



National Science Foundation
WHERE DISCOVERIES BEGIN

Extraordinary Times

Challenges and Opportunities for NSF and the EPSCoR Community

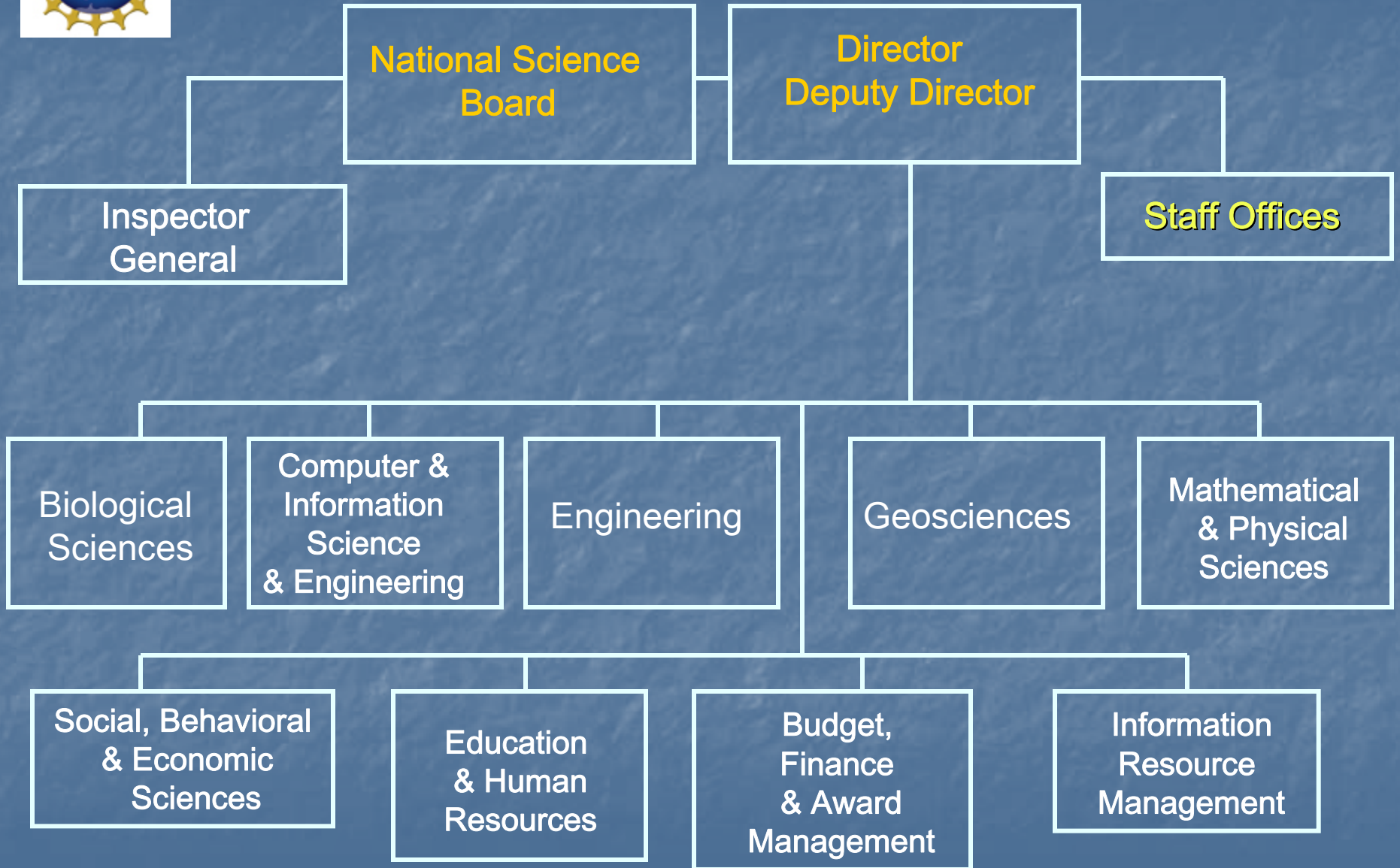
W. Lance Haworth

Director, Office of Integrative Activities

Oklahoma EPSCoR Grants Workshop
Oklahoma State University, Stillwater, OK
21 May 2009

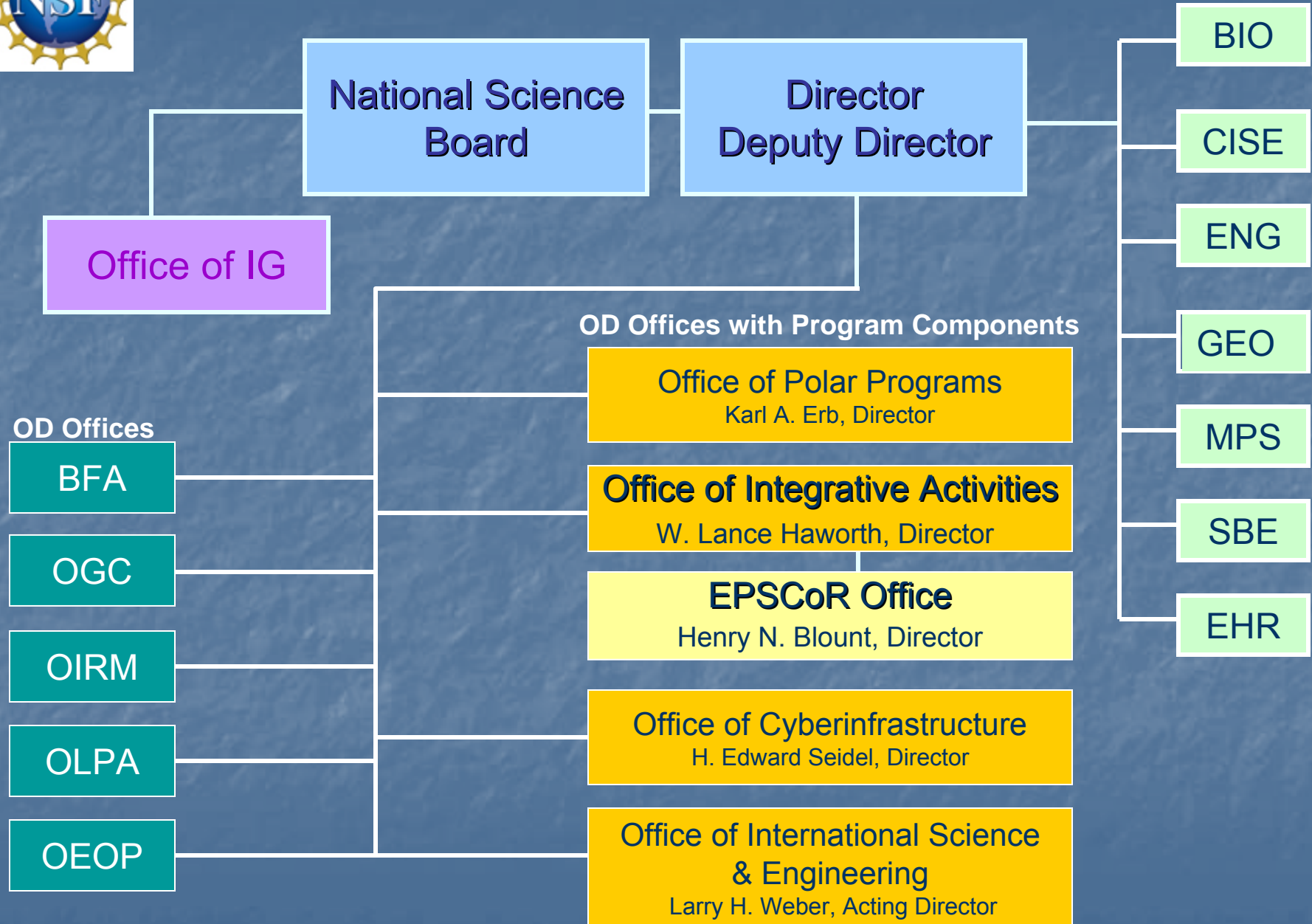


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EPSCoR Origins

- *NSF Act of 1950*
 - ...it shall be an objective of the Foundation to strengthen science and engineering research potential and education at all levels throughout the United States and avoid undue concentration of such research and education, respectively.
- *Resolution NSB-78-12* established the EPSCoR program and the general guidelines for its management
- *EPSCoR Purpose*
 - To build the capacity of educational institutions to participate more fully in NSF research activities

NSF EPSCoR Cohorts

FY 1980

Arkansas
Maine
Montana
South Carolina
West Virginia

FY 2000

Alaska
FY 2001
Hawaii
New Mexico

FY 1985

Alabama
Kentucky
Nevada
North Dakota
Oklahoma
Puerto Rico
Vermont
Wyoming

FY 2002

U.S. Virgin Islands

FY 2003

Delaware

FY 2004

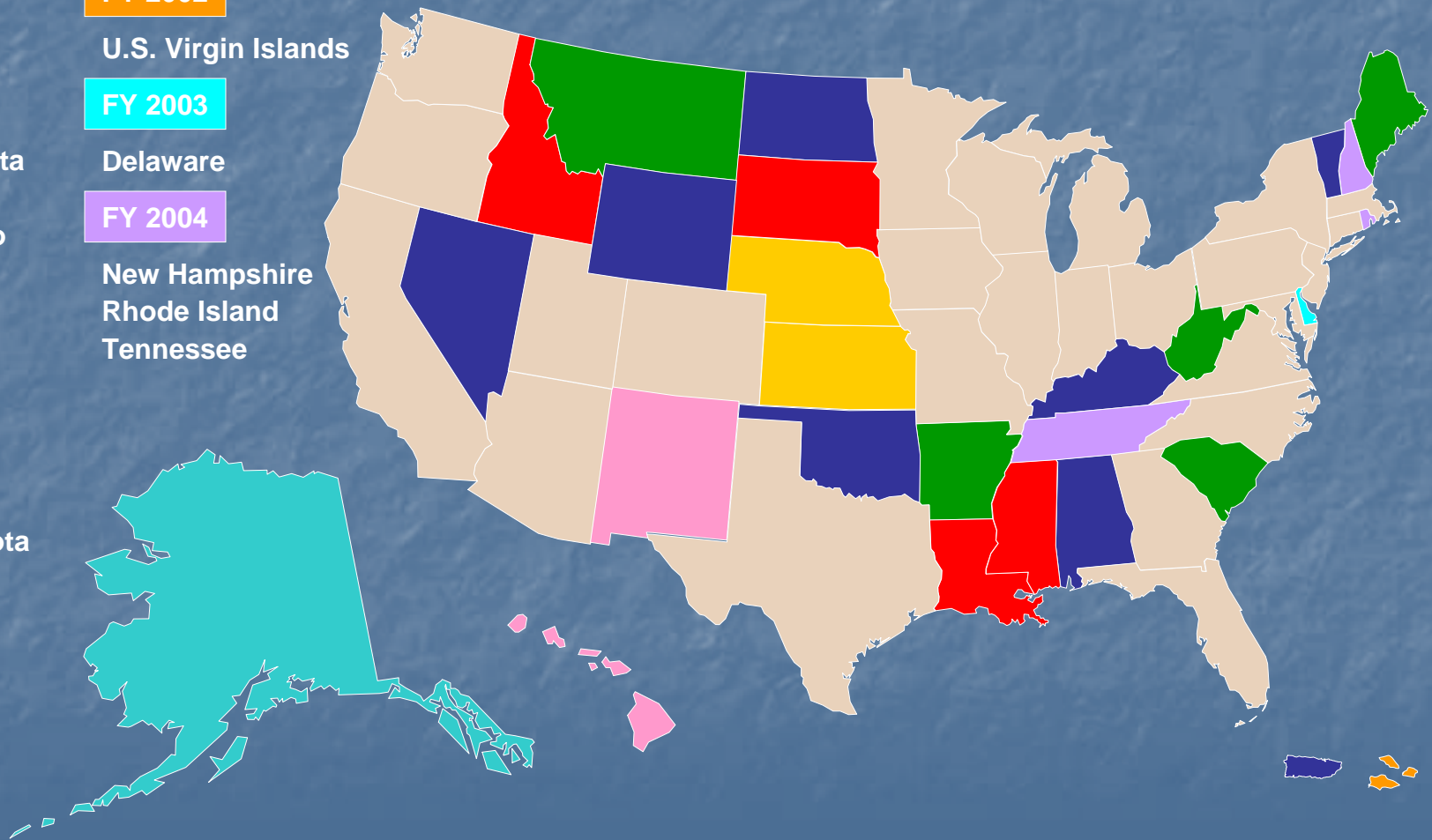
New Hampshire
Rhode Island
Tennessee

FY 1987

Idaho
Louisiana
Mississippi
South Dakota

FY 1992

Kansas
Nebraska





EPSCoR Strategic Objectives

- Catalyze *key research themes*
- Activate effective collaborations within and among the states
- Broaden participation
- Develop, implement, and evaluate programmatic experiments



Innovation and Broadening Participation

“Diversity Drives Innovation”

“You can do all the innovating you want in the laboratory, but if you can’t get it out of the university walls you do no one any good”

- ***Joseph DeSimone, University of North Carolina (MIT-Lemelson Innovation Award Winner, 2008)***

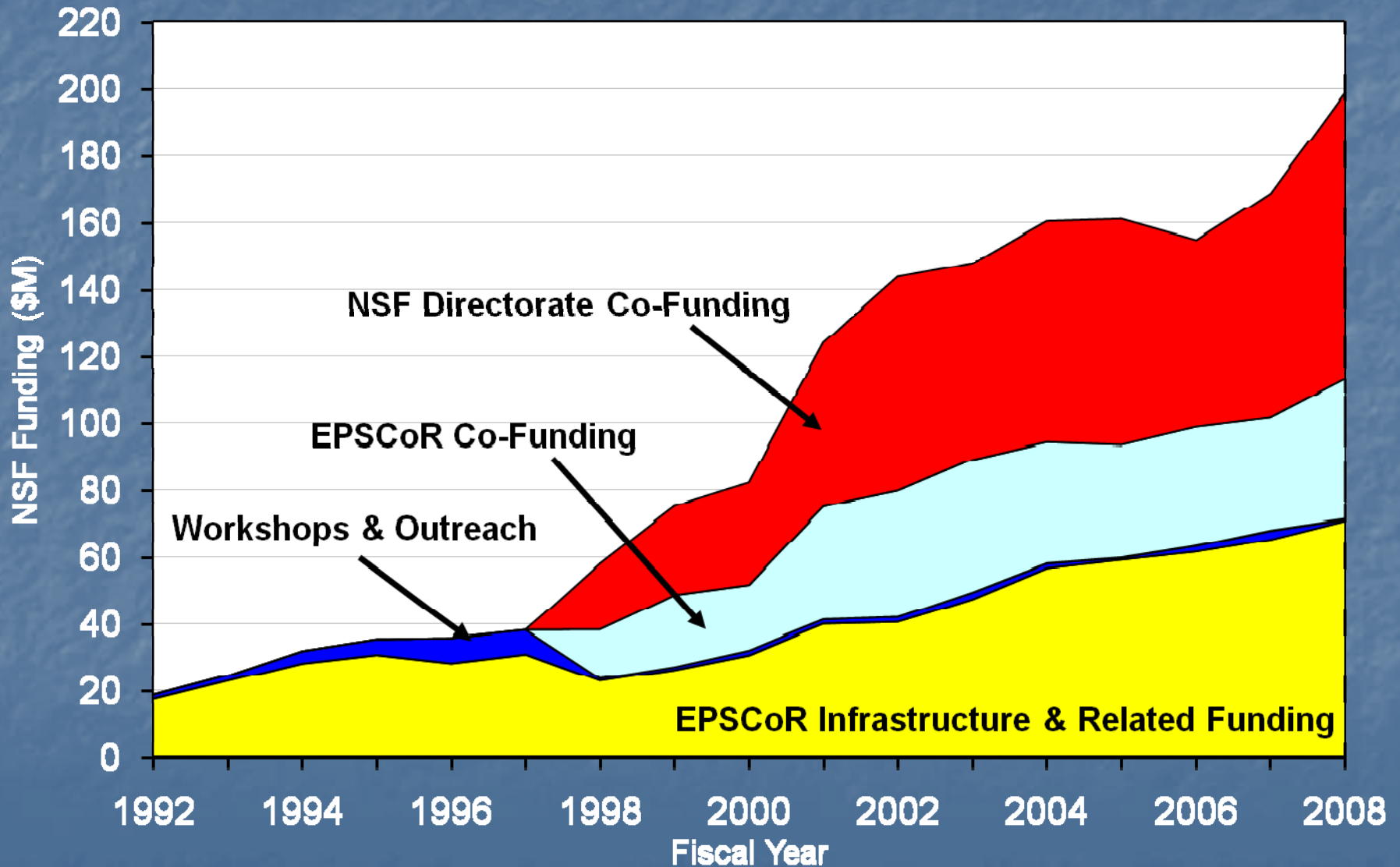


EPSCoR Modes of Support

- Research Infrastructure Improvement Awards
 - Track 1
 - now up to \$4M per year for up to 5 years
 - Track 2
 - new in 09; CI enabled S&E; consortia *among* jurisdictions – up to \$2M per year for up to 3 years – **boost under ARRA**)
 - Connectivity
 - **planned under ARRA**; CI enabled S&E *within* jurisdiction – up to \$1M)
- Co-Funding with NSF Directorates and Offices
 - Meritorious proposals reviewed in NSF programs
- Outreach Activities and Workshops

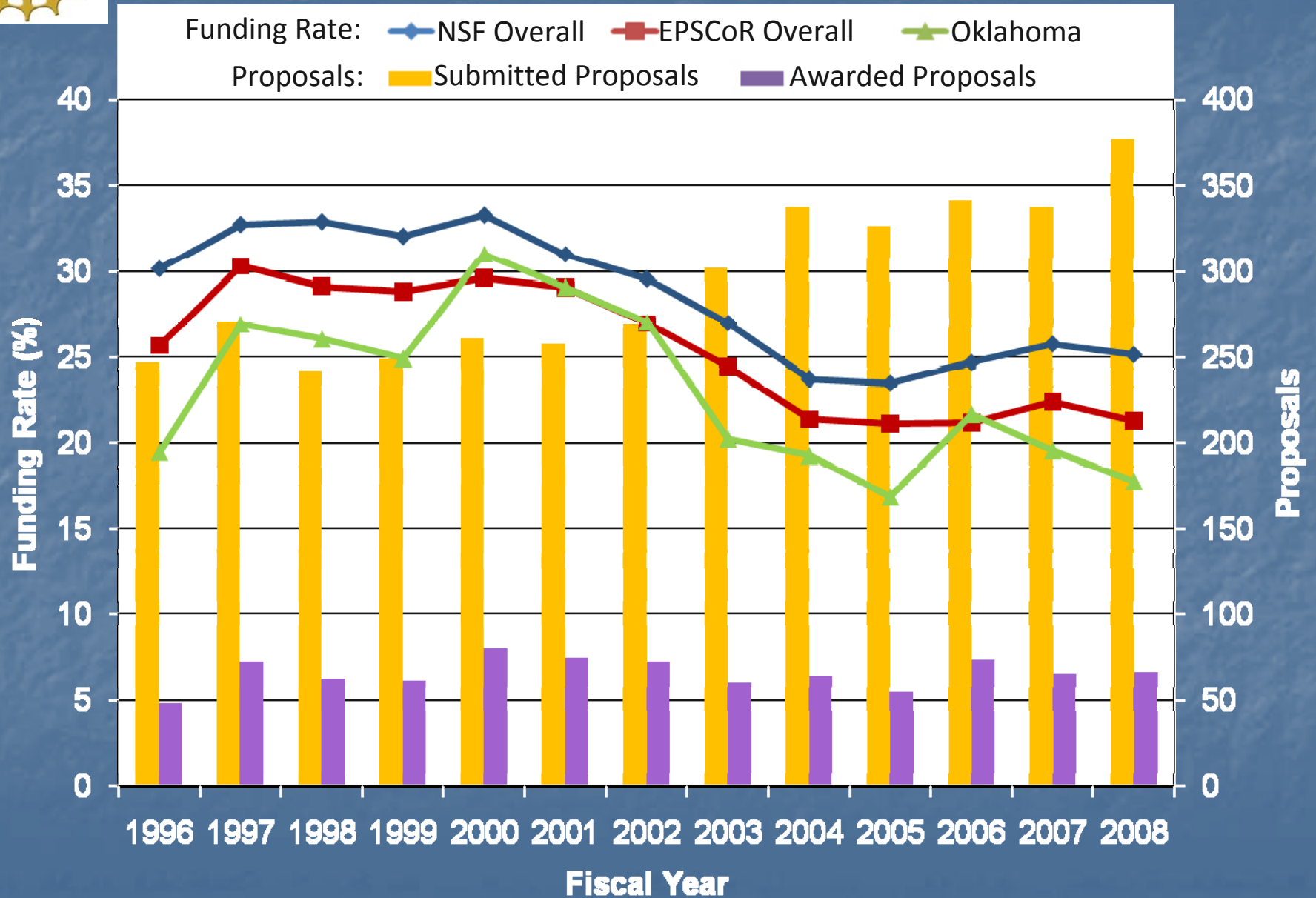


EPSCoR – Directorate Leveraging



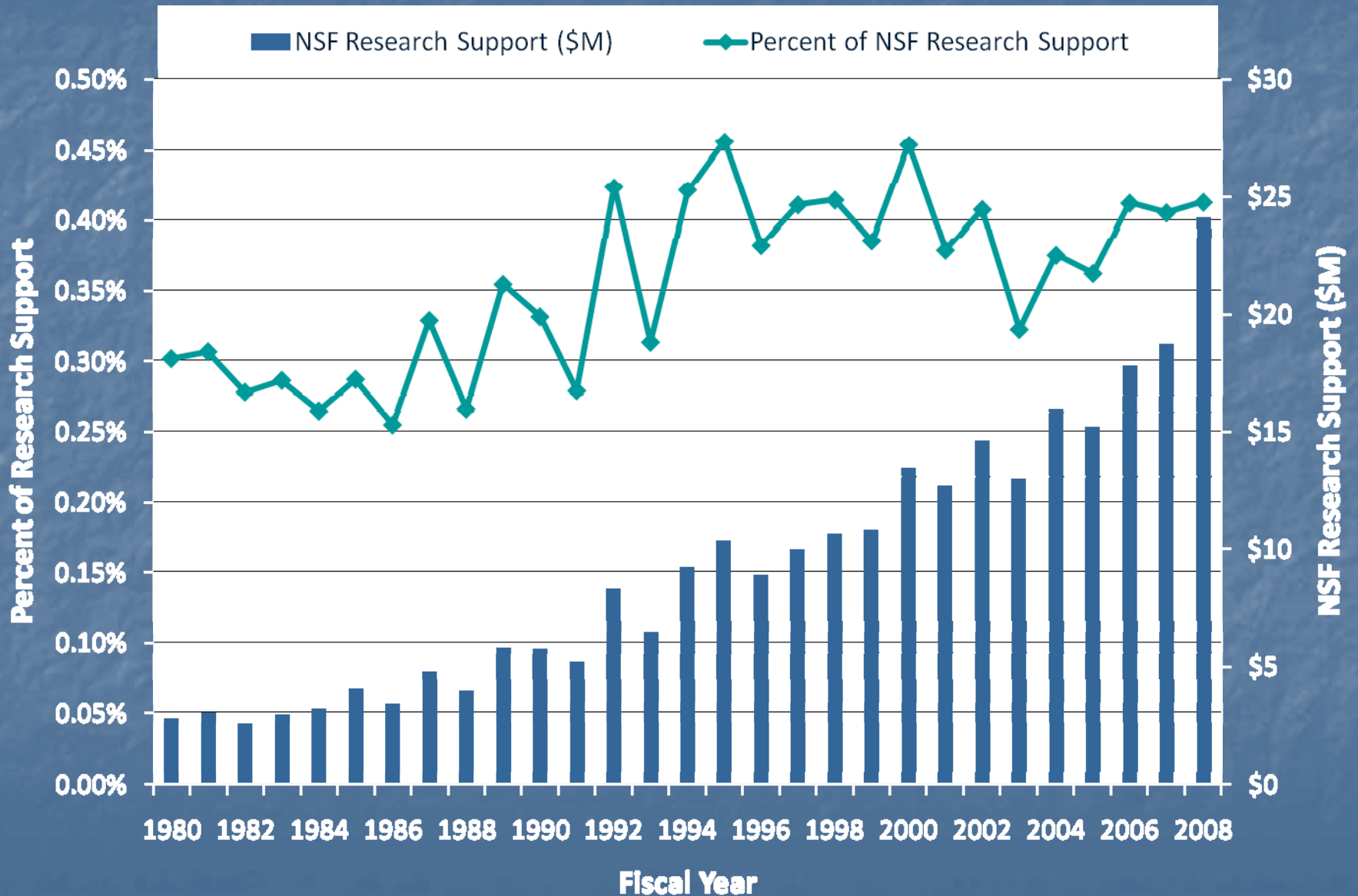


NSF Funding Rate: Oklahoma





Research Support Funding: Oklahoma





**EPSCoR 2020: Expanding State Participation in
Research in the 21st Century -- A New Vision for
the Experimental Program to Stimulate
Competitive Research**

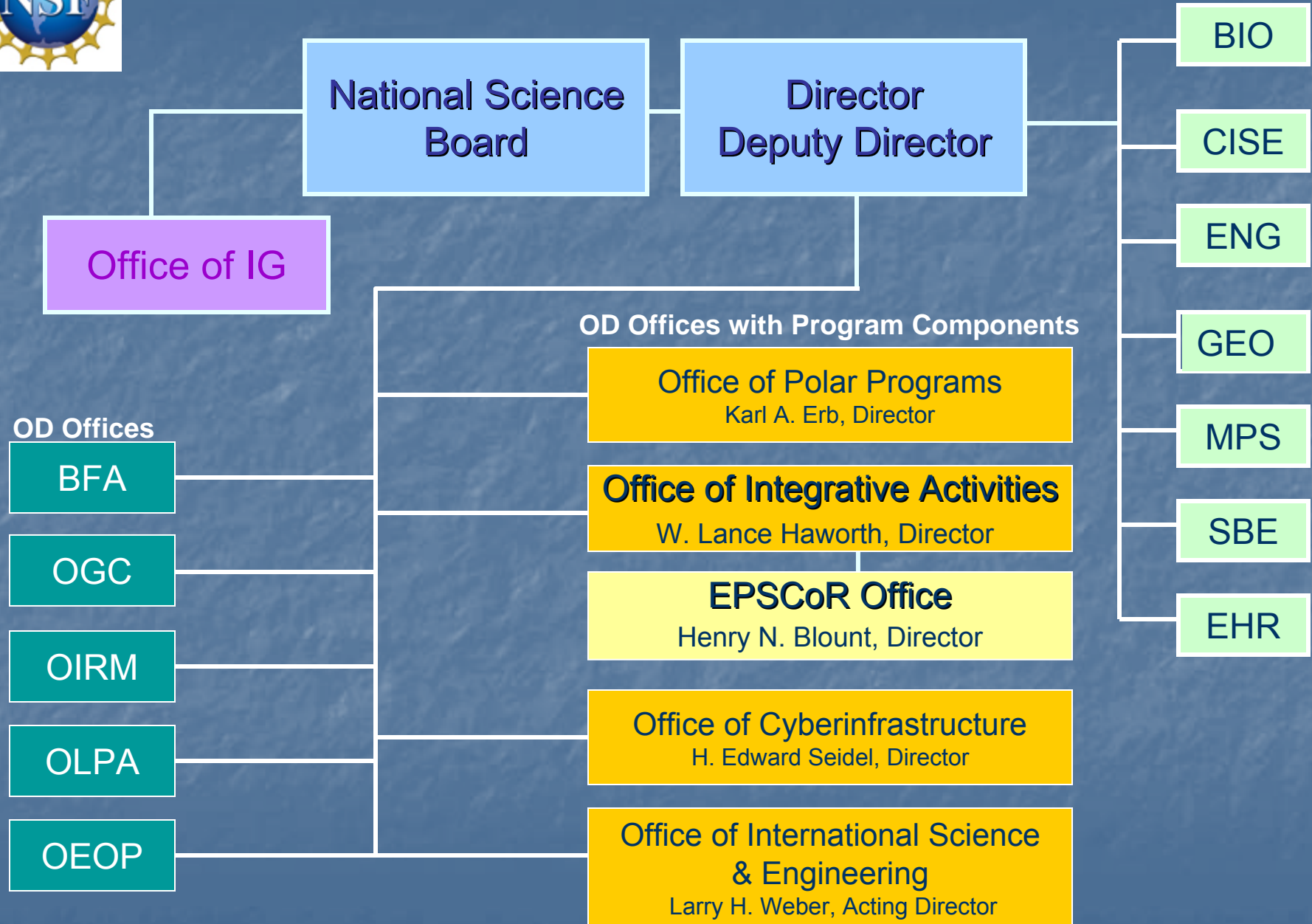
**A report to the
National Science Foundation**

August 2006

**Prepared by Jerome D. Odom, Ph.D.
Principal Investigator: NSF Award # 0630747**



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A Challenge and an Opportunity!

- EPSCoR RII Track-1 Awards now require *formal review and approval* by the National Science Board
- Some observations so far
 - Build upon compelling science at the cutting edge of discovery
 - Foster diversity in every sense
 - Align with State S&T plan
 - Ensure independent, expert, critical evaluation

NSF Programs Receiving Recovery Act Funding

- Research and Related Activities:
 - \$2.5B, including
 - Base programs in Directorates and Offices
 - Academic Research Infrastructure
 - Major Research Instrumentation
- MSP, Noyce Teacher Scholarships, Science Masters
 - \$100M
- Major Research Equipment & Facilities Construction
 - \$400M



NSF Plan under the Recovery Act

NSF already has many highly rated research proposals in hand to consider for funding with ARRA funds. Some research proposals have already been reviewed and others are in the review process.

NSF is planning to use *the majority of* the funds available in Research and Related Activities for proposals that are already in house and will be reviewed and/or awarded prior to Sept. 30, 2009.

Grants funded under ARRA will be awarded quickly in order to contribute to new job creation and reinvestment.



All grants issued with Recovery Act funds will be standard grants with durations of up to 5 years. This approach will allow NSF to structure a sustainable portfolio.

Funding of new Principal Investigators and high-risk, high-return research will be a top priority.

NSF will use ARRA funds to increase the number of CAREER and IGERT awards. CAREER grants support the research and education activities of junior faculty and IGERT grants support interdisciplinary research and training of graduate students.



American Recovery and Reinvestment Act: MRI and ARI

The ARRA specifically allocates **\$300M** for NSF's Major Research Instrumentation (MRI) program, and **\$200M** for academic research facilities modernization

**NATIONAL SCIENCE FOUNDATION
MAJOR RESEARCH
INSTRUMENTATION**

MRI GOALS

- Catalyzing new knowledge and discoveries
- Empowering the Nation's scientists and engineers
- Providing state-of-the-art research instrumentation
- Enabling research-intensive learning environments
- Building capacity for a diverse workforce
- Developing next generation instrumentation
- Promoting academic/private sector partnerships

MRI@NSF.GOV
www.nsf.gov/od/oia/programs/mri

The poster features a grid of small images showing various research activities, including scientists working in laboratories, using equipment, and conducting field research. The background is a dark blue and green abstract design with glowing lines and a grid pattern.



Major Research Instrumentation (MRI)

Overview

- Congressionally mandated program since 1990s
- Annual competition with January proposal deadline
- Supports **acquisition and development** of major research instruments
- Coordinated by OIA in partnership with NSF Directorates and Offices (Working Group)
 - Awards made by the appropriate Division
- Proposal limit "2 + 1" per institution
- **Award size from \$100,000 to \$4 million****
- Standard grants – up to 3Y acquisition, 5Y development
- **30% cost sharing (per ACA), but non-PhD-granting academic institutions are exempt**



MRI -Snapshot of FY08 Awards

- **Program budget \$94M**

- 810 proposals reviewed, 225 awards to 184 institutions
- 17 awards \geq \$1 million; 4 awards \geq \$2 million
- Co-funding added \$7M

- **Award Distribution**

- BIO 45, CISE 24, ENG 44, GEO 25, MPS 74, SBE 6, OCI 4, OPP 3
- 186 Acquisition, 39 Development
- Mean Award size \$451,000

- **Instruments**

- 8 or more awards: Scanning Electron Microscopes; Confocal Microscopes; NMRs; Mass Spectrometers; Computer Clusters
- Other examples: Astronomical Spectrograph; Meteorological Radar Network; Ocean Acoustic Waveguide Remote Sensing; Genome Sequencer; Supercomputer; 5 MeV Accelerator...



Two MRI Competitions in FY 2009

(1) NSF 09-502 issued last fall

- 824 proposals already received
 - Deadline was January 2009
- Funding:
 - \$100M from FY 2009 funds
 - +\$100M from ARRA funds
 - ~350-400 awards total
 - Award limit \$4M
 - No mixing of funds
- Awards in FY 2009



Two MRI Competitions in FY 2009

(2) NSF 09-561 MRI-R² issued 11 May

- MRI-R² - Recovery and Re-investment
- Funding: \$200M, all from ARRA funds
- Award limit raised to \$6M
 - *per America Competes Act*
- **Cost-sharing exemption extended**
 - *per ACA, to non-top-100 federally funded institutions*
- ~350-400 new awards
- **Awards in CY 2009**



Impact of ARRA (MRI and MRI-R²)

- Adds new opportunities for acquisition and development of mid-scale instruments up to \$6 million
- Up to ~600 additional awards this year will catalyze advances across the spectrum of fundamental research and education in the U.S.
- **Significantly higher success rates**
- ARRA funds reach community in 2009
- **Re-investment in research capability**



Academic Research Infrastructure - Recovery and Reinvestment (ARI-R²)

NSF 09-562

- Update of 1990s ARI program
 - NSF-SRS report indicates \$3.6B in deferred projects
- One-time opportunity
- **Repair or renovation of *existing* research facilities**
 - New construction not supported
 - Shared research space
 - Shared research training space
 - Bricks-and-mortar, mobile, or virtual
 - All NSF-supported research areas



Academic Research Infrastructure - Recovery and Reinvestment (ARI-R²)

- Program coordinated by OIA in partnership with NSF Directorates and Offices
 - NSF-wide Working Group established
- Funding: \$200M, all from ARRA funds
- **Three Award Categories**
 - \$250K to \$2M (~100 awards)
 - \$2M to \$5M (~6-10 awards)
 - \$5M to 10M (~3-5 awards)
- Standard grants and cooperative agreements
- **No cost sharing**



Academic Research Infrastructure - Recovery and Reinvestment (ARI-R²)

- Limit 1 proposal per eligible organization
 - Anticipate ~500-800 proposals (??)
 - Reviewer spectrum: research, facilities, project management
 - ~110 awards
- Smaller awards by January 2010
- Larger awards by April 2010
 - Reverse site visits / site visits, as needed
- Award duration
 - Up to 3Y for smaller grants
 - Up to 4Y for larger awards

NSF Staffing and Program Management

■ MRI Team

- OIA
 - Randy Phelps, Staff Associate: rphelps@nsf.gov
 - (New position) Staff Associate, TBD
 - Staff support
- NSF-wide MRI working group; Directorates and Offices

■ ARI Team

- OIA
 - Steve Meacham, Senior Staff Associate: smeacham@nsf.gov
 - Sherrie Green, Program Director (part time)
 - Staff support
- NSF-wide ARI working group; Directorates and Offices

- Both programs will require extensive post-award reporting and monitoring under the ARRA

Timelines

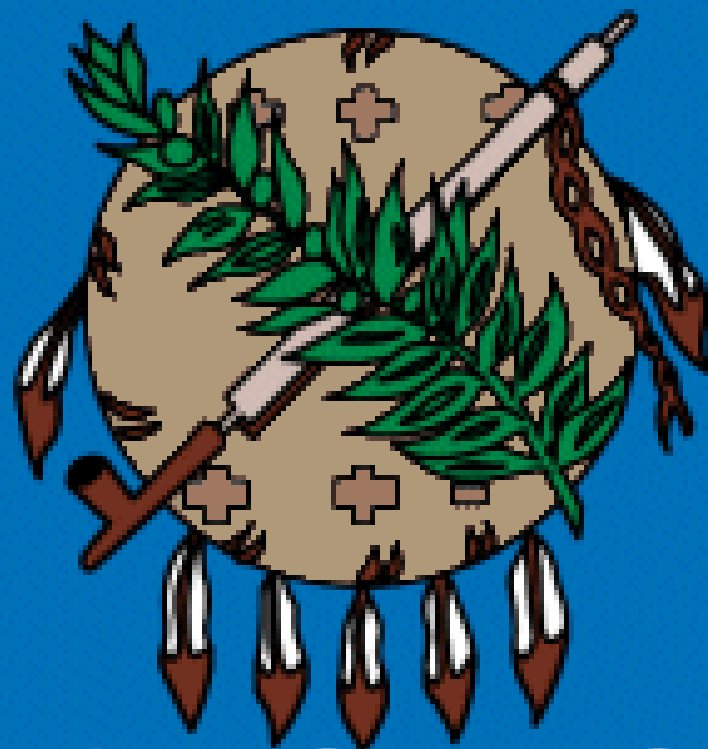
	MRI	MRI-R ²	ARI-R ²
Solicitation Posted	10/24/2008	11 May 2009	11 May 2009
Outreach -- Webinar, FAQs...	Ongoing	May-August	May-August
Letters of Intent	N/A	N/A	July 2009
Submission Deadline	22 January 09	10 August 2009	24 August 2009
Panel Reviews	April - June	Late September - October	October - December
Competition Site Visits, as needed	N/A	N/A	Dec 09 / early 2010
Awards Issued	July 2009	November 2009	January – April 2010



*That we assure **continued national capacity in science and engineering** ... is an issue of self-interest, an issue of national self-interest, indeed, of national security.*

*If we engage the talent — with its beauty and the beautiful minds — of **all of our young people** in science and engineering studies and professions — we will address our national self-interest. And, we will have acknowledged the value inherent in talent and inherent in diversity.*

-- Shirley Ann Jackson
President, Rensselaer Polytechnic Institute



OKLAHOMA

Thank You!

lhaworth@nsf.gov

<http://nsf.gov/dir/index.jsp?org=OIA>

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Catalyzing Excellence in Research and Education

