Research Corporation for Science Advancement, America’s first foundation dedicated wholly to science, has named 25 early-career scholars in chemistry, physics, and astronomy as its 2020 Cottrell Scholars. Each awardee receives $100,000. Recipients are recognized for high-quality research, innovative educational initiatives, and academic leadership.

Three accomplished Cottrell Scholars (far right) further along in their careers have also received recognition for their achievements. The IMPACT Award is given for national impact in science through leadership and service. STAR Awards reward excellence in science teaching and research.

For additional information visit rescorp.org or call 520.571.1111.

Cottrell Scholar Awardees

1. Carlos R. Baiz, chemistry, University of Texas at Austin / Molecular Dynamics at Heterogeneous Oil-Water Interfaces and a New Approach to Addressing the Mental Health Needs of Graduate Students
2. Kateri H. DuBay, chemistry, University of Virginia / Teaching Entropy and Modeling the Sequence-Determinants of Surface-Initiated Copolymerizations
4. Pengfei Huo, chemistry, University of Rochester / Enabling New Chemical Reactivities through Polariton Photochemistry
5. Catherine Kealhofer, physics, Williams College / Nonequilibrium Phonon Dynamics in Two-dimensional Materials
7. Kristin S. Koutmou, chemistry, University of Michigan / Chemical Modifications to mRNA Nucleosides: A New Frontier in Gene Regulation
8. Kah Chun Lau, physics, California State University, Northridge / Data-Driven Solubility Model Development of Concentrated Non-aqueous Electrolytes
9. Frank A. Leibfarth, chemistry, University of North Carolina at Chapel Hill / Organocatalytic Kinetic Resolution Polymerization of Lactones
10. Huey-Wen Lin, physics, Michigan State University / Unveiling the Three-Dimensional Structure of Nucleons
11. Song Lin, chemistry, Cornell University / New Catalytic Methods for Enantioselective Electrosynthesis and Introducing Electrosynthesis to College and Graduate Curricula
12. Britt F. Lundgren, astronomy, University of North Carolina Asheville / Shedding Light on Star Formation Driven Galaxy Outflows across Cosmic Time
13. Elisabetta Matsumoto, physics, Georgia Institute of Technology / Knotty Knits: Using Topological Constraints to Program Geometry and Elastic Response in Knitted Textiles with Lattice Defects
14. Sharon R. Neufeldt, chemistry, Montana State University / Combined Experimental and Computational Approach to Improving Nickel and Palladium-Catalyzed Cross-Couplings
16. Peter P. Orth, physics, Iowa State University / Probing Fractionalization and Entanglement in Quantum Spin Liquids: Theory of Two-dimensional Spectroscopy
17. Cedric Owens, chemistry, Chapman University / Constructing a Better Nitrogenase by Uncovering Protein-protein Interactions That Protect the Enzyme and Expand its Chemistry
18. Dennis V. Perpeletitsa, physics, University of Colorado Boulder / Next-Generation Experimental Probes of Hot and Dense Nuclear Matter
19. Leslie A. Rogers, astronomy, University of Chicago / Searching for Water in Distant Worlds: Connecting the Atmospheric and Bulk Compositions of Sub-Neptune-Size Planets
20. Brenda M. Rubenstein, chemistry, Brown University / Advancing Chemistry through Data Science: Catalyst Design via Data-Enabled Quantum Chemistry and Integrating Data Science into the Chemistry Curriculum
21. Lorenzo Sironi, astronomy, Columbia University / To B or Not to B: The Birth and Death of Magnetic Fields in the Universe
22. David A. Strubbe, physics, University of California, Merced / Light-induced Structural Dynamics in Materials: New Theoretical Insight into Ultrafast Phenomena
23. Claire P. Till, chemistry, Humboldt State University / Scandium and Iron: Parallels in Chemical Reactivity, and Reducing the Opportunity Gap in the HSU Chemistry Department and Beyond
24. Jesus M. Velazquez, chemistry, University of California, Davis / Achieving Energy Conversion Functionality through Compositional Modification: The Role of Metal Promotion in Chalcogenide Frameworks

IMPACT and STAR Awardees
1. IMPACT awardee Rigoberto Hernandez, chemistry, Johns Hopkins University / Cottrell Scholar 1999
2. STAR awardee Helen Blackwell, chemistry, University of Wisconsin, Madison / Cottrell Scholar 2005
3. STAR awardee Julio de Paula, chemistry, Lewis and Clark College / Cottrell Scholar 1994
CALL FOR NOMINATIONS

AAAI Squirrel AI Award for Artificial Intelligence for the Benefit of Humanity

$1,000,000 Prize

The AAAI Squirrel AI Award for Artificial Intelligence for the Benefit of Humanity recognizes positive impacts of artificial intelligence to protect, enhance, and improve human life in meaningful ways with long-lived effects. The award will be given for the first time in 2021.

The award will be given annually at the conference for the Association for the Advancement of Artificial Intelligence (AAAI) in February, and is accompanied by a prize of $1,000,000 plus travel expenses to the conference.

Candidates may be individuals, groups, or organizations that are directly connected with the main contribution stated in the nomination. Qualifications and technical knowledge in artificial intelligence are not requirements for nominations. The emphasis is on the significance and impact of the work.

The award is administered by AAAI, with support from the European Artificial Intelligence Association (EurAI) and the Chinese Association for Artificial Intelligence (CAAI). Financial support for the award is provided by Squirrel AI.

DEADLINE for 2021 Award Nominations: May 24, 2020

https://www.aaai.org/Awards/Squirrel-AI/
“YOU SHOULD AIM TO CONVEY WHAT IS INNOVATIVE ABOUT YOUR RESEARCH”

Longzhi Tan, Stanford University, USA
Grand Prize Winner 2019

GENOMICS, PROTEOMICS, AND SYSTEMS BIOLOGY APPROACHES
Honoring research in genomics, proteomics, integrative omics and systems biology approaches, including computational, to facilitate comprehensive understanding of living cells, organisms and species.

The Science & SciLifeLab Prize for Young Scientists is an annual prize awarded to early-career scientists. The prize is presented in four categories: Cell and Molecular Biology; Genomics, Proteomics, and Systems Biology Approaches; Ecology and Environment; and Molecular Medicine.

As a winner, you will have your essay published by Science, win up to USD 30,000 and be invited to Sweden where you will receive your award, present your research and meet with leading scientists in your field.

Get ready for a life-changing moment in your scientific career - apply now, deadline is July 15!

SCIENCEPRIZE.SCILIFELAB.SE
Light Sheet Fluorescence Microscope

The high stability of ZEISS Lightsheet 7 enables researchers to observe living samples with subcellular resolution over extended periods of time—even days—with less phototoxicity than ever before. Specimens up to 2 cm in size with a refractive index between 1.33 and 1.58 and in almost any clearing solution can be accommodated, such as organoids, spheres, organs, and brains. ZEISS Lightsheet 7 features the high-quantum efficiency of pco.edge sCMOS detectors to enable observations of the fastest processes at the lowest-illumination light levels. The sample holder makes mounting larger specimens easy. Smart software tools assist in defining imaging parameters, such as light sheet and sample positions; correct zoom settings, tiles, and positions; as well as data processing parameters. All these new features work with the reliable ZEISS combination of cylindrical lens optics and laser scanning to generate the illumination light sheet. The patented Pivot Scan technology delivers artifact-free optical sections for the best possible image quality.

ZEISS
For info: +49-(0)-7364-20-0
www.zeiss.com

Biological and Aqueous Sample Extraction

Porvair Sciences offers Microlute SLE 96-well plates and cartridges to enable you to quickly and easily extract a wide range of acidic, basic, and neutral analytes from samples with greater reproducibility. Designed to provide a superior method of liquid extraction, Microlute SLE products use selectively sourced diatomaceous earth as the solid support to maximize absorption of the aqueous solvent, enabling greater and simpler separation and elution of organic analytes from biological samples such as plasma, serum, and aqueous solutions. With no inversions, shaking, or tedious pipetting required, Microlute SLE overcomes sample handling issues commonly associated with traditional liquid–liquid extraction (LLE). It is also lab friendly and uses significantly less solvent and glassware than LLE protocols.

Porvair Sciences
For info: +44-(0)-1978-666222
www.microplates.com/microlute-sle

3-Position Clamp

Produced for chemists undertaking parallel syntheses, the Asynt DrySyn 3-Position Clamp allows secure clamping of up to three round bottom flasks or condensers to a standard boss head. There are three sizes of the 3-Position Clamp available—to suit the DrySyn MULTI-E, MULTI-M, and MULTI-S heating block systems—and these devices are also perfect to use with the Asynt CondenSyn range of waterless air condensers. Each clamp features a novel, fast grip/release mechanism that minimizes setup time, and its unique design enables easy, simultaneous removal of all three reactions from the heat source should the need arise. Durably constructed from aluminum and stainless steel, with a replaceable rubber covering, the compact, affordably priced 3-Position Clamp is available in sizes from 5 mL to 500 mL, to securely hold condensers and round bottom flasks.

Asynt
For info: +44-(0)-1638-781709
www.asynt.com/product/drysyn-multi-clamp

Coronavirus–COVID-19 Research Products

AMS Biotechnology announces the availability of recombinant proteins and antibodies for detection of coronavirus disease 2019 (COVID-19) and related RNA viruses. Coronavirus are a group of enveloped, positive-stranded RNA viruses that contain four structural proteins: spike (S) glycoprotein, envelope (E) protein, membrane (M) protein, and nucleocapsid (N) protein. The spike glycoprotein includes two regions, S1 and S2, where S1 is for host-cell receptor binding via angiotensin-converting enzyme 2 (ACE2), and S2 is for membrane fusion. Spike glycoprotein is a key target for vaccines, therapeutic antibodies, and diagnostics. To facilitate research in these areas, we supply high-quality COVID-19 full-length S protein, S1 protein, and human ACE2 protein based on the HEK293 human cell expression platform. The binding activity of these products has been verified by surface plasmon resonance and biolayer interferometry technologies. Also available are antibodies, including antibody pairs against coronavirus for ELISA; a PCR detection kit for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), ACE2 expression vectors, and short hairpin RNA vectors; and CRISPR kits.

AMS Biotechnology
For info: 617-945-5033

Semiautomatic Tube Rack Sealing Device

Ziath announces ImpressiOn—a versatile, semiautomatic device designed to take the strain out of applying friction sealing mats or septum sealing caps to Society for Biomolecular Screening (SBS)–commercially available septum cap mats and most 2D-coded and 3D-implanted, such as organoids, spheroids, organs, and brains. ZEISS 1.324


Coronavirus–COVID-19 Research Products

AMS Biotechnology announces the availability of recombinant proteins and antibodies for detection of coronavirus disease 2019 (COVID-19) and related RNA viruses. Coronavirus are a group of enveloped, positive-stranded RNA viruses that contain four structural proteins: spike (S) glycoprotein, envelope (E) protein, membrane (M) protein, and nucleocapsid (N) protein. The spike glycoprotein includes two regions, S1 and S2, where S1 is for host-cell receptor binding via angiotensin-converting enzyme 2 (ACE2), and S2 is for membrane fusion. Spike glycoprotein is a key target for vaccines, therapeutic antibodies, and diagnostics. To facilitate research in these areas, we supply high-quality COVID-19 full-length S protein, S1 protein, and human ACE2 protein based on the HEK293 human cell expression platform. The binding activity of these products has been verified by surface plasmon resonance and biolayer interferometry technologies. Also available are antibodies, including antibody pairs against coronavirus for ELISA; a PCR detection kit for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), ACE2 expression vectors, and short hairpin RNA vectors; and CRISPR kits.

AMS Biotechnology
For info: 617-945-5033

Biological and Aqueous Sample Extraction

Porvair Sciences offers Microlute SLE 96-well plates and cartridges to enable you to quickly and easily extract a wide range of acidic, basic, and neutral analytes from samples with greater reproducibility. Designed to provide a superior method of liquid extraction, Microlute SLE products use selectively sourced diatomaceous earth as the solid support to maximize absorption of the aqueous solvent, enabling greater and simpler separation and elution of organic analytes from biological samples such as plasma, serum, and aqueous solutions. With no inversions, shaking, or tedious pipetting required, Microlute SLE overcomes sample handling issues commonly associated with traditional liquid–liquid extraction (LLE). It is also lab friendly and uses significantly less solvent and glassware than LLE protocols.

Porvair Sciences
For info: +44-(0)-1978-666222
www.microplates.com/microlute-sle

3-Position Clamp

Produced for chemists undertaking parallel syntheses, the Asynt DrySyn 3-Position Clamp allows secure clamping of up to three round bottom flasks or condensers to a standard boss head. There are three sizes of the 3-Position Clamp available—to suit the DrySyn MULTI-E, MULTI-M, and MULTI-S heating block systems—and these devices are also perfect to use with the Asynt CondenSyn range of waterless air condensers. Each clamp features a novel, fast grip/release mechanism that minimizes setup time, and its unique design enables easy, simultaneous removal of all three reactions from the heat source should the need arise. Durably constructed from aluminum and stainless steel, with a replaceable rubber covering, the compact, affordably priced 3-Position Clamp is available in sizes from 5 mL to 500 mL, to securely hold condensers and round bottom flasks.

Asynt
For info: +44-(0)-1638-781709
www.asynt.com/product/drysyn-multi-clamp

Coronavirus–COVID-19 Research Products

AMS Biotechnology announces the availability of recombinant proteins and antibodies for detection of coronavirus disease 2019 (COVID-19) and related RNA viruses. Coronavirus are a group of enveloped, positive-stranded RNA viruses that contain four structural proteins: spike (S) glycoprotein, envelope (E) protein, membrane (M) protein, and nucleocapsid (N) protein. The spike glycoprotein includes two regions, S1 and S2, where S1 is for host-cell receptor binding via angiotensin-converting enzyme 2 (ACE2), and S2 is for membrane fusion. Spike glycoprotein is a key target for vaccines, therapeutic antibodies, and diagnostics. To facilitate research in these areas, we supply high-quality COVID-19 full-length S protein, S1 protein, and human ACE2 protein based on the HEK293 human cell expression platform. The binding activity of these products has been verified by surface plasmon resonance and biolayer interferometry technologies. Also available are antibodies, including antibody pairs against coronavirus for ELISA; a PCR detection kit for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), ACE2 expression vectors, and short hairpin RNA vectors; and CRISPR kits.

AMS Biotechnology
For info: 617-945-5033

Biological and Aqueous Sample Extraction

Porvair Sciences offers Microlute SLE 96-well plates and cartridges to enable you to quickly and easily extract a wide range of acidic, basic, and neutral analytes from samples with greater reproducibility. Designed to provide a superior method of liquid extraction, Microlute SLE products use selectively sourced diatomaceous earth as the solid support to maximize absorption of the aqueous solvent, enabling greater and simpler separation and elution of organic analytes from biological samples such as plasma, serum, and aqueous solutions. With no inversions, shaking, or tedious pipetting required, Microlute SLE overcomes sample handling issues commonly associated with traditional liquid–liquid extraction (LLE). It is also lab friendly and uses significantly less solvent and glassware than LLE protocols.

Porvair Sciences
For info: +44-(0)-1978-666222
www.microplates.com/microlute-sle

3-Position Clamp

Produced for chemists undertaking parallel syntheses, the Asynt DrySyn 3-Position Clamp allows secure clamping of up to three round bottom flasks or condensers to a standard boss head. There are three sizes of the 3-Position Clamp available—to suit the DrySyn MULTI-E, MULTI-M, and MULTI-S heating block systems—and these devices are also perfect to use with the Asynt CondenSyn range of waterless air condensers. Each clamp features a novel, fast grip/release mechanism that minimizes setup time, and its unique design enables easy, simultaneous removal of all three reactions from the heat source should the need arise. Durably constructed from aluminum and stainless steel, with a replaceable rubber covering, the compact, affordably priced 3-Position Clamp is available in sizes from 5 mL to 500 mL, to securely hold condensers and round bottom flasks.

Asynt
For info: +44-(0)-1638-781709
www.asynt.com/product/drysyn-multi-clamp

Compound Libraries

The Tocriscreen range of compound libraries are collections of compounds for use in screening assays for receptor deorphaning, target validation, drug reprofiling, tool-compound identification, and assay development. Comprising biologically active compounds selected from the Tocris catalog, these libraries provide wide coverage of cellular targets, including G protein–coupled receptors, ion channels, kinases, enzymes, nuclear receptors, and transporters. Tocriscreen 2.0 Max, Mini, and Micro Compound Libraries include 1,280 compounds covering multiple pharmacological targets and research areas. Collections of compounds for specific research areas or targets, such as epigenetics and kinases, are also available.

Tocris
For info: 800-343-7475
www.tocris.com

Electronically submit your new product description or product literature information! Go to www.sciencemag.org/about/new-products-section for more information.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and governmental organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by Science or AAAS of any products or materials mentioned is not implied. Additional information may be obtained from the manufacturer or supplier.
PUT YOUR RESEARCH OUT IN FRONT

Submit your research: cts.ScienceMag.org
Beijing PINS Medical Equipment Co. Ltd. was established in 2008.

As an innovative high-tech enterprise with focus on neuromodulation, PINS Medical has developed a variety of clinical products, which include stimulators for deep brain, vagus nerve, spinal cord, and sacral nerve stimulation therapies. PINS Medical devotes itself to providing cutting-edge treatments for patients who suffer from neurological disorders, such as Parkinson's disease, epilepsy, chronic pain, and uroclepsia.

The name of PINS is derived from a Chinese word with the original meaning of "Magic Pin," the ability to cure disease. PINS is also an abbreviation of "Patient Is No. 1 always." This message clearly represents the goal of PINS Medical for "restoring hope," not simply as an innovation company but also across society to citizens.

www.pinsmedical.com/html/en/  info@pinsmedical.com