

APS Announces 2018 Prize and Award Recipients

The APS would like to congratulate the recipients of these APS prizes and awards. They will be presented during APS award ceremonies throughout the year. Both March and April meeting award ceremonies are open to all APS members and their guests. At the March Meeting, the APS Prizes and Awards Ceremony will be held Monday, March 5, 5:45 - 6:45 p.m. at the Los Angeles Convention Center (LACC) in Los Angeles, CA. At the April Meeting, the APS Prizes and Awards Ceremony will be held Sunday, April 15, 5:30 - 6:30 p.m. at the Greater Columbus Convention Center in Columbus, OH. In addition to the award ceremonies, most prize and award recipients will give invited talks during the meeting. Some recipients of prizes, awards are recognized at APS unit meetings. For the schedule of APS meetings, please visit <http://www.aps.org/meetings/calendar.cfm>.

Nominations are open for most 2019 prizes and awards. We encourage members to nominate their highly-qualified peers, and to consider broadening the diversity and depth of the nomination pool from which honorees are selected. For nomination submission instructions, please visit the APS web site (<http://www.aps.org/programs/honors/index.cfm>).

Prizes



2018 APS MEDAL FOR EXCELLENCE IN PHYSICS

Eugene N. Parker
University of Chicago

In recognition of many fundamental contributions to space physics, plasma physics, solar physics and astrophysics for over 60 years.



2018 PRIZE FOR A FACULTY MEMBER FOR RESEARCH IN AN UNDERGRADUATE INSTITUTION

Warren F. Rogers
Indiana Wesleyan University

For his essential contribution to the exploration of atomic nuclei beyond the neutron drip line and his conception and continued leadership of the Conference Experience for Undergraduates program.



2018 WILL ALLIS PRIZE FOR THE STUDY OF IONIZED GASES

Leanne Pitchford
CNRS & Université Toulouse III–Paul Sabatier

For the development and application of methods to accurately compute rate coefficients and charged particle transport coefficients, and their application to predictive modeling of low-temperature plasmas.



2018 HERMAN FESHBACH PRIZE IN THEORETICAL NUCLEAR PHYSICS

Edward Shuryak
Stony Brook University

For his pioneering contributions to the understanding of strongly interacting matter under extreme conditions, and for establishing the foundations of the theory of quark-gluon plasma and its hydrodynamical behavior.



2018 HANS A. BETHE PRIZE

Keith Alison Olive
University of Minnesota

For outstanding contributions across a broad spectrum of fields including nuclear physics, particle physics, theoretical and observational astrophysics, and cosmology, especially Big Bang nucleosynthesis and the properties of dark matter.



2017 FLUID DYNAMICS PRIZE

Detlef Lohse
University of Twente

For profound and wide-ranging contributions to our understanding of fluid turbulence, multiphase flow, and granular flows; for outstanding contributions to the teaching and training of future fluid dynamicists; and for long-standing service to the international fluid dynamics community.



2018 TOM W. BONNER PRIZE IN NUCLEAR PHYSICS

Bradley M. Sherrill
National Superconducting Cyclotron Laboratory

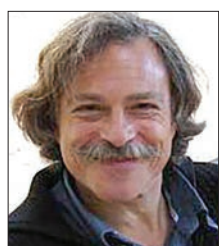
For his scientific leadership in the development and utilization of instruments and techniques for discovery and exploration of exotic nuclei, and for his community leadership in elucidating the physics of rare isotope beams and advancing the realization of the Facility for Rare Isotope Beams facility.



2018 DANNIE HEINEMAN PRIZE FOR MATHEMATICAL PHYSICS

Barry Simon
Caltech

For his fundamental contributions to the mathematical physics of quantum mechanics, quantum field theory, and statistical mechanics, including spectral theory, phase transitions, and geometric phases, and his many books and monographs that have deeply influenced generations of researchers.



2018 OLIVER E. BUCKLEY CONDENSED MATTER PRIZE

Paul Michael Chaikin
New York University

For pioneering contributions that opened new directions in the field of soft condensed matter physics through innovative studies of colloids, polymers, and packing.



2018 FRANK ISAKSON PRIZE FOR OPTICAL EFFECTS IN SOLIDS

Andrea Cavalleri
Max Planck Institute & University of Oxford

Keith A. Nelson

Massachusetts Institute of Technology

For pioneering contributions to the development and application of ultra-fast optical spectroscopy to condensed matter systems, and providing insight into lattice dynamics, structural phase transitions, and the non-equilibrium control of solids.



2018 DAVISSON-GERMER PRIZE IN ATOMIC OR SURFACE PHYSICS

John E. Thomas
North Carolina State University

For his seminal contributions to the study of unitary Fermi gases, from their experimental realization to measurements of their collective mode dynamics, universal thermodynamic relations, and quantum transport coefficients.



2018 JULIUS EDGAR LILIENFELD PRIZE

Naomi J. Halas
Rice University

For her pioneering research at the intersection of optics and nanoscience, and groundbreaking applications of those findings in the field of plasmonics, and for her exceptional impact communicating the excitement of scientific discoveries and their vital role in improving people's lives.



2018 MAX DELBRÜCK PRIZE IN BIOLOGICAL PHYSICS

William S. Bialek
Princeton University

For the application of general theoretical principles of physics and information theory to help understand and predict how biological systems function across a variety of scales, from molecules and cells, to brains and animal collectives.

Nominate members for next years' prizes, awards, and fellows: aps.org/programs/honors/index.cfm

Prizes



2017 JAMES CLERK MAXWELL PRIZE FOR PLASMA PHYSICS

Dmitri Ryutov

Lawrence Livermore National Laboratory

For many outstanding contributions to the theoretical plasma physics of low and high energy density plasmas, open and closed magnetic configurations, and laboratory and astrophysical systems.



2018 ANEESUR RAHMAN PRIZE FOR COMPUTATIONAL PHYSICS

Hans Herrmann

Swiss Federal Institute of Technology (ETH)

For groundbreaking contributions in developing novel computational methods in complex systems, fracture mechanics, and granular media.



2018 JAMES C. MCGRODDY PRIZE FOR NEW MATERIALS

Rodney S. Ruoff

IBS Center for Multidimensional Carbon Materials

For pioneering contributions to the scalable synthesis, materials science and applications of graphene and graphene derivatives.



2018 NORMAN F. RAMSEY PRIZE IN ATOMIC, MOLECULAR AND OPTICAL PHYSICS, AND IN PRECISION TESTS OF FUNDAMENTAL LAWS AND SYMMETRIES

Peter Zoller

Universität Innsbruck

For his pioneering theoretical work on quantum computation, communication, and simulation with trapped ions, atoms, and molecules.



2018 LARS ONSAGER PRIZE

Subir Sachdev

Harvard University

For his seminal contributions to the theory of quantum phase transitions, quantum magnetism, and fractionalized spin liquids, and for his leadership in the physics community.



2017 ANDREI SAKHAROV PRIZE

Ravi Kuchimanchi

Association for India's Development (AID)

For his continued research in physics while simultaneously advocating for global policies that reflect science; for leading sustainable development, human rights, and social justice efforts; and for creating a vibrant international volunteer movement that learns from, works with, and empowers communities in India.



2018 ABRAHAM PAIS PRIZE FOR HISTORY OF PHYSICS

Peter Galison

Harvard University

For outstanding contributions to the history of physics, especially for elucidating the complicated roles of experiment, instrumentation, and theory in the production of scientific knowledge, and for sharing his insights via award-winning scholarship, generous mentoring, and innovative filmmaking.



Narges Mohammadi

Physicist, Engineer, Human Rights Defender, Prisoner of Conscience (Evin Prison, Tehran)

For her leadership in campaigning for peace, justice, and the abolition of the death penalty and for her unwavering efforts to promote the human rights and freedoms of the Iranian people, despite persecution that has forced her to suspend her scientific pursuits and endure lengthy incarceration.



2018 GEORGE E. PAKE PRIZE

Richard Boudreault

Polar Knowledge Canada

For outstanding research accomplishments in electronics, photonics, and advanced materials during his distinguished senior-level career in management and administration of scientific corporations and government institutions over a period of 40 years.



2018 J. J. SAKURAI PRIZE

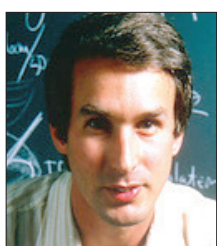
Michael Dine

University of California, Santa Cruz

Ann Nelson

University of Washington

For groundbreaking explorations of physics beyond the standard model of particle physics, including their seminal joint work on dynamical super-symmetry breaking, and for their innovative contributions to a broad range of topics, including new models of electroweak symmetry breaking, baryogenesis, and solutions to the strong charge parity problem.



2018 W.K.H. PANOFSKY PRIZE IN EXPERIMENTAL PARTICLE PHYSICS

Lawrence R. Sulak

Boston University

For novel contributions to detection techniques, including pioneering developments for massive water Cherenkov detectors that led to major advances in nucleon decay and neutrino oscillation physics.



2018 ARTHUR L. SCHAWLOW PRIZE IN LASER SCIENCE

Gérard Albert Mourou

École Polytechnique

For fundamental contributions in ultrafast, ultrahigh-field laser inventions, such as chirped pulse amplification, that led to the new discipline of relativistic optics.



2018 POLYMER PHYSICS PRIZE

Juan J. de Pablo

University of Chicago

For his innovative models and algorithms for the simulation of macromolecular systems.



2018 ROBERT R. WILSON PRIZE FOR ACHIEVEMENT IN THE PHYSICS OF PARTICLE ACCELERATORS

Alexander Wu Chao

SLAC National Accelerator Laboratory

For insightful, fundamental and broad-ranging contributions to accelerator physics, including polarization, beam-beam effects, nonlinear dynamics, and collective instabilities, for tireless community leadership and for inspiring and educating generations of accelerator physicists.



2018 EARLE K. PLYLER PRIZE FOR MOLECULAR SPECTROSCOPY & DYNAMICS

David M. Jonas

University of Colorado

For the demonstration and development of femtosecond two-dimensional Fourier transform spectroscopy and its use in studying fast processes.



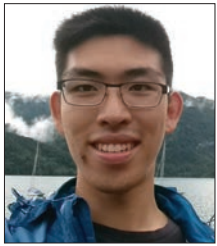
Awards



2018 DAVID ADLER LECTURESHIP AWARD IN THE FIELD OF MATERIALS PHYSICS

Christopher J. Palmstrøm
University of California, Santa Barbara

For innovative experimental research, lectures, and writing in the areas of dissimilar materials epitaxy, heterostructures and interfaces in thin films.



2017 LEROY APKER AWARD

Calvin Leung
Harvey Mudd College

For development and experimental implementation of astronomical random number generators for loophole-free tests of Bell's inequality and other applications in quantum fundamentals, astrophysics, and tests of general relativity.



Angela F. Harper
Wake Forest University

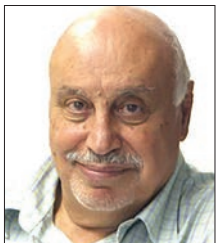
For significant contributions to printed electronics research and outstanding leadership of the Society of Physics Students and Society of Women in STEM fields.



2018 DISTINGUISHED LECTURESHIP ON THE APPLICATIONS OF PHYSICS

Robert Leonard Kleinberg
Schlumberger

For the invention of geophysical instrumentation, and its pioneering use in field studies of subsurface and marine geology.



2018 EDWARD A. BOUCHET AWARD

Miguel José Yacamán
University of Texas at San Antonio

For far-ranging, high-impact contributions to nanoscale science using electron microscopy, and for his mentorship and promotion of Latinos in physics, ranging from undergraduates to faculty.



2018 JOSEPH A. BURTON FORUM AWARD

Neil F. Johnson
University of Miami

For his important contributions using physics to broaden scientific and public understanding of asymmetric conflict, terrorism, and instabilities in sociotechnical systems.



2017 STANLEY CORRSIN AWARD

Jens Eggers
University of Bristol

For analysis of singularities as a unifying theme for physical and mathematical insights into a wide variety of two-phase fluid mechanics problems involving jets, coalescence, entrainment and wetting.

2017 JOHN DAWSON AWARD FOR EXCELLENCE IN PLASMA PHYSICS RESEARCH



Andrew James MacKinnon
Lawrence Livermore National Laboratory



Chikang Li
Massachusetts Institute of Technology



Fredrick H. Séguin
Massachusetts Institute of Technology



Marco Borghesi
The Queen's University, Belfast



Oswald Willi
Heinrich Heine University Düsseldorf



Richard D. Petrasso
Massachusetts Institute of Technology

For pioneering use of proton radiography to reveal new aspects of flows, instabilities, and fields in high-energy-density plasmas.



2018 JOHN H. DILLON MEDAL

Bradley D. Olsen
Massachusetts Institute of Technology

For significantly expanding our understanding of the physics of polymers, including the self-assembly of block copolymers incorporating a fully folded protein, the influence of polymer shape on diffusion; for engineering novel gels; and for updating the theory of the modulus of a network.



2018 EARLY CAREER AWARD FOR SOFT MATTER RESEARCH

Eric Lauga
University of Cambridge

For seminal contributions to our understanding of the dynamics of complex fluids, including biological swimmers.



2018 ROLF LANDAUER AND CHARLES H. BENNETT AWARD IN QUANTUM COMPUTING

Aram W. Harrow
Massachusetts Institute of Technology (MIT)

For outstanding accomplishments in the mathematics of quantum information, and the development of new algorithmic primitives for quantum computers.

2018 EXCELLENCE IN PHYSICS EDUCATION AWARD

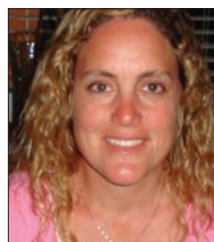


The PhET Interactive Simulations Team:

Carl Wieman
Stanford University



Wendy K. Adams
Colorado School of Mines



Michael Dubson
University of Colorado



Emily B. Moore
University of Colorado



Ariel Paul
University of Colorado



Kathy Perkins
University of Colorado



Sam Reid
University of Colorado

For the systematic development, dissemination, and evaluation of the physics education tool, PhET Interactive Simulations project, used world-wide by millions of students and their teachers.

2018 JOSEPH F. KEITHLEY AWARD FOR ADVANCES IN MEASUREMENT SCIENCE



Andreas J. Heinrich
Center for Quantum Nanoscience (QNS) at Ewha Womans University



Wilson Ho
University of California, Irvine



Joseph A. Stroscio
NIST

For the design and construction of a series of highly sophisticated scanning probe instruments, including the development of inelastic electron tunneling spectroscopy at the single atom and single spin limit, that provided many breakthroughs in the science of measurement.



2018 MARIA GOEPPERT MAYER AWARD

M. Lisa Manning
Syracuse University

For her use of computational and analytical tools to develop microscopic understanding of flow in disordered materials, ranging from metallic glasses to biological tissues.



2017 DWIGHT NICHOLSON MEDAL FOR OUTREACH

Neil deGrasse Tyson
Hayden Planetarium – American Museum of Natural History

For his wide-ranging and awe-inspiring contributions to the public understanding of science, and for his passionate and effective advocacy of the values of critical scientific thinking in a democratic society.



2018 HENRY PRIMAKOFF AWARD FOR EARLY-CAREER PARTICLE PHYSICS

Eric Dahl
Northwestern University / Fermilab

For fundamental contributions to the development of new techniques for the direct detection of dark matter, including the bubble chamber and xenon time projection chamber.



2018 JONATHAN F. REICHERT AND BARBARA WOLFF-REICHERT AWARD FOR EXCELLENCE IN ADVANCED LABORATORY INSTRUCTION

Kurt Wick
University of Minnesota

For over two decades of educational innovation and teaching excellence in the advanced laboratory sequence at the University of Minnesota Twin Cities; for cultivating students' interest and expertise in modern experimental methods and research through laboratory education and independent projects; and for consistently supporting the advanced laboratory community in the adoption of modern experimental methods in the curriculum.



2017 THOMAS H. STIX AWARD FOR OUTSTANDING EARLY CAREER CONTRIBUTIONS TO PLASMA PHYSICS RESEARCH

Ian Chapman
Culham Centre for Fusion Energy, United Kingdom Atomic Energy Authority

For groundbreaking experimental and theoretical studies in tokamak stability.



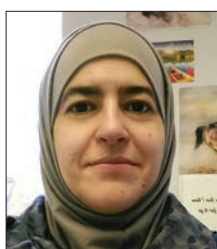
2018 LEO SZILARD LECTURESHIP AWARD

Edwin Stuart Lyman
Union of Concerned Scientists

For using his technical expertise and tireless advocacy to maintain and strengthen U.S. policy on nuclear nonproliferation and reactor safety and security.

Fellowships

2017 M. HILDRED BLEWETT FELLOWSHIP



Wafia Bensalem
Carlton University



Samadrita Chowdhury
University of Massachusetts, Lowell



Soma Chattopadhyay
Elgin Community College



2017 STANFORD R. OVSHINSKY SUSTAINABLE ENERGY FELLOWSHIP

Luisa Whittaker-Brooks
University of Utah

Dissertations



2017 ANDREAS ACRIVOS DISSERTATION AWARD

Xiang Yang, STANFORD UNIVERSITY
For developing the novel integral wall modeling concept for Large Eddy Simulations based on fundamental principles and for groundbreaking new insights into the scaling implications of the attached eddy model for understanding fluctuations in wall bounded turbulent flows.



2017 CARL E. ANDERSON DIVISION OF LASER SCIENCE DISSERTATION AWARD

Dennis Gardner, UNIVERSITY OF COLORADO, BOULDER
For coherent diffractive imaging near the spatio-temporal limit with high-harmonic sources.



2018 OUTSTANDING DOCTORAL THESIS AWARD IN ASTROPHYSICS

Garrett Somers, VANDERBILT UNIVERSITY
For his thesis "Exploring Non-Standard Stellar Physics with Lithium Depletion."



2017 OUTSTANDING DOCTORAL THESIS RESEARCH IN BEAM PHYSICS AWARD

Spencer J. Gessner, SLAC - NATIONAL ACCELERATOR LABORATORY
In recognition of an original theoretical treatment and an experimental demonstration of accelerating positrons in a hollow channel plasma wakefield accelerator.



2017 AWARD FOR OUTSTANDING DOCTORAL THESIS RESEARCH IN BIOLOGICAL PHYSICS

Pierre Alexandre Haas, DAMTP/UNIVERSITY OF CAMBRIDGE
For outstanding theoretical work on the description of embryonic inversion in the alga Volvox, incorporating novel generalizations of elasticity theory and applied mathematics.



2017 AWARD FOR OUTSTANDING DOCTORAL THESIS RESEARCH IN BIOLOGICAL PHYSICS

David Reid Jacobson, JILA, NIST/UNIVERSITY OF COLORADO, BOULDER
For pioneering studies of the electrostatic, elastic, and conformational behavior of single-stranded nucleic acids.



2018 JUSTIN JANKUNAS DOCTORAL DISSERTATION AWARD IN CHEMICAL PHYSICS

Marissa Weichman
Slow Photoelectron Velocity-Map Imaging and Infrared Photodissociation Spectroscopy of Cryo-Cooled Molecular and Cluster Ions



2017 DEBORAH JIN AWARD FOR OUTSTANDING DOCTORAL THESIS RESEARCH IN ATOMIC, MOLECULAR, OR OPTICAL PHYSICS

Mickey McDonald, COLUMBIA UNIVERSITY
For outstanding contributions to high precision optical spectroscopy and quantum state selected photodissociation of ultracold 88Sr2 molecules in an optical lattice.



2018 NICHOLAS METROPOLIS AWARD

Andrea Cepellotti, UNIVERSITY OF CALIFORNIA, BERKELEY
For the introduction and development of novel ideas in the theory of Boltzmann transport, including the concepts of relaxons, transport waves, and friction in nanostructures, and their application to the case of hydrodynamic transport of heat.



2018 DISSERTATION AWARD IN NUCLEAR PHYSICS

Kyle W. Brown, WASHINGTON UNIVERSITY AT ST. LOUIS
For elucidating the continuum structure of light proton-rich nuclides using invariant mass spectroscopy.



2018 DISSERTATION AWARD IN NUCLEAR PHYSICS

Matthew Elias Caplan, INDIANA UNIVERSITY
For a pioneering study of dense nuclear matter in compact stars that makes surprising connections across disciplines including nuclear physics and biophysics.



2017 MARSHALL N. ROSENBLUTH OUTSTANDING DOCTORAL THESIS AWARD

Jonathan Squire, CALIFORNIA INSTITUTE OF TECHNOLOGY
For fundamental contributions to dynamo theory, and in particular for analytical and computational elucidation of the magnetic shear current effect



2018 DISSERTATION AWARD IN STATISTICAL AND NONLINEAR PHYSICS

Alison E. Patteson, UNIVERSITY OF PENNSYLVANIA
For outstanding doctoral thesis work on non-equilibrium systems at the interface of active matter and fluid dynamics.



2018 J. J. AND NORIKO SAKURAI DISSERTATION AWARD

Grant Newton Remmen, CALIFORNIA INSTITUTE OF TECHNOLOGY
For his contributions to understanding the structure and self-consistency of gravity and effective field theories using ideas from quantum field theory and holography.



2018 MITSUYOSHI TANAKA DISSERTATION AWARD

Nathan Jurik, SYRACUSE UNIVERSITY
For his thesis "Observation of J/psi p resonances consistent with pentaquark states in Lambda_b to J/psi K p decays."



2018 RICHARD L. GREENE DISSERTATION AWARD

M. A. Mueed, MASSACHUSETTS INSTITUTE OF TECHNOLOGY
For his thesis, "Exotic Phases of Interacting Two-dimensional Carriers Using One-dimensional Density Modulation."



Claire Donnelly, ETH ZURICH - PAUL SCHERRER INSTITUTE
For her thesis, "Hard X-ray Tomography of Three Dimensional Magnetic Structures."