National Science Foundation
WHERE DISCOVERIES BEGIN

News Release 17-094

NSF funds 30 faculty research fellowships through new EPSCoR initiative

Awards focus on developing the next generation of US researchers

Georgina Gibson will research dissolved organic matter at the interface of Arctic land and ocean.

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September 20, 2017

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New awards from the National Science Foundation's (NSF) Established Program to Stimulate Competitive Research (EPSCoR) <https://www.nsf.gov/od/oia/programs/epscor/> will provide 30 non-tenured researchers with fellowships, partnering them with premier research centers and enhancing their ability to work at the frontiers of science and engineering.

The NSF EPSCoR Research Infrastructure Improvement (RII) Track-4 fellowship awards total roughly $5.6 million and are distributed to researchers across 20 states. Awardees will make extended collaborative visits to laboratories and scientific centers, establish partnerships with researchers with complementary expertise, learn new techniques, have access to sophisticated equipment, and shift their research focus in new directions.

Unlike other types of NSF EPSCoR awards, which focus on supporting research centers and partnerships among institutions, RII Track-4 focuses on giving individual researchers the foundation for collaborations that span their entire careers. RII Track-4 supports EPSCoR's mission of increasing scientific progress nationwide, as fellows enhance the research capacity of their local institutions and jurisdictions.

"NSF EPSCoR takes a comprehensive approach to building U.S. research capabilities," said NSF acting EPSCoR head Uma Venkateswaran. "These awards provide non-tenured researchers with tremendous opportunities and result in EPSCoR institutions gaining faculty members and investigators with cutting-edge research experience, who can help build the vibrant science and engineering laboratories and programs of the future."

The program is open to non-tenured investigators, or those with a close equivalent appointment, from EPSCoR jurisdictions. Currently, 24 states, the Commonwealth of Puerto Rico, the U.S. Virgin Islands and Guam are eligible to compete for EPSCoR funding. Through EPSCoR, NSF establishes regional partnerships with government, higher education and industry that create lasting improvements in a state's or territory's research infrastructure and research and development capacity.

The new RII Track-4 projects, their principal investigators and their home institutions are listed below.

- In Situ and Surface Sensitive Characterization of Fe-Ni(OH)2 Bimetallic Catalysts <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738165> , Lauren Greenlee, University of Arkansas
- Ab initio modeling of nuclear reactions for studies of nucleosynthesis and fundamental symmetries in nature <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738287> , Kristina Launey, Louisiana State University
- The Molecular Nature of Environmentally Persistent Free Radicals on Nanoparticles <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738337> , Eric Vejerano, University of South Carolina
- Molecular understanding of salt-induced selective aggregation and selective sorption of dissolved organic matter to natural particles <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738340> , Mohammed Baalousha, University of South Carolina
- Operando Analysis of Fuel Cell Materials at Advanced Light Source <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738386> , Kateryna Artyushkova, University of New Mexico
- Selection of methylxanthine-responsive aptamers <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738497> , Ryan Summers, University of Alabama
- Strengthening structural biology research with single particle cryo-electron microscopy (cryo-EM) <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738547> , Tung-Chung Mou, University of Montana
- Quantifying Muscle Assembly in Live C. elegans Using Super-Resolution Light Microscopy <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738564> , Ryan Littlefield, University of South Alabama
- Enhancing Interdisciplinary Graduate Studies and Research Funding Opportunities in Sensory Neurobiology through Studies of Crustacean Vision <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738567> , Megan Porter, University of Hawaii
- Digital Alloy Contact Layers for Solar Cells <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738575> , Matthew White,

University of Vermont

- A role for epigenetic modifications driving seasonal patterns of reproduction <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738591> ? Timothy Greives, North Dakota State University
- Mechanisms underlying transgenerational inheritance of the stress phenotype <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738594> , Jenny Ouyang, University of Nevada, Reno
- Deciphering sources and accumulation pathways of mercury in the tributaries and lake of a forested watershed using stable mercury isotopes <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738614> , Vivien Taylor, Dartmouth College
- The distribution and origin of deep level charge trapping centers in large size high-purity germanium crystals <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738632> , Guojian Wang, University of South Dakota
- Acquiring and propagating expertise in closed-loop precision optical control of neuronal activity using spatial light modulation (SLM) combined with multiphoton imaging <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738633> , Scott Cruikshank, Brown University
- Photovoltaic Based Physically Unclonable Functions (PUFs) for Vehicular Security <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738662> , Himanshu Thapliyal, University of Kentucky
- Development of high-purity Ge detector technology with LBNL for dark matter and neutrino physics <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738695> , Jing Liu, University of South Dakota
- Big Data and Massive Computation Approaches to Non-Equilibrium Dynamics of Strongly Correlated Materials <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738698> , Cheng-Chien Chen, University of Alabama at Birmingham
- Characterization of LPS-induced Hsc70 ligands as a means of defining the role of C-linked glycosylation in innate immunity <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738707> , John Rakus, Marshall University
- Electronic Structure Calculations to Characterize Mechanisms of Regioselective Additions to Olefins and to Advance P-31 NMR as a Reporter of Catalytic Intermediates <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738708> , Katie Mitchell-Koch, Wichita State University
- Paleoecological insights into the impacts of climate change on Vermont lakes <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738748> , Laurie Grigg, Norwich University
- Dynamic Live Imaging and Manipulation of Migrating Collectives Inside Tissues <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738757> , Jocelyn McDonald, Kansas State University
- Microscale processes controlling speciation and transformation of phosphorus in soils <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738770> Deb Jaisi, University of Delaware
- Using in-cell NMR to follow 13C-fluxomics in living cells <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738785> , Lisa Warner, Boise State University
- Comparative cityscape genomics of rats in four major cities <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738789> , Jonathan Richardson, Providence College
- Enhancement of technical and analytical skills for the application of genomics to research in molecular ecology and comparative phylogeography

<https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738817> , Ryan Garrick, University of Mississippi

- Sharp arithmetic transitions and universality in one-frequency quasiperiodic systems <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738834> , Sasa Kocic, University of Mississippi
- Governing Social-Ecological Transformation across Working Landscapes <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738857> , Brian Chaffin, University of Montana
- Modeling Dissolved Organic Matter at the Arctic land/ocean interface <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738861> , Georgina Gibson, University of Alaska Fairbanks
- Investigating Evolutionary Innovations through Metagenomics <https://www.nsf.gov/awardsearch/showAward?AWD_ID=1738865> , Eric Hayden, Boise State University

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Jonathan Richardson studies city rat populations, work that could lead to better control methods.
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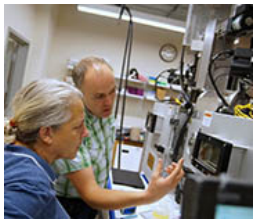

Matthew White's work focuses on solar cell materials, with the goal of addressing U.S. energy needs.
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Vivien Taylor's work will focus on accumulation pathways of mercury in forest tributaries and lakes.
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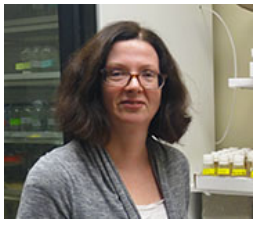

Jocelyn McDonald will study microscope methods to reveal how cells move inside tissues.
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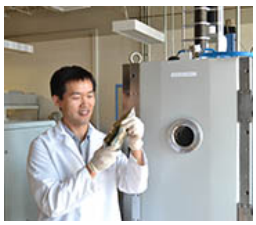

Guojian Wang's research seeks to advance development of instruments that could observe dark matter.
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