

FEBRUARY 2022

NSF & THE OCEAN DECADE



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

RESOURCE FOR RESEARCHERS
INVOLVED IN THE NATIONAL
SCIENCE FOUNDATION'S
ENDORSED OCEAN DECADE
ACTIONS

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National Science Foundation

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DOCUMENT PURPOSE

This document is a resource for NSF staff and researchers (including PIs, postdocs, students, etc.) funded through one of the five NSF Ocean Decade Actions (Navigating the New Arctic (NNA), International Ocean Discovery Program (IODP), GEOTRACES, Global Ocean Biogeochemistry Array (GO-BGC), and Coastlines and People (CoPe)) officially endorsed by the Intergovernmental Oceanographic Commission (IOC). The content below provides context and resources for engagement in the Ocean Decade and will evolve as opportunities within the Ocean Decade change in the coming years.

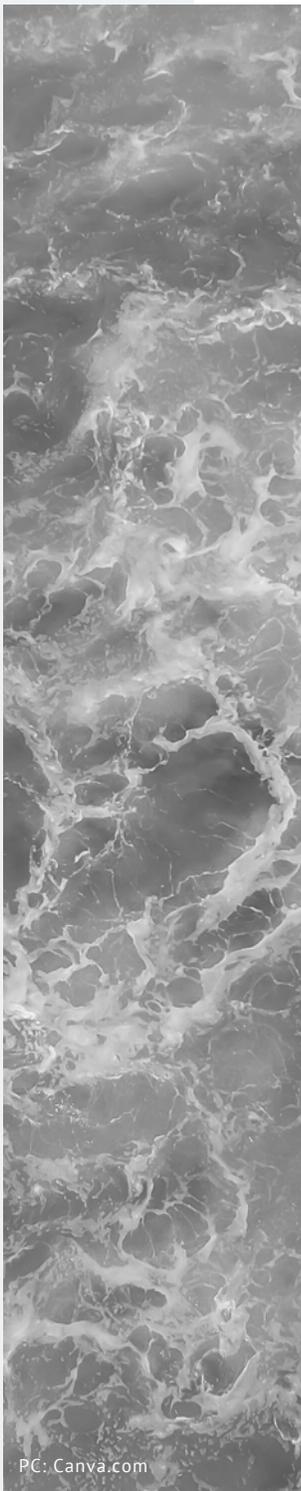


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ABOUT THE OCEAN DECADE



“Our engagement in international efforts, such as the United Nations Decade of Ocean Science for Sustainable Development, reflects the priorities and values of my Administration to ensure that ocean science delivers greater benefits for the American people, the people of the world, and international ocean ecosystems.”

President Joseph R. Biden Proclamation on National Ocean Month, 2021

In 2017, the United Nations (UN) General Assembly proclaimed there is an opportunity to reverse the decline in ocean health while continuing to rely on the ocean for our ever-increasing needs, particularly under a changing climate. With this acknowledgment, and a sense of urgency for immediate action, in 2017 the UN declared 2021-2030 The UN Decade of Ocean Science for Sustainable Development (Ocean Decade). The Ocean Decade was officially launched January 1, 2021.

The Ocean Decade offers a once-in-a-lifetime opportunity to engage the global community and strengthen international recognition of the ocean's essential importance to the health and wellbeing of our planet and its people. The Ocean Decade calls on the international community to unlock innovative ocean science solutions to foster an equitable and sustainable world. Healthy and resilient ocean, coastal, and Great Lakes ecosystems are fundamental to our Nation's and the globe's well-being, prosperity, and security, and provide solutions to many of our society's most significant challenges, from climate change to meeting the resource needs of growing coastal populations.

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The Ocean Decade is like an umbrella: it is an organizing tool, a mechanism for collaboration, and an effort to build broad momentum for the ocean science needed for the "ocean we want." The Decade Coordination Unit (DCU) of UNESCO's Intergovernmental Oceanographic Commission (IOC) is the central organizing body for the Ocean Decade.

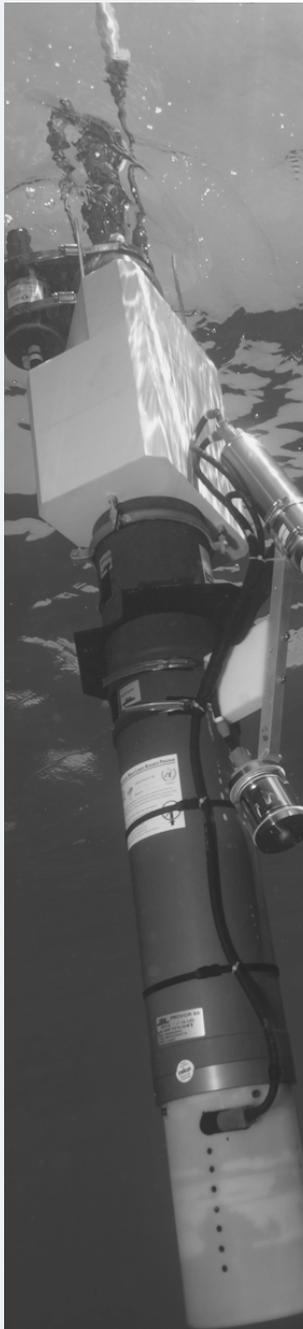
The vision of the Ocean Decade is 'the science we need for the ocean we want'. The mission of the Ocean Decade is 'to catalyze transformative ocean science solutions for sustainable development, connecting people and our ocean'. The Ocean Decade will be implemented on a voluntary basis within the legal framework of the United Nations Convention on the Law of the Sea (UNCLOS). The Ocean Decade will facilitate the generation of data, information and knowledge needed to move from the 'ocean we have' to the 'ocean we want'.

The ambition of the Ocean Decade is beyond the capacity of any single nation, any single stakeholder group, any single generation, or any single scientific discipline. The Ocean Decade will convene a wide range of stakeholders to collectively align their research, investments, and initiatives around a set of common priorities, so that the result of their shared efforts is exponentially greater than the sum of the parts.



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Seven outcomes describe the ‘ocean we want’ at the end of the Ocean Decade:



- 1 A clean ocean where sources of pollution are identified and reduced or removed.
- 2 A healthy and resilient ocean where marine ecosystems are understood, protected, restored, and managed.
- 3 A productive ocean supporting sustainable food supply and a sustainable ocean economy.
- 4 A predicted ocean where society understands and can respond to changing ocean conditions.
- 5 A safe ocean where life and livelihoods are protected from ocean-related hazards.
- 6 An accessible ocean with open and equitable access to data, information, technology, and innovation.
- 7 An inspiring and engaging ocean where society understands and values the ocean in relation to human well-being and sustainable development.

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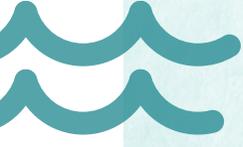
BENEFITS OF NSF ENGAGEMENT IN THE DECADE



The U.S. National Science Foundation (NSF) has been an active player in the Ocean Decade since its inception. NSF has long promoted the progress of ocean science. In fact, four of NSF's first 100 awards made were related to ocean science. NSF invests in transformational research to catalyze breakthroughs, a need identified by the Ocean Decade as it recognizes the multitude of compounding threats our oceans face from climate change to coastal development.



NSF seeks to accelerate research at speed and scale for the future, as demonstrated by the work of the 5 endorsed NSF Decade Actions. NSF investments advance all seven outcomes of the Ocean Decade by supporting people, infrastructure, and innovation. NSF looks forward to engaging with its many partners, from academia to philanthropy to international colleagues, to further advance ocean science and technology and promote a diverse and inclusive STEM-literate blue workforce to best harness the potential benefits gained from the Decade and promote a sustainable future.



The Ocean Decade provides an opportunity to fuel transformational actions to discover, innovate, identify the industries we cannot even imagine today, and cultivate the diverse talent needed to power the STEM and blue workforce forward at speed and scale. NSF is engaged in the Ocean Decade through multiple channels including the five NSF endorsed Decade Actions, in funding the U.S. National Ocean Decade Committee, and in Co-Chairing the Subcommittee on Ocean Science and Technology (SOST) and participating in the SOST Interagency Working Group on the Ocean Decade (IWG-OD). NSF-funded projects such as the Ocean Observatories Initiative (OOI), the IODP U.S. Science Support Program, and CLIVAR serve as nexus organizations to the U.S. National Ocean Decade Committee.

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BENEFITS OF NSF ENGAGEMENT IN THE DECADE

Cont.

Participation in the Ocean Decade facilitates NSF-funded work to share its activities, missions, methodologies and approaches, and findings on the global stage. Through highlighting the exciting work supported by NSF, we are able to showcase research which has met the NSF merit-based and broadening-participation standards as exemplary models for further research. NSF-funded researchers can harness the motivation and energy of the Ocean Decade to build their networks, share their research and ideas, and engage in global conversations on the transformative actions needed to further ocean science and technology in pursuit of the Ocean Decade goals.

NSF-funded researchers can leverage the Ocean Decade to engage in discussions across sectors, regions, and cultures and think big about ambitious goals related to ocean work, facilitating answers to the question “where does our field need to be in ten years?” The Ocean Decade’s strong focus on equity and meeting the needs of poor and marginalized communities around the world is a chance to expand and strengthen national and international efforts to integrate environmental justice principles and diversity, equity, inclusion, and accessibility goals throughout the Ocean S&T enterprise.*

*Please see www.nsf.gov/od/broadeningparticipation for NSF resources regarding broadening participation. In addition, many professional scientific societies and organizations have online resources (e.g., [AGU](#) & [Thriving Earth Exchange](#)) to support the development of EJ and DEIA goals and activities.



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NSF OCEAN DECADE ENDORSED ACTIONS

At the beginning of the Ocean Decade, NSF submitted five actions for endorsement. All 5 were accepted and announced June 2021. They include:

Coastlines and People (CoPe): Supports multi-institution Coastal Research Hubs at the nexus between coastal sustainability, human dimensions, and coastal processes to transform understanding of interactions among natural, human-built, and social systems in coastal, populated environments. Decade Action Unique Identification Number: 135

GEOTRACES: An international program collecting data on trace elements in the ocean – rare chemicals that play important roles as essential nutrients, act as tracers of processes now and in the past, and affect organisms as toxic contaminants. Decade Action Unique Identification Number: 146

Global Ocean Biogeochemistry Array (GO-BGC): A multi-institutional program contributing 500 robotic floats to collect chemistry and biology data from the ocean surface to a depth of 2,000 meters, allowing us to transform how we observe the global ocean. Decade Action Unique Identification Number: 142

International Ocean Discovery Program (IODP): An international marine research collaboration that explores Earth's geological and environmental history, and dynamics, using ocean-going research vessels, including the NSF-supported JOIDES Resolution, to collect sub-seafloor sediments and environmental samples. Decade Action Unique Identification Number: 140

Navigating the New Arctic (NNA): Brings together research across the social, natural, environmental, computing, and engineering sciences, to inform our understanding of Arctic change and its local and global effects, to create new directions in Arctic science and technology. Decade Action Unique Identification Number: 153

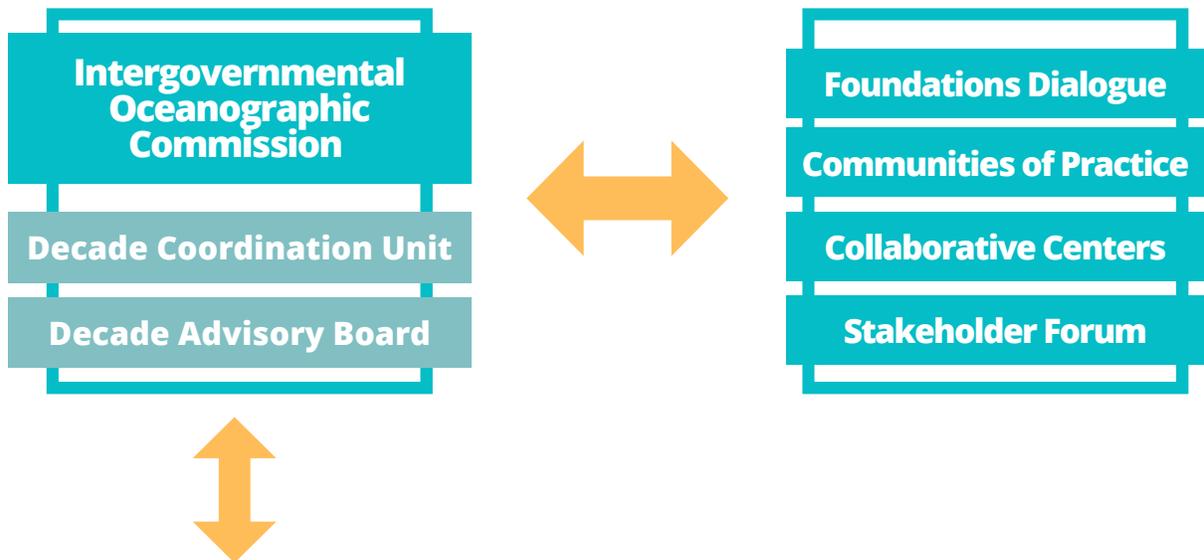
**Contact information for all actions is listed at the end of this document.*

NSF-funded projects such as the [Ocean Observatories Initiative \(OOI\)](#), [IODP U.S. Science Support Program](#), and [CLIVAR](#) serve as official nexus organizations of the Ocean Decade.

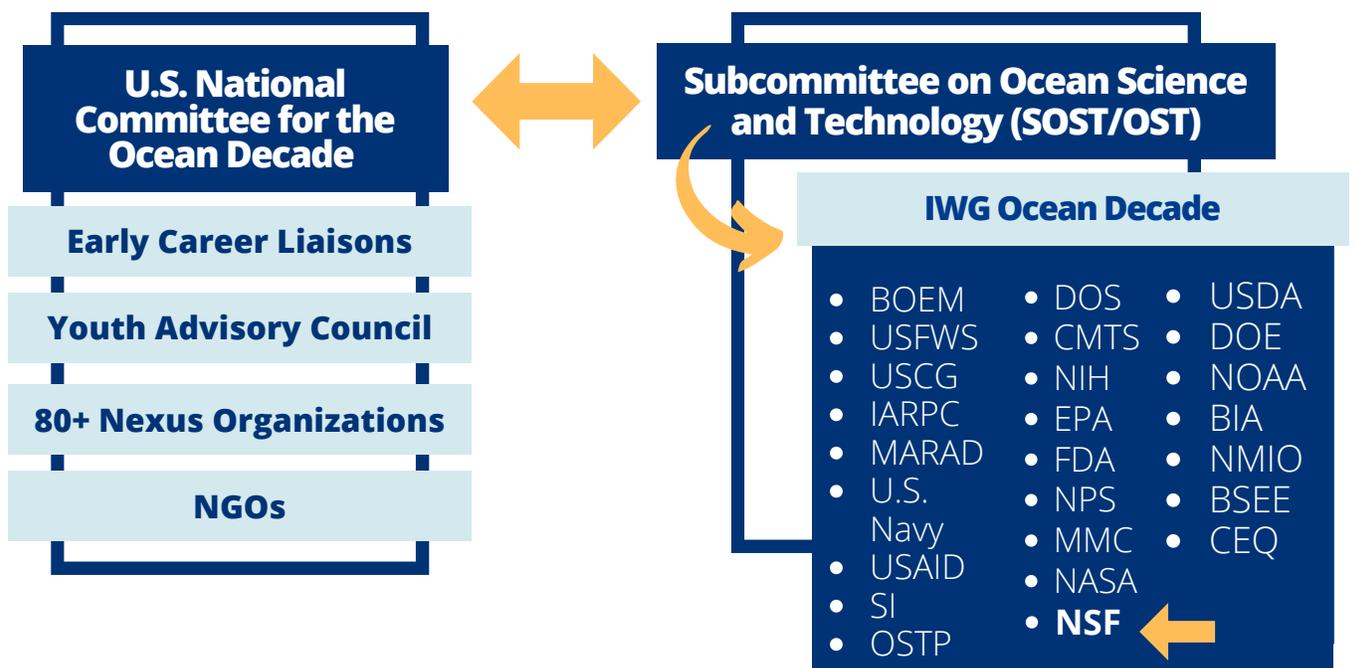
10 OCEAN DECADE ORGANIZATION CHART

NSF has the opportunity to engage with international Ocean Decade communities, including communities of practices, collaborative centers, and the stakeholder forum, as well as through the development of Decade activities. At the national level, NSF is a member of the Interagency Working Group on the Ocean Decade (IWG-OD) within the Subcommittee on Ocean Science and Technology and can connect with early career professionals, nexus organizations, and NGOs to promote program actions and explore synergies in ocean activities.

International Frameworks



National Frameworks



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PATHWAYS FOR COLLABORATION

Ocean Decade Bodies

The NSF Endorsed Actions have the opportunity to work with a variety of collaboration bodies, including but not limited to:

- The National Science and Technology Council (NSTC) Subcommittee on Ocean Science and Technology (SOST) [Interagency Working Group on the Ocean Decade \(IWG-OD\)](#) formalizes the Federal government's coordination of agency activities related to the UN Decade of Ocean Science for Sustainable Development.
- The [U.S. National Committee for the Ocean Decade](#) encourages participation and serves as a communication channel for the U.S. ocean science community throughout this international effort. The U.S. National Academies of Sciences, Engineering, and Medicine (NASEM) serves as the organizational center for coordination of scientific initiatives to inspire U.S. contributions to the Ocean Decade.
- [Ocean Decade Collaborative Centers](#) (DCCs) are decentralized coordination structures that enhance and facilitate a wide range of thematic and geographic priorities for Decade Actions. Current DCCs include one regional focusing on the Northeast Pacific by the [Tula Foundation](#). There are also three thematic centers: one on ocean-climate solutions and innovation hosted by [Ocean Visions](#) in Atlanta, USA; one focused on coastal resilience in a changing climate hosted by the [University of Bologna](#); and one on ocean prediction by the [Mercator Ocean International](#).
- The [Early Career Ocean Professional \(ECOP\) Network Programme](#) seeks to empower ECOPs, who self-identify as being early in their career in any field related to the ocean. The Programme is at the heart of the UN Decade of Ocean Science for Sustainable Development, and it was endorsed by the UN Ocean Decade as a network program in 2021.

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International Collaboration Best Practices

As part of the Ocean Decade, researchers from endorsed actions have the opportunity to form new and build on existing international collaborations. International collaboration is crucial for addressing global ocean challenges and can help facilitate information, resource, and perspective exchanges.

International collaborations require sensitivity and consideration of cultural, social, and political differences (1,2). This understanding is pertinent to both logistical aspects of the collaboration (i.e. sharing samples and data) as well as communication and teamwork success. Expectations, conflicts of interest, resource sharing, and other practical components of international collaborations are best formalized and clarified in early stages of development (3, 4). These collaborations also present opportunity, and a responsibility, to be inclusive. Inclusivity can include confronting the gender and under-represented minority gaps in international exchange opportunities (5,6) as well as actively partnering with local stakeholders (7).

There are many resources for international research collaboration planning available online. NSF's Engineering Research Center's Portal for International Collaboration Resources is one example that can be found at: <https://erc-assoc.org/international-collaboration-resources>. The American Academy of Arts & Sciences released a 2020 report "America and the International Future of Science" that includes additional general information and resources on approaching new international collaborations: www.amacad.org/publication/international-science.

Existing International Collaboration Avenues

International scientific collaboration is often field and regionally focused, and best practices are often context-dependent. In addition to the NSF endorsed actions and Decade bodies detailed on the previous page, other Decade efforts to facilitate collaboration can be found here: www.oceandecade.org/decade-actions/. A few existing international collaboration avenues potentially relevant to the NSF endorsed actions (some which NSF is not involved in) include but are not limited to:

- Interagency Arctic Research Policy Committee (IARPC): www.iarpccollaborations.org/index.html
- G7 Future of Seas and Oceans Initiative (FSOI): www.g7fsoi.org
- Scientific Committee on Oceanic Research (SCOR): www.scor-int.org
- International Marine Conservation Congress (IMCC): www.conbio.org/mini-sites/imcc6/
- The Global Ocean Observing Systems (GOOS): www.goosocean.org
- International Arctic Science Committee (IASC): www.iasc.info
- Scientific Committee for Antarctic Research (SCAR): www.sodecade.org
- All-Atlantic Ocean Research Alliance: www.allatlanticocean.org
- Marine Biodiversity Observation Network (MBON): www.marinebon.org
- Belmont Forum: www.belmontforum.org
- OISE Bilateral Collaborations: www.nsf.gov/od/oise/IntlCollaborations/index.jsp#bilateralcollaborations
- NASEM Policy and Global Affairs: www.nationalacademies.org/pga/policy-and-global-affairs

1.E. Pain, "Responsible research guidelines for the global scientist," *Science*, 2016 available: www.science.org/content/article/responsible-research-guidelines-global-scientist

2.B. Benderly, "Ethics Across Borders," *Science*, 2012, available at: <https://www.science.org/content/article/ethics-across-borders>

3.R. de Grijis, "Ten Simple Rules for Establishing International Research Collaborations," *PLoS Computational Biology*, 2015, available at: <https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1004311>

4.V. Gewin, "Top tips for building and maintaining international collaborations," *Nature*, 2018, available at: <https://www.nature.com/articles/d41586-018-05944-x>

5.L. Ackers, "Internalisation, Mobility and Metrics: A New Form of Indirect Discrimination?," *Minerva*, 2008, available at: links.springer.com/article/10.1007/s11024-008-9110-2

6.NSF Engineering Research Centers, "Welcome to the Portal for International Collaboration Resources," available at: <https://erc-assoc.org/international-collaboration-resources>

7.R. Brook and S. McLachlan, "Trends and prospects for local knowledge in ecological and conservation research and monitoring," *Biodiversity and Conservation*, 2008, available at:

<https://link.springer.com/article/10.1007/s10531-008-9445-x>

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HOW TO GET INVOLVED

There are many ways to get involved in the Ocean Decade. To stay up to date on Ocean Decade opportunities, refer to the online resources listed later in this document.

Join the Global Stakeholder Forum

Join The Ocean Decade Global Stakeholder Forum by visiting the official Ocean Decade website and create an account to log in. Among other services, this gives you access to the “Ocean Decade LinkedIn” and allows you to see who else at scientific conferences are engaged in the Ocean Decade: www.oceandecade.org.

Develop a Decade Activity

Plan an Ocean Decade activity and share it with Ocean Decade organizers using this form:

<https://www.surveymonkey.com/r/requestforendorsementforoceandecadeactivities>

Activities are one off events, webinars, conferences, workshops, publications, and at times, creative outputs such as poster competitions and postal stamps. They are typically 1-28 days long, and at maximum are one year.

Connect Early Career Professionals

Encourage early career professionals involved with your program to engage with the Early Career Ocean Professional (ECOP) Program:

www.ecopdecade.org

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HOW TO GET INVOLVED *Cont.*

Join Ocean Decade Events

Stay up to date with Ocean Decade Events which can be found via two main sources: 1) The U.S. National Committee for the Ocean Decade Events Calendar

(www.airtable.com/shrLA7EJyJ5V97njA/tblnOBOv9o6aYh2m4/viwbJnJBxbpgSmnhf) and 2) The UN Ocean Decade Events page (www.oceandecade.org/decade-events)

Discover & Share Decade Opportunities

Discover or share Ocean Decade opportunities for trainings, partnerships, and career development through the Ocean Decade website: www.forum.oceandecade.org/opportunities

Use the Decade Logo

Use the Ocean Decade Logo on materials related to your Decade Action work. The logos are available in all 6 UN languages (and 4 additional languages) in EPS, AI, PDF, PNG and JPEG formats found here:

<https://drive.google.com/drive/folders/1vGc8qQlm3z0XY4n0JbLwghg8Ubw2Brhg?usp=sharing>

*Use of the official Ocean Decade Logo must be in accordance with the official brand guidelines (www.oceandecade.org/wp-content/uploads//2021/09/337568-Ocean%20Decade%20Brand%20Guidelines)

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HOW TO GET INVOLVED *Cont.*

Communities of Practice

Over the course of the Ocean Decade, Communities of Practice will be established to ensure that partners working on similar themes or in similar geographies can find each other and work together to optimize collective impact throughout the Decade.

- Communities of Practice are a way of loosely organizing and making legible a very complex landscape throughout the Decade. They are not formal structures or mechanisms but rather can be seen as a fluid framework to facilitate connections between partners.
- Communities of Practice will allow partners to work together, when it is advantageous, to carry out a range of essential functions including:
 - Horizontal coordination to optimize communications and collaboration among partners
 - Vertical coordination to aid coherence of actions across projects and assist with overall work planning, implementation, and monitoring
 - Identification of thematic or geographic gaps and priority needs, leading to input to the design of future Call for Decade Actions
 - Monitoring and reporting the impact of Decade Actions
 - Communications and outreach activities to engage new partners and raise awareness
 - Work with Decade structures on resource mobilization, including need assessments
 - Facilitate information exchange to other Decade structures and across Communities of Practice to avoid siloing and duplication of work
- As a member of an endorsed Decade Action, you can join any Community of Practice. Register using this link: www.surveymonkey.co.uk/r/MG78VYW. When registering you will need your Decade Action Unique Identification Number. For the NSF Actions they are: CoPe: 135; GEOTRACES: 146, NNA: 153; IODP: 140; GOBGC: 142.

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HOW TO GET INVOLVED *Cont.*

Communicate About Your Action:

- **Scientific Journals:** The [Marine Technology Society Journal](#) plans to dedicate an issue annually to The Decade. Other scientific journals may similarly advertise Ocean Decade specific issues, providing an avenue to publish your work.
- **Podcasts:** The [Ocean Decade Show](#), distributed by the American Shoreline Podcast Network, is an officially endorsed Decade action. Persons interested in showcasing work of an NSF Ocean Decade Action on the podcast can reach out to Taylor Goelz at: taylorgoelz@gmail.com
- **UN Ocean Decade Communications:** As you develop specific outreach and communications materials about your endorsed Action, feel free to send those to v.lindoso@unesco.org and oceandecade@unesco.org so they can be shared via the Ocean Decade channels. The Ocean Decade team can repost/retweet content from your relevant accounts if you tag @UNOceanDecade. The Ocean Decade Communications Channels, include:
 - The Official Ocean Decade Newsletter
 - Social media (Twitter: @UNOceanDecade; LinkedIn: @UN Ocean Decade; Facebook: @oceandecade; Instagram: @unoceandecade)
 - Website: <http://oceandecade.org>
 - Key publications (print and online)
 - Decade Action factsheet series
- **Attend Ocean Decade Events:** View Ocean Decade led upcoming events at: www.forum.oceandecade.org/events. Attend to promote your action! Upcoming **Ocean Decade Laboratories** can be found here: www.oceandecade-conference.com/en/ocean-decade-laboratories.html

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INFORMATIONAL RESOURCES



- **UN Ocean Decade Endorsed Programme General Information Webinar, October 2021:**
zoom.us/rec/share/QkFiR48XXDFbxMHNLIzUoHfhwFZAZRTMrgaSyULy3qAWzULzxl3iGpFKNJYGaw6.GPP0oSoWPdXH-VMM
 Access Passcode: !U@pSmp8
- **UN Ocean Decade Website:** www.oceandecade.org
- **UN Ocean Decade Stakeholder Forum:** www.oceandecade.org/sign-up/
- **All UN Endorsed Decade Actions:** www.oceandecade.org/decade-actions
- **UN Ocean Decade Challenges:** www.oceandecade.org/challenges
- **UN Ocean Decade Vision, Mission, and Outcomes:**
www.oceandecade.org/vision-mission
- **UN Ocean Decade Implementation Plan Summary:**
www.oceandecade.org/wp-content/uploads//2021/09/337521-Ocean%20Decade%20Implementation%20Plan:%20Summary
- **UN Ocean Decade National Committees Operational Guidelines:**
www.oceandecade.org/wp-content/uploads//2021/09/337557-National%20Decade%20Committees%20Operational%20Guidelines
- **UN Early Career Professional (ECOP) Programme Website:**
www.ecopdecade.org
- **U.S. National Committee for the Ocean Decade Website:**
www.nationalacademies.org/our-work/us-national-committee-on-ocean-science-for-sustainable-development-2021-2030
- **U.S. Ocean-Shots Concepts & Submission:**
www.nationalacademies.org/our-work/us-national-committee-on-ocean-science-for-sustainable-development-2021-2030#sl-three-columns-e33ae106-08bc-49e3-8baf-078797861e38
- **U.S. Interagency Ocean Science and Technology Policy and Management Website** (New page on the Ocean Decade coming soon!):
www.noaa.gov/interagency-ocean-policy

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NSF OCEAN DECADE MAIN CONTACTS

For general questions, please reach out to the NSF Ocean Decade Team at:
oceandecade@nsf.gov

NSF Ocean Decade Strategic Lead

Stacy Aguilera-Peterson, saguiler@nsf.gov

Leads strategic direction for Ocean Decade Actions holistically across SOST, NSF, and UN Ocean Decade Engagement. Responsible for reporting requirements on NSF Actions

NSF Ocean Decade Interagency Working Group (IWG-OD) Representative

Cynthia Suchman, csuchman@nsf.gov

Represents NSF on the IWG-OD and contributes to strategic direction of NSF Ocean Decade activities. Works in tandem with Ocean Decade Strategic Lead to communicate Decade opportunities to NSF leadership. Responsible for maintaining awareness of potential interagency Decade Actions of interest

NSF Intergovernmental Oceanographic Commission (IOC) Representative

Mete Uz, bmuz@nsf.gov

Represents NSF on the IOC U.S. working group and communicates international opportunities for engagement and key international priorities to NSF leadership, in coordination with the Strategic Lead and IWG-OD Representative

NSF Leadership

Alexandra Isern, aisern@nsf.gov

Terry Quinn, tquinn@nsf.gov

NSF leadership staff who are engaged in and supportive of Ocean Decade activities. Are also involved in SOST Ocean Decade activities and coordination with the U.S. National Committee

NSF Ocean Policy Knauss Fellow

Lauren Howe-Kerr, lhoweker@nsf.gov

Coordinates NSF engagement in the Ocean Decade and supports strategic direction of Ocean Decade activities across the SOST

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NSF OCEAN DECADE MAIN CONTACTS

Five NSF Endorsed Actions

Program POC: *Staff who are directly engaged in the work of a program, can work to develop activities under an Action (in coordination with other NSF Decade contacts as appropriate), and should be consulted for any programmatic requests*

ECOP: *Early career ocean professionals who support planning for NSF Decade Action activities, nationally and internationally, and are engaged in activities of interest to advance their career goals*

Coastlines and People (CoPe)

- Program POC: Rita Teutonico, rteutoni@nsf.gov
- ECOP: Neha Pankow, Associate Program Director, NSF, npankow@nsf.gov

Navigating the New Arctic (NNA)

- Program POC: Jesús G. Alvelo Maurosa, jalvelo@nsf.gov
- ECOP: Kitrea Takata-Glushkoff, Graduate Research Assistant, University of Alaska Fairbanks, pltakataglushkoff@alaska.edu

GO-BGC Array

- Program POC: Kandy Binkley, kbinkley@nsf.gov
- ECOP: Yui Takeshita, Scientist, MBARI, yui@mbari.org

GEOTRACES

- Program POC: Hedy Edmonds, hedmonds@nsf.gov
- ECOP: Laura Whitmore, Post-Doctoral Researcher, University of Alaska Fairbanks, lmwhitmore@alaska.edu

International Ocean Discovery Program (IODP)

- Program POC: Jamie Allan, jallan@nsf.gov
- ECOP: Samantha Bova, Assistant Professor, San Diego State University, sbova@sdsu.edu

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NSF OCEAN DECADE COMMUNICATIONS CONTACTS

Overall

Please share all media inquiries with NSF Public Affairs at media@nsf.gov in addition to the other relevant contacts listed below.

Communications Leads (overall NSF engagement)

Chris Parsons, ecparson@nsf.gov

Beth Zelenski, ezelensk@nsf.gov

Consult on holistic NSF Ocean Decade communications issues (e.g., summary of activity across all five actions or overarching NSF interest in the Decade)

**All contacts below should be consulted for media or materials requests for their respective Actions.*

Coastlines and People

NSF CoPe Working Group, nsfcope@nsf.gov

Navigating the New Arctic (NNA)

NSF NNA Working Group, nna@nsf.gov

GO-BGC Array

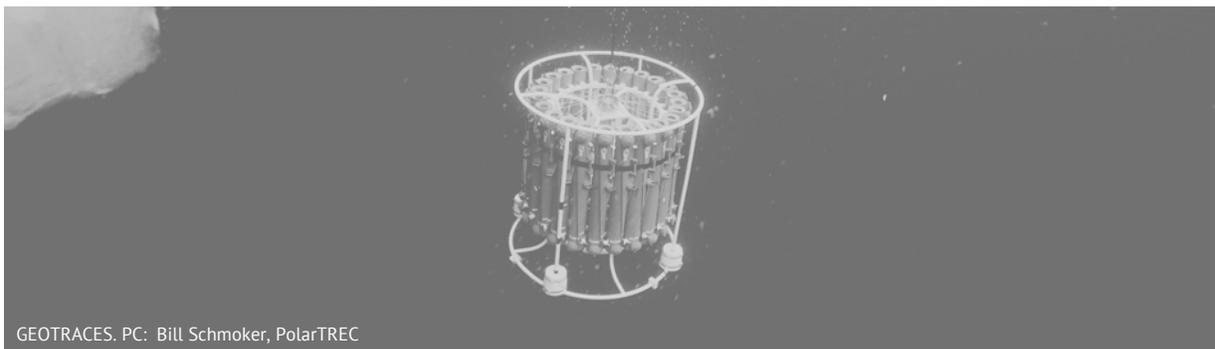
GO-BGC Team, info@go-bgc.org

GEOTRACES

GEOTRACES International Project Office, Elena Masferrer Dodas, Executive Officer, ipo@geotraces.org

International Ocean Discovery Program (IODP)

Charna Meth, Executive Director of the IODP Science Support Office, cmeth@ucsd.edu



GEOTRACES. PC: Bill Schmoker, PolarTREC