Climate Program Office (CPO), Earth System Science and Modeling Research in support of the Disaster

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NOTICE OF FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

Federal Agency Name(s): Office of Oceanic and Atmospheric Research (OAR), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: Climate Program Office (CPO), Earth System Science and Modeling Research in support of the Disaster

Announcement Type: Initial

Funding Opportunity Number: NOAA-OAR-CPO-2023-2007562

Federal Assistance Listings Number: 11.431, Climate and Atmospheric Research

Dates: Letters of intent (LOIs) for all competitions should be received by email by 5:00 p.m. Eastern Time on October 31, 2022.

Full applications for all competitions must be received by 5:00 p.m. Eastern Time on January 26, 2023.

Funding Opportunity Description: Climate variability and change present society with significant economic, health, safety, and security challenges. As part of the National Oceanic and Atmospheric Administration (NOAA) climate portfolio within the Office of Oceanic and Atmospheric Research (OAR), Climate Program Office (CPO), the Earth System Science and Modeling (ESSM) Division programs address climate challenges by managing competitive research programs that support high-priority science initiatives. CPO/ESSM Programs advance our understanding of the Earth's climate system and foster the application and use of this knowledge to improve the resilience of our Nation and its partners. Through this announcement, CPO/ESSM is seeking applications for two individual competitions in FY23. These competitions solicit projects in response to the DISASTER RELIEF SUPPLEMENTAL APPROPRIATIONS ACT (DRSA), 2022:"Improvements to … precipitation and flood prediction, forecasting, and mitigation capabilities…" (https://www.congress.gov/bill/117th-congress/house-bill/5305/text) that align with the goals of NOAA's Precipitation Prediction Grand Challenge Strategy 2020-2030 (PPGC). (https://www.noaa.gov/sites/default/files/2022-01/PPGC-Strategy_FINAL_2020-1030.pdf). NOAA's PPGC initiative is aimed at providing more accurate, reliable, and timely precipitation forecasts across timescales from weather to subseasonal-to-seasonal (S2S) to seasonal-to-decadal (S2D) through the development and application of a fully coupled Earth system prediction model.

NOAA, OAR, and CPO require applicants and awardees to support the principles of diversity

and inclusion when writing their proposals and performing their work; indeed, applicants will be evaluated, in part, on how well principles of diversity and inclusion are addressed. Diversity is defined as a collection of individual attributes that together help organizations achieve objectives. Inclusion is defined as a culture that connects each employee to the organization. Promoting diversity and inclusion improves creativity, productivity, and the vitality of the climate research community in which CPO engages.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

Climate variability and change present society with significant economic, health, safety, and security challenges. As part of the National Oceanic and Atmospheric Administration (NOAA) climate portfolio within the Office of Oceanic and Atmospheric Research (OAR) Climate Program Office (CPO), the Earth System Science and Modeling (ESSM) Division programs address these climate challenges by managing competitive research programs that support high-priority science initiatives. These investments support NOAA's mission of "Science, Service, and Stewardship" and are designed to advance our understanding of the Earth's climate system and to foster the application and use of this knowledge to improve the resilience of our Nation and its partners. The position of CPO at the intersection among NOAA's science and service missions, the climate research community, and the broader climate enterprise enables it to provide strategic vision, lead a research agenda and forge partnerships that enhance society's ability to make effective decisions. For example, the ESSM Division is actively building the global- and regional-scale understanding needed to improve predictions. The program coordinates an array of researchers from federal agencies, national labs, and universities, focusing them on the most pressing climate research necessary to advance NOAA's prediction and other services and applications. CPO also fulfills its congressionally-mandated responsibilities under the National Climate Program Act, the Global Change Research Act and its National Climate Assessment, and the National Integrated Drought Information System Act, as well as through international collaborations such as those under the World Climate Research Programme.

CPO/ESSM grant programs manage a competitive process through a Notice of Federal Funding Opportunity (NOFO) announcement to make awards supporting high-quality research conducted across the United States and internationally on the most urgent climate science questions. While each program area has its own focus, together they advance understanding of Earth's climate system through interdisciplinary, integrated scientific research, and leverage the resulting knowledge, data, and systems to enhance society's ability to plan and respond to climate variability and climate change. Toward this end, CPO also supports partnerships that build end-to-end pipelines of information (e.g., integrated information systems) flowing from scientists to decision-makers.

B. Program Priorities

This FY23 NOFO is being executed through CPO's Earth System Science and Modeling

(ESSM) Division, and two of its programs: Climate Observations and Monitoring (COM) Program, and the Climate Variability and Predictability (CVP) Program. Through this announcement, CPO is seeking applications for two individual competitions. These competitions solicit projects in response to the DISASTER RELIEF SUPPLEMENTAL APPROPRIATIONS ACT (DRSA), 2022:“Improvements to … precipitation and flood prediction, forecasting, and mitigation capabilities…” (https://www.congress.gov/bill/117th-congress/house-bill/5305/text) that align with the goals of NOAA’s Precipitation Prediction Grand Challenge Strategy 2020-2030. (https://www.noaa.gov/explainers/precipitation-prediction-grand-challenge-strategy)

Prior to submitting applications, investigators are highly encouraged to learn more about CPO/ESSM programs. (https://cpo.noaa.gov/Divisions-Programs/Earth-System-Science-and-Modeling) In addition, interactions, partnerships, or collaborations with NOAA Laboratories, Cooperative Institutes and Centers are encouraged.

The two competitions covered by this announcement are as follows:

- COM: Research to Improve Precipitation Analysis Datasets
- CVP: Identify and understand key land-atmosphere processes that influence coupled-model precipitation biases in the continental United States.

1. CPO’s Earth System Science and Modeling (ESSM) Division

The mission of CPO’s Earth System Science and Modeling (ESSM) Division is to advance scientific understanding of Earth’s atmosphere, ocean, land, and cryosphere as an integrated system and to improve NOAA’s Earth system climate models and predictions. To accomplish this mission, ESSM funds a unique and highly flexible research enterprise, including process-level studies, predictability studies of climate phenomena, testing for research-to-operation and application transitions, improving model representations of key processes and prediction technologies, and developing datasets, methodologies, tools and products for applications.

A. Climate Observations and Monitoring (COM) Program

The Climate Observation and Monitoring (COM) Program focuses on supporting work that leverages existing in-situ and remote sensing-based observations to develop value-added datasets, products, and analyses. Primary objectives are to support work that 1) provides usable and useful datasets that further enable monitoring and modeling efforts by research and operational communities; and 2) provides authoritative, long-term datasets and analyses

for assessment activities.

In this FY23 DRSA NOFO, COM is soliciting proposals for the following competition: Research to Improve Precipitation Analysis Datasets.

The goals of this competition are to further the use of observations for data assimilation and precipitation prediction. Proposals are invited that integrate precipitation process datasets (including cloud properties and precipitation) and improve current, existing precipitation analysis datasets.

Proposals should articulate how improvements and project outcomes will advance the future use of the dataset for data assimilation, model calibration, validation, and/or performance tuning to reduce the mismatch between observed and modeled precipitation.

For questions and information about this competition, please contact the competition manager: Virginia Selz (virginia.selz@noaa.gov).

B. Climate Variability and Predictability (CVP) Program

The Climate Variability and Predictability (CVP) program supports advances in the development and application of Earth system models and analyses across NOAA for the purpose of building resilience to climate impacts, predicting and projecting change from years to decades in the future, and improving our understanding of and ability to simulate the Earth system.

In this FY23 DRSA NOFO, CVP is soliciting targeted proposals for the following competition: Identify and understand key land-atmosphere processes that influence coupled-model precipitation biases in the continental United States. CVP seeks to improve understanding of physical and dynamic mechanisms over land and their associated changes in extreme weather in the continental United States (CONUS) now and in a changing climate. Through this competition, an expected outcome is to close the gap between models and observations by using existing observations in a coupled model framework to explore the following priority processes: orographic processes, processes important for land-air interactions (e.g., the land-atmosphere transition zone such as upper soil, vegetation, and atmospheric boundary layer),and other land-atmosphere processes, local and/or remote, that influence extreme precipitation events. Common phenomena that affect CONSUS events are tropical storms, extratropical cyclones, atmospheric rivers, and mesoscale convective systems (MCS).

The CVP Program is interested in a process-based approach to identifying and understanding key land-surface processes, land-atmosphere interactions that influence biases and systematic errors in the simulation of CONUS precipitation at the S2S timescales through data analysis, and global or regional modeling experiments. This includes examining how these processes impact/cause model biases and how model biases can be reduced by different approaches. Experimental approaches include but are not limited to: studies of increased model resolution in a coupled model framework, using observations to improve physical parameterizations of unresolved processes, and/or developing new knowledge or theories about processes and multiscale process interactions.

Projects that are most appropriate for the call generally fall in or near the “basic research” or “applied research” levels of technical maturity, i.e., Readiness Levels (RLs) of 1 or 2 RL during the duration of the project. (See details on the NAO 216-105B Policy on Research and Development Transitions https://www.noaa.gov/organization/administration/nao-216-105b-policy-on-research-and-development-transitions)

Collaborations and partnerships with NOAA laboratories, cooperative institutes, and centers are encouraged but not required. Additionally, the use of NOAA models (SPEAR, S-SHiELD, X-SHiELD, UFS, and others) is encouraged but not required. If appropriate, use of observations from NOAA-funded field campaigns and modeling projects is encouraged but not required.

The outcome of this competition is to identify and understand where improvements to precipitation prediction can be made. Precipitation prediction supports better forecasting and leads to mitigation of severe impacts of precipitation events. These projects will support the goal of getting NOAA to a future in which it delivers a comprehensive suite of precipitation predictions over various timescales and with high fidelity.

For questions and information about this competition, please contact both of the competition managers: Sandy Lucas (sandy.lucas@noaa.gov) and Jin Huang (jin.huang@noaa.gov).

C. Program Authority

49 U.S.C. 44720(b), 15 U.S.C. 2904, 15 U.S.C. 2931-2934

II. Award Information

A. Funding Availability

In FY23, approximately $2.3 million will be available for approximately 5 new awards

pending budget appropriations (see section I.B above). It is anticipated that most awards will be at a funding level between $125,000 and $250,000 per year with exceptions for larger awards, unless otherwise noted below. Current or previous grantees are eligible to apply for a new award that builds on, but does not replicate, activities covered in existing or previous awards. Current grantees should not apply for supplementary funding through this announcement.

Funding availability per FY23 competition is provided below.

1. COM - It is anticipated that there will be a total of $0.5M available to fund new projects. It is anticipated that awards will be at a funding level of $125K to $250K per year for one or two years. Funding of 1 or 2 projects is anticipated.
2. CVP - It is anticipated that there will be a total of $1.8M available in FY23 to fund new projects. It is anticipated that most awards will be at a funding level between $150K and $225K per year for 2 years. Funding of approximately 4 projects is anticipated. Projects will start in FY23.

B. Project/Award Period

1. COM - It is anticipated that awards will be 1 or 2 years in duration.

2. CVP - It is anticipated that awards will be 2 years in duration.

C. Type of Funding Instrument

The funding instrument for awards will be a grant. If, however, it is anticipated that NOAA will be substantially involved in the implementation of the project, a cooperative agreement may be awarded. Examples of substantial involvement may include, but are not limited to, applications for collaboration between NOAA scientists and a recipient scientist or contemplation by NOAA of detailing Federal personnel to work on proposed projects. NOAA will make decisions regarding the use of a cooperative agreement on a case-by-case basis. Funding for contractual arrangements for services and products for delivery to NOAA is not available under this announcement.

III. Eligibility Information

A. Eligible Applicants

Eligible applicants are institutions of higher education, other nonprofits, commercial organizations, international organizations, and state, local and Indian tribal governments.

Federal agencies or institutions are not eligible to receive Federal assistance under this notice. If applicants or NOAA cooperative institutes are interested in collaborating with NOAA labs/center employees, then applicants should submit their applications directly to this notice. NOAA lab/center federal employees can participate by providing in-kind support.

B. Cost Sharing or Matching Requirement

All CPO programs have no cost sharing or matching criteria.

C. Other Criteria that Affect Eligibility

None.

IV. Application and Submission Information

A. Address to Request Application Package

Application packages are at grants.gov. For applicants without Internet access, please contact the CPO Grants Manager Diane Brown by mail at NOAA Climate Program Office (R/CP1), SSMC3, Room 12734, 1315 East-West Highway, Silver Spring, MD 20910 to obtain an Application Package.

B. Content and Form of Application

1. Letter of Intent (LOI)

The purpose of the LOI process is to provide information to potential applicants on the relevance of their proposed project to the competition in advance of preparing a full application. Full applications will be encouraged only for LOIs deemed relevant. Applicants who have not been encouraged may still submit a full application. While LOIs are strongly encouraged, applicants are not required to submit them and may submit a full application even if they have not submitted a LOI.

LOI submission to the identified NOAA Competition Manager should be done by the deadline specified in Section IV.D below (COM Competition Manger: Virginia Selz (virginia.selz@noaa.gov); CVP Competition Managers Sandy Lucas (sandy.lucas@noaa.gov) and Jin Huang (jin.huang@noaa.gov)).

The LOI should provide a concise description of the proposed work and a statement regarding its relevance to the targeted competition. The LOI should be no more than two pages in length and should include the items listed below. If these items are not included or

the LOI is submitted late, the LOI may not be considered:

Identification of the competition that is being targeted in the LOI.
- Competition Name.
- A tentative project title.
- Name(s) and institution(s) of the Lead Principal Investigator(s) and other Principal Investigator(s).
- Statement of the problem.
- Brief summary of work to be completed, methodology to be used, data sets needed or to be collected.
- Approximate cost of the project.
- Relevance to the Competition that is being targeted.

A response to the LOI from the Competition Manager (e-mail or letter) will be sent to the investigator within four weeks after the LOI's due date encouraging or discouraging a full application based on its relevance to the targeted competition. It is then entirely up to the investigator whether to submit a full application.

2. Full Application

Failure to comply with these provisions will result in applications being returned without review. Full applications are limited to 35 pages, single spaced, using 12-point font type with one-inch margins on standard 8.5 by 11 inch paper. For full applications with three or more Principal Investigators, the page limit is 40 pages. The page limit includes:
- Title page
- Abstract
- Results from prior research
- Project Narrative
- Budget narrative
- Budget table
- Vitae
- Current and pending support
- Associated figures
- References
- Data/Information Sharing Plan
- Statement of Diversity and Inclusion.

The full proposal and Negotiated Indirect Cost Rate Agreement (NICRA) should be put into one electronic file. The budget table/justification should be submitted in a file labeled budget

narrative. The Federal Forms (SF424, SF424A, SF424B, CD511) and other mandated forms should be inserted in separate files when submitted and are not included in the page count.

The following forms and elements are required in each application.

(1) Title page: The title page shall identify the Principal Investigator(s) (PI) and institutional representative and clearly indicate which Competition is being addressed by name and Competition number. The title page should also include all co-PIs from Federal Institutions. If more than one investigator is listed on the title page, please identify the lead investigator. The lead PI and institutional representative should be identified by: full name, title, organization, telephone number, email, and address. For paper submissions, the lead PI and the institutional representative must sign the title page. The total amount of Federal funds being requested should be listed for each budget period. If there are several institutions submitting separate applications associated with the same project, the names of all component institutions along with their lead PI name, e-mail, and amount requested per year must also appear on the title page of all applications that anticipate being funded under the same project.

(2) Abstract: A one-page abstract must be included and should contain the project title, an introduction to the problem, rationale, and a brief summary of the work to be completed. Abstracts must identify the name of the Competition that is being targeted and must also include a paragraph describing the work's broader impacts and relevance to the Competition that is being targeted as well as NOAA's long-term climate research goals stated in section I.A. For multiple applications associated with the same project, the abstract must be identical in all applications. Failure to include this paragraph can result in the application being denied without additional review.

(3) Results from prior research: The results of each prior research project led by the Principal Investigator(s) during the last three years relevant to the proposed effort (not limited to NOAA funding only) should be summarized in brief paragraphs. Because NOAA believes it is important that data sets developed with its support should be shared with the scientific community, PIs should also indicate how and when they have made their data accessible and usable by the community in the past. This section should not exceed two pages. For multiple applications associated with the same project, this section must be identical in all applications.

(4) Project Narrative: The proposed project must be completely described, including identification of the problem, scientific objectives, proposed methodology, and relevance to the Competition to which you are submitting the proposal and to NOAA's long-term climate

research goals. Benefits of the proposed project to the general public and the scientific community should be discussed. The statement of work, including references, figures, and other visual materials, must not exceed 20 pages of text. Applications from three or more investigators may include a statement of work containing up to 25 pages of overall project description. For multiple applications associated with the same project, all applications must have an identical statement of work, including a clear statement of the roles and responsibilities of each applicant.

(5) Data/Information Sharing Plan:
Proposals submitted in response to this announcement must include a data management plan (up to 2 pages). See section VI.B Administrative and National Policy requirements below for additional information of what the plan should contain.

The Responsible NOAA Official for questions regarding this guidance and for verifying accessibility of data produced by funding recipients: Sandy Lucas, sandy.lucas@noaa.gov for CVP competition; Virginia Selz virginia.selz@noaa.gov for COM competition.

Data Accessibility: Programs require that public access to grant/contract-produced data be enabled in one of the following ways (select one):

-- Funding recipients are planning to submit data to NOAA National Centers for Environmental Information (NCEI), which will provide public access and permanent archiving. Point of Contact for NCEI is Nancy Ritchey (Nancy.Ritchey@noaa.gov). NCEI supports the creation of adequate metadata and data ingest into long term repository holdings using tools such as Send2NCEI (www.nodc.noaa.gov/s2n, for small volume, one-time only data collections) and Advanced Tracking and Resource tool for Archive Collections or ATRAC (www.ncdc.noaa.gov/atrac, for recurring and/or large volume data collections).

-- Data are to be submitted to an International Council for Science (ICSU) World Data System facility: https://www.icsu-wds.org/community/membership/regular-members)

-- An existing publicly accessible online data server at the funded institution is to be used to host these data (describe in proposal).

-- Data are to be submitted to a public data repository appropriate to this scientific domain (describe in proposal).

-- Proposal may request permission not to make data publicly accessible (proposal to explain rationale for lack of public access, and if funded approval to be obtained from Responsible NOAA Official listed above).

-- Archival of data at an established Cloud Computing facility, if cost effective and reliable

Technical recommendations:

Programs require the following data format(s), data access method(s), or other technical guidance:

-- Data must be made available in a common machine-readable non-proprietary format with appropriate metadata and clear labels and descriptors. Use of netCDF is encouraged.

-- Data should be available via public and discoverable data portals, as described above.

-- At a minimum, investigators should plan to archive and make available modeling data used in producing any figures in publications from research supported by their grants, as well as data that support conclusions reached in papers or stated publicly. Only those data which are necessary for demonstrating reproducibility of published results need be archived and made public unless otherwise required as part of the solicitation.

-- In situ observational data collected during the field campaign should be made freely available to the public either 2 years after collection and validation or at the time of publication, whichever is sooner.

-- Model data should be made available for at least 3 years after it is initially published or made otherwise publicly available.

Resources: Proposals are permitted to include the costs of data sharing and/or archiving in their budgets within solicitation specified proposal cost limit. Proposed methods and approaches should use reasonable means to minimize data management costs.

(6) Statement of Diversity and Inclusion (D&I): CPO recognizes that it has a particular and unique opportunity to support NOAA's commitment to diversity and inclusion by taking an intentional step that encourages program applicants to consider diversity and inclusion as part of their scientific projects. This action has the potential to make an impact on not only the diversity and inclusion in science at NOAA, but also beyond the agency. In this section, describe how well the proposed activity broadens the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.) including, but not limited to, how the project advances the organization or institution's commitment to diversity and advances full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM). If funded activities aligned with diversity and inclusion are being proposed, please include the description of those within the project narrative and budget justification. Examples could include ways in which the project will specifically: recruit or retain under-represented groups, collaborate with minority-serving institutions, foster an inclusive and safe environment, share data and/or information in ways that it is accessible to minority-serving institutions. Applicants are also encouraged to highlight past work in D&I and the value those experiences will add to the proposal.

(7) Budget Table and Narrative:

Budget Table: An itemized budget for all years and a total itemized budget must be included

as a separate table that breaks down the budget per object class category. Travel must be itemized to include destination, airfare, per diem, lodging, and ground travel.

For multiple applications associated with the same project, the Lead Principal Investigator should include a table that displays the total budget for all partners. All partners, including the Lead Principal Investigator and any co-PIs from Federal Institutions, should include a separate budget for their portion of the project.

Budget Narrative: A brief description of the expenses listed on the budget table and how they address the proposed work must be included. Item justifications must include salaries, equipment, publications, supplies, tuition, travel, etc. Investigators who will not be requesting funds for salaries must also be listed, indicating their estimated time of commitment. Purchases of equipment greater than $5000 must include a purchase versus lease justification.

Duplicate work with different federally-funded projects, commonly referred to as "double dipping," is not permitted. As stated in the Code of Federal Regulations, specifically Subpart E- Cost Principles,2 CFR 200.430 (i)(1)(i-vii), Standards for Documentation of Personnel Expenses, "Charges to Federal awards for salaries and wages must be based on records that accurately reflect the work performed." The regulations additionally state that the work, "Reasonably reflect the total activity for which the employee is compensated by the non-Federal entity, not exceeding 100% of compensated activities."

(8) Federal Budget Forms: Budget numbers corresponding with the descriptions contained in the statement of work and budget table must be included. In addition to including the total budget on the SF424, the application must include the total budget and budgets for years 1, 2, and 3 in separate columns in Section B on page 1 on the SF424A. (Note that this revised 424A Section B format is a NOAA requirement that is not reflected in the Instructions for the SF 424A). Note that these forms are not part of the required page limit. All budget items need to be rounded up to the nearest dollar to avoid discrepancies.

For multiple applications associated with the same project, each application requesting funding from NOAA needs to complete the federal budget forms for their specific institution.

(9) Indirect Costs: A copy of the institution’s current Indirect Cost Rate Agreement (IDCRA) must be included. The IDCRA does not, however, count as part of the required page limit. To obtain an indirect cost rate if your institution does not already have one, a grantee must submit an indirect cost proposal to its cognizant agency and negotiate an

indirect cost agreement. If an applicant has not previously (ever) established an indirect cost rate with a Federal agency they may choose to negotiate a rate with the Department of Commerce or use the de minimis indirect cost rate of 10% of MTDC (as allowable under 2C.F.R. 200.414). This document is not a part of the page limit.

(10) Vitae: Abbreviated curriculum vitae are requested with each application for PIs and Co-PIs. Reference lists should be limited to all relevant publications in the last three years with up to five other relevant papers. For multiple applications associated with the same project, each application should include identical vitae for all applications.

(11) Current and pending support: For each Principal Investigator and Co-Principal Investigator(s), submit a list of all current and pending Federal support that includes project title, supporting agency with grant number, investigator months per year, dollar value, and duration. Requested values should be listed for pending support. The list of support will be included in the page limit for the proposals.

For multiple applications associated with the same project, each application should include identical current and pending support information for all applications.

Letters of Support are not required. However they may be used to supplement information included in the Full Proposal if submitted as part of the application, they will be taken into consideration when evaluating the proposal. For example, unfunded collaborations should be documented in the body of the Full Proposal (the sections included in page count), and a Letter of Support from the unfunded collaborator could be included as a supplement. In another example, if the proposal includes key stakeholders or users, this should be documented in the Full Proposal, and a supplementary letter of support could be included to convey the value of the project to the stakeholder or user.

C. Unique Entity Identifier and System for Award Management (SAM)

Excerpt 2 CFR 200 Appendix I.D.3: Each applicant (unless the applicant is an individual or Federal awarding agency that is excepted from those requirements under 2 CFR 25.110(b) or (c), or has an exception approved by the Federal awarding agency under 2 CFR 25.110(d)) is required to: (i) Be registered in SAM before submitting its application; (ii) Provide a valid unique entity identifier (UEI) in its application; and (iii) Continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency. NOAA may not make a Federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time NOAA is ready to make a Federal award,

NOAA may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

In order to submit an application through Grants.gov, an applicant must register for a Grants.gov user ID and password. Note that this process can take between three to five business days or as long as four weeks if all steps are not completed correctly. To avoid delays, applicants are strongly encouraged to start early and not wait until the approaching application deadline before registering, logging in, reviewing the application instructions, and applying. Information about the Grants.gov registration process for organizations can be found at http://grants.gov/applicants/organization_registration.jsp.

Please note that organizations already registered with Grants.gov do not need to re-register; however, all registered organizations must keep their Grants.gov password and SAM database (which now incorporates CCR) registration up-to-date or their applications will not be accepted by Grants.gov. Note that your CCR username will not work in SAM. You must create a new SAM user account to renew or update your registration. Registration on SAM is a requirement. To obtain additional information and to verify that all required registrations are current, please visit www.sam.gov/portal/public/SAM.

If you experience a Grants.gov systems issue (technical problems or glitches with the Grants.gov website) that you believe threatens your ability to complete a submission before the application deadline, please do all of the following:

-- Print any error message received

-- Call the Grants.gov Contact Center at 1-800-518-4726 for immediate assistance

-- Contact NOAA using the contact information in section VIII. of this NOFO prior to the close of the competition

-- Ensure that you obtain a case number regarding your communications with Grants.gov

In the event of a confirmed systems issue, NOAA reserves the right to accept an application in an alternate format prior to the application deadline. Problems with an applicant organization’s computer system or equipment are not considered systems issues. Similarly, an applicant’s failure to do the following are not considered systems issues:

-- Complete the required registration

-- Ensure that a registered Authorized Organization Representative (AOR) submits the application

-- Read an email message with guidance from Grants.gov

D. Submission Dates and Times

Letters of intent (LOIs) for all competitions should be received by email by 5:00 p.m.

Eastern Time on October 31, 2022.

Full applications for all competitions must be received by 5:00 p.m. Eastern Time on January 26, 2023.

E. Intergovernmental Review

Applications under this program are not subject to Executive Order 12372, Intergovernmental Review of Federal Programs.

F. Funding Restrictions

Fees and profits are not permitted.

G. Other Submission Requirements

All applications should be submitted through grants.gov. If an applicant does not have Internet access, CPO Grants Manager Diane Brown should be contacted by mail at NOAA Climate Program Office (R/CP1), SSMC3, Room 12734, 1315 East-West Highway, Silver Spring, MD 20910 for hard copy submission instructions.

Faxed or emailed copies of applications will not be accepted.

V. Application Review Information

A. Evaluation Criteria

1. Importance/Relevance and Applicability of Application to the Program Goals (Stage 1 Weight=0%) (Stage 2 Weight=100%) (Final Weight=25%)
This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, federal, regional, state, tribal, or local activities. For the CPO grant program competitions in this NOFO, this includes importance and relevance to the program objective in Section I.A, scientific program priorities of the selected Competition(s) in Section I.B, the Statement of Diversity and Inclusion described in Section IV.B(6), the PI's record of making his/her data accessible and usable by the scientific community in the past, and the present Data/Information Sharing Plan described in Section IV.B(5) will also be considered when evaluating the importance and relevance of the application.

2. Technical/Scientific Merit (Stage 1 Weight=70%) (Stage 2 Weight=0%) (Final Weight=52.5%)
This criterion assesses whether the approach is technically sound and/or innovative, if the

methods are appropriate. The criterion also assesses whether the goals of the Competition will be realized through clear project goals and objectives (i.e. What is the intrinsic scientific value and maturity of the subject and the study proposed as they relate to the specific science priorities?)

3. Overall Qualifications of Applicants (Stage 1 Weight=20%) (Stage 2 Weight=0%) (Final Weight=15%)
This criterion assesses whether the applicant team possesses the necessary education, experience, training, facilities, and/or administrative resources to accomplish the project.

4. Project Costs (Stage 1 Weight = 10%) (Stage 2 Weight = 0%) (Final Weight =7.5%)
This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time frame, and the degree of return of investment (i.e. useful results versus proposed costs).

B. Review and Selection Process

Once a full application has been received, an administrative review will first be conducted to determine compliance with requirements and completeness of the application. The selection reviews will then take place in two stages. In Stage 1, independent peer mail reviewers and/or independent peer panel reviewers consisting of both Federal and/or non-Federal experts will evaluate applications using the three criteria described above: technical/scientific merit, overall qualifications of applicants, and project costs. Relevance will be assessed separately in Stage 2. The panel will not give consensus advice. We protect the identities of reviewers to the extent permitted by law.

During Stage 1, each reviewer will provide one score for each of three criteria: technical/scientific merit, overall qualifications of applicants, and project costs for each application. The scores from the reviewers for each application will be combined using the weighting averages to produce a single numerical score for Stage 1. Occasionally a reviewer may, due to lack of familiarity in a particular area, choose not to score a particular application. Proposals that score a 3.0 or higher (out of a possible high score of 5) in Stage 1 will proceed to Stage 2.

If only a mail peer review is conducted for stage 1, proposals that score a 3.0 or higher (out of a possible high score of 5) in Stage 1 will proceed to Stage 2.

If a mail review and a panel review are both conducted for Stage 1, the mail reviews will be provided to the Stage 1 review panel for use in its deliberations prior to providing its ratings,

but the Competition Manager will use only the numerical rank order of the peer review panel to determine the average score for each proposal. Proposals that score a 3.0 or higher (out of a possible high score of 5) in Stage 1 will proceed to Stage 2.

In Stage 2, scores for Importance/Relevance and Applicability of Application to the Program Goals will be determined by a second panel comprised of either Federal or a combination of Federal and non-Federal partners. The applications and their associated scores from Stage 1 will be provided to the Stage 2 panel. Each panel reviewer will provide a relevance score for each application that moved forward from Stage 1. The Stage 2 panel will not give consensus advice.

Mail Reviewers and Panelists will use the following standardized scoring rubric.
*5 - Excellent - Probably will fall among top 10% of proposals in the subfield; highest priority for support. This category should be used only for truly outstanding proposals.
*4 - Very Good - Probably will fall among top 1/3 of proposals in this subfield; should be supported
*3 - Good - Probably will fall among middle 1/3 of proposals in this subfield; worthy of support.
*2 - Fair - Probably will fall among lowest 1/3 of proposals in this subfield.
*1 - Poor - Proposal has serious deficiencies; should not be supported.

The Stage 1 and Stage 2 weighting of scores for the individual criteria are shown in the following table:

Criterion	Stage 1 Weight	Stage 2 Weight	Final Weight
Importance and Relevance/Applicability	0%	100%	25%
Technical/Scientific Merit	70%	0%	52.5%
Overall Qualifications of Applications	20%	0%	15%
Project Costs	10%	0%	7.5%
Final Score			
Stage Total	100%	100%	100%

To determine the final score, the scores from Stage 1 and Stage 2 will be combined, with a weighting of 75% for the Stage 1 score and 25% for the Stage 2 score, leading to the overall weightings for each criterion shown in the table above. The final score for each application will be used to determine the numerical rank order of proposals within each Competition.

The Competition Manager will recommend applications to the Selecting Official in

numerical rank order unless a recommendation out of rank order is justified based upon any of the factors listed in the following section. Should applications receive a tie score, and funding is not available for every tied application, the Competition Manager may preferentially recommend applications for funding also according to any of the factors listed in the following section. The Competition Manager will review the amounts requested for each selected application (including costs for computing and networking services) and recommend the total duration and the amount of funding, which may be less than the application and budget requested.

C. Selection Factors

The Selecting Official shall select awards in rank order unless a selection out of rank order is justified based upon any of the following factors:

- Availability of funding
- Balance/distribution of funds:
  - -- Geographically
  - -- By type of institutions
  - -- By type of partners
  - -- By research area
  - -- By project types
- Duplication of other projects funded or considered for funding by NOAA or other Federal agencies
- Program priorities and policy factors
- Applicant’s prior award performance
- Partnerships with/participation of targeted group
- Adequacy of information necessary for NOAA staff to make a NEPA determination and draft necessary documentation before recommendations for funding are made to the Grants Officer.

The Selecting Official makes final recommendations for awards to the Grants Officer who is authorized to obligate the funds.

D. Anticipated Announcement and Award Dates

Subject to the availability of funds, review of applications will occur during the 6-7 months following the full applications due date. CPO anticipates that funding decisions on applications will be made during spring 2023. Such decisions are contingent upon the final FY23 appropriation for NOAA by Congress and the final allocation of funds to CPO by NOAA. Funding for successful applicants is expected to begin during summer 2023 for most approved projects. Applications should use June 1, 2023, as the start date unless otherwise directed by the Competition Manager.

VI. Award Administration Information

A. Award Notices

The Grants Officer will provide notice to the applicant that they have received the award. Successful applicants will receive notification that the application has been recommended for funding by an official of the NOAA Climate Program Office. This notification is not an authorization to begin performance of the project. The official notification of funding, signed by a NOAA Grants Officer, is the authorizing document that allows the project to begin. Notifications will be issued to the Authorizing Official and the Principal Investigator of the project. Unsuccessful applicants will be notified that their application was not selected for recommendation.

GRANTS OFFICER SIGNATURE. Proposals submitted in response to this solicitation are not considered awards until the Grants Officer has signed the grant or cooperative agreement. Only Grants Officers can bind the Government to the expenditure of funds. The Grants Officer's digital signature constitutes an obligation of funds by the federal government and formal approval of the award.

B. Administrative and National Policy Requirements

UNIFORM ADMINISTRATIVE REQUIREMENTS, COST PRINCIPLES, AND AUDIT REQUIREMENTS. Through 2 C.F.R. § 1327.101, the Department of Commerce adopted Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, which apply to awards in this program. Refer to http://go.usa.gov/SBYh and http://go.usa.gov/SBg4.

DEPARTMENT OF COMMERCE (DOC) TERMS AND CONDITIONS. Successful applicants who accept a NOAA award under this solicitation will be bound by Department of Commerce Financial Assistance Standard Terms and Conditions. This document will be provided in the award package in NOAA's Grants Online system at http://www.ago.noaa.gov and at http://go.usa.gov/hKbj.

RESEARCH TERMS AND CONDITIONS. For awards designated on the CD-450 as Research, the Commerce Terms, and the Federal-wide Research Terms and Conditions (Research Terms) as implemented by the Department of Commerce, currently, at https://www.nsf.gov/awards/managing/rtc.jsp, both apply to the award. The Commerce Terms and the Research Terms are generally intended to harmonize with each other; however, where the Commerce Terms and the Research Terms differ in a Research award, the Research Terms prevail, unless otherwise indicated in a specific award condition.

BUREAU TERMS AND CONDITIONS. Successful applicants who accept an award under this solicitation will be bound by bureau-specific standard terms and conditions. These terms and conditions will be provided in the award package in NOAA's Grants Online system. For NOAA awards only, the Administrative Standard Award Conditions for National Oceanic and Atmospheric Administration (NOAA) Financial Assistance Awards U.S. Department of Commerce are applicable to this solicitation and may be accessed online at https://www.noaa.gov/organization/acquisition-grants/financial-assistance.

HUMAN SUBJECTS RESEARCH. For research projects involving Human Subjects, an Institutional Review Board (IRB) approval or an exemption determination will be required in accordance with DOC Financial Assistance Standard Terms and Conditions "Research Involving Human Subjects" found at https://www.commerce.gov/oam/policy/financial-assistance-policy.

DEPARTMENT OF COMMERCE PRE-AWARD NOTIFICATION REQUIREMENTS FOR GRANTS AND COOPERATIVE AGREEMENTS - The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of December 30, 2014 (79 FR 78390) are applicable to this solicitation and may be accessed online at http://www.gpo.gov/fdsys/pkg/FR-2014-12-30/pdf/2014-30297.pdf.

LIMITATION OF LIABILITY - Funding for programs listed in this notice is contingent upon the availability of continuing Congressional appropriations. Applicants are hereby given notice that funds have not yet been appropriated for the programs listed in this notice. In no event will NOAA or the Department of Commerce be responsible for proposal preparation costs. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds.

UNPAID OR DELINQUENT TAX LIABILITY. In accordance with Federal appropriations law, an authorized representative of the selected applicant(s) may be required to provide certain pre-award certifications regarding federal felony and federal criminal tax convictions, unpaid federal tax assessments, and delinquent federal tax returns.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA). NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals which are seeking NOAA federal funding opportunities. Detailed information on NOAA compliance with NEPA can be found at the

following NOAA NEPA website: http://www.nepa.noaa.gov/, including our NOAA Administrative Order 216-6 for NEPA, http://www.nepa.noaa.gov/NAO216_6.pdf, and the Council on Environmental Quality implementation regulations, ttp://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf. Consequently, as part of an applicant's package, and under their description of their program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non-indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems). In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting an environmental assessment, if NOAA determines an assessment is required. Applicants will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. Failure to do so shall be grounds for not selecting an application. In some cases if additional information is required after an application is selected, funds can be withheld by the Grants Officer under a special award condition requiring the recipient to submit additional environmental compliance information sufficient to enable NOAA to make an assessment on any impacts that a project may have on the environment.

REVIEW OF RISK - After applications are proposed for funding by the selecting official, the Grants Office will perform administration reviews. These may include assessments of the financial stability of an applicant and the quality of the applicant’s management systems, history of performance, and the applicant’s ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities. Special conditions that address any risks determined to exist may be applied. Applicants may submit comments to the Federal Awardee Performance and Integrity Information System (FAPIIS) about any information included in the system about their organization for consideration by the awarding agency.

DATA SHARING PLAN - 1. Environmental data and information collected or created under NOAA grants or cooperative agreements must be made discoverable by and accessible to the general public, in a timely fashion (typically within two years), free of charge or at no more than the cost of reproduction, unless an exemption is granted by the NOAA Program. Data should be available in at least one machine-readable format, preferably a widely-used or open-standard format, and should also be accompanied by machine-readable documentation (metadata), preferably based on widely used or international standards. 2. Proposals submitted in response to this Announcement must include a Data Management Plan of up to two pages describing how these requirements will be satisfied. Administrative and National

Policy Requirements, below for additional information on what the plan should contain. The Data Management Plan should be aligned with the Data Management Guidance provided by NOAA in the Announcement. The contents of the Data Management Plan (or absence thereof), and past performance regarding such plans, will be considered as part of proposal review. A typical plan should include descriptions of the types of environmental data and information expected to be created during the course of the project; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; methods for providing data access; approximate total volume of data to be collected; and prior experience in making such data accessible. The costs of data preparation, accessibility, or archiving may be included in the proposal budget unless otherwise stated in the Guidance. Accepted submission of data to the NOAA National Centers for Environmental Information (NCEI) is one way to satisfy data sharing requirements; however, NCEI is not obligated to accept all submissions and may charge a fee, particularly for large or unusual datasets. 3. NOAA may, at its own discretion, make publicly visible the Data Management Plan from funded proposals, or use information from the Data Management Plan to produce a formal metadata record and include that metadata in a Catalog to indicate the pending availability of new data. 4. Proposal submitters are hereby advised that the final pre-publication manuscripts of scholarly articles produced entirely or primarily with NOAA funding will be required to be submitted to NOAA Institutional Repository after acceptance, and no later than upon publication. Such manuscripts shall be made publicly available by NOAA one year after publication by the journal. More information can be found on NOAA's Data Management Procedures at:
https://nosc.noaa.gov/EDMC/documents/Data_Sharing_Directive_v3.0_remediated.pdf and at NAO 212-15 Management of Environmental Data and Information:
https://www.noaa.gov/organization/administration/nao-212-15-management-ofenvironmental-data-and-information.

INDIRECT COST RATE - If an applicant has not previously established an indirect cost rate with a Federal agency they may choose to negotiate a rate with the Department of Commerce or use the de minimis indirect cost rate of 10% of MTDC (as allowable under 2 C.F.R. §200.414). The negotiation and approval of a rate is subject to the procedures required by NOAA and the Department of Commerce Standard Terms and Conditions. The NOAA contact for indirect or facilities and administrative costs is: Lamar Revis, Grants Officer, NOAA Grants Management Division, 1325 East West Highway, 9th Floor, Silver Spring, MD 20910 lamar.revis@noaa.gov.

REVIEWS AND EVALUATION. The applicant acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance and other reports submitted by

applicants, may be used by the Department of Commerce in conducting reviews and evaluations of its financial assistance programs. For this purpose, applicant information and data may be accessed, reviewed and evaluated by Department of Commerce employees, other Federal employees, and also by Federal agents and contractors, and/or by non-Federal personnel, all of whom enter into appropriate conflict of interest and confidentiality agreements covering the use of such information. As may be provided in the terms and conditions of a specific financial assistance award, applicants are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner, and by cooperating with the Department of Commerce and external program evaluators. In accordance with §200.303(e), applicants are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained in connection with a Department of Commerce financial assistance award.

MINORITY SERVING INSTITUTIONS - The Department of Commerce/National Oceanic and Atmospheric Administration (DOC/NOAA) is strongly committed to increasing the participation of Minority Serving Institutions (MSIs), i.e., Historically Black Colleges and Universities, Hispanic-serving institutions, Tribal colleges and universities, Alaskan Native and Native Hawaiian institutions, and institutions that work in underserved communities.

FREEDOM OF INFORMATION ACT (FOIA) - Department of Commerce regulations implementing the Freedom of Information Act (FOIA), 5 U.S.C. Sec. 552, are found at 15 C.F.R. Part 4, Public Information. These regulations set forth rules for the Department regarding making requested materials, information, and records publicly available under the FOIA. Applications submitted in response to this Notice of Funding Opportunity may be subject to requests for release under the Act. In the event that an application contains information or data that the applicant deems to be confidential commercial information that should be exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as Privileged, Confidential, Commercial or Financial Information. In accordance with 15 CFR § 4.9, the Department of Commerce will protect from disclosure confidential business information contained in financial assistance applications and other documentation provided by applicants to the extent permitted by law.

PAPERWORK REDUCTION ACT – This notification involves collection-of-information requirements subject to the Paperwork Reduction Act. The use of Standard Forms 424, 424A, 424B, and SF-LLL and CD-346 has been approved by the Office of Management and Budget (OMB) under control numbers 0348-0043, 0348-0044, 0348-0040, and 0348-0046 and 0605-0001. Notwithstanding any other provision of law, no person is required to

respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid OMB control number.

Sexual Harassment, Other Forms of Harassment, or Sexual Assault:

The Climate Program Office (CPO) will not tolerate sexual harassment, other forms of harassment or sexual assault within the agency, at awardee organizations, or anywhere CPO-funded science and education are conducted. As a primary funding agency of fundamental and applied science research in the United States, CPO is committed to promoting safe, productive research and education environments for current and future scientists and engineers. CPO considers the PI and any co-PIs identified on a CPO award to be in positions of trust.

The PIs and all award personnel must comport themselves in a responsible and accountable manner during the performance of award activities whether at the grantee organization, on-line, or conducted outside the organization, such as at field sites, or facilities, or during conferences and workshops.

The many U.S. institutions of higher education and other organizations that receive CPO funds are responsible for fully investigating complaints and for compliance with federal non-discrimination laws, regulations and executive orders. In support of this position, CPO has taken steps to bolster our commitment to a safe research environment, including development and implementation of an award term and condition that requires CPO to be notified: 1) of any findings/determinations regarding the PI(s) that demonstrate a violation of awardee codes of conduct, policies, regulations or statutes relating to sexual harassment, other forms of harassment, or sexual assault; or 2) if the awardee places, or has placed, the PI(s) on administrative leave or imposes, or has imposed, an administrative action relating to a finding or investigation of a violation of awardee policies, codes of conduct, statutes or regulations relating to sexual harassment, other forms of harassment, or sexual assault.

CPO expects all research organizations to establish and maintain clear and unambiguous standards of behavior to ensure harassment-free workplaces wherever science is conducted. A community effort is essential to eliminate sexual and other forms of harassment in science and to build a scientific workspace where people can learn, grow and thrive.

C. Reporting

In accordance with 2 CFR 200.328-9 and the terms and conditions of the award, financial reports are to be submitted semiannually and performance (technical) reports are to

be submitted semiannually (every 6 months). Reports are submitted electronically through NOAA's Grants Online system.

The Federal Funding Accountability and Transparency Act, 31 U.S.C. 6101 note, includes a requirement for awardees of applicable Federal grants to report information about first-tier subawards and executive compensation under Federal assistance awards. All awardees of applicable grants and cooperative agreements are required to report to the FFATA Subaward Reporting System (FSRS) available at https://www.fsrs.gov/ on all subawards over $30,000. Refer to 2 CFR Part 170.

VII. Agency Contacts

Please visit the CPO website for further information at or contact the CPO Grants Manager, Diane Brown, by mail (see address above) or at diane.brown@noaa.gov for general NOFO questions only. For competition specific information, please contact the corresponding competition manager, as listed below.Please allow up to two weeks after receipt for a response.

Climate Observations and Monitoring program competition manager: Virginia Selz (virginia.selz@noaa.gov)

Climate Variability and Predictability program competition managers: Sandy Lucas (sandy.lucas@noaa.gov) and Jin Huang (jin.huang@noaa.gov).

VIII. Other Information

None.