



National Science Foundation

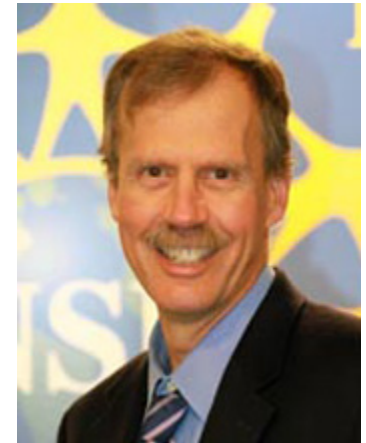
Pedro Marronetti

American Physical Society Meeting

Washington, DC – January, 2017

Jim Ulvestad is Acting Assistant Director for MPS

Dr. Ulvestad was Division Director of the Astronomy Division for several years. He will remain as AD until the search for Fleming Crim's successor is finalized (later this year).



New name for the Advanced Cyberinfrastructure Division (ACI)

ACI is now the Office of Advanced Cyberinfrastructure (OAC) still inside the Directorate of Computer & Information Science & Engineering (CISE)

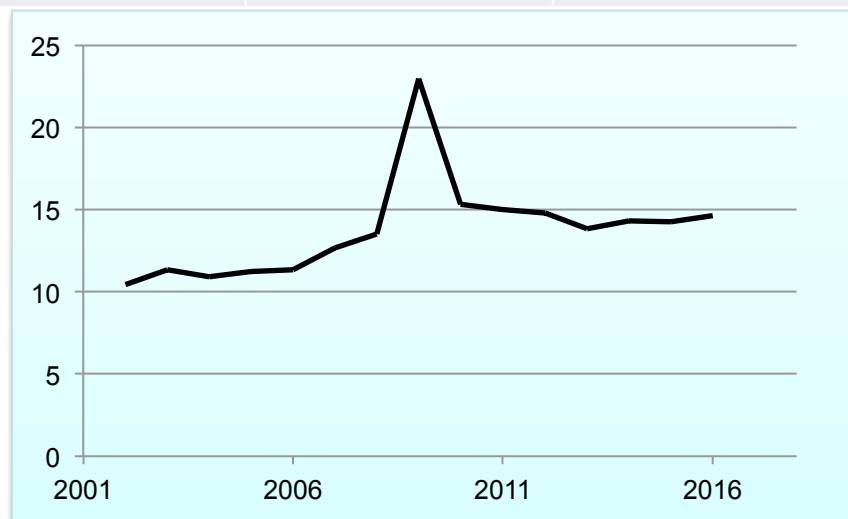


Budget news

Progression of NSF budget in the last three fiscal years (FY) and FY17 request (in millions):

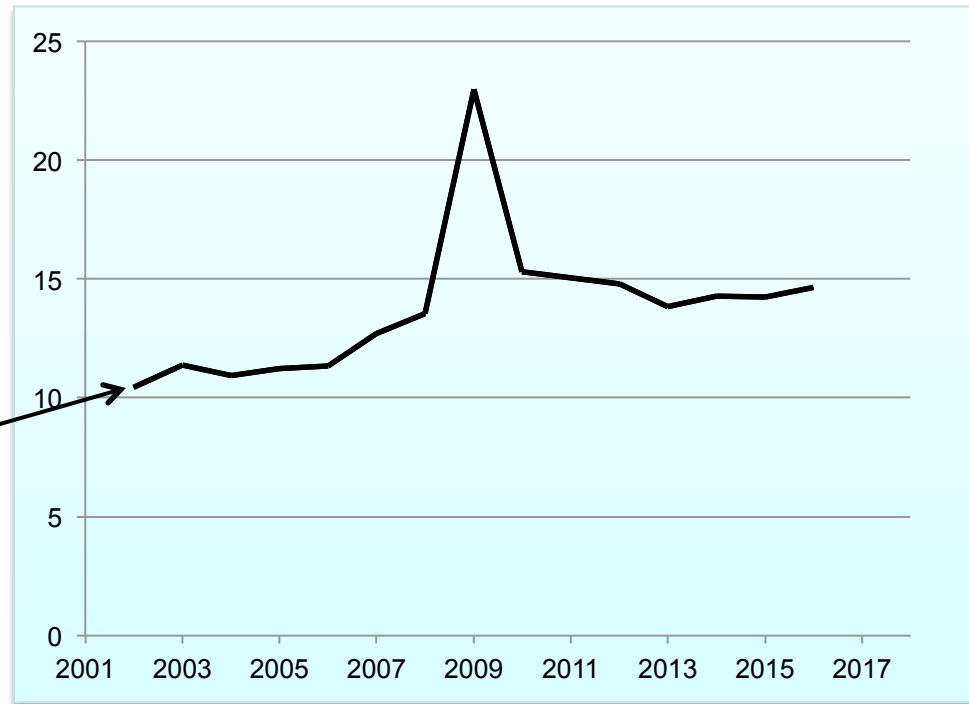
| | FY14 Actual (Δ from last FY) | FY15 Actual (Δ from last FY) | FY16 Estimate (Δ from last FY) | FY17 Request (Δ from last FY) |
|------------------|---------------------------------|---------------------------------|-----------------------------------|----------------------------------|
| NSF | \$7,131 (3.3%) | \$7,398 (3.7%) | \$7,463 (0.9%) | \$7,964 (6.7%) |
| MPS Directorate | \$1,268 (1.5%) | \$1,376 (8.5%) | \$1,349 (-2.0%) | \$1,436 (6.4%) |
| PHY Division | \$267 (6.8%) | \$276 (3.4%) | \$277 (0.4%) | \$295 (6.5%) |
| Gravity programs | \$14.3 (3.6%) | \$14.3 (0.0%) | \$14.6 (2.1%) | ? |

Gravity programs

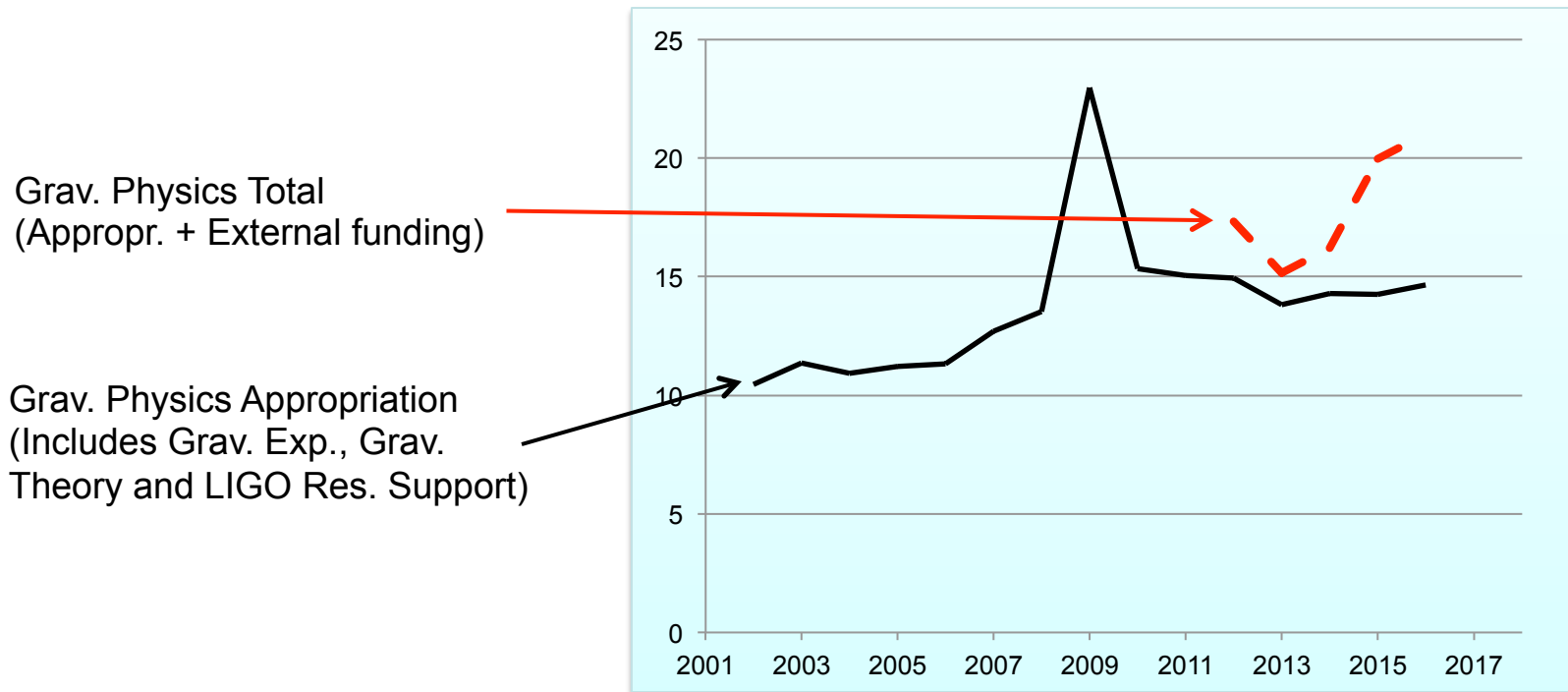


Budget: Appropriation

Grav. Physics Appropriation
(Includes Grav. Exp., Grav.
Theory and LIGO Res. Support)



Budget: Appropriation + External sources



In 2016 almost **30% of the NSF funding awarded to Grav. Physics PIs** was obtained from outside the Grav. Physics programs (i.e., INSPIRE, PFC, MRI, PIF/CP, SI2 (OAC), etc.)



Other programs' deadlines

- 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)
- SI2: SSE (elements-small), SSI (interdisc.-larger), S2I2(institutes- largest):
 - Office of Advanced Cyberinfrastructure (OAC) solicitations
 - Deadlines: **Many!**
- MRI
 - New revised solicitation in 2014
 - Major change: In **Acquisition** proposals the 70% cost requested from NSF can only be used for **equipment**: personnel costs (if any) have to come from the cost-sharing 30%.
 - Deadline: **January 10, 2018 (Est.)**
- CAREER
 - Deadline: **July, 2017 (TBD)**
- CDS&E / PIF – Computational Physics
 - Deadline: **No call in 2017! To be resumed in 2018**



Other programs' deadlines

- Mathematical Sciences Innovation Incubator (MSII)

- Div. of Mathematical Sciences (DMS) solicitation

“aims to enhance the synergistic relationships between the mathematical sciences and other NSF-supported disciplines through the Mathematical Sciences Innovation Incubator (MSII) activity. The MSII activity encourages and supports new research collaborations among mathematical scientists and other scientists and engineers working in NSF- supported research areas of high national priority by:

- facilitating DMS co-review and co-funding of multi-disciplinary research collaborations involving mathematical scientists;
 - providing leverage for investments of non-DMS NSF programs in projects that include mathematical scientists; and
 - providing a uniform mechanism through which collaborative research teams involving mathematical scientists can request DMS co- review.”

- **To apply for MSII support**, after submitting a proposal to a non-DMS program for a research project that involves mathematical scientists, the Principal Investigator must send an e-mail message specifying the name(s) and affiliation(s) of the mathematical scientist(s) and the NSF proposal ID to the [address](mailto:DMScofunding@nsf.gov) [DMScofunding@nsf.gov].
 - More information at https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505044



Division of Physics: Investigator-Initiated Research Project

NSF 17-XXX

- Starting in 2014, **all proposals** submitted to the Division of Physics programs (*LIGO Research Support, Theor. Grav. Physics, Exp. Grav. Physics, etc.*) **have to go through this solicitation!**
- This includes:
 - **Conference** proposals.
- This does not include:
 - **CAREER, MRI, INSPIRE, RUI**, etc. and any other proposal that pertains to an NSF-wide solicitation.
 - **Supplements** and **EAGER**. You can use NSF 17-1 GPG
- It has **Deadlines** (instead of Target Date).
 - All three Grav. Physics programs: **Oct 25, 2017 (estimated)**
- See Auxiliary slides for more information



Changes to Proposals & Awards Policies & Procedures Guide 2017 (PAPPG)

- No More Grant Proposal Guide (GPG)! NSF will refer PIs to the PAPPG which existed before as the sum of the GPG and the Awards Administration Guide (AAG).
- Deadline Submission: NSF will strictly enforce proposal submission deadlines to comply with policy outlined in the PAPPG. **Organizations will not be able to submit proposals after 5:00 pm submitter's local time** on the deadline date (this has been there for years. It will be actively enforced from now on).
- Submission: NSF will no longer provide a 5-day grace period between the submission of a proposal to NSF and receipt of the Authorized Organizational Representative signature (at the bottom of proposal's cover page). **No more 5-day grace period!**

| | | |
|--|-------------------------|------------|
| <small>This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</small> | | |
| AUTHORIZED ORGANIZATIONAL REPRESENTATIVE | SIGNATURE | DATE |
| NAME/TITLE (TYPED) | | |
| TELEPHONE NUMBER | ELECTRONIC MAIL ADDRESS | FAX NUMBER |

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New Panel on Gravitational Wave Science

- Jointly organized by the Astronomy and Physics Divisions at NSF
- NASA is interested in joining in on this pilot next year. This year funding is coordinated between agencies.
- No modification in proposal submission:
 - Pls submit their proposals to their program of choice (AAG in Astronomy or Gravitational Physics in Physics)
 - Deadlines are those of each program
 - Program officers sort out which proposals qualify for the joint panel (24 proposals were selected this year)



10 Big Ideas for Future NSF Investments

(https://www.nsf.gov/about/congress/reports/nsf_big_ideas.pdf)

“As we look ahead to the coming decades, we must envision bold questions that will drive NSF's long-term research agenda -- questions that will ensure future generations continue to reap the benefits of fundamental S&E research”

- 4 Big Ideas for Funding Infrastructure: One of which is
 - Midscale+ Research Infrastructure: To bridge the gap between Midscale (< \$20M) and MREFC (> \$100M) funding
- 6 Big Ideas for Scientific Drives
 - Windows on the Universe - The Era of Multi-messenger Astrophysics:

*“NSF's longstanding investments in ground-based astronomy, particle astrophysics and **gravitational physics** puts it clearly in the center of the action for all of these messengers. As the one agency engaged in all three types of multi-messenger astrophysics, NSF is uniquely positioned to promote the interagency and international collaborations needed to advance understanding in this field.”*



DFG-NSF Lead Agency Agreement

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

- First review process conducted in February 2016. One award out of 3 proposals rec.
- This works in a way similar to the NSF “Collaborative Research” proposals: single proposal core with two sets of budgets, CVs, etc.
- Researchers decided which is the “Lead” agency (NSF or DFG)
- The Lead Agency conducts the review process with participation of officers from the non-lead agency (i.e., single review simplifies administrative workload)
- It incentivizes international collaborations for small groups
- Deadline:
 - If NSF is Lead Agency: **Oct. 25, 2017 (Est.)**
 - If DFG is Lead Agency: **None**



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 2nd meeting conducted October 28, 2016 (teleconference).
- Current member agencies: ARC (Australia), CFI (Canada), CNRS (France), CONACYT (Mexico), DFG (Germany), INFN (Italy), NASA (US), NSF (US), STFC (UK).



Ideas Lab – “Measuring Big G”

The Newtonian constant of gravitation, G , is the fundamental constant of physics known with the least precision (CODATA relative uncertainty = 1.2×10^{-4}). Measurements made in the past decade and a half show a spread of values larger than their individual estimated errors, creating a discrepancy at a level of 10σ .

- The Ideas Lab was held at NIST, MD, in July 2016.
- 15 participants and 4 mentors spent a week discussing new ways of measuring G
- 3 groups were invited to submit full proposals
- We are in the final stages of making the recommendations

THANK YOU ALL FOR MAKING THIS A SUCCESSFUL EXPERIENCE!



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 your proposal and provide feedback once. Send the proposal timely! Mentors are busy people.
- NSF accepts no responsibility on the interaction/outcome of the program!

But, does it work?

Physics Division has decided to implement a pilot across the Division based on or experience in Grav. Physics!



For the latest news:

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

NSF 17-XXX



Gravitational waves detected from second pair of colliding black holes

On December 26, 2015, LIGO's detectors caught a second robust signal from two black holes in their final orbits and then their coalescence into a single black hole.

[Read More](#)

Announcements

PHY Uses Solicitation for Investigator Proposals [Read More >](#)

Special Announcements [Read More >](#)


LIGO Detects Gravitational Waves [Read More >](#)

[See All >](#)

News

New Program Director for Experimental Nuclear Physics: Dr. Edmundo Garcia
JANUARY 4, 2017

New Program Director for Physics: Dr. Steven Southworth
JANUARY 4, 2017

 Gravitational waves detected 100 years after Einstein's prediction
FEBRUARY 11, 2016

[See All >](#)

Funding Opportunities

Innovations at the Nexus of Food, Energy and Water Systems
(NSF 17-530) POSTED DECEMBER 5, 2016

Software Infrastructure for Sustained Innovation
(NSF 17-526) POSTED DECEMBER 1, 2016

Upcoming Due Dates

Physics Frontiers Centers
(NSF 16-561) FULL PROPOSAL: JANUARY 30, 2017, BY INVITATION ONLY

Division of Physics: Investigator-Initiated Research Projects
(NSF 16-566) FULL PROPOSAL: FEBRUARY 1, 2017

Popular Links

- Career Opportunities
- PHY: Investigator-Initiated Research Projects
- Physics in the Mathematical and Physical Sciences
- Gravitational Wave Agencies

Email any questions to
pmarrone@nsf.gov
or call (703)292-7372



Auxiliary slides

Solicitation NSF 17-XXX

“Division of Physics: Investigator-Initiated Research Projects”



On Fastlane, choose solicitation NSF 17-XXX

Do **NOT** choose
NSF 17-1 GPG or anything else.
Prop. will be **returned w/o review!**

Program Announcement / Solicitation Number Selection

Select a Program Announcement or, if not in response to a program announcement, choose 'NSF 14-1 GPG: Not in response to a program announcement/solicitation'. If the program announcement is within multiple divisions or programs, the next page will allow you to select from the associated divisions and programs. If the program announcement is associated with only one division and program, the unit of consideration will automatically be selected.

There are currently 305 Program Announcements/Program Descriptions

Program Announcement / Solicitation Number

Select one of the items below:

- NSF 14-1 Grant Proposal Guide - GPG
- NSF 14-579 Facilitating Research at Primarily Undergraduate Institution...
- NSF 14-578 Science of Science and Innovation Policy Doctoral Disserta...
- NSF 14-577 Advanced Technological Education
- NSF 14-576 Division of Physics: Investigator-Initiated Research Project...**
- NSF 14-575 US-Japan Big Data and Disaster Research
- NSF 14-574 Methodology, Measurement, and Statistics
- NSF 14-572 Tribal Colleges and Universities Program
- NSF 14-571 NSF/Intel Partnership on Cyber-Physical Systems Security and...

Select

Go Back

Unit Selection Lists

Select the organizational unit you wish to consider your proposal from **either** the Division selection box (if you want to review the NSF Divisions and associated Programs) **or** the Program selection box (if you know the Program you wish to select).

Note: Some program announcements will be associated with multiple Divisions and Programs. In these cases, a logical step-by-step selection process is provided.

Divisions

Select a Division within NSF 14-576

- Directorate: MPS-Directorate for Mathematical & Physical Sciences
- PHY-Division of Physics**

Programs

Select a Program within NSF 14-576

- Accelerator Science
- ASTROPHYSICS & COSMOLOGY THEOR
- ATOMIC & MOLECULAR PHYSICS
- ATOMIC THEORY
- COMPUTATIONAL PHYSICS
- ELEMENTARY PARTICLE ACCEL USER
- ELEMENTARY PARTICLE THEORY
- GRAVITATIONAL EXPERIMENTS
- GRAVITATIONAL THEORY

Select Program

Show the divisions in this program.

Choose the Program in the next
screen



What is different?

- The solicitation has **Deadlines** instead of Target Dates
 - Gravitational Physics: **Oct. 25, 2017** (Estimated. Last Wedn. in Oct.).
- PIs who have or anticipate **additional concurrent sources of support** should clearly explain the **differences** between this proposal and the other awards.
- **List of collaborators** : The GPG (sect II.C.1.e) now **requires a supplemental document for each person listed as senior personnel listing their collaborators: not in the Biosketch anymore!** For large collaborations, proposers must individually list the members with whom the person works directly. It is not sufficient just to name the collaboration or provide a URL pointing to a list of collaborators.
- **Letters of Collaboration** should follow the following single-sentence format:

“If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by the NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description.”
- **Letters of Membership** should follow the following single-sentence format:

“The [Name of PI’s Institution] group is a member in good standing of the [Name of Collaboration], including you as a member of that group.”



What are the exceptions?

- RUI proposals
Use the RUI solicitation instead but **follow the new Deadlines** for each Physics program
- CAREER, MRI, INSPIRE, SI2, etc.
NSF-wide solicitations or solicitations from other Divisions (AST, ACI, etc.) are unaffected.
- Supplement proposals and EAGER are unaffected (i.e., you can use NSF 16-1 GPG)
- Conference proposals are **not** excepted! They also have to be submitted through NSF 16-566 and, thus, before Oct 26, 2016.



What is different?

- The solicitation has **Deadlines** instead of Target Dates
 - Gravitational Physics: **Oct. 25, 2017** (Est. Last Wedn. in Oct.)
 - PIF Computational Physics: **No call in 2017!**
- PIs are strongly encouraged to submit **single proposals** for possible co-review **instead of multiple similar proposals** to different programs



Additional Criteria I

- PIs who have or anticipate **additional concurrent sources of support should clearly explain the differences** between this proposal and the other awards (including ALL grants regardless of the agency of origin)
 - Where? **Project Description** or **Current & Pending** (you may need to upload a separate file in this case)
 - *“The proposal review process will include an assessment of the proposers’ ability to carry out the proposed research in light of these commitments”*
 - PIs with similar proposals for different agencies will be expected to withdraw all other applications should one of them be funded



Additional Criteria II

- For proposals involving development or construction of **complex instrumentation** (typically above \$1M), the following aspects will be assessed by during the review:
 - Ability of the proposers to deliver within the proposed budget
 - Cost, schedule and risk mitigation management (project management documentation should be uploaded as a Supplementary Document)
 - **Contact the corresponding NSF Program Officer for details**



Additional Criteria III

- **List of collaborators** that do not fit in the Bio sketches (such as those of large collaborations) should be included as Supplementary Document
 - For those who belong to the LSC, identify those members with whom the PIs and Co-PIs work closely (i.e., publish non-full-LSC-authorship papers, etc.).
 - The full list of LSC **is not required** for proposals submitted to LIGO Research Support. However, do include any other affiliation (i.e., ANTARES, Ice Cube, etc.)



Additional Criteria IV

- **Letters of Collaboration** should follow the following single-sentence format:
“If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by the NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description.”
- **Letters of Membership** should follow the following single-sentence format:
“The [Name of PI’s Institution] group is a member in good standing of the [Name of Collaboration], including you as a member of that group.”
- **Letters of Support are NOT allowed.**



Changes to PAPPG 2017

- Proposal Preparation: Upload the following individual files for each Senior Personnel listed on the proposal (i.e., they **cannot longer be grouped** into one single file):
 - Biosketch
 - Collaborators & Other Affiliations (as Single Copy Document. **No more in Biosketch!**)
 - Current & Pending

