

National Science Foundation
Office of Integrative Activities (OIA)
(with special focus on the MRI and STC programs)

NSF Grants Conference
Arlington, VA

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



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What is OIA?

The Answer

Agent of Change - catalyzing
excellence in research and
education

- Incubator
- Capacity Building
- Stewardship

Activities - Stewardship

American Association for the Advancement of Science (AAAS) Fellows

- Providing opportunities for learning, and input on issues relating to NSF's mission to support fundamental science and engineering research and education.



Summer Scholars Internship Program

- Developing undergraduate and graduate student potential through exposure to science and engineering policy, issues and programs.

www.nsf.gov/od/oia/activities/interns/about_ext_only.jsp

Committee on Equal Opportunities in Science and Engineering (CEOSE)

- Encouraging full participation of women, underrepresented minorities, and persons with disabilities in scientific, engineering, and professional fields.

www.nsf.gov/od/oia/activities/ceose/

Committee of Visitors (COV)

- Advising the Foundation to ensure improvement of NSF performance, and openness to the research and education community.

www.nsf.gov/od/oia/activities/cov/



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Activities - Stewardship

National Medal of Science

- For individuals "deserving of special recognition by reason of their outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences."

www.nsf.gov/od/nms/medal.jsp



Waterman Award

- Recognizing outstanding young researchers in any field of science or engineering supported by the NSF.

www.nsf.gov/od/waterman/waterman.jsp

Presidential Early Career Awards for Scientists and Engineers (PECASE)

- Providing the highest honor bestowed by the United States Government for early career scientists and engineers

www.nsf.gov/od/oia/activities/pecase/

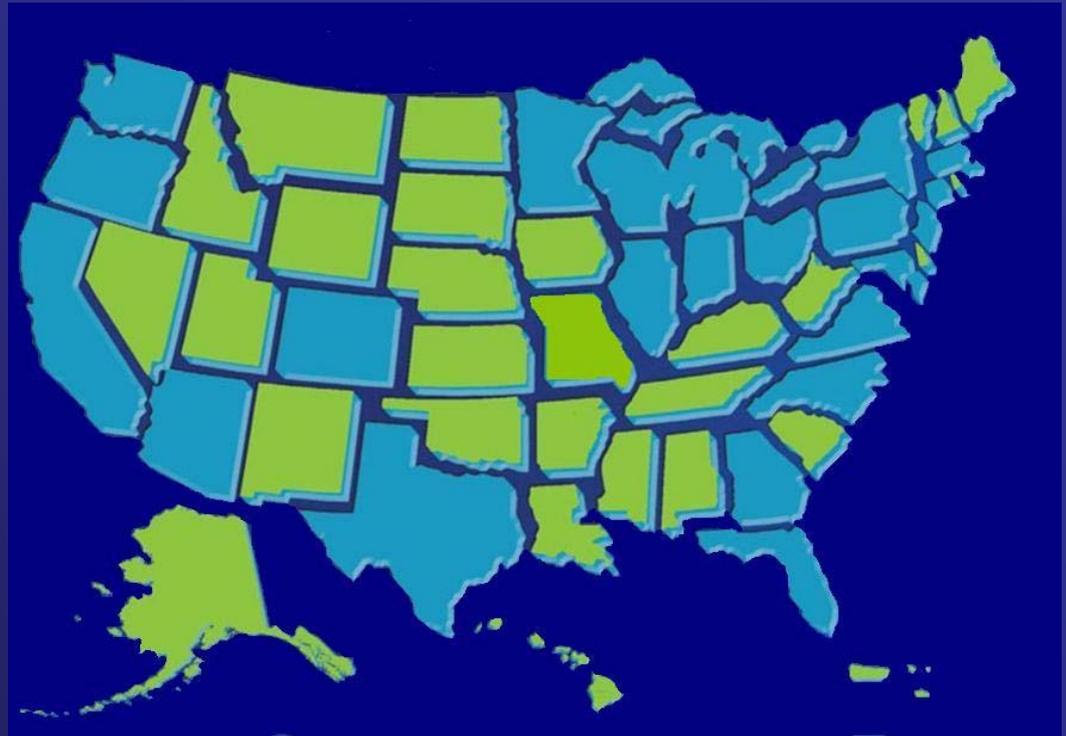


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Programs – Capacity Building

Experimental Program to Stimulate Competitive Research (EPSCoR)

- Strengthening research and education in science and engineering throughout the United States and avoiding undue concentration of such research and education;
- Catalyzing key research themes and related activities within and among EPSCoR jurisdictions;
- Facilitating effective jurisdictional and regional collaborations among academic, government and private sector stakeholders;
- Broadening participation in science and engineering by institutions, organizations and people within and among EPSCoR jurisdictions.



28 States, 1 Commonwealth, and 1 Territory participate in EPSCoR



<http://www.nsf.gov/od/oia/programs/epscor/about.jsp>

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Programs - Incubation

Innovation Corps (I-Corps)

I-Corps is a set of activities and programs that prepare scientists and engineers to extend their focus beyond the laboratory to broaden the impact of select, NSF-funded, basic-research projects. Fosters entrepreneurship that will lead to the commercialization of technology.

- Enables commercial feasibility testing
 - Through structured curriculum
 - Requires team participation
- Leverages previous NSF support
- Targets increasing NSF's economic impact
- Multi-element program
 - Teams, Sites, Nodes



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Programs - Incubation

Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)

Demonstrate that NSF is open to unusually novel cross-disciplinary ideas: Welcome groundbreaking or unconventional ideas and approaches, and unusually novel, creative interdisciplinary proposals

- First pilot INSPIRE award activity for 2012-13: CREATIV (now INSPIRE), unsolicited (open to any NSF-supported topic), interdisciplinary, potentially transformative, generally internally reviewed, up to \$1 million over up to 5 years
- Second pilot under development for 2013: “Mid-scale” projects, to \$3M (responds to NSB Task Force on Unsolicited Mid-scale Research)
- Third pilot under development: Director’s Individual INSPIRE Awards



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Programs – Capacity Building

Science and Technology Centers (STC): Integrative Partnerships

The STC: Integrative Partnerships program supports innovative, grand-challenge research programs that require large-scale, long-term investments and embed education, diversity and the transfer of new knowledge to achieve the goals of the Center. STCs may involve any areas of science and engineering that NSF supports.

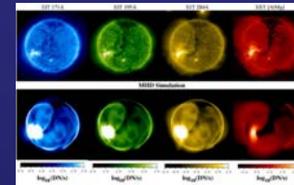
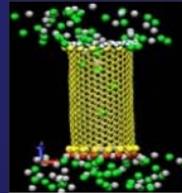
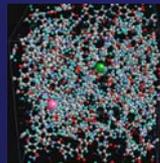
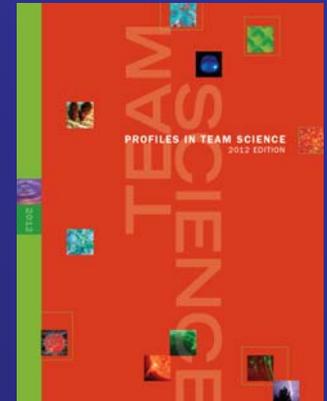
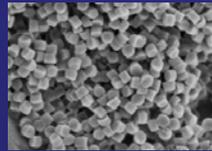
A [Science and Technology Centers: Integrative Partnerships](#) competition is underway: Deadline has passed. New competitions are typically held every ~3 years at the Director's discretion



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Science and Technology Centers (STC)

- Currently there are 17 active Science and Technology Centers
 - The Class of 2000 (5 Centers) has “graduated”, the Class of 2002 (6 Centers) soon will “graduate”
 - The Class of 2010 (5 Centers) is the most recent Class
- http://www.nsf.gov/news/news_summ.jsp?cntn_id=116378&org=NSF&from=news
- Profiles in Team Science (2007, 2012): <http://depts.washington.edu/teamsci/welcome.html>



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Science and Technology Centers (STC)

Center for Layered Polymeric Systems (CLiPS)

CLiPS Mission

The Center undertakes an integrated program of research, innovation and education through the vehicle of a unique multilayering process technology. The enabling technology will be a platform for advancing the nation's science and technology agenda through development of new materials and materials systems, and for educating a diverse American workforce through interdisciplinary education programs.



Partnerships



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Science and Technology Centers (STC)

Class of 2010

http://www.nsf.gov/news/news_summ.jsp?cntn_id=116378&org=NSF&from=news

- Center for Dark Energy Biosphere Investigations (C-DEBI) – Lead: University of Southern California
- BEACON: An NSF Center for the Study of Evolution in Action – Lead: Michigan State University
- Emergent Behaviors of Integrated Cellular Systems – Lead: Massachusetts Institute of Technology
- Emerging Frontiers of Science of Information – Lead: Purdue University
- Center for Energy Efficient Electronics Science (E3S) – University of California Berkeley

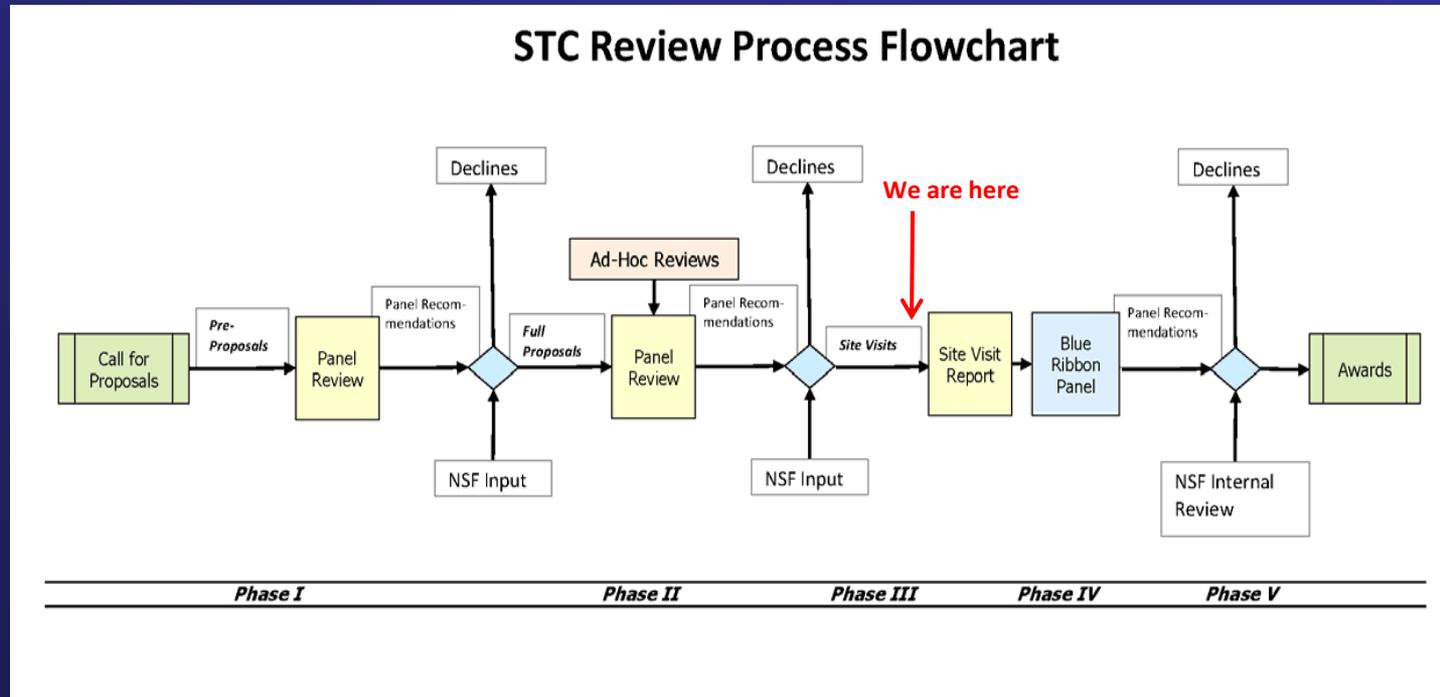


For more information, contact: **Joan M. Frye (jfrye@nsf.gov)**

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Science and Technology Centers (STC)

STC 2013 Competition (NSF 11-522): Review Process



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The Major Research Instrumentation (MRI) Program¹

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

¹The MRI program is coordinated by the Office of Integrative Activities (OIA) in collaboration with Directorates and Offices across NSF.



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MRI Program Solicitation for the FY 2013 MRI Competition

A new solicitation is expected this fall for the anticipated January 2013 deadline – to be posted in October, 2012.

A web broadcast on the FY 2013 MRI competition is planned for December, 2012.

Please monitor the website below for further details.



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

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MRI – Capacity Building

- Supporting the *acquisition* of major state-of-the-art instrumentation, thereby improving access to, and increased use of, modern research and research training instrumentation shared by the Nation's scientists, engineers, and graduate and undergraduate students;

OR

- Fostering the *development* of the next generation of major instrumentation, resulting in new instruments that are more widely used, and/or open up new areas of research and research training;

AND

- Enabling academic departments, disciplinary & cross-disciplinary units, and multi-organization collaborations to integrate research with *research training*.



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MRI – Incubating

- Supporting the acquisition and development of research instrumentation that makes use of, advances, and/or expands the Nation's cyber-infrastructure and/or high performance computing capability:
 - ❖ Support development of computational and data-intensive science and engineering programs, or
 - ❖ Provide pathways to regional and national infrastructure.
- Promoting substantive and meaningful partnerships for instrument development between the academic and private sectors:
 - ❖ Create innovative ideas or products with wide scientific or commercial impact (*links to I-Corps*)



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MRI

- Congressionally mandated program since 1990s
- Annual competition with January proposal deadline
- Eligible organizations: Ph.D.-granting (>20 Ph.D./D.Sci. over 2 years) and non-Ph.D.-granting (≤20 Ph.D./D.Sci. over 2 years) academic institutions; non-degree-granting institutions
- Proposal limit: 3 per institution - no more than two proposals may be for instrument acquisition
- Award size: \$100,000 to \$4 million for Ph.D.-granting institutions and non-degree-granting institutions; up to \$4 million (no minimum) for non-Ph.D.-granting institutions
- ***30% cost sharing (per America COMPETES), but non-PhD-granting academic institutions are exempt***

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.



MRI 2012 (NSF 11-503)

- Proposals considered for **Instrument Acquisition** (3 years) or **Instrument Development** (5 years)
- Must be a **single instrument** or multiple pieces of equipment that serve as an **integrated instrument**.
- **Anticipated Award Size \$100,000 to \$4 million** for either acquisition or development proposals
(no minimum for proposals from non-Ph.D. granting institutions or proposals for fields of mathematical and social, behavioral and economic sciences)
- **Number of Anticipated Awards** based on anticipated FY12 budget of **\$90 million²**:

~175 awards overall (up to \$35 million for \$1-4 million awards^{2,3})

¹New solicitation expected this fall for anticipated January 24, 2013 deadline

²Subject to availability of funds ³Subject to proposal quality



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MRI 2012 Snapshot - Overall

Number Reviewed: 810 (208 DEV, 602 ACQ)

Dollars Requested: \$537.4 million

Mean Dollars Requested: \$663,500

Median Dollars Requested: \$491,000

Number of Awards: 207 (51 DEV, 156 ACQ)

MRI Amount Awarded: \$88.7 million

NSF Amount Awarded: \$103.0 million

Overall Success Rate: 25.6%

Mean Award: \$497,400

Median Award: \$351,600

Number of Institutions that Participated: 428

Number of Institutions Awarded: 170



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MRI 2012 Snapshot - Institutions

	Ph.D.	non-Ph.D.	Non-degree	MSI
# reviewed	499 (33% DEV)	275 (11% DEV)	36 (33% DEV)	91 (19% DEV)
Mean request	\$758,100	\$463,500 K	\$880,500	\$551,000
Median request	\$560,700	\$357,400 K	\$583,900	\$394,200
# awards	127	74	6	17
NSF \$ awarded	\$76.5 M	\$19.7 M	\$6.8 M	\$5.3 M
MRI \$ awarded	\$64.5 M	\$18.0 M	\$6.2 M	\$4.8M
Success rate	25.5%	26.9%	16.7%	18.7%
Mean award	\$602,700	\$265,900	\$1,127,000	\$282,200
Median award	\$644,600	\$246,100	\$1,101,700	\$225,000



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MRI 2012 Snapshot - EPSCoR

Number of Proposals Reviewed: 219
Dollars Requested : \$127.9 M
Number of EPSCoR-eligible Awards: 51
EPSCoR-eligible Success Rate: 23.3%
Amount to EPSCoR-eligible Awards: \$23.8 M
Eligible proposals co-funded by EPSCoR: 19
EPSCoR Awarded to EPSCoR-eligible Awards: \$3.0 M
Mean award: \$469,900
Median award: \$312,800



MRI 2012 Snapshot¹

FY	# Proposals	\$ Requested	# Awards	MRI Funding	Total NSF Funding ²
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 ³	2,020	\$1,715.9	651	\$398.9	\$405.6
2010 ^{4,5}	939 ⁵ (41) ⁴	\$626 ⁵ (\$6.3) ⁴	171 ⁵ (29) ⁴	\$86.8 ⁵ (\$4.1) ⁴	\$94.8 ⁵ (\$4.1) ⁴
2011 ⁶	859	\$576.4	188	\$88.1	\$102.0
2012	810	\$537.4	207	\$88.7	\$103.0
TOTAL:	12,259	\$7,320.8	3,872	\$1,517.6	\$1,631.8

¹includes only awards submitted directly to MRI program.

²includes MRI funds and contributions from Directorates and Offices.

³includes one-time appropriation under ARRA.

⁴includes 29 awards and \$4.1M awarded to MRI RAPID Proposals.

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

⁶includes a \$1.8M FY12 program contribution to a FY11 MRI award.



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Thank You!



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