

# NSF/MPS Grant Opportunities



NSF headquarters in Alexandria, VA

New HQ, short metro ride  
from DC National Airport

**Kathleen McCloud**  
**Division of Physics**  
**[kmccloud@nsf.gov](mailto:kmccloud@nsf.gov)**  
**(PHY)**

**Hans Krimm**  
**Division of Astronomy**  
**[hkrimm@nsf.gov](mailto:hkrimm@nsf.gov)**  
**(AST)**

**Guebre X. Tessema**  
**Division of Materials**  
**Research**  
**[gtessema@nsf.gov](mailto:gtessema@nsf.gov)**  
**(DMR)**

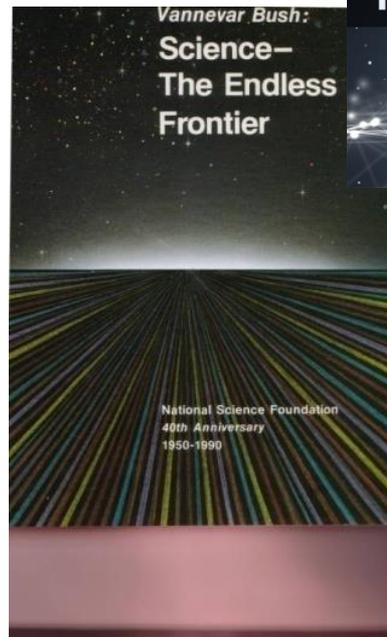
AAPT New Faculty Workshop  
November 17, 2019

<http://www.nsf.gov/>



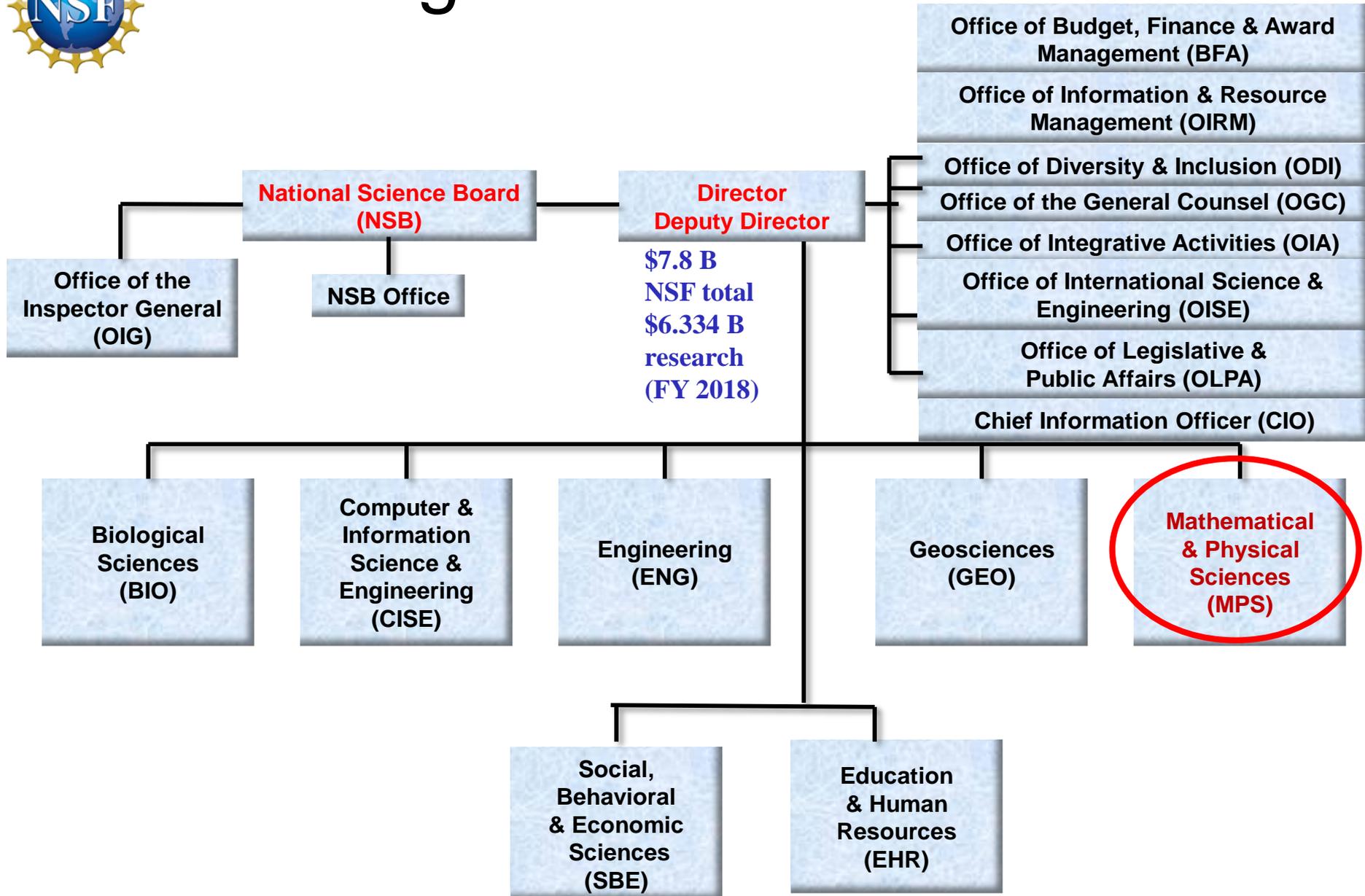
# NSF Vision and Goals

- **Vision:** A nation that creates and exploits new concepts in science and engineering and provides global leadership in research and education
- **Mission:** To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense ...
- **Strategic Goals:**
  - Transform the frontiers of science and engineering
  - Stimulate innovation and address societal needs through research & education
  - Excel as a Federal science agency

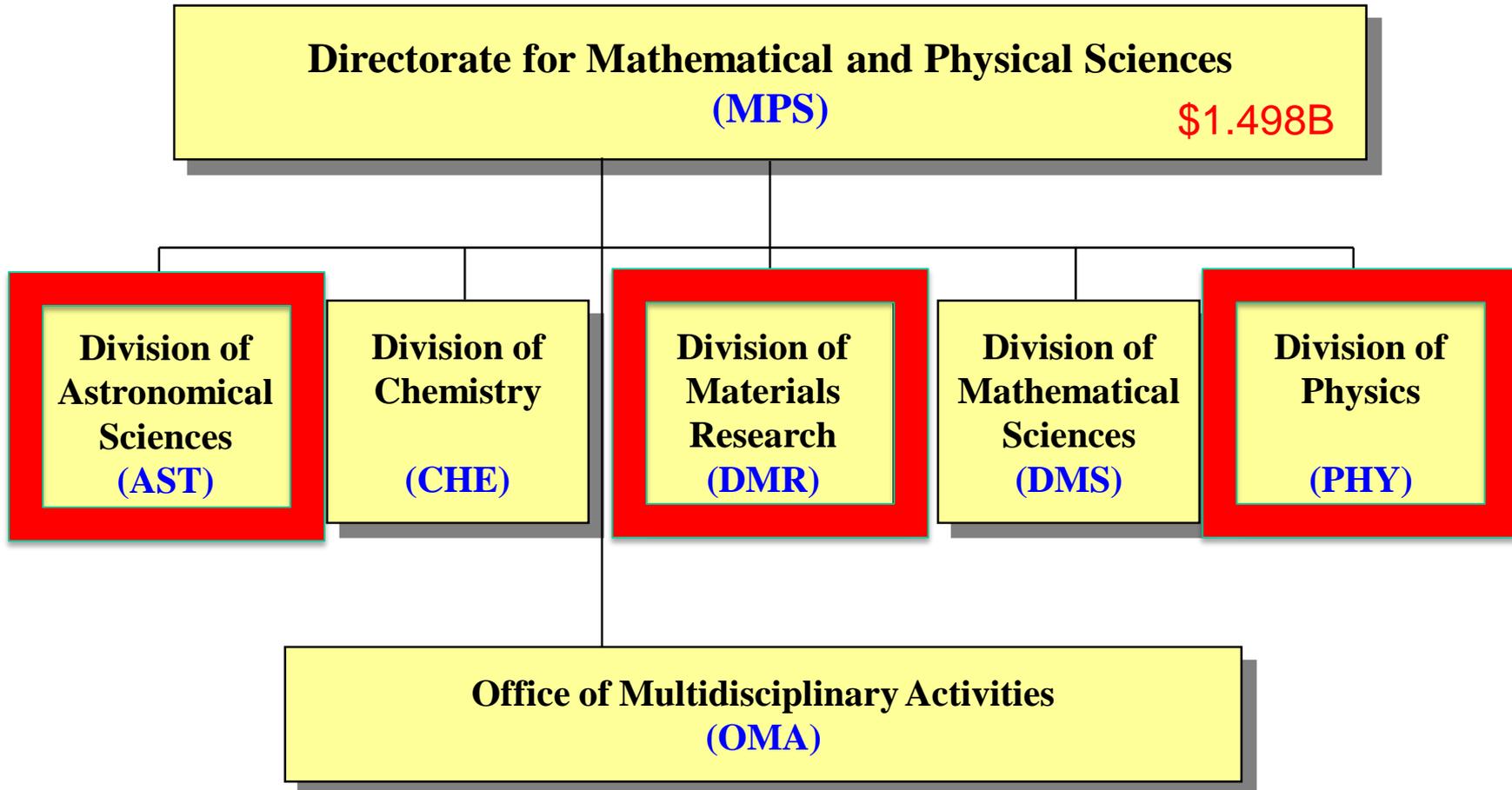




# NSF Organization Chart



# Directorate for Mathematical and Physics Sciences (MPS)



Numbers are  
FY 2018 Actuals



# How to Apply for Funding

In general, you submit a proposal via [fastlane.nsf.gov](https://fastlane.nsf.gov) or [research.gov](https://research.gov) to a particular Solicitation within a particular Division, specifying a particular Program.

- Designating secondary programs for co-review is OK if your work is inter-cross/disciplinary.
- If your selection is inappropriate, we will try to find the correct intellectual home for your proposal and transfer it internally.



## How to find the right Solicitation and/or Program?

- Investigate Program websites
- Search the Award Database (at nsf.gov) using relevant keywords to see what has already been funded in various programs.
- Talk to your colleagues in similar disciplines (but beware that programs, requirements, etc. change).
- ***Read*** the relevant Solicitation.
- Contact the relevant Program Director!
  - One or two paragraphs describing the project
  - Possible phone call to discuss project

Not to get a scientific evaluation, but to discuss appropriateness for that Program.



## Awards


[Search Awards](#)
[Recent Awards](#)
[Presidential and Honorary Awards](#)
[About Awards](#)

## How to Manage Your Award

[Grant Policy Manual](#)
[Grant General Conditions](#)
[Cooperative Agreement Conditions](#)
[Special Conditions](#)
[Federal Demonstration Partnership](#)
[Policy Office Website](#)


## Award Abstract #1713841

## The Purest Dark Matter Halos and the Processes of Galaxy Evolution

NSF Org:	<a href="#">AST Division Of Astronomical Sciences</a>
Initial Amendment Date:	May 17, 2017
Latest Amendment Date:	May 17, 2017
Award Number:	1713841
Award Instrument:	Standard Grant
Program Manager:	Peter Kurczynski AST Division Of Astronomical Sciences MPS Direct For Mathematical & Physical Scien
Start Date:	August 15, 2017
End Date:	July 31, 2020 (Estimated)
Awarded Amount to Date:	\$567,637.00
Investigator(s):	Dennis Zaritsky dzaritsky@as.arizona.edu (Principal Investigator) Alan Strauss (Co-Principal Investigator)
Sponsor:	University of Arizona 888 N Euclid Ave Tucson, AZ 85719-4824 (520)626-6000
NSF Program(s):	EXTRAGALACTIC ASTRON & COSMOLO
Program Reference Code(s):	1207
Program Element Code(s):	1217

## ABSTRACT

A galaxy contains a mixture of gas, stars and dark matter. The gas and stars emit light, making them easy to study. But the dark matter is, well, dark: It does not emit light; so, it is difficult to study. Theories of galaxy formation try to account for the mixtures of gas, stars and dark matter in galaxies of all types. Recently, a new type of galaxy was discovered, the so-called ultra-diffuse galaxies (UDGs). These galaxies contain dark

Division that made the award.

Program Director currently managing the award.

Funds allocated to date\*. See 'expired' awards for standard level of investment per award. [\* may not reflect total award]

Program(s) that funded this award.

**Abstract for this award – reviewing abstracts provides information on research scope of the program – does your research fit?**



## Now you want to begin writing.

- What are the rules?
- Is there guidance as to what is expected?

### In general, your proposal must comply with two sets of rules/expectations:

- Those listed in the **PAPPG\*** (NSF-wide expectations and requirements)
- Those listed in the **Solicitation** (specific to program):
  - Goal of Program
  - Eligibility
  - Deadlines/ Submission windows
  - Pre/Full proposal

In case of a conflict between the PAPPG and the Solicitation, the Solicitation overrides the PAPPG.

\* **NSF Proposal & Award Policies & Procedures Guide – updated annually – make sure you read the current version!**



# Parts of an NSF Proposal

- **Project Summary** and **Project Description** --- each must explicitly and separately address **Intellectual Merit** and **Broader Impact**
- **Project Description** -- also include Results from Prior NSF support
- **References** -- All Authors (except very large collaborations), Titles of Articles
- **Biographical Sketch**
- **Budget** -- your declaration about what you need to complete the proposed research (including overhead, etc.) --- consult with your SRO
- **Current and Pending Support declaration**
- **Post Doc Mentoring Plan** – if needed, one page in Supplementary Docs
- **Data Maintenance Plan** – two pages in Supplementary Docs
- **Collaborator & Affiliations List** – Single-Copy Document; special format – this is needed to identify conflicts of interest with potential reviewers
- Others as needed... see PAPPG and Solicitation

**Non-conforming proposals may be returned without review!!!**



# Things to consider while writing

- **Why *this* research project?**
- Why you and not someone else?
  - Uniqueness of research, educational opportunities, available facilities...
- What are your strengths?
  - Capture the reviewers' attention in the Summary and Introduction. Make them want to read more.
- YOU must convince the reviewer you are worthy of funding
- Express yourself clearly
  - It's not the reviewer's job to figure out what you are trying to accomplish and why. Good expository writing is key!

"A poor idea well written is more likely to be accepted than a good idea poorly written"

-- Isaac Asimov, scientist and writer (1920-1992)



## Before You Submit Your Proposal

- Start well in advance of the deadline
- Get someone else (with experience) to read the proposal, and **leave your ego behind!**
- Don't wait until the deadline to submit (and ask your SRO how much time they will need in advance). **Deadlines are absolute:** may be extended for natural or man-made disasters (such as a government shutdown), but not for issues at your end.
- **Upload, then download and Print** the PDF file after finishing and **double-check** the font size, diagrams, etc.



# Merit Review Criteria

*NSF-funded Projects are expected to be of the highest intellectual quality with the potential to advance, if not transform, the frontiers of knowledge.*

*Projects are also expected to contribute more broadly to achieving societal goals, either through the research itself or through activities related or complementary to the research.*

**Two Merit Review criteria are considered when evaluating ALL NSF proposals:**

- **Intellectual Merit**: the potential to advance knowledge
- **Broader Impacts**: the potential to benefit society and contribute to the achievement of specific, desired societal outcomes



# Broader Impacts

**NSF Broader Impacts are (intentionally) broadly defined.**

Examples include, but are *not limited to*:

- Education: improved STEM education and educator development at any level
- Outreach: increased public scientific literacy and public engagement with science and technology
- Broadening participation: development of a diverse, globally competitive STEM workforce
- Partnerships: increased cooperation between academia, industry, and others
- **ALL NSF proposals must include Broader Impacts!**
- Impact must be outside your field of study.



Each Division has its own programs to which you can submit a proposal.

However, there are several important Solicitations which cut *across* NSF....



# CAREER

## Faculty Early Career Development Program NSF 17-537

- NSF's most prestigious awards in support of junior faculty exemplifying the role of teacher-scholar
- Enhances and emphasizes the importance of balanced academic careers
- Career development plan to integrate research and education

*Important points to bear in mind...*

- Not a research excellence prize!
- Not intended as a default proposal mechanism for new Assistant Professors.
- Has a specialized purpose which may not be suitable for all PI's.



# CAREER

- **Additional Requirements**
  - Must be in a tenure track position, as defined by your institution
  - Associate professors cannot apply
  - Requires letter from Department Chair or Equivalent
  - Read the solicitation for complete eligibility rules.
- **SIZE**
  - Lower Limit \$400K (total)
- **DURATION**
  - 5 Years
- **PECASE**
  - HONORARY ONLY (Unlike DOE)

- **DEADLINES:**
  - July 15, 2020            BIO, CISE, EHR
  - July 16, 2020            ENG
  - July 17, 2020            GEO, [MPS](#), SBE



# SOME OTHER RELEVANT PROGRAMS

## Major Instrumentation Program (MRI)

**NSF – 18-513**

- Up to \$4M for development or acquisition proposals
- Submission limits per institution
- Cost sharing required for most institutions
- Submission window Jan. 1 – 19, 2020

## Facilitating Research at Primarily Undergraduate Institutions (RUI)

**NSF – 14-579**

- Available to PIs at eligible institutions
- Submit as RUI to regular NSF program; meet program deadline
- Additional RUI Impact Statement required as part of proposal

## Broadening participation in graduate study (AGEP)

**NSF – 16-552**

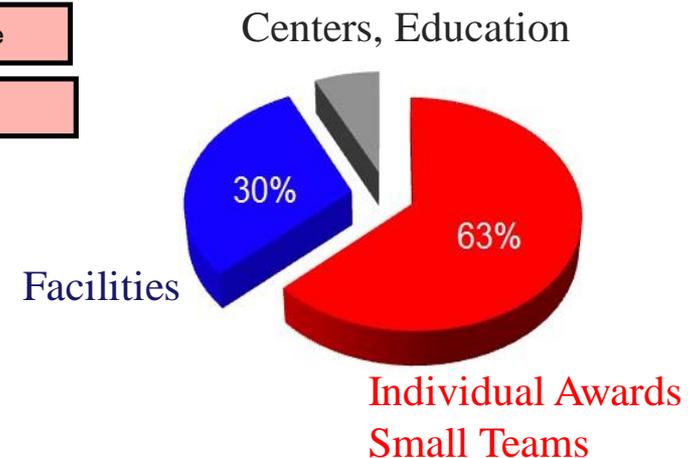
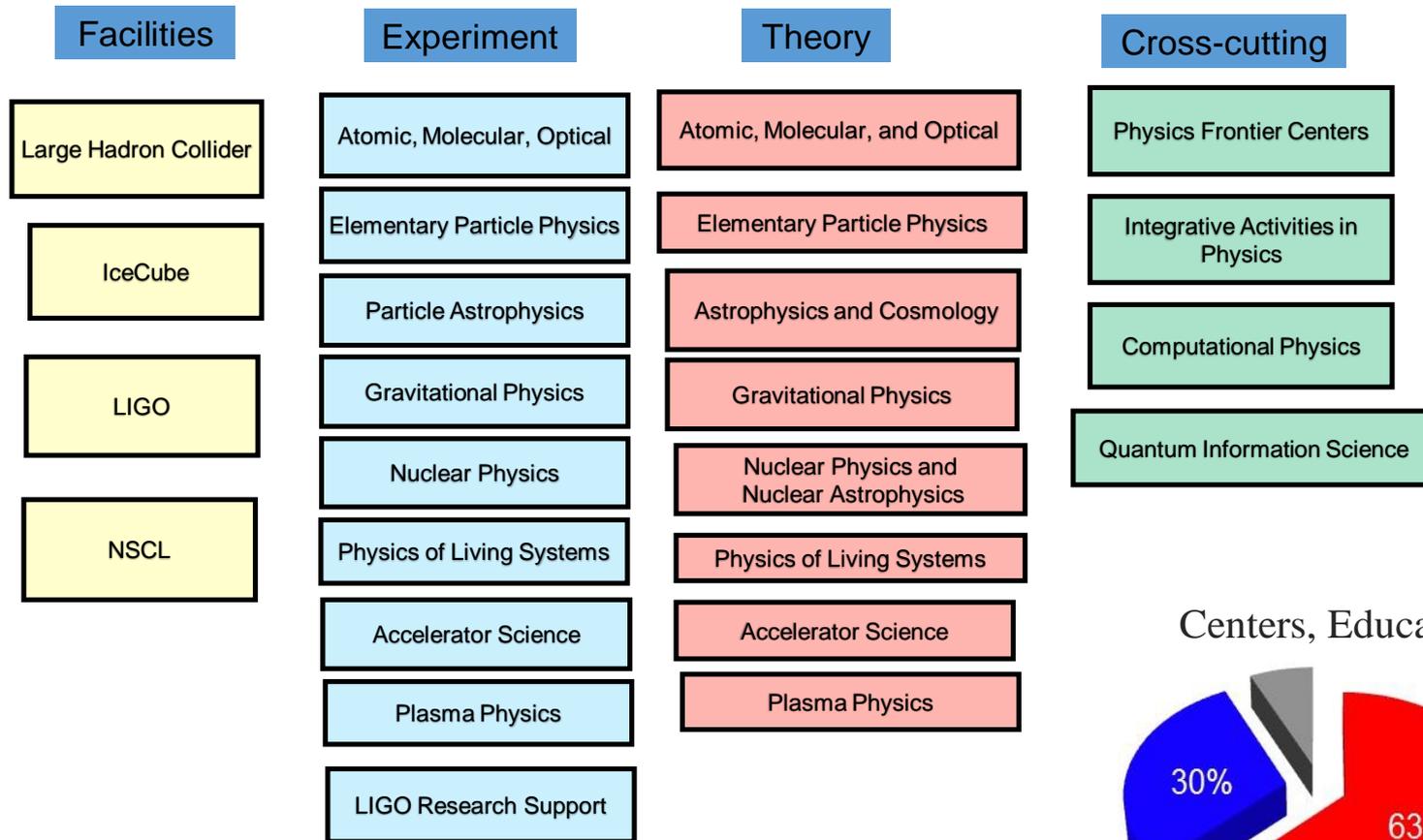
- Available to PIs at specified institutions
- Support for graduate student tuition, benefits, stipend



# Division of Physics (PHY)



# Division of Physics

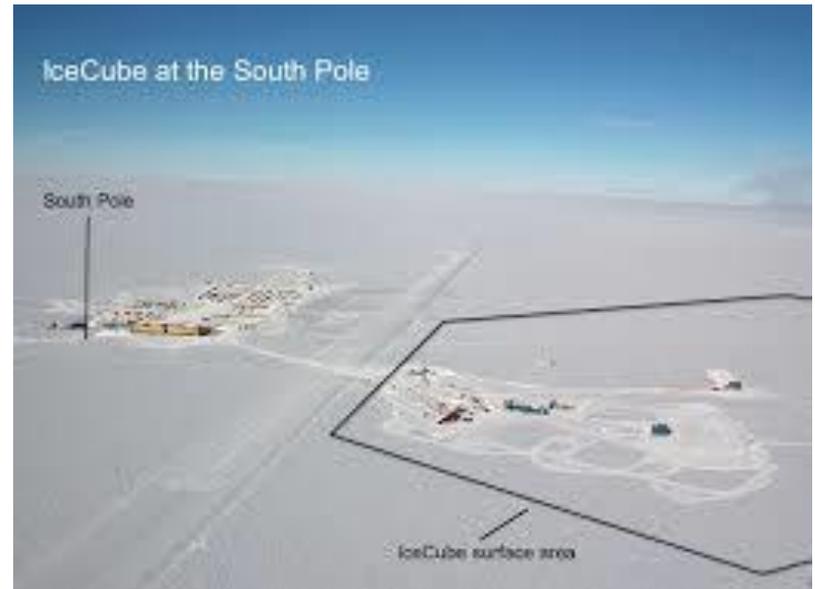
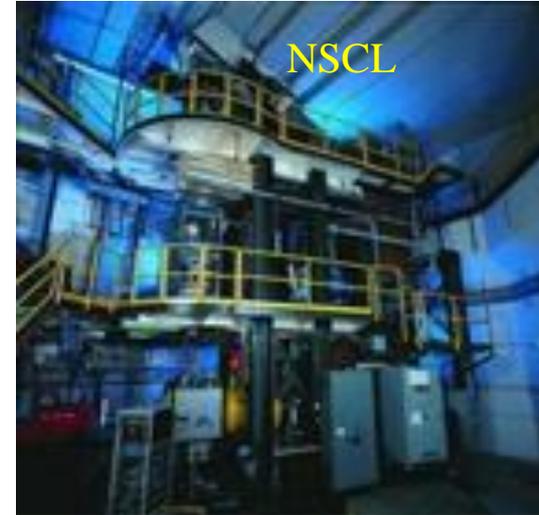


Note: Condensed-Matter Physics is within DMR, not PHY!



# World Class Major Facilities

## Keeping Researchers at the Frontier



# Division of Physics

***Program Solicitation:***  
**Investigator-Initiated Research Projects (18-564)**

***Be aware:***

- **New requirements for some PI's!**
- **Does not override existing solicitations such as RUI, CAREER, REU sites, etc.**
- **Deadlines instead of target dates!**
- **Separate deadlines for different Physics programs**



# Division of Physics

## Full Proposal Deadlines

(due by 5 p.m. submitter's local time):

### November 20, 2019:

- Atomic, Molecular & Optical Physics - Experiment & Theory;
- Gravitational Physics - Experiment & Theory;
- Integrative Activities in Physics;
- LIGO Research Support

### December 03, 2019:

- Nuclear Physics - Experiment and Theory
- Elementary Particle Physics - Experiment
- Particle Astrophysics -Experiment;
- Computational Physics

### December 10, 2019:

- Elementary Particle Physics - Theory;
- Particle Astrophysics and Cosmology - Theory;
- Quantum Information Science
- Physics of Living Systems



# Division of Physics

## *Changes to note:*

- (for all Divisions:) **Collaborators and Other Affiliations** is now a Single-Copy Document (not sent to reviewers, seen by NSF only)
- There are restrictions on the allowed content in *Letters of Collaboration* or *Membership in large collaborations*

### PI's with **concurrent sources of support:**

- Explain how the proposed work is **distinct** from other funded activities.
- Discuss **commitments** (such as deliverables, specific projects, percentage of total research effort, etc.) associated with other support
- Put in the **Current/Pending Support** section... *item for peer review.*

### **Additional Information for Midscale Instrumentation:**

For proposals to support instrumentation acquisition or development at the level of \$4 million and above. This language may also apply to requests for lesser amounts if the cognizant Program Director concludes that the complexity of the instrumentation merits this approach. **Investigators should first contact the Program Director for their physics subdiscipline.** Proposals should be submitted to the appropriate PHY Program (not a separate solicitation.)



# Division of Astronomy (AST)

Hans Krimm  
hkrimm@nsf.gov





# AST Division Programs

[nsf.gov/ast](http://nsf.gov/ast)

## Individual Investigators

(Lead: James Neff)

**AAG**  
Astronomy and Astrophysics Research Grants

~~SPG~~  
Solar and Planetary Research Grants

**CAREER**  
Early Career Faculty

**AAPF**  
Postdocs

**ATI**  
Advanced Technologies and Instrumentation

**MRI**  
Major Research Instrumentation

**REU**  
Education and Special Programs

**Research**

Early Career Faculty  
Postdocs

**Technology/Instrumentation**

Major Research Instrumentation

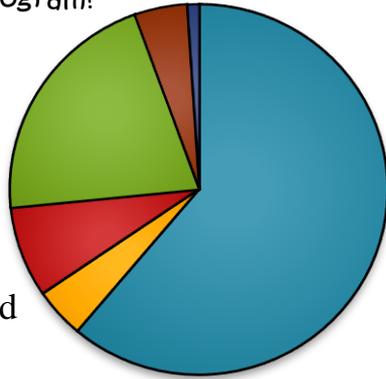
**Education and Special Programs**

## Mid-scale

(Lead: Rich Barvainis)

**MSIP**

Back into a single program!



## Facilities

(Lead: Ralph Gaume)

**ALMA**

**NRAO**

**Gemini**

**NOAO**

**NSO**

**Arecibo**

**LSST**

## Astronomy and Astrophysics Research Grants (AAG)

**Annual AAG deadline: November 15**

- Research grants for observational, theoretical, laboratory, and archival data studies in all areas of astrophysics
- Proposals may span multiple disciplines and/or areas of study and may utilize multiple techniques.
- Solar and planetary research proposals should be submitted to AAG this year – with the same Nov. 15 deadline.
- New AAG solicitation 18-575

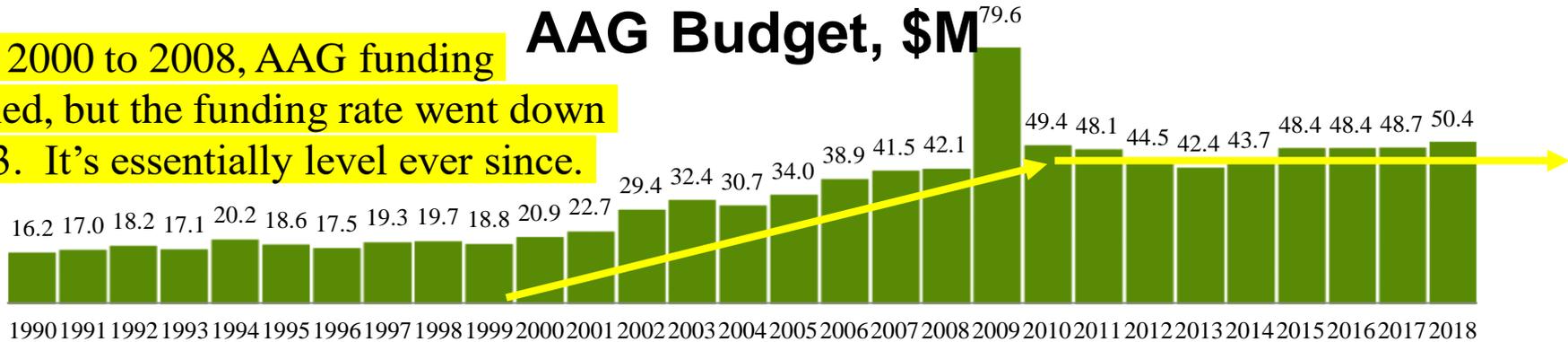




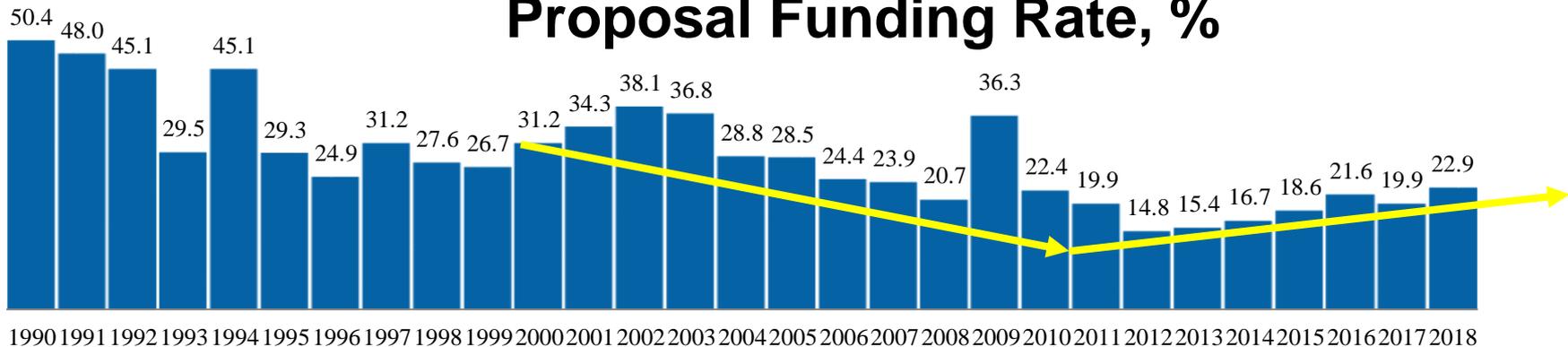
# AAG Funding History, 1990-2018

From 2000 to 2008, AAG funding doubled, but the funding rate went down by 1/3. It's essentially level ever since.

## AAG Budget, \$M



## Proposal Funding Rate, %





# IIP Update

- *No Proposal Deadline* pilot has concluded for the Planetary/Exoplanetary and Solar portions of AAG (now included in AAG)
- New ATI solicitation released -- proposals are due Nov. 15, 2019
- MSIP is on every-other-year schedule - will be solicitation for FY2020.
- PAARE discontinued.
- MRI solicitation annually - deadline Jan 2020



# AAG Overview

- AAG = Astronomy & Astrophysics Res. Grants (due Nov. 15, 2020)
- An award is made to an institution: university, observatory, center (like CfA), NOT directly to another federal agency (like NASA).
- Typical awards are 3 years, ~\$400K including institutional indirect
- Usual budget is for salary (grad student, postdoc, faculty summer ( $\leq 2$  mos), "soft money" academic year), travel, publication costs.

AAG program overview:

Observational, theoretical or laboratory

Solar, stellar, planetary, exoplanets, galactic, extragalactic or cosmology

Proposals that are solely or predominantly for the acquisition, analysis, or interpretation of space-based data from NASA-supported missions will be returned without review.

# Our Facilities

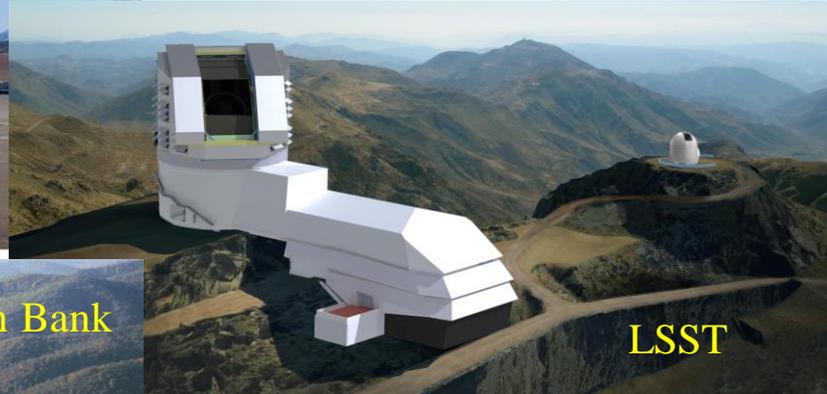
ALMA



CTIO



LSST



Arecibo



Green Bank



Gemini



DKIST



Anyone may propose for observing time on NSF AST-funded facilities



# Division of Materials Research (DMR)



# DIVISION OF MATERIALS RESEARCH (DMR)

## Topical Materials Research Programs

**“unsolicited”**

- Biomaterials
- Ceramics
- Electronic & Photonic Materials
- Metals and Metallic Nanostructures
- Polymers
- Condensed Matter & Materials Theory
- Condensed Matter Physics
- Solid State and Materials Chemistry

**Other types of Proposals: EAGER, RUI, GOALI (and CAREER\*)**

## Cross-Cutting Activities

Diversity  
International  
Education

STC

## Centers & Teams

Materials Research Science & Engineering Centers  
**(MRSEC)**

Partnerships in Research & Education in Materials  
**(PREM)**

Designing Materials to Revolutionize & Engineer our Future  
**(DMREF)**

Solicitations

## National Facilities & Instrumentation Program

Cornell High Energy Synchrotron Source (CHESS)

National High Magnetic Field Laboratory (NHMFL)

Center for High Resolution Neutron Scattering (CHRNS)

National Nanotechnology Coordination Network (NNCI)

Materials Innovation Platforms **(MIP)**

User Facilities



# DMR Solicitations for “Individual Investigator” Proposals for TMRP

**Biomaterials (BMAT)**  
**Electronic & Photonic Materials (EPM)**  
**Metals and Metallic Nanostructures (MMN)**  
**Polymers (POL)**  
**Condensed Matter Physics (CMP)**  
**Solid State and Materials Chemistry (SSMC)**

## Ceramics (CER)

**PROGRAM SOLICITATION**  
NSF 16-597

**REPLACES DOCUMENT(S):**  
PD 15-1774

## Division of Materials Research: Topical Materials Research Programs (DMR-TMRP)

**PROGRAM SOLICITATION**  
NSF 17-580

**REPLACES DOCUMENT(S):**  
PD 03-1710, PD 03-1773, PD 03-1775, PD 06-7623, PD 09-1771,  
PD 10-1762



**Submission Deadline: Nov 1**

## Condensed Matter and Materials Theory (CMMT)

**PROGRAM SOLICITATION**  
NSF 16-596

**REPLACES DOCUMENT(S):**  
PD 09-1765



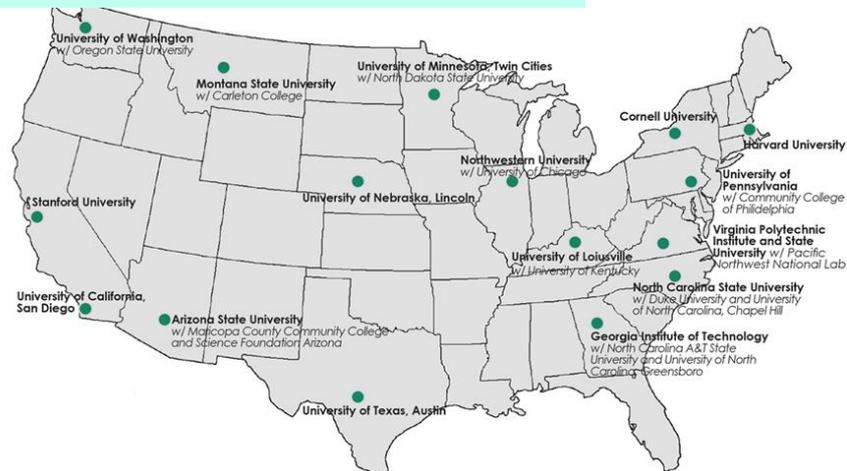
**Open Window – No Deadlines**



# National Facilities & Instrumentation



Cornell High Energy Synchrotron Source (Cornell, Ithaca)



National Nanotechnology Coordinated Infrastructure <http://nncl.net/about-nncl>



Center for High Resolution Neutron Scattering (NIST, MD)



National High Magnetic Field Facility (Florida)



# Materials Innovation Platforms (MIP)

**MIP Concept:** Combine a **focused research effort** in an interactive feedback loop together with a **mid-scale user facility open to the community** in order to accelerate advancement of a materials research topic of national importance.



**Focus:** 2-dimensional chalcogenide materials for future electronics  
e.g., Can theory model growth kinetics and guide materials synthesis?



**Focus:** interfacial materials, combining oxides & 2D materials, for valleytronics & spintronics  
e.g., Can we design and create new interfacial materials by “breaking” Gibbs’ & Pauling’s rules?

## Current Status:

- Accept user proposals; some samples delivered to users already
- World’s first 300-atm floating-zone furnace at Paradim-JHU
- Integrated MBE, CVD, ARPES & STM/AFM later in 2017
- Access to computational, TEM & other capabilities
- Webinars and summer schools



Questions?

**Ask Early, Ask Often  
(starting now!)**

PHY: Kathy McCloud, [kmcccloud@nsf.gov](mailto:kmcccloud@nsf.gov)

AST: Hans Krimm, [hkrimm@nsf.gov](mailto:hkrimm@nsf.gov)

DMR: G. X. Tessema, [gtessema@nsf.gov](mailto:gtessema@nsf.gov)

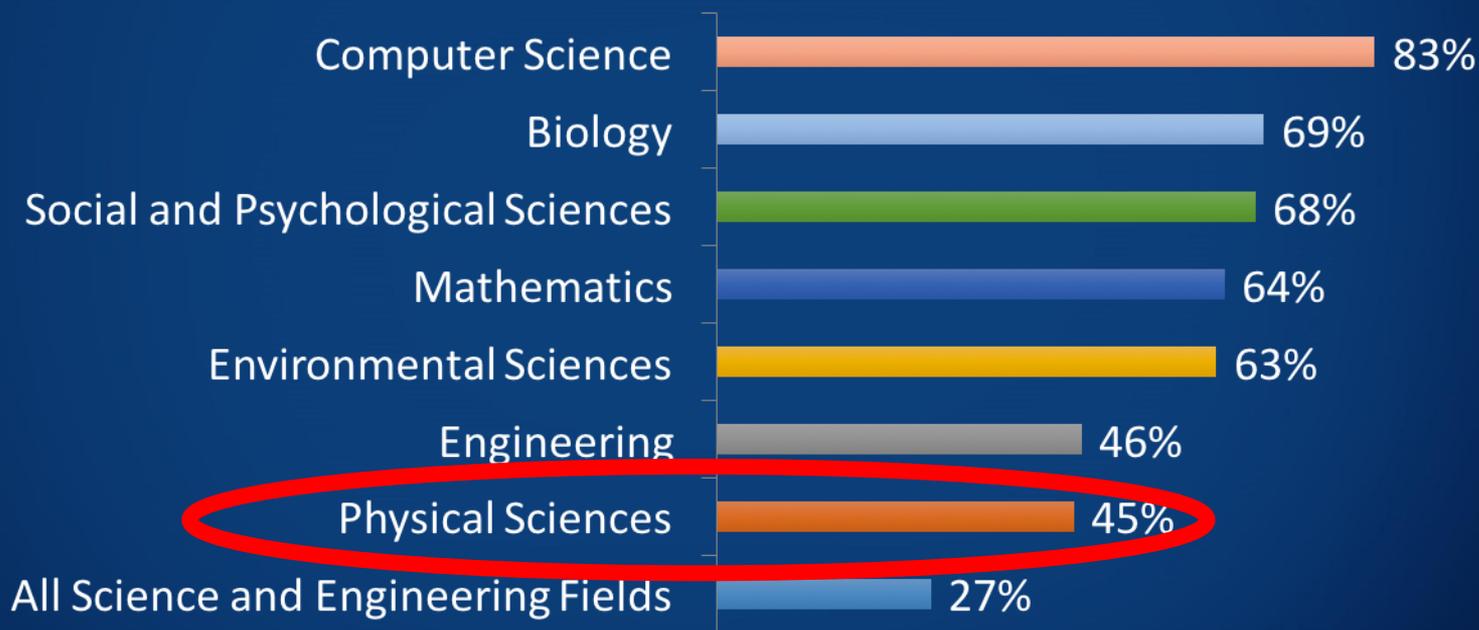




# Backup Slides



## NSF Support of Academic Basic Research in Selected Fields (as a percentage of total federal support in 2015)



**Note:** Biology includes Biological Science and Environmental Science. Biology and Psychological Sciences exclude National Institutes of Health funding from the total amount of federal support.

**Source:** NSF/National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development



# MPS Overall Funding—FY 2018 Request

## MPS Funding

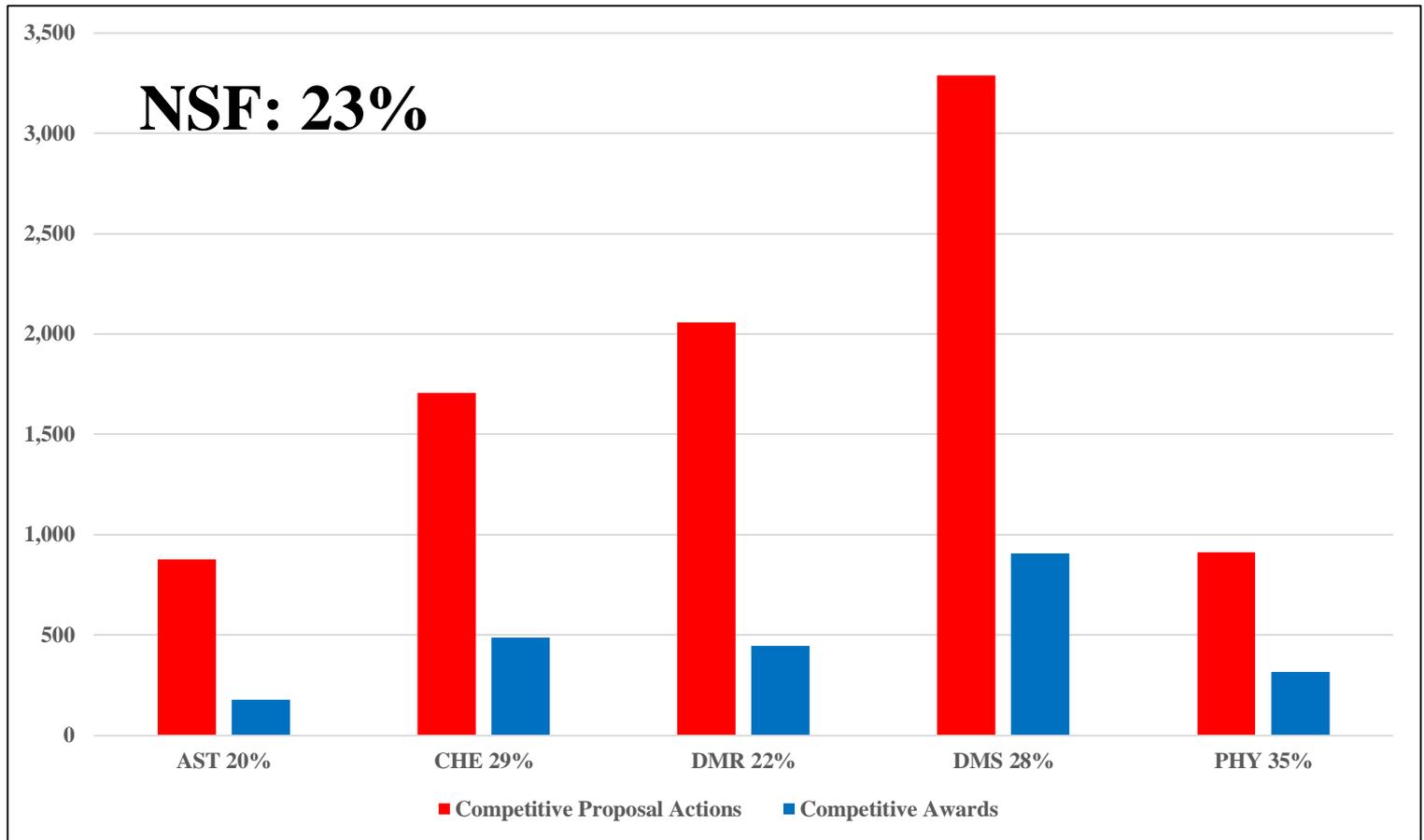
(Dollars in Millions)

	FY 2016 Actual	FY 2017 (TBD)	FY 2018 Request	Change Over FY 2016 Actual	
				Amount	Percent
Astronomical Sciences (AST)	\$246.63	-	\$221.15	-\$25.48	-10.3%
Chemistry (CHE)	246.52	-	221.05	-25.47	-10.3%
Materials Research (DMR)	309.88	-	282.87	-27.01	-8.7%
Mathematical Sciences (DMS)	233.95	-	209.78	-24.17	-10.3%
Physics (PHY)	276.91	-	253.30	-23.61	-8.5%
Office of Multidisciplinary Activities (OMA)	34.89	-	31.28	-3.61	-10.3%
<b>Total</b>	<b>\$1,348.78</b>	<b>-</b>	<b>\$1,219.43</b>	<b>-\$129.35</b>	<b>-9.6%</b>



# Funding Rates

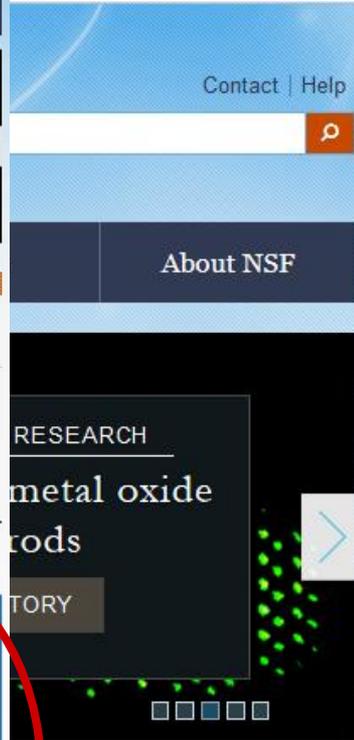
**FY 17**



# Funding Opportunities [www.nsf.gov](http://www.nsf.gov)



This image shows the main content area of the NSF website. At the top, there is a search bar and a navigation bar with "Funding" circled in red. Below the navigation bar is a featured article titled "NSF-FUNDED RESEARCH Potential of metal oxide nanorods" with a "FULL STORY" button. Underneath is a section for "NSF Social Media" with social media icons for Twitter, Facebook, YouTube, and LinkedIn. The "NSF Funding &amp; Research Community" section contains "SPECIAL NOTICES" and an "EVENT CALENDAR". A red circle highlights a "FUNDING OPPORTUNITIES" search box, which includes a search field, a "GO" button, and a "VIEW ALL FUNDING OPPORTUNITIES" button.



# [www.nsf.gov](http://www.nsf.gov) – Search Current Awards

The screenshot shows the National Science Foundation website. At the top left, the NSF logo and the text "National Science Foundation WHERE DISCOVERIES BEGIN" are visible. To the right is a search bar with the text "Search" and a magnifying glass icon. Below the search bar is a navigation menu with the following items: "Research Areas", "Funding", "Awards", "Document Library", "News", and "About NSF". The "Awards" item is circled in red. A dropdown menu is open under "Awards", listing the following links: "About Awards", "Award Statistics (Budget Internet Info System)", "Award Conditions", "Managing Awards", "Policies and Procedures", "Presidential and Honorary Awards", and "Search Awards". The "Search Awards" link is also circled in red. To the right of the dropdown menu is a "RELATED LINKS" section with the following links: "Research.gov", "FastLane", and "NSF Public Access Repository (NSF-PAR)". The background of the website features a blue header and a dark blue navigation bar. The main content area has a black background with a pattern of colorful dots (green, yellow, and pink) on the left side.

National Science Foundation  
WHERE DISCOVERIES BEGIN

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Search

Research Areas Funding **Awards** Document Library News About NSF

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NSF Public Access Repository (NSF-PAR)





National Science Foundation  
WHERE DISCOVERIES BEGIN



HOME

RESEARCH AREAS   FUNDING   AWARDS   DOCUMENT LIBRARY   NEWS   ABOUT NSF

Simple Search   Advanced Search   Popular Searches   Download Awards   Send Comments   Award Search Help

## Simple Search Results

Search awards for: **dark matter**

Search

Export up to 3,000 Awards: [CSV](#) | [XML](#) | [Excel](#) | [Text](#)

[Email this Link](#) | [Export All Results](#)

Sort By: [Relevance](#)   Results size: [30 per page](#)   [Table](#)

Page 1 of 98

Displaying 1 - 30 of 2916

'dark matter'

### You Searched For:

dark matter

Active Awards: true

### Refined by

Refine Search

### State

Alaska(14)

Alabama(8)

Arkansas(5)

Arizona(47)

California(426)

Show More ...

### NSF Organization

Office Of The Director(32)

Direct For Mathematical & Physical Sci(1744)

Direct For Social, Behav & Economic Sci(93)

Direct For Computer & Info Sci & Engin(158)

Directorate For Geosciences(339)

Directorate For Engineering(254)

Direct For Biological Sciences(170)

Direct For Education and Human Resources(126)

### Award Amount

Less than or equal \$50,000(168)

Between \$50,001 - \$100,000(187)

Between \$100,001 - \$500,000(1928)

Between \$500,001 - \$1,000,000(424)

More than \$1,000,000(209)

### Collaborative Research: Direct Search for Dark Matter with Underground Argon at LNGS

Award Number:1314483; Principal Investigator:C. J. Martoff; Co-Principal Investigator;; Organization:Temple University;NSF Organization:PHY Start Date:06/15/2014; Award Amount:\$526,442.00; Relevance:47.63;

### The Purest Dark Matter Halos and the Processes of Galaxy Evolution

Award Number:1713841; Principal Investigator:Dennis Zaritsky; Co-Principal Investigator:Alan Strauss; Organization:University of Arizona;NSF Organization:AST Start Date:08/15/2017; Award Amount:\$567,637.00; Relevance:47.63;

### On the Relation Between Galaxies and Dark Matter Halos

Award Number:1612085; Principal Investigator:Idit Zehavi; Co-Principal Investigator;; Organization:Case Western Reserve University;NSF Organization:AST Start Date:07/01/2016; Award Amount:\$65,064.00; Relevance:47.63;

### Observing the Invisible: A Collaborative Investigation between Astrophysicists and Philosophers

Award Number:1557138; Principal Investigator:Michael Weisberg; Co-Principal Investigator:Barry Madore; Organization:University of Pennsylvania;NSF Organization:SES Start Date:07/01/2016; Award Amount:\$154,876.00; Relevance:47.63;

### Collaborative Research (RUI): Search for Exotic Transient Spin-dependent Signals from Ultrabright Dark Matter Fields

Award Number:1707875; Principal Investigator:Derek Kimball; Co-Principal Investigator;; Organization:California State University, East Bay Foundation, Inc.;NSF Organization:PHY Start Date:05/15/2017; Award Amount:\$122,879.00; Relevance:47.63;

### Collaborative Research (RUI): Search for Exotic Transient Spin-dependent Signals from Ultrabright Dark Matter Fields

Award Number:1707803; Principal Investigator:Jason Stalaker; Co-Principal Investigator;; Organization:Oberlin College;NSF Organization:PHY Start Date:05/15/2017; Award Amount:\$91,435.00; Relevance:47.63;

### Collaborative Research: ADMX-HF Extreme Axion Experiment

Award Number:1607223; Principal Investigator:Konrad Lehnert; Co-Principal Investigator;; Organization:University of Colorado at Boulder;NSF Organization:PHY Start Date:07/01/2016; Award Amount:\$276,929.00; Relevance:47.63;

### Extremes Meet: Radio and Gamma-Ray Observations of Clusters of Galaxies, from Dark Matter to Cosmic Rays

Award Number:1517545; Principal Investigator:Tesla Jeltema; Co-Principal Investigator:Stefano Profumo; Organization:University of California-Santa Cruz;NSF Organization:AST Start Date:09/01/2015; Award Amount:\$325,000.00; Relevance:47.63;

# Proposal & Award Policies & Procedures Guide

(see link within Fastlane under “Proposals, Awards, Status”)

## (PAPPG) NSF 18-1

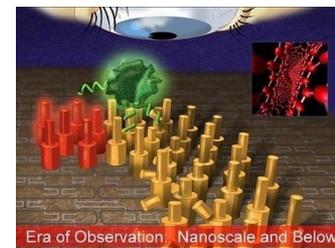
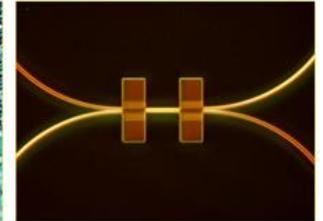
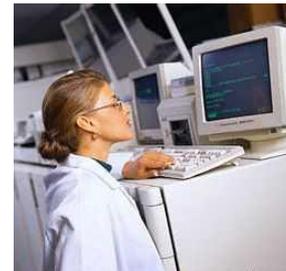
- Contains guidelines for all proposals (except when program Solicitation stipulates otherwise)
- Also provides guidance for Award process, from issuance and administration through closeout
- Also describes NSF organizations and offices most relevant to grantees
- Also provides a list of Statutes and Executive Orders
- **Is updated often: make sure you are looking at the most current edition!**



# Intellectual Merit

*For example...*

- How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
- How well qualified is the proposer (individual or team) to conduct the project?
- To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?
- How well conceived and organized is the proposed activity?
- Is there sufficient access to resources?



# Broader Impacts

*For example...*

How well does the activity advance discovery and understanding while **promoting teaching, training, and learning**?

How well does the proposed activity broaden the participation of **underrepresented groups**?

To what extent will it enhance the **infrastructure** for research and education, such as facilities, instrumentation, networks, and partnerships?

Will the **results be disseminated** broadly to enhance scientific and technological understanding?

What may be the benefits of the proposed activity to **society**?



# Funding Decisions

Along with the advice provided by reviewers/Panels, NSF staff give careful consideration to the following in making funding decisions:

## **Integration of Research and Education**

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions...

## **Integrating Diversity into NSF Programs, Projects, and Activities**

Broadening opportunities and enabling the participation of all citizens, women and men, underrepresented minorities, and persons with disabilities, are essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.



# CAREER

## **ELIGIBILITY: As of Directorate Deadline**

- Hold a doctoral degree by the deadline date in a field supported by NSF;
- Be untenured until October 1 following the deadline; and
- Have not previously received a CAREER award (prior or concurrent Federal support for other types of awards or for non-duplicative research does not preclude eligibility);

AND

- By October 1st following the deadline for submission of CAREER proposals: Be employed in a tenure-track (or tenure-track-equivalent) position as an **assistant professor (or equivalent title)** at an accredited institution located in the U.S., its territories, or possessions, or the Commonwealth of Puerto Rico, that awards degrees in a field supported by NSF;

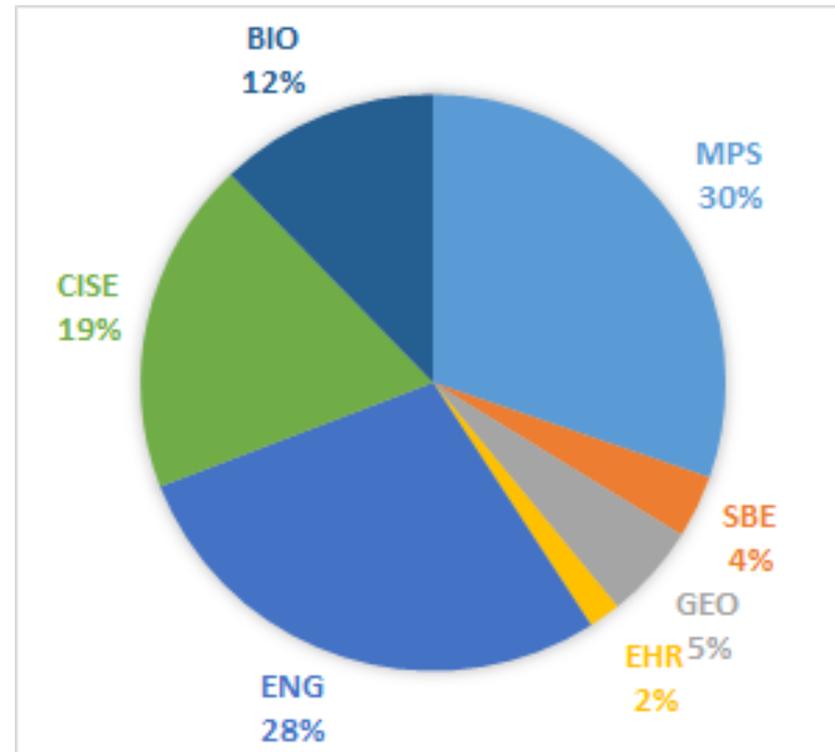
OR

- Be employed in a tenure-track position (or tenure-track-equivalent position) as an **assistant professor (or equivalent title)** at an organization located in the U.S., its territories or possessions, or the Commonwealth of Puerto Rico, that is a non-profit, non-degree-granting organization such as a museum, observatory, or research lab.



# CAREER Program

Awardees are selected based on their plan of *outstanding research, excellent education*, and the integration of research and education within the context of the mission of their organizations, *building a firm foundation for a lifetime of leadership*.



FY2016

Increased participation of those traditionally under-represented in science and engineering is encouraged.



# Principles Applied to MPS

- Support early career
  - CAREER request relatively stable. Targeted REU reductions if undergraduate students could be supported through national facilities and normal research awards. 8,000 graduate students to be supported through research awards.
- Protect the core; cross disciplinary programs
  - Major research facilities are “core” to MPS.
  - Retained flexibility to fund the best science by rolling some cross-disciplinary programs into core programs.
- Strategic and prioritized reductions within directorates
  - Emphasized funding of highest priority facilities; reductions proposed for some facilities in transition.
  - Reduced mid-scale and instrumentation; support individual investigators.
  - Prioritized low-level investments leading to “Big Ideas”.



# Major Instrumentation Program (MRI)

**NSF – 18-513**

**Next Deadline:** January 01, 2019 - January 22, 2019

**Restrictions on organization submission eligibility**

**Submission limit** - Three (3) per organization: *Two proposals for less than \$1M, one proposal for more than \$1M.*

**Awards** - up to \$4M for development or acquisition proposals

**Cost-sharing** at the level of 30% of the ***total project cost*** is required for Ph.D.-granting institutions and non-degree-granting organizations. ***Cost-sharing is not required for non-Ph.D. granting institutions.***

**Merit Review** - At the time of submission, PI's are asked to identify an NSF division(s) to review proposal. NSF reserves the right to place proposals in the appropriate division(s) for review.

## ***RUI: Facilitating Research at Primarily Undergraduate Institutions***

- RUI proposals from **eligible institutions** must be submitted in response to existing NSF funding opportunities and must abide by guidelines and deadlines in those documents.
- Current RUI solicitation is [NSF 14-579](#). You submit here and designate which Program should receive your proposal. *RUI solicitation has extra requirements* beyond the regular Program Solicitations and PAPPG.

***There is no single Foundation-wide deadline for RUI proposals – see Division programs.***



# MPS AGEP GR *Supplements*

- Available to PIs to support qualifying graduate students at AGEP or AGEP Legacy Institutions only!  
[https://www.nsf.gov/mps/broadening\\_participation/index.jsp](https://www.nsf.gov/mps/broadening_participation/index.jsp)
- Graduate Student Eligibility
  - Emphasis placed on under-represented groups
  - 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.

See DCL 16-125 for more information

