



National Science Foundation Update to National Association of Marine Laboratories

Dr. James McManus

Geosciences Directorate

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Agency Priority Goals (APG) are:

- Subset of an agency's performance goals that represent highest **priorities of the Agency and Administration**
- **Outward-focused and communicate** specific outcome(s) for achievement to the public related to Agency mission
- Two-year goals that are reported quarterly through a public facing website
- Not dependent on new legislation or new funding to accomplish



APG FY 2022-2023

Goal Statement:

- **Impact:** Improve representation in the scientific enterprise by making changes that will lead to an increase in proposal submissions by *individuals and institutions that have been historically excluded in STEM.*
- **Achievement:** By September 30, 2023, NSF will increase both the number and proportion of proposals received with investigators from *groups and institutions historically excluded in STEM* by 10 percent over the FY 2020 baselines.

<https://www.performance.gov/agencies/NSF/apg/goal-1/>



Credit: Joseph Xu



NSF Fiscal Year 2023 Budget Request

(Dollars in Millions)						
NSF by Account	FY 2021 Actual	FY 2021 ARP Actual	FY 2022 Enacted ¹	FY 2023 Request	FY 2023 Request change over FY 2021 Actual	
					Amount	Percent
Biological Sciences	\$817.74	\$9.18	-	\$970.23	\$152.49	18.6%
Computer & Information Science & Engineering	1,007.13	35.72	-	1,150.78	143.65	14.3%
Engineering	764.43	3.00	-	940.28	175.85	23.0%
Geosciences	1,004.27	71.04	-	1,239.05	234.78	23.4%
Mathematical & Physical Sciences	1,593.31	20.33	-	1,746.847	153.54	9.6%
Social, Behavioral & Economic Sciences	282.11	18.16	-	330.21	48.10	17.0%
Technology, Innovation, & Partnerships	369.01	19.87	-	879.87	510.86	138.4%
<i>TIP Programs</i>	136.73	2.00	-	596.81	460.08	336.5%
<i>SBIR/STTR, including Operations</i>	232.28	17.87	-	283.06	50.78	21.9%
Office of International Science & Engineering	51.29	1.45	-	74.04	22.75	44.4%
Office of Polar Programs	484.04	14.52	-	547.10	63.06	13.0%
Integrative Activities	386.42	2.28	-	545.86	159.44	41.3%
U.S. Arctic Research Commission	1.60	-	-	1.72	0.12	7.5%
Research & Related Activities	\$6,761.35	\$195.54	\$7,159.40	\$8,425.987	\$1,664.63	24.6%
Total, NSF Discretionary Funding	\$8,440.03	\$240.48	\$8,838.00	\$10,492.08	\$2,052.05	24.3%



NSF FY 2023 Request for Climate

(Dollars in Millions)					
NSF by Account	FY 2021 Actual	FY 2022 Enacted ¹	FY 2023 Request	FY 2023 Request change over FY 2021 Actual	
				Amount	Percent
Biological Sciences	\$155.00	-	\$237.15	\$82.15	53.0%
Computer & Information Science & Engineering	-	-	40.00	40.00	N/A
Engineering	-	-	-	-	N/A
Geosciences	329.00	-	515.37	186.37	56.6%
Mathematical & Physical Sciences	9.83	-	34.63	24.80	252.3%
Social, Behavioral & Economic Sciences	18.25	-	25.14	6.89	37.8%
Technology, Innovation, & Partnerships	-	-	-	-	N/A
Office of International Science & Engineering	-	-	5.00	5.00	N/A
Office of Polar Programs	56.11	-	56.11	-	-
Integrative Activities	-	-	-	-	N/A
Research & Related Activities	\$568.19	-	\$913.40	\$345.21	60.8%
Total, NSF Discretionary Funding	\$568.19	-	\$913.40	\$345.21	60.8%



GEO FY 2023 Budget Request

(Dollars in Millions)						
NSF by Account	FY 2021 Actual	FY 2021 ARP Actual	FY 2022 Enacted ¹	FY 2023 Request	FY 2023 Request change over:	
					FY 2021 Actual	
					Amount	Percent
Atmospheric & Geospace Sciences (AGS)	\$283.35	\$17.29	-	\$301.37	\$18.02	6.4%
Earth Sciences (EAR)	201.65	16.74	-	206.36	4.71	2.3%
Research, Innovation, Synergies, and Education (RISE)*	116.27	15.00	-	299.54	183.27	157.6%
Ocean Sciences (OCE)	402.99	22.01	-	431.78	28.79	7.1%
Total	1,004.26	71.04	-	1,239.05	234.79	23.4%

*Formerly Division of Integrative and Collaborative Education and Research (ICER)



RISE-ing to The Challenge

Transcending Boundaries for a Resilient Earth

- R** **Blurring disciplinary boundaries** to catalyze critical research efforts
- I** **Enabling innovative approaches** to cross-cutting and convergent investments
- S** **Fostering synergy and partnerships** across NSF, the U.S., and around the world
- E** **Ensuring inclusive and equitable** geoscience education



GEO Future Research Emphasis Areas

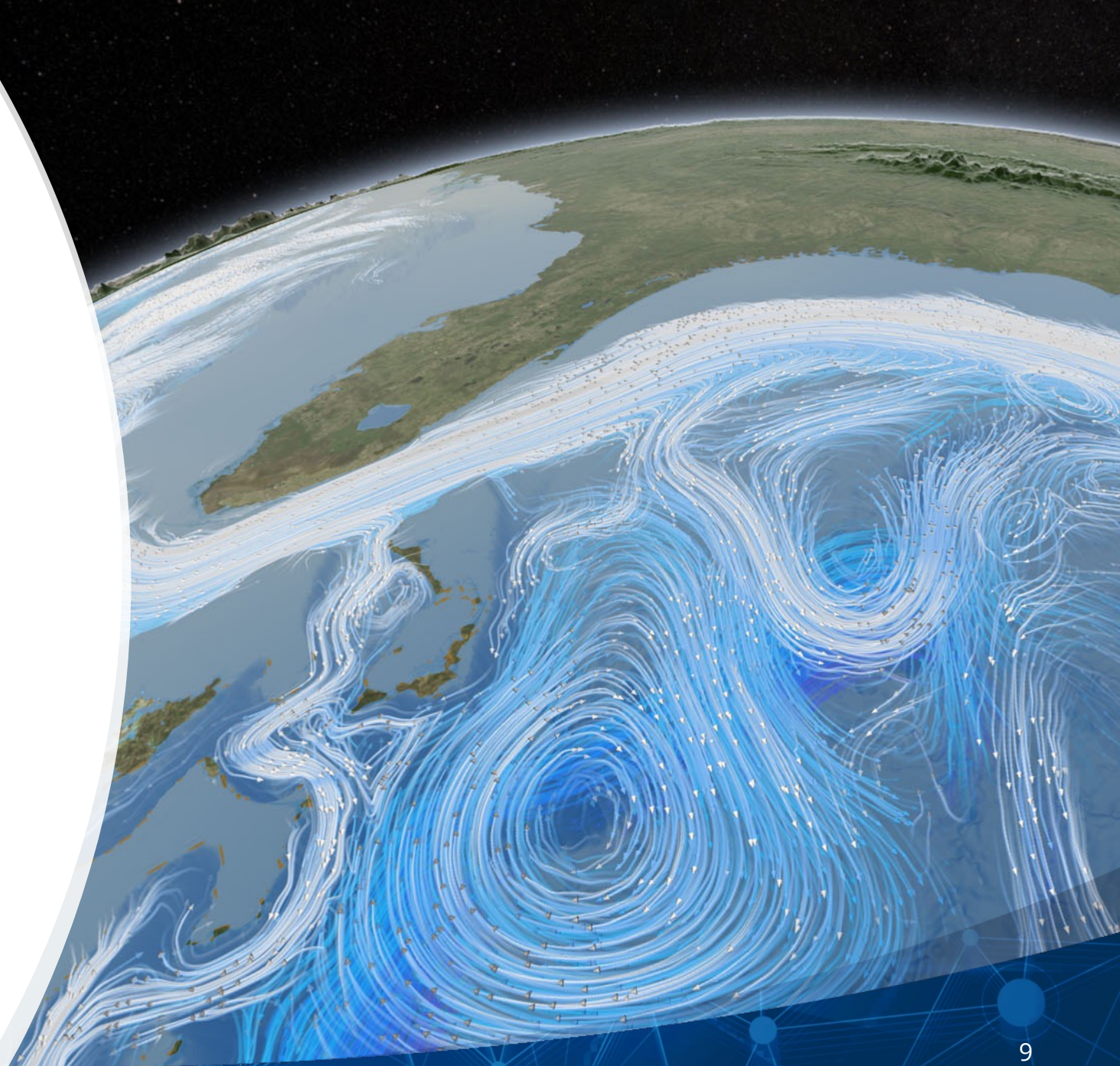


- Climate Intervention
- Hazards & Extreme Events
- Critical Minerals
- Cyber-infrastructure
- New Technologies
- Research Facilities
- Climate & Health



GEO Priority Emphasis: Climate Change

- Research and U.S. Global Change Research Program (USGCRP) support
- Investments in:
 - Earth system predictability and resilience
 - The role of the ocean
 - Terrestrial-climate interactions
 - Water sustainability
- Emphasis on social equity



Investments in Postdoctoral Fellowships

- Significant budget increase:
 - FY 2021 \$5.34 M
 - FY 2023 \$13.34 M
- Supporting fundamental research in priority areas
- Serving broader inclusivity goals in science workforce
- AGU LANDInG-PRFP provides OCE and OPP Fellows with DEI training

Some of the 2021 OCE Postdoctoral Fellows



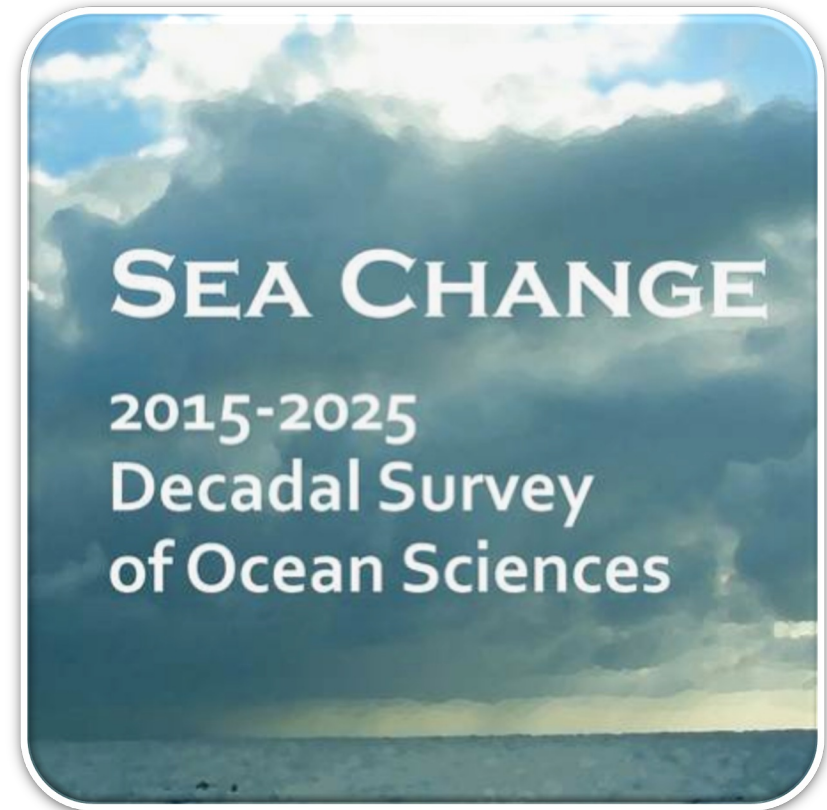
Investments in Use-Inspired Research

- Fostering solutions-oriented research to address societal challenges
- NSF's Convergence Accelerator awards on *Enhancing the Blue Economy through use-inspired research* (through the TIP directorate)
- New solicitation on Engineering Technologies to Advance Underwater Sciences (ETAUS)



NAS Decadal Study for OCE (2025 – 2035)

- Last decadal study (“Sea Change, 2015-2025”) identified research priorities and provided strategies to balance investments
- New study will provide recommendations for OCE considering changing priorities and emerging opportunities
- Committee nominations of diverse candidates strongly encouraged



What We Want From a New Study

Identify ocean science questions that continue our focus on the critical role of the ocean in the Earth system.

- Our science needs to continue to be attendant to issues of
 - Timeliness / urgency
 - Societal benefit
 - Technological advances / needs



Need to continuously address the question: *What research infrastructure is needed to advance the high-priority ocean science research questions over the coming decades*



- Without the right tools we will not be able to advance our science to its fullest potential and we run the risk of not meeting society's greatest needs.
- Community recommendation that "OCE should strive to reduce the O&M costs of its major infrastructure...", (*Sea Change: Decadal Survey of Ocean Sciences*).



We need to continue to seek leverage opportunities between the Ocean Sciences Division and other NSF units, federal agencies, and the private sector, including ocean industries and foundations, and international organizations.

- In particular, how can we encourage greater collaboration and maximize shared use of research assets, technology, and data for the benefit of all?

How can you help? The Division of Ocean Sciences plans to solicit your input in the coming months on priorities and approaches that will help shape the future of the Ocean Sciences research enterprise.



GEO Senior Staff Updates



Dr. James McManus

Director
Division of Ocean Sciences



Dr. Dena Smith-Nufio

Director
Division of Earth Sciences



Dr. Anne Johansen

Director
Division of Atmospheric &
Geospace Sciences



Dr. Jim Ulvested

Acting Director
Office of Polar
Programs



Dr. Anjuli Bamzai

Senior Science Advisor
Global Climate Change



Thank you for nurturing the next generation of scientists!



Mote Marine Laboratory



East Carolina University



Univ. Wisconsin Milwaukee
(Yucatán Peninsula)



