NSF Funding Opportunities in Data Science

National Institute of Standards and Technology, Data Science Symposium, March 4–5, 2014

Xiaoming Huo, Program Officer
Division of Mathematical Sciences
National Science Foundation
Press Release (Old)

Keyword: NSF, “big data”, press release
NSF Investments

- NSF investments in a diverse portfolio of research to advance data analytics
- Nearly $62 million was awarded through many NSF programs...
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<thead>
<tr>
<th>CIF21 Portfolio FY 2013</th>
<th>BIO</th>
<th>ACI</th>
<th>CISE (w/o ACI)</th>
<th>ENG</th>
<th>GEO</th>
<th>MPS</th>
<th>SBE</th>
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<td>Software Infrastructure for Sustained Innovation (SI2)</td>
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<td>Core Techniques and Technologies for Advancing Big Data Science &amp; Engineering (BIGDATA)</td>
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<td>CIF21 Integrated Graduate Research and Traineeship (CIF21-IGERT)</td>
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<td>Computational Astrophysics</td>
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<td>Computational and Data-Enabled Science and Engineering (CDS&amp;E)</td>
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<td>EarthCube</td>
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<td>Expeditions in Training, Research, and Education for Mathematics and Statistics through Quantitative Explorations of Data (EXTREEMS-QED)</td>
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<td>Building Community and Capacity (BCC-SBE/EHR) General Social Survey (GSS)</td>
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<td>Data-enabled Science in BIO (portion of Advances in Biological Informatics)</td>
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<td>Network for Computational Nanotechnology</td>
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<td>Virtual Astronomical Observatory</td>
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- **Blue** = CIF21 for budget purposes;
- **Red** = investment, but not CIF21-designated;
- **Red with checkmark** = on solicitation.
Programs (covered today)

1. CIF21
2. CDS&E and CDS&E–MSS
3. BIGDATA
4. DIBBs
5. IGERT
6. SI^2,
7. EarthCube
8. …
1. CIF21

- NSF's vision for a Cyberinfrastructure Framework for 21st Century Science and Engineering
- Crosscutting/NSF-wide
- CIF21 will provide a comprehensive, integrated, sustainable, and secure cyberinfrastructure (CI) to accelerate research and education and new functional capabilities in computational and data-intensive science and engineering, thereby transforming our ability to effectively address and solve the many complex problems facing science and society.
Components of CIF21

- Grand Challenge Communities
- Scientific Instruments
- Data
- Campus Bridging, Cybersecurity
- Advanced Computational Infrastructure
- Software
- Learning & Workforce Development

Innovation, Discovery
2. CDS&E

- Computational and **Data-Enabled** Science and Engineering
- the development and use of computational methods and data mining and management systems to enable scientific discovery and engineering innovation.
- *NSF award search.*
CDS&E–MSS

- Computational and Data-Enabled Science and Engineering in Mathematical and Statistical Sciences
- Division of Mathematical Sciences
- The CDS&E–MSS program accepts proposals that confront and embrace the host of mathematical and statistical challenges presented to the scientific and engineering communities by the ever-expanding role of computational modeling and simulation on the one hand, and the explosion in production of digital and observational data on the other.
- to promote the creation and development of the next generation of mathematical and statistical theories and methodologies that will be essential for addressing the above issues
3. BIGDATA

- Critical Techniques and Technologies for Advancing Big Data Science & Engineering
- Directorate for Computer & Information Science & Engineering

This solicitation aims to advance the core scientific and technological means of managing, analyzing, visualizing, and extracting useful information from large, diverse, distributed and heterogeneous data sets so as to:

- accelerate the progress of scientific discovery and innovation;
- lead to new fields of inquiry that would not otherwise be possible;
- encourage the development of new data analytic tools and algorithms;
- facilitate scalable, accessible, and sustainable data infrastructure;
- increase understanding of human and social processes and interactions;
- and promote economic growth and improved health and quality of life.

- Deadlines: June/July 2012
4. DIBBs

- Data Infrastructure Building Blocks
- Directorate for Computer & Information Science & Engineering

The Data Infrastructure Building Blocks (DIBBs) program is an integral part of CIF21. The DIBBs program encourages development of robust and shared data-centric cyber-infrastructure capabilities to accelerate interdisciplinary and collaborative research in areas of inquiry stimulated by data.

- Deadlines: April 9, 2014
5. IGERT–CIF21

- Integrative Graduate Education and Research Traineeship Program–CIF21 Track
- Crosscutting
- to meet the challenges of educating U.S. Ph.D. scientists and engineers with interdisciplinary backgrounds, deep knowledge in chosen disciplines, and technical, professional, and personal skills.
6. SI^2

- **Software Infrastructure for Sustained Innovation**
- **Crosscutting**
- **Scientific Software Elements (SSE):** SSE awards target small groups that will create and deploy robust software elements for which there is a demonstrated need that will advance one or more significant areas of science and engineering.
- **Scientific Software Integration (SSI):** SSI awards target larger, interdisciplinary teams organized around the development and application of common software infrastructure aimed at solving common research problems.
- **Scientific Software Innovation Institutes (S2I2)**
NSF Software Infrastructure Projects
A Community-driven Data and Knowledge Management System for the Geosciences

EarthCube is a collaboration between the U.S. National Science Foundation and Earth, atmosphere, ocean, computer, information, and social scientists, educators, data
THANK YOU!

QUESTIONS?

Email: xhuo@nsf.gov