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News Release 17-065

## NSF Research Traineeship program makes 17 new awards

Awards support preparation of future STEM workforce for interdisciplinary challenges



Allyson Ettinger helps lead a session at an NRT-supported workshop.

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A National Science Foundation (NSF) program recently awarded 17 projects a total of \$51 million to develop and implement bold, new, potentially transformative models for graduate education in science, technology, engineering and mathematics (STEM) fields.

The NSF Research Traineeship (NRT) program awarded projects in high-priority, interdisciplinary research areas, including six projects in NSF's Innovations at the Nexus of Food, Energy and Water Systems (INFEWS) research initiative and three in its Understanding the Brain (UtB) effort.

"Integration of research and education through interdisciplinary training will prepare a workforce that undertakes scientific challenges in innovative ways," said Dean Evasius, director of the NSF Division of Graduate Education. "The NSF Research Traineeship awards will ensure that today's graduate students are prepared to pursue cutting-edge research and solve the complex problems of tomorrow."

While each project covers a unique area of research, all projects train students to address complex problems at the intersection of different scientific disciplines and provide them with the skill set to tackle these problems during their training and on entering the workforce. Examples of specific areas of research include coastal resilience; urban environmental challenges; data-intensive approaches to solve complex problems (e.g. food security, epidemics); food-energy-water issues in coastal, indigenous, urban or agricultural settings; and brain function.

The NSF-wide NRT program addresses key issues in the scientific community, including educating and expanding the science and engineering workforce, broadening participation in STEM education to include traditionally underserved populations, and creating new resources at institutions that train STEM graduate students.

The new NRT awards and their principal investigators and associated institutions are:

- **Sustainable Food, Energy, and Water Systems (SFEWS)**: Rakesh Agrawal, Purdue University, and Aavudai Anandhi Swamy, Florida Agricultural and Mechanical University.
- **Training in Theory and Application of Cross-Scale Resilience in Agriculturally Dominated Social Ecological Systems**: Craig Allen, University of Nebraska-Lincoln.
- **A Training Incubator for Addressing Urban Environmental Change From Ridge to Reef (R2R)**: Steven Allison, University of California, Irvine.
- **Indigenous Food, Energy, and Water Security and Sovereignty**: Karletta Chief, University of Arizona.
- **Improving Strategies for Hunger Relief and Food Security Using Computational Data Science**: Lauren Davis, North Carolina Agricultural & Technical State University.
- **Training the Next Generation of Researchers in Engineering and Deciphering of Miniature Brain Machinery**: Martha Gillette, University of Illinois at Urbana-Champaign.
- **Graduate Training Program in Sensory Science: Optimizing the Information Available for Mind and Brain**: Victoria Interrante, University of Minnesota-Twin Cities.
- **Transformative Research in Urban Sustainability Training (T-RUST)**: Donna Kashian, Wayne State University.
- **Science of Learning, From Neurobiology to Real-World Application: A Problem-Based Approach**: James Magnuson, University of Connecticut.
- **Computational Data Science to Advance Research at the Energy-Environment Nexus**: Elisabeth Moyer, University of Chicago.
- **Quantitative & Evolutionary STEM Training (QUEST): An Integrative Training Program for Versatile STEM Professionals to Solve Environmental and Global Health Problems**: Melissa Pespeni, University of Vermont & State Agricultural College.
- **Integrated Urban Solutions for Food, Energy, and Water Management**: Laurent Pilon, University of California, Los Angeles.
- **Interdisciplinary Training in Complex Networks and Systems**: Luis Rocha, Indiana University.

- **Sustainable Oceans: From Policy to Science to Decisions:** James Sanchirico, University of California, Davis.
- **Boston UniverCity - Partnering Graduate Students and Cities to Tackle Urban Environmental Challenges:** Pamela Templer, Boston University.
- **Systems Training for Research on Geography-Based Coastal Food Energy Water Systems (STRONG-CFEWS):** Maya Trotz, University of South Florida, and Sennai Habtes, University of the Virgin Islands.
- **Disaster Resilience and Risk Management (DRRM) - Creating Quantitative Decision Making Frameworks for Multi-Dimensional and Multi-Scale Analysis of Hazard Impact:** Robert Weiss, Virginia Polytechnic Institute and State University.

The next solicitation for NRT awards, including priority research areas, is anticipated in fall 2017. As information concerning the new NRT solicitation becomes available, it will be posted on the [NRT website <https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505015>](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505015).

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Nina Hsu at the University of Maryland's workshop.

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William Matchin leads a discussion about the neuroscience of language at the University of Maryland.

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