





# The Mission (of the Non-Mission Agency)

- Established by Congress in 1950
- Supports all fields of fundamental science and engineering (~~medical science~~)
- Vision: A Nation that is the global leader in research & innovation

\*NSF Strategic Plan for 2018 – 2022

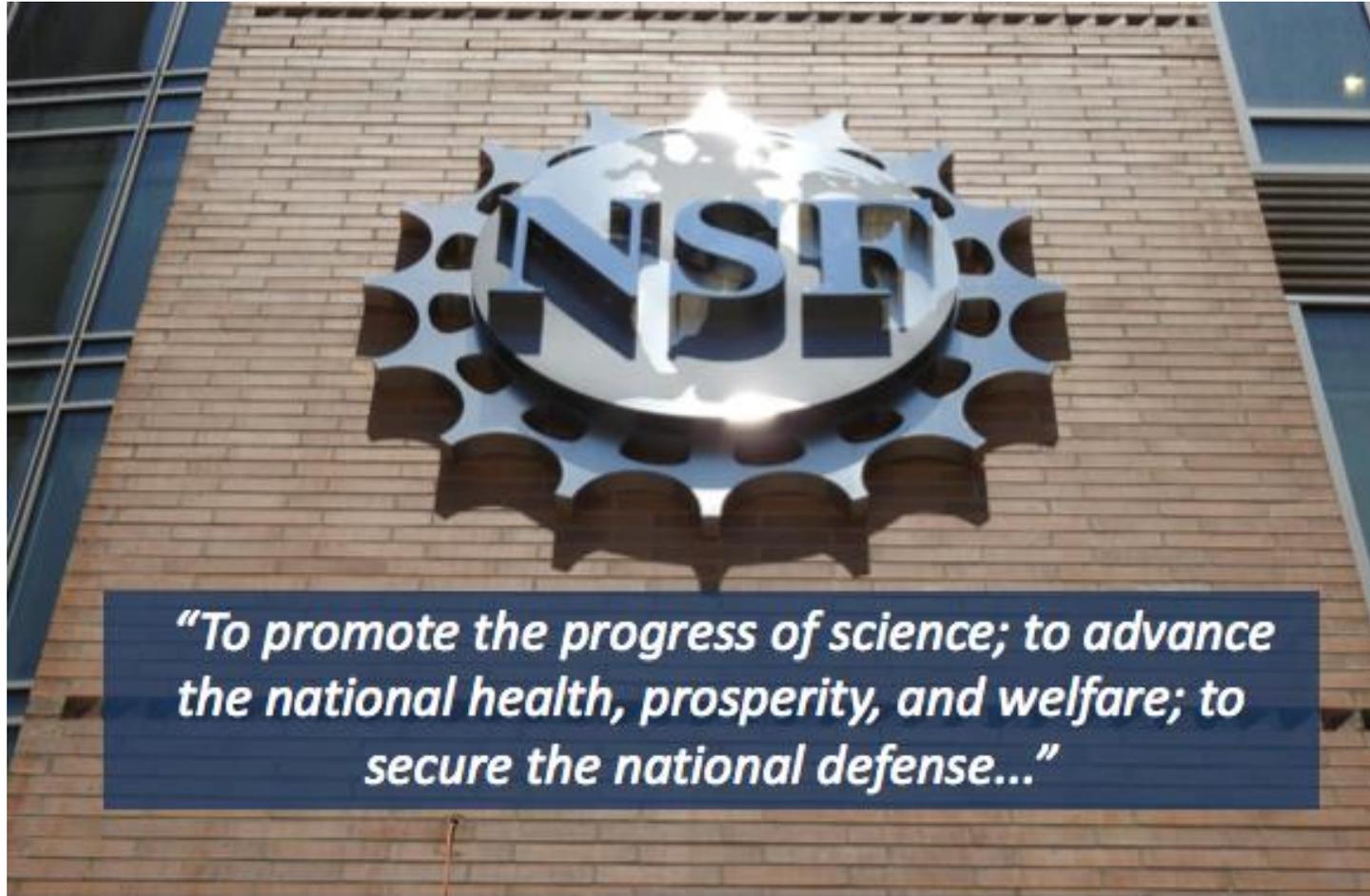
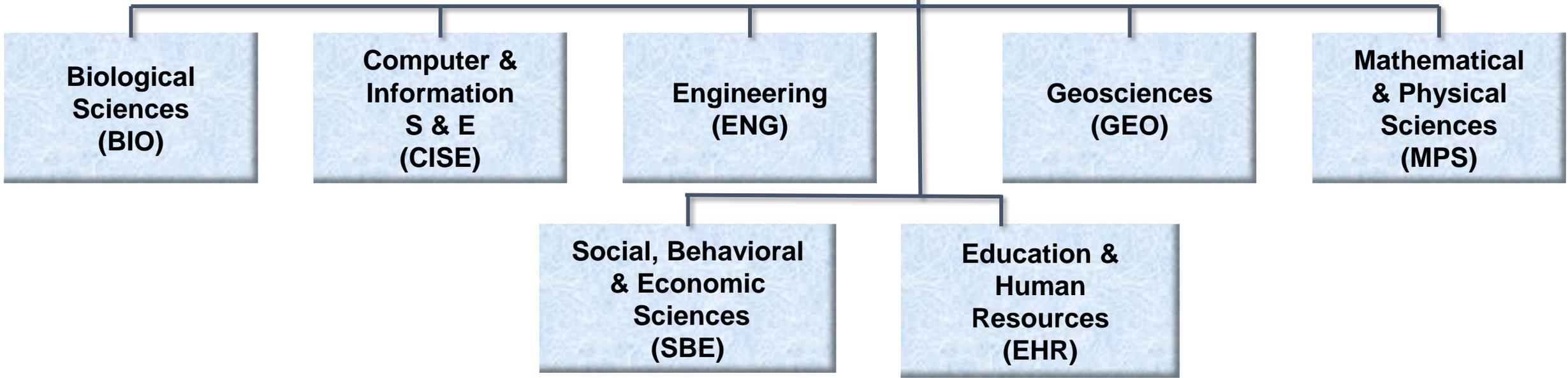
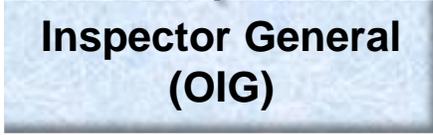


Photo Credit: Maria Barnes, NSF





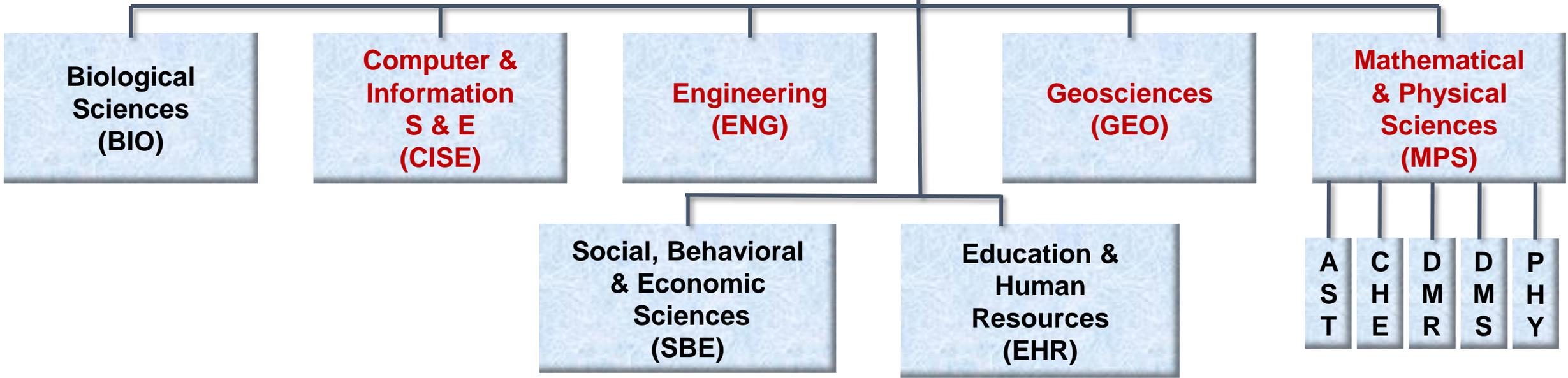
NSF Director  
Dr. Sethuraman  
Panchanathan (Panch)





NSF Director  
Dr. Sethuraman  
Panchanathan (Panch)

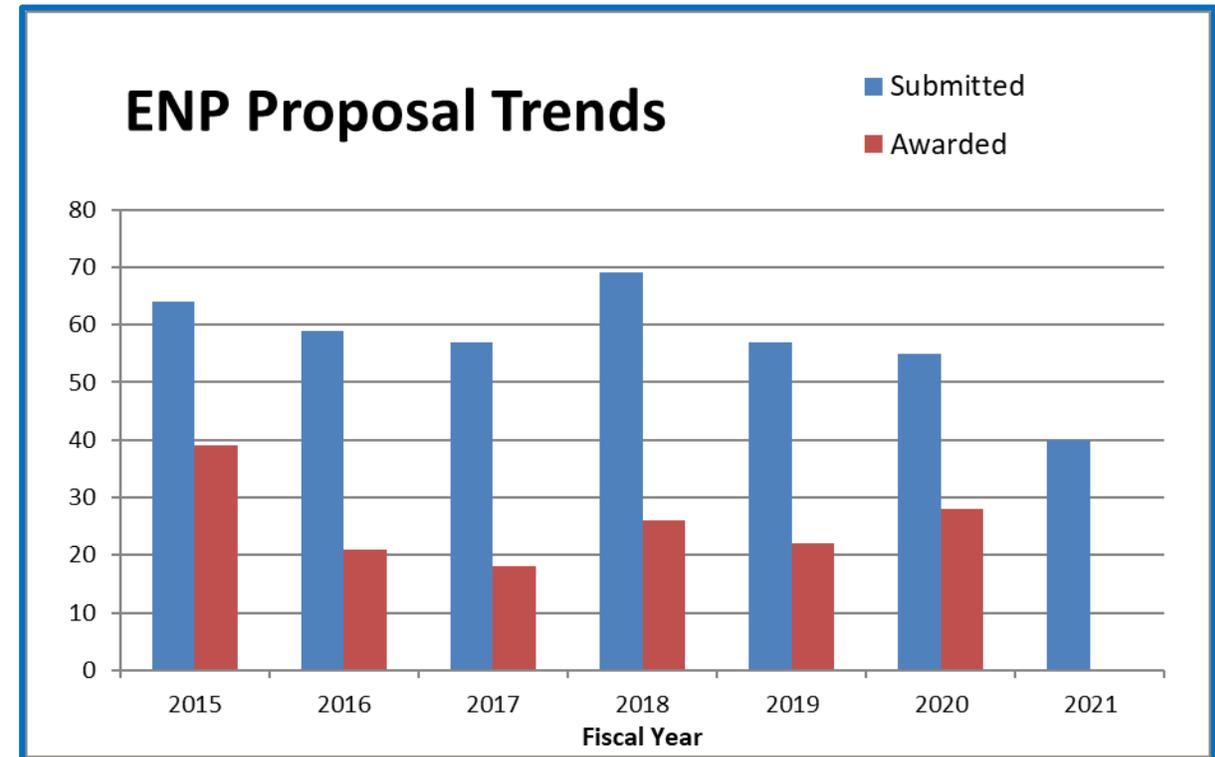
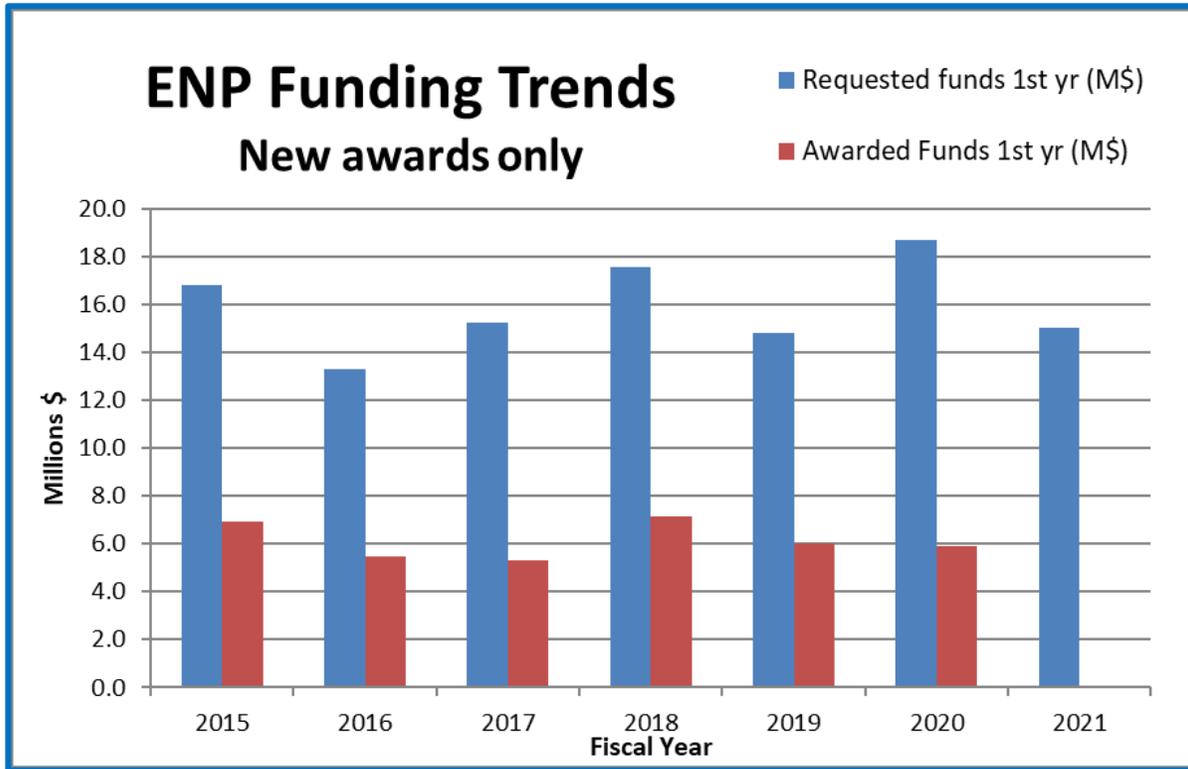
Inspector General  
(OIG)







# Proposal Trends in Experimental Nuclear Physics



NSAC

July 2021

NOVA

PBS WGBH





# PHY Mid-scale Instrumentation

- Design and Construction *or* Acquisition of Instrumentation
  - R & early D, operations *funded by research programs*
- ~ \$4M < TPC < ~ \$20M; over multiple years
- Selection based on
  - merit review
  - exceptional opportunity
  - research community priorities.
- Currently 3 ENP Midscale projects (nEDM, LEGEND-200, MOLLER)
- For more info, see PHY Solicitation







# PHY DCL: Growing a Strong, Diverse Workforce NSF 21-065

## PHY-GR Supplements – emphasis on URM<sup>s</sup> in STEM fields

- Graduate Student Eligibility
  - Not currently supported by federal government (NSF, DOE, NIH, ...)
  - US Citizen, US National, or US Permanent Resident
- Stipend, tuition, benefits, and IDC (~\$60k)
- Renewable up to two times, no deadline for submission however, early submission suggested

## REU Supplements – emphasis on URM<sup>s</sup> in STEM fields

- US Citizen, US National, or US Permanent Resident





# LEAPS and ASCEND MPS intends to renew these in FY22

## LEAPS: Launching Early-Career Academic Pathways in MPS

- Designed to launch careers of pre-tenure faculty in MPS fields *at minority-serving institutions (MSIs), predominantly undergraduate institutions (PUIs), and Carnegie Research 2 (R2) universities* with the goal of achieving excellence through diversity
- **Due date = 14-jun-2021** Awards = 24 months, up to \$250k

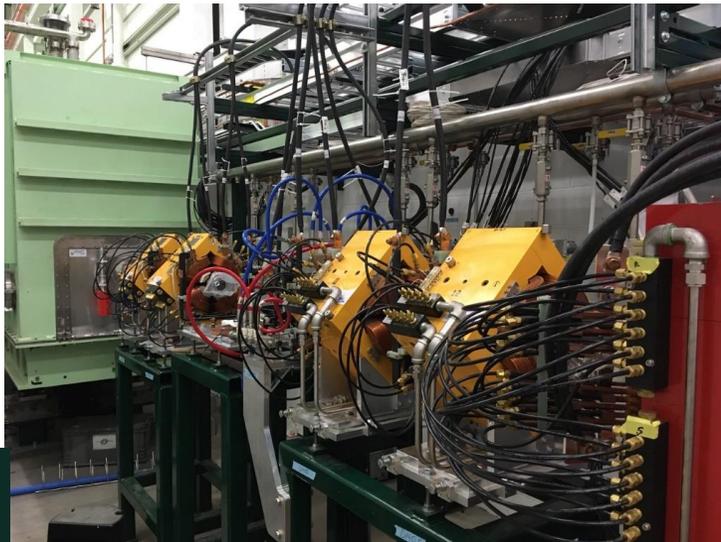
## ASCEND - Postdoctoral Research Fellowships

- Goal: to support Postdoctoral Fellows who will broaden the participation of groups that are underrepresented in Mathematical and Physical Sciences (MPS) fields in the U.S.
- And to prepare PD Fellows to transition from a postdoctoral position into the first few years of an academic faculty position
- Fellowships are **awards to individuals**, not institutions, and are administered by the Fellows
- **Due date = 15-jun-2021** \$100k/year for up to 3 years

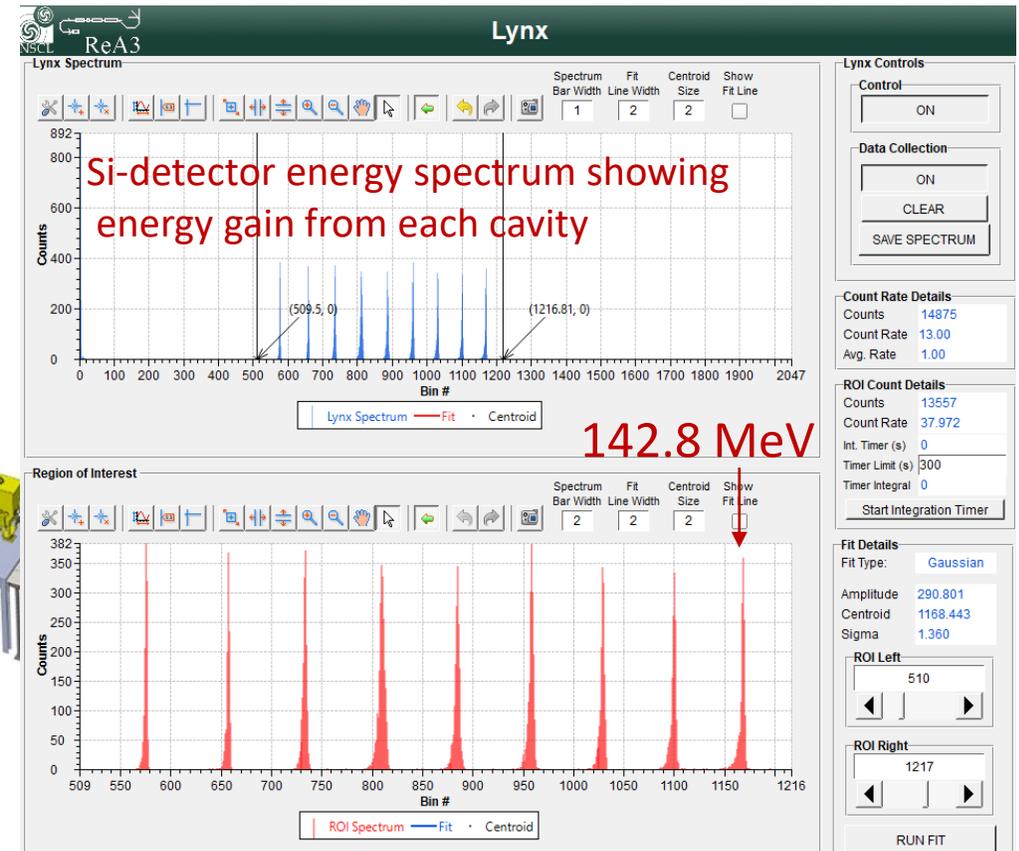
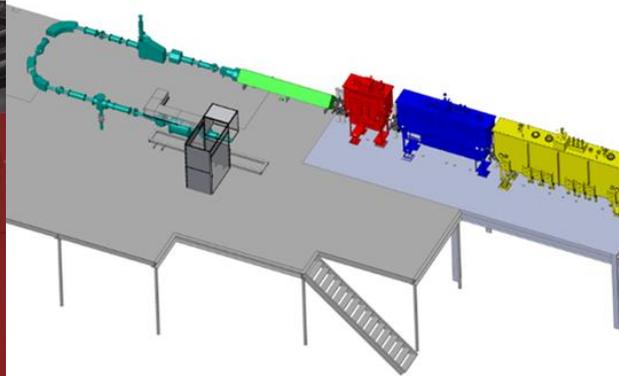


# NSCL ReA6 Upgrade Completed

- Coupling between ReA3 and ReA6 completed
- ReA6 Cryomodule cooled down to 4.5K and operating at full field
- First ReA6 experiment started 12 May 2021



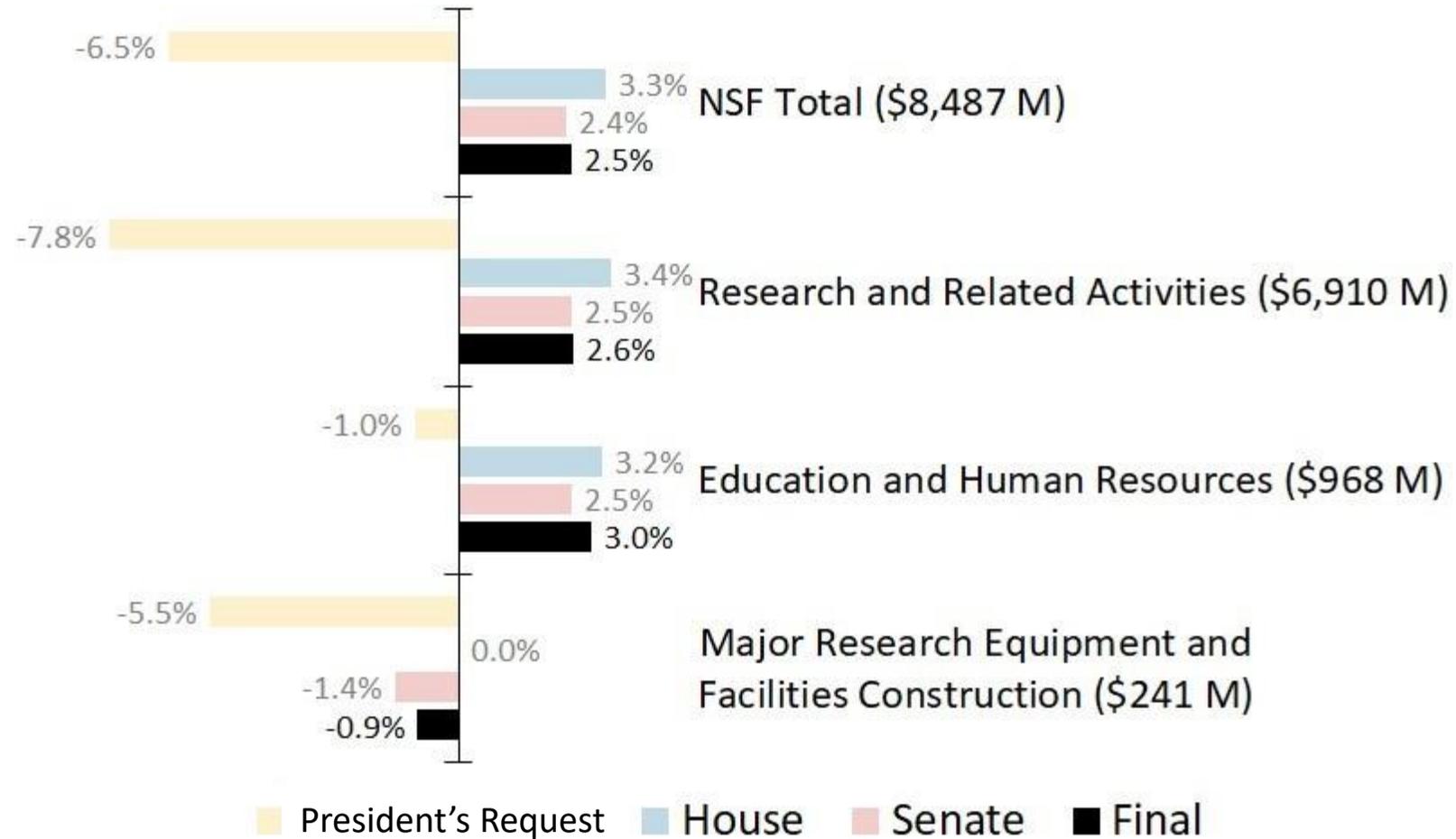
ReA6 beam line





# NSF FY21 Budget Appropriations

\$ in ( ) = FY21 amounts



American Institute of Physics | [aip.org/fyi](http://aip.org/fyi)



NSAC

March 2021





# COVID Relief Bill

- \$600 million for the National Science Foundation to “fund or extend new and existing research grants, cooperative agreements, scholarships, fellowships, and apprenticeships, and related administrative expenses to prevent, prepare for, and respond to coronavirus.”
- PHY set aside funding for supplements to existing PHY awards to help address the needs of those PIs, postdocs, and students disproportionately impacted by the pandemic with the goal of maintaining a robust scientific workforce.
  - Approximately \$1.5M in supplements to Nuclear Physics awards





UNITED STATES  
National Science Foundation

- Enhance fundamental research and development;
- Address racial equity in science and engineering;
- Address climate science and sustainability research;
- Strengthen U.S. leadership in emerging technologies; and
- Construct additional major research facilities.

FY 2022

BUDGET REQUEST TO CONGRESS

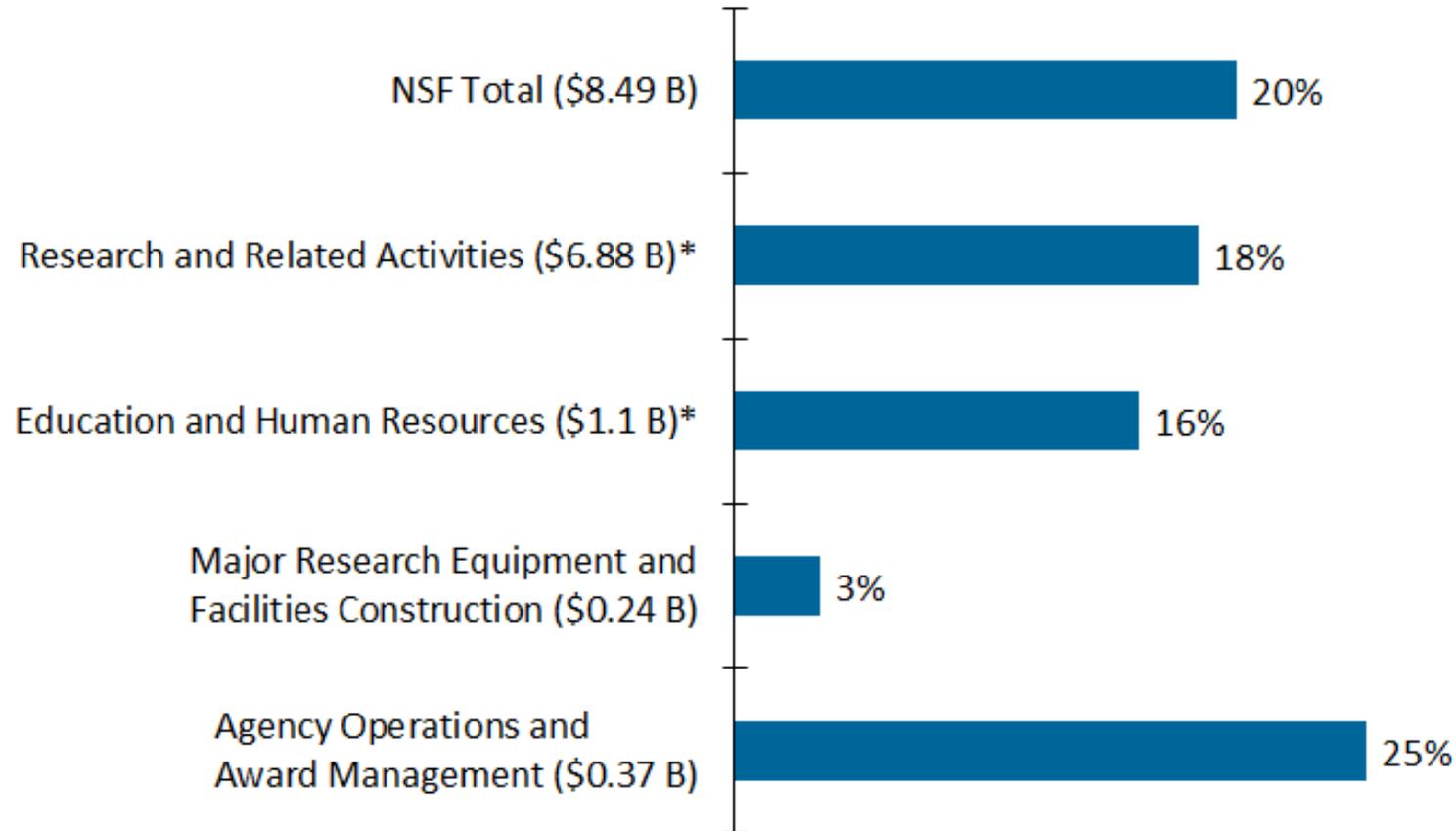


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July 2021

# FY22 President's Budget Request – NSF

\$ in ( ) = FY21 estimates



- Impressive increase
- Details are complicated
- ...

\* Figures account for consolidation of the Graduate Research Fellowship Program budget in the EHR Directorate.

American Institute of Physics | [aip.org/fyi](http://aip.org/fyi)

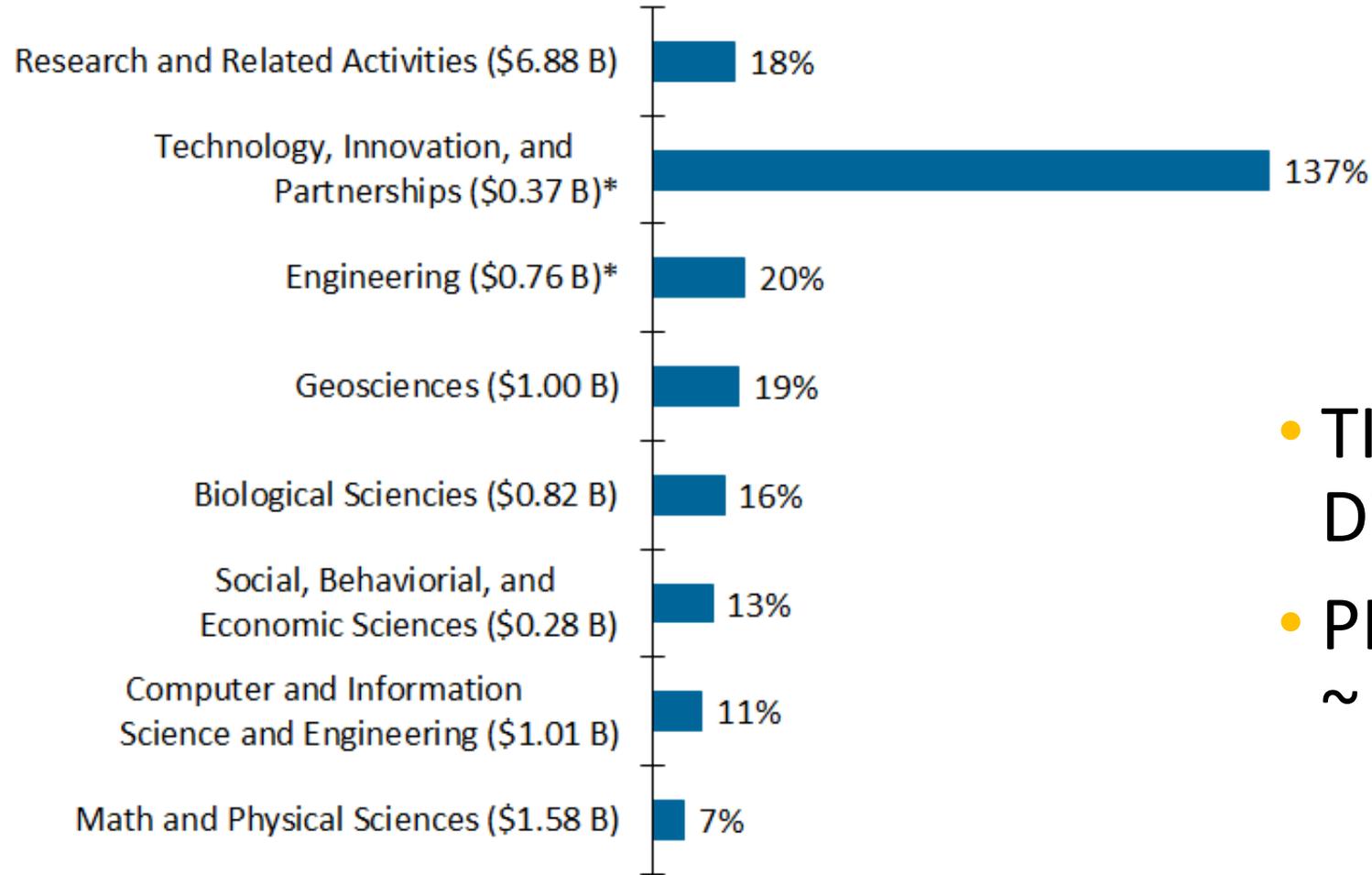


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# FY22 President's Budget Request – Directorates

\$ in ( ) = FY21 estimates



- TIP Directorate
- PHY increase ~ 4%

\* The Engineering Directorate topline excludes programs that NSF proposes to transfer to the Technology Directorate.





# NSF and DOE Coordination in Nuclear Physics

- MOLLER – parity violating Moller (elastic  $e e$ ) scattering

- DOE CD-1 Dec 2020

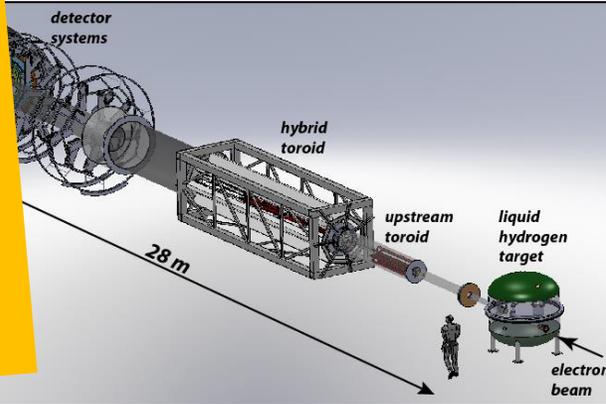
- NSF DIV 100

- EIC

- D

- P

*NSF responds to proposals with no guarantee of NSF participation in a future mission-driven project - but we are listening carefully and enthusiastically*



- Next Generation  $0\nu\beta\beta$

- Prior NSF support: CUOREcino, CUORE, MJD, EXO-200, KamLAND-Zen, NEMO, ...

- DOE  $0\nu\beta\beta$  portfolio review





# NSF/PHY: Summary

- Recent fiscal years have been challenging
- And the physics has been compelling
- NSF-wide priorities offer opportunities for nuclear physics
  - Mid-scale programs (NSF wide and within PHY)
  - Windows on the Universe
  - Quantum Leap
  - AI Institutes
- NSF Nuclear Physics continually works on programmatic balance
  - University labs, large groups, single PIs
  - Research scope
  - Risk





# NSF/MPS/PHY Personnel

- Sethuraman Panchanathan – Director (as of 23-jun-2020)
- Sean L. Jones – Assistant Director for MPS
- Denise Caldwell – Physics Division Director
- Jean Cottam Alan – Deputy Division Director
- Bogdan Mihaila – Nuclear Theory Program Director
- ★ Jim Thomas – Expt'l Nuclear Physics Program Director
- Allena Opper – Expt'l Nuclear Physics Program Director



[www.nsf.gov/pubs/2019/phy19001/phy19001.jsp](http://www.nsf.gov/pubs/2019/phy19001/phy19001.jsp)  
[www.nsf.gov/careers/rotator](http://www.nsf.gov/careers/rotator)



# For the latest updates:

<https://www.nsf.gov/physics>

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Physics (PHY)

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### Physics (PHY)

PHY Replaces DCL with Solicitation NSF 14-576

The Physics Division has issued a solicitation ([NSF 14-576](#)) for FY2015 that replaces its prior annual Dear Colleague Letter. The solicitation follows most of the requirements in the Grant Proposal Guide, but has additional requirements that relate primarily to proposers who anticipate having multiple sources of support, and proposals involving significant instrumentation development. The solicitation also has deadlines instead of target dates. All proposals submitted to the Physics Division that are not governed by another solicitation (such as CAREER) should be submitted to this solicitation; otherwise they will be returned without review.

PHY Int'l Activities - Potential Co-Review

The Physics Division has issued a Dear Colleague Letter ([NSF 14-009](#)) to announce the guidelines for "International Activities within the Physics Division - Potential International Co-Review". The DCL outlines a possible coordinated review of projects involving international colleagues and counterpart funding organizations where a mutual review and funding process is beneficial to the advancement of Physics research. Contact with the appropriate NSF Program Officer is a necessary first step and additional time for this coordination must be allowed. Proposals requesting co-review will be competing with all other proposals in that area and must succeed on the strengths of their intellectual merit and broader impact.

Special Announcements

[MPS Alliances for Graduate Education and the Professoriate - Graduate Research Supplements \(AGEP-GRS\) Dear Colleague Letter \(NSF 13-071\)](#)

[Dear Colleague Letter - Announcement of Instrumentation Fund to Provide Mid-Scale Instrumentation for FY2014 Awards in Physics Division \(NSF 13-118\)](#)

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