National Science Foundation

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APS April Meeting

Minneapolis, MN – April 2023

NSF News

Fastlane has been phased-out

- Proposals submitted in 2023 must use Research.gov.
- Updated Current & Pending document is required before releasing an award

NSF search for next Division of Physics Director

- Search announcement: https://www.usajobs.gov/job/707560000
- Application deadline: May 17, 2023
- Contact me for more details (pmarrone@nsf.gov)

Physics Division search for Program Director for Facilities

- Search announcement: https://www.usajobs.gov/job/714909400
- Application deadline: May 4, 2023
- Contact me for more details (pmarrone@nsf.gov)

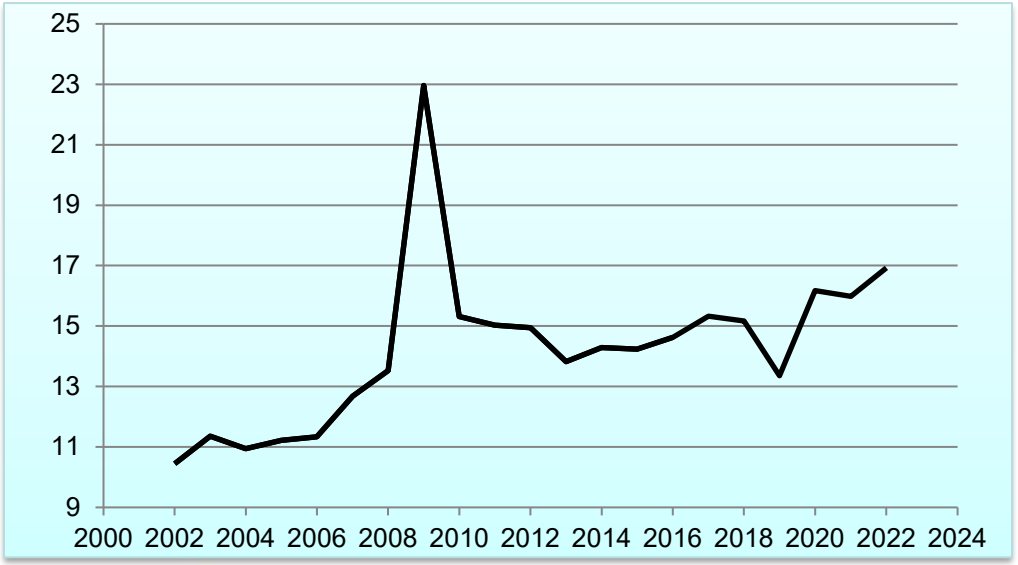
Budget news

Progression of NSF budget in the last three fiscal years (FY) and FY23 (in millions):

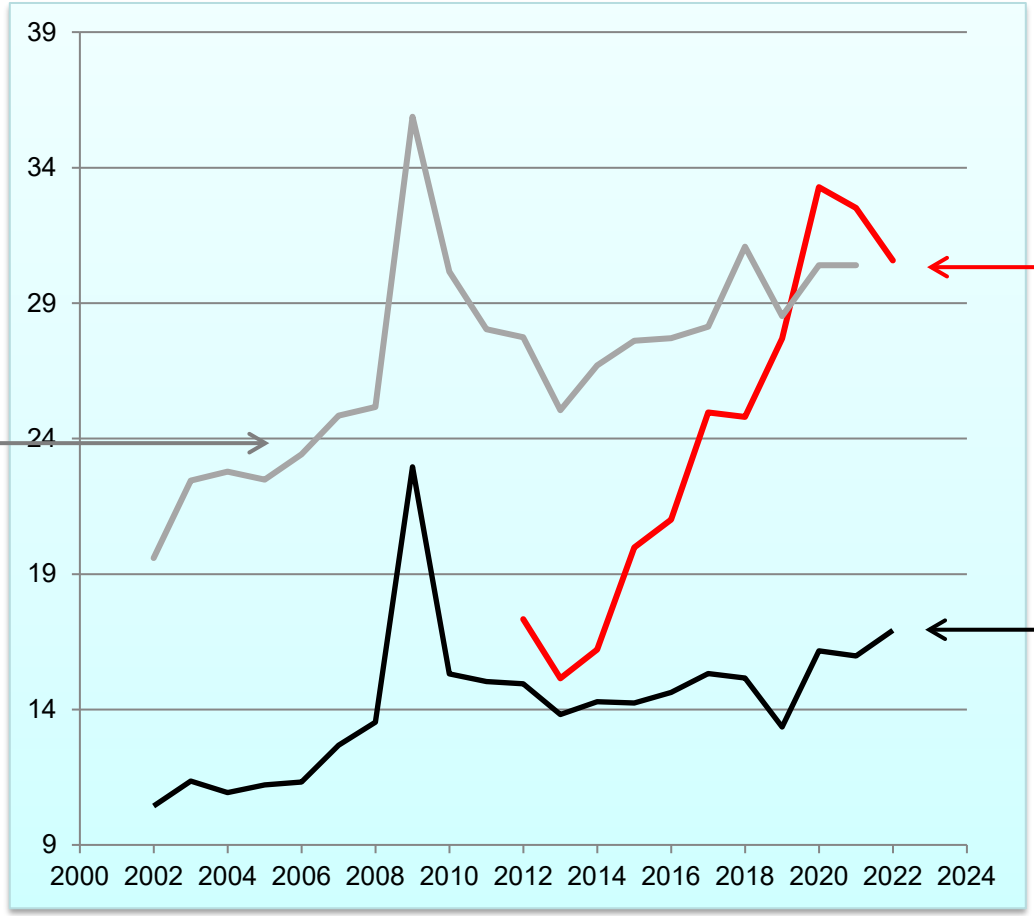
	FY21 Actual (Δ from last FY)	FY22 Actual (Δ from last FY)	FY23 Estimate (Δ from last FY)	FY24 Request (Δ from last FY)
NSF	$8,612 (3.2%)	$8,980 (4.3%)	$10,109 (13%)	$11,554 (14%)
MPS Directorate	$1,593 (4.1%)	$1,615 (1.4%)	$1,686 (4.4%)	$1,836 (8.9%)
PHY Division	$304 (6.7%)	$310 (2.0%)	$313 (1.0%)	$324 (3.5%)
Gravity programs	$15.98 (-1.2%)	$16.92 (5.9%)	-	-

Gravitational Physics programs:

Grav. Theory
Grav. Experiments & Data Analysis
LIGO Research Support
(Instrumentation)



Budget: Appropriation + External sources (in millions)



Physics Division
(divided by 10)

Grav. Physics Total
Appropr. + External
Funding: $30.6M

Grav. Physics
Appropr.: $16.9M

In 2022 about 45% of the funding awarded to Grav. Physics PIs was obtained from outside the Grav. Physics programs (i.e., Windows on the Universe, SI2 (OAC), AAG (Astronomy), PFC, MRI, PIF/CP, RAISE, co-funding with other programs in and out of Physics Division, External agencies, etc.).

Other programs' deadlines

- Astronomy & Astrophysics Grants (AAG)
  - Deadline: November 15, 2023
- CSSI
  - CSSI is an umbrella program for four classes of proposals: Elements, Frameworks, Cyberinfrastructure Planning Grants, Cyberinfrastructure Implementations.
  - Deadline: December 1, 2023
- RAISE (successor of INSPIRE)
  - $1M max / Duration up to 5 years
  - Support of two or more Prog. Directors from different disciplines
  - No LOI needed / No Deadlines (similar to EAGERs)
- MRI
  - Major change: In Acquisition proposals the 70% cost requested from NSF can only be used for equipment: personnel costs (if any) must come from the cost-sharing 30%.
  - Proposal window: January 2024
- CAREER
  - Deadline: 4th Wed of July

New funding opportunities on Diversity, Equity and Inclusion

- AGEP
- MPS – Ascend
- MPS – LEAPS
- Physics GRS
- PREP

NSF-wide

MPS-wide

Physics Division-wide*

More details in auxiliary slides.

Read the corresponding solicitation before contacting me!

* Women are considered Under-Represented Minorities (URM)

DFG-NSF Lead Agency Opportunity

DFG-NSF opportunity for collaborations between US and German groups in Gravitational Physics (experimental, computational & theoretical projects)

- Dear Colleague Letter published in December 2022 (NSF 23-036).
- All programs in Physics Division will be able to participate. Mention this opportunity to your colleagues from other areas of research!
- A new US – Canadian Lead Agency opportunity is developed by NSERC.

Next-generation GW Observatory in the U.S.

Through the Mathematical and Physical Sciences (MPS) Advisory Committee, NSF has convened a review panel to study the landscape of next-generation GW observatories in the U.S.

- This panel (or sub-committee) is charged with making recommendations on potential candidates for such observatories as MREFC projects
- It has been tasked to consider the existing GW detection network as well as all national and international observatories that could potentially be operational next decade
- The sub-committee is now in function, and it will provide a report early in 2024
- More details at https://www.nsf.gov/mps/phy/nggw.jsp

Next Generation Gravitational Wave Observatory Subcommittee

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Northwestern University
Daniel I. Linzer Distinguished University Professor
Email
Website

Dr. Stephon Alexander
Brown University
Professor of Physics
Email
Website

Dr. Ani Aprahamian
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Richard Black Professor of Astrophysics
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Website

Next-generation GW Observatory in the U.S.

Call for White Papers is out!

- https://www.nsf.gov/mps/phy/nggw/WhitePaperCall2.pdf
- Deadline: June 12, 2023

Committee of Visitors (COV) 2023

- A COV panel has reviewed the activities of NSF's Physics Division in 2019-2022
- The report will be made public here next week.
- I am very grateful to the COV members. In particular, the Gravitational Physics Subgroup Alessandra Corsi, Gary Horowitz (Chair), and Xavier Siemens.
- Starting in 2023, PI with current NSF funding could be able to apply for 4-year grants instead of the traditional 3-year awards

OSTP Memo about Public Access Policies

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

August 25, 2022

Link to Full memo

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Dr. Alondra Nelson
Deputy Assistant to the President and Deputy Director for Science and Society
Performing the Duties of Director
Office of Science and Technology Policy (OSTP)

SUBJECT: Ensuring Free, Immediate, and Equitable Access to Federally Funded Research

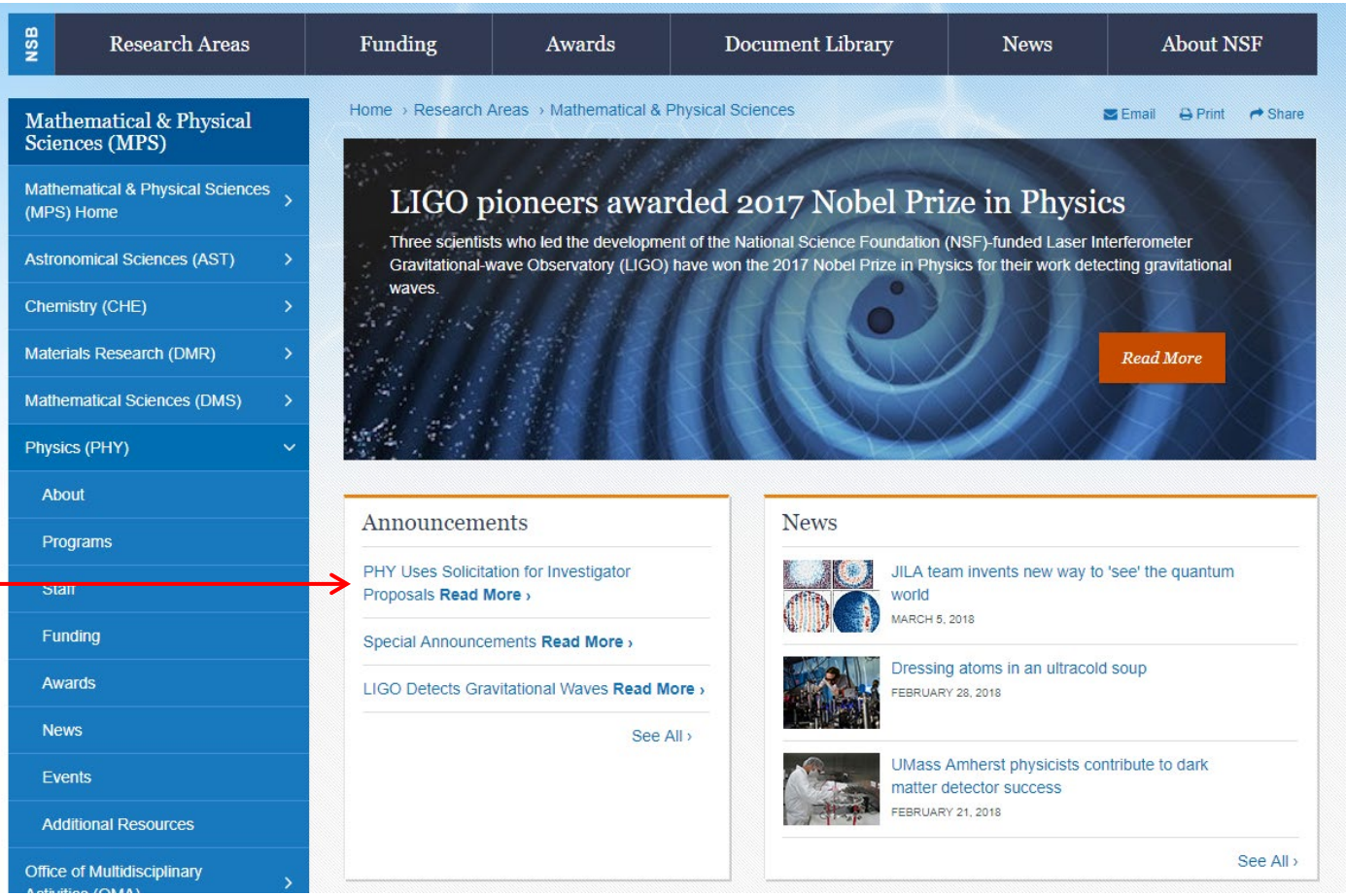
This memorandum provides policy guidance to federal agencies with research and development expenditures on updating their public access policies. In accordance with this memorandum, OSTP recommends that federal agencies, to the extent consistent with applicable law:

1. Update their public access policies as soon as possible, and no later than December 31st, 2025, to make publications and their supporting data resulting from federally funded research publicly accessible without an embargo on their free and public release;
2. Establish transparent procedures that ensure scientific and research integrity is maintained in public access policies; and,
3. Coordinate with OSTP to ensure equitable delivery of federally funded research results and data.

For the latest news:

http://www.nsf.gov/div/index.jsp?div=PHY

NSF 21-593



Email any questions to pmarrone@nsf.gov

Auxiliary slides

- Let us know of upcoming press releases
- New funding opportunities
- Gravitational Wave Agencies Correspondents (GWAC)
- Research.gov replaces Fastlane
- Common mistakes in proposal preparation
- Mentoring program

Proposal submission for 2023

- New Physics Division solicitation:
  "Division of Physics: Investigator-Initiated Research Projects" NSF 21-593
- Deadline: November 20, 2023
- NSF has implemented templates for Biosketch, Current & Pending, Collaboration, and Other Affiliations (COA). No more freeform!
- Physics Division requires that you report other proposals and awards

"PIs who have or anticipate having concurrent sources of support during the performance of the proposed activities (including but not limited to grants from other agencies or private foundations, and/or laboratory appointments) should upload a brief statement as a Supplementary Document entitled "Concurrent Commitments and Activities" that clearly articulates the nature of the commitments (such as deliverables, specific projects, etc.), the relationship between the activities and the currently proposed activities, and the proposers' commitment to accomplishing the activities described in the proposal. The proposal review process will include an assessment of the proposers' ability to carry out the proposed research in light of these commitments. Proposals that fail to provide this information as a Supplementary Document may be returned without review."

NSF Communications: Let us know of your latest results

- Let me know of your latest and greatest results. NSF is always looking for news from our PIs
- Let me know (pmarrone@nsf.gov) if you have published an article in a high-impact journal (i.e., Nature, Science, PRL, etc. but not PRD or any other traditional outlets),

Alliances for Graduate Education and the Professoriate (AGEP)

- Goal: “to increase the number of historically underrepresented minority faculty in STEM”.
- Support for URM Graduate Students for a year for up to $60K.
- NSF-wide solicitation: All NSF funded areas qualify.
- Current NSF PIs submit a Supplement Proposal for an existing award. Contact me in advance for Gravitational Physics supplements.
- AGEP also includes three proposal tracks through solicitation NSF 21-576:
  - AGEP Institutional Transformation Alliance (ITA)
  - AGEP Faculty Career Pathways Alliance Model (FC-PAM)
  - AGEP Catalyst Alliance (ACA)
- Institution must belong to an AGEP cluster of universities and colleges. If you are unsure if your institution qualifies, ask your Sponsored Research Office (SRO).

Mathematical and Physical Sciences Ascending Postdoctoral Research Fellowships (MPS-Ascend)

- Goal: “to support postdoctoral Fellows who will broaden the participation of groups that are underrepresented in MPS fields”.
- Support for postdocs for up to 3 years ($100K/year).
- MPS-wide solicitation.
- Postdocs apply directly to NSF through solicitation NSF 22-501.
- Deadline: January 2023
- Candidates do not need to belong to an URM, but they must be US citizens or permanent residents.
- The proposal must include a plan on “how the applicant and project will serve to broaden the participation of underrepresented minorities in MPS fields”.
- Contact NSF program officer prior to submission.

Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences (MPS-LEAPS)

- Goal: “helping to launch the careers of pre-tenure faculty in Mathematical and Physical Sciences (MPS) fields at minority-serving institutions (MSIs), predominantly undergraduate institutions (PUIs), and Carnegie Research 2 (R2) universities” and “aims to broaden participation to include members from groups underrepresented in the Mathematical and Physical Sciences, including Blacks and African Americans, Hispanics, Native Americans, Alaska Natives, and Native Hawaiians, and other Pacific Islanders”.
- Support for pre-tenure faculty for up to 24 months (up to $250K of total cost).
- MPS-wide solicitation.
- PIs apply directly to NSF through solicitation NSF 22-503.
- Deadline: January 2023
- Candidates must be US citizens or permanent residents.
- The proposal must include a plan “that shows how the proposed activities will increase (1) the participation of scientists from underrepresented groups and (2) the numbers of such individuals that serve as role models for the scientific workforce of the future”.
- Contact NSF program officer prior to submission.

Dear Colleague Letter: PHY – GRS Supplements

- Goal: to support “the recruitment, mentorship, and retention of junior researchers from historically underrepresented groups”.
- Physics Division-wide solicitation.
- Support for a single newly recruited graduate student for up to 12 months for a current Physics Division award (typical amount $60K/year). It can be renewed for up to 3 times.
- If your institution is part of AGEP, you should use that solicitation instead!
- PIs submit a Supplement proposal through solicitation NSF 21-593.
- Graduate students must be US citizens or permanent residents.
- Contact NSF program officer prior to submission.

Partnerships for Research and Education in Physics (PREP)

- Goal: “to enable and grow partnerships between minority-serving institutions (MSI) and Division-supported Physics Frontiers Centers to increase the participation of members of underrepresented groups in physics ”.
- Physics Division-wide solicitation.
- Support for MSI PIs for up to 3 years (up to $300K/year). The proposal must identify the Director of an existing Physics Frontier Center (PFC) as a Co-PI.
- PIs submit a Supplement proposal to an existing PFC award through solicitation NSF 21-610. The MSI faculty will be supported through a sub-award.
- Deadline January 2023
- Contact NSF program officer prior to submission.

Windows On The Universe

The Era of Multi-Messenger Astrophysics (WoU-MMA)

The universe is the ultimate laboratory, and we can now probe it as never before through several powerful and diverse windows – electromagnetic waves, high-energy particles, and gravitational waves. Each of these windows provides a different view. Together they reveal a detailed picture of the Universe that will allow us to study matter, energy, and the cosmos in fundamentally new ways.

The WoU-MMA program welcomes proposals in any area of research supported through the participating divisions that address at least one of the following criteria:

- *Coordination:* Hardware, software, or other infrastructure to coordinate observations involving more than one messenger.

- *Observations:* Observations of astrophysical objects or phenomena that are potentially sources of more than one messenger, including the use of existing observatories, experiments, and data archives, as well as the development and construction of new capabilities for advancing multi-messenger astrophysics.

- *Interpretation:* Theory, simulations and other activities to understand or interpret observations of astrophysical objects that are sources of more than one messenger.

Solicitation published in 2018 (NSF 18-5115). But do not submit your proposals to this call!
Keep using “Division of Physics: Investigators Initiated Research Projects” NSF 21-593!

Gravitational Wave Agencies Correspondents (GWAC)

- The GW scientific community recommended *"… a closer link between the global funding agencies, to start to coordinate medium- and long-term planning, and looking for synergy between the agency capabilities to most effectively stimulate the field*." ("What Comes Next for LIGO?" Workshop, May 2015, Silver Spring MD.)

- NSF created an informal communication framework between funding agencies called "*Gravitational Wave Agencies Correspondents*" (GWAC).

- Homepage http://www.nsf.gov/mps/phy/gwac.jsp.

- The 8th GWAC meeting will be held on May 25, 2023.

- Current member agencies: ARC (Australia), BMBF (Germany), CFI (Canada), CNRS (France), CONACYT (Mexico), DFG (Germany), European Space Agency (ESA), DAE (India), DST (India), FWO (Belgium), INFN (Italy), NASA (US), NSF (US), NWO (Netherlands), STFC (UK).

Research.gov open for proposal submissions

- Fastlane is no longer available for proposal submission. Use Research.gov.

- Advantages of Research.gov:
  - Integrated compliance checks for fonts, margins, and line spacing
  - Real-time compliance feedback and alerts, so proposers know a proposal section is compliant before moving on to another section
  - Specific checks on the budget screens and for Collaborators and Other Affiliations (COA) uploads
  - A few seconds to upload documents versus 30-90 seconds for each document upload in Fastlane
  - Embedded relevant sections of the Proposal & Award Policies & Procedures Guide (PAPPG) and video job aids, so proposers don't have to go to multiple sites to access guidance and tools

Common proposals mistakes

In times of tight budgets, the main reason proposals go unfunded is not fatal flaws in research but imperfections (of different caliber) that make some proposals less competitive than others.

- Context of research not properly described:
  - Claims that a group is the only one working on a subject or single-handedly carrying out a given type of research
  - What other groups are doing the same or similar work? How is your project different? Who are you collaborating with and what is your role?

- Large increase in request:
  - How well can you justify an increase (in some cases of a factor of 2 or 3) over your current level of funding?

- Lack of details:
  - Typical of long “laundry list” of projects proposals

Writing proposals: Mentoring program

Mentoring Program: The goal is to make the expertise of senior researchers on proposal writing available to young investigators

How does it work?

- The Mentee requests a Mentor (email me at pmarrone@nsf.gov).
- I will send you a list of Mentor Volunteers. You can contact anyone you like without identifying them to NSF.
- The Mentor will read you proposal and provide feedback once. Send the proposal timely! Mentors are busy people.
- NSF accepts no responsibility on the interaction/outcome of the program!