

Program Name

**NOAA Climate and Societal Interactions (CSI) Division
Adaptation Sciences Program
FY2023 Information Sheet**

Program Mission

The Adaptation Sciences Program resides in the [U.S. National Oceanic and Atmospheric Administration's](#) (NOAA) [Climate Program Office's \(CPO\)](#). The program is managed by the [Climate and Societal Interactions Division \(CSI\)](#). CSI has traditionally been a home for high-impact science, catalyzing some of the earliest U.S. government investments in regionally scaled, societally relevant, interdisciplinary climate research and engagement focused on reducing vulnerability and risk through the use of climate knowledge and information. Today, CSI continues to work with partners to enhance community, sectoral and national resilience in the face of climatic changes, through human-centered research, engagement and capacity building activities designed to connect innovative science directly to complex and dynamic preparedness, adaptation, and resilience challenges and opportunities. It is increasingly imperative that as society incorporates a changing climate into “mainstream” planning and risk management efforts, we seek to identify, design and implement adaptation efforts that align with and underscore other social and economic benefits.

Programs managed by CSI are a key component of NOAA's cutting-edge research enterprise, which has evolved over time to include the private sector, NGOs, interdisciplinary teams and the social sciences at large. CSI includes the [Adaptation Sciences \(AdSci\) research program](#), which helps advance the knowledge, methods, and frameworks needed to move society beyond incremental adaptation toward more widespread, connected, adaptive pathways and resilience strategies with clear economic and societal co-benefits, and the [Regional Integrated Sciences and Assessments](#) program, which advances equitable adaptation through sustained regional research and community engagement. CSI seeks to foster collaboration and integration across these program areas in order to optimize the investment of NOAA resources in support of societal needs.

NOAA's Adaptation Sciences (AdSci) Program is designed to advance the knowledge, methods and frameworks needed to move society beyond incremental adaptation toward more widespread, connected, adaptive pathways, and resilience strategies with clear economic and societal co-benefits. Research focuses on the integration of acute and chronic stressors that occur over multiple timescales, which can lead to cascading impacts that threaten to overwhelm and

undermine systems important to daily life and social and economic well-being. NOAA Research, in the context of its commitment to improved service development, delivery, and integrated information services through innovative science, is well placed to advance interdisciplinary research in support of adaptation and resilience that helps society meet social and economic goals under a changing climate. The goal of the AdSci Program is to foster adaptation and resilience by supporting research and partnerships focused on:

- Developing an understanding of key drivers and conditions that shape and enable adaptation across multiple temporal and spatial scales (e.g., socioeconomic context, adaptive behaviors, risk perception, public awareness and education); and
- Identifying key aspects of and promoting opportunities for the use of scientific information to best support preparedness and planned adaptation of high value to social and economic goals.

The AdSci program is composed of several lines of effort - each shaped by ongoing engagement and structured partnerships with key stakeholders - and program strategies that reflect the societal needs and opportunities for collaboration that emerge from these partnerships. AdSci's current lines of effort include partnerships and projects focused on the following: international collaboration to advance adaptation and resilience; climate impacts on fisheries and pathways for adaptation in fishing communities; and water-resources challenges and opportunities in coastal communities.

AdSci International works with partners in the public and private sector to enhance the knowledge, engagement and capacity needed to foster adaptation and resilience in the face of a changing climate. Programs work across regions, and the sectors and systems upon which communities depend (e.g., human health, disaster risk reduction, water resources, coastal and marine ecosystem management, food security, infrastructure) and help support the integration of climate information in related risk management and decision making processes.

Focus for FY2023 - Adaptation Sciences Program: Island Resilience
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In FY 2023, NOAA's Adaptation Sciences Program is seeking proposals for interdisciplinary adaptation research activities to identify and better understand evolving climate risks, vulnerabilities, and adaptive capacity, and to foster the integration of this knowledge into adaptation and resilience planning for islands in the Caribbean and the Pacific. Applicants are encouraged to consider risks and solutions related to compound events and cascading impacts across sectors that have critical implications for systems such as food security, human health, energy, sustainable and regenerative tourism, ecosystems and livelihoods, coastal resilience and

infrastructure, and methods to advance effective adaptation solutions, decision support tools, early warning systems and networks in island regions.

Funding for FY2023

Proposals should be for projects up to 2 years duration with a budget of up to \$150,000 per year (for a maximum total of \$300,000.00)

Depending on the availability of funds, it is anticipated that 11-13 projects will be supported.

Furthermore, depending on the availability of funds, a portion of the funding for the international projects may come from the U.S. Department of State.

Competition Information

Overview

Small island geographies are among the most vulnerable to climate change. Many of them are already facing compounding climate risks and cascading impacts related to relative sea level rise, coastal flooding, shifting temperature and rainfall patterns, increasing ocean acidification and the impacts on marine and coastal ecosystems, and extreme events such as storms, droughts, and marine heat waves. Islands throughout the world are environmentally, socio-economically and culturally diverse, but many share common characteristics that shape their climate related risk and response actions. These include physical remoteness; the nexus of communities, cultures, infrastructure and economic activities found in island coastal regions; and the disproportionately high cost that islands must incur in order to adapt to climate change.¹ These characteristics, amplified by the impacts of climate, can result in losses to marine and coastal biodiversity and ecosystem services, threatened food and water security, declines in key socioeconomic sectors (e.g., fisheries, agriculture and tourism), destruction of infrastructure and homes, and existential threats to cultural resources and heritages.^{2 3}

¹ Nurse, L.A., R.F. McLean, J. Agard, L.P. Briguglio, V. Duvat-Magnan, N. Pelesikoti, E. Tompkins, and A. Webb, 2014: Small islands. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R., C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1613-1654.

² Keener, V. W., Marra, J. J., Finucane, M. L., Spooner, D., Smith, M. H., & Assessment, P. I. R. C. (2012). Climate change and Pacific islands: indicators and impacts: report for the 2012 Pacific Islands Regional Climate Assessment (PIRCA). Washington, DC: Island Press.

³ Taylor, M. A., Stephenson, T. S., Chen, A. A., & Stephenson, K. A. (2012). Climate change and the Caribbean: Review and response. Caribbean studies, 169-200.

As islands around the world are facing some of the earliest and most severe of climate impacts, their long history of responding to variability and unpredictability in their dynamic social-environmental systems is well documented. Resilience is inherently part of island history⁴ making their experience important to our understanding and advancement of adaptation and resilience strategies globally. This historical resilience, coupled with current island innovation and action with regard to adaptation, demonstrates that islands are key actors in the adaptation and resilience space.

Collaboration is one important enabling factor for island adaptation. Research focused on Pacific and Caribbean islands, experiencing and responding to climate impacts, emphasizes two important types of collaboration that occurs among islands, and can help foster adaptation across multiple scales: (1) within island collaboration, which typically refers to collaboration between various communities, agencies and organizations, as well as (2) across island collaboration, which refers to collaboration across islands, particularly those within the same region. Although collaborative island efforts may differ in objectives and outcomes, some common benefits include: enhanced understanding climate of impacts and responses through shared traditional and local knowledge sources⁶, the development of solutions that are contextually relevant for islands⁷, and improved political influence of islands with shared interests and goals for climate resilience⁸.

Recognizing the challenges and opportunities related to climate resilience in island regions, the United States formally announced a new multi-agency partnership, which includes NOAA and the U.S. Department of State among others, at the April 2021 Leaders Summit on Climate. The purpose of this resilience initiative is to foster small island leadership in combating the climate crisis and promoting resilience in ways that reflect their unique cultures and sustainable development needs⁹. NOAA and the Department of State continue to work together, along with the broader USG Federal agency community, under the [President's Emergency Plan for Adaptation and Resilience \(PREPARE\)](#), which was launched at COP26 in Glasgow, Scotland¹⁰.

⁴ McMillen, H. L., Ticktin, T., Friedlander, A., Jupiter, S. D., Thaman, R., Campbell, J., Veitayaki, J., Giambelluca, T., Nihmei, S., Rupeni, E., Apis-Overhoff, L., Aalbersberg, W. & Orcherton, D. F. (2014). Small islands, valuable insights: systems of customary resource use and resilience to climate change in the Pacific. *Ecology and Society*, 19(4).

⁵ Lazrus, H. (2012). Sea change: island communities and climate change. *Annual Review of Anthropology*, 41(1), 285-301.

⁶ McMillen, H. L., Ticktin, T., Friedlander, A., Jupiter, S. D., Thaman, R., Campbell, J., Veitayaki, J., Giambelluca, T., Nihmei, S., Rupeni, E., Apis-Overhoff, L., Aalbersberg, W. & Orcherton, D. F. (2014). Small islands, valuable insights: systems of customary resource use and resilience to climate change in the Pacific. *Ecology and Society*, 19(4).

⁷ Lazrus, H. (2012). Sea change: island communities and climate change. *Annual Review of Anthropology*, 41(1), 285-301.

⁸ Hauger, J. S. (2015). Climate change challenges to security in the Pacific Islands region and opportunities for cooperation to manage the threat. *Regionalism, security and cooperation in Oceania*, 147-160.

⁹ <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/23/fact-sheet-president-bidens-leaders-summit-on-climate/>

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<https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/01/fact-sheet-president-biden-renews-u-s-leadership-on-world-stage-at-u-n-climate-conference-cop26/>

PREPARE is a whole-of-government approach designed to support and advance international adaptation and resilience, including the enhancement of climate information services and early warning systems, and the development of the knowledge, partnerships and solutions that underpin adaptation and resilience. The FY2023 Adaptation Sciences funding competition contributes to these efforts.

Program Priorities

Through the FY2023 competition, AdSci seeks to support interdisciplinary and participatory research activities that address island-identified resilience needs; with an emphasis on projects that result in: (1) contextually relevant and usable information about climate impacts, vulnerabilities and solutions; (2) the evaluation, identification and strengthening of the adaptive capacities of institutions, communities, sectors and islands; (3) and/or the integration of climate information in adaptation planning, action and long-term resilience strategies. Within this framework, research proposals should seek to address one or more of the following topics:

- Identify evolving risks and vulnerabilities that arise as a result of the intersection of socioeconomic and climate stressors in these islands, and assess the adaptive related capacity within and across key sectors, including the food-energy-water nexus;
- Evaluate, test and/or scale up approaches to mitigating risk and advancing effective adaptation, including methods related to compound events and cascading impacts, nature based solutions, climate information and early warning systems, and/or low-carbon adaptation and resilience solutions;
- Advance understanding of key barriers and enabling conditions (e.g., governance, attitudes, political norms, education, culture) that influence adaptation and resilience in islands of the Caribbean and Pacific through the use of participatory social science methods.

Proposals should focus on one or more islands within the following regions:

- Region A (Caribbean): Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Jamaica, St. Kitts and Nevis, St Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago, Puerto Rico and the U.S. Virgin Islands.
 - Region B (Pacific): the Federated States of Micronesia, Fiji, Kiribati, Maldives, Marshall Islands, Mauritius, Mauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu, Hawaii, American Samoa, Guam, the Northern Mariana Islands.
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Collaboration among Principal Investigators (PIs) and stakeholders from multiple countries is encouraged to support regional networks and foster peer-to-peer learning. Applicants are not required to be located in these regions, however proposals should reflect the priorities, needs and cultures of specific islands, and demonstrate plans to develop or build on partnerships and engagement with local and indigenous communities, organizations, networks and/or institutions in these islands.

Research projects should include and be shaped by focused engagement with stakeholders, with attention to participation from relevant sectors and communities with roles to play in characterizing change and its effects, and in working toward the evaluations, assessment and implementation of new approaches. Work should be conducted at scales designed to expand the availability, accessibility and use of climate information in the context of public and private decision-making. Project implementation should enhance community, sub-regional and regional national engagement and networks that incorporate locally relevant knowledge, support local decision making, and the co-development of effective climate services, techniques, best practices, methods and frameworks to support decision makers in related areas of food security and sustainable food systems, water resources, public health and safety, infrastructure, disaster preparedness, nature based solutions, and low-carbon resilience strategies.

All projects should incorporate the principles of justice, equity, diversity, and inclusion. Applicants should demonstrate a plan to carry out their work in ways that acknowledge existing legacies of social and environmental inequities and support actions that address them, including but not limited to the inclusion of frontline community members in setting project priorities.

Proposed projects should:

- Leverage the research, priority setting and engagement capacity of key partners (e.g. international, regional, Federal, state, local, tribal, NGO and community-based organizations, as well as ongoing Communities of Practice) to identify and share methods, capacities and conditions needed to effectively utilize and incorporate interdisciplinary climate information science and services for island decision makers, practitioners, and planners, and assure that the results of these studies are stimulating wide and inclusive involvement.
- Explore opportunities to engage with organizations engaged in economic and community development, and connect with efforts to support the financing and/or evaluation of adaptation actions or strategies in order to foster more evidence-based policies.

- Support research activities as opposed to discrete adaptation project implementation activities outside of a learning framework (e.g., the implementation of a nature based solution in a specific community). However, if integrated in the research methodology, projects *may* include the coordination or development of trainings, workshops, peer-to-peer exchange opportunities focused on priority areas identified by island partners.
- Seek to leverage and partner with NOAA resources and capabilities in or related to the Caribbean and Pacific islands, including but not limited to those supported by OAR (e.g., the [RISA](#) and [Sea Grant Programs](#)), the [National Weather Service](#), the [Science Centers of the National Marine Fisheries Service](#), the [National Centers for Environmental Information's Pacific Region Climate Services](#), and the [National Ocean Service](#).

Additional Information

Information Sessions

The Adaptation Sciences team will hold at least one virtual information session to answer questions and review the application process shortly after the release of the Notice of Federal Funding Opportunity (NOFO) and prior to the Letter of Intent deadline. Please check [our website for details](#), and/or email us at Lisa.Vaughan@noaa.gov and ask to be placed on a distribution list to receive information about the date and time.

All applicants should carefully review the NOFO, and ensure that they are providing adequate time to meet the requirements for receiving Federal funding outlined Section IV, C: Unique Entity Identifier and System for Award Management (SAM).

Proposal Specifics

Proposals should include a statement or plan on how they will address the following:

Project Outcomes

Projects should increase understanding of island-specific climate risks in their full social and economic context, and existing adaptation options and capacities to address risks; as well as methods, tools, resources and solutions that will support further risk-based adaptation assessment, consistent with local decision-making and aspirations for sustainable long-term island resilience in a changing climate. In addition, projects should contribute to the growing body of usable knowledge related to one or more of the following outcomes:

- **Assessing and/or improving the adaptive capacity of island governance structures and norms:** Projects may evaluate, assess and contribute to adaptive capacity, including

methods to address enabling conditions, of island institutions at different scales (national, sub-national, etc.) and throughout and across different sectors (water, agriculture, fisheries, public health, infrastructure, etc.);

- **Assessing and/or improving the adaptive capacity of local and indigenous island communities:** Projects may assess and enhance adaptive capacity, including enabling conditions, of island communities at different scales (individuals, households, communities, etc.) and throughout different social functions (culture, recreation, livelihood, etc.);
- **Enabling/Advancing the use of climate information for risk-reducing measures:** Projects may include an evaluation of ongoing adaptation efforts integrating climate information into wider planning contexts, as well as provide decision-support for the transformation of climate information into adaptation planning, action and long-term resilience strategies.

Investigator Teams

Multidisciplinary teams of investigators are often best suited for addressing the complex issues related to climate, society and enhanced adaptation. The proposal must identify the investigators, include an explanation of the investigator roles, and explain how the team will interact and integrate across the multiple components. Investigators and key partners who will not be requesting funds for salaries must also be listed, along with their estimated time of commitment. Proposals are strongly encouraged to include diverse representatives from a variety of sciences and stakeholder groups required to fulfill the goals and objectives of the research (including indigenous and traditional knowledge). When addressing team composition, applicants should consider team contributions to a diverse, next-generation workforce through training, mentorship, education, and by engaging with students and early career professionals.

Outreach With Relevant Stakeholder Communities

The proposal should include a stakeholder/community engagement plan that incorporates how relevant stakeholders will be engaged from the beginning through to the completion of the project, as well as outline the development of relevant stakeholder engagements and a stakeholder report and/or engagement at the end of the project to share relevant findings.

Interaction with NOAA and Partners

Applicants whose proposals are chosen for funding will be expected to undertake an ongoing dialogue with the NOAA Climate Program Office and relevant NOAA partners. Project teams will be expected to submit annual and final reports and

respond to periodic data and information requests. PIs will be expected to participate in PI Communities of Practice convened by the NOAA Adaptation Sciences Program for the duration of their projects. This will include a series of coordination and communication activities to share research methods and results, support collaboration and information exchange across proposals, share lessons learned and optimize the outcomes of their projects. In addition, PIs will be encouraged to participate in Communities of Practice convened by our partners (e.g. The [Local2030 Islands Network](#) and the [Pacific Risk Management 'Ohana \(PRiMO\)](#)) to share lessons learned through these projects.

Diversity, Equity, Inclusion and Accessibility

The Adaptation Science program upholds the principles of Diversity, Equity, Inclusion and Accessibility (DEIA) as defined in the [White House Strategic Plan to Advance Diversity, Equity, Inclusion and Accessibility](#). Diversity here is defined as the practice of including the many communities, identities, races, ethnicities, backgrounds, abilities, cultures, and beliefs of the American people, including underserved communities. Ensuring equity means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment. An inclusive culture is one that recognizes, appreciates, and uses the talents and skills of employees of all backgrounds, and connects each person to the larger organizing structure. Accessibility here is defined as the design, construction, development, and maintenance of facilities, information and communication technology, programs, and services so that all people, including people with disabilities, can fully and independently use them. Accessibility includes the provision of accommodations and modifications to ensure equal access to employment and participation in activities for people with disabilities, the reduction or elimination of physical and attitudinal barriers to equitable opportunities, a commitment to ensuring that people with disabilities can independently access every outward-facing and internal activity or electronic space, and the pursuit of best practices such as universal design. Promoting diversity, equity, inclusion and accessibility improves the productivity and vitality of the communities in which the Adaptation Sciences program engages.

Each proposal should:

- Include a statement on integration of DEIA that describes how the project will incorporate the DEIA principles to help broaden the participation of underrepresented groups and remove barriers to action. The statement should also summarize where and how the project will integrate DEIA considerations into team composition, team management, leadership and decision making, focus areas, partnerships and approaches employed in the proposed work. Where possible it should also include goals and metrics for assessing and adjusting DEIA efforts.
- Develop and incorporate protocols and processes to include cultural data/resources and

local, indigenous traditional knowledge and other non-western scientific knowledge to enhance western science data where appropriate.

Websites and resource documents

- [NOAA Adaptation Sciences Program](#)
- [NOAA Regional Integrated Sciences and Assessments Program \(RISA\)](#)
- [NOAA Climate Program Office](#)
- [NOAA Oceanic and Atmospheric Research \(OAR\)](#)
- [President's Emergency Plan for Adaptation and Resilience \(PREPARE\)](#)
- [NOAA Next Generation Strategic Plan](#)
- [Executive Order 14008 Section 216C Tackling the Climate Crisis at Home and Abroad](#)
- [Weaving Indigenous Knowledge into the scientific method](#)
- [PREPARE Action Plan](#)

Data Archiving and Computational Resources

Responsible NOAA Official

For questions regarding this guidance and for verifying accessibility of data produced by funding recipients, contact the competition manager, Lisa Vaughan (Lisa.Vaughan@noaa.gov).

Data Accessibility

NOAA requires public access to grant-produced data. The use of open-standard formats and methods for data sharing is encouraged. Applicants must describe their approach in the Data/Information Sharing Plan section of their application (see the CPO Federal Funding Opportunity for more information on this requirement). Below are examples of methods to enable public access to grant-produced data:

- Data is submitted to the NOAA National Centers for Environmental Information (NCEI), which will provide public access and permanent archiving.
- Data are to be submitted to one of the following relevant International Science Council (ISC) World Data System facilities:
<https://www.icsu-wds.org/community/membership/regular-members>
- Data is submitted to another NOAA facility (other than NCEI), which will operate a publicly accessible online data server for this data.
- An existing publicly accessible online data server at the funded institution is to be used to host this data.
- Data is to be submitted to a public data repository appropriate to this scientific domain.
- Funding recipients will establish their own data hosting capability.

- Proposals may request permission not to make data publicly accessible. The application should include a rationale for lack of public access, and if funded, approval will need to be obtained from the Responsible NOAA Official listed above.

Resources

Proposals should include the costs of data sharing or archiving in their budgets.

Contact Information and Submission Information

For questions related to the competition, please contact the Competition Manager, Lisa.Vaughan@noaa.gov.

Letters of Intent (LOIs)

- Please email your LOI submissions to Lisa.Vaughan@noaa.gov. Principal investigators submitting a proposal in response to this AdSci competition announcement are required to follow the Letters of Intent (LOI) and Proposal preparation and submission guidelines described in the Adaptation Sciences FY 2023 Notice of Federal Funding Opportunity announcement.
- Investigators are strongly encouraged to submit an LOI prior to developing and submitting a full proposal, however, they are not required. Investigators will be notified by the AdSci Program Competition Manager as to whether a full proposal is encouraged based on the LOI within four weeks of the LOI due date.

General Information

- Administrative questions regarding the Notice of Federal Funding Opportunity (e.g. proposal formatting or submission guidelines) should be directed to Diane Brown (diane.brown@noaa.gov), please cc: lisa.vaughan@noaa.gov.