



NSF Regional Grants Conference Arlington, VA

Directorate for Geosciences

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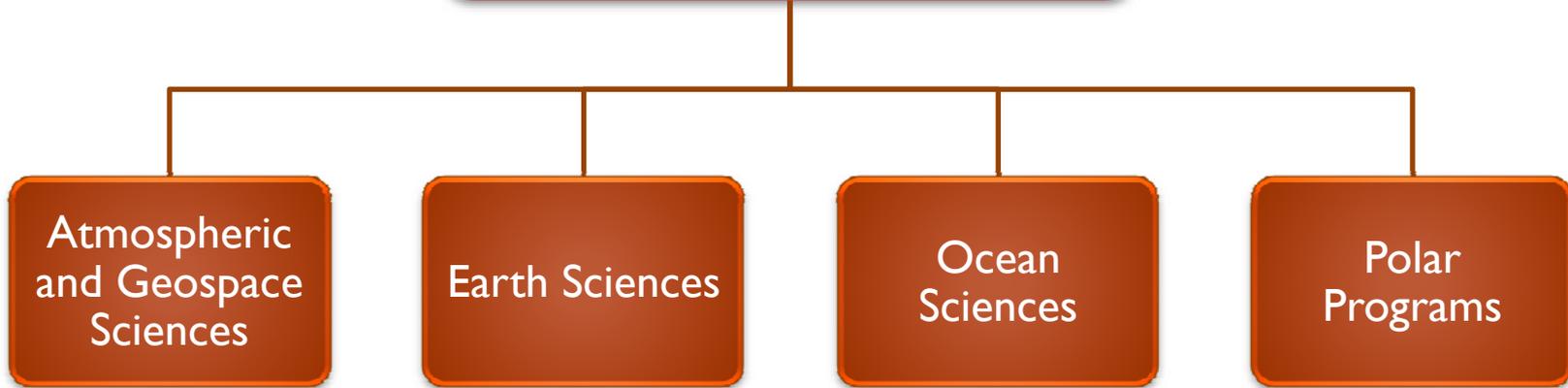


The Mission of the Directorate for Geosciences

- Support research in the atmospheric, earth and ocean sciences
- Address the nation's need to understand, predict and respond to environmental events and changes in order to use the Earth's resources wisely



GEO Directorate +
Office of Polar Programs
(New GEO)

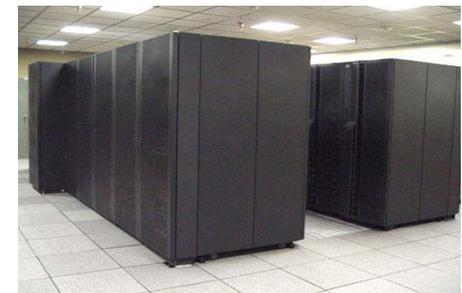


New proposed structure as of Oct 1, 2012



Division of Atmospheric and Geospace Sciences (AGS)

- Furthers understanding of weather, climate and the solar-terrestrial system by expanding the fundamental knowledge of the composition and dynamics of the Earth's atmosphere and geospace environment
- Supports large, complex facilities required for research in the atmospheric and solar-terrestrial sciences



Division of Atmospheric and Geospace Sciences

**UCAR & Lower Atmospheric
Facilities Oversight Section**

**Lower Atmosphere Research
Section**

**Upper Atmosphere Research
Section**

Atmospheric Research Program

**Cross-Disciplinary Activities
Program**

**Physical & Dynamic
Meteorology Program**

**Climate & Large-Scale Dynamics
Program**

Paleoclimate Program

Aeronomy Program

**Magnetospheric Physics
Program**

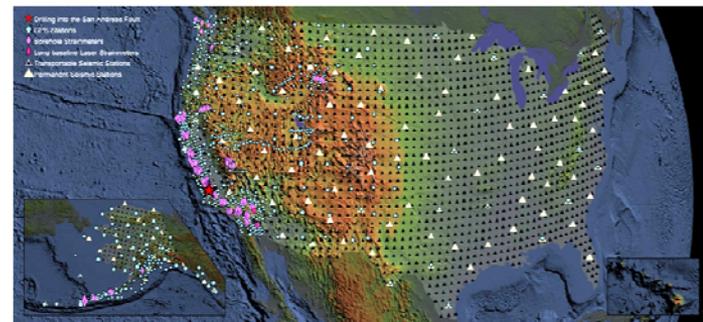
**Solar Terrestrial Research
Program**

Upper Atmospheric Facilities

**Major Research Instrumentation
Program**

Division of Earth Sciences (EAR)

- Improves the understanding of the structure, composition, and evolution of the Earth and the processes that govern the formation and behavior of the solid Earth
- Supports theoretical, computational, laboratories and field stations and state-of-the-art scientific infrastructure



Division of Earth Sciences

Surface Earth Processes Section

Education & Human Resources

Hydrologic Sciences

Geomorphology & Land Use Dynamics

Sedimentary Geology & Paleobiology

Geobiology & Environmental
Geochemistry

Deep Earth Processes Section

Instrumentation & Facilities

Integrated Earth Systems*

EarthScope

Geophysics

Petrology & Geochemistry

Tectonics

*New



Division of Ocean Sciences (OCE)

- Enhances understanding of all aspects of the global oceans and their interactions with the solid earth and the atmosphere
- Supports major shared-use oceanographic facilities including research vessels and manned deep diving submersibles



Division of Ocean Sciences

Marine Geosciences Section

Ocean Drilling Program

Marine Geology and Geophysics Program

Integrative Programs Section

Ship Operations Program

Oceanographic Facilities Program

Oceanographic Instrumentation and Technical Services

Oceanographic Technology and Interdisciplinary Coordination Program

Ocean Sciences Education

Ocean Section

Biological Oceanography Program

Physical Oceanography Program

Chemical Oceanography Program



Division of Polar Programs

Arctic Sciences

Natural Sciences

Observing Networks

Social Sciences

System Sciences

Research Support & Logistics

Polar Environment, Health and Safety

Antarctic Infrastructure and Logistics

Antarctic Sciences

Glaciology

Earth Sciences

Astrophysics and Geospace

Ocean and Atmospheric Sciences

Organisms and Ecosystems

Integrated System Sciences



Polar Programs (Arctic Sciences)

- The goal of Arctic Sciences is to gain a better understanding of the Arctic's physical, biological, geological, chemical, social and cultural processes; the interactions of oceanic, terrestrial, atmospheric, biological, social, cultural, and economic systems; and the connections that define the Arctic
- Program Solicitation – NSF 10-597
Deadline – October 18, yearly



Polar Programs (Antarctic Sciences)

- Scientific research and its operational support are the principal activities supported by the United States Government in Antarctica.
- The goals are to expand fundamental knowledge of the region, to foster research on global and regional problems of current scientific importance, and to use Antarctica as a platform from which to conduct research.
- The U.S. Antarctic Program provides support for fieldwork only when a compelling justification exists for doing the work in Antarctica (i.e., the work can only be done, or is best done, in Antarctica).
- Program Solicitation issued yearly with deadline in May-June



Modes of support

- unsolicited proposals from all scientists with interests in the geosciences
- special competitions, often interdisciplinary
- Integration of research and education in geosciences
- support for infrastructure, instrumentation, facilities
- post-doctoral fellowship programs and workforce development programs



Earth Sciences Post-Doctoral Fellowship Program (EAR-PRF)

- Program Solicitation – NSF 10-500 (revisions to be coming soon)
 - *Deadline: July 1 annually*
- Fellowship program may be conducted at any appropriate U.S. or foreign host institution
- 2 year long fellowships, \$170k over 2years
- Eligibility within 3 years of PhD
- Fellowships are awards to individuals, not institutions, and are administered by the Fellows.
- 2 months parental leave can be requested
- Contact – Lina Patino (lpatino@nsf.gov)



Atmospheric and Geospace Science Post-Doctoral Research Fellowships

- Program Solicitation - NSF 11-521
 - ***Deadlines: February 02, 2012 and 2013***
- The program supports researchers for a period of up to 2 years with Fellowships that can be taken to the institution or national facility of their choice - \$86,000 per year
- Similar to the EAR-PRF
- Contact: Linda George (lgeorge@nsf.gov)



Ocean Sciences Postdoctoral Research Fellowships (OCE-PRF)

- Program Solicitation – NSF 11-586 (in revision)
- Goal – Awards are intended to support the individual fellows' research and increase the diversity of the U.S. ocean sciences research community. In this solicitation, the term underrepresented groups will refer to and include the following: women, persons with disabilities, African Americans, Hispanics, Native Americans, Alaska Natives, and Pacific Islanders.
 - ***Deadline: January 13, 2012***



Polar Program Education and Outreach Activities

- Post-Doctoral Fellowship program is being revised and will be reissued with deadline for early 2013
 - http://www.nsf.gov/od/opp/post_doc/pd_resources.jsp
- Antarctic Artists and Writers Program -
 - The Antarctic Artists and Writers Program supports writing and artistic projects specifically designed to increase understanding and appreciation of the Antarctic and of human activities on the southernmost continent.
 - Contact: Peter West (pwest@nsf.gov)



Changes afoot ...

- **Dear Colleague Letter - NSF 12-121**
 - Changes to the Directorate for Geosciences (GEO) Education and Diversity Programs for Fiscal Year 2013 and Solicitation of Community Input Regarding Broadening Participation Programs in the Geosciences
 - Opportunities for Enhancing Diversity in the Geosciences (OEDG) is expected to be released in FY 2013



Frontiers in Earth System Dynamics (FESD)

GEO-wide program involving AGS, EAR, OCE (OPP co-review)

- Promotes interdisciplinary study of interactive dynamics within the Earth system over a wide range of space and time scales;
- Program budget: \$28M per competition (FY11, FY13, FY15)
- Budgets \$3-5M up to 5 years duration
- Type I- Frontier Research Projects: bring together interdisciplinary teams of researchers on a specific research problem or grand challenge in the geosciences.
- Type II: Research Synthesis Centers or Geoscience Collaboratories: Open to community beyond the proposing team of collaborators.

FY 11 Awards: 7 Funded (6 Type I, 1 Type II), \$33M invested by GEO (DMS, OCI, other), FY13 Under Review, Another Competition in FY 15

Science, Engineering, and Education for Sustainability (SEES)

Mission Statement:

To advance science, engineering, and education to inform the societal actions needed for environmental and economic sustainability and sustainable human well-being

- Goal 1: Support interdisciplinary research and education that can facilitate the move towards global sustainability.
- Goal 2: Build linkages among existing projects and partners and add new participants in the sustainability research enterprise.
- Goal 3: Develop a workforce trained in the interdisciplinary scholarship needed to understand and address the complex issues of sustainability.

SEES Presentation tomorrow morning ~ 9:50 am



Science, Engineering and Education for Sustainability NSF-Wide Investment (SEES)

SEES Mission Statement

To advance science, engineering, and education to inform the societal actions needed for environmental and economic sustainability and sustainable human well-being.

CONTACTS

For general inquiries about SEES related activities: nsf-sees-info@nsf.gov.

For program or discipline-specific questions, please see the full list of contacts at: http://www.nsf.gov/geo/sees/sees_contacts.jsp

To subscribe to the SEES listserv, send the text "subscribe SEES" to listserv@listserv.nsf.gov.

SYNOPSIS

Science, Engineering, and Education for Sustainability (SEES) is a portfolio of activities that highlights NSF's unique role in helping society address the challenge(s) of achieving sustainability.

SEES Portfolio of Programs:

Arctic SEES	Dimensions of Biodiversity	Small Business Technology Transfer Program (STTR) Phase I, FY 13
Climate Change Education Partnerships	Interdisciplinary Research in Hazards and Disasters (Hazards SEES)	Sustainable Chemistry, Engineering, and Materials (SusChEM)
Coastal SEES	Ocean Acidification	Sustainable Energy Pathways (SEP)
Cyber-Enabled Sustainability Science and Engineering (CyberSEES)	Partnerships for International Research & Education (PIRE)	Sustainability Research Networks (SRN)
Decadal & Regional Climate Prediction Using Earth System Models (EaSM)	Research Coordination Networks (RCN)	Water Sustainability and Climate (WSC)
Dynamics of Coupled Natural & Human Systems (CNH)	SEES Fellows	



SEES FY 2013

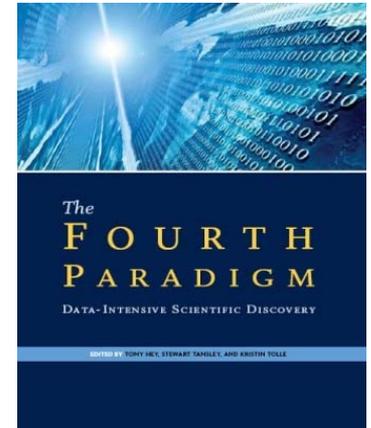
- Dynamics of Coupled Natural and Human Systems – NSF 10-612 (November 12th)
- Ocean Acidification - NSF 12-600 (Dec 4th)
- Coastal SEES – NSF 12-594 (Jan 17th, 2013)
- Hazards SEES – NSF 12-610 (Feb 4th, 2013)
- Sustainable Chemistry, Engineering and Materials - Dear Colleague Letter 12-097

- Website – www.nsf.gov/sees



Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21)

- Comprehensive and integrated cyberinfrastructure to transform research, innovation and education
- Focus on computational and data-intensive science to address complex problems
- Four major components
 - Data-enabled science
 - New computational infrastructure
 - Community research networks
 - Access and connections to cyberinfrastructure facilities



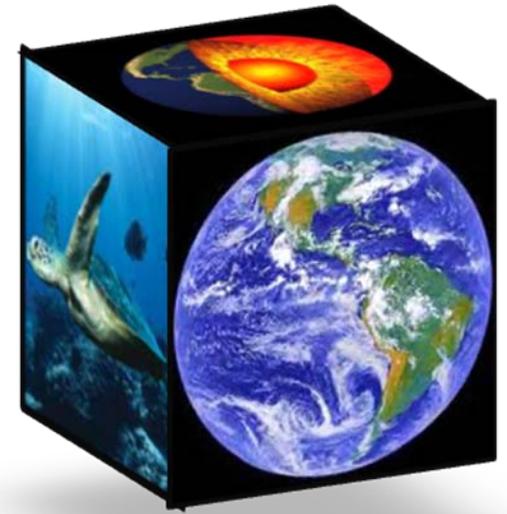
CIF2I – Geosciences Foci

- GEO investment was \$16 million in 2012
- Computational Infrastructure
 - acquisition and use of cyberinfrastructure for the conduct of geoscience research
- Data Enabled Science
 - geoinformatics – the tools and techniques that facilitate data-enabled geoscience
 - enhancement of access and connections to facilities and scientific instruments
- EarthCube



EarthCube

- Supports research, development, and tools to advance data-enabled science
- Aims at integration of geosciences data and high-performance computing technologies in an open, adaptable and sustainable framework that will enable transformative research and education in Earth System Science
- Community-guided framework development
- Enhancement of connections to facilities
- <http://www.nsf.gov/geo/earthcube/>
<http://earthcube.ning.com>



Questions ?

