



# OIA Programs

March 2012

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**Senior Advisor**  
**Office of Integrative Activities**

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*"Catalyzing Excellence in Research and Education"*



# One NSF Through Integrative Activities



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# Find Funding for Crosscutting Programs

The screenshot shows the NSF website's funding page. At the top left is the NSF logo with the tagline "WHERE DISCOVERIES BEGIN". To the right is a search bar with "NSF Web Site" selected. Below the search bar is a navigation menu with links: HOME, FUNDING, AWARDS, DISCOVERIES, NEWS, PUBLICATIONS, STATISTICS, ABOUT, and FastLane. The main content area is titled "Crosscutting and NSF-wide Active Funding Opportunities". It includes a paragraph explaining that the site provides program information for activities sponsored by more than one NSF organization and that all NSF organizations accept proposals that cut across organizational and programmatic boundaries. Below the text are filters for "Org:" (Crosscutting and NSF-wide) and "Status:" (Active). There is also a checkbox for "Get Crosscutting Program Annncmts & Info Updates by Email" and an RSS icon. The page is sorted by Title. A key indicates that "Crosscutting" is selected, "NSF-wide" is not, and "Grants.gov submission required" is not. A table lists funding opportunities with columns for Title, Program Guidelines, and Due Dates. The first entry is "Academic Research Infrastructure Program: Recovery and Reinvestment (ARI-R<sup>2</sup>)" with a due date of "09-562".

**Funding**

**Crosscutting and NSF-wide Active Funding Opportunities**

This site provides program information for activities sponsored by more than one NSF organization. In addition, all NSF organizations accept proposals that cut across organizational and programmatic boundaries. We suggest that those seeking support for interdisciplinary work not described here consult the NSF program site(s) closest to the science, engineering or education focus of the planned work and contact relevant program officers to discuss submission of a proposal.

Org: Crosscutting and NSF-wide Status: Active

Get Crosscutting Program Annncmts & Info Updates by Email | RSS

Sorted by Title. Click column headings to sort.

Key:  Crosscutting |  NSF-wide |  Grants.gov submission required

Title	Program Guidelines	Due Dates
<a href="#">Academic Research Infrastructure Program: Recovery and Reinvestment (ARI-R<sup>2</sup>)</a>	<a href="#">09-562</a>	

Go to [http://www.nsf.gov/funding/pgm\\_list.jsp?type=xcut](http://www.nsf.gov/funding/pgm_list.jsp?type=xcut)

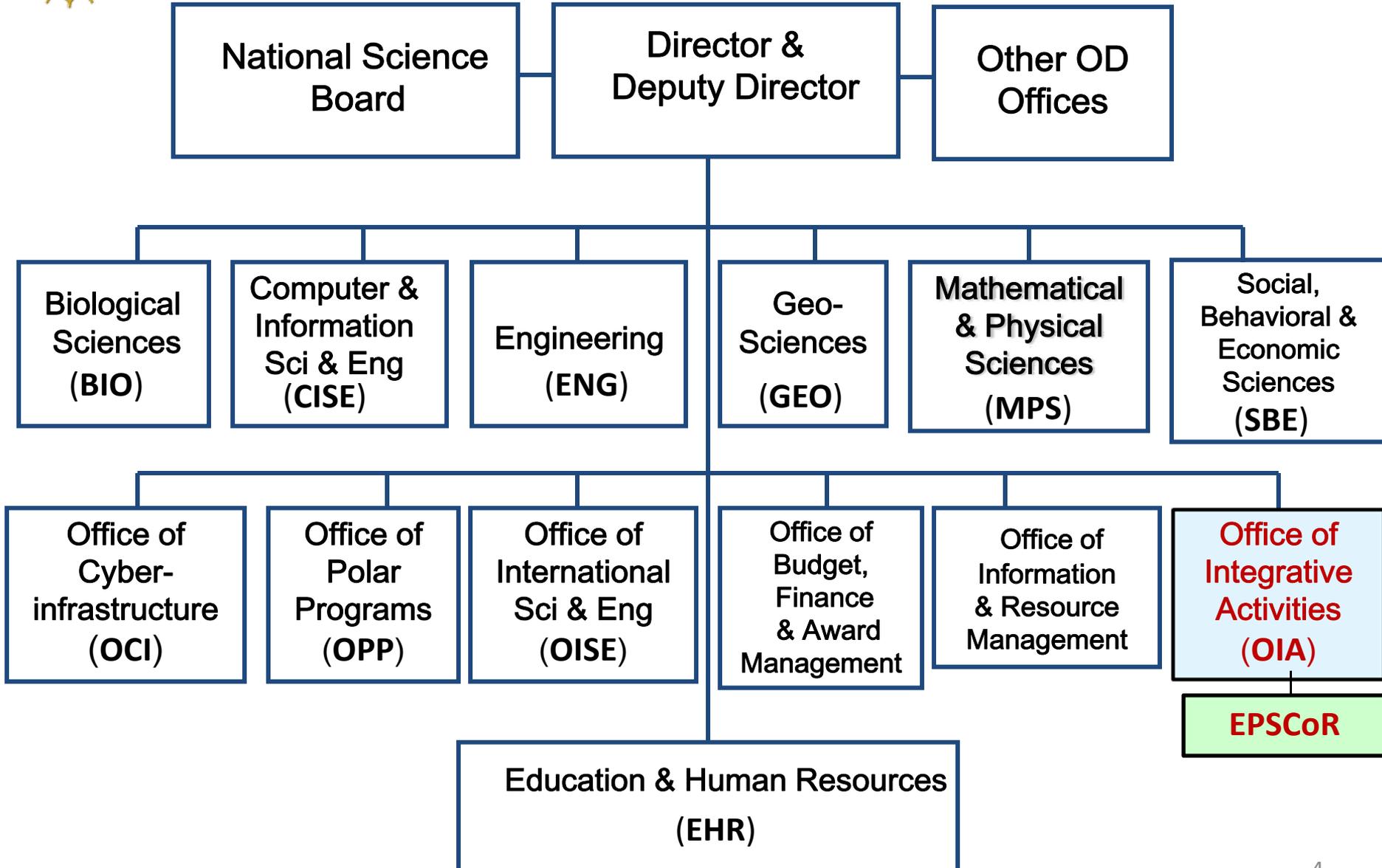
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# Basic NSF Organization



# Office of Integrative Activities: *Who We Are*

- An Office within the Office of the NSF Director
- Coordinates many programs and activities that span NSF
- Supports the NSF Director's Office through policy and special projects that address NSF priorities



# OIA Cross-Cutting Research and Education Programs' Impact

- Catalyze Interdisciplinary/Multidisciplinary Activities
- Foster Potentially Transformative Research
- Develop Next Generation STEM Leaders and Workforce
- Strengthen Nation's Research Infrastructure
- Build Sustainable/Geographically Diverse Capacity
- Enhance Program Evaluation/Performance Measurement



# Office of Integrative Activities:

## *Programs and Activities*

- **EPSCoR** – Experimental Program to Stimulate Competitive Research
- **I-CORPS** – Innovation Corps
- **INSPIRE** – Integrated NSF Support Promoting Interdisciplinary Research and Education
- **MRI** – Major Research Instrumentation
- **STC** – Science and Technology Centers



EPSCoR



# EPSCoR

FY 2012 Budget:

\$151 Million

*29 Jurisdictions; Sustainable R&D capacity*

- State-based
  - S&T plan, co-investment
- Research driven—***Science First!***
- Multi-faceted: Physical, Human, and Cyber infrastructure
  - Education, Diversity, Workforce Development, External Engagement, Evaluation, Management, Sustainability
- Multidisciplinary and Multi-institutional
- Economic Development

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# NSF EPSCoR Jurisdictions

1980

Arkansas  
Maine  
Montana  
South Carolina  
West Virginia

2001

Hawaii  
New Mexico

2002

U.S. Virgin Islands

1985

Alabama  
Kentucky  
Nevada  
North Dakota  
Oklahoma  
Puerto Rico  
Vermont  
Wyoming

2003

Delaware

2004

New Hampshire  
Rhode Island  
Tennessee

2009

Iowa  
Utah

1987

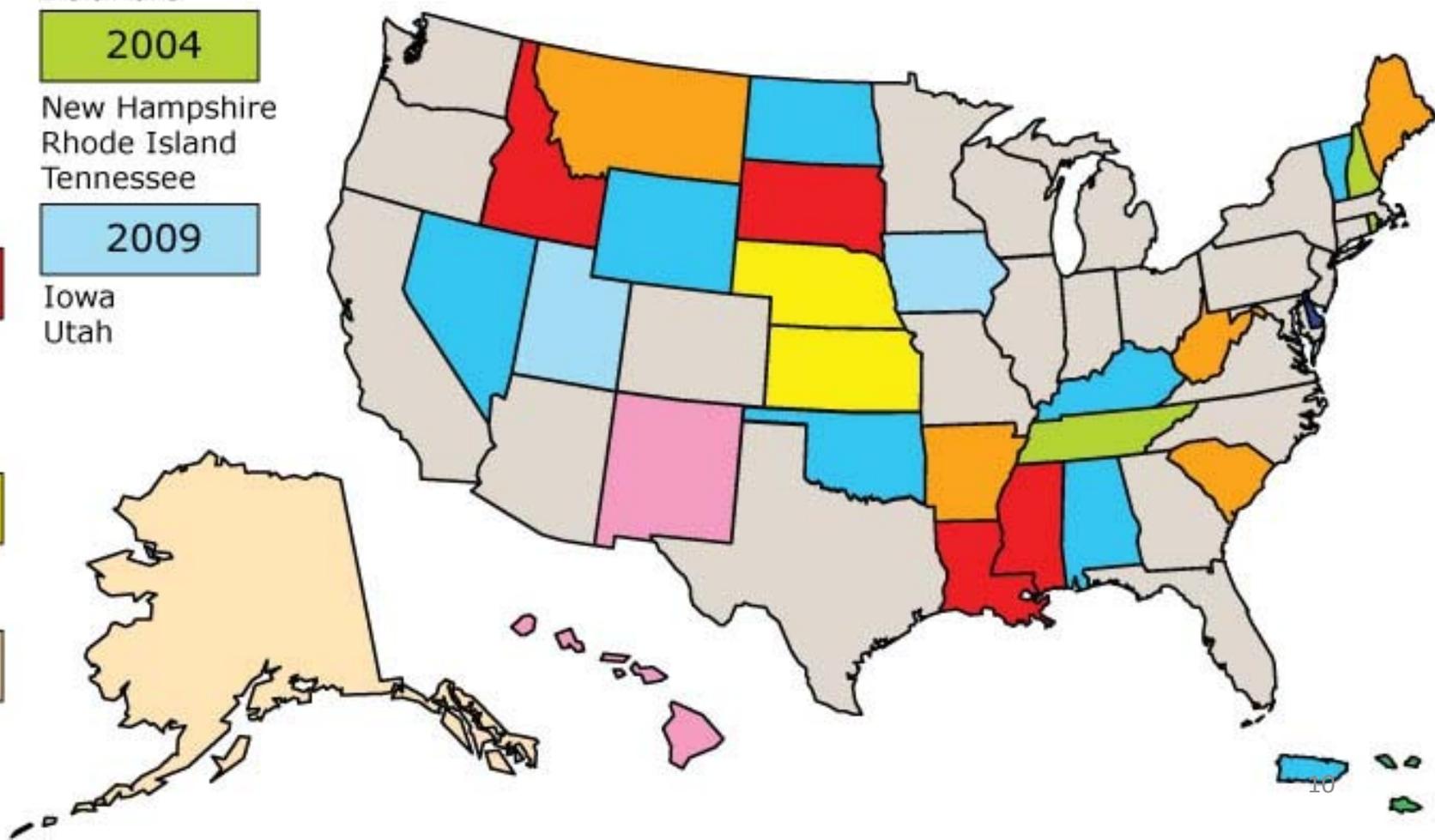
Idaho  
Louisiana  
Mississippi  
South Dakota

1992

Kansas  
Nebraska

2000

Alaska



# EPSCoR Investment Strategies

- **Research Infrastructure Improvement Awards (RII)**  
Support physical, human, and cyber infrastructure within academic institutions at the state level
- **Co-Funding with NSF Directorates and Offices**  
Supports individual investigators and groups from EPSCoR jurisdictions by co-investment with disciplinary research programs in their meritorious proposals
- **Outreach Activities and Workshops**  
Brings researchers, educators, and other partners in EPSCoR jurisdictions together with NSF program staff; builds mutual awareness and transparency



I-CORPS



# I-Corps

FY 2012 Budget:

\$7.5 Million

## *Transitioning lab-based research to marketplace products*

- Provide access to resources to help determine the readiness to transition technology previously supported by NSF
- Public-private partnership
- NSF-wide
- Leverage prior NSF investment
- **Support for** the development of technologies, products and processes
  - **NOT** funding for research
  - **ARE** small grants to focus on creating commercialization roadmaps
- Nimble funding – Quick Assessment

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# I-Corps: Program Details

## *A Few Basics:*

- Extensive information about the program [www.nsf.gov/i-corps](http://www.nsf.gov/i-corps)
  - Solicitation (11-560)
  - Webinar – first Tuesday of every month – next one April 3<sup>rd</sup>
  - Video for “veteran” I-CORPS participants
- \$50K per award
  - IDC capped at 10%
- Target – 100 awards in FY 12
  - 21 awards last fall; 25 in March; ~50 expected in July

## *Eligibility:*

- PI: Previous NSF award in last 5 years
- Must have I-Corps team in place at initial contact
- Entire team must be available for off-site workshops and on-site curriculum
- Serious time commitment (consistent with start-up mentality)



# I-Corps: Program Details

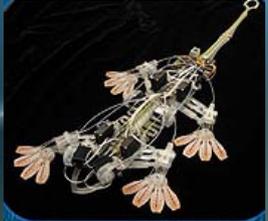
## **Project Proposal:**

- Written authorization from cognizant NSF program officer required to submit proposal
- 5-page proposal
  - Team (2 pages); NSF lineage (1); Potential Commercial Impact (1); Project Plan/Demo (1)
- Review—quarterly batches, internal, 4-week turnaround

## **Team:**

- Entrepreneurial Lead *post-doc/student to move it forward*
- I-CORPS mentor *entrepreneur in close proximity*
- PI *current/previous award, responsible for overall grant management*
- ALL of the team must attend a 3-day course, participate in 5 webinars, attend 2-day demo session...ALL





INSPIRE





## Is the National Science Foundation Taking Enough 'Risks'?

by Jeffrey Mervis on 15 April 2010, 4:34 PM | [2 Comments](#)

[Email](#) [Print](#) | [f](#) [t](#) [+1](#) [0](#) [d](#) [su](#) [+](#) [More](#)

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[NEXT ARTICLE](#)

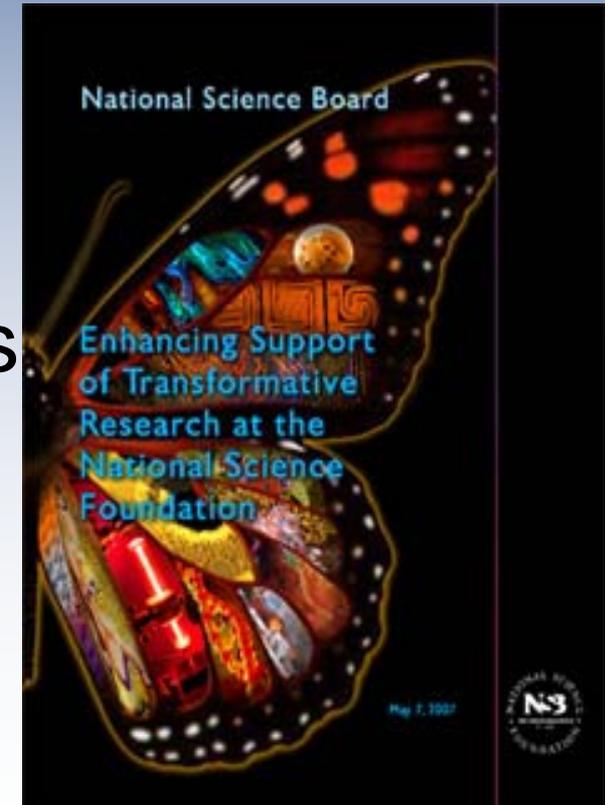
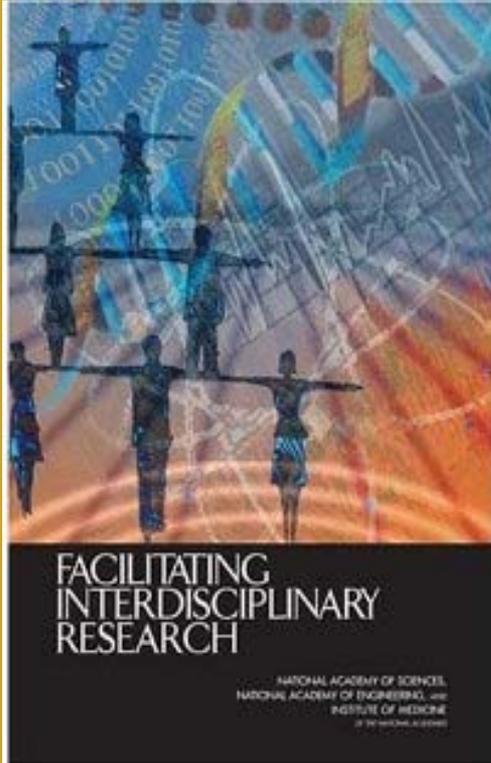
For years, Congress has pushed the National Science Foundation to take more risks. Yesterday, a House of Representatives science panel offered a first-ever definition of what that would mean for the \$7 billion research agency and—by extension—the entire U.S. scientific enterprise.

At issue is striking the right balance between the institutional conservatism of NSF reviewers and program managers and the desire of policymakers to fund the next big thing—a crazy idea that will transform science and, eventually, bolster the economy and solve an important societal problem. Although NSF prefers to call it "potentially transformative research," it's usually referred to as "high-risk, high-reward research."

The panel's [definition](#) is a mouthful: "Research driven by ideas that have the potential to radically change our understanding of an important existing scientific or engineering concept, or leading to the creation of a new paradigm."

# INSPIRE

Responding to:  
National Academies  
National Science  
Board



Other reports

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# INSPIRE

FY 2013 NSF (not just IA) Budget:

\$63 Million

*Catalyze interdisciplinary, potentially transformative research; integrates existing NSF interdisciplinary efforts with a suite of new Foundation-wide activities*

## Two Track Approach:

### ➤ **INSPIRE Awards Program**

- **Creative Research Awards for Transformative Interdisciplinary Ventures (CREATIV)**—Introduced in FY 2012
- New FY 2013 pilot award program

### ➤ **Facilitate cross-cutting collaboration of novel interdisciplinary proposals** within NSF, within U.S. research community

- Reduce/eliminate barriers
- Augment staff and reviewer training
- Foster best practices

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# INSPIRE / CREATIV GOALS

- **Demonstrate that NSF is open to unusually novel cross-disciplinary ideas:** Welcome groundbreaking or unconventional ideas and approaches
- **Encourage Program Directors to promote such ideas:** Empower PDs with flexibility and new resources and mechanisms to enable cross-cutting collaboration and risk-taking in developing their awards portfolio
- **Attract unusually creative high-risk / high-reward interdisciplinary proposals,** including ones that PIs may have been reluctant to submit to a standard review process



# INSPIRE Awards Programs

- **CREATIV**— **Pilot** grant award mechanism
    - Proposals **must** be interdisciplinary and potentially transformative
    - **Must** be supported by at least 2 intellectually distinct NSF divisions or programs
      - For 2 programs: maximum award \$800,000
      - For 3 or more programs: maximum award \$1,000,000
    - Open to all NSF-supported fields—no favored topics
    - Generally merit-reviewed internally by program directors
    - Substantial funding (maximum award size -- \$1.0 million); not limited to exploratory stage
    - Maximum award duration: 5 years
    - Typically for an individual PI or a small team
- PI must have program managers' authorization in advance in order to submit a proposal**



# INSPIRE Awards Programs

- **New open pilot** mechanism under INSPIRE to begin in FY 2013
  - Larger “**mid-scale**” interdisciplinary awards up to \$2.5-\$3.0M
  - Utilize novel internal & external merit review approaches



# CREATIV is for special proposals

- CREATIV is **not** for proposals that are more appropriate for existing mechanisms:
  - Primarily advance a single discipline, or
  - Can be expected to receive an appropriate evaluation through external review in regular programs, or
  - Continue a well-established line of research, leading to the next expected step



# Identifying PDs

- It is the PI's responsibility
- If assistance is needed, one resource is the NSF interdisciplinary research (IDR) Points of Contact on the IDR web site:  
[http://www.nsf.gov/od/oia/additional\\_resources/interdisciplinary\\_research/](http://www.nsf.gov/od/oia/additional_resources/interdisciplinary_research/)
- Not all inquiries will result in authorization (e.g., PDs may find that the proposal idea should reviewed under a different mechanism)



MRI



# Major Research Instrumentation (MRI)

FY 2012 Budget:

\$90.0 Million

*Invest in state-of-the-art research instrumentation to empower the Nation's scientists, engineers, and students*

- Innovative Instrumentation Awards
  - Acquisition or Development
- Anticipate making ~175 awards
- Success rate: ~15-20%
- Award size:
  - Range -- \$100,000-\$4 million
  - Mean size: ~\$500,000-600,000
- OIA and Directorates co-manage the program



# 1998 - 2011 MRI Award Snapshot<sup>1</sup>

FY	# Proposals	\$ Requested	# Awards	MRI Funding	Total NSF Funding <sup>2</sup>
1998	479	\$248.5	165	\$49.5	\$56.4
1999	472	\$261.5	166	\$49.5	\$56.8
2000	475	\$252.0	163	\$49.5	\$54.7
2001	741	\$305.5	311	\$74.6	\$78.7
2002	691	\$296.3	279	\$75.7	\$81.3
2003	757	\$351.2	280	\$83.2	\$91.0
2004	838	\$421.4	327	\$109.1	\$112.9
2005	784	\$473.0	256	\$88.8	\$95.6
2006	769	\$427.4	233	\$88.2	\$97.0
2007	774	\$478.3	222	\$89.7	\$96.9
2008	810	\$515.8	224	\$93.2	\$101.0
2009 <sup>3</sup>	2,020	\$1,715.9	651	\$398.9	\$405.6
2010 <sup>4,5</sup>	939 <sup>5</sup> (41) <sup>4</sup>	\$626 <sup>5</sup> (\$6.3) <sup>4</sup>	171 <sup>5</sup> (29) <sup>4</sup>	\$86.8 <sup>5</sup> (\$4.1) <sup>4</sup>	\$94.8 <sup>5</sup> (\$4.1) <sup>4</sup>
2011	859	\$576.4	187	\$88.1	\$100.2
<b>TOTAL:</b>	<b>11,449</b>	<b>\$6,783.4</b>	<b>3,664</b>	<b>\$1,428.9</b>	<b>\$1,527.0</b>

<sup>1</sup>includes only awards submitted directly to MRI program.

<sup>2</sup>includes MRI funds and contributions from Directorates and Offices.

<sup>3</sup>includes one-time appropriation under ARRA.

<sup>4</sup>includes 29 awards and \$4.1M awarded to MRI RAPID Proposals.

<sup>5</sup>includes \$1.4M in FY11 MRI Funds and \$300K in other FY11 NSF Funds.

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# MRI



The screenshot shows the NSF OIA website. At the top, there is a navigation bar with links: HOME | FUNDING | AWARDS | DISCOVERIES | NEWS | PUBLICATIONS | STATISTICS | ABOUT | FastLane. Below this is the NSF logo and the text "National Science Foundation OFFICE OF Integrative Activities (OIA)". A search bar is present with "NSF Web Site" entered. A secondary navigation bar includes: OIA Home | OIA Funding | OIA Awards | OIA Discoveries | OIA News | About OIA. The main content area features a sidebar on the left with a list of links: OIA Home, About OIA, Funding Opportunities, Awards, News, Events, Discoveries, Publications, Career Opportunities, Interagency Coordinating Committee, Investment Strategies, See Additional OIA Resources, and View OIA Staff. The main content area is titled "Major Research Instrumentation Program" and includes a paragraph describing the MRI program's goals and a list of five bullet points detailing its objectives. To the right of the text is a graphic titled "MAJOR RESEARCH INSTRUMENTATION" with a list of "MRI GOALS" and a grid of small images. A link "(For larger image, please click on the image)" is provided below the graphic.

HOME | FUNDING | AWARDS | DISCOVERIES | NEWS | PUBLICATIONS | STATISTICS | ABOUT | FastLane

National Science Foundation  
OFFICE OF  
Integrative Activities (OIA)

SEARCH  
NSF Web Site

OIA Home | OIA Funding | OIA Awards | OIA Discoveries | OIA News | About OIA

Office of Integrative Activities (OIA)

**Major Research Instrumentation Program**

The Major Research Instrumentation Program (MRI) catalyzes new knowledge and discoveries by empowering the Nation's scientists and engineers with state-of-the-art research instrumentation. The MRI Program enables research-intensive learning environments that promote the development of a diverse workforce and next generation instrumentation, as well as facilitates academic/private sector partnerships. Among the goals of the MRI Program are:

- Supporting the acquisition of major state-of-the-art instrumentation, thereby improving access to, and increased use of, modern research and research training instrumentation by a diverse workforce of scientists, engineers, and graduate and undergraduate students;
- Fostering the development of the next generation of instrumentation, resulting in new instruments that are more widely used, and/or open up new areas of research and research training;
- Enabling academic departments, disciplinary and cross-disciplinary units, and multi-organization collaborations to create well-equipped research environments that integrate research with education;
- Supporting the acquisition and development of instrumentation that contributes to, or takes advantage of, existing investments in cyberinfrastructure, while avoiding duplication of services already provisioned by NSF investments;
- Promoting substantive and meaningful partnerships for instrument development between

**MAJOR RESEARCH INSTRUMENTATION**

MRI GOALS

- Catalyzing new knowledge and discoveries
- Empowering the Nation's scientists and engineers
- Providing a diverse workforce of scientists, engineers, and graduate and undergraduate students
- Enabling academic departments, disciplinary and cross-disciplinary units, and multi-organization collaborations to create well-equipped research environments that integrate research with education
- Supporting the acquisition and development of instrumentation that contributes to, or takes advantage of, existing investments in cyberinfrastructure, while avoiding duplication of services already provisioned by NSF investments
- Promoting substantive and meaningful partnerships for instrument development between

[\(For larger image, please click on the image\)](#)

- **Contact Information:**
  - (703) 292-8040
  - [mri@nsf.gov](mailto:mri@nsf.gov)
- **New solicitation expected with anticipated January 24, 2013 deadline**
- **Webcast planned for December 2012**
- **Monitor MRI website for further details**

<http://www.nsf.gov/od/ois/programs/mri>

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# MRI Goals

- Support **acquisition** of major state-of-the-art instrumentation
- Foster **development** of the next generation of major instrumentation
- Integrate research with education
- Use, advance, and/or expand the Nation's cyber-infrastructure and/or high performance computing capability through instrumentation acquisition or development
- Promote academic and private sector instrument development partnerships

# MRI – Program Details

- **Organization submission eligibility**
  - “US”-based
  - Private firms – as partner
- **Submission limit** - Three (3) per organization: *If three proposals are submitted, at least one of the proposals must be for instrument development.*
- **Cost-sharing** at the level of 30% of the **total project cost** is required for Ph.D.-granting institutions and non-degree-granting organizations. **Cost-sharing is not required for non-Ph.D.-granting institutions.**
- **Merit Review** - At the time of submission, PI’s are asked to identify an NSF division(s) to review proposal. NSF reserves the right to place proposals in the appropriate division(s) for review.
- **Management as well as Data Management Plans.**

***MRI does not support  
requests for multiple  
instruments to outfit  
labs/facilities***

<http://www.nsf.gov/od/oia/programs/mri/>

# The MRI Program Will **Not** Support:

- **Construction, renovation or modernization of rooms, buildings or research facilities** (instruments must be able to decouple from their host environment);
- **Large, specialized experimental facilities** (constructed with significant amounts of common building material using standard building techniques);
- **General purpose and supporting equipment** (e.g., general purpose computers/laboratory equipment, fume hoods, cryogen storage systems);
- **Sustaining infrastructure and/or building systems** (e.g., electrical, plumbing, HVAC, toxic waste disposal, telecommunications);
- **General purpose platforms or environments** (e.g., fixed, non-fixed structures, manned vehicles);
- **Instrumentation used primarily for science and engineering education courses.**

<http://www.nsf.gov/od/oia/programs/mri/>

# 2011 MRI Award Snapshot - Overall

<b>Number Reviewed:</b> 859 (201 DEV, 658 ACQ)
<b>Dollars Requested:</b> \$576.4 million
<b>Mean Dollars Requested:</b> \$671,000
<b>Median Dollars Requested:</b> \$477,000
<b>Number of Awards:</b> 187 (45 DEV, 142 ACQ)
<b>MRI Amount Awarded:</b> \$88.1 million
<b>NSF Amount Awarded:</b> \$100.2 million
<b>Overall Success Rate:</b> 21.8%
<b>Mean Award:</b> \$536,000
<b>Median Award:</b> \$433,000
<b>Number of Institutions that Participated:</b> 462
<b>Number of Institutions Awarded:</b> 169



# 2011 MRI Award Snapshot

## By Institution Type

	Ph.D.	non-Ph.D.	Non-degree	MSI
# reviewed	506 (30% DEV)	312 (11% DEV)	41 (29% DEV)	75 (25% DEV)
Mean request	\$784 K	\$453 K	\$934 K	\$545 K
Median request	\$590 K	\$341 K	\$761 K	\$377 K
# awards	104	74	9	18
NSF \$ awarded	\$70.5 M	\$24.5M	\$5.2 M	\$7.4 M
MRI \$ awarded	\$61.4 M	\$21.7 M	\$5.0 M	\$6.0 M
Success rate	20.6%	23.7%	22.0%	24.0%
Mean award	\$678 K	\$331 K	\$580 K	\$411 K
Median award	\$523K	\$312 K	\$472 K	\$299 K

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STC



# STC

FY 2013 IA Budget:

\$26.3 Million

*Enable potentially transformative, complex research requiring large-scale, long-term efforts; develop next generation scientists and engineers; promotes partnerships / knowledge transfer*

- 17 STCs
  - 5 new centers in FY 2010 + 11 previously existing centers
  - Geographically wide-spread
  - All NSF-supported disciplines eligible
  - Current competition to fund ~5 centers in FY 2013
- Directorates and OIA co-manage the program
  - \$48.77M invested in 11 STCs in FY 2013 via directorates
  - \$25M invested in the 5 new 2013 STCs



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# Emerging Frontiers of Science of Information

NSF STC 2010



- Bryn Mawr
- Howard
- MIT
- Princeton
- Purdue
- Stanford
- UC Berkeley
- UC San Diego
- UIUC

# Overview of BEACON

Center for the Study of Evolution in Action



STC Directors' Meeting  
August 30, 2010

Erik Goodman, Director  
Michigan State University



EMERGENT BEHAVIOR OF INTEGRATED CELLULAR SYSTEMS: AN ENGINEERING APPROACH TO THE DESIGN OF BIOLOGICAL MACHINES

STC Directors' Meeting  
August, 2010

Center for Dark Energy Biosphere Investigations (C-DEBI)



NSF Directors meeting  
Aug. 31 - Sept. 1 2010



Katrina J. Edwards  
University of Southern California  
Department of Biological Sciences



### Mission Statement:

To develop the device science and technology that will reduce energy consumption in electronic systems by orders of magnitude. To inspire and train a diverse generation of scientists, engineers, and technicians.

NSF, Arlington VA  
Aug. 30, 2010

Eli Yablonovitch, Berkeley EECS Dept.

# NSF Center for E<sup>3</sup>S

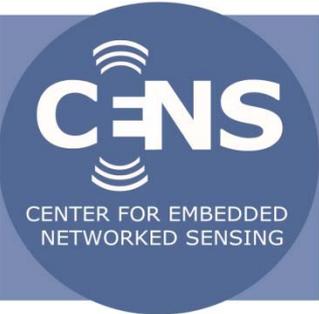
Center for Energy Efficient Electronics Science



CMOP  
Center for Coastal Margin Observation & Prediction

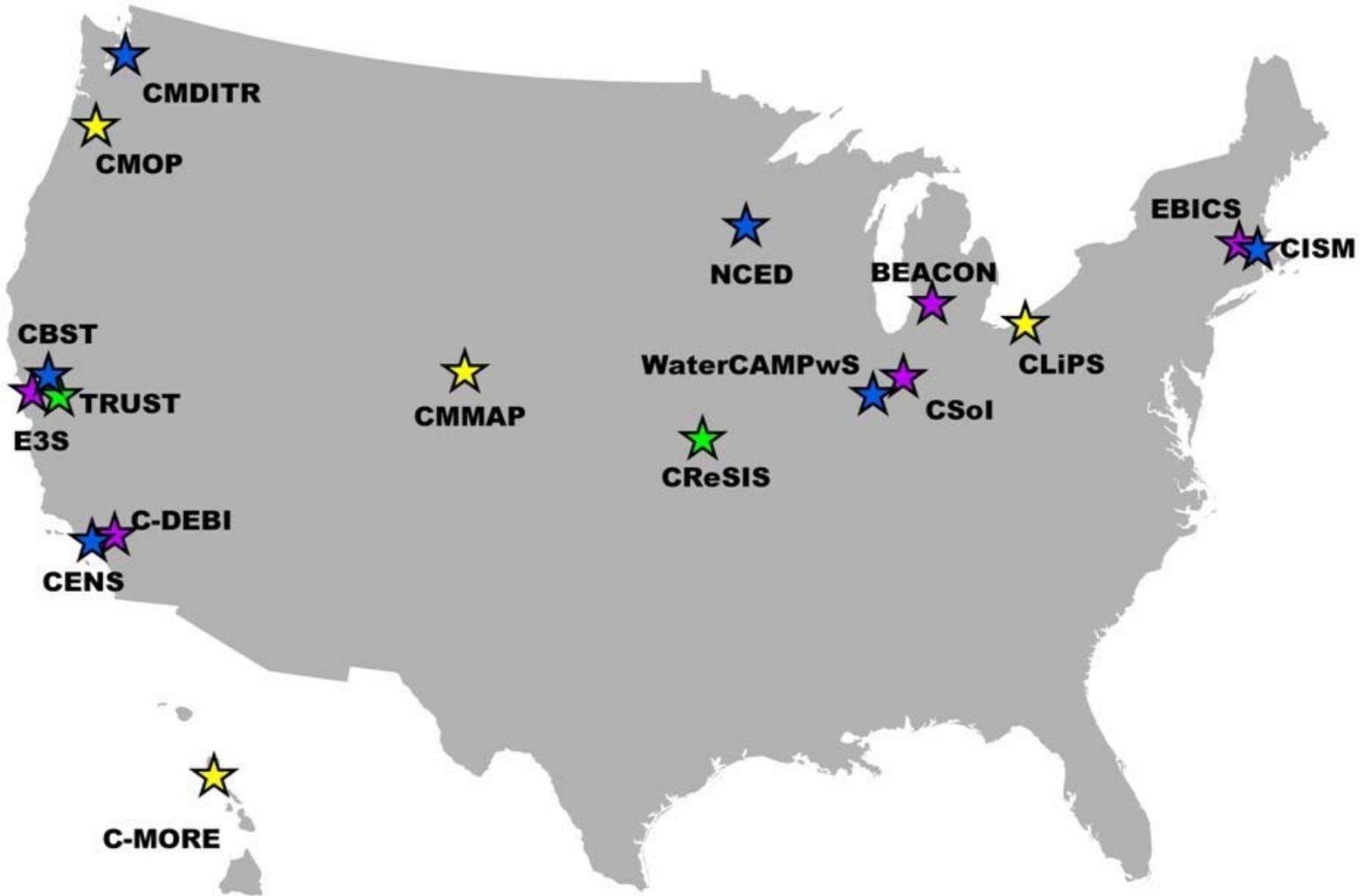


center for microbial oceanography  
c.m.o.r.e.



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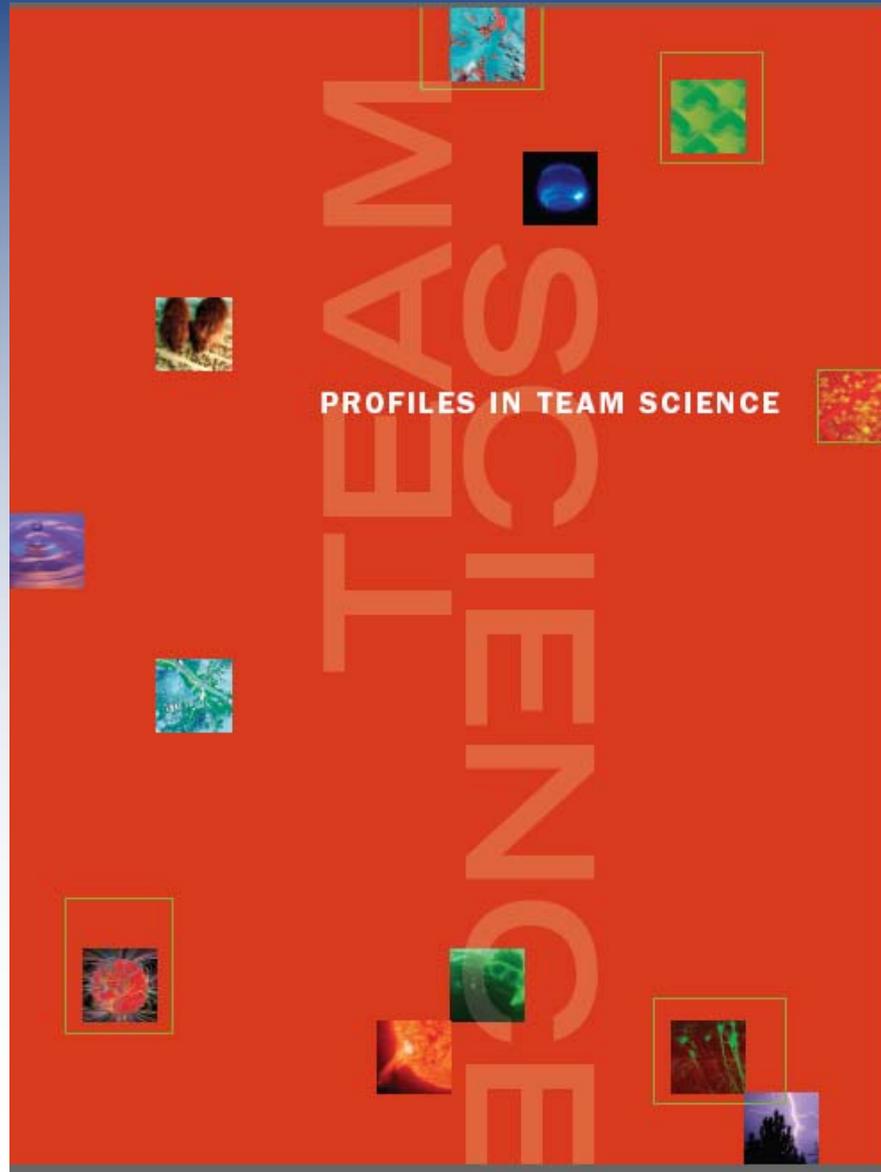
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# Understanding NSF

- Know the NSF Website ([www.nsf.gov](http://www.nsf.gov))
- Search Recent Awards ([www.nsf.gov/awardsearch](http://www.nsf.gov/awardsearch))
- Identify appropriate funding opportunities ([www.nsf.gov/funding](http://www.nsf.gov/funding))
- Talk to Program Officers in Divisions where you “fit”
- Know the “Grant Proposal Guide” (GPG) within the “Proposal and Award Policies and Procedures Guide”  
([http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=papp](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp))
- Know program purpose, goals, and requirements
- Serve as a panelist!
- Talk to successful PIs
- Know NSF’s role compared to other Federal agencies

# Ask Early, Ask Often!

<http://www.nsf.gov/staff>

<http://www.nsf.gov/staff/orglist.jsp>



# For More Information

## EPSCoR

<http://www.nsf.gov/div/index.jsp?org=EPSC>

## I-CORPS

<http://www.nsf.gov/i-corps>

## INSPIRE

<http://nsf.gov/creativ>

[http://www.nsf.gov/about/budget/fy2013/pdf/40\\_fy2013.pdf](http://www.nsf.gov/about/budget/fy2013/pdf/40_fy2013.pdf)

## MRI

<http://www.nsf.gov/od/oia/programs/mri/>

## STC

<http://www.nsf.gov/od/oia/programs/stc/index.jsp>



# Thank You!

# Questions?