

NATIONAL
SCIENCE
FOUNDATION

FISCAL
YEAR
2015

BUDGET
REQUEST



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Unidata's SAC
8 October 2014



GEO Advances NSF Priorities

- Empowering Discovery
 - Core Research Programs
 - Science, Engineering and Education for Sustainability (SEES)
 - Cyber-infrastructure Framework for 21st Century Science, Engineering and Education (CIF21)
 - Innovation Corps (I-Corps)
 - Infrastructure





GEO Advances NSF Priorities

- Preparing Students for Tomorrow
 - Improving Undergraduate STEM Education (IUSE)
 - Research Experiences for Undergraduates (REU)
- Improving Effectiveness and Efficiency
 - Responding to Antarctic Blue Ribbon Panel Report
 - Decadal Survey of Ocean Sciences (DSOS)





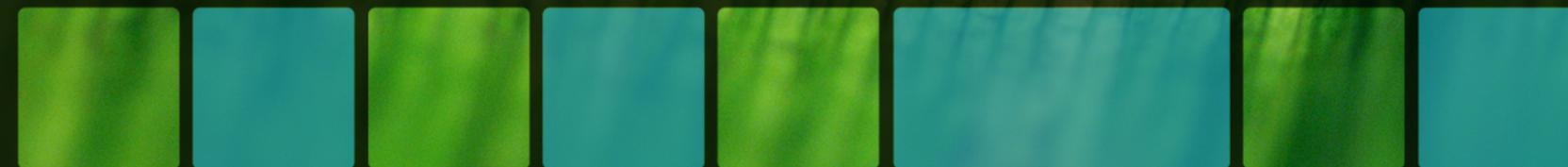
Fiscal Year 2015 Budget Request

GEO fits within NSF's Research and Related Activities Account

R&RA Funding (Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change over FY 2014 Estimate	
				Amount	Percent
Biological Sciences	\$679.21	\$721.27	\$708.52	-\$12.75	-1.8%
Computer & Information Science & Engineering	858.13	894.00	893.35	-0.65	-0.1%
Engineering	820.18	851.07	858.17	7.10	0.8%
Geosciences	1,273.77	1,303.03	1,304.39	1.36	0.1%
Mathematical & Physical Sciences	1,249.34	1,299.80	1,295.56	-4.24	-0.3%
Social, Behavioral & Economic Sciences	242.62	256.85	272.20	15.35	6.0%
International and Integrative Activities	434.28	481.59	473.86	-7.73	-1.6%
U.S. Arctic Research Commission	1.39	1.30	1.41	0.11	8.1%
Total, R&RA	\$5,558.88	\$5,808.92	\$5,807.46	-\$1.46	-

Totals may not add due to rounding.



Fiscal Year 2015 Budget Request by Division



GEO Funding (Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate	
				Amount	Percent
Atmospheric and Geospace Sciences (AGS)	\$245.03	\$250.46	\$250.61	\$0.15	0.1%
Earth Sciences (EAR)	173.80	177.60	177.75	0.15	0.1%
Integrative and Collaborative Research and Education (ICER)	84.73	83.86	83.96	0.10	0.1%
Ocean Sciences (OCE)	343.76	356.50	356.96	0.46	0.1%
Polar Programs (PLR)	426.45	434.61	435.11	0.50	0.1%
<i>U.S. Antarctic Logistical Support (USALS)</i>	<i>[64.51]</i>	<i>[67.52]</i>	<i>[67.52]</i>	-	-
Total, GEO	\$1,273.77	\$1,303.03	\$1,304.39	\$1.36	0.1%

Totals may not add due to rounding.





Research Highlights

- SEES
 - GEO has been a leader in NSF's SEES priority area. 2015 marks the start of sun-setting for this investment. (\$59M, \$9M below FY14)
- CIF21
 - GEO's EarthCube activity will start transitioning from community development toward implementation (\$11M, 6.5M below FY14)





SEES: Science, Engineering and Education for Sustainability

- NSF-wide investment
- Began FY10: \$69M; FY13 and FY14: \$163M
- FY2015 Request: \$139M (GEO: \$59)
 - Focus on Sustainable Chemistry, Engineering & Materials, Biodiversity, Earth System Modeling, Water, Hazards, Urban Research Networks, SEES Fellows, Cyber and Coastal
- Component programs “sunset” or transition in FY 2017
 - Example: Water-Food-Energy Nexus
- Evaluating impact on sustainability research, collaboration across disciplines and workforce development





PREEVENTS (Prediction and Resilience against Extreme Events)

OSTP & OMB Science and Technology Priorities for the FY15 Budget 7/26/13 (Memo M-13-16)*“help the Nation become more resilient to natural and technological disasters.....enhancing the **understanding of the natural processes that produce hazards**, developing better hazard mitigation strategies and technologies, reducing the vulnerability of interdependent critical infrastructure, improving assessments of disaster resilience, and promoting risk-informed behavior”.....*

Executive Order 11/1/13 - PREPARING THE UNITED STATES FOR THE IMPACTS OF CLIMATE CHANGE*“including.....excessively high temperatures, more heavy downpours, an increase in wildfires, more severe droughts, permafrost thawing, ocean acidification, and sea-level rise”.....*

.....*“encourage investments, practices, and partnerships that facilitate increased resilience to climate impacts, including those associated with extreme weather”.....*





Infrastructure Highlights

- GEO's Division of Polar Programs continues to make progress on key investments recommended by the recent Blue Ribbon Panel (\$18.5M, +\$1.5M from FY14)
- OCE has initiated a major NRC "decadal survey" to identify key research themes and associated infrastructure priorities for the coming decade. Report expected in 2015.





Infrastructure Highlights

- Support is temporarily being made available to offset increases necessary for the Ocean Observatories Initiative (\$14M from ICER). Decadal survey will inform both OCE and GEO as a course for the future of ocean sciences is determined.
- R/V SIKULIAQ will start operations later in 2014. Highly capable ship, on-budget.





IMPROVING UNDERGRADUATE STEM EDUCATION (IUSE)

- Rapidly and dramatically improve U.S. undergraduate STEM education through coherent, agency-wide investment to:
 - increase numbers
 - broaden diversity
 - Improve preparation of STEM professionals
- Common system of assessing the impact of the collective investment

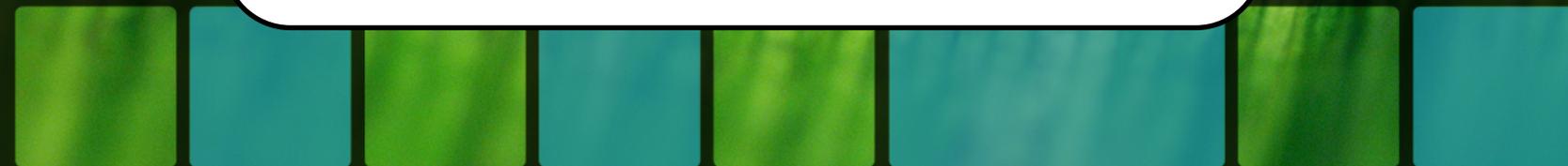
Directorate for Education and Human Resources (EHR) \$ 99.08 million

Directorate for Geosciences (GEO) \$ 10.90 million

Directorate for Engineering (ENG) \$6.00 million

Directorate for Biological Sciences (BIO) \$2.5 million

Improving Undergraduate STEM Education (IUSE) \$118.48 million





In FY 2015, GEO...

- Strategically invests in NSF-wide priority areas
- Supports key infrastructure investments
- Promotes the training of the next generation of geoscientists
- Long-standing GEO divisional research programs essentially level with 2015
 - Some will increase, some will decrease, but on balance the net budget remains essentially the same



THE END

