



NSF Funding Opportunities in Data Science

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

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Division of Mathematical Sciences
National Science Foundation

Press Release (Old)

- ▶ Keyword: NSF, “big data”, press release

The screenshot shows the National Science Foundation (NSF) website. At the top, the NSF logo and the text "National Science Foundation WHERE DISCOVERIES BEGIN" are visible. A search bar and "QUICK LINKS" button are in the top right. A navigation menu includes "HOME", "FUNDING", "AWARDS", "DISCOVERIES", "NEWS", "PUBLICATIONS", "STATISTICS", "ABOUT NSF", and "FASTLANE".

The main content area features a "News" section with a "News" sub-header and a "NEWS" graphic. Below this is a list of news categories: "News From the Field For the News Media", "Special Reports", "Research Overviews", "NSF-Wide Investments", "Speeches & Lectures", "NSF Current Newsletter", "Multimedia Gallery", and "News Archive".

The "News by Research Area" section lists: "Arctic & Antarctic", "Astronomy & Space", "Biology", and "Chemistry & Materials".

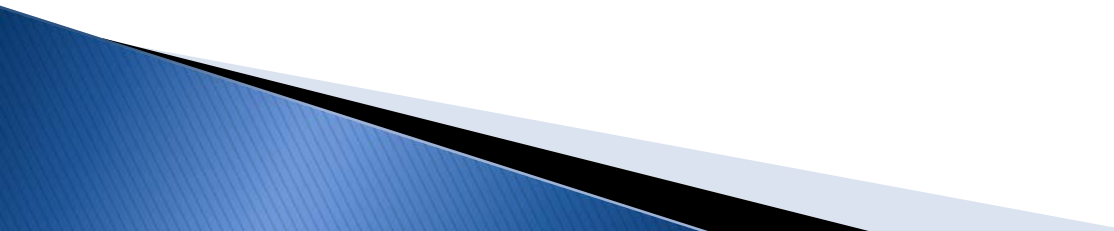
The main article is titled "Press Release 12-060 NSF Leads Federal Efforts In Big Data". It includes a "View Video" link and a video player showing a man speaking. The text of the press release reads: "At White House event, NSF Director announces new Big Data solicitation, \$10 million Expeditions in Computing award, and awards in cyberinfrastructure, geosciences, training".

Below the text is a satellite image of Hurricane Ike over the Gulf of Mexico. The caption reads: "Hurricane Ike visualization created by Texas Advanced Computing Center (TACC) supercomputer Ranger. Credit and Larger Version".

The date "March 29, 2012" is displayed at the bottom of the article.

Additional "View Video" links are present for other news items, including one for "Broadcast of OSTP-led Federal Government Big Data Rollout, March 29, 2012, Washington, DC. Credit and Larger Version" and another for "Farnam Jahanian serves as assistant director for NSF. Credit and Larger Version".

NSF Investments

- ▶ NSF investments in a diverse portfolio of research to advance data analytics
 - ▶ Nearly \$62 million was awarded through many NSF programs...
- 

CIF21 Portfolio FY 2013	BIO	ACI	CISE (w/o ACI)	ENG	GEO	MPS	SBE
Software Infrastructure for Sustained Innovation (SI2)							
Core Techniques and Technologies for Advancing Big Data Science & Engineering (BIGDATA)							
CIF21 Integrated Graduate Research and Traineeship (CIF21-IGERT)							
Computational Astrophysics							
Computational and Data-Enabled Science and Engineering (CDS&E)							
EarthCube							
Expeditions in Training, Research, and Education for Mathematics and Statistics through Quantitative Explorations of Data (EXTREEMS-QED)							
Building Community and Capacity (BCC-SBE/EHR) General Social Survey (GSS)							
Data-enabled Science in BIO (portion of Advances in Biological Informatics)							
Network for Computational Nanotechnology							
Virtual Astronomical Observatory							

NSF investment

= CIF21 for budget purposes;

= investment, but not CIF21-designated

= on solicitation

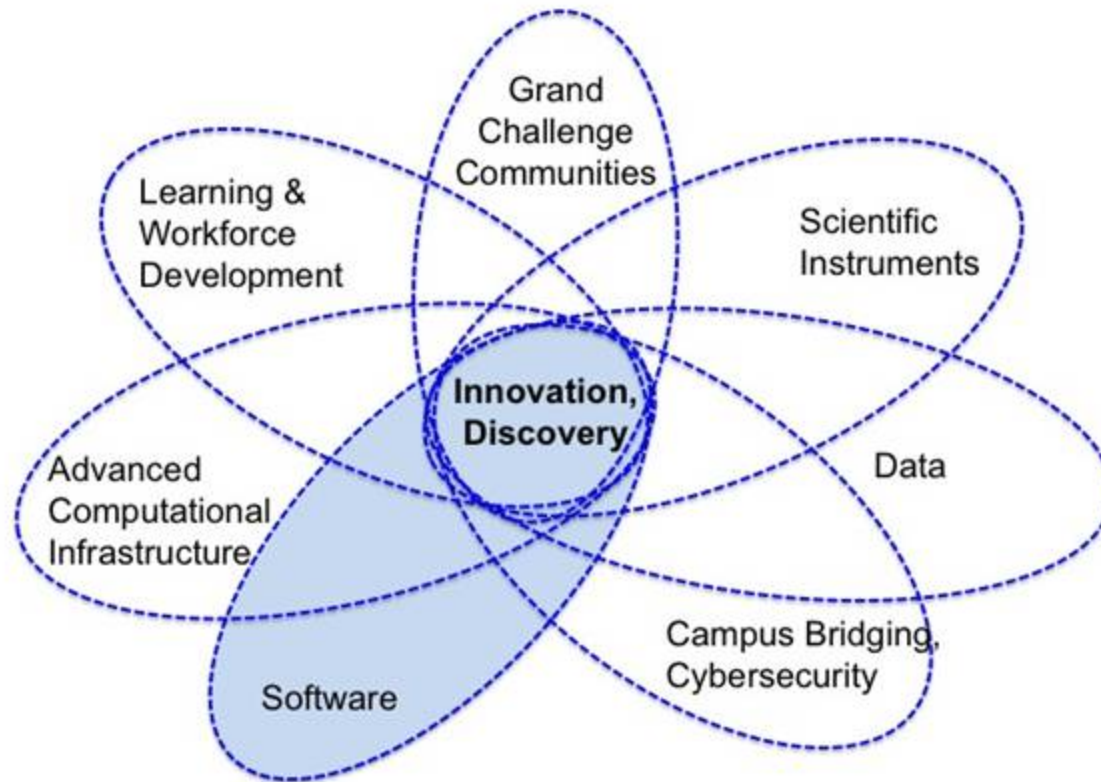
Programs (covered today)

1. CIF21
2. CDS&E and CDS&E-MSS
3. BIGDATA
4. DIBBs
5. IGERT
6. SI²,
7. EarthCube
8. ...

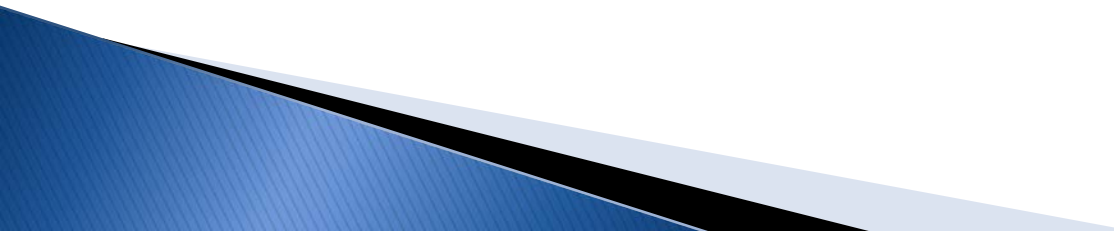
1. CIF21

- ▶ 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



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

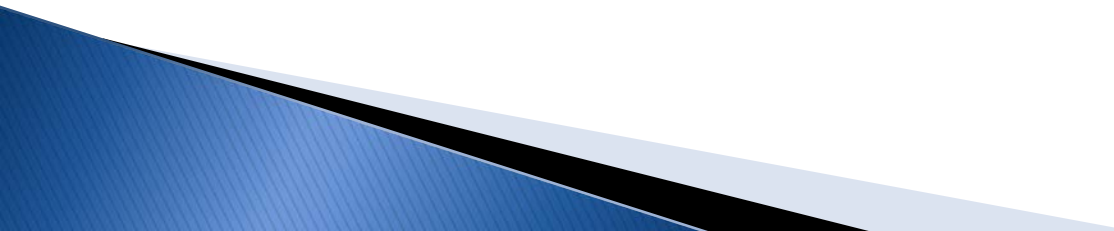
3. BIGDATA

- ▶ 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

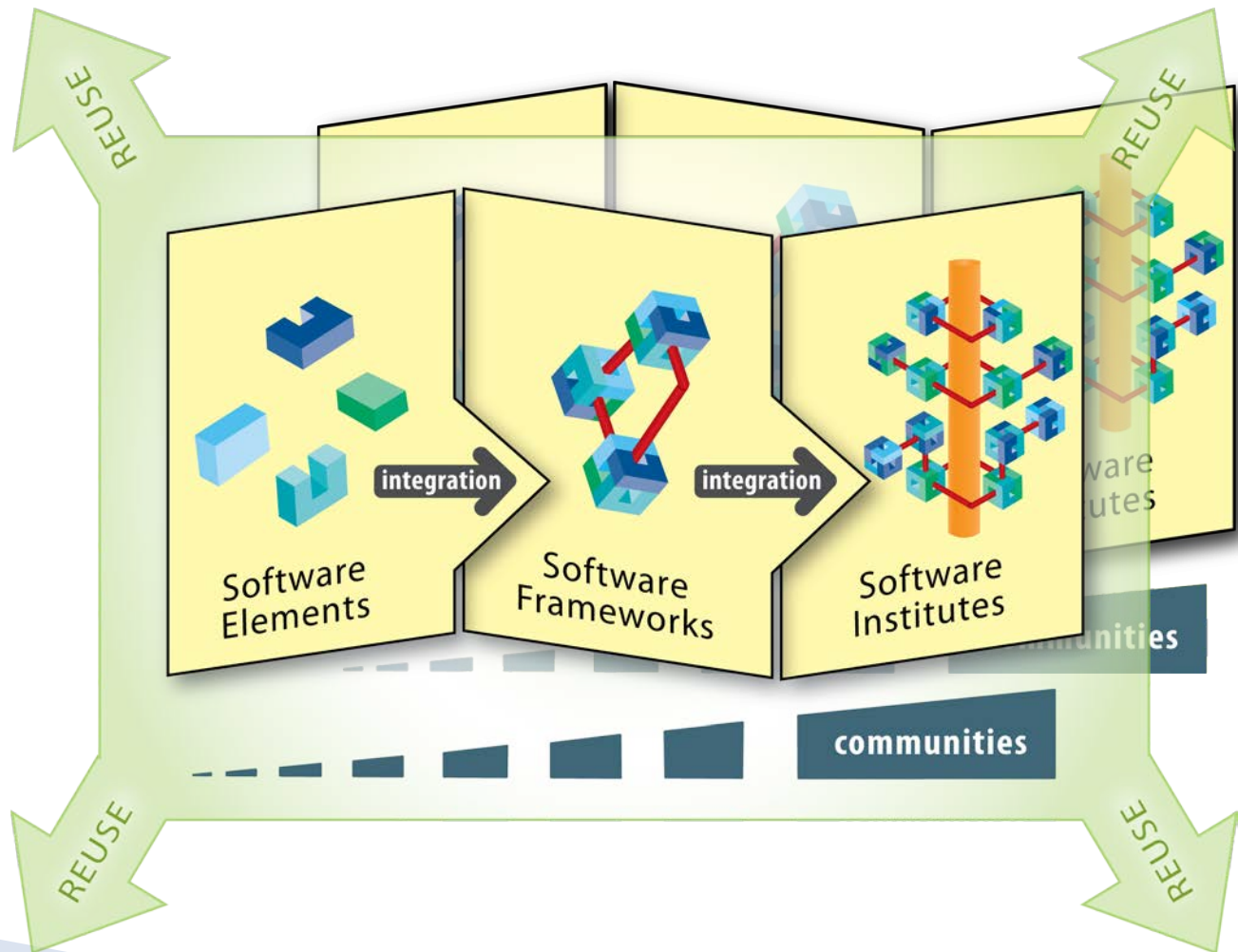
5. IGERT–CIF21

- ▶ 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.
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6. SI²

- ▶ 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





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QUESTIONS?

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