

Major Facility Innovation and Technology Transfer (Socio-economic Impact)

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Why is this important?

- To many stakeholders, the science does not automatically justify the investment
- “How does it effect me?” (directly & indirectly)
- U.S. innovation ecosystem impact from NSF-funded Research Infrastructure is under-reported



On-going Activities

- Other U.S. agencies
- European Union
- Group of Senior Officials (GSO)



National Synchrotron Light Source II

DOE

*“But when the project was launched in August 2005, the specifications for NSLS-II were at or beyond the state-of-the-art, particularly with respect to magnet precision and alignment and advanced optics. This meant **substantial innovation was needed** in the R&D phase to deliver a resource that would support cutting edge research for the facility life-span, which is roughly 30 years.”*

*“In many cases, the **vendors** had difficulty in meeting [the project’s] demanding requirements.”*



NASA



“Since 1976, Spinoff has annually profiled an average of 50 commercial technologies with origins in NASA missions and research.”



Europe

Organization for Economic Co-operations and Development (OECD)

- GUIDELINES FOR COLLECTING AND INTERPRETING INNOVATION DATA (Oslo Manual; 2005)
- “The Impacts of Large Research Infrastructures on Economic Innovation and on Society: Case Studies at CERN” (2014)
- Surveys currently underway with research infrastructure managers and funders



Group of Senior Officials (GSO)

13. Innovation, Technology Transfer and Intellectual Property. Global Research Infrastructures should develop an Innovation Promotion Plan (IPP) with clear goals and strategies for the promotion of innovation and technology transfer and the management of intellectual property. **The plan should also describe how the GRI will monitor and assess the socio-economic impact of innovation and technology transfer.** These plans should recognize the differing opportunities for innovation at each stage of the RI lifecycle as well as the barriers and drivers appropriate to the particular GRI context.



NSF

- Focus on Programs & Centers:
 - “Mid-scale Innovations Program”
 - “Innovations at the Nexus of Water, Energy and Food Systems”
 - “Centers for Chemical Innovation”
 - “Partnerships for Innovation”
- OLPA: [nsf.gov/impacts](https://www.nsf.gov/impacts)



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Florida

Florida Statistics

2012	\$154,956,000
2011	total awards for
2010	FY 2012

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Local Research Assets: 12
2012 NSF Awards: 599

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NSF Award Highlights

- Jobs await graduates of two-year aerospace technician programs**
Aerospace courses and SpaceTEC certification align with industry needs...
Research Areas: Education
- 'Tiny Tech' on the radio and the web**
Radio program on nanotechnology gives insight to the public...
Research Areas: Nanoscience, Education
- Improving the efficiency of organic light-emitting diodes**
A partnership between industry and academia produces thin films for lighting needs...
Research Areas: Chemistry & Materials, Engineering

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NSF Local Research Assets

Recent Awards & Abstracts

- RAPID Collaborative Research: Resilient and resistant urban forests: the role of landscape configuration and socioeconomic legacy in understanding tree response to hurricane
- RAPID Collaborative Research: Resilient and resistant urban forests: the role of landscape configuration and socioeconomic legacy in understanding tree response to hurricane
- CAREER: Developing a Consensual Validation and Benchmarking Procedure for Characteristic Density

<https://www.research.gov/research-portal/appmanager/>



Objective

In the current budget and political landscape, how do we (Recipients and NSF) do better at “telling the story” to external stakeholders?

- More routinely
- More clearly
- More easily
- More consistently



Major Facilities Questionnaire

Purpose: Gather initial information from NSF-funded Major Facilities related to socio-economic impact (“Broader Impacts”):

- What do we know already?
- What data do Facilities already collect?
- How can we do it better w/o adding undo burden?



Major Facilities Questionnaire

- Tailored questions from:
 - NSF's BRDIS (2009) – NCSES
 - The Community Innovation Survey 2012 (EU)
 - Current OECD Surveys
- Four Sections:
 - General Information
 - Economic Impact
 - Societal Impact
 - Data Collection and Dissemination



How will the data be used?

- Generate aggregate statistics for NSF internal use
- Shared with Major Facilities community to help inform decision making on information gathering and reporting
- Shared in aggregate with international partners for cross-comparison



Questions

- Are you interested in reviewing the questionnaire?
- Are you interested in taking this questionnaire?
- If so, who is the appropriate POC at your Facility?

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Thank You

