NSF Funding Opportunities for Statisticians and Data Scientists

Cheryl L. Eavey, Program Director
Methodology, Measurement, and Statistics
September 25, 2020
SBE Organizational Chart

Arthur Lupia
Assistant Director

Kellina Craig-Henderson
Deputy Asst. Director

Behavioral and Cognitive Sciences
Marc Sebrechts
Division Director

Social and Economic Sciences
Alan Tompkins
Acting Division Director

Natl. Center for Science and Engineering Statistics
Emilda Rivers
Division Director

Office of Multidisciplinary Activities
SBE Programs

Behavioral and Cognitive Sciences
- Archaeology
- Bio. Anthropology
- Cult. Anthropology
- Geo. & Spatial Sci.
- Social Psych.
- Cog. Neuroscience
- Develop. Sci.
- Sci. of Learning
- Linguistics

Social and Economic Sciences
- Economics
- Political Sci.
- Sociology
- Decision, Risk, & Mgmt. Sci.
- Law & Social Sci.
- Methodology, Measurement, and Statistics
- Sci. of Organizations
- Sci., Tech., & Society

Natl. Center for Science and Engineering Statistics
- Measuring
  - The Nation’s Investment in R&D
  - Educ. & Workforce Character. of Sci. and Eng.
- Developing Indicators of Nation’s Compet. & Innov. Cap.
- Supporting Rsrch. On S&T Enterprise

Office of Multidisciplinary Activities
- Research Exp. for Undergrad. Sites
- SBE Postdoc. Rsrch. Fellowships
- Science of Science and Innov. Policy
Methodology, Measurement, and Statistics (MMS) Program (NSF 19-575)

- The Methodology, Measurement, and Statistics (MMS) Program is an interdisciplinary program in the Directorate for Social, Behavioral, and Economic Sciences that supports the development of innovative analytical and statistical methods and models for those sciences.

- MMS seeks proposals that are methodologically innovative, grounded in theory, and have potential utility for multiple fields within the social and behavioral sciences.

- Funding Mechanisms:
  - Regular Research Proposals
  - Early Career Development (CAREER) proposals
  - Proposals for conferences, workshop, and community-development activities
  - Doctoral Dissertation Research Improvement (DDRI) proposals
Faculty Early Career Development (CAREER) Program (NSF 20-525)

• CAREER is an NSF-wide funding opportunity

• CAREER is NSF's most prestigious award in support of early-career faculty

• CAREER provides substantial support for "early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization. Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research."
CAREER Characteristics

- Minimum of $400,000 for a 5-year duration for most programs; Minimum of $500,000 for a 5-year duration for programs in BIO, ENG, and OPP
- NSF selects nominees for the Presidential Early Career Awards for Scientists and Engineers (PECASE) from among the most meritorious recent CAREER awardees.
- Integration of Research and Education
- Next Deadline: July 22, 2021
- Additional details; including recent webinar, on NSF CAREER site.
Doctoral Dissertation Research Improvement Proposals

• Supported by MMS in an effort to improve the quality of doctoral dissertation research.

• Funds are to be used for expenses associated with the conduct of the research that normally are not underwritten by the home institution.

• The advisor serves as principal investigator; the student serves as co-principal investigator.

• It is expected that the intellectual input to the proposed research be predominantly that of the student.

• The maximum for a DDRI award from MMS is $18,000 (includes both direct and indirect costs).
Partnership with Federal Statistical Agencies

• As part of its larger portfolio, the MMS Program partners with a consortium of federal statistical agencies to support research proposals that further the development of new and innovative approaches to surveys and to the analysis of survey data.

• Potential topics for consideration include:
  - Measurement issues
  - Questionnaire design
  - Survey Design and Technology
  - Analytical Issues (e.g., uses of administrative data or paradata)
  - Small Area Estimation
  - Data Improvement (e.g., disclosure limitation methods)
  - Data Dissemination and Visualization
General MMS Information

- **MMS Home Page**

- **MMS Solicitation**
  - NSF 19-575

- **Upcoming MMS Proposal Deadlines**
  - January 28, 2021
  - August 26, 2021
NSF’s 10 Big Ideas | Research Ideas

- Windows on the Universe: The Era of Multi-messenger Astrophysics
- Harnessing the Data Revolution
- The Future of Work at the Human-Technology Frontier
- Navigating the New Arctic
- The Quantum Leap: Leading the Next Quantum Revolution
- Understanding the Rules of Life: Predicting Phenotype
Harnessing the Data Revolution (HDR)

Topics:
- Vision
- Overview
- Process
- Portfolio
- Next Steps

Amy Walton
Office of Advanced Cyberinfrastructure
National Science Foundation
Harnessing the Data Revolution: Vision

HDR will enable new modes of data-driven discovery that will allow fundamental questions to be asked and answered at the frontiers of science and engineering.
Harnessing the Data Revolution (HDR): Overview

Components of the HDR vision

- **Foundations of Data Science**
  
- **Education and Workforce Development**
  
- **Data-intensive Science and Engineering**
  - Algorithms and Systems for Data Science
  - Data Cyberinfrastructure

HDR Programmatic

- **HDR Tripods (FY19)**
  - [NSF 19-550]

- **Data Science Corps (FY19)**
  - [NSF 19-518]

- **HDR Institutes (Conceptualization) (FY19)**
  - Ideas Labs
  - Frameworks
  - Coordination (FY20)
  - Convergence (FY21)
  - [NSF 19-549]
Cyberinfrastructure for Sustained Scientific Innovation (CSSI)

- Supports the **development and deployment** of robust, reliable and sustainable **data and software cyberinfrastructure**.
- Brings innovative capabilities towards sustained scientific innovation and discovery.
- Provides a cross-directorate opportunity to advance common approaches to sustain and innovate research cyberinfrastructures.
- Follows accepted data management and software development practices.
# Types of Awards

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<tr>
<th>Investment Class</th>
<th>Description</th>
<th>Estimated Budget</th>
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<td><strong>Elements</strong></td>
<td>Small groups that will develop and deploy robust software and data capabilities for which there is a demonstrated need that will advance one or more significant areas of science and engineering.</td>
<td>Up to $600K (up to $200K/yr) Up to 3 years</td>
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<td><strong>Framework Implementations</strong></td>
<td>Larger, interdisciplinary teams organized around the development and application of common software and data infrastructure aimed at solving common research problems faced by NSF researchers in one or more areas of science and engineering, resulting in a sustainable community framework serving a diverse community or communities.</td>
<td>$600K - $5M ($200K-$1M/yr) 3-5 years</td>
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General CSSI Information

- **CSSI Solicitation**
  - NSF 20-592

- **CSSI Proposal Deadline**
  - October 28, 2020

- **Contact Information**
  - Email [CSSIQueries@nsf.gov](mailto:CSSIQueries@nsf.gov)
Any Questions?

Thanks for your time. My contact information is below:

- **MMS Program Officer**
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  - ceavey@nsf.gov