NSF Established Program to Stimulate Competitive Research (EPSCoR): Program Update

Oklahoma NSF EPSCoR

2018 Annual State Conference

April 24, 2018
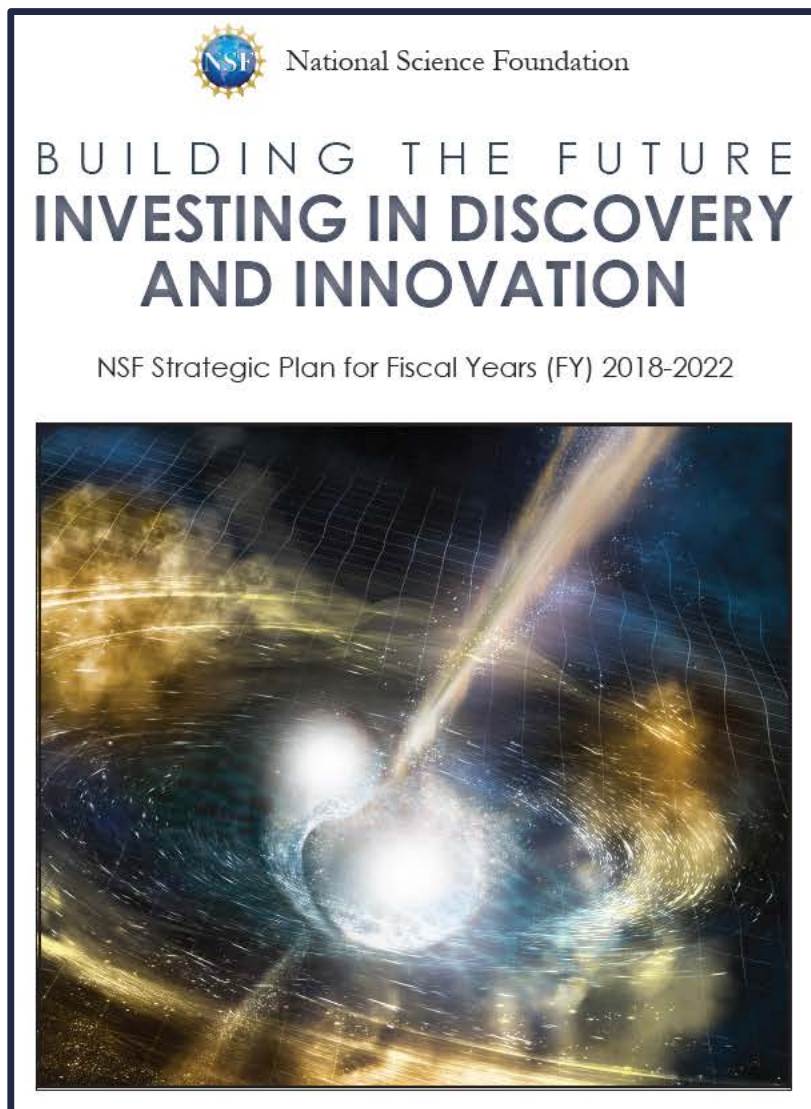
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NSF Mission

"To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..."

New NSF Strategic Plan

National Science Foundation

BUILDING THE FUTURE
INVESTING IN DISCOVERY AND INNOVATION

NSF Strategic Plan for Fiscal Years (FY) 2018-2022

https://www.nsf.gov/pubs/2018/nsf18045/nsf18045.pdf

NSF by the Numbers

$7.0B FY 2018 Budget Request	**11,456** awards funded	Fund research in all S&E disciplines
92% funds research, education and related activities	**1,859** NSF-funded institutions	Fund STEM education & workforce
49,424 proposals evaluated in FY17	**359,631** people NSF supported	**231** NSF-funded Nobel Prize winners

Other than the FY 2018 Budget Request, numbers shown are based on FY 2017 activities.

Established Program to Stimulate Competitive Research (EPSCoR)

Enhances research competitiveness of targeted jurisdictions (states, territories, commonwealth) by strengthening STEM capacity and capability

Goals

- Catalyze research capability across and among jurisdictions;

- Establish STEM professional development pathways;

- Broaden participation of diverse groups/institutions in STEM;

- Effect engagement in STEM at national and global levels; and

- Impact jurisdictional economic development.

Discovery & Innovation

Education & Workforce

Economic Development

Building Capacity

https://www.nsf.gov/od/oia/programs/epscor/index.jsp

EPSCoR Team

Loretta Moore

J.D. Swanson

Andy Ogram

Sean Kennan

Liz Lawrence

Chinonye Nnakwe

Tracey Wigglesworth

Uma Venkateswaran

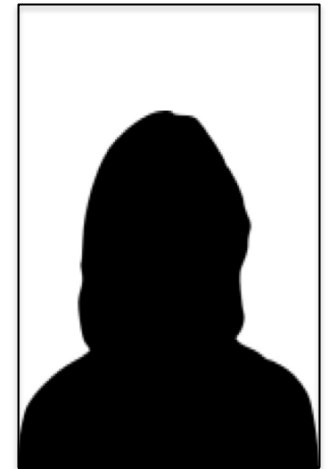Tim VanReken

Jeanne Small

Monique Moore

EPSCoR Investment Strategies

- **Research Infrastructure Improvement (RII)** (79% of EPSCoR budget)

  Support physical, human, and cyber infrastructure within academic institutions across each jurisdiction

- **Co-Funding w/ NSF Directorates & Offices** (20% of budget)

  Meritorious proposals reviewed in other NSF programs that also satisfy EPSCoR programmatic criteria

- **Outreach and Workshops** (1% of budget)

  Interaction among EPSCoR Community and NSF to build mutual awareness; catalyze areas of potential strength possible future collaborations

Research Infrastructure Improvement

- **Track-1** (up to $20M over 5 years)
  - Jurisdiction-wide research capacity building in alignment with priorities in Jurisdictional Science & Technology Plan
  - Multi-faceted approach to physical, human, and cyber infrastructure improvement
  - Administratively complex (team-based; cross-sectors; cross-institutions)

- **Track-2** (up to $1.5M per year for up to 4 years)
  - Interjurisdictional collaborations (2 or more EPSCoR jurisdictions)
  - Theme chosen by NSF EPSCoR to align with Foundation-wide priority areas
  - Additional emphasis on early-career faculty development

- **Track-3** (piloted in FY13; up to $750k for up to 5 years)
  - Focus on broadening participation in STEM

- **Track-4** (new in FY17; up to $300k over 2 years)
  - Fellowships for non-tenured faculty for extended research visits to premier private, governmental, or academic institutions in the U.S.

Co-Funding

- Joint support of meritorious proposals from EPSCoR Institutions
  - Proposal submittal to specific NSF Directorate/Office
  - Merit review by the managing program based on NSF policies
  - At managing program's request, EPSCoR reviews and decides on co-funding based on alignment with priorities and availability of funds

- Co-funding priorities
  - New PI; Collaborative/Multidisciplinary; Synergy with NSF Priorities (for current fiscal year); Broadening Participation; Instrumentation to Increase Research Capacity; K-12 Student & Teacher Training; Integration of Research & Education

Workshops and Outreach

- EPSCoR Workshops
  - Support EPSCoR community-wide activities designed to:
    - Explore opportunities in emerging areas of STEM research
    - Share best practices in planning and implementation in areas of importance to EPSCoR jurisdictions
  - Contact: Dr. Chinoye Nnakwe, cnnakwe@nsf.gov, (703) 292-8950
  - Current solicitation (NSF 12-588):
    - http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf12588&org=NSF

- EPSCoR Outreach
  - Supports NSF staff travel for interactions with the EPSCoR community and builds mutual awareness
  - Contact: Liz Lawrence, elawrance@nsf.gov, (703) 292-8997
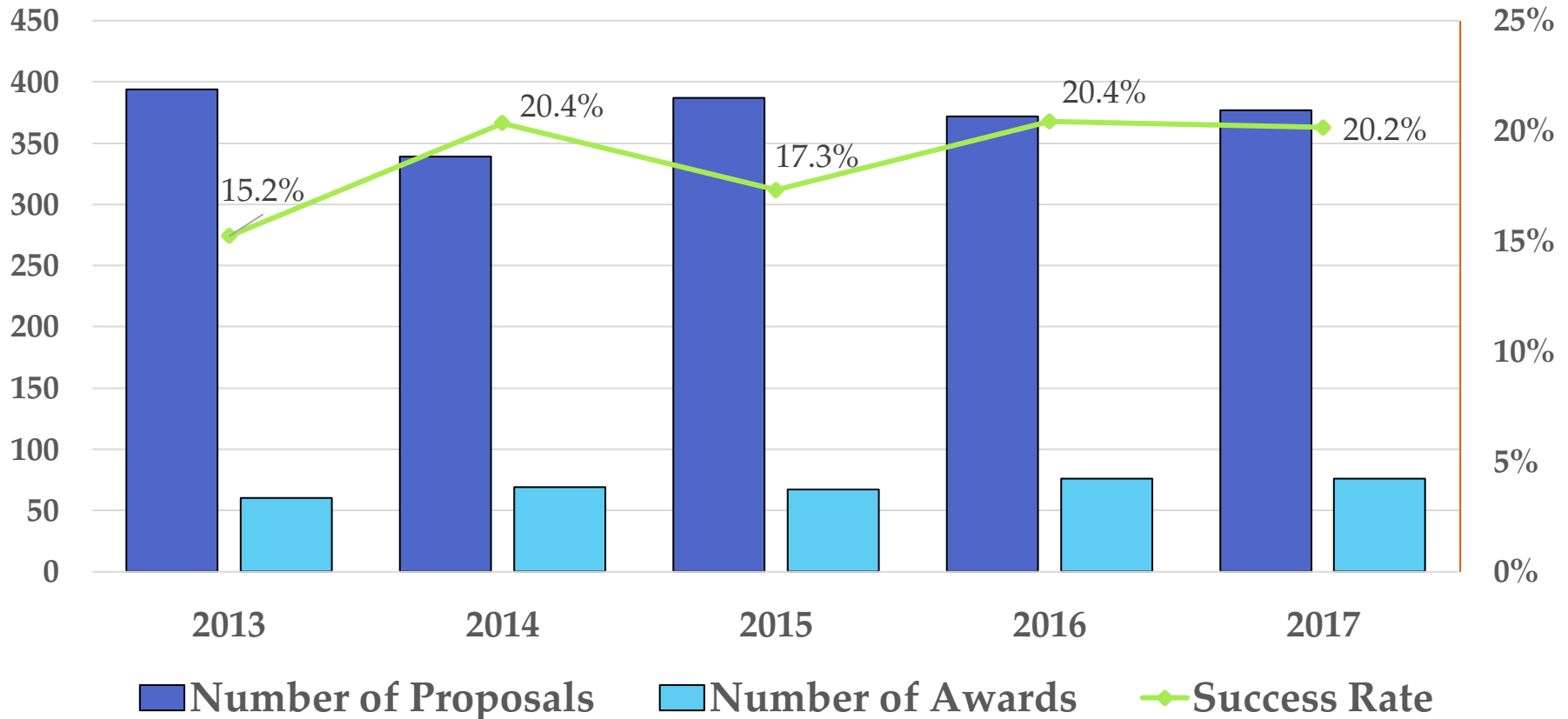 - https://www.nsf.gov/od/oia/programs/epscor/FY2017_Outreach_Procedures.pdf

EPSCoR Jurisdictions' Proposal Success Rate
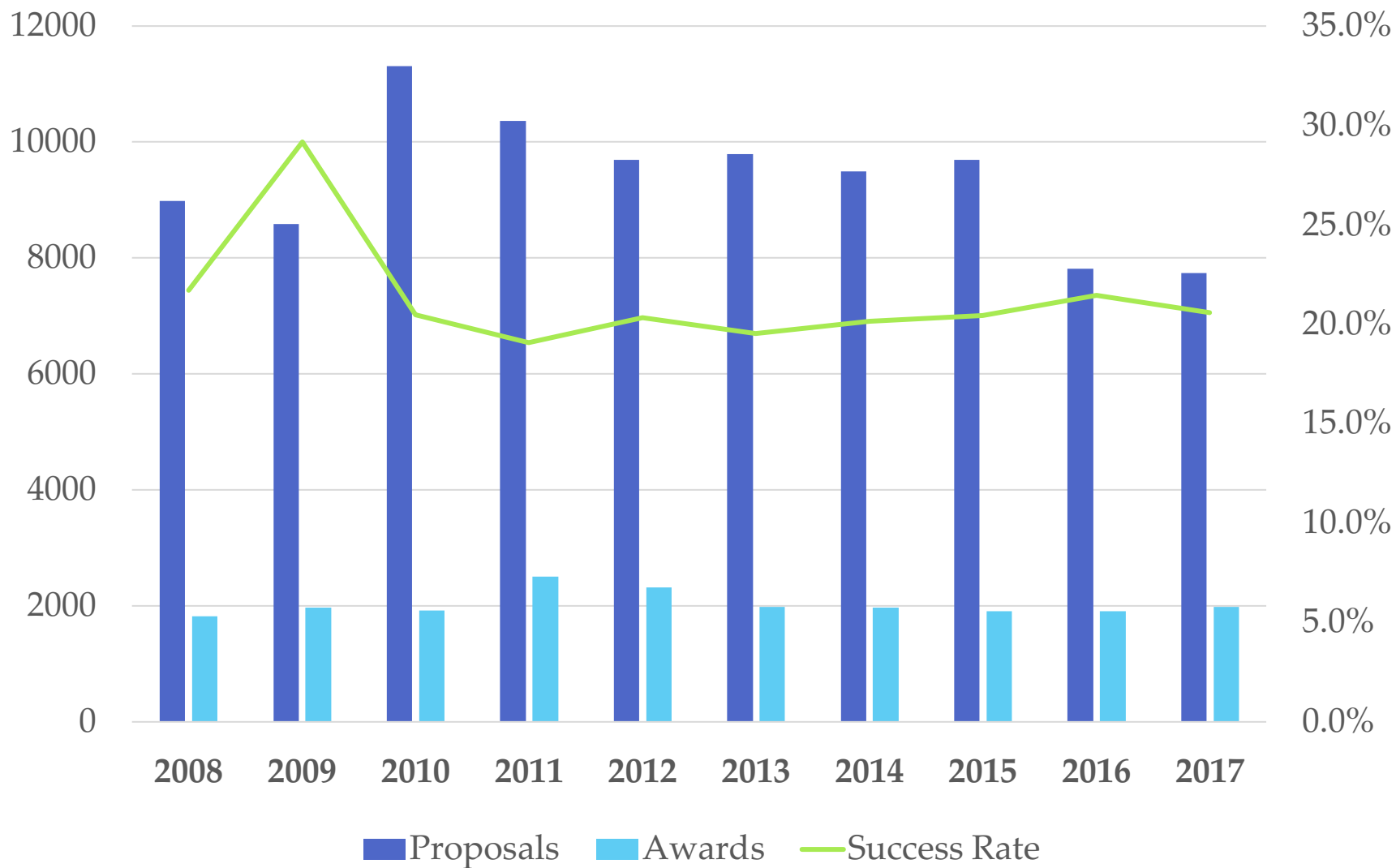
OK Proposal Submissions and Success

NSF Proposal Success Rates: Oklahoma, FY13 - FY17

Note: NSF average success rate in FY17 was 23.2% and EPSCoR average success rate was 20.6%. You can view jurisdictional success rates at https://dellweb.bfa.nsf.gov/awdfr3/bottom.asp

What Can You Do?

- Stay abreast of funding priorities and opportunities

- Communicate with program officers (Disciplinary and EPSCoR)

- <u>APPLY!!!</u> And write to the solicitation

- Revise and resubmit

- Participate in grantsmanship workshops

- Utilize NSF EPSCoR outreach

- Serve as a reviewer

- Serve as a NSF Rotating Program Officer

- EPSCoR contact: Tim VanReken (tvanreke@nsf.gov)

NSF's Ten Big Ideas

RESEARCH IDEAS

HARNESSING THE DATA REVOLUTION

Harnessing Data for 21st Century Science and Engineering

Work at the Human-Technology Frontier: Shaping the Future

Navigating the New Arctic

Windows on the Universe: The Era of Multi-messenger Astrophysics

The Quantum Leap: Leading the Next Quantum Revolution

Understanding the Rules of Life: Predicting Phenotype

PROCESS IDEAS

Mid-scale Research Infrastructure

NSF 2026: Seeding Innovation

Growing Convergence Research at NSF

NSF INCLUDES: Enhancing STEM through Diversity and Inclusion

Understanding the Rules of Life: Predicting Phenotype

Dear Colleague Letter (NSF 18-031)

- Rules of Life (RoL): Forecasting and Emergence in Living Systems (FELS)
  https://www.nsf.gov/pubs/2018/nsf18031/nsf18031.jsp

EPSCoR RII Track-2

- Genome to Phenome
- FY 2017 (NSF 17-503) and FY 2018 (NSF 18-502)

Work at the Human-Technology Frontier

NSF 18-548

Two themes:
(1) Foundations for Augmenting Human Cognition
(2) Embodied Intelligent Cognitive Assistants

CISE, EHR, ENG, and SBE

Small projects: $750k to $1.5M for 3-5 yrs
Large projects: $1.5-3M for 3-5 yrs

LOI Deadline: April 16, 2018
Full Proposal Deadline: June 4, 2018

Harnessing the Data Revolution

Three components :
- Research - across all NSF Directorates
- Educational pathways - Innovations grounded in an education-research-based framework
- Advanced cyberinfrastructure – accelerating data-intensive research

NSF 18-539 BIGDATA
Foundations & **I**nnovative **A**pplications
Submission Window: May 7-14, 2018
(CISE, EHR, ENG, MPS, SBE)

NSF INCLUDES

(Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science)
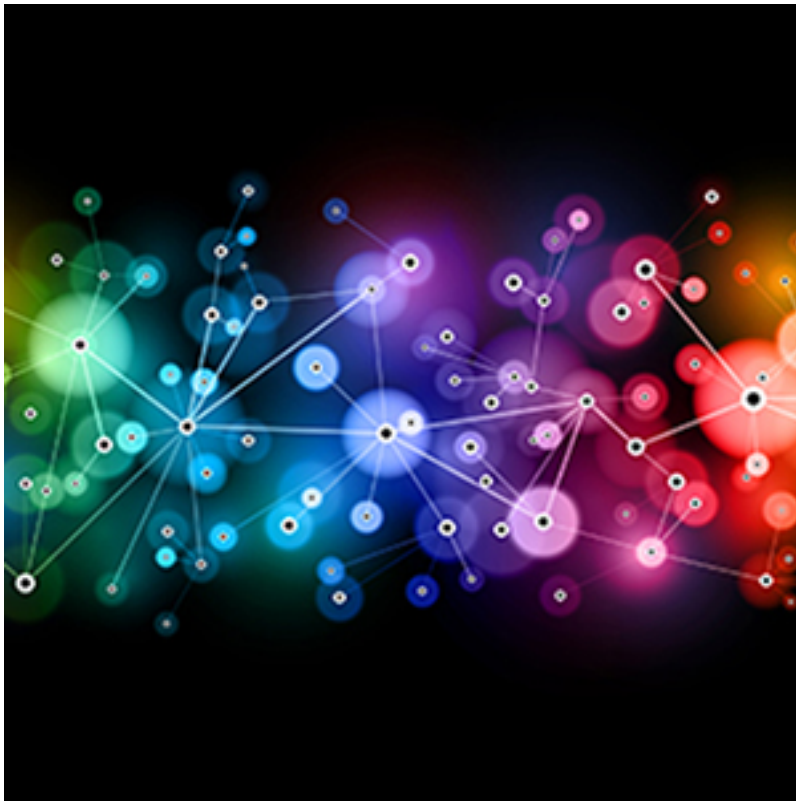
NSF INCLUDES Report to the Nation:
https://www.nsf.gov/news/special_reports/nsfincludes/pdfs/INCLUDES_report_to_the_Nation.pdf

FY16 and FY17: ~ 70 awards for Design and Development Launch Pilots; 13 Conferences on Designing the Network.

FY18-2021: Alliances and National Coordination Network/Hub

Convergence Research

NSF 18-058 (DCL)

- Research driven by a specific, compelling challenge inspired by deep scientific questions or pressing societal needs

- Deep, sustained integration across disciplines leading to new paradigms or disciplines

- Submit a prospectus (< 1000 words) by May 1, or October 15, 2018

- Proposal within 60 days of invitation (< $1 M for up to 3 years)

- All Directorates, OIA, OISE

Mid-scale Research Infrastructure

- Combination of facilities, equipment, instrumentation, computational hardware and software, and necessary human capital

- Upgrades to existing major research facilities

- Investment falling between Major Research Instrumentation (MRI) program's maximum and that of a major multi-user research facility project (~ $4-100 million)

- NSF 18-013 (Request For Information): Projects for construction and/or acquisition

Thank You!!

Merit Review Process

Video here: http://www.nsf.gov/news/mmg/mmg_disp.jsp?med_id=76467