Catalyzing Economic Development through Research and Innovation

Denise M. Barnes, Ph.D.
Head, NSF EPSCoR
East Tennessee State University
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National Science Foundation Statutory Charge

" .... to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education."

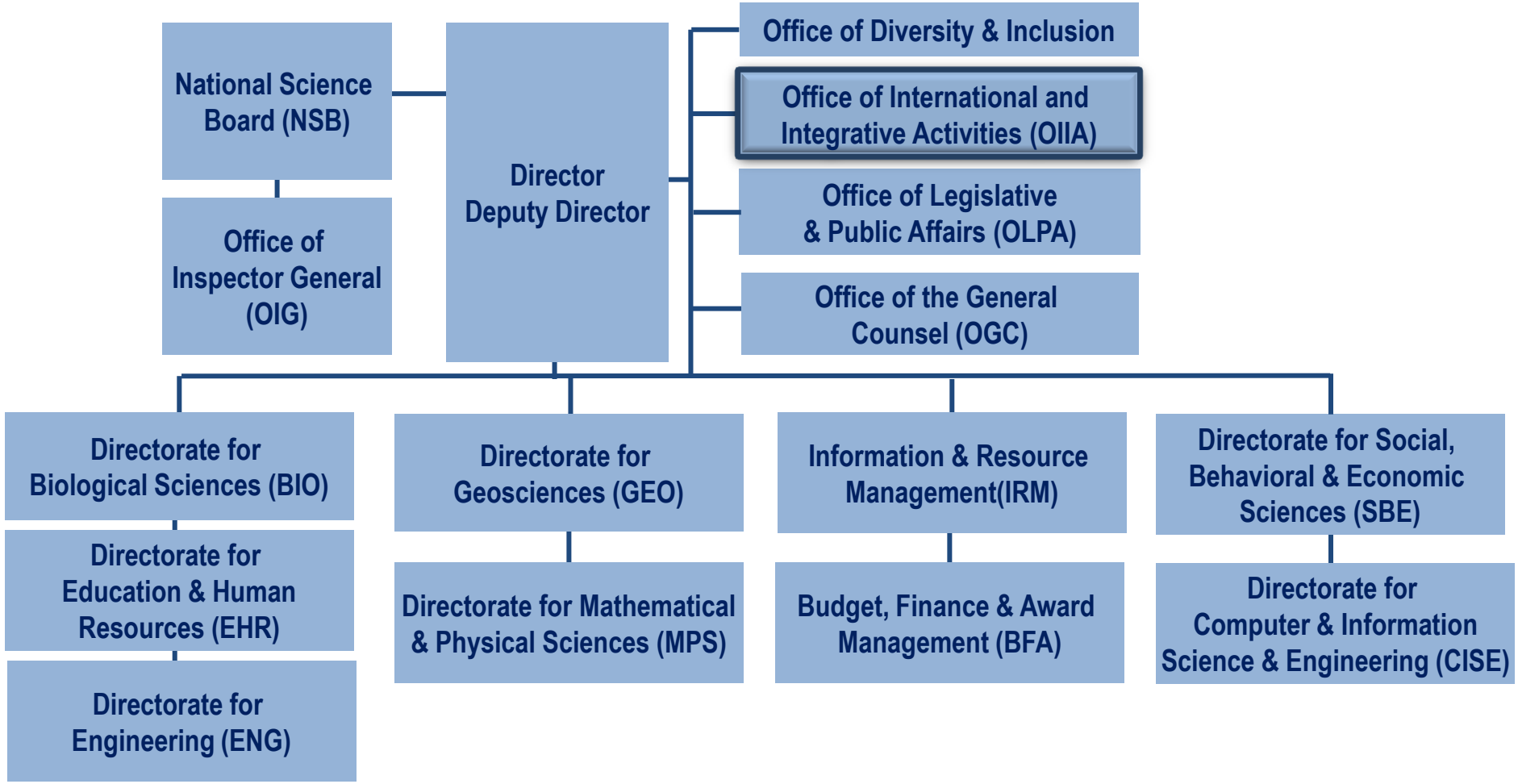
NSF Mission

- To promote the progress of science
- To advance the national health, prosperity, and welfare
- To secure the national defense

NSF Vision

NSF envisions a nation that capitalizes on new concepts in science and engineering and provides global leadership in advancing research and education.

NSF Organization



NSF FY12 Statistics

Budget: **$6.73B**

- $5.63B for Research Support
- $901M for Education & Human Resources
- $198M for Major Research Equipment

Proposals received: 48,623

Proposals awarded: 11,534 (24%)

Administration: ~2100 staff in Arlington, VA

Let's try to describe basic research

- Basic scientific research yields new knowledge and understanding of nature and its laws.
- It focuses on one or a few questions grounded in that broader framework.
- It uses scientifically sound approaches to assess the viability of answers to those questions.
- A variety of paths can lead to productive advance of knowledge

As a result...

- Basic research provides the scientific capital from which practical applications of knowledge can be drawn.
- Basic research, while seeking no practical ends, is not “impractical” research.
- It’s research that’s valuable even if we don’t care about its specific findings or applications.
- This research is a necessary element for training scientists

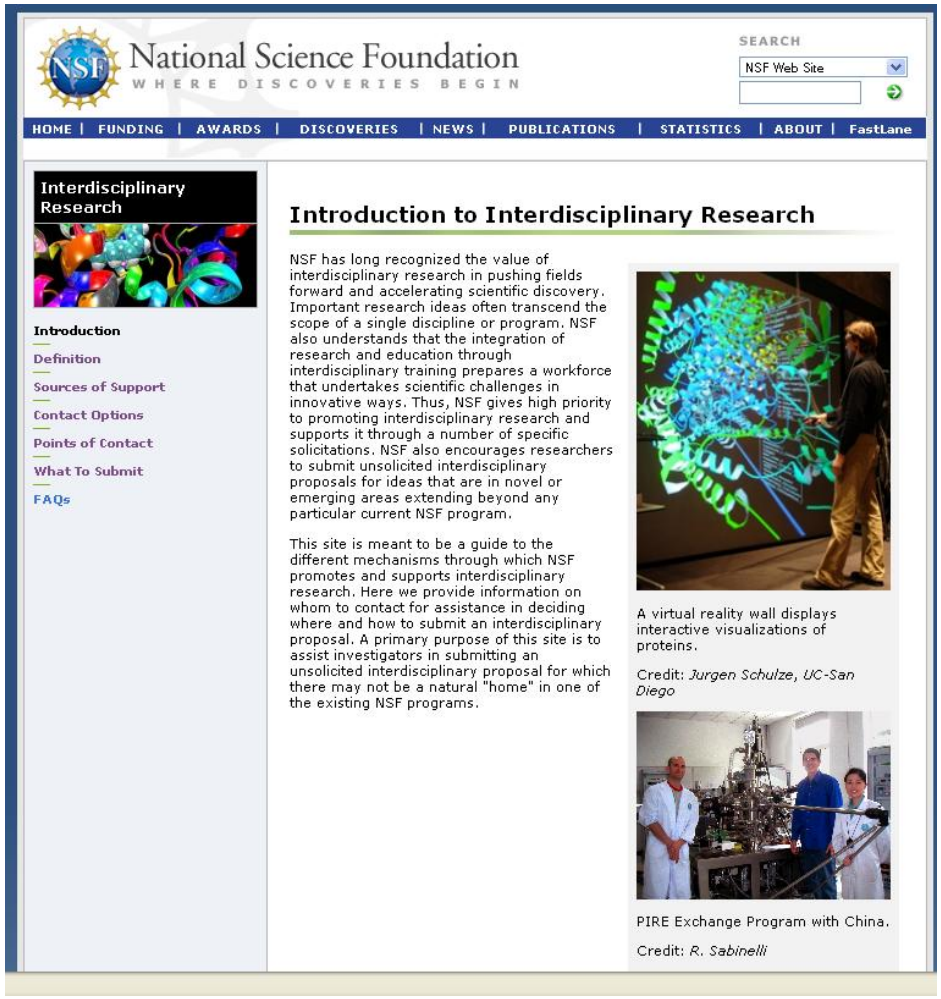
Basic vs. Applied Research

- It's not "either/or“
- It’s relative
- Basic research results often have great direct and indirect utility and applicability
- Basic research is first and foremost about broader theoretical development, not focused application of specific research results.
- Analysis and synthesis are favored over prescription

How can NSF turn basic research into applied innovation?

- Grant Opportunities for Academic Liaison with Industry (GOALI)
- NSF Innovation Corps (I-Corps)
- Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)
- Small Business Innovation Research (SBIR)
- Partnerships for Innovation (PFI)
- Industry and University Cooperative Research Program (I/UCRC)

Interdisciplinary Research Portal



http://www.nsf.gov/od/oia/additional_resources/interdisciplinary_research/

Funding for Crosscutting Programs

http://www.nsf.gov/funding/pgm_list.jsp?type=xcut

Grant Opportunities for Academic Liaison with Industry (GOALI)

- Contact disciplinary program office for deadlines and contact information.
- Supplements and Full Proposals accepted anytime
- Current solicitation: NSF 12-513

GOALI Program Goals

- To promote university-industry partnerships by making project funds or fellowships/traineeships available
- To fund research that lies beyond that which industry would normally fund by themselves
- Targets high-risk/high-gain research with a focus on fundamental research, new approaches to solving generic problems, innovative collaborative industry-university educational programs, and direct transfer of new knowledge between academe and industry

GOALI Eligibility Information

- For fellowships/traineeships, only U.S. citizens, nationals, or permanent residents are eligible to apply for support under this program.
- NSF funds cannot go to an industry partner; they can only be used by the academic institution. The industry partner is expected to participate in the research effort to facilitate in the commercialization of the research.

- **Submission:**
  - To disciplinary program (not GOALI), at its deadline
  - Estimated number of awards: 60-80
  - Anticipated funding: $5M from all participating directorates

NSF Innovation Corps (I-Corps)

- **Contact:**
  - **Errol Arkilic: (703) 292-8095; earkilic@nsf.gov**
  - **Rathindra DasGupta: (703) 292- 8353 rdasgupt@nsf.gov**
  - **Anita La Salle: (703) 292-5006; alasalle@nsf.gov**
- **Submission Windows:**
  - **Jan 1, 2013 – Mar 15, 2013**
  - **Apr 1, 2013 – June 15, 2013**
  - **July 1, 2013 – Sep 15, 2013**
  - **Oct 1, 2013 – Dec 15, 2013**
- **Current solicitation : NSF 12-602**

I-Corps Program Goals

- Establishes a **public-private partnership** to support the translation of NSF research into the development of technologies, products, and processes

- Aims to help create a **national network** of scientists, engineers, innovators, business leaders and entrepreneurs building on existing NSF grantee events

I-Corps Eligibility Information

- **Projects are Team-based** and must have an entrepreneurial lead, an I-Corps mentor, and a PI
- PI(s) *must* contact one of the cognizant I-Corps program officers and receive **prior written authorization to submit** a proposal.
- Proposers **must have an active NSF award** or one that has been active within the previous five years from the date of submission of the I-Corps proposal in a science or engineering field relevant to the proposed innovation.
- A PI is limited to **one I-Corps proposal** during each submission window**.**

I-Corps Anticipated Outcomes

- Functioning network of Mentors/Advisors
- Scientist and Engineers trained as Entrepreneurs
- Increased impact of NSF-funded basic research

- Estimated Number of Awards: 150 in FY 2013

- Anticipated Funding in FY 2013: $18M

Informational Webinars held on the first Tuesday of every month

Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)

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to support bold interdisciplinary projects in all NSF-supported areas of science, engineering, and education research

PROGRAM SOLICITATION

NSF 13-518

National Science Foundation

Office of Integrative Activities

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Education & Human Resources

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Office of Cyberinfrastructure

Office of International Science and Engineering

Office of Polar Programs

Letter of Intent Due Date(s) *(required)* (due by 5 p.m. proposer's local time):

December 10, 2012 - February 20, 2013

INSPIRE Track 2 Inquiries

December 10, 2012 - March 29, 2013

INSPIRE Track 1 Inquiries

Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

May 13, 2013

INSPIRE Track 2 Full Proposals

May 29, 2013

INSPIRE Track 1 Full Proposals

May 29, 2013

Director's INSPIRE Awards Full Proposals

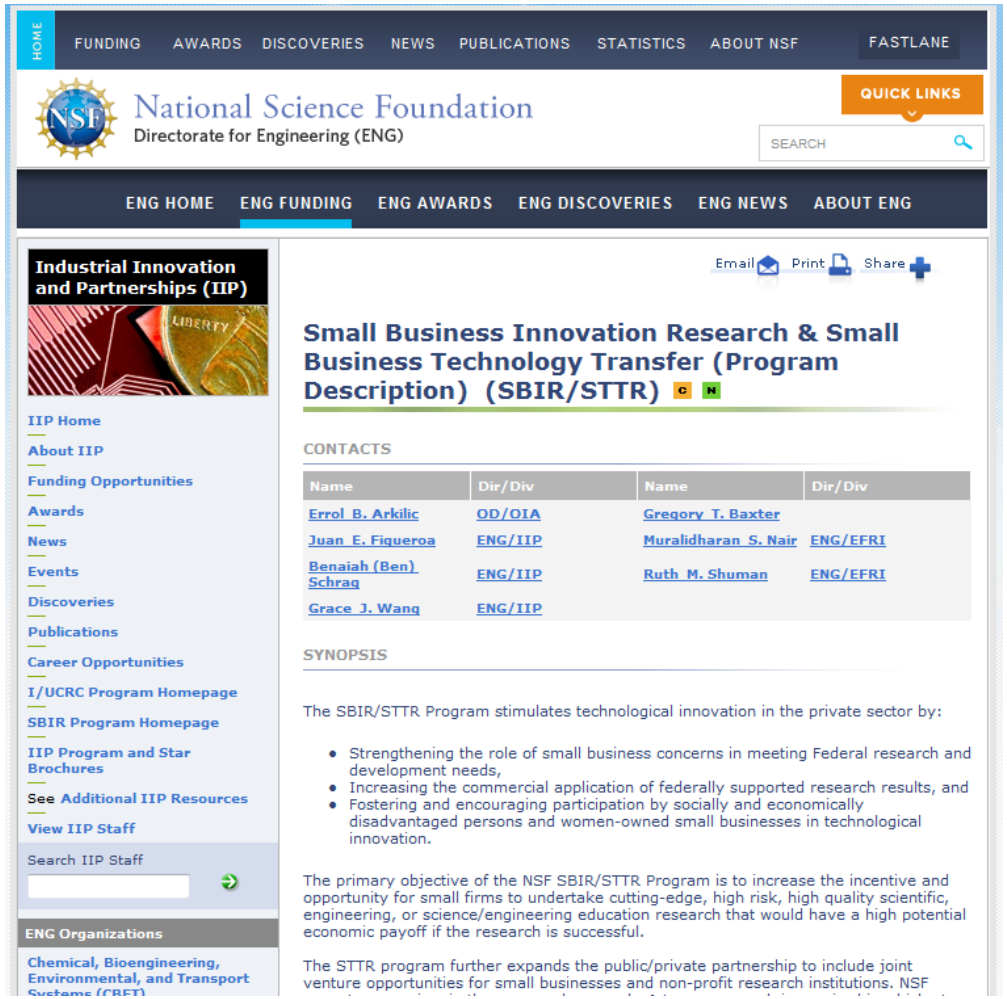
- Solicitation: NSF 13-518
- In a nutshell:
  - Only internal merit review is required
  - Proposals ***must*** be interdisciplinary ***and*** potentially transformative
  - Maximum award size: $1,000,000
  - Maximum award duration: 5 years
- To begin process, PI submits inquiry form

INSPIRE Program Goals

- Attract unusually creative high-risk / high-reward interdisciplinary proposals, including ones that PIs may have been reluctant to submit to a standard review process
- Provide substantial funding, not limited to the exploratory stage
- Be open to all NSF-supported areas of science, engineering, and education research – no favored topics
- INSPIRE 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

Through inquiry process, PI must have at least 2 program directors' authorizations in advance to submit a proposal

Small Business Innovation Research Program (SBIR)



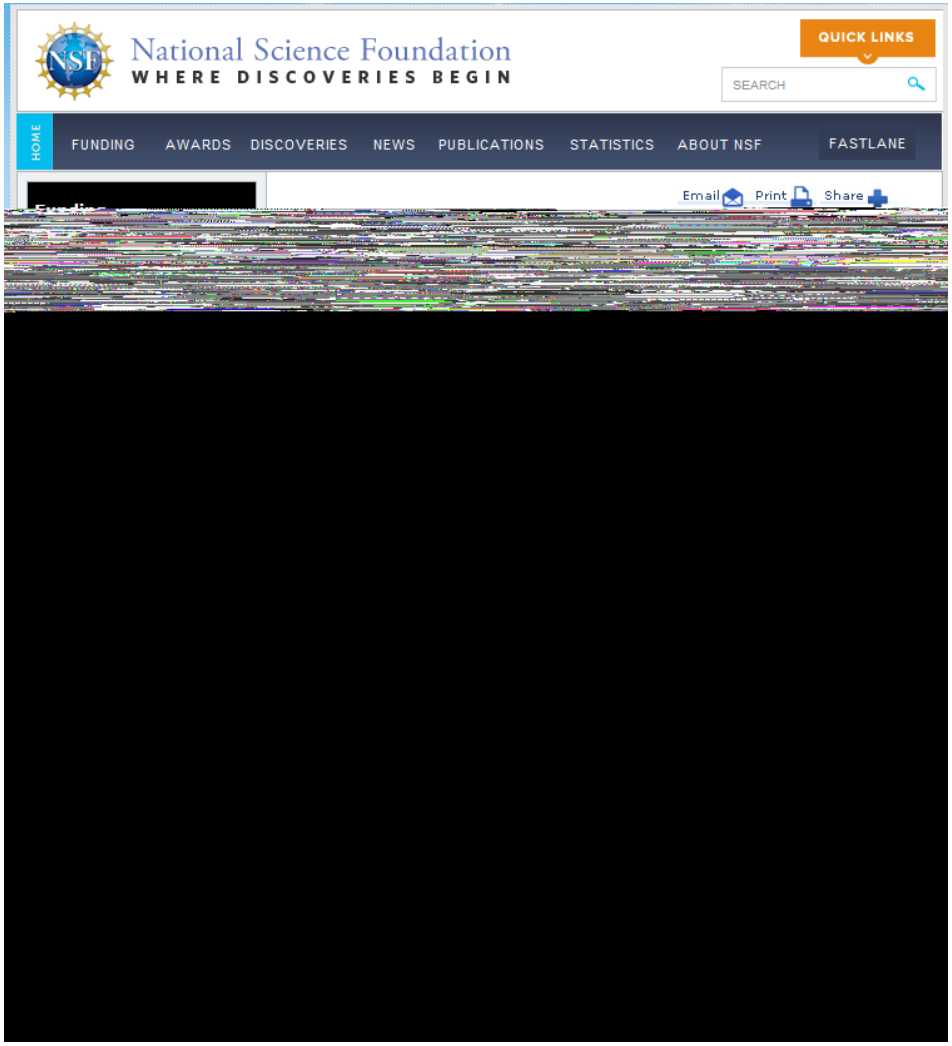
- Solicitation – NSF 13-546
- Estimated number of awards: 200
- Estimated FY13 funding: $30M
  - $150k per award

SBIR Program Goals

- To stimulate technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses.

- FY13 Topics include:
  - Biological and Chemical Technologies
  - Education Applications
  - Electronics, Information and Communication Technologies
  - Nanotechnology, Advanced Materials, and Manufacturing

Partnerships for Innovation: Accelerating Innovation Research (PFI:AIR)



- Solicitation – NSF 12-571
- Estimated number of awards:
  30-35 for Technology Translation
  10-12 for Research Alliance
- Estimated funding:
  - Technology Translation:
  $150k for 18 months per award
  - Research Alliance:
  $800k for 24 months per award

PFI:AIR Program Goals

To accelerate innovation that results in the creation of new wealth and the building of strong local. Regional, and national economies through these two pathways:

- Technology Translation encourages the translation of technologically-promising research discoveries made by prior and/or current NSF-funded investigators toward a path of commercialization
- Research Alliance promotes synergistic collaborations between an existing NSF-funded research alliance (e.g. Centers) and other public and private entities to motivate the translation and transfer of research discoveries into innovative technologies and commercial reality

Industry & University Cooperative Research Program (I/UCRC)

- Dear Colleague Letters:
  - NSF 11-074
  - NSF 13-016
- Current Solicitation: NSF 12-516
- Estimated number of awards:
  4-12 planning grants
  2-8 for full centers
- Estimated funding: $10M annually

I/UCRC Program Goals

- Develop long-term partnerships among industry, academe, and government
- Centers are catalyzed by a small investment from NSF and are primarily supported by industry center members, with NSF taking a supporting role in the development and evolution of the center.
- Contributes to the Nation's research infrastructure base and enhances the intellectual capacity of the engineering and science workforce through the integration of research and education.
- International collaboration used to advance these goals within the global context

Thank you!