Dr SW; Atlanta GA 30311; Phone (404) 696-0739; Fax (404) 880-6258; Email [mick23756@AOL.COM](mailto:mick23756@AOL.COM)

**JOHN H. DILLON MEDAL**

Sponsored by Elsevier Science, Oxford, U.K., publishers of the journal, *Polymer*.

Purpose: To recognize outstanding research accomplishments by young polymer physicists who have demonstrated exceptional research promise early in their careers.

Send name of proposed candidate and supporting information to: Ralph H. Colby; Dept. of Materials Science and Engineering; Pennsylvania State University; University Park, PA 16802; Tel: (814) 863-3457; Fax: (814) 865-2917; E-mail: [rhc@plmsc.psu.edu](mailto:rhc@plmsc.psu.edu)

**NICHOLSON MEDAL FOR HUMANITARIAN ASSISTANCE**

Deadline: April 1, 2002

Sponsored by friends of Dwight Nicholson.

Purpose: To recognize the humanitarian aspect of physics and physicists.

Send name of proposed candidate and supporting information to: R. Paul Drake; University of Michigan; Atmospheric Oceanic and Space Sciences; Space Physics Research Laboratory; 2455 Hayward St.; Ann Arbor, MI 48109; Phone: 734-763-4072; Fax: 734-647-3083; Email: [rpdrake@umich.edu](mailto:rpdrake@umich.edu)

**LEO SZILARD LECTURESHIP AWARD**

Endowed by members of the Forum on Physics and Society and the Packard, MacArthur, and Energy Foundations.

Purpose: To recognize outstanding accomplishments by physicists in promoting the use of physics for the benefit of society in such areas as the environment, arms control, and science policy.

Send name of proposed candidate and supporting information to: Andrew Sessler; Univ of California; Lawrence Berkeley Lab MS71-259; One Cyclotron Rd; Berkeley CA 94720; Phone (510) 486-4992; Fax (510) 486-6485; Email [amsessler@lbl.gov](mailto:amsessler@lbl.gov)

**DISSERTATION AWARDS**

**OUTSTANDING DOCTORAL THESIS IN PLASMA PHYSICS AWARD**

Deadline: April 1, 2002

Endowed in by General Atomics Inc.

Purpose: To provide recognition to exceptional young scientists who have performed original thesis work of outstanding scientific quality and achievement in the area of plasma physics.

Send name of proposed candidate and supporting information to: Amanda Hubbard; NW17-113 Plasma Fusion Ctr; MIT; 175 Albany St; Cambridge MA 02139; Email [hubbard@pSfc.mit.edu](mailto:hubbard@pSfc.mit.edu)

**OUTSTANDING DOCTORAL THESIS RESEARCH IN BEAM PHYSICS AWARD**

Supported by Brookhaven Science Associates, Southwest Universities Research Association, and Universities Research Association.

Purpose: To recognize doctoral thesis research of outstanding quality and achievement in beam physics and engineering.

Send name of proposed candidate and supporting information to: Robert Ryne; Mail Stop 71-259; Lawrence Berkeley Natl Lab; 1 Cyclotron Rd; Berkeley, CA 94720; Phone (510) 486-7639; Email [rdrayne@lbl.gov](mailto:rdrayne@lbl.gov)

**2001 APS Fellowship Nomination Deadlines**

For submittal information see: <http://www.aps.org/fellowships>

**DIVISIONS**

Astrophysics ..... 05/01/02  
Atomic, Molecular, Optical .... 04/01/02  
Biological Physics ..... 04/01/02  
Chemical Physics ..... PAST  
Computational Physics ..... 04/12/02  
Condensed Matter ..... PAST  
Fluid Dynamics ..... PAST  
Polymer Physics ..... 04/15/02  
Laser Science ..... 04/01/02  
Materials Physics ..... PAST  
Nuclear Physics ..... 04/01/02  
Particles & Fields ..... 04/01/02  
Physics of Beams ..... 04/15/02  
Plasma Physics ..... 04/01/02

**FORUMS**

Physics & Society ..... 04/01/02  
History of Physics ..... 04/01/02

International Physics ..... 04/01/02  
Industrial and Applied Physics ... PAST  
Education ..... 04/15/02

**TOPICAL GROUPS**

Few Body Systems ..... 04/01/02  
Precision Measurement  
Fund. Const. .... 04/01/02  
Instruments and  
Measurement ..... 04/01/02  
Shock Compression ..... 04/01/02  
Gravitation ..... 04/01/02  
Magnetism and Its  
Applications ..... 04/01/02  
Plasma Astrophysics ..... 04/01/02  
Statistical and Nonlinear  
Physics ..... 04/01/02

**APS GENERAL ..... 06/03/02**