Outline

• Priorities - National, Agency, Program
• Overview of NSF Structure
• Geospace Facilities
• Opportunities for Students
• Overview of the Grant Process
• Understanding the grants and review process
• Foundation's organic legislation authorizes us to engage in the following activities:

• A. Initiate and support, through grants and contracts, scientific and engineering research and programs to strengthen scientific and engineering research potential, and education programs at all levels, and appraise the impact of research upon industrial development and the general welfare.

• D. Foster and support the development and use of computers and other scientific methods and technologies, primarily for research and education in the sciences.
Space Weather a National Priority

• In 2015, the White House Office of Science and Technology Policy released the National Space Weather Action Plan and in 2016, it was made a permanent part of the National Science and Technology Council.

• This year, it was re-released as the National Space Weather Strategy and Action Plan.

• The Space Weather Research and Forecasting Act has also been making it’s way through Congress.
NSF Supports Fundamental Science

• Unlike the mission driven agencies, NSF has a goal of supporting science from the grassroots.
• This philosophy compliments our sister agencies.

The NSF Director and the ADs set agency and Directorate level priorities.

Divisions:
Atmospheric and Geospace Sciences
Earth Sciences
Ocean Sciences
Polar Programs
• The Division Directors and Program Officers feed “local” priorities.
We Need YOU!

- It is time for innovation and for the next generation to organize.
- ISR Workshop in Spring 2020
- 2019 Held First DASI Competition
- Innovation and Vitality Program
  - Support renovation and upgrade of existing facilities
  - Facilitate the development of new instrumentation
NSF Solicitations and Funding Mechanisms

- Core (un-solicited)
- Programs (solicitations)
  - SHINE, GEM, CEDAR
  - PRF, GRFP
  - INSPIRE
  - CAREER
  - MRI
  - MSRI
- Co-funding
  - interagency
  - interdivisional
Research Experiences for Undergraduates (NSF 13-542)

• Minimum Cohort size of 6 students
• Typically a summer experience, but other models are supported
• Provides students with a paid research experience, mentoring and professional development

Geospace REU sites
Harvard Smithsonian Center for Astrophysics
University of Alabama-Huntsville
University of Colorado-Boulder
University of Michigan
University of Puerto Rico
NSF Graduate Research Fellowships

Five Year Awards - $138,000
• Three years of financial support
  • $34,000 Stipend per year
  • $12,000 Educational allowance to institution
• Professional Development Opportunities:
  • GRIP: internships at federal agencies
  • INTERN: other industry/policy/nat’l lab internships
• Career-Life Balance Initiative (family leave)

Supercomputer access: XSEDE

• Fellowship: Awarded to individual
• Flexible: Choice of project, advisor & graduate program
• Portable: Can be used at any accredited U.S. institution
  • MS, PhD, both degrees
GRFP Eligibility [NSF 18-573]

- U.S. citizens and permanent residents
- Early-career: undergrad & grad students
- Pursuing research-based MS or PhD
- Science and engineering
- Enrolled in accredited institution in US by Fall

Academic Levels

- 1: Seniors or baccalaureates with no graduate study yet
- 2: First-year graduate students
- 3: Second-year graduate students (at the beginning of the second year)
- 4: >12 months graduate study, with interruption in graduate study of 2+ years

See solicitation NSF 18-573 for further eligibility details
GRFP Application Timeline

- **Late October**: Applications Due
  - **Early November**: Reference Letters Due
    - **Late March – early April**: Recipients Announced
  - **May 1**: Acceptance of Award and Declaration of Tenure/Reserve
    - **June 1 or Sept. 1**: Fellowship Year Begins
  - **APPLY to Graduate Schools!**
Plasma Science & Engineering Subfield Deadlines (by 5pm):

1) October 21, 2019:
   • Geosciences: Magnetospheric Physics, Solar Physics

2) October 22, 2019:
   • Engineering: Aeronautical and Aerospace Engineering, Nuclear Engineering, Chemical Engineering, Environmental Engineering, Materials Engineering
   • Materials Research: Photonic materials

3) October 25, 2019:
   • Physics and Astronomy: Plasma Physics, Astronomy and Astrophysics

Reference letter deadline (3 letters): November 1, 2019
Atmospheric and Geospace Sciences Postdoctoral Research Fellowships (AGS-PRF)

- Stipend $65,000 year 1 and $67,000 year 2
- $29,000 per year for benefits, travel, equipment

Eligibility
- US Citizens and Green Card Holders
- Grad Student or
  - PhD for less than 2 years or with less than 18 months of employment

- Must start Postdoc within 6 months of award.
- Geospace track - can take fellowship to any institution, except NCAR, which has the ASP
- No Deadline. Submit Any Time.
What you should understand about the process

• This takes time.
• NSF has a goal of making decisions within 6 months of submission. THIS IS NOT ALWAYS POSSIBLE! And this is not the end of the process.
• Once a decision is reached, it can take several months for the process to be completed and money to reach your institution.
• Be conservative. Estimate 12-18 months from the time you submit a proposal for funds to reach you.
• Only submit one idea at a time - POs coordinate and will only entertain one proposal at a time from a PO
• Do not simply resubmit a proposal. Your proposal can be returned without review if changes are not made.
NSF Proposal Proposals and Review Criteria

- NSF Grant Proposal Guide
- Review Criteria
  - Intellectual Merit
  - Broader Impacts
  - Relevance to a Solicitation
  - Additional Solicitation Specific Criteria
- NSF Conflicts of Interest
- Non Compliant Proposals can be returned without review
How Funding Decisions Are Made

- NSF relies on the community to review proposals
  - Panels or Mail Ins
  - POs **CANNOT MAKE FUNDING RECOMMENDATIONS WITHOUT REVIEWS FROM YOU.**
- Minimum of 3 reviews per proposal
- Reviewers inform PO
- POs look at portfolio for balance, timeliness/urgency and other factors and recommend to the Division Director.
If You Are Declined

- Read the reviews and comments from the PO
- Talk to your community
  - Consider comments you get in meetings, conferences, etc
  - Remember that these people are your reviewers
- Talk to your PO
- REVISE THE PROPOSAL
- Resubmit
You Win an Award – Now What?

• Do Your Very Best Science

• Things happen and you cannot always spend the money or work plans change
  • There are mechanisms for this.
  • No Cost Extensions and Revised Work Plans

• Annual and Final Reports
  • Do them. On Time.
  • Annual reports due 3 months prior to the end of period
  • Any changes to the work, how the funds were spent, etc
  • Late Reports hold up increments in funding and new awards
Communicating with NSF

• TALK TO YOUR PROGRAM OFFICER
  • If you have questions or concerns or want to share some super cool science.
• Offer to review
  • Early careers often are concerned they don’t have the expertise.
  • You are an expert in your field. You have a perspective that is valued.
  • It is a great way to learn how NSF works and how your community thinks.
Reviewing is the Best Way to Learn How to Write a Good Proposal

- Last year grad students and postdocs
- Send your contact info and a brief bio to cblack@nsf.gov
How to Write a Useful Review

• Reviews identify Major and Minor Strengths and Weaknesses
  • Summary
  • Intellectual Merit
  • Broader Impacts
  • Recommendation

• Give your opinion in the summary
• Statements on how important a particular area is to the community at large are helpful
• Suggestions for improvement of the proposal document or science idea
• Communicate with your PO - if you are unsure of what is useful or appropriate, call us. We will help you understand how to address this.
• Thank you!