ISRs and Their Science at NSF: Grad Students and Postdocs

Carrie Black
Geospace Facilties Program Officer
NSF/AGS

Outline

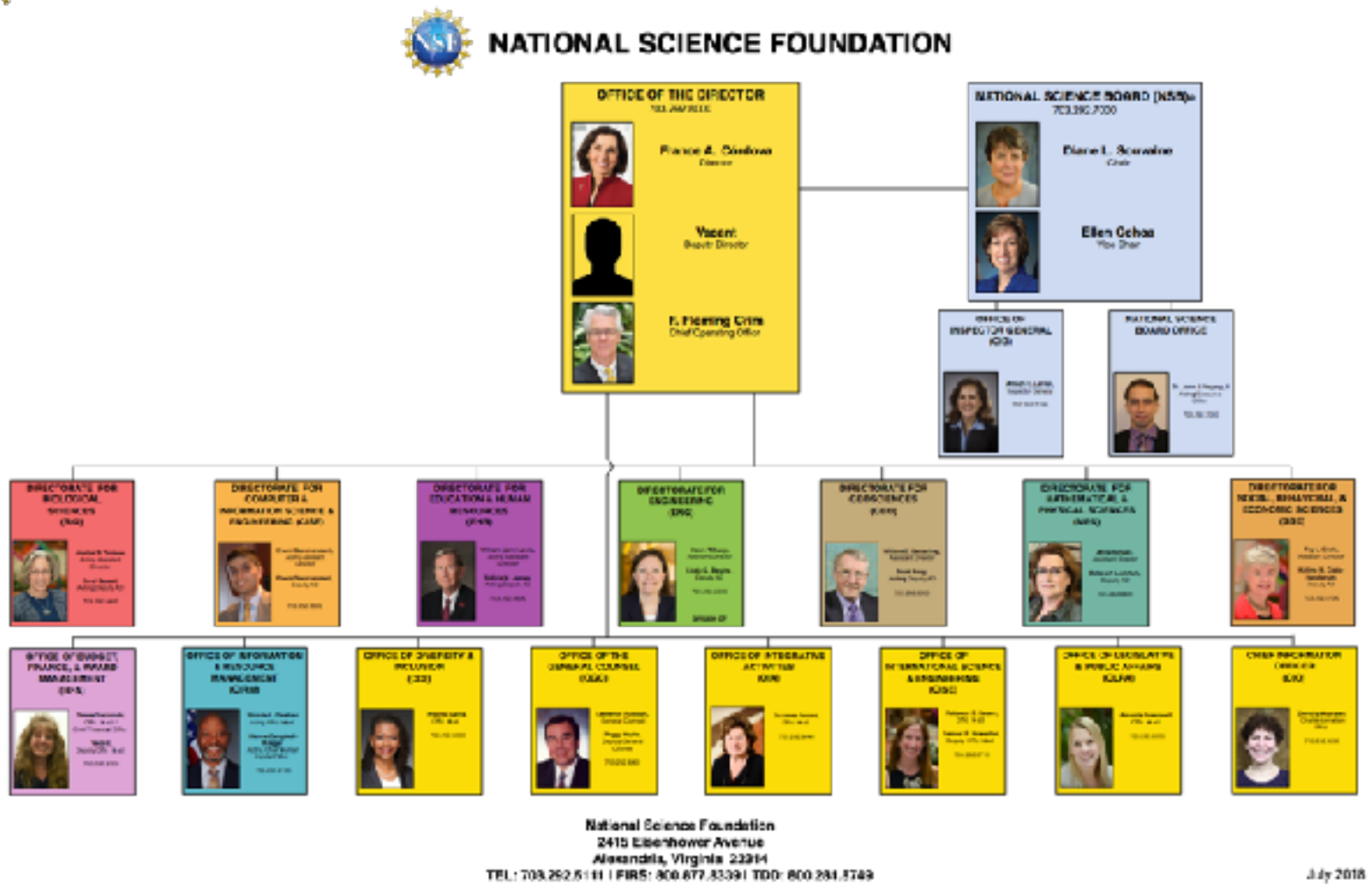
- NSF mandate
- Overview of NSF Structure
- Geospace Facilities
- How to get your science funded

NSF Mandate

May 10, 1968

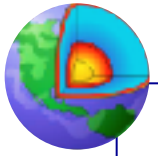
- **Foundation's organic legislation authorizes us to engage in the following activities:**
- **A.** Initiate and support, through grants and contracts, scientific and engineering research and programs to strengthen scientific and engineering research potential, and education programs at all levels, 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.

NSF Organizational Chart



Geosciences Organizational Chart

Dr. William Easterling, Assistant Director
Dr. Scott Borg, Deputy Assistant Director



Earth Sciences (EAR)
Carol Frost, Division Director
Integrated Activities
Disciplinary Programs

Ocean Sciences (OCE)
Vacant, Division Director
Marine Geosciences
Ocean
Integrated Programs

Atmospheric and Geospace Sciences (AGS)
Vacant, Division Director
Atmospheric Science
Geospace Science
NCAR and Facilities

Office of Polar Programs (OPP)
Kelly Falkner, Office Director
Antarctic and Arctic Sciences
Antarctic Infrastructure and Logistics
Antarctic Artists & Writers

DIVISION OF ATMOSPHERIC AND GEOSPACE SCIENCES

DIVISION DIRECTOR
vacant

Atmospheric Section
Anjuli Bamzai, Section Head

Atmospheric Chemistry
Sylvia Edgerton, Sheri Hunt

Physical and Dynamic Meteorology
Chungu Lu, Nicholas Anderson

Climate and Large-scale Dynamics
Eric DeWeaver, Ming Cai

Paleoclimate
David Verardo

Geospace Section
Mike Wiltberger, Section Head

Aeronomy
Ruth Lieberman

Solar-Terrestrial Research
Ilia Roussev

Magnetospheric Physics
Onboarding soon

Geospace Facilities
Carrie Black

Space Weather Research
Irfan Azeem

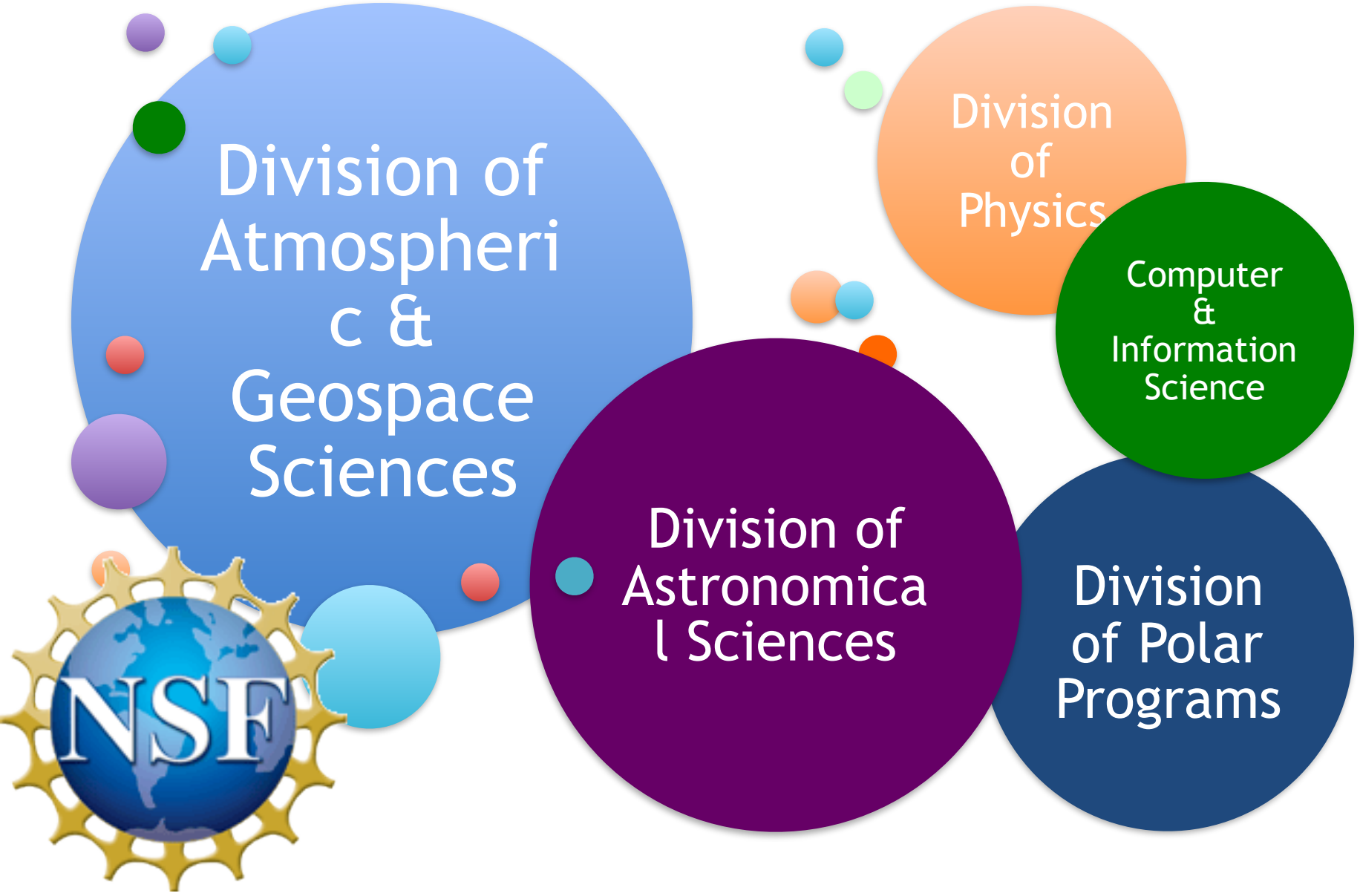
NCAR and Facilities Section
Farrah Ruth, Section Head

NCAR
Shree Mishra, Bernard Grant

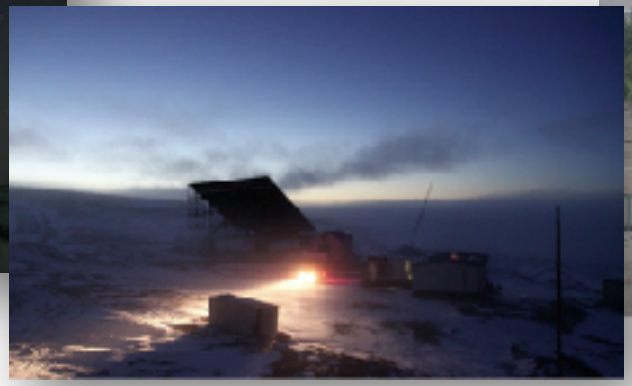
Lower Atmosphere Observing Facilities
Linnea Avallone

Education and Cross-Disciplinary Activities
Amanda Adams

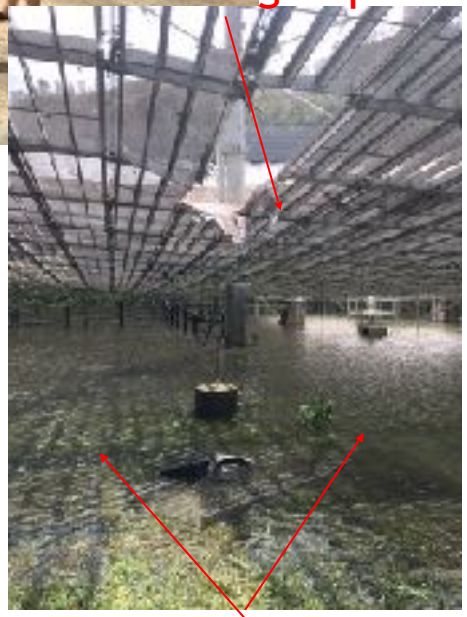
Solar, Space Physics & Aeronomy at NSF



Geospace Facilities



Hurricane Maria damages AO



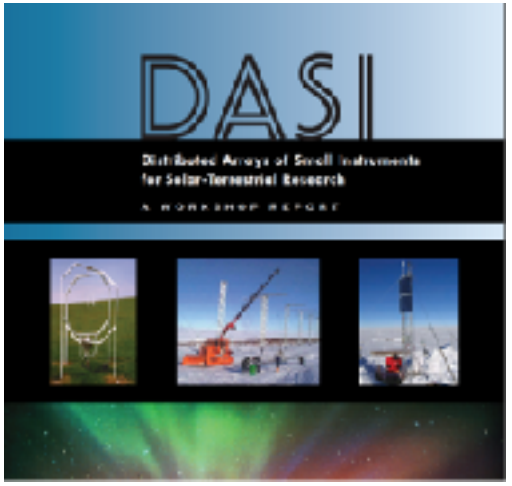
Kangerlussuaq Research Facility

- Geospace Portfolio Review made 3 recommendations related to SRF
  - 7.2 – End ISR observations
  - 7.3 – Consider supporting ancillary observations from site
  - 7.4 – Investigate joining EISCAT

ISR and LIDAR at SRF

- Section is moving forward with these recommendations
  - ISR operations ended 3/31
  - Conducting an environmental and engineering assessment of site via CPS
  - Obtained information from EISCAT on levels of involvement

We Need YOU!



- It is time for innovation and for the next generation to organize.
- Distributed Array of Small Instruments
  - Potential 2019 solicitation
- Innovation and Vitality Program
  - Support renovation and upgrade of existing facilities
  - Facilitate the development of new instrumentation

NSF and AGS FY18 Budgets

- NSF Topline Budget ~$7.8M
  - AGS and Geospace received an operating budget that is flat on FY17
  - Overall spending in section was $47.5M up 5% from FY16
  - GS Operating Plan for FY18 is:

AER	MAG	STR	SWR	FAC
9.3M	7.1M	7.8M	6.2M	14.3M

- NASA Heliophysics FY18 ~$700M

NSF Solicitations and Funding Mechanisms

- Core (un-solicited)
- Programs (solicitations)
  - SHINE, GEM, CEDAR
  - PREEVENTS
  - INSPIRE
  - CAREER
  - MRI
- Co-funding
  - interagency
  - interdivisional

Graduate Student Fellowships

- Graduate Research Fellowship Program (GRFP)
  - https://www.nsfgrfp.org
  - Proposals due in the fall
  - 1st years only (no more than 12 months)
  - Citizenship/permanent resident requirement

- NSF East Asia and Pacific Summer Institutes (EAPSI) program
  - https://www.nsf.gov/pubs/2013/nsf13593/nsf13593.htm
  - Due November 8, 2018
  - Summer stipend and airfare to Australia, China, Japan, Korea, New Zealand, Singapore, or Taiwan

Post Doctoral Research Fellowship

- Has been suspended for 2+ years while we work on a new solicitation.
- Release expected sometime in FY19
- Open to US citizens and Green Card holders only
- Stipend + travel/equipment for 2 years

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

NSF Proposal Review Criteria

- NSF Grant Proposal Guide
- Review Criteria
  - Intellectual Merit
  - Broader Impacts
  - Relevance to a solicitation
- Project Summary Page
- Project Description 15 page limit
  - (not including references)
  - Font size and style requirements
  - Must include Broader Impacts Section!
  - Detailed work plan: what you will do each year
- Biographical Sketch
  - 48 months of collaborators and COIs
- Additional documents
- Budgets
  - Budget justification: how you will spend the $ each year
    - These are estimates, but should add up to the total requested
- 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.***
- Dwell time
- 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
- 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 a 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.

How to Write a Useful Reviews

- 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

- Thank you!