NSF Geosciences Program and Budget

Unidata Policy Committee Meeting

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Administration Priorities

"Innovation also demands basic research… the same kind of research and innovation that led to the computer chip and the Internet; to new American jobs and new American industries."

President Barack Obama

2012 State of the Union Address

FY 2013 Request

In 2013, the President is requesting $906,440,000 for GEO; an increase of $21,170,000 or 2.4% above 2012.

GEO Funding
(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over FY 2012 Estimate Amount	Change Over FY 2012 Estimate Percent
AGS	$257.65	$258.66	$264.06	$5.40	2.1%
EAR	183.83	183.50	189.20	5.70	3.1%
ICER	91.62	91.21	91.21	-	-
OCE	352.21	351.90	361.97	10.07	2.9%
Total, GEO	**$885.32**	**$885.27**	**$906.44**	**$21.17**	**2.4%**

Totals may not add due to rounding.

Highlights

- Central commitment to basic research in and across disciplines
- Ocean Observatories Initiative (OOI) construction request $65M
- Investment in OneNSF areas
  - Science, Engineering, and Education for Sustainability (SEES)
  - Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21)
  - Expeditions in Education (E^2)
  - Integrated NSF Support Promoting Interdisciplinary Research and Education

One 

Science Engineering and Education for Sustainability (SEES)

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

Goals

- Build the knowledge base.
- Grow workforce of the future.
- Forge critical partnerships.

FY13 Investment Highlights

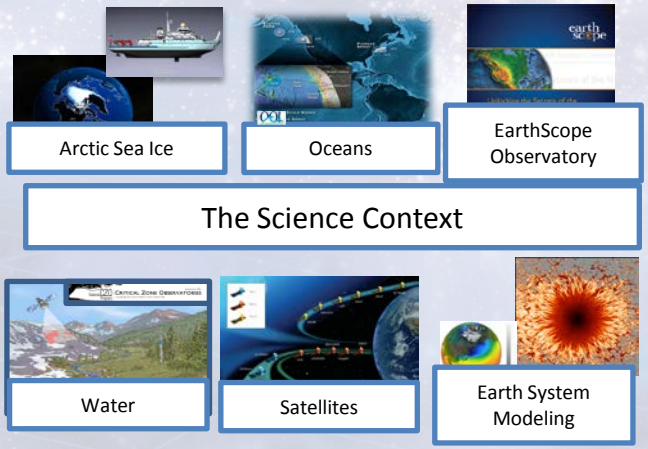
- Resilience to natural and technological disasters
- Coastal and Arctic systems
- Sustainable Chemistry, Engineering and Materials
- Improvements in IT energy efficiency

GEO FY13 Investments in SEES

- GEO FY13 SEES Request: $70.75M
- *Hazards and Resilience*
  - Atmospheric and space weather hazards, severe storms, earthquakes, tsunamis, storm surge
- *Coastal Systems*
  - Interactions among natural and human-driven processes
  - Pathways to enhance coastal resilience
- Ongoing support for Water Sustainability and Climate, Networks, Ocean Acidification, Energy activities

Context & Partnership

- **GEO is increasing "born-digital"**



- **--- A Major New NSF Activity ---**

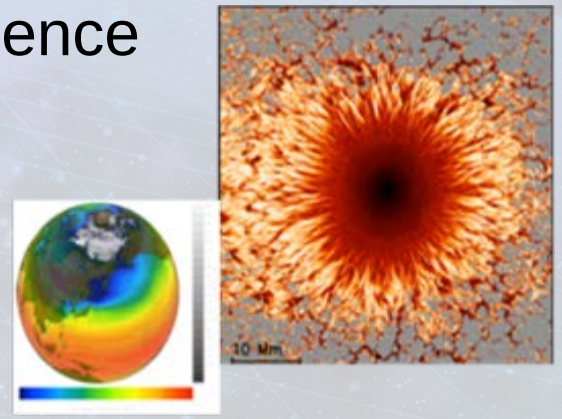
  Cyber-Infrastructure For the 21st Century (CIF21)

  - Builds national infrastructure for S&E
  - Leverages common methods, approaches, and applications – focus on interoperability
  - Catalyzes other CI investments across NSF
    - Provides focus and is a vehicle for coordinating efforts and programs
  - Based upon a shared governance model involving every directorate and office
  - Managed as a coherent program by OCI

- **EarthCube is GEO contribution to CIF21**

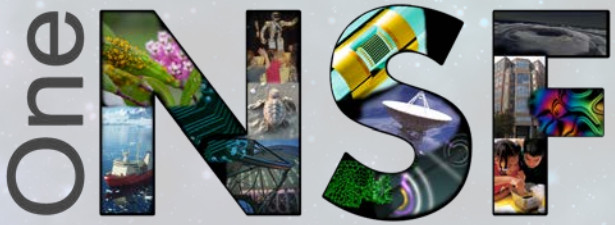
CIF21: EarthCube

- GEO FY13 Request: $12.0M
  - Partnership with Office of Cyberinfrastructure.
  - Supports research, development, and tools to advance NSF's goal of data-enabled science.
- Integrate geosciences data and high-performance computing technologies in an open, adaptable and sustainable framework (an "Earth Cube") to enable transformative research and education in Earth System Science
- Community-guided framework development
- Enhancement of connections to facilities



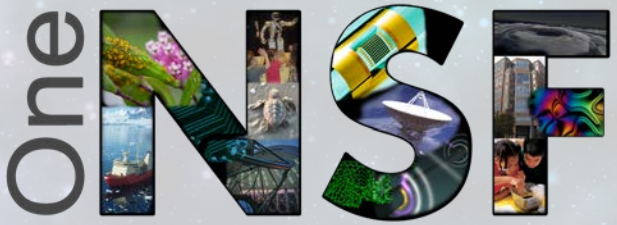
Earth System Modeling

Expeditions in Education (E^2)



- GEO FY13 Request: $12.0M
- Partnership with the Directorate for Education and Human Resources (EHR)
- GEO participating in two areas:
  - Transforming undergraduate STEM leaning
  - Learning and understanding on sustainability
- Involves many existing GEO education and human resource development programs

INSPIRE



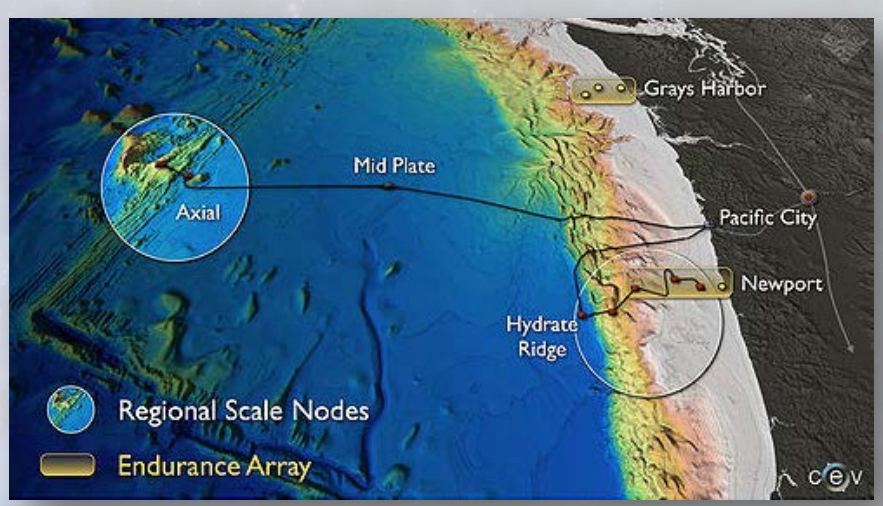
- GEO FY13 Request: $5.0M
- Second year of the CREATIV ***pilot*** grant award mechanism

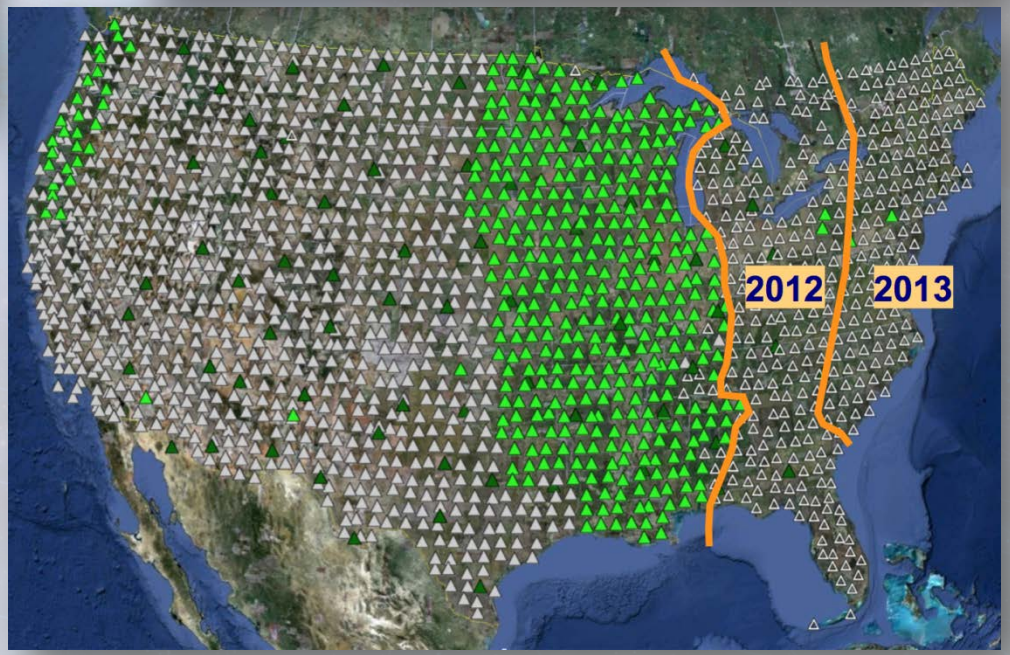
(Creative Research Awards for Transformative Interdisciplinary Ventures)

  - New interdisciplinary opportunities
  - Creative high-risk / high-reward interdisciplinary proposals
  - Provide substantial funding (up to $1M over 5 years)
  - Open to all NSF-supported areas of science, engineering, and education research

- **Open pilot** mechanism under INSPIRE to begin in FY 2013
  - Larger **"mid-scale"** interdisciplinary awards up to $2.5-$3.0M
  - Utilize novel internal & external merit review approaches

Infrastructure in GEO





Infrastructure Update

- Ocean Observatories Initiative
  - Construction underway
- R/V SIKULIAQ
  - Construction proceeding on schedule
- NCAR/Wyoming Supercomputing Center
  - 2012 is the final year of construction
- Regional Class Research Vessels
  - Construction of up to 3 ships is under consideration as an NSF large facility project