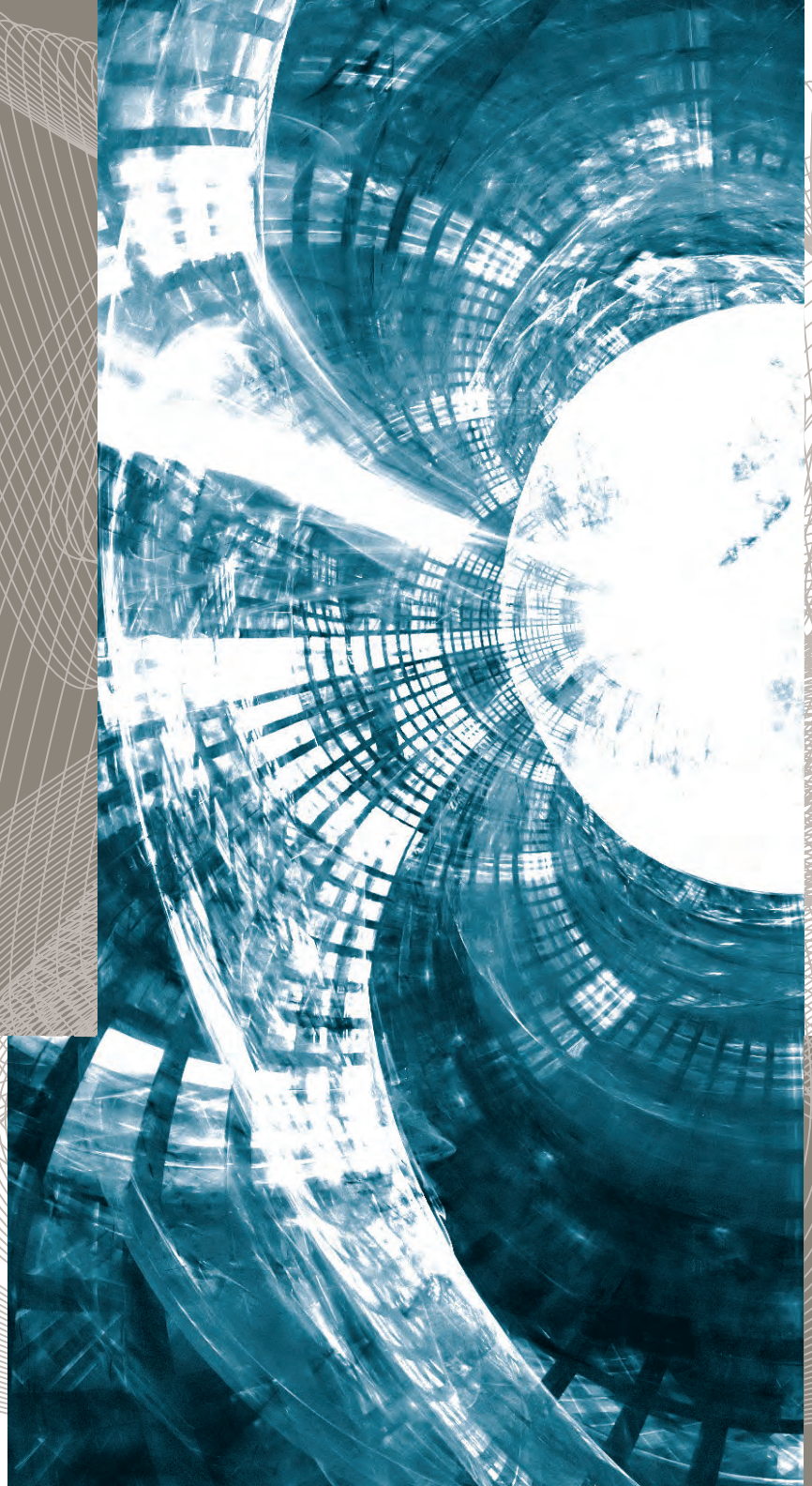


AWARDS

MRS MATERIALS RESEARCH SOCIETY®
Advancing materials. Improving the quality of life.

Spring 2024

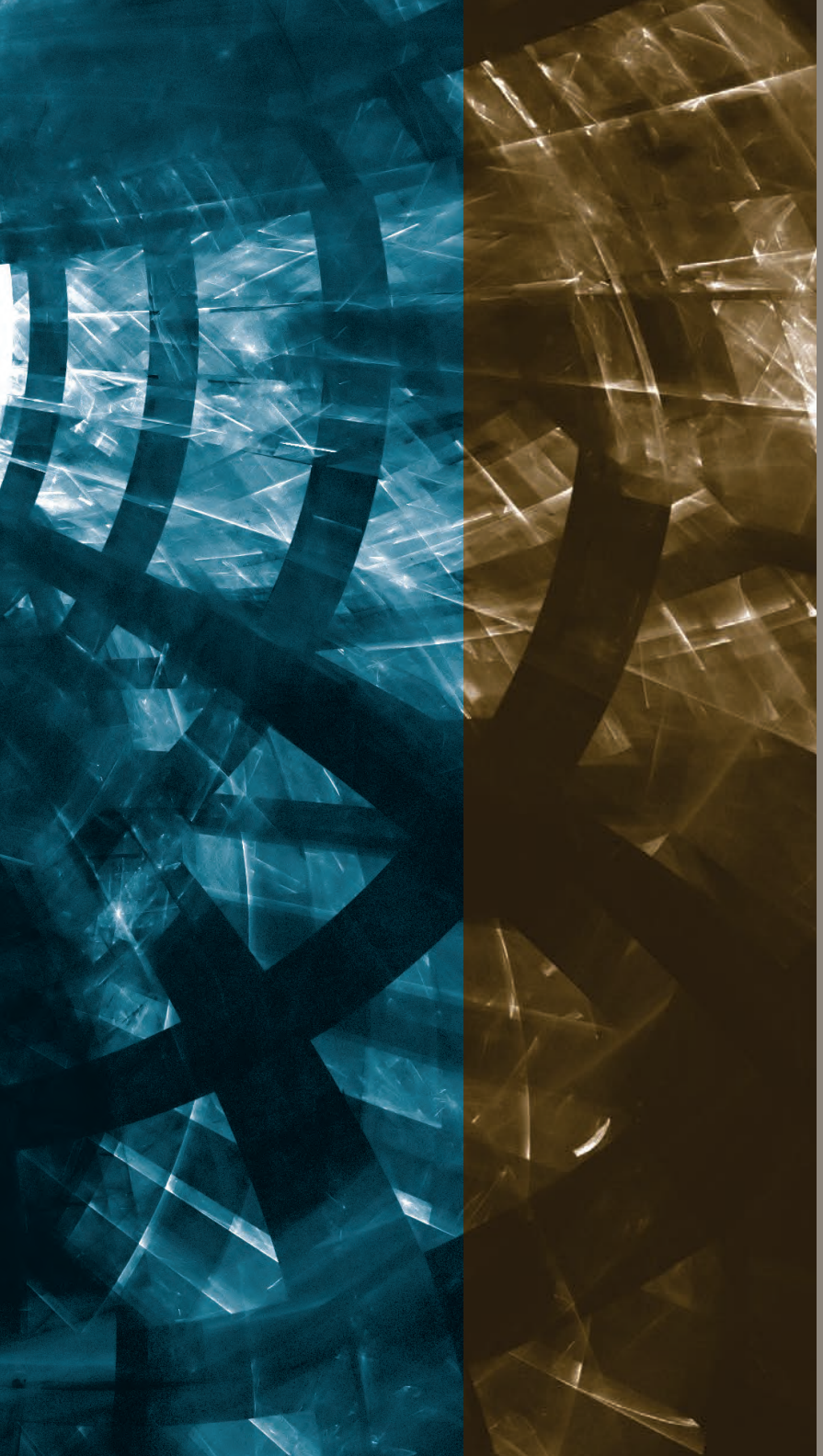
The MRS Awards

Endowment Fund

In order to secure the future of an awards program of high caliber, and thereby maintain this valuable extra dimension of enrichment for the professional, educational, and general communities, the Materials Research Society requires a substantial Endowment Fund. The Society is deeply grateful to those individuals, and corporate and foundation donors who have already contributed to this Fund. In order to approach self-sufficiency, however, further donations are needed. MRS earnestly solicits consideration of this need by corporations, foundations, and individuals who share our vision of this program as an investment in the future.

For further information about the Awards Endowment Fund, please contact:

Materials Research Society Awards Program
awardsprogram@mrs.org



The MRS

Awards Program

The MRS Awards Program strives to acknowledge outstanding contributors to the progress of materials research, and to recognize their exciting and profound accomplishments. We seek to honor those whose work has already had a major impact in the field, those who have defined the frontiers of the field, those who are outstanding exponents of their science, and those young researchers whose work already leads to great expectations for future leadership. Not only do we honor the award recipients, we also believe that by highlighting these leaders in our field and their creative work, we will enrich the awareness of the progress and diversity of materials research, both within the materials community and in the wider community at large.

Nomination information, as well as, guidelines for proposing the creation of a new MRS award can be found by visiting **mrs.org/awards**

Table of Contents

AWARDS

2024

MRS Fellow

Honoring outstanding members whose sustained and distinguished contributions to the advancement of materials research are internationally recognized. MRS Fellow is a lifetime honor. The honor is highly selective, with no more than 0.2% of the membership being honored each year.

The vitality, diversity, and opportunity of materials research are all epitomized in this group of Fellows, whose remarkable accomplishments are highlighted by their brief citations. We are confident that the examples of excellence, enterprise and dedication, displayed by this steadily growing community of MRS Fellows will serve to encourage and inspire all materials researchers, at all levels, and will also support and enhance the prestige and recognition of materials research in serving the broader community of the world.

mrs.org/fellows

2024 Recipients

Harald Ade

North Carolina State University

For seminal contributions leading to the understanding of the morphology of organic thin films and its implications on organic electronic device performance

Amit Bandyopadhyay

Washington State University

For pioneering work in metal additive manufacturing for biomedical and other applications, and for instruction and mentoring of an inclusive research group in materials science and advanced manufacturing

Donald Brenner

North Carolina State University

For pioneering contributions to materials modeling, and for broader contributions to the materials community that include studies that helped shape major research directions in the U.S.

Stefano Curtarolo

Duke University

For outstanding contributions to thermodynamics of disordered ceramics and alloys, material genome initiatives, and for creating first-class density functional theory database and software leading to effective material discovery

Laura M. Herz

University of Oxford

For pioneering contributions to the science of light-harvesting materials, including metal-halide perovskites, pi-conjugated molecules, biomimetic systems, and nanostructured semiconductors

Andrea M. Hodge

University of Southern California

For pioneering contributions to understanding the synthesis and mechanical response of novel nanofoams and nano-twinned materials, and for leadership and commitment to materials education and the materials community

Cherie R. Kagan

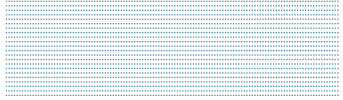
University of Pennsylvania

For pioneering contributions to the physics and chemistry of emerging materials constructed from colloidal nanocrystals and organic-inorganic hybrid perovskites and to their integration in electronic, optical, and optoelectronic devices

Lane Martin

Rice University

For seminal contributions to the science of ferroelectric and multiferroic thin film materials

2023 Recipients

Sanjay Mathur
University of Cologne
For outstanding and innovative contributions in the field of chemical processing of advanced materials for electrochemical and biomedical applications

Amanda K. Petford-Long
Argonne National Laboratory
For work developing quantitative imaging and analysis techniques for nanoscale functional heterostructures, in particular those with magnetic properties, and leadership in teaching, mentoring and fostering diversity in materials science

Gregory Rohrer
Carnegie Mellon University
For developing pioneering experimental methods and a statistical methodology to quantify and correlate interface crystallography, energy and properties in crystalline materials

Federico Rosei
Institut national de la recherche scientifique (INRS)
For leadership in nanomaterials synthesis and characterization, in particular multifunctional materials and their integration in optoelectronic devices, and for sustained international efforts in service, mentoring and outreach

Subhash L. Shinde
University of Notre Dame
For cutting-edge materials science and engineering research contributions through leadership in advancing microelectronics packaging, 3D microsystems integration, concentrating solar technologies and dedicated, impactful MRS service

Ichiro Takeuchi
University of Maryland
For leadership in development of combinatorial and high-throughput methodology and incorporation of machine learning for exploration and discovery of new functional materials; and for invention and development of elastocaloric cooling

Dmitri V. Talapin
University of Chicago
For innovation in synthesis of nanomaterials; contributions to the field of nanoparticle self-assembly; and pioneering research in nanocrystal devices

Deji Akinwande
The University of Texas at Austin

James J. Coleman
The University of Texas at Arlington

David A. Ginger
University of Washington

Tony A. Heinz
Stanford University

Prashant V. Kamat
University of Notre Dame

Ho Nyung Lee
Oak Ridge National Laboratory

Zhiqun Lin
National University of Singapore

Benji Maruyama
U.S. Air Force Research Laboratory

Phillip Messersmith
University of California, Berkeley

Nitin Padture
Brown University

Kristin Persson
University of California, Berkeley

Yabing Qi
Okinawa Institute of Science and Technology

Zhifeng Ren
University of Houston

Julie M. Schoenung
University of California, Irvine

Yuri Suzuki
Stanford University

Martin Winter
University of Münster

Kang Xu
U.S. Army Research Laboratory

Von Hippel Award

The Von Hippel Award recognizes those qualities most prized by materials scientists and engineers—brilliance and originality of intellect—combined with vision that transcends the boundaries of conventional scientific disciplines. The award bears the name of its inaugural recipient, whose interdisciplinary and pioneering research typified the spirit of the award. Nominations of candidates from all areas of materials research are encouraged.

mrs.org/vonhippel

Recipients

Arthur von Hippel 1976
Massachusetts Institute of Technology
In whose honor the premier award of the Materials Research Society is named, a pioneer in the study of dielectrics, semi-conductors, ferromagnetics, and ferroelectrics. He was an early advocate of the interdisciplinary approach to materials research, and his example substantially furthered the science of materials.

William O. Baker 1978
Bell Laboratories
Led research into solid state materials and macromolecules, dielectric properties and dynamic mechanical properties of crystals and glasses, information processing technology, and plastics, fibers, and natural and synthetic rubbers. He nurtured and oversaw the development of one of the world's preeminent laboratories.

David Turnbull 1979
Harvard University
Has distinguished himself in many areas of materials research, including kinetics to crystal nucleation and growth, diffusion in metals, and glass formation.

W. Conyers Herring 1980
Stanford University
Demonstrated that whiskers of high crystalline perfection would exhibit extraordinary mechanical properties. He is also held in esteem for his theoretical contributions to the understanding of surfaces and surface tension.

James W. Mayer 1981
Cornell University
Carried out research on implantation that identified the damage and the epitaxial regrowth phenomena crucial to the semiconductor industry, and pioneered the use of ion beam techniques for materials analysis.

Clarence M. Zener 1982
Carnegie Mellon University
Performed the definitive work on internal friction in solids. His influence is most visibly expressed in the line of research that resulted in the invention of the Zener diode and laid the foundation for the development of semiconductors.

Sir Peter B. Hirsch 1983
University of Oxford
Is universally known for his research with the electron microscope into imperfection in the crystalline structure of materials and the relationship between structural defects and mechanical properties.

Walter L. Brown 1984
AT&T Bell Laboratories
Pioneered studies on semiconductor surface states, semiconductor radiation detectors, and the application of particle/solid interactions to the study of materials.

John W. Cahn 1985
National Bureau of Standards
Is today's foremost scientist in the thermodynamics of phase equilibrium. He has made major contributions in solidification, crystal growth, glass formation, and the thermodynamics of surfaces and interfaces.

Minko Balkanski 1986
Université Pierre et Marie Curie
Has made major contributions to the understanding of semiconductors and other materials, particularly through his development and use of optical spectroscopies which led to an understanding of elementary excitations and band structures in these materials.

Sir Charles Frank 1987
University of Bristol

Has had wide-ranging impact on modern materials science through seminal contributions in areas of inorganic crystals, metals, polymers, and liquid crystals. His outstanding research in crystallography, chemistry, physics, and materials science exemplifies the interdisciplinary approach.

Jacques Friedel 1988
Université de Paris-Sud

Has made pioneering contributions within the domain of condensed matter sciences which have profoundly influenced, theoretically and experimentally, advances ranging from the quantum theory of solids, materials science and metallurgy to chemistry. He is noted for major contributions to the understanding of dislocations and strength of materials, electron theory of metals, and the properties of alloys.

John B. Goodenough 1989
The University of Texas, Austin

Has made distinguished contributions to the field of solid state sciences, where his insights, ideas, knowledge, and research have consistently drawn together the basic concepts of physics and chemistry in the conquest of wide-range fundamental topics. Through the years, his work can be said to have built the principal conceptual foundations of the science and solid state chemistry.

Robert W. Balluffi 1990
Massachusetts Institute of Technology

Whose seminal experimental and analytical contributions have clarified our fundamental understanding of the atomic mechanisms of sintering, Kirkendall phenomena, dislocation climb, solid-state diffusion, the production and recovery of radiation damage, grain boundary structure and energetics in metals and ceramics.

Theodore H. Geballe 1991
Stanford University

Has made ingenious use of chemical principles to synthesize novel materials of technological importance, has executed careful experiments on a wide range of materials to illuminate fundamental materials properties and behavior, and has provided leadership in helping to formulate the modern concepts of interdisciplinary as a scientist, teacher, and administrator.

Michael F. Ashby 1992
University of Cambridge

Has made seminal contributions to subjects as diverse as dispersion hardening, grain boundary sliding, creep, fracture, sintering, cellular materials, ice mechanics, and wear.

Frederick Seitz 1993
The Rockefeller University

Has played a seminal role in establishing the modern fields of solid-state physics and materials science through his many basic books and research papers, and for his leadership as a teacher and administrator in encouraging the growth of these disciplines.

Alfred Y. Cho 1994
AT&T Bell Laboratories

Pioneered the development of molecular beam epitaxy (MBE) and its application to new devices based on quantum wells and artificially structured materials.

William W. Mullins 1995
Carnegie Mellon University

Has made profound contributions to the understanding of grain boundary motion, morphological stability, the structure of surfaces and interfaces, and flow and diffusion as stochastic phenomena.

Sir Alan H. Cottrell 1996
University of Cambridge

Converted crystal dislocations from a hand waving hypothesis to a rigorous discipline, transformed the understanding of brittle fracture, made varied and crucial advances in the theory of radiation damage, and transformed the teaching of materials science throughout the academic world through his pioneering textbooks.

Gabor A. Somorjai 1997
University of California, Berkeley

Has made extraordinary multidisciplinary contributions to the atomic-level understanding of materials surfaces and surface processes with technological importance in heterogeneous catalysis, corrosion, and tribology. Somorjai's ideas and his vision for the future as well as his promotion of the field and of his colleagues' work have had a major impact in stimulating support and raising the visibility of surface science when the field was young.

Larry L. Hench 1998
Imperial College of Science, Technology and Medicine

For pioneering accomplishments in the field of glass and ceramics including the demonstration of the first bioactive glass called Bioglass® and subsequent expansion of the field, demonstration of the feasibility of encapsulating nuclear waste products in glass/ceramic matrices, and development of sol-gel processing to produce ultra-high-purity optical and dielectric materials with controlled microstructures.

Richard S. Stein 1999
University of Massachusetts, Amherst

In recognition of his seminal work in the development of rheo-optical techniques for polymer characterization and property assessment, his profound contributions leading to a fundamental understanding of how polymeric materials respond to deformation in the melt and solid states, and his pioneering role in the development of graduate education in polymer materials.

George M. Whitesides 2000
Harvard University

For bringing fundamental concepts of organic chemistry and biology into materials science and engineering, through his pioneering research on surface modification, self-assembly and soft lithography.

Simon C. Moss 2001
University of Houston

For consistently timely and essential contributions to identifying and understanding the atomic-level structure of almost every new type of materials discovered in the last thirty years.

Howard K. Birnbaum 2002
University of Illinois

For seminal contributions to our understanding of intrinsic point defects, hydrogen in metals, and grain boundary segregation, especially as these effects relate to mechanical properties; for the innovative use of a wide range of novel experimental tools; and for stimulating, directing, and influencing interdisciplinary research throughout the materials community.

Julia R. Weertman 2003
Northwestern University

For her life-long exceptional contributions to understanding the basic deformation processes and failure mechanisms in a wide class of materials, from nanocrystalline metals to high-temperature structural alloys, and for her inspiring role as an educator in materials science.

Nick Holonyak, Jr 2004
University of Illinois

For his many contributions to research and development in the field of semiconductors, not least for the first development of semiconducting lasers in the useful visible portion of the optical spectrum.

Robert S. Langer 2005
Massachusetts Institute of Technology

For pioneering accomplishments in the science and application of biomaterials in drug delivery and tissue engineering, particularly in inventing the use of materials for protein and DNA delivery, and for his achievements in interdisciplinary research which have generated new medical products, created new fields of biomaterials science, and inspired research programs throughout the world.

Knut Wolf Urban 2006
Forschungszentrum Jülich GmbH

For sustained contributions to the development and use of electron microscopy, and for major discoveries in the defect physics of quasicrystals and high-temperature superconductors.

William Nix 2007
Stanford University

For his original contributions on the deformation and failure of materials, particularly in the areas of thin films, small volumes, and high-temperature alloys; for pioneering mechanical test methods; and for educating and mentoring future generations of materials scientists.

Herbert Gleiter 2008
Forschungszentrum Karlsruhe

For his imaginative experiments on the role of defects that have led to new insights into the importance of length-scale in materials and have resulted in many new applications.

Tobin J. Marks 2009
Northwestern University

For consistently discovering and applying new scientific principles, and for advancing materials science across a spectrum from self-assembly to crystal growth, encompassing organic electronic, photonic, and photovoltaic materials, and oxide dielectrics, conductors, and superconductors.

L. Eric Cross 2010
The Pennsylvania State University

For his imposing leadership in the science and applications of ferroelectric materials.

A. Paul Alivisatos 2011
Lawrence Berkeley National Laboratory

For the development of the fundamental scientific basis for growing and utilizing defect-free colloidal semiconductor nanoparticles, providing the basis for biological imaging, solid state lighting, and the capture and conversion of solar energy to electricity.

Stuart S.P. Parkin 2012
IBM Almaden Research Center

For pioneering contributions to the science and technology of spintronic materials, particularly in establishing the fundamental foundations of spin-engineered magnetic heterostructures and demonstrating artificial atomically layered magnetic multilayers for applications in field sensing, magnetic memory and data storage devices.

Mildred S. Dresselhaus 2013
Massachusetts Institute of Technology

For her pioneering contributions to the fundamental science of carbon-based and other low electron density materials, her leadership in energy and science policy, and her exemplary mentoring of young scientists.

Marvin L. Cohen 2014
University of California, Berkeley

For explaining and predicting properties of materials and for successfully predicting new materials using microscopic quantum theory.

Sir Richard H. Friend 2015
University of Cambridge

For pioneering research on highly original materials phenomena and device concepts, enabled by polymeric semiconducting materials, and imprinting an indelible influence on contemporary materials science and the new field of plastic electronics.

Charles M. Lieber 2016
Harvard University

For pioneering contributions to nanoscience, defining the foundations of rational synthesis of nanoscale wires, characterization of their fundamental physical properties, and the development of applications of these materials in chemistry, biology and medicine.

C.N.R. Rao 2017
Jawaharlal Nehru Centre for Advanced Scientific Research

For his immense interdisciplinary contributions to the development of novel functional materials, including magnetic and electronic properties of transition metal oxides, nanomaterials such as fullerenes, graphene and 2-D inorganic solids, superconductivity and colossal magnetoresistance in rare-earth cuprates and manganates.

Hideo Hosono 2018
Tokyo Institute of Technology

For the discovery of high Tc iron-based superconductors, creation of transparent oxide semiconductors and inorganic electrides.

Jerry Tersoff 2019
IBM T.J. Watson Research Center

For advancing the understanding of low-dimensional and nanoscale electronic materials, surfaces and interfaces, through elegant theoretical models that highlight the essential physics controlling growth, structure and electronic properties.

Cato T. Laurencin 2020
University of Connecticut

For pioneering work in engineering of musculoskeletal tissues, for extraordinary work guiding technology and science policy, and for promoting ethnic diversity and excellence in science.

Harry Atwater 2021
California Institute of Technology

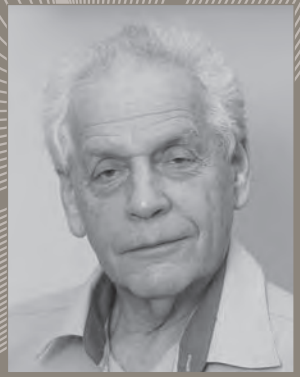
For fundamental research in light-matter interactions—particularly nanophotonics, plasmonics, photonic metamaterials, and solar energy conversion—and numerous applications of photon control of materials illustrating the value of fundamental research to technologies that improve the quality of life.

Samuel I. Stupp 2022
Northwestern University

For pioneering contributions to the development and understanding of a broad range of molecularly designed supramolecular soft materials that function as bioactive scaffolds in regenerative medicine, matrices for photocatalytic activity, and stimuli-responsive robotic structures.

Reshef Tenne 2023
Weizmann Institute of Science

For spearheading modern research on nano-2D materials through the discovery of nanotube- and fullerene-like inorganic layered compounds.

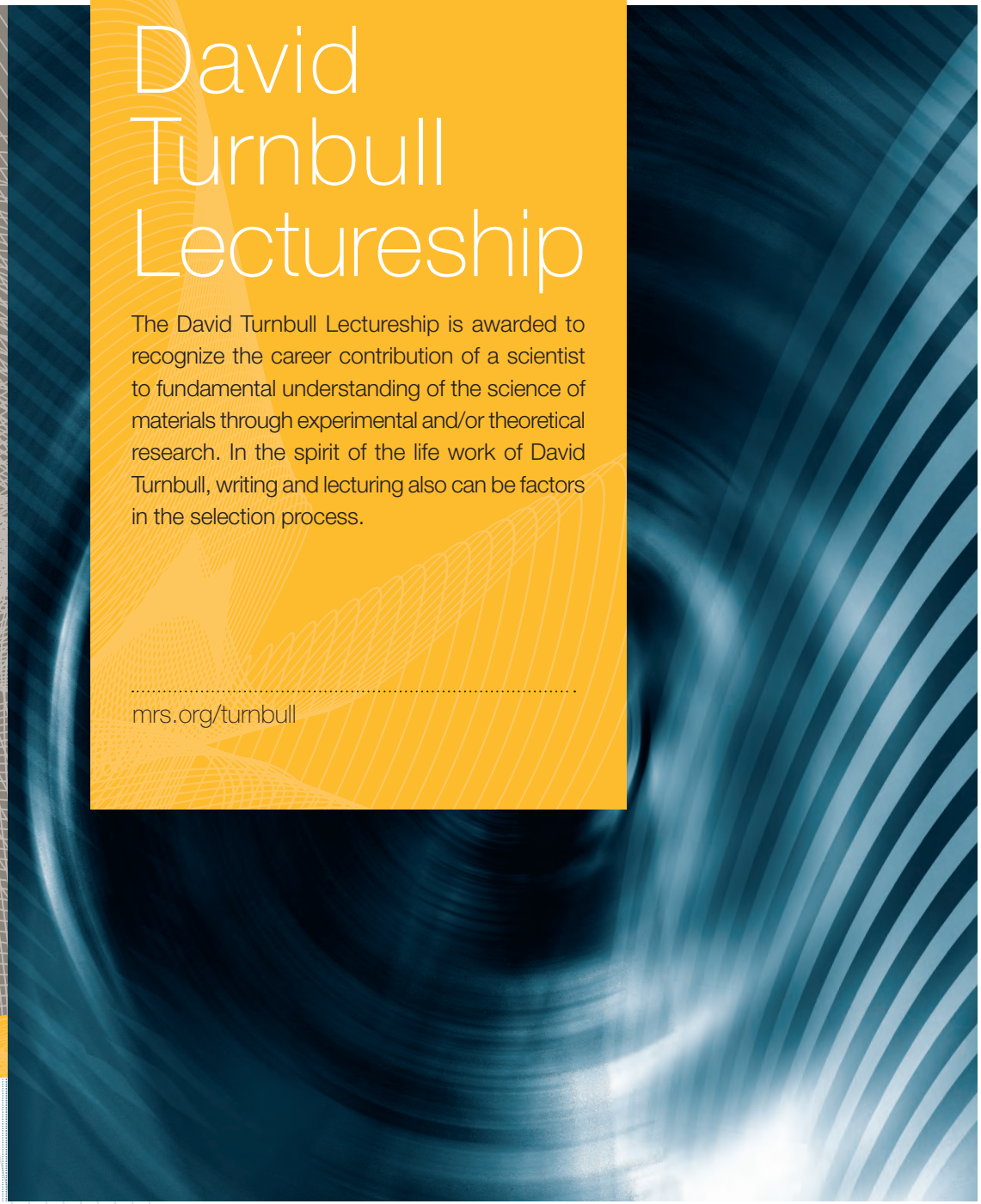


Reshef Tenne
2023 Von Hippel Award Recipient

David Turnbull Lectureship

The David Turnbull Lectureship is awarded to recognize the career contribution of a scientist to fundamental understanding of the science of materials through experimental and/or theoretical research. In the spirit of the life work of David Turnbull, writing and lecturing also can be factors in the selection process.

mrs.org/turnbull



Recipients

Thomas R. Anthony 1992
General Electric Company
For outstanding contributions to the understanding of diffusion, thermomigration, and the synthesis of diamond.

Morris Cohen 1993
Massachusetts Institute of Technology
For his contributions to the development of physical metal-lurgy, especially in the mechanism and kinetics of martensitic transformation, and for his leadership in establishing the broader discipline of materials science and engineering.

Arthur S. Nowick 1994
Columbia University
For his pioneering work in anelastic and dielectric behavior, in fast ion conductors, and in amorphous alloys, and for his excellence in teaching and writing.

Didier R. de Fontaine 1995
University of California, Berkeley
In recognition of fundamental contributions and insights in the fields of order/disorder phenomena in materials and computational techniques for phase diagrams.

Robert E. Newnham 1996
Pennsylvania State University
For pioneering the field of ceramic composites for electronic and optical applications, and in recognition of a distinguished career of guiding students, lecturing, and writing.

Merton C. Flemings 1997
Massachusetts Institute of Technology
For contributing to the foundations and technology of solidification processing and for educating a generation of materials engineers.

H. Eugene Stanley 1998
Boston University
For his insights into the statistical aspects of materials phenomena including phase transitions, pattern formation, and disordered, granular, and soft materials, and for his outstanding lecturing and writing on these topics.

Joseph E. Greene 1999
University of Illinois
For contributions to the use of non-thermal methods in the growth of thin films and the engineering of their phase, composition, and microstructure; and for excellence in teaching and writing.

Anthony G. Evans 2000
Princeton University
For outstanding contributions and leadership in bringing fundamental insights in mechanical behavior to materials engineering through research, teaching, mentoring, writing, and lecturing.

James R. Chelikowsky 2001
University of Minnesota
For his contributions to the fundamental understanding of electronic, optical, mechanical, surface and interface properties of bulk and nanostructured semiconductors, ceramics, and metals through ab initio calculations; and for excellence in teaching, lecturing, and writing.

Robert W. Cahn 2002
University of Cambridge
For service to the materials science community through writing, editing, mentoring, and fostering of international understanding, as well as for outstanding contributions to the development of physical metallurgy through research on recovery and recrystallization, rapid solidification, and intermetallic compounds.

Ellen D. Williams 2003
University of Maryland

For groundbreaking research on the atomic-scale science of surfaces and for leadership, writing, teaching, and outreach that conveys her deep understanding of and enthusiasm for materials research.

Frank S. Bates 2004
University of Minnesota

For pioneering contributions to the fundamental understanding of structure and properties of complex polymeric materials, particularly block copolymers and polymeric vesicles, coupled with outstanding lecturing, writing, teaching, and educational leadership.

Eugene E. Haller 2005
University of California, Berkeley

For pioneering achievements and leadership in establishing the field of isotopically engineered semiconductors, for outstanding contributions to materials growth, doping and diffusion, and for excellence in lecturing, writing, and fostering international collaborations.

Austen Angell 2006
Arizona State University

For pioneering contributions to the fundamental understanding of the formation, dynamics, and properties of glasses, and particularly his development of fragility as an essential tool for characterizing glass forming materials, coupled with a comprehensive understanding of the field effectively communicated through lectures and publications.

Ramamoorthy Ramesh 2007
University of California, Berkeley

For his pioneering contributions to the materials science of complex oxide heterostructures and nanostructures, including multiferroics, ferroelectrics,and magnetoresistive oxides; and for his enthusiasm and leadership in conveying the excitement of this field to a broad audience.

David N. Seidman 2008
Northwestern University

For research that has made major contributions to our understanding of point defects and the role they play in radiation damage, and phase transformations; unique studies of interfacial segregation; and especially for the development and fruitful use of atom-probe spectrometry; for numerous seminal publications, and excellence in education/training students and colleagues in the laboratory, classroom and conferences.

Edward J. Kramer 2009
University of California, Santa Barbara

For outstanding contributions in bringing insights and understanding to flux pinning in superconductors and to the fundamentals of fracture, diffusions, interface phenomena in complex polymeric materials through research, teaching, mentoring, writing, and lecturing.

David D. Awschalom 2010
University of California, Santa Barbara

For pioneering achievements and leadership in establishing the field of semiconductor spintronics, including fundamental discoveries of spin transport and coherence in the solid state, developing new experimental techniques and materials engineering for spin-based quantum information science, and for excellence in communication through lecturing and writing.

Phaedon Avouris 2011
IBM T. J. Watson Research Center

For his development of nanoscience and nanotechnology through research, publications, lecturing and mentoring: in particular, for his work on carbon nanotubes, graphene and semiconductor surfaces, imaging and measuring their electronic structure and properties; modifying them chemically and physically using scanning probe techniques; and incorporating them into advanced electronic and photonic devices.

Robert Sinclair 2012
Stanford University

For his original contributions to the understanding of atomic arrangements in solids and their relationship to diverse materials phenomena including martensitic transformations, dislocation interactions with interfaces, phase equilibria in complex thin-film systems, and nanoscale interactions in soft matter, for seminal contributions to *in situ* and high-resolution transmission electron microscopy, development of their combined use, and for passionate and dedicated teaching, advising, and academic leadership.

Robert O. Ritchie 2013
University of California, Berkeley

For pioneering contributions to, and teaching us all how to think about, the mechanistic role of microstructure in governing fatigue and fracture in a variety of materials systems, and communicating his scientific insights to the world audience through eloquent lectures and seminal publications.

Rodney S. Ruoff 2014
Ulsan National Institute of Science and Technology

For pioneering discoveries related to carbon materials and their innovative preparation, characterization, and mechanics.

Jacob Klein 2015
Weizmann Institute of Science

For discoveries which transformed our understanding of soft matter and interfaces, through sustained research, inspirational lecturing and academic leadership.

James De Yoreo 2016
Pacific Northwest National Laboratory

For discoveries that have shaped our understanding of crystallization science.

Sigurd Wagner 2017
Princeton University

For groundbreaking contributions to the science and technology of thin film photovoltaics, amorphous silicon and flexible large-area electronics.

M. Stanley Whittingham 2018
Binghamton University (SUNY)

For fundamental contributions to solid state ionics including the discovery of the key role of intercalation mechanisms, and the development and commercialization of rechargeable Li-ion batteries.

Paula T. Hammond 2019
Massachusetts Institute of Technology

For her contributions to the science, engineering and applications of self-assembled macromolecular systems.

Sossina M. Haile 2020
Northwestern University

For fundamental contributions to the electrochemical and thermochemical materials science that advance sustainable energy, for her commitment to the broader international materials community and for being an inspiring colleague and passionate mentor.

Nicholas A. Kotov 2021
University of Michigan

For foundational discoveries in interface-based engineering of self-organizing materials.

Chang-Beom Eom 2022
University of Wisconsin-Madison

For pioneering research and insightful lectures on epitaxy of oxide materials and its impact on applications in electronics.

Mark Asta 2023
University of California, Berkeley and Lawrence Berkeley National Laboratory

For seminal contributions to theory, computational modeling, and education on the structural, thermodynamic, and kinetic properties of phases, surfaces, and interfaces of materials.

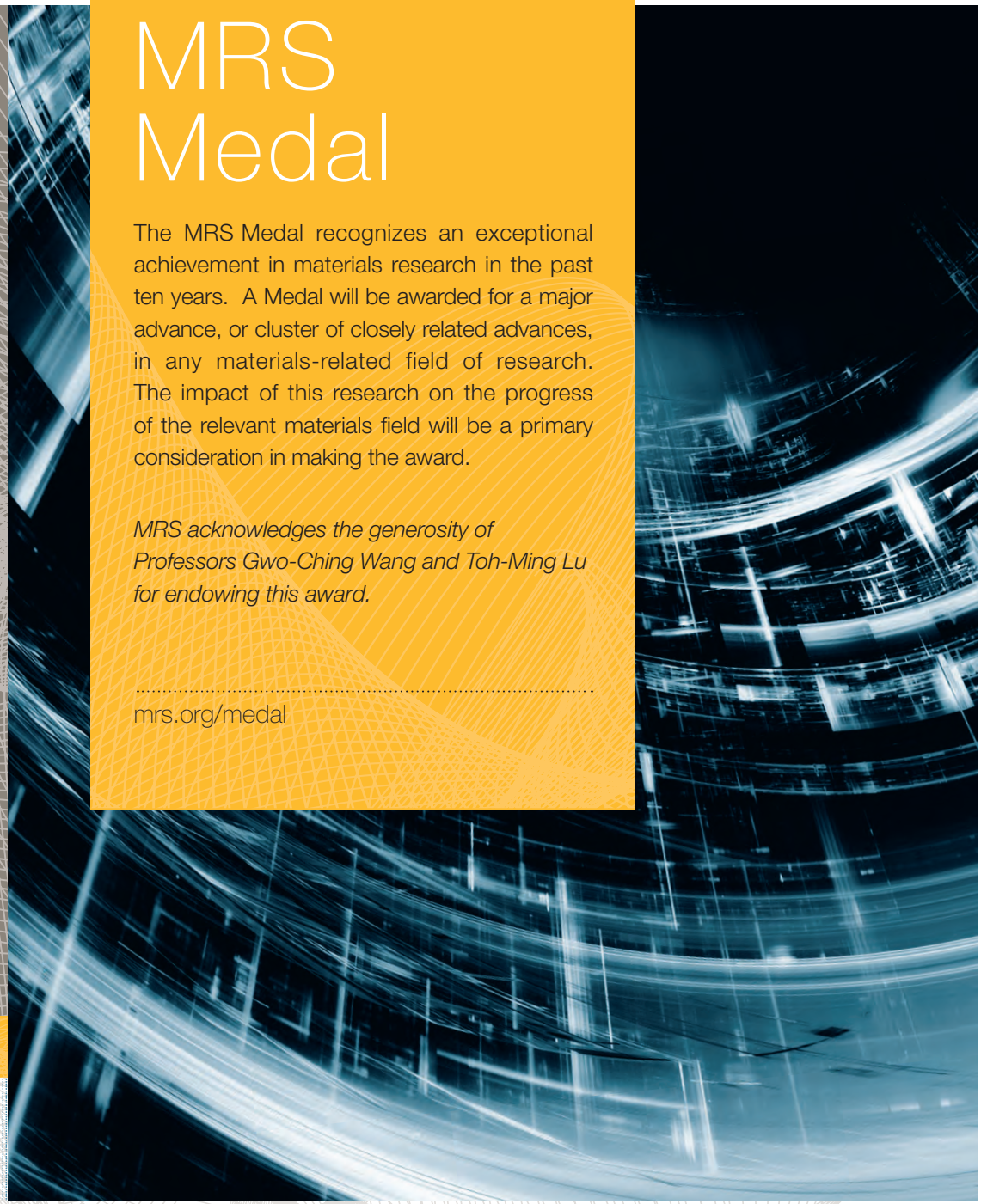
Mark Asta
2023 David Turnbull Lectureship Recipient

MRS Medal

The MRS Medal recognizes an exceptional achievement in materials research in the past ten years. A Medal will be awarded for a major advance, or cluster of closely related advances, in any materials-related field of research. The impact of this research on the progress of the relevant materials field will be a primary consideration in making the award.

MRS acknowledges the generosity of Professors Gwo-Ching Wang and Toh-Ming Lu for endowing this award.

mrs.org/medal



Recipients

Arthur J. Freeman 1990
Northwestern University
In recognition of his pioneering achievements in the field of monolayer and low dimensional magnetism.

Duward F. Shriver 1990
Northwestern University
In recognition of his seminal work in the synthesis, characterization, understanding and application of polymer based solid electrolyte materials.

Bernard S. Meyerson 1991
IBM T.J. Watson Research Center
In recognition of his dynamic research leading to the fabrication of high speed heterojunction bipolar transistors.

Shigeyuki Somiya 1991
Nishi Tokyo University
In recognition of his innovation and energy in pioneering the field of hydro-thermal synthesis of ceramic materials.

L. Eric Cross 1992
Pennsylvania State University
In recognition of his leadership and vision in the atomic scale engineering of relaxor ferroelectric materials as the prototype of self-assembling nano-composites.

Stephen J. Pennycook 1992
Oak Ridge National Laboratory
For the development and application of incoherent (Z contrast) imaging in the scanning transmission electron microscope for direct determination of the atomic scale structure and chemistry of materials and interfaces.

Donald R. Huffman 1993
University of Arizona
and
Wolfgang Krätschmer 1993
Max-Planck Institute für Kernphysik
For the discovery of a method to produce macroscopic quantities of fullerenes, and for elucidating their properties.

Max G. Lagally 1994
University of Wisconsin, Madison
For innovative development of STM as a quantitative probe of the microscopic mechanisms of crystal growth and ordering at surfaces.

Kenneth S. Suslick 1994
University of Illinois, Urbana—Champaign
For incisive studies of chemical effects of ultrasound and the use of sonochemistry in synthesis of unusual inorganic materials.

Federico Capasso 1995
AT&T Bell Laboratories
For seminal contributions to compositionally graded materials, using bandgap engineering, and their innovative applications in electronics and optoelectronics.

Rudolf M. Tromp 1995
IBM T.J. Watson Research Center
For pioneering experiments on the role of atomic structure, surface stress, and surfactants in heteroepitaxial growth.

Jerry D. Tersoff 1996
IBM T.J. Watson Research Center
For seminal contributions to the theory of strain relaxation in thin films.

Shuji Nakamura 1997
Nichia Chemical Industries Ltd.
For the development of lattice-mismatched GaN-based heteroepitaxy and its application to the creation of blue and green light-emitting diodes and short wavelength laser diodes.

William L. Johnson 1998
California Institute of Technology
For the development and fundamental understanding of bulk metallic glass forming alloys.

M. George Craford 1999
Hewlett Packard
For pioneering contributions and leadership in the development of visible-spectrum light-emitting diode materials and devices.

Stephen Forrest 1999
Princeton University
For pioneering contributions to the growth and optoelectronic applications of organic semiconductor thin films.

Dieter M. Gruen 2000
Argonne National Laboratory
For the low-pressure synthesis of nano-crystalline diamond films from fullerene precursors.

Samuel I. Stupp 2000
Northwestern University
For seminal contributions to the development of supramolecular materials that exhibit unique properties resulting from their hierarchical organization in the condensed state.

Norman C. Bartelt 2001
Sandia National Laboratories
For contributions to the statistical mechanics of materials surfaces.

Mathew Mate 2001
IBM Almaden Research Center
For pioneering studies of friction at the atomic and molecular level.

Uzi Landman 2002
Georgia Institute of Technology
For molecular dynamics simulations elucidating the microscopic behavior of solid and liquid interfacial junctions and atomistic processes of tribology.

Charles M. Lieber 2002
Harvard University
For controlled synthesis of nanowire and nanotube materials.

C. Jeffrey Brinker 2003
Sandia National Laboratories
For his pioneering application of principles of sol-gel chemistry to the self-assembly of functional nanoscale materials

Ivan K. Schuller 2003
University of California, San Diego
For his innovative studies of exchange bias in magnetic heterostructures and nanostructures.

Jacob N. Israelachvili 2004
University of California, Santa Barbara
For his work on adhesion and friction, which has revolutionized the understanding of molecular mechanisms responsible for these technologically vital phenomena.

Toh-Ming Lu 2004
Rensselaer Polytechnic Institute
and
Sunil K. Sinha 2004
University of California, San Diego/
Los Alamos National Laboratory
For seminal contributions to understanding mechanisms of thin-film surface and interface morphology evolution and establishing the foundations of diffraction and scattering methods for its quantitative analysis.

Reshef Tenne 2005
Weizmann Institute
For realizing that nanoclusters of layered compound materials (e.g., MoS2 WS2) can be made to fold into hollow cage structures, analogous to graphitic carbon. These structures, known as 'Inorganic Fullerenes,' constitute a materials class with exciting new properties.

Pulickel Ajayan 2006
Rensselaer Polytechnic Institute
and
Won Bong Choi 2006
Florida International University
For important developments in the material science and applications of carbon nanotubes.

Mark Thompson 2006
University of Southern California
For development of highly efficient heavy metal phosphor complexes.

Omar M. Yaghi 2007
University of California-Los Angeles
For his pioneering work on the synthesis, structure, and theory of metal organic frameworks.

Darrell G. Schlom 2008
Cornell University
and
James F. Scott 2008
Cambridge University
For fundamental contributions to the materials science of oxides underlying current and future electronic devices.

Gerbrand Ceder 2009
Massachusetts Institute of Technology
For pioneering the high-impact field of first-principles thermodynamics of batteries materials and for the development of high power density Li battery compounds.

Walter A. de Heer 2010
Georgia Institute of Technology
For his pioneering contributions to the science and technology of epitaxial graphene.

Peidong Yang 2011
University of California, Berkeley
For outstanding contributions in the creative synthesis and assembly of semiconductor nanowires and their heterostructures, and innovations in nanowire-based photonics, thermoelectrics, solar energy conversion and nanofluidic applications

Zhong Lin (Z.L.) Wang 2011
Georgia Institute of Technology
For seminal contributions in the discovery, controlled synthesis, and fundamental understanding of ZnO nanowires and nanobelts, and the design and fabrication of novel, nanowire-based nanosensors, piezotronic devices, and nanogenerators.

Jennifer A. Lewis 2012
University of Illinois at Urbana-Champaign
For pioneering contributions in the design of viscoelastic inks composed of colloidal, polymeric, and organometallic building blocks and their directed assembly into planar and 3D functional architectures.

Miquel Salmeron 2012
Lawrence Berkeley National Laboratory
For his contribution to the molecular level understanding of material surfaces under ambient conditions of gas pressure and temperature made possible by the development and application of Ambient Pressure Photo-Electron Spectroscopy (APPES), which revealed the chemical structure of liquids, catalysts surfaces and nanoparticles during environmental reaction conditions.

Alexander A. Balandin 2013
University of California, Riverside
For discovery of the extraordinary high intrinsic thermal conductivity of graphene, development of an original optothermal measurement technique for investigation of thermal properties of graphene, and theoretical explanation of the unique features of the phonon transport in graphene.

Mercouri G. Kanatzidis 2014
Northwestern University and Argonne National Laboratory
For the discovery and development of nanostructured thermoelectric materials.

Delia J. Milliron
2023 MRS Medal Recipient

Sharon C. Glotzer 2014
University of Michigan
and
Nicholas A. Kotov 2014
University of Michigan
For foundational work elucidating processes of nanoparticle self-assembly.

Richard B. Kaner 2015
University of California, Los Angeles
For the discovery of efficient methods to synthesize water dispersible conducting polymer nanofibers and their applications in sensors, actuators, molecular memory devices, catalysis, and the novel process of flash welding.

Robert J. Cava 2016
Princeton University
For pioneering contributions in the discovery of new classes of 3D Topological Insulators.

Joanna Aizenberg 2017
Harvard University
For developing new synthesis routes inspired by biological principles for the fabrication of advanced complex multifunctional materials and devices.

Younan Xia 2017
Georgia Institute of Technology
For seminal contributions to shape-controlled synthesis of metal nanocrystals with major impact on catalysis, plasmonics and biomedicine".

John Rogers 2018
Northwestern University
For pioneering contributions to materials for diverse classes of bio-integrated electronic systems.

Catherine J. Murphy 2019
University of Illinois at Urbana-Champaign
and
Haimei Zheng 2019
Lawrence Berkeley National Laboratory
For outstanding contributions on the study of anisotropic nanoscale materials, transformation and application.

Yi Cui 2020
Stanford University
and
Linda Nazar 2020
University of Waterloo
For outstanding contributions to advanced materials design, synthesis and characterization for energy storage, particularly Li battery technologies.

Yury Gogotsi 2021
Drexel University
For contributions to advancing the understanding of processing, structure, and properties of two-dimensional carbides and nitrides (MXenes) for energy storage applications.

Chad A. Mirkin 2022
Northwestern University
For the invention and implementation of nanoparticle mega-libraries for materials discovery.

Delia J. Milliron 2023
The University of Texas at Austin
For the development of optically tunable metal oxide nanomaterials for applications such as energy-saving electrochromic windows

Innovation in Materials Characterization Award

To honor an outstanding advance in materials characterization that notably increases the knowledge of the structure, composition, *in situ* behavior under outside stimulus, electronic, mechanical, or chemical behavior, or other characterization feature, of materials. It is not limited to the method of characterization or the class of material observed. Impact of the advance on materials research will be the primary consideration in making the award. Nominations for this award may be made for scientists and engineers in all areas of materials research.

MRS acknowledges the generosity of Professors Gwo-Ching Wang and Toh-Ming Lu for endowing this award.

mrs.org/imca

Recipients

Warren C. Oliver 2010
Nanomechanics, Inc.
and
George M. Pharr 2010
Oak Ridge National Laboratory

For seminal contributions to the development of the instrumentation and analysis methods of nanoindentation for characterizing the mechanical properties of materials at the micro- and nanometer-length scales. Their work on nanoindentation has profoundly impacted all fields of materials research where mechanical behavior is important.

Tye T. Gribb 2011
DTE Research & Design LLC
and
Thomas F. Kelly 2011
Cameca Instruments, Inc.
and
David J. Larson 2011
Cameca Instruments, Inc.

For the highly successful conception, design, fabrication, and commercialization of an ergonomic three-dimensional local-electrode atom probe (LEAP) tomograph that enables the determination of the local composition information, on an atom-by-atom basis, of metallic, semiconducting, ceramic and organic materials, on a subnanometer scale, in direct space, with high mass resolving power and signal-to-noise ratio, permitting the determination of small concentrations of all elements.

Stephen J. Pennycook 2012
Oak Ridge National Laboratory

For his pioneering use of aberration-corrected *Z*-contrast scanning transmission electron microscopy in the characterization of materials at the atomic scale.

D. Bruce Chase 2013
University of Delaware
and
John F. Rabolt 2013
University of Delaware

For the development of Fourier Transform Raman Spectroscopy and the demonstration of its utility for examining the chemical structure and properties of organic molecules and polymers in solids, thin films and solutions.

Albert Polman 2014
University of Amsterdam, FOM Institute AMOLF, The Netherlands

For the development, application and commercialization of Angle-Resolved Cathodoluminescence Imaging Spectroscopy (ARCIS) as a new tool for optical imaging at the nanoscale, with applications in nanophotonics and materials science in general.

John M. Carpenter 2015
Argonne National Laboratory

For innovations in neutron sources that have fundamentally changed their performance and enabled opportunities for further advancement of materials that improve the quality of life.

Niels de Jonge 2016
INM–Leibniz Institute for New Materials
and
Frances M. Ross 2016
IBM T.J. Watson Research Center
and
Chongmin Wang 2016
Pacific Northwest National Laboratory

For seminal contributions to the imaging of specimens in liquids using transmission electron microscopy, revolutionizing the direct observation of materials processes, batteries during operation and biological structures.

Joost W.M. Frenken 2017
Advanced Research Center for Nanolithography (ARCNL)

For the development, application and commercialization of high-speed, temperature-controlled, *in situ* scanning probe microscopy, leading to key insights in the structure, dynamics and chemistry of surfaces and interfaces.

David G. Cahill 2018
University of Illinois at Urbana-Champaign

For developing transformative methods for characterizing the thermal transport properties of materials and their interfaces using time-domain thermoreflectance (TDTR) and related approaches.

Stig Helveg 2019
Haldor Topsoe

For pioneering atomic-scale transmission electron microscopy under reactive gas environments, leading to groundbreaking insights in catalysis, crystal growth and corrosion. aches.

Jinghua Guo 2020
Lawrence Berkeley National Laboratory

For pioneering *in situ/operando* soft x-ray spectroscopy characterization of interfacial phenomena in energy, catalysis and chemical materials science.

Jianwei (John) Miao 2021
University of California, Los Angeles

For pioneering coherent diffractive imaging for a wide range of material systems and atomic electron tomography for determining atomic positions without assuming crystallinity.

Annamaria Petrozza 2022
Italian Institute of Technology

For the development and innovative use of time-resolved carrier dynamics measurements, from sub-picoseconds to milliseconds, to fundamentally advance our understanding of the photo-physics of metal-halide perovskites, leading to materials and devices of improved stability.

Franz Giessibl 2023
University of Rebensberg

For enabling subatomic resolution capability of atomic force microscopy and for the invention of the qPlus sensor, a smart AFM probe with outstanding spatial resolution.

Nikhilesh Chawla 2024
Purdue University

For innovations in developing time-resolved methods to characterize the evolution of microstructural features of materials under complex loading and environmental conditions

Nikhilesh Chawla
2024 Innovation in Materials Characterization Award Recipient

Materials Theory Award

The Materials Theory Award recognizes exceptional advances made by materials theory to the fundamental understanding of the structure and behavior of materials. This award is intended to honor both those who have pioneered the development of a new theoretical approach and those who have used existing approaches to provide significant new insight into materials behavior.

MRS acknowledges the generosity of Professors Gwo-Ching Wang and Toh-Ming Lu for endowing this award.

mrs.org/mta

Recipients

Alex Zunger 2011
University of Colorado, Boulder
For his development of the inverse band structure approach to materials by design and the foundational developments of methods of first-principles theory of solids, leading to innovative and transformative studies of renewable-energy materials and nanostructures.

John Perdew 2012
Tulane University
For his pioneering contributions to the fundamental development and nonempirical approximations in density functional theory.

David J. Srolovitz 2013
University of Pennsylvania
For decisive and highly influential contributions to the theory and simulation of microstructure, morphological evolution, mechanical behavior, and the structure and dynamics of interfaces.

Long-Qing Chen 2014
The Pennsylvania State University
For his pioneering work in the development of the phase-field method and its applications in the computational modeling of mesoscale structures and their dynamics in inhomogeneous materials.

Steven G. Louie 2015
University of California, Berkeley
For his seminal contributions to the development of ab initio methods for and the elucidation of many-electron effects in electronic excitations and optical properties of solids and nanostructures.

Gerbrand Ceder 2016
University of California, Berkeley, and Lawrence Berkeley National Laboratory
For seminal contributions to the emerging field of computationally guided materials exploiting high-throughput computation and promoting the development of open databases to enable widespread use.

Glenn H. Fredrickson 2017
University of California, Santa Barbara
For pioneering the development of field-theoretic computer simulation methods and their application to investigate and design self-assembling polymers and soft materials.

Giulia Galli 2018
University of Chicago
For the development of advanced first-principles simulation methods and their application to the understanding, prediction and design of complex nanostructured

materials.

Lu Sham 2019
University of California, San Diego
For pioneering contributions to the quantum theory of molecules and solids, especially the Kohn–Sham formulation of density functional theory.

Jean-Luc Bredas 2020
The University of Arizona
For seminal theoretical contributions to the design and understanding of novel molecules and materials in thefields of organic electronics and photonics.

Emily Carter 2021
University of California, Los Angeles
For advances in quantum mechanics theory with broad applications to materials and chemical sciences.

George Schatz 2022
Northwestern University
For pioneering theoretical advances in the properties of plasmonic nanostructures, self-assembly models for soft materials, and the discovery of lattice plasmon polaritons.

Chris Van de Walle 2023
University of California, Santa Barbara
For advances in development of rigorous ab initio methodologies for understanding point defects and their effect on light emission in wide-bandgap semiconductors.

Chris Van de Walle
2023 Materials Theory Award Recipient

Mid-Career Researcher Award

The Mid-Career Researcher Award recognizes exceptional achievements in materials research made by mid-career professionals. It is intended to honor an individual who is between the ages of 40 and 52 at the time of nomination. Exceptions may be made for an interruption in career progression due to family or military service. The award recipient must also demonstrate notable leadership in the materials area.

The Mid-Career Researcher Award is made possible through an endowment established by Millipore Sigma.

MilliporeSigma

mrs.org/mra

Recipients

Kristi S. Anseth 2012
University of Colorado, Boulder
Exceptional achievement at the interface of materials and biology enabling new, functional biomaterials that answer fundamental questions in biology and yield advances in regenerative medicine, stem-cell differentiation, and cancer treatment.

John A. Rogers 2013
University of Illinois at Urbana-Champaign
For fundamental and applied contributions to materials, mechanics designs, and assembly techniques for stretchable/flexible electronic systems.

Lei Jiang 2014
Chinese Academy of Sciences, China
For establishing fundamental understanding of the interfacial properties of biological systems and transforming that insight into commercialized bioinspired materials with properties better than those of natural systems.

Seth R. Marder 2015
Georgia Institute of Technology
For establishing fundamental relationships between the chemical structure of organic molecules and their optical and electronic properties, thereby profoundly impacting how the scientific community designs optimized molecular structures for use in nonlinear optical applications.

Hongjie Dai 2016
Stanford University
For seminal contributions to carbon-based nanoscience and applications in nanoelectronics, renewable energy, and biological systems.

Nicola Spaldin 2017
ETH Zürich
For creating a new theoretical framework describing multiferroics and for service to the materials community.

David Mooney 2018
Harvard University
For pioneering contributions to the field of biomaterials, especially in the incorporation of biological design principles into materials and the use of biomaterials in mechanobiology, tissue engineering and therapeutics.

Hongyou Fan 2019
Sandia National Laboratories and The University of New Mexico
For outstanding contributions in nanoparticle self-assembly of functional nanomaterials and for leadership within the materials community.

Xiangfeng Duan 2020
University of California, Los Angeles
For contributions to rational design and assembly of layered materials for electronic, photonic and energy devices.

Zhenan Bao 2021
Stanford University

For pioneering contributions and conceptual developments to organic electronics and skin-inspired electronics.

Molly Stevens 2022
Imperial College London

For innovative biosensing nanomaterials technologies for point-of-care disease diagnostics.

George Malliaras 2023
University of Cambridge

For outstanding contributions to the fundamentals and development of organic electronic materials and their application in biology and medicine.

Mark C. Hersam 2024
Northwestern University

For pioneering contributions to the synthesis, purification, functionalization, and application of low-dimensional nanoelectronic materials and mixed-dimensional van der Waals heterostructures

Mark C. Hersam
2024 Mid-Career Researcher Award Recipient

MRS Impact Award

The MRS Impact Award honors outstanding individuals who have displayed excellence in areas of science communication, education, advancing diversity, mentoring, or community engagement, which reflect the Society's pursuit to advance materials science and technology to improve the quality of life.

mrs.org/mrs-impact-award

Recipient

Lynnette D. Madsen 2017
National Science Foundation
In recognition of her effectiveness in exemplifying technical leadership, advancing diversity, fostering mentoring and communicating persuasively to influence both large and small institutions.

Michael Falk 2018
Johns Hopkins University
For broadened participation in STEM education in Baltimore elementary schools; for bringing attention to professional and educational climate issues faced by LGBTQ students and researchers; and for pioneered research-based methodologies for integrating computation into the Materials Science and Engineering curriculum.

Meyya Meyyappan 2019
NASA Ames Research Center
For his lifelong dedication toward creating significant and outstanding impact to understanding nanotechnology through global outreach initiatives and for unwavering mentorship.

Takiya J. Ahmed Foskey 2020
DuPont
For leadership, mentoring and substantive contributions toward creating and organizing educational opportunities to prepare the next generation, in particular underrepresented and economically disadvantaged youth, to strive for STEM education and careers and be role models in the future.

Amy J. Moll 2021
Boise State University
For sustained leadership and impact in materials outreach and education, including founding the department at Boise State University, fostering excellent materials science pedagogy, and engaging the public through museum exhibits and television documentaries.

Mark Miodownik
2024 MRS Impact Award Recipient

Kwadwo Osseo-Asare 2022
The Pennsylvania State University
For sustained contributions to building a global materials science and engineering community that spans continents from Africa to the Americas

Anne Lynn Gillian-Daniel 2023
University of Wisconsin-Madison
For creative leadership in materials education and outreach spanning all ages, in a wide range of venues, and across socioeconomic backgrounds; and for promoting diversity and inclusion.

Mark Miodownik 2024
University College London
For sustained promotion of materials science to a global audience, sparking interdisciplinary collaborations, policy development, and public engagement

The Kavli Foundation Early Career Lectureship in Materials Science

The Kavli Foundation is dedicated to advancing science for the benefit of humanity, promoting public understanding of scientific research and supporting scientists and their work.

THE KAVLI FOUNDATION

mrs.org/kavli-early-career

Recipients

Jennifer A. Dionne 2013
Stanford University

Julia R. Greer 2014
California Institute of Technology

Ali Khademhosseini 2015
Harvard-MIT Division of Health Sciences and Technology

Andrea Alù 2016
The University of Texas at Austin

Xiaobo Yin 2017
University of Colorado Boulder

Laura Na Liu 2018
University of Heidelberg

Silvia Vignolini 2019
University of Cambridge

Igor Aharonovich 2020
University of Technology Sydney

Susan Bernal Lopez 2021
University of Leeds

Aaswath Raman 2022
University of California, Los Angeles

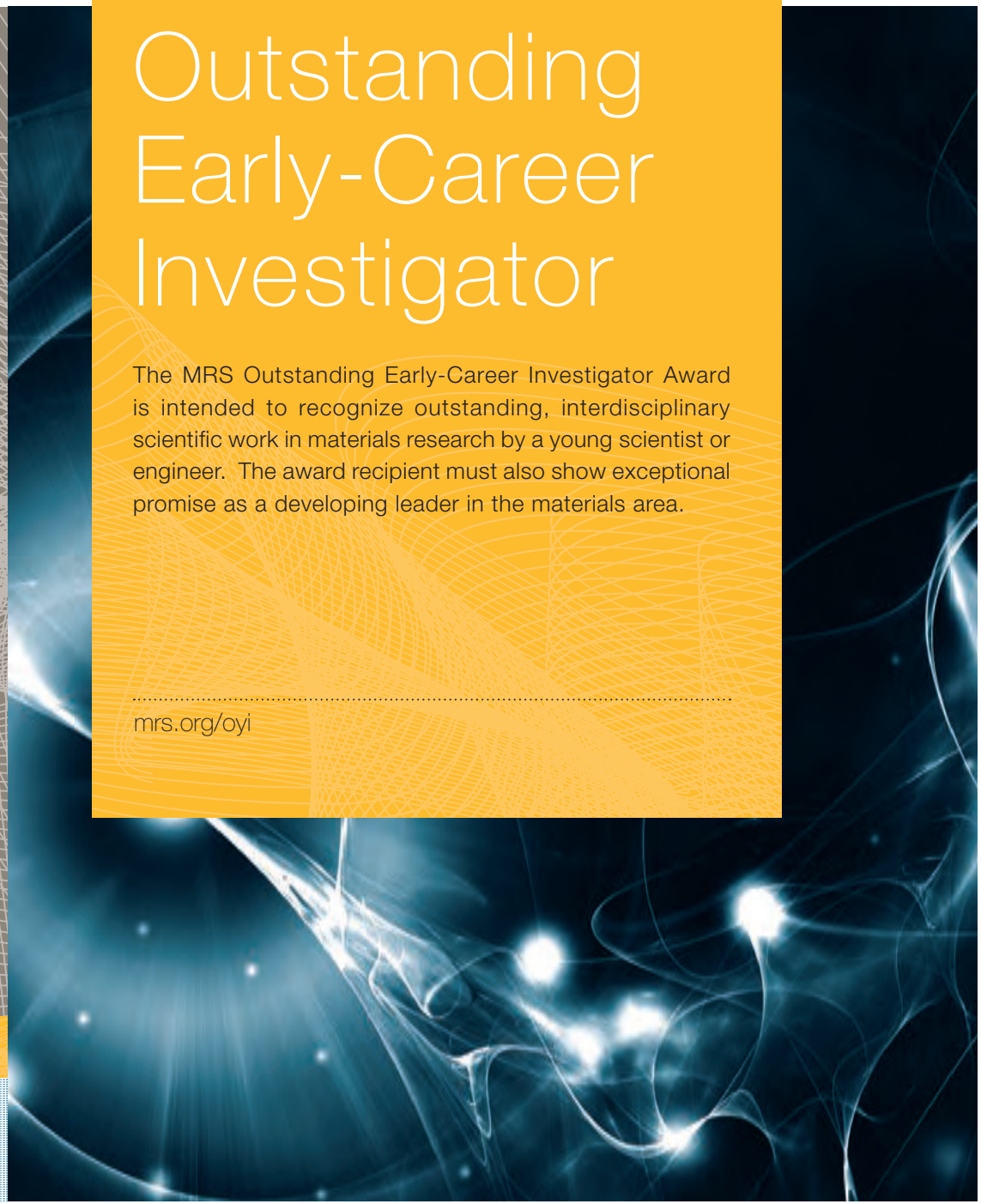
Michael Saliba 2023
University of Stuttgart

Michael Saliba
2023 The Kavli Foundation Early Career Lectureship in Materials Science Recipient

Outstanding Early-Career Investigator

The MRS Outstanding Early-Career Investigator Award is intended to recognize outstanding, interdisciplinary scientific work in materials research by a young scientist or engineer. The award recipient must also show exceptional promise as a developing leader in the materials area.

mrs.org/oyi



Recipients

Stuart S.P. Parkin 1991
IBM Almadin Research Center
Recognizing enterprise in new materials, high Tc superconductors, and magnetic multilayers displaying oscillatory exchange coupling.

David D. Awschalom 1992
University of California, Santa Barbara
Recognizing enterprise in the field of nanostructured materials.

Charles M. Lieber 1993
Harvard University
Pioneering contributions to the understanding of novel materials through synthesis and elegant determination of complex local structure and electronic properties.

David J. Eaglesham 1994
AT&T Bell Laboratories
Creativity, leadership and experimental ingenuity in discovering an understanding of fundamental interface, surface and defect phenomena in semiconductor crystal growth.

A. Paul Alivisatos 1995
University of California, Berkeley
Leadership in materials research, notably in the field of nanocrystals.

Antonios G. Mikos 1996
Rice University
For the synthesis and processing of new biomaterials for tissue engineering, supports for cells, tissue-growth conduits, targeted cell-adhesion substrates, and cellular-response stimulants.

Christopher N. Bowman 1997
University of Colorado
For seminal contributions to the field of highly crosslinked polymers, information storage materials and computational methods in polymerization engineering.

Anne M. Mayes 1998
Massachusetts Institute of Technology
For incisive theoretical and experimental investigations of macromolecules at and near surfaces and interfaces leading to tailorable surface properties, especially novel biocompatible substrates.

Chad A. Mirkin 1999
Northwestern University
Pioneering and leadership role in developing a new interdisciplinary field in which complex biological macromolecules are used to assemble inorganic nanoparticle building blocks into functional meso- and macroscopic structures.

Frances M. Ross 2000
IBM T.J. Watson Research Center
For innovative and powerful experimental studies, based upon development of novel *in situ* electron microscopy techniques, that have provided fundamental new understanding of nucleation, growth, oxidation and etching processes in a wide range of materials systems.

Kristi S. Anseth 2001
University of Colorado
For innovative work in polymeric biomaterials for drug delivery, bone and cartilage repair, and tissue engineering, and for outstanding leadership potential in this interdisciplinary field of materials research.

Timothy J. Deming 2003
University of California, Santa Barbara
For his discovery of synthetic methods to produce polypeptide homopolymers and block copolymers with exquisite control of block length, sequence and secondary structure and the interdisciplinary exploitation of these materials to yield unique hydrogels and inorganic materials.

Peidong Yang 2004
University of California, Berkeley
For innovative synthesis of a broad range of nanowire and nanowire heterostructure materials, and the discovery of optically-induced lasing in individual nanowire devices.

Harold Y. Hwang 2005
University of Tokyo
For innovative work on the materials physics of transition metal oxides and the atomicscale synthesis of complex oxide heterostructures.

Ju Li 2006
The Ohio State University
For innovative work on the atomistic and first-principles modeling of nanoindentation and ideal strength in revealing the genesis of materials deformation and fracture.

Michael D. McGehee 2007
Stanford University
For innovation and application of organic semiconductors in lasers, light-emitting diodes, transistors and solar cells.

Michael S. Strano 2008
Massachusetts Institute of Technology
For innovative work on single walled carbon nanotube chemical modifications, both fundamental and applied, and for pioneering a new class of near infrared sensor architectures based upon chemically induced optical modulation of carbon nanotubes.

Teri Odom 2009
Northwestern University
For the development and characterization of nanoparticles and nanostructured arrays designed to filter and propagate plasmonic excitations with unprecedented control and sensitivity.

Mark C. Hersam 2010
Northwestern University
For pioneering research on the physics, chemistry, and engineering of nanoelectronic materials and devices, including solution-phase techniques for sorting carbon nanotubes and graphene, and for organic functionalization and nanopatterning of semiconductor surfaces.

Dmitri V. Talapin 2011
University of Chicago
For methodological developments of synthesis and self-assembly of inorganic nanocrystals and for fundamental studies transforming colloidal nanostructures into electronic and optoelectronic materials.

Markus J. Buehler 2012
Massachusetts Institute of Technology
For highly innovative and creative work in computational modeling of biological, bio-inspired, and synthetic materials, revealing how weakness is turned into strength through hierarchical material design.

Alexandra Boltasseva 2013
Purdue University & Technical University of Denmark
For pioneering research to develop novel materials for advanced plasmonic, metamaterial and transformation optics devices with potential applications in future nanoscale photonic technologies.

Henry J. Snaith 2014
University of Oxford, United Kingdom
For innovation and development of solid state dye sensitized solar cells and for his groundbreaking work in perovskite hybrid solar cells.

Karena W. Chapman 2015
Argonne National Laboratory
For contributions to understanding the coupled structure and reactivity of energy-relevant systems and for developing the incisive experimental and analytical tools needed to interrogate these complex materials systems.

Ali Javey 2015
University of California, Berkeley
For innovative contributions in integrating nanomaterials into device applications.

Dino Di Carlo 2016
University of California, Los Angeles
For pioneering methods to manufacture, measure, and manipulate microstructured materials and applying these innovations to biomedical problems.

Timothy J. White 2016
Air Force Research Laboratory
For innovations in the preparation and applications of photo-responsive materials.

Jennifer A. Dionne 2017
Stanford University
For innovating new materials and methods to visualize and control nanometer-scale optical, electronic, and chemical processes *in situ*.

James M. Rondinelli 2017
Northwestern University
For pioneering advances in the theoretical understanding of atomic structure-electronic property relations of complex inorganic oxides in bulk, thin film, and superlattice geometries.

William Chueh 2018
Stanford University
For groundbreaking research on ionic and electronic charge transport and interface chemistry relevant to electrochemical devices.

Vanessa Wood 2018
ETH Zürich
For innovative work in visualizing, quantifying and explaining transport processes in material and devices.

Sheng Xu 2019
University of California, San Diego
For materials and device designs in biointegrated electronics and stretchable energy systems.

Jonathan Rivnay 2020
Northwestern University
For innovative research on an organic semiconductor microstructure and charge transport for electronics and bioelectronics.

Huolin Xin 2021
University of California, Irvine
For development of innovative transmission electron microscopy imaging methodologies for advancing energy storage and conversion materials.

Prineha Narang 2022
Harvard University
For critical advances in the understanding of materials physics, optical sciences, and topology for the prediction and design of quantum materials.

Luisa Whittaker-Brooks 2023
University of Utah
For cutting-edge work on the control of structural phase transitions, spins, and thermal-dependent electronic interactions in organic-inorganic quantum well heterostructures.

Qian Chen 2024
University of Illinois at Urbana-Champaign
For transformative advances in understanding mechanisms of nanoparticle superlattice formation and electrochemical reactions through the innovative use of liquid phase electron microscopy and machine learning-based data analysis

Qian Chen
2024 Outstanding Early-Career Investigator Recipient

MRS Nelson "Buck" Robinson Science & Technology Award for Renewable Energy

The newest MRS award, the MRS Nelson "Buck" Robinson Science and Technology Award for Renewable Energy, recogonizes an individual for the development of novel sustainable solutions for the realization of renewable sources of energy.

MRS acknowledges the generosity of Sophie Robinson for endowing this award in memory of her father, Nelson "Buck" Robinson.

mrs.org/nelson-buck-robinson-science-and-technology-award

Recipients

Aaswath Raman 2018
University of California, Los Angeles

Kelsey Hatzell 2019
Vanderbilt University

Aditya Sadhanala 2020
Centre for Nano Science and Engineering at the Indian Institute of Science

Stafford Sheehan 2021
Air Company

Kelsey A. Stoerzinger 2022
Oregon State University

Qi Dong 2023
Purdue University

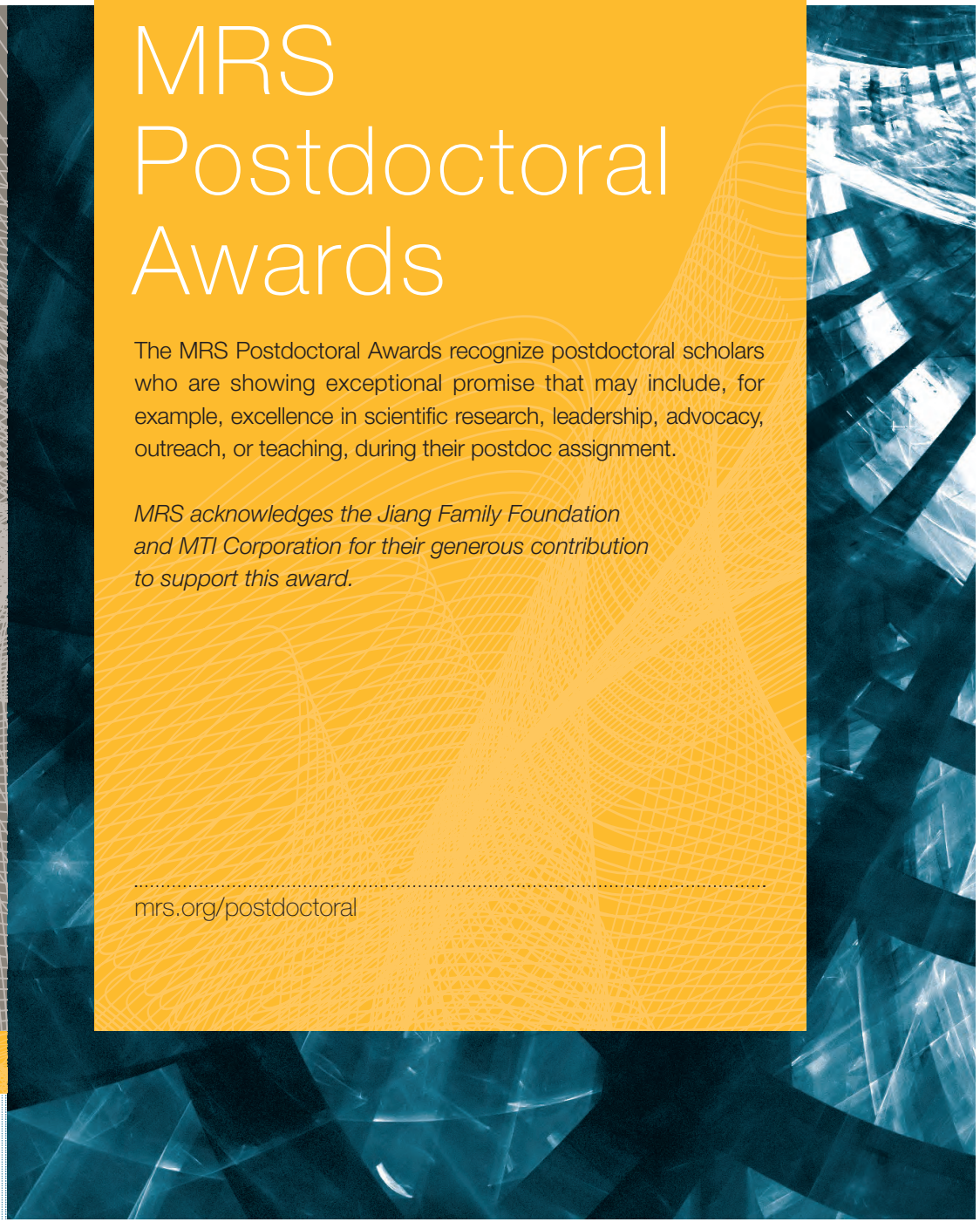
Qi Dong
2023 MRS Nelson "Buck" Robinson Science & Technology Award for Renewable Energy Recipient

MRS Postdoctoral Awards

The MRS Postdoctoral Awards recognize postdoctoral scholars who are showing exceptional promise that may include, for example, excellence in scientific research, leadership, advocacy, outreach, or teaching, during their postdoc assignment.

MRS acknowledges the Jiang Family Foundation and MTI Corporation for their generous contribution to support this award.

mrs.org/postdoctoral



Recipients

Jonathan Rivnay Fall 2014
École Nationale Supérieure des Mines de Saint-Étienne
For the development of state-of-the-art organic electronic devices for interfacing with biology, through the elucidation of structure versus electrical properties relationships.

Chao Wang Fall 2014
Stanford University
For innovative research developing self-healing electronic materials and utilizing the self-healing concept to achieve high-performance, long lifetime electronic and energy storage devices.

Dustin W. Janes Spring 2015
The University of Texas at Austin
For outstanding theoretical and experimental contributions to understanding transport in polymer films and membranes and novel nano- and micro-patterning methodologies, and his dedicated mentorship of graduate and undergraduate student researchers.

Yuan Yang Spring 2015
Massachusetts Institute of Technology
For innovative research on electrochemical materials and systems to convert low-grade waste heat into electricity and exploration of new applications of batteries.

Jiamian Hu Fall 2015
The Pennsylvania State University
For pioneering contributions to the theoretical understanding of strain-mediated electric-field-induced magnetization switching in magnetoelectric nanostructures and for designing prototypes of magnetoelectric devices.

Beata Layla Mehdi Fall 2015
Pacific Northwest National Laboratory
For advances in *in situ* transmission electron microscopy instrumentation for electrochemical studies and quantitative understanding of nanoscale processes taking place in energy storage systems.

Babak Anasori Spring 2016
Drexel University
For innovative research on 2D materials, creative and artistic ways of presenting science, dedication to and love of teaching, and student mentoring.

Shinbuhm Lee Spring 2016
Oak Ridge National Laboratory
For the innovative development of multifunctional ionic devices via vertically aligned heterostructures, and outstanding contributions for theoretical and experimental understanding of them.

Qi Li Fall 2016
The Pennsylvania State University
For advancing the field of polymer nanocomposites for electrical energy storage and conversion.

Yongming Sun Fall 2016
Stanford University
For advancing the development of high-capacity battery materials.

Bert Conings Spring 2017
Hasselt University
For innovation in hybrid perovskite photovoltaics, addressing fabrication, lifetime, and toxicity issues.

Yunlong Zi Spring 2017
Georgia Institute of Technology
For pioneering research to improve the efficiency and wider applicability of mechanical energy harvesting systems.

Mit Naik
Spring 2024 MRS Postdoctoral Award Recipient

Michael Saliba Fall 2017
École Polytechnique Fédérale de Lausanne (EPFL)
For developing a family of stable, reproducible and highly efficient multi-cation perovskites for optoelectronics.

Jieun Yang Fall 2017
Rutgers, The State University of New Jersey
For creative research in chemically exfoliated 2D materials and tireless dedication to mentoring women in science and engineering.

Arnab Banerjee Spring 2018
Oak Ridge National Laboratory
For groundbreaking experiments providing evidence of topological excitations in a two-dimensional magnet, moving toward lossless qubits in quantum computing.

Jie Xu Spring 2018
Stanford University
For applying polymer physics concepts to realize integrated, intrinsically stretchable transistors for skin electronics.

James Bullock Fall 2018
University California, Berkeley
For the development of dopant-free, selective contacts for high-efficiency Si photovoltaics.

Minah Lee Fall 2018
Stanford University
For the development of sustainable organic materials to achieve high-performance energy storage devices and understanding their redox mechanisms.

Kaifu Bian Spring 2019
Sandia National Laboratories
For advancing the understanding of nanoparticle assemblies under stress.

Nicholas Jackson Spring 2019
Argonne National Laboratory
For foundational theoretical and computational contributions to the study of structure and transport in charged polymers and organic semiconductors.

Rachel E. Carter Fall 2019
U.S. Naval Research Laboratory
For contributions to the design of safe battery materials and systems, leadership of students and advocacy for women scientists and engineers.

Yasutaka Nagaoka Fall 2019
Brown University
For contributions to the assembly of nanocrystal superstructures.

Tian Li Spring 2020
University of Maryland
For the innovative and pioneering research in wood nanotechnology and nanocellulose toward energy, water and sustainability.

Xianwen Mao Spring 2020
Cornell University
For developing fabrication strategies and *operando* imaging techniques for nanoscale electrochemical materials systems important for environmental and energy applications.

Edoardo Baldini Fall 2020
Massachusetts Institute of Technology
For implementing novel laser techniques to identify and control collective excitations in quantum materials leading to major advances in the field of excitonics and phononics.

Chengwei Wang Fall 2020
University of Maryland
For developing a novel high temperature sintering technique for rapid screening and discovery of high performance ceramics for energy and other applications.

Yang Liu Spring 2021
The Pennsylvania State University
For the pioneering research in ferroelectric polymers to achieve high piezoelectric responses, and outstanding contributions to understanding of relaxor ferroelectricity in polymers.

Yu Jun Tan Spring 2021
National University of Singapore
For developing stretchable, self-healing materials for smart electronics.

Zhijie Chen Fall 2021
Northwestern University
For his outstanding contributions to the fields of porous materials, nanochemistry, and supramolecular assembly.

Dasha Nelidova Fall 2021
Institute of Molecular and Clinical Opthalmology Basel
For creating tunable nanogenetic near-infrared light sensors to restore vision.

Mattia Biesuz Spring 2022
University of Trento
For fundamental contribution to the knowledge and development of flash sintering phenomena and processes in ceramics.

Aditya Sood Spring 2022
Stanford University
For pioneering correlated dynamic structure and transport studies, and the discovery of a new electrically-triggered metastable phase in an operating device.

Liang Feng Fall 2022
Northwestern University
For discovery of mechanisorption, a fundamentally new mode of adsorption.

Kenji Yasuda Fall 2022
Massachusetts Institute of Technology
For the discovery of atomically-thin interfacial ferroelectricity in van der Waals heterostructures

Yeonsik Choi Spring 2023
Northwestern University
For the development of transient biomedical implants designed to provide therapeutic function over a clinically relevant timeframe, reducing costs and risks associated with surgical extraction.

Qi Qian Spring 2023
University of California,Los Angeles
For pioneering research in developing and understanding van der Waals heterostructures and superlattices.

Mit Naik Spring 2024
University of California, Berkeley
For pioneering development of computational methods to study excited states in Moiré superlattices and discovering a unique charge-transfer Moiré exciton

MRS Bulletin Postdoctoral Publication Prize

MRS is pleased to present the inaugural *MRS Bulletin* Postdoctoral Publication Prize!

The *MRS Bulletin* Postdoctoral Publication Prize recognizes postdoctoral researchers for their intellectual merit and the impact of their research and scholarship. Candidates should have an interest in scientific publications and/or science writing and communications, and show promise for future scientific contributions in the broad materials field.

MRS Bulletin *acknowledges the Jiang Family Foundation and MTI Corporation for their generous contribution to support this award.*

mrs.org/bulletin-prize

Recipient

Andy Tay Kah Ping 2017
Stanford University
For his combination of outstanding academic credentials, scientific publications and science communication efforts.

Hortense Le Ferrand 2018
of Nanyang Technological University
For her excellent academic credentials, high-quality scientific publications, science writing and science communications efforts, and potential for future scientific leadership in the materials field.

Ognjen Ilic 2019
University of Minnesota
For his outstanding academic achievements, high quality of scientific publications, demonstrated passion for science communication, science outreach efforts to the general public, and clear potential to become a leader in the field of materials research.

Ritu Raman 2020
Massachusetts Institute of Technology (MIT)
For her diverse research experience, outstanding academic achievements, high quality of scientific publications, extensive outreach efforts, and dedication to mentorship and professional service.

Tedrick Thomas Salim Lew 2021
Institute of Materials Research and Engineering in Singapore
For his excellent academic achievements, passion for his chosen area of research, interest in communicating his research and science to nonscientists, and significant leadership potential in the field of multidisciplinary materials science.

Liang Feng 2022
Northwestern University
For his excellent academic achievements, passion for his chosen area of research, interest in communicating his research and science to nonscientists, and significant leadership potential in the field of multidisciplinary materials science

Natalie M. Larson
2023 *MRS Bulletin* Postdoctoral Publication Prize

Natalie M. Larson 2023
Harvard University
For her academic achievements, passion for her chosen areas of research, interest in communicating her research and science to other scientists and nonscientists, and significant leadership potential in the field of multidisciplinary materials science & engineering.

MRS Woody White Service Award

MRS is pleased to present the inaugural Woody White Service Award!

The MRS Woody White Service Award honors outstanding individuals who have embodied the MRS Mission, Vision and Values for an egalitarian interdisciplinary community advancing materials science and technology to improve the quality of life. It may be given in recognition of long-term, impactful service to the Society, as well as for special projects/programs that significantly impacted the Society.

mrs.org/woody-white

Recipient

Monica Jung de Andrade 2017
The University of Texas at Dallas

For her eager willingness to assume multiple leadership roles, her work in engaging international students and postdocs, and her numerous activities with The University of Texas at Dallas University Chapter. These contributions have impacted and engaged multiple communities within the Society including students, international members, under-represented members, industrial members and the MRS Membership at large.

Ashley White 2018
Lawrence Berkeley National Laboratory

For her work in cultivating sustainable development as a core MRS activity embodied by the Focus on Sustainability Subcommittee, and tireless advocacy through the Government Affairs Committee and the MRS Congressional Fellowship. White has written numerous articles for MRS Bulletin and Meeting Scene, and she continues to promote MRS values, namely interdisciplinarity and quality of life, through her extensive community efforts.

Terry Aselage 2019
Sandia National Laboratories (retired)

For his focused leadership and vision at the helm of the Meetings Committee, moving the Society toward a more agile, responsive and inclusive community. Aselage also worked to create a stronger partnership between Meetings and Publications, driving the Society forward with more consistent, yet fresh approaches.

Eric Stach 2020
The Pennsylvania State University

For exemplary service to the MRS in our quest to improve the impact of our programs and to hold us accountable for professionalism aligned with our values.

William J. Weber
2023 MRS Woody White Service Award Recipient

Sanjay Mathur 2021
University of Cologne

For his passion and creativity in intensifying student engagement by creating micro-volunteering opportunities for younger scientists and serving a global scientific community through extraordinary contributions for the advancement of materials research and innovation.

Shefford P. Baker 2022
Cornell University

For his long-term, impactful service to the Society and unwavering dedication to the betterment of the field and MRS.

William J. Weber 2023
The University of Tennessee, Knoxville

MRS Communications Lecture

The MRS Communications Lecture recognizes excellence in the field of materials research through work published in MRS Communications. It is intended to honor the authors of an outstanding paper published in the journal during the award year.

mrs.org/mrc-lecture

Recipient

David C. Martin 2016
University of Delaware
"Molecular design, synthesis, and characterization of conjugated polymers for interfacing electronic biomedical devices with living tissue"

Published April 15, 2015
MRS Communications Volume 5, Issue 2

Sharon C. Glotzer 2017
University of Michigan
"Rational design of nanomaterials from assembly and reconfigurability of polymer-tethered nanoparticles" with Ryan L. Marson and Trung Dac Nguyen

Published July 23, 2015
MRS Communications Volume 5, Issue 3

Clara Santato 2018
Polytechnique Montréal
"Natural melanin pigments and their interfaces with metal ions and oxides: emerging concepts and technologies" with Eduardo Di Mauro, Ri Xu, and Guido Soliveri

Published May 11, 2017
MRS Communications Volume 7, Issue 2

Timothy J. Bunning 2019
Air Force Research Laboratory
"Dynamic Optical Properties of Gold Nanoparticles/Cholesteric Liquid-Crystal Arrays"

Published April 26, 2018
MRS Communications Volume 8, Issue 2

Grace X. Gu 2020
University of California, Berkeley
"Artificial Intelligence for Materials Design and Additive Manufacturing"

Published March 27, 2019
MRS Communications Volume 9, Issue 2

Sossina M. Haile 2021
University of California, Berkeley
"Insensitivity of the extent of surface reduction of ceria on termination: Comparison of (001), (110), and (111) faces" with Weizi Yuan

Published September 30, 2020
MRS Communications Volume 10, Issue 4

Yury Gogotsi
2024 *MRS Communications* Lecture

Andreas Lendlein 2022
University of Potsdam
"Bio-inspired and computer-supported design of modulated shape changes in polymer materials"

Published July 20, 2021
MRS Communications Volume 11, Issue 4

Blair Brettmann 2023
Georgia Institute of Technology
"Material extrusion additive manufacturing of dense pastes consisting of macroscopic particles"

Published August 3, 2022
MRS Communications Volume 12, Issue 5

Yury Gogotsi 2024
Drexel University
"Improving environmental stability of MXene films by intercalation of N-methylformamide"

Published March 16, 2023
MRS Communications Volume 13, Issue 5

Graduate Student Awards

MRS Gold and Silver Awards are intended to honor and encourage graduate students whose academic achievements and current materials research display a high level of excellence and distinction. MRS seeks to recognize students of exceptional ability showing promise for significant future achievement in materials research.

Arthur Nowick Graduate Student Award

This award honors the late Dr. Arthur Nowick and his lifelong commitment to teaching and mentoring students in materials science. The award will be presented to a GSA finalist who shows particular promise as a future teacher and mentor at each Meeting.

MRS acknowledges the generous contribution for the Nowick Award to the MRS Foundation from Joan Nowick in memory of her husband Dr. Arthur Nowick.

mrs.org/gsa

Recipients

● *Gold Award Recipient* ● *Silver Award Recipient*

Fall 2023

- ● **Nan Li**
  University of Chicago
- ● **Yukun Liu**
  Northwestern University
- ● **Katelyn Randazzo**
  Princeton University
- ● **Jiaobing Tu**
  California Institute of Technology
- ● **Fabia Farlin Athena**
  Georgia Institute of Technology
- ● **Suvo Banik**
  University of Illinois at Chicago
- ● **Rishi Gurnani**
  Georgia Institute of Technology
- ● **Nabojit Kar**
  Indiana University Bloomington
- ● **Jingxian Li**
  University of Michigan, Ann Arbor
- ● **Liang Li**
  Columbia University
- ● **Jihong Min**
  California Institute of Technology
- ● **Jinhong Min**
  University of Michigan
- ● **Atharva Sahasrabudhe**
  Massachusetts Institute of Technology
- ● **Aamir Shah**
  University of California, Los Angeles
- ● **Di Wang**
  University of Chicago

Spring 2024

- ● **Joonsoo Kim**
  University of Michigan
- ● **Zainab Patel**
  University of Washington
- ● **Brian Wyatt**
  Purdue University
- ● **Xintong Yuan**
  University of California, Los Angeles
- ● **Wenbo Zhang**
  Stanford University
- ● **Jie Zhao**
  University of Illinois Urbana-Champaign
- ● **Maximilian Buchmüller**
  University of Wuppertal
- ● **Mario Ulises Gonzalez Rivas**
  University of British Columbia
- ● **Sichao Li**
  National University of Singapore
- ● **Peifen Lyu**
  University of California, Davis
- ● **Shahriar Muhammad Nahid**
  University of Illinois Urbana Champaign
- ● **Nirmaan Shanker**
  University of California, Berkeley
- ● **Xingyu Shen**
  University of Chicago
- ● **Kateryna Shevchuk**
  Drexel University
- ● **Jiuyun Shi**
  The University of Chicago
- ● **Seungju Yu**
  Seoul National University

Nowick Award Recipient

Fall 2023

Nabojit Kar
Indiana University Bloomington

Nowick Award Recipient

Spring 2024

Brian Wyatt
Purdue University