EPSCoR PDPA Meeting
Arlington
May 19, 2014

NSF Directorate for Geosciences

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Includes Polar Programs since Oct 1, 2012
Directorate for Geosciences: Our Mission

• Support research in atmospheric, earth, polar 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
Era of Observation and Simulation
Division of Atmospheric and Geospace Sciences (AGS)

- Further 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
- Support large, complex facilities required for research in the atmospheric and solar-terrestrial sciences
Division of Earth Sciences (EAR)

- Improve the understanding of the structure, composition, and evolution of the Earth and the processes that govern the formation and behavior of the solid Earth
- Support theoretical, computational, laboratories and field stations and state-of-the-art scientific infrastructure
Division of Ocean Sciences (OCE)

- Enhance understanding of all aspects of the global oceans and their interactions with the solid earth and the atmosphere
- Support major shared-use oceanographic facilities including research vessels and manned deep diving submersibles
Division of Polar Programs (PLR)

• Polar regions are unique natural laboratories to investigate Earth and its systems, explore the geographical frontier, perform science in extreme conditions.

• Support basic research and its operational activities in the Arctic and the Antarctic.
GEO Funding Trend
GEO 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
GEO Program Due Dates*

- **Atmospheric Sciences**: no due dates; proposal may be submitted any time
- **Earth Sciences**: January and July
- **Ocean Sciences**: February and August
- **Polar Programs**: ARC, ANT different due dates
- **Cross-cutting/special programs**: see solicitation or Dear Colleague Letter

*Check the NSF web site for actual dates and updates to requirements when developing a proposal*
GEO Instrumentation and Facilities - Funding opportunities

• Major Research Instrumentation (MRI and MRI-R²)
  $100,000 to $6M -- proposals requesting less than $100,000 will be considered only from non-Ph.D. granting organizations

• Improvements in Facilities, Communications, and Equipment at Biological Field Stations and Marine Laboratories (FSML)

• Earth Sciences: Instrumentation and Facilities (EAR/IF)

• EPSCoR Research Infrastructure Improvement Program: Inter-Campus and Intra-Campus Cyber Connectivity (RII C2)
GEO observing and supercomputing facilities are available to NSF PIs, students, and sometimes researchers funded by other sources.

- Each facility has its own application and review process.
- Users range from individual PIs and students to large international field campaigns.
- E.g. NCAR supercomputers, aircraft, radar.
GEO AGS Postdoc Fellowship

Support
- 24 months grant period
- $172K total directly to fellows

Eligibility
- Be US citizen, national, or permanent resident
- within 3 years of PhD
- work to be undertaken at an academic institution or national facility of their choice

GOALS
- recognize investigators with significant potential
- provide research experience, broaden perspective
- facilitate interdisciplinary interactions as appropriate
- enable and establish leaders within the community

Proposals must describe a research plan that addresses scientific questions that lie within the scope of the AGS programs

NSF 14-509 Due: January 12, 2015
More information: swarren@nsf.gov
GEO EAR Postdoc Fellowship

Support
- 24 months grant period
- $174K total directly to fellows

Eligibility
- Be US citizen, national, or permanent resident
- Have or will receive PhD by start of fellowship
- Not have worked more than 18 FTE months in positions requiring PhD
- Research within EAR purview

GOALS
- recognize investigators with significant potential
- fund research on topics supported by EAR and implementation of a broadening participation plan
- enable and establish leaders within the community
- support fellows at any appropriate U.S. or foreign host institution

NSF 13-948 Due: July 18, 2014
More info: lpatino@nsf.gov
GEO OCE Postdoctoral Research Fellowships
Track 1: Broadening Participation
Track 2: International

Proposals must describe:
- Research plan
- Host organization(s) and sponsoring scientist(s)
- Expected broader impacts
- Candidate’s long-term career goals
- For Track 1: Specific plans for broadening participation of under-represented groups in ocean sciences in the US
- For Track 2: True intellectual collaboration with foreign scientists

NSF 13-603 Due: January 12, 2015
More info: gpugh@nsf.gov

Support
- Up to 24 FTE months
- $62K/yr stipend
- $25K/yr expenses & benefits
- Up to $10K/yr for international

Eligibility
- US citizen, national, or permanent resident
- Have or will receive PhD by start of fellowship
- Not have worked more than 24 FTE months in positions requiring PhD
- Research within OCE purview

– In partnership with CISE, continuing support for EarthCube to create an integrated data management infrastructure across the geosciences

– Workshops and community events to broaden user base and scientific breadth

– Integration and coordination
SEES: Science, Engineering and Education for Sustainability

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

- Established in Fiscal Year 2010
- Portfolio of existing and new programs
- All NSF Directorates and offices involved
- Partnerships (e.g. other agencies, CNRS, Belmont Forum)
SEES Characteristics

**Systems Thinking**
- Holistic approaches that link human, built and natural systems, and reach across disciplines

**Partnerships & Networks**
- Connect intellectually and spatially disparate communities, institutions and organizations

**Workforce & Education**
- Development and education of new researchers and students on critical aspects and issues of sustainability
## SEES in FY 14/15

### Solicitations (see SEES webpage for latest information)

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Status</th>
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<tr>
<td>ArcSEES (Arctic)</td>
<td>Open/ongoing</td>
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<tr>
<td>CNH (Dynamics of Coupled Natural and Human Systems)</td>
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<td>Coastal SEES</td>
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<td>SEES Fellows</td>
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<td>SusChEM (Sustainable Chemistry, Engineering and Materials)</td>
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<tr>
<td><strong>SusChEM (Sustainable Chemistry, Engineering and Materials)</strong></td>
<td>Considering/planning</td>
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<tr>
<td><strong>Sustainability Research Networks (Urban)</strong></td>
<td>Ended</td>
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SEES – Future Plans

**Evaluation:** Program-wide evaluation began April 2014

**Other activities:** PI Meetings, workshops; presentations & other outreach

**Transition:** Planning for long-term support for sustainability research in NSF after 2017