



National Science Foundation  
WHERE DISCOVERIES BEGIN

## Office of International and Integrative Activities (OIIA)

NSF Grants Conference

Dr. Randy L. Phelps  
Senior Staff Associate  
rphelps@nsf.gov  
703-292-8040

March 11-12, 2013

Hosted by Howard University, Arlington, Virginia





# What is OIIA?

## An Agent of Change - catalyzing excellence in research and education

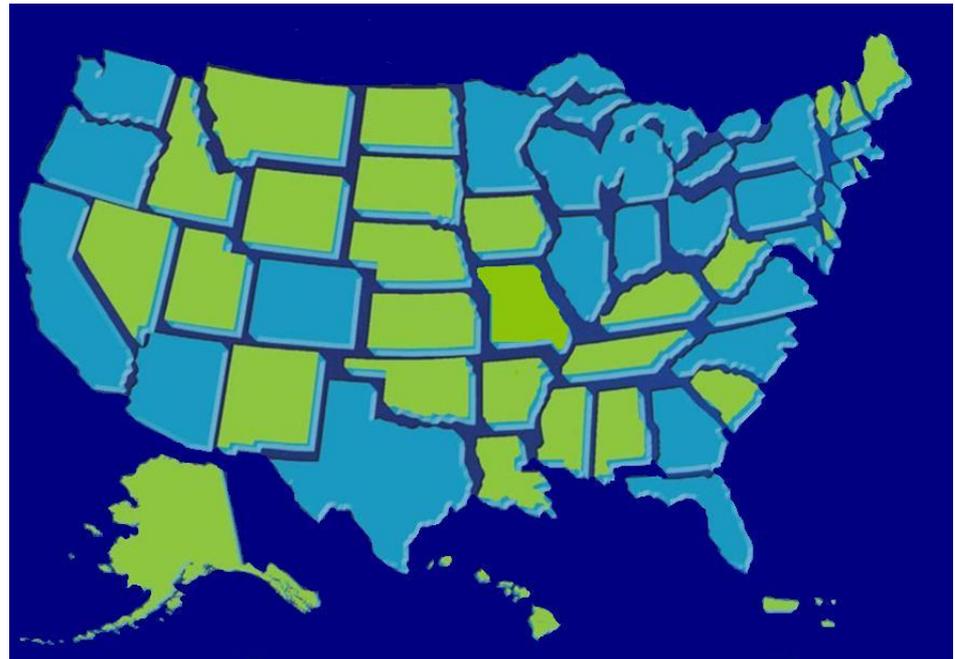
- *Leadership—Leadership with the Scientific Community Locally, Regionally, Globally through Integrative Partnerships*
- ***Innovation**—Incubation of New Interdisciplinary Ideas, Activities, Programs for Excellence in Research and Education*
- ***Capacity Building**—Sustained Efforts for Large-Scale Transformative Research and the Development of Diverse Human Capital and Cutting-Edge Research Infrastructure*
- *Stewardship and Communication—Broad Impact as a Model Organization within NSF*



# 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>



# Programs – Innovation and 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



# Programs – Innovation and Incubation

## Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)

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

**Anticipated FY 2013 Funding Amount: \$63 million** (pending availability of funds)

- **INSPIRE Track 1** - Provides funding for all NSF-supported areas of science, engineering, and education research; not limited to the exploratory stage (max award \$800,000 to \$1M; max duration 5 years)
- **INSPIRE Track 2** - Larger (\$1M to \$3M) projects
- **Director's INSPIRE Awards** - INSPIRE Track 1 awards for single investigators. Possible additional \$500K.

Solicitation **NSF 13-518** released Nov. 23, 2012

Frequently Asked Questions **NSF 13-040** posted Jan. 3, 2013



# Programs – Capacity Building

## Science and Technology Centers (STC): Integrative Partnerships

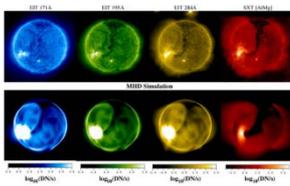
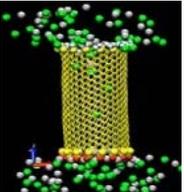
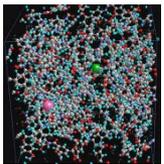
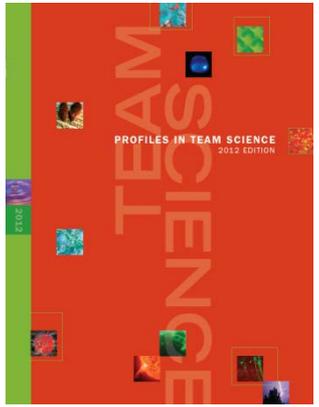
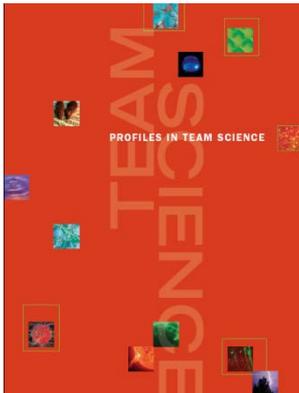
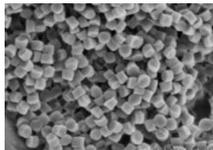
*The STC: Integrative Partnerships program supports innovative, grand-challenge research programs that require large-scale, long-term investments and embed education, diversity and the transfer of new knowledge to achieve the goals of the Center. STCs may involve any areas of science and engineering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

**A Science and Technology Centers: Integrative Partnerships**  
**competition (NSF 11-522) is underway: Deadline has passed.**  
**New competitions are typically held every ~3 years at the**  
**Director's discretion**



# Science and Technology Centers (STC): Integrative Partnerships

- 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](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>



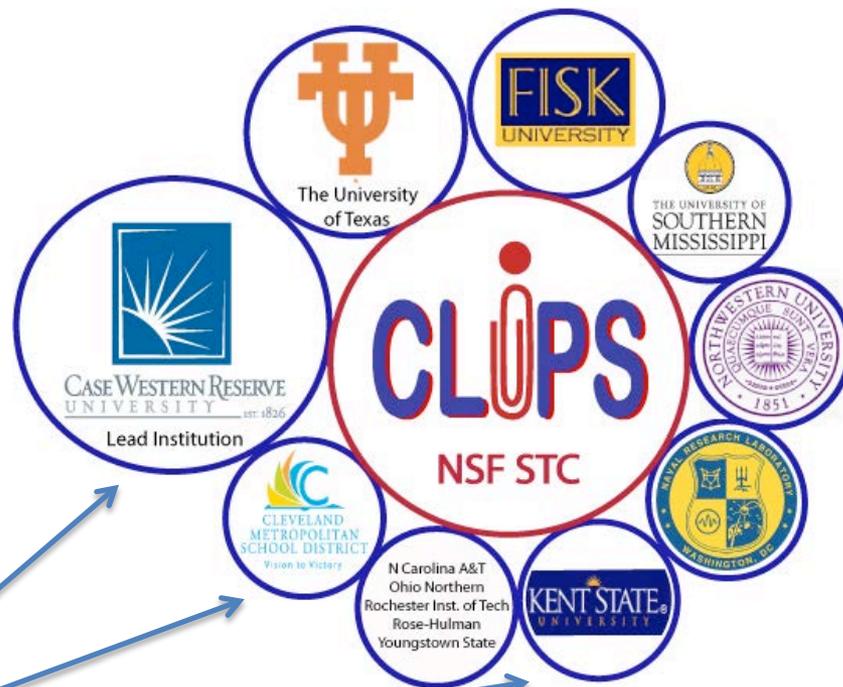


# Science and Technology Centers (STC): Integrative Partnerships

## 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**



## Science and Technology Centers (STC): Integrative Partnerships

### Class of 2010

[http://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=116378&org=NSF&from=news](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



# Programs – Capacity Building

## Major Research Instrumentation (MRI) Program

- 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*.

<sup>1</sup>The MRI program is coordinated by the Office of International & Integrative Activities (OIIA) in collaboration with Directorates and Offices across NSF.



# 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*)



# MRI

- Congressionally mandated program since 1990s
- Annual competition with (typically) a January proposal deadline
- Eligible organizations: Ph.D.-granting (>20 Ph.D./D.Sci. over 2 years) and non-Ph.D.-granting ( $\leq$ 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 2013 (NSF 13-517)

- 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 FY 2013 budget of **\$90 million<sup>2</sup>**:  
~**175 awards** overall (up to \$35 million for \$1-4 million awards<sup>2,3</sup> )

<sup>1</sup>New solicitation expected this fall for anticipated January 23, 2014 deadline

<sup>2</sup>Subject to availability of funds <sup>3</sup>Subject to proposal quality



# MRI 2012 - Award Snapshot (Overall)

|  |
|--|
| <b>Number Reviewed:</b> 810 (208 DEV, 602 ACQ)       |
| <b>Dollars Requested:</b> \$537.4 million            |
| <b>Mean Dollars Requested:</b> \$663,500             |
| <b>Median Dollars Requested:</b> \$491,000           |
| <b>Number of Awards:</b> 207 (51 DEV, 156 ACQ)       |
| <b>MRI Amount Awarded:</b> \$88.7 million            |
| <b>NSF Amount Awarded:</b> \$103.0 million           |
| <b>Overall Success Rate:</b> 25.6%                   |
| <b>Mean Award:</b> \$497,400                         |
| <b>Median Award:</b> \$351,600                       |
| <b>Number of Institutions that Participated:</b> 428 |
| <b>Number of Institutions Awarded:</b> 170           |



# MRI 2012 - Award Snapshot (Institution Type)

|                | 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    |



# MRI 2012 - Award Snapshot (EPSCoR)

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



National Science Foundation  
WHERE DISCOVERIES BEGIN



***Thank You!***  
***Questions?***