

Update from the Earth Sciences Division, National Science Foundation

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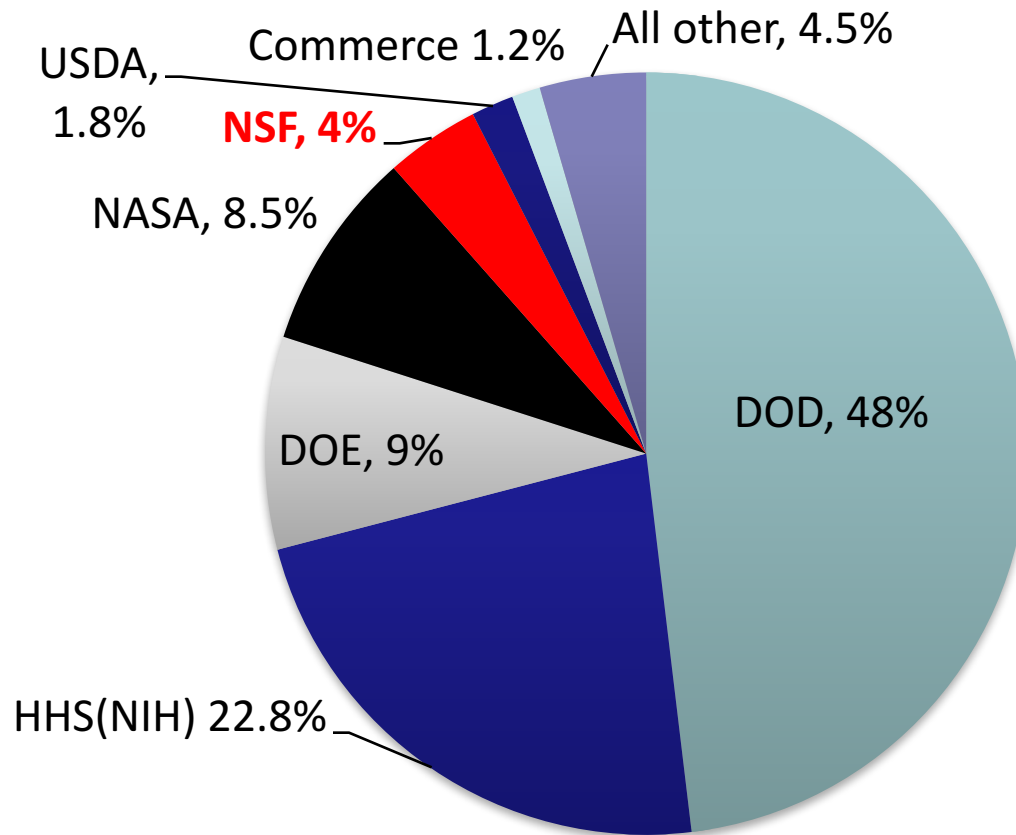
Earth Sciences Division, NSF

SCEC Annual Meeting

September 12, 2016



NSF is a very small agency...



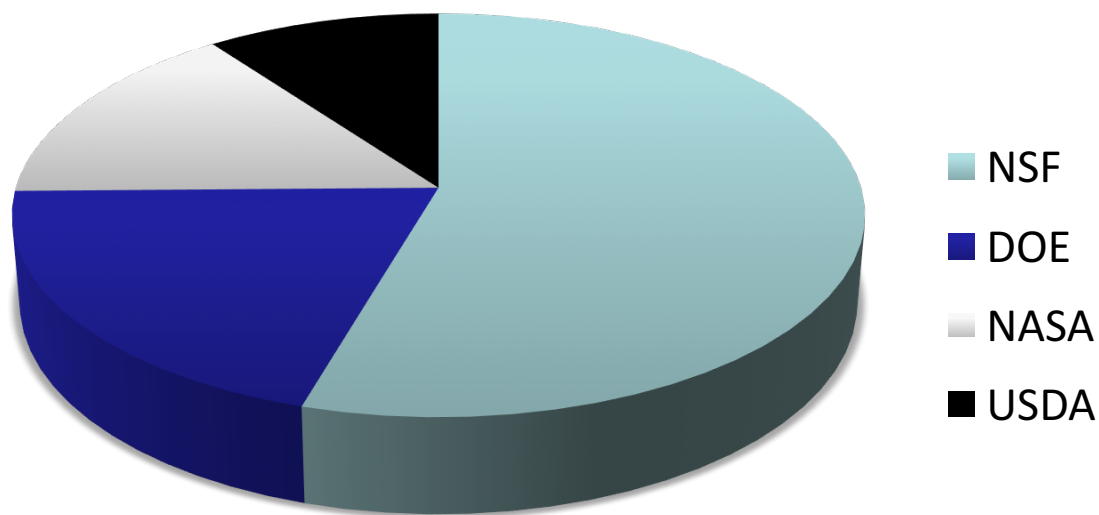
FY15 Federal R&D (total: \$136.5 billion)

Modified from AAAS 2015

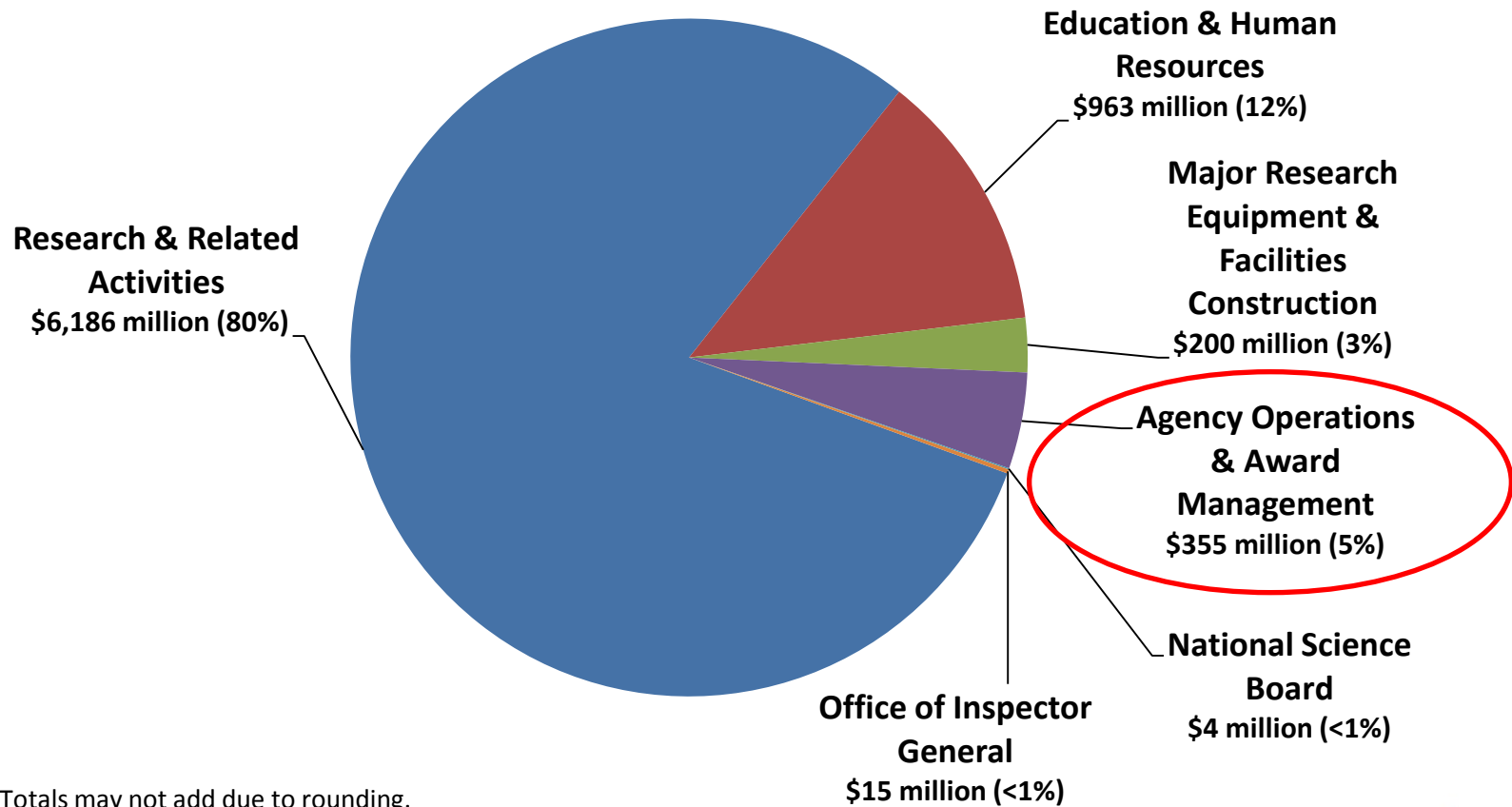


...with a big impact...

- Only agency whose sole mission is to support basic research
- NSF supplies **54%** of federally-financed, non-defense and non-medical basic research awards to academic institutions



...due partially to low overhead



NSF FY16 Budget by Account (Total: \$7.5 billion)

Federal Science Funding Context

- Budget process
 - July: OMB and OSTP issue Multi-agency Science Priorities Memo
 - Fall: NSF prepares budget
 - February: President releases budget request
 - By Oct. 1*: Congress passes budget

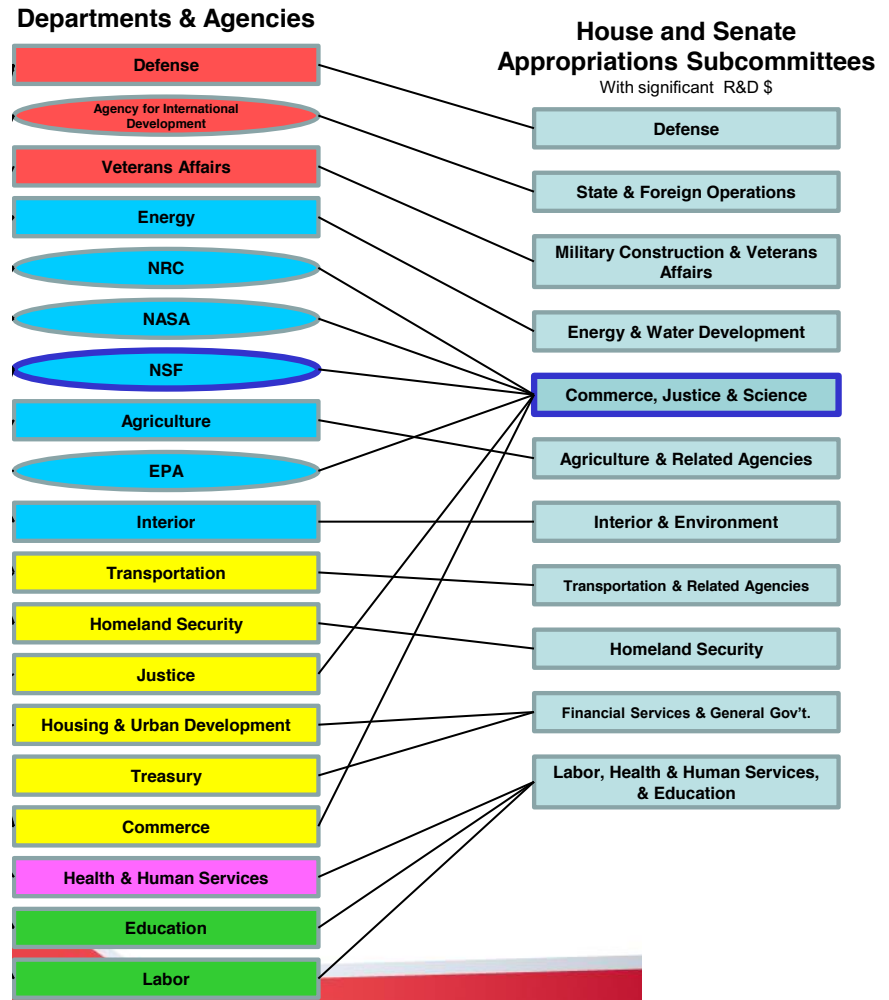


**Congress has passed the budget prior to start of fiscal year only twice in the past 25 years*



Federal Science Funding Context

- There is no single “*R&D budget*”
- Responsibility is distributed
- NSF appropriations from Commerce, Justice and Science subcommittee
- DOE, USDA, USGS are funded by different appropriations subcommittees



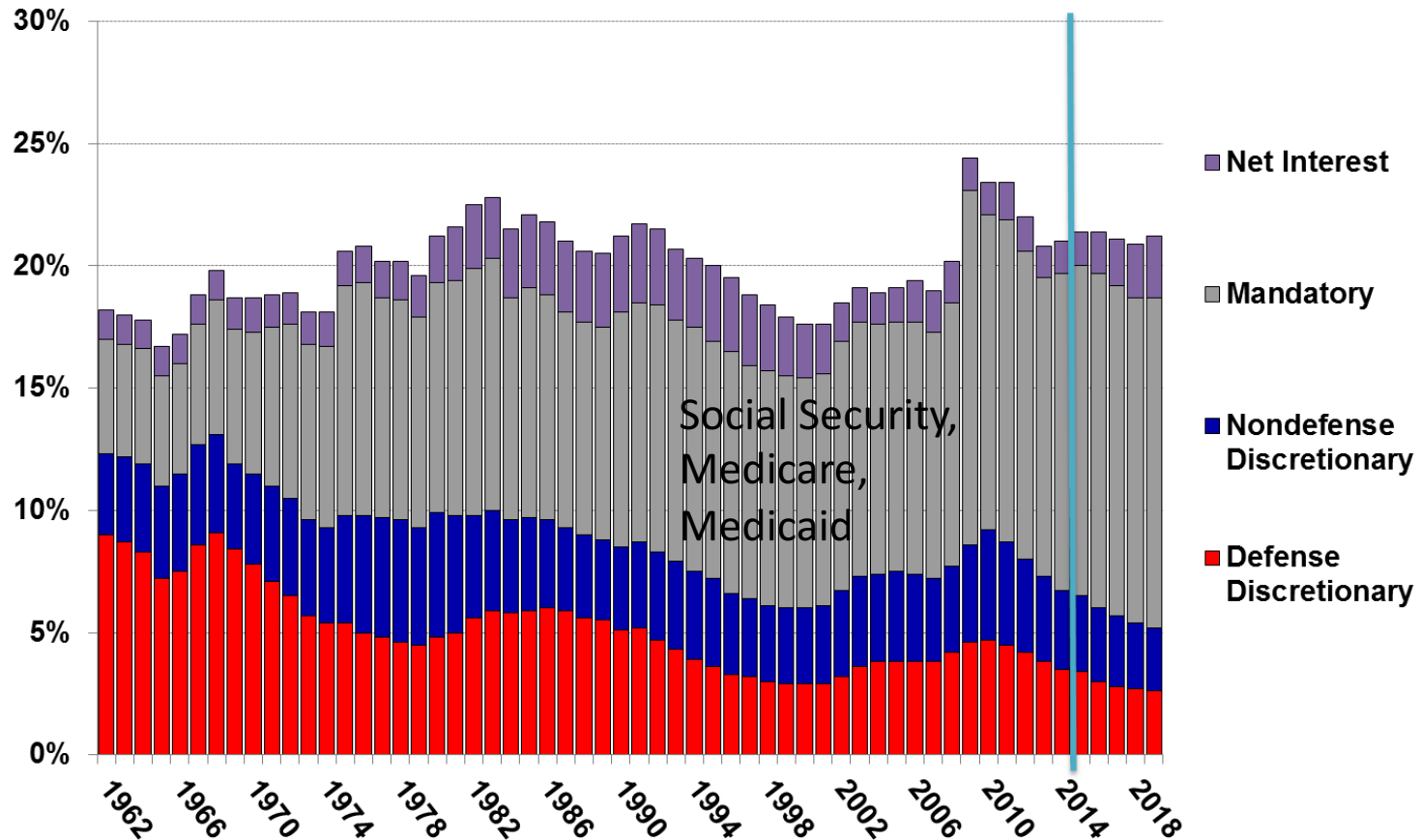
Where Are We Right Now?

- FY16 budget escaped directorate allocations
- President's FY17 budget released in February 2016
 - *NSF request is \$7.96 billion, up \$500 million*
 - \$100 million of increase is “discretionary”
 - \$400 million is one-time “mandatory”
- GEO directorate increase is composed of
 - \$1 million in “discretionary”
 - \$79 million in “mandatory”



Mandatory vs. discretionary spending

Federal Spending as a Percent of GDP, 1962 - 2019



Source: Budget of the U.S. Government FY 2015. © 2014 AAAS



Where Are We Right Now?

- FY17 Mandatory funding proposal
 - Unlikely to pass...
 - “Zero chance.” Rep. John Culberson (Chair of Commerce, Justice and Science Appropriations Committee) Politico, 3/28/16
- FY18 budget preparation awaits new administration
- EAR is planning based on flat budget



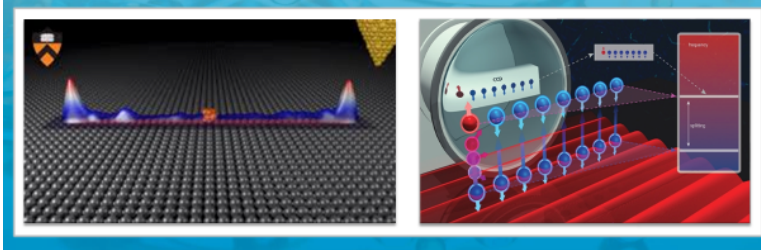
“10 Big Ideas for future NSF investment”

- 6 Research Initiatives
 - Harnessing data
 - Shaping the New Human-Technology Frontier
 - Rules of Life



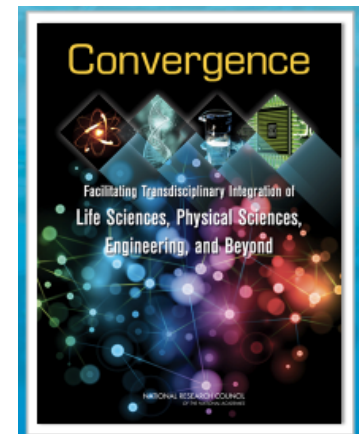
“10 Big Ideas for future NSF investment”

- 6 Research Initiatives
 - The Quantum Leap: leading the next quantum revolution
 - Navigating the New Arctic
 - Windows on the Universe: multi-messenger astrophysics



“10 Big Ideas for future NSF investment”

- 4 Process Ideas
 - INCLUDES
 - Growing convergent research at NSF
 - Mid-scale research infrastructure
 - NSF 2050: the integrative foundational fund



PREEVENTS

Prediction of and Resilience against
Extreme Events



Part of NSF Risk and Resilience Activity

Risk and Resilience Funding by Directorate

(Dollars in Millions)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Request	
CISE	\$5.50	\$6.00	\$6.00	CRISP
ENG	12.00	12.00	14.00	CRISP
GEO	-	17.75	17.75	PREEVENTS
MPS	-	0.50	0.50	CRISP
SBE	1.84	4.90	4.90	CRISP
Total	\$19.34	\$41.15	\$43.15	

Totals may not add due to rounding.

Overarching risk & resilience goals

- Improve predictability & risk assessment, increase resilience
- Reduce impact of extreme events on life, society, economy



PREEVENTS in a Nutshell

- **Primary targets – must address both to be eligible**
 - Enhance understanding of fundamental processes underlying natural hazards and extreme events
 - Improve capability to model and forecast such hazards and events
- **Tracks**
 - **Track 1:** Conferences to foster new communities & interdisciplinary approaches, **proposals any time**
 - **Track 2:** Projects addressing both goals, extending beyond typical for GEO programs, **deadline 20 Sept for groups that submitted LOI in July**
 - **Also:** Internal-only co-funding process
- **Questions?** Chat w/Greg, see solicitation (16-562)



SC/EC

5

an NSF + USGS center



SCEC5 Review Timeline

When	What
1 Oct 2015	SCEC5 proposal submitted
Oct-Dec 2015	Ad hoc review process
Jan 2016	Simultaneous NSF and USGS site visit panels
Feb-May 2016	NSF deliberations in consultation w/USGS
31 May 2016	NSF letter to SCEC leadership
15 Oct 2016	Revised budget and work plan due to NSF
1 Feb 2017	SCEC5 planned start

