

ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

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

Funding Opportunity Title: NOAA Cooperative Institute to expand Understanding of the Earth as it Relates to Atmospheric Processes and Trends, Climate Variability and Change, Stratospheric Ozone, Weather Prediction, Air Quality, Geodynamics, Space Weather and the Water Cycle

Announcement Type: Initial

Funding Opportunity Number: NOAA-OAR-CIPO-2012-2003286

Catalog of Federal Domestic Assistance (CFDA) Number: 11.432, NOAA Cooperative Institutes

Dates: Applications must be received by OAR no later than June 1, 2012, 5:00 p.m. EDT. For applications submitted via Grants.gov, a date and time receipt indication will form the basis for determining timeliness. For those applicants not having access to the Internet, one signed original and two hard copy applications must be received by OAR at the following address: NOAA/OAR, Attn: Phillip Hoffman, 1315 East West Highway, Room 11342, Silver Spring, Maryland 20910. Use of U.S. mail or another delivery service must be documented with a receipt. (Note that late-arriving hard copy applications provided to a delivery service on or before 5:00 p.m. EDT on the closing date for applications will be accepted for review if the applicant can document that the applications was provided to the guaranteed delivery service by the specified closing date and time and if the applications is received by OAR no later than 5:00 p.m., EDT, two business days following the closing date.) No facsimile or electronic mail applications will be accepted. Applications submitted after 5:00 p.m., EDT, June 1, 2012 will not be reviewed or considered for funding.

Funding Opportunity Description: The NOAA Office of Oceanic and Atmospheric Research (OAR) invites applications for the establishment of a Cooperative Institute (CI) to help meet NOAAs strategic goals in the areas of Climate Adaptation and Mitigation and Weather Ready Nation, as well as the underpinning Science & Technology and NOAA Engagement enterprise objectives. The proposed CI will collaborate with NOAA scientists to improve understanding of climate variability and change, stratospheric ozone, weather, and space weather processes and impacts; improve air quality and weather forecasts and climate prediction; develop advanced observation and modeling techniques to aid in research, forecasts and predictions; advance understanding and usefulness of current and cutting-edge information technology systems; develop and implement a paleoclimate research and modeling capability; and enhance

environmental literacy to improve the public's capability for making scientifically-informed environmental decisions. The CI will be established at a research institution not only having outstanding graduate degree programs in NOAA-related sciences, but also located within a daily commuting distance to the NOAA's Earth System Research Laboratory (ESRL) facilities in Boulder, Colorado. The CI will provide significant coordination of resources among all non-governmental partners and will promote the involvement of students and post-doctoral scientists in NOAA-funded research. If the CI is comprised of multiple supporting academic institutions, only the lead institution applying for the award and where the CI will be established must satisfy the daily commuting distance requirement.

CIs conduct research under approved scientific research themes and Tasks (additional tasks may be proposed by the CI):

- i. Task I. Task I activities are related to the management of the CI, as well as general education and outreach activities. This task also includes support of postdoctoral and visiting scientists conducting research that is approved by the CI Director in consultation with NOAA, and is relevant to NOAA and the CI's mission goals.
- ii. Task II. Task II activities usually involve on-going direct collaboration with NOAA scientists. This collaboration typically is fostered by the collocation of federal and CI employees.
- iii. Task III. Task III activities require minimal collaboration with NOAA scientists and may include research funded by other NOAA competitive grant programs.

Description of the activities comprising Tasks I - III may not be altered without specific written approval of the OAR Program Director. Applications must address these tasks as drafted.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

The CI will support the following five objectives identified in the NOAA Next Generation Strategic Plan: (1) Climate Adaption and Mitigation, (2) Weather-Ready Nation, (3) Resilient Coastal Communities and Economies, (4) Science and Technology Enterprise, and (5) NOAA Engagement Enterprise.

These Strategic Objectives will be expressed through NOAA-funded research addressing the following nine (9) Cooperative Institute Themes:

I. Air Quality in a Changing Climate

Air quality and climate change are inexorably linked. Anticipated changes in climate will affect our ability to manage future air quality in ways that are neither well quantified nor understood. Conversely, many of the emission sources that are managed to improve air quality influence climate change. The National Academy of Sciences panels have recommended that climate-air quality interactions be studied so that the Nation can simultaneously optimize its approaches to both of these issues. Without careful consideration, it is possible that activities to mitigate climate change would worsen air quality or vice versa.

Research conducted under this theme focuses on understanding the processes that influence climate and air quality and improving NOAA's air quality forecasting capability on local, regional, and global scales. It includes observations to measure the variables that control atmospheric lifetimes, atmospheric transformation and transport, and boundary layer processes. Laboratory measurements of fundamental parameters and development of new measurement capabilities are necessary, as are field observations of the chemical and physical processes that contribute to air quality. NOAA and the CI will thus, provide not only the scientific understanding and tools required for evaluating management options, but also information on its implications for decision-making.

II. Climate Forcing, Feedbacks, and Analysis

Human activities affect the atmospheric abundances of greenhouse gases (GHGs) and aerosols, which in turn drive changes in climate. GHGs, mainly CO₂, CH₄, tropospheric ozone, N₂O, and chlorofluorocarbons (CFCs), alter outgoing radiation while aerosols, such as sulfate and black carbon, directly absorb and scatter incoming solar radiation and indirectly influence Earth's radiation balance through their effects on clouds. Atmospheric water vapor, which increases with rising surface temperature, is a powerful greenhouse gas

and influences cloud formation, making it a major feedback to climate forcing. This result, and other climate feedbacks, such as methane release from warming wetlands or thawing permafrost and changes in atmospheric composition, are critical components of climate change and variability, and must be accounted for in any effort to understand the influences of atmospheric composition on climate. Understanding climate-forcing agents requires knowledge not only of the contribution of individual forcing agents, but also of the dynamics of their sources and sinks. Both long-term monitoring and short-term intensive campaigns are necessary to understand the behavior of these substances in the atmosphere and to evaluate their influence on the climate system. Space-based earth imagery data and products provide additional synoptic information regarding sources and sinks of various forcing functions such as the global gas flaring, population shifts, and the increase in impervious surface areas. The World Data Center for paleoclimatology provides time series of climate forcing (e.g., CO₂ from ice cores) and response that complement monitoring and field studies. Paleoclimate data are also useful in understanding past trends and abrupt changes to climate. Laboratory and field studies will be conducted to understand and quantify the chemical and physical processes that contribute to the formation and transformation of climate forcing agents and their separate roles in the climate system. Finally, evaluations of these data with models, assimilation, and analyses of model results allow NOAA scientists and their partners to understand the influence of climate change on sources and sinks of GHGs and aerosols, project future trends in climate, assess emission inventories, and provide information to decision-makers developing or implementing climate-mitigation strategies.

III. Earth System Dynamics, Variability and Change

Research under this theme will advance understanding of physical processes that produce variability and change in the Earth system, including the effects of interactions among system components (atmosphere, ocean, land surface, cryosphere and biosphere). A particular emphasis will be on observing, diagnosing and assessing the predictability of phenomena spanning weather and climate time and space scales. Work under this theme will include research necessary to advance understanding of oceanic and atmospheric dynamics and internal feedbacks and teleconnections between the tropics, mid-latitudes, and Polar Regions which affect short and long-term climate variability and change. It will entail in-depth investigations into Earth system variability, trend analysis, and dynamics using traditional and novel observation techniques, characterization of systematic relationships from observations and process understanding, and advanced modeling techniques. Long time series of variability and change provided by paleoclimate data such as ice cores and tree rings, offer insights to Earth system dynamics under boundary conditions and climate forcing substantially different from the present. Other key elements of this theme are effects of climate variability and change on the water cycle and on the occurrence of extreme weather and climate events, which address overarching societal challenges that are central to NOAA's mission. This effort will require research to identify key deficiencies in coupled

modeling systems, improve the characterization of physical processes in these models and advance understanding of Earth system processes and phenomena. To this end, NOAA supports an array of ground- and ship-based observing systems deployed in the Polar Regions, at sea, and across the U.S. In addition, NOAA maintains a climate diagnostics capability to develop and provide a suite of products for research and applications, including development of a historical reanalysis using only global surface pressure observations that now extends back into the 19th century.

IV. Management and Exploitation of Geophysical Data

Research to be conducted under this theme will involve traditional and novel approaches to documenting, displaying, integrating, preserving, archiving, and distributing large amounts of geophysical and environmental data and utilizing standard formats, documentation, and services whenever possible. It will also focus on the analysis of a wide range of data-sets including the U.S. Exclusive Economic Zone (EEZ) bathymetry, precise geodetic measurements, and world-wide geo-magnetic data. Work to improve existing, and create new products from these data will be required. This research will improve understanding of our environment by collecting, organizing, and exploiting geophysical datasets.

The NOAA Observing System Architecture (NOSA) has provided and continues to provide prodigious amounts of geophysical data to serve the needs of the operational and research communities. Space environmental data, including solar observations, obtained from NOAA's geostationary and polar satellite systems as well as space-based earth imagery available from the U.S. Air Force must be properly managed for the Nation. Other datasets include coastal bathymetry, precise geodetic measurements, and world-wide geomagnetic, solar and ionospheric measurements available from NOAA and non-NOAA sources. Future datasets include interplanetary measurements from deep-space platforms, total solar irradiance observations from space, and atmospheric/ionospheric profiles derived from the Global Positioning System (GPS) and other Global Navigation Satellite Systems. Some of these datasets directly support National objectives for determining the Extended Continental Shelf (ECF) which is vitally important to U.S. commercial interests. Other environmental datasets are used in the development of strategies for disaster mitigation and recovery from tsunamis, hurricanes, earthquakes, solar flares and geomagnetic storms. In all cases, research is needed to improve the quality and utility of these highly-relevant datasets and their derived information. Research is also required to create higher-level products and modern data-access systems that improve the utility and accessibility, respectively, of NOAA's environmental data. All environmental data and derived products must be managed in accordance with NOAA Administrative Order 212-15, "Management of Environmental and Geospatial Data and Information". So too, decisions regarding the acquisition of new datasets that may contribute to NOAA's overall environmental mission require careful

consideration using guidelines provided, for example, by the NOAA Procedure for Scientific Records Appraisal and Archive Approval. Such decisions rely on the sound judgment of a scientifically-proficient staff familiar with the needs of NOAA's operational and research constituents. In summary, the research conducted within this theme will improve NOAA's understanding of our environment by collecting, organizing, and exploiting geophysical datasets.

V. Regional Science and Applications

The impacts of climate variability and change are felt most strongly at regional scales, whether through retreating Arctic sea ice and melting permafrost, heat and cold waves, floods, or persistent droughts. Specific needs are to 1) Enhance measurement, analysis, and understanding of physical processes of the coupled atmosphere-ocean-land-ice-snow system that modulate extreme events on regional, national, and global scales, 2) Advance observations, analysis, and understanding of local changes in polar regions and assessing the role of the polar regions in the global climate system, 3) Advance observing system science, demonstration, and transition of research advances to operations through regional test-beds that will lead to improved forecasts and warnings of extreme precipitation events and flooding, 4) Identify the role of key phenomena and processes in the weather-climate system producing extreme precipitation events as well as severe and prolonged droughts, 5) Promote the development of decision support tools for water resource management and validation data for weather and climate models in collaboration with programs such as the Western Water Assessment (WWA), Hydrometeorology Testbed (HMT) and National Integrated Drought Information System (NIDIS), and 6) Develop the ability to explain the origins of weather and climate extremes that typically occur at regional scales. Another major scientific challenge is improving observations and understanding the role of the atmospheric boundary layer, which mediates the exchange of heat, momentum, moisture, and chemical constituents, including CO₂ and other greenhouse gases, between the Earth's surface (ocean, land, ice and snow) and the atmosphere. Understanding boundary layer processes at a fundamental level, using observations, analysis and modeling, is crucial to improving predictions of conditions at the Earth's surface, as well as deriving information from regional paleoclimate proxy data. This research will focus on improving observations, analysis, and representation of key exchange processes that must be included in Earth system models. It will include analysis of a broad range of phenomena such as those that affect the CO₂ budget, wind-driven upwelling in the ocean affecting marine ecosystems, terrestrial ecosystem responses and emissions due to changed temperature and moisture regimes, feedbacks to the surface energy budget due to changed land use or cover (e.g. vegetation, snow, ice), hurricane intensification, water vapor budget in atmospheric rivers, forecasting of renewable energy resources, and changes in the energy balance in the Arctic that affect sea ice formation and permafrost melting. Results will be used to improve understanding of

biogeochemical cycles and to better represent these processes in coupled climate and Earth system models.

VI. Scientific Outreach and Education

Scientific outreach activities should address programs both relevant to NOAA as well as all societal benefit areas. To improve environmental literacy, the NOAA Education Council has recognized the importance of new technologies for learning. Consequently NOAA has made investments in the development of exhibits featuring spherical display systems showing Earth system science and developing science modules for these display systems. The most prominent of these systems is Science On a Sphere (SOS) which continues to evolve with more enhancements and interactive capabilities to promote learning at all levels. NOAA also has invested in immersive technologies including games and simulations in web-enabled virtual worlds to ensure the broad reach and continued relevancy of NOAA's educational message in promoting environmental science education and to enhance public awareness and understanding of Earth's environment. Immersive technologies enable users to interact with representations of scientific phenomena that are otherwise difficult to comprehend due to their different scales in both space and timeframe. This theme also includes continued ESRL leadership in NOAA's Education Partnership Program activities, involvement in university education through graduate student fellowship programs, and active participation in postdoctoral and visiting scientist programs.

VII. Space Weather Understanding and Prediction

Activities under this theme will concentrate on research in observations, physical processes, modeling, model verification, numerical weather prediction, and product generation required to better specify and forecast space weather. This will also include work necessary to improve understanding of the impacts of space weather on technologies and society. Outcomes envisioned are better information for the reduced loss of life and property from severe space weather events, improved transportation efficiency and safety, improved reliability of critical infrastructures such as the electric power distribution system, economic benefit through forecasts specifically tailored to key U.S. industries, and improved support to emergency managers.

VIII. Stratospheric Processes and Trends

Stratospheric ozone depletion due to human-emitted chlorine- and bromine-containing chemicals is a global environmental change issue that society has been making serious efforts to address. NOAA research has contributed substantially to the scientific basis for national and international decisions to protect the stratospheric ozone layer, namely, the U.S. Clean Air Act and the United Nations Montreal Protocol on Substances that Deplete the Ozone Layer. Research conducted by NOAA includes long-term monitoring of the atmospheric burden of ozone and ozone-depleting gases, participation in periodic field

campaigns, modeling of ozone behavior in the stratosphere, and vetting of potential new substitutes for ozone-depleting compounds. Over the last decade it has become clear that there are strong linkages between stratospheric processes and climate change e.g., climate change affects ozone layer recovery, most ozone-depleting substances are also potent greenhouse gases, and stratospheric changes influence surface climate. NOAA has been at the forefront in providing science-based information by contributing leadership, data, and analyses for national and international scientific assessments of the stratospheric ozone layer since 1989; it also provides yearly updates of the Ozone-Depleting Gas Index, an indicator of how well society is addressing this issue.

IX. Systems and Prediction Models Development

Four major activities comprise this systems theme - observing, modeling/data assimilation, advanced computing, and information systems. At the heart of better understanding the Earth system are reliable observations of critical processes that range from watershed to global scales and from minutes to years. Research is needed to assess the value of information provided by new and current observing systems, both in the context of operational weather forecasting as well as numerical weather and climate prediction. The ESRL produces global and regional modeling and data assimilation systems coupling atmospheric, ocean, chemistry, land-use, and other earth system components supporting NOAA's broad weather warning and forecast mission as well as for other applications. Research is needed to further develop and improve ensemble-based, probabilistic weather, air quality, and intra-seasonal climate data assimilation and prediction models. Underlying this activity is the requirement for advanced high-performance computer system architectures to handle the enormous computational demands of environmental models, as well as exploration of emerging technologies necessary to meet future demands for fault-tolerance, performance portability, and interoperable modeling frameworks. The final activity under this theme is the development of impact-based, environmental information systems to support commerce and other societal needs in coordination with the National Weather Service and other NOAA stakeholders. Common to all four systems is the strong desire to do research and development in such a manner that it enhances the ESRL mission priority to transfer research developments to operations and applications in order to address gaps identified by NOAA's stakeholders. The formalized transition of validated models, verification and information systems, data analysis tools, information products, and observing systems into operational use by public and private sector forecasters and decision makers for the protection of life and property is at the heart of NOAA science and technology activities. Supporting this activity is participation in research test-beds for providing the infrastructural and testing bridge between research and operations.

B. Program Priorities

The proposed CI should provide the flexibility needed to work on multi-disciplinary research in collaboration primarily with NOAA scientists. NOAA requires broad and substantial scientific expertise in the following disciplines and focus areas: data assimilation; coupled-ocean atmosphere and atmosphere-land surface modeling, analysis, and reanalysis; parameterization, modeling, and assimilation of snow cover and sea ice; long term measurement and calibration protocols; social sciences; arctic process modeling; carbon cycle modeling; intermountain west focus; cloud, aerosol, and precipitation processes; hydrology; water management; tropical dynamics; air-sea exchange; observing systems ? theory, design, construction, and deployment (land based, marine, and airborne); algorithm development; data management (collection, quality control, communication, archiving); data analysis to include signal processing; high performance computing systems and innovative techniques; forecast and prediction model standardization; satellite data interpretation; geophysics; geographic information systems (GIS); coastal geomorphology; information technology; data management, distribution and access systems; creative and innovative use, reuse, and cross-use of data; space weather models and the coupling of tropospheric weather models; solar, heliospheric, magnetospheric, and ionospheric modeling; modeling space weather impacts on radio navigation and communication; and assessments of current and future states of the climate system that identify potential impacts and inform science, service, and stewardship decisions.

The CI is expected to promote undergraduate, graduate, and postdoctoral involvement in research projects in order to train the next generation of scientists and NOAA employees. To strengthen the collaborations between NOAA and the CI, many of these students and post-doctoral scientists should be located close enough to allow them to work with NOAA scientists in Boulder, Colorado at least weekly. The CI should provide substantial support for graduate and undergraduate students and post-doctoral scientists that will provide a "hands-on" opportunity for the development of a wide range of expertise. NOAA can capitalize on this expertise, as CI employees and students will work with NOAA scientists to conduct research that complements NOAA's mission needs. In order to sustain strong interactions between NOAA scientists and the CI, NOAA may provide office space in the NOAA facility for CI personnel who are working with NOAA scientists. Other CI employees should be within daily commuting distance of NOAA facilities in Boulder, Colorado. On Rare occasions, CI employees may need to operate government-owned vehicles in conjunction with official business in NOAA's interest. In order to do so, the CI must satisfy Department of Commerce requirements regarding licensing and liability. A full-time single point of contact CI administrator working on-site at the NOAA facility will be required.

The CI must also have the ability to assist NOAA with effectively communicating the results of research and associated social and economic impacts to decision-makers and the

public. The CI must develop strong relationships with other NOAA CIs working in related disciplines, as well as establishing new engagements as required. Since it is important to maximize utilization of the research performed and observations made, it is essential that the CI maintains not only a high level of scientific training within its staff, but also purposeful engagement across all sectors through education training and outreach activities.

C. Program Authority

Authorities: 15 U.S.C. 313, 15 U.S.C. 1540; 15 U.S.C. 2901 et seq., 118 STAT. 71 (January 23, 2004), 16 U.S.C. 753a, 33 U.S.C. 883d, 33 U.S.C. 1442, 49 U.S.C. 44720 (b).

II. Award Information

A. Funding Availability

All funding is contingent upon the availability of appropriations. NOAA anticipates that up to \$32M may be available annually for the CI based on Congressional Appropriations. Of that amount, up to \$750 K will be available per year for Task 1. The final amount of funding available for Task I will be determined during the negotiation phase of the award based on availability of funding. The actual annual funding that the CI receives may be less than the anticipated amount and will depend on the actual projects that are approved by NOAA after the main CI award begins, the availability of funding, the quality of the research, the satisfactory progress in achieving the stated goals described in project applications, and continued relevance to program objectives.

B. Project/Award Period

October 1, 2012 through September 30, 2017

The Cooperative Institute may be non-competitively renewed for an additional 5 years subject to the outcome of a review of Science carried out in its fourth year (FY 2016) by the NOAA Science Advisory Board, as well as an administrative review completed at the same time by the sponsoring NOAA Line Office (NOAA Oceanic and Atmospheric Research (OAR)). Guidelines and policies on the renewal process may be found on the Cooperative Institute Program Web site at: <http://www.nrc.noaa.gov/ci/policy/establishment.html>

C. Type of Funding Instrument

Applications selected for funding will be funded through a cooperative agreement depending upon the amount of collaboration, participation, or involvement by NOAA in the management of the project. Examples of substantial involvement may include but are not limited to, applications for collaboration between NOAA scientists and a recipient scientist. Funding for contractual arrangements for services or products for delivery to NOAA is not available under this notice. If the CI is comprised of multiple supporting academic

institutions, NOAA will issue only one award to the lead institution that applied for the award and where the CI will be established, in accordance with the daily commuting distance requirement.

III. Eligibility Information

A. Eligible Applicants

Eligibility is limited to public and private non-profit universities, colleges and research institutions that offer accredited graduate level degree-granting programs in NOAA-related sciences and that are within a daily commuting distance to the NOAA facilities in Boulder, Colorado.

B. Cost Sharing or Matching Requirement

To stress the collaborative nature and investment of a CI by both NOAA and the research institution, cost sharing is required. There is no minimum cost sharing requirement; however, the amount of cost sharing will be considered when determining the level of the CI's commitment under NOAA's standard evaluation criteria for overall qualifications of applicants. Acceptable cost-sharing applications include, but are not limited to, offering a reduced indirect cost rate against activities in one or more Tasks, waiver of any indirect costs assessed by the awardee on subawards, waiver of indirect costs assessed against base funds and/or Task I activities, waiver or reduction of any costs associated with the use of facilities at the CI, and full or partial salary funding for the CI director, administrative staff, graduate students, visiting scientists, or postdoctoral scientists.

C. Other Criteria that Affect Eligibility

The general evaluation criteria and selection factors that apply to this funding opportunity are set forth below.

IV. Application and Submission Information

A. Address to Request Application Package

The standard application package is available at <http://www.grants.gov>. For applicants without Internet access, an application package may be secured by contacting Philip Hoffman, 1315 East West Highway, Room 11342, Silver Spring, Maryland 20910; telephone (301) 734-1090.

B. Content and Form of Application

Applications must adhere to the provisions under "Applications" and the requirements under "Required Elements" in this section by the deadline of [60 days after RFA publication date].

i. Applications

a. Applications must include elements requested on the Grants.gov portal. If a hard copy application is submitted, NOAA requests that the original and two unbound copies of the application be included.

b. Applications, electronic or paper, should be no more than 75 pages (numbered) in length, excluding budget, investigators vitae, and all appendices. Federally mandated forms are not included within the page count. Facsimile transmissions and electronic mail submission of full applications will not be accepted.

ii. Required Elements

Failure to include the following elements will result in the application being returned to the submitter without review:

a. Signed title page. The title page should be signed (electronically or on paper) by the principal investigators (PIs) and the institutional representative and should clearly indicate which project area is being addressed. The PIs and institutional representative should be identified by full name, title, organization, telephone number, and address. The total amount of Federal funds being requested should be listed for the award period.

b. Abstract: An abstract must be included and should contain a brief description of the CI, research themes, and proposed activities. The abstract should appear on a separate page, headed with the application title, institution's investigators, total proposed cost, and budget period.

c. Results from prior research. The results of related projects supported by NOAA and other agencies should be described, including their relation to the currently proposed work. Reference to each prior research award should include the title, agency, award number, PIs, period of award, and total award. The section should be a brief summary and should not exceed two pages.

d. Project Description. The information provided in this section will be used to evaluate the application according to NOAA's standard evaluation criteria described in Section V. The project description includes several sections: (1) a description of the goals for the CI, (2) a description of the three research themes, (3) a description of the graduate degree program

and other education and outreach activities, (4) a business plan, and(5) proposed performance measures for the five-year award.

The Goals Section should clearly describe the mission and vision of the CI, and what the CI expects to accomplish during the award.

The Theme Section should include information that will help NOAA determine the quality of the CI's capabilities and the expertise at the CI needed to conduct outstanding research in each of the nine scientific themes described in Section I.A. This Section also includes project descriptions of research projects that will or could be conducted by the CI under each theme (or combination of themes), if sufficient funding during the five-year award is provided.

The Education Section should describe the NOAA-related degrees programs that are offered at the CI's institutions, including terminal degrees in these programs. This Section should also describe how the CI will integrate students and post-docs into the research projects at the CI.

The Business Plan should be well-developed and include details regarding fiscal and human resource management, as well as strategic planning and accountability. It must describe the organizational structure of the CI, how it will operate, the responsibilities of the participants from multiple institutions, and how the CI will use the Executive Council and Council of Fellows described in the CI Interim Handbook (available at <http://www.nrc.noaa.gov/ci>). The Business Plan must describe how the CI chooses projects, reviews its progress, as well as how the CI will support enhanced communication and collaborations with NOAA.

The Performance Measures Section must include proposed measures to be used by the CI to gage, quantify, and/or evaluate progress on projects and the overall performance of the CI. After the award is made, NOAA will work with the CI to finalize a set of performance measures that are acceptable to the CI and NOAA.

Immediately after the CI award has been established, the CI must consult with the OAR CI Program Manager and produce an annual research plan that provides specific information about the research projects described in the Themes Section that will be accomplished during the first year. The plan will be developed after consultations with NOAA programs that will provide project funding to the CI. This plan must state the goals and objectives of each project, along with a description of the research that the CI expects to accomplish and a detailed budget for these projects. CI funding for the projects described in this plan will be released upon NOAA's approval of the plan. Funding for subsequent years of the award will require additional annual plans.

e. Budget. Applicants must submit a Standard Form 424 "Application for Federal Assistance," including a detailed budget using the Standard Form 424A, "Budget Information--Non-Construction Programs." These and other forms are provided in the Grants.gov application package. The application must include total and annual budgets corresponding to the descriptions provided in the project description. Annual and total budgets should be stratified by Task and Institution, particularly if the CI has proposed a reduced indirect cost rate for certain Tasks. Beyond the first year budget (which is associated with the activities described in the annual science plan), NOAA uses the application budgets in years 2-5 to establish a funding limit provided by NOAA during the entire award. Funding for years 2-5 will be provided only after approval by the NOAA grants officer of an annual science plan or any other application submitted to NOAA that includes a detailed budget. For this CI, applications should provide an annual budget not to exceed \$32,000,000 in years 1-5. While this level of funding is not guaranteed, this amount will allow for the possibility of funding for projects that were not originally planned for the CI. A budget justification should include information described in the budget guidelines provided in the Grants.gov application package.

f. Vitae. Abbreviated curriculum vitae are sought with each application. Reference lists should be limited to all publications in the last 3 years with up to five other relevant papers.

g. Current and pending support. For each investigator, submit a list which includes project title, supporting agency with grant number, investigator months, dollar value, and duration. Requested values should be listed for pending support.

C. Submission Dates and Times

Applications must be received by OAR no later than June 1, 2012, 5:00 p.m. EDT. For applications submitted via Grants.gov, a date and time receipt indication will form the basis for determining timeliness. For those applicants not having access to the Internet, one signed original and two hard copy applications must be received by OAR at the following address: NOAA/OAR, Attn: Phillip Hoffman, 1315 East West Highway, Room 11342, Silver Spring, Maryland 20910. Use of U.S. mail or another delivery service must be documented with a receipt. (Note that late-arriving hard copy applications provided to a delivery service on or before 5:00 p.m. EDT on the closing date for applications will be accepted for review if the applicant can document that the applications was provided to the guaranteed delivery service by the specified closing date and time and if the applications is received by OAR no later than 5:00 p.m., EDT, two business days following the closing date.) No facsimile or electronic mail applications will be accepted. Applications submitted after 5:00 p.m., EDT, June 1, 2012 will not be reviewed or considered for funding.

D. Intergovernmental Review

Applications under this program from state or local governments are subject to the provisions of Executive Order 12372, "Intergovernmental Review of Federal Programs." Any applicant submitting an application for funding is required to complete item 16 on the SF-424 regarding clearance by the State Single Point of Contact (SPOC) established as a result of EO 12372. To find out about and comply with a State's process under this Executive Order, the names, addresses and phone numbers of participating SPOC's are listed in the Office Management and Budget's home page at www.whitehouse.gov/omb/grants/spoc.html.

E. Funding Restrictions

Representation by Corporations Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under Any Federal Law

(1) In accordance with Sections 543 and 544 of Public Law 112-55 Commerce, Justice, Science, and Related Agencies Appropriations Act 2012, Title V (General Provisions) none of the funds made available by that Act may be used to enter into a cooperative agreement with or make a grant to any corporation that-

(a) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, unless the agency has considered suspension or debarment of the corporation and made a determination that this further action is not necessary to protect the interests of the Government.

(b) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, unless the agency has considered suspension or debarment of the corporation and made a determination that this further action is not necessary to protect the interests of the Government.

(2) The Applicant represents that-

(a) It is is not a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

(b) It is is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreements with the authority responsible for collecting the tax liability.

Funding for this program is contingent upon congressional appropriations. In no event will NOAA or the Department of Commerce be responsible for application preparation costs

if these programs fail to receive funding or are cancelled because of other agency priorities. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds.

F. Other Submission Requirements

Universal Identifier - Applicants should be aware that they are required to provide a Dun and Bradstreet Data Universal Numbering System (DUNS) number during the application process. See the October 30, 2002 Federal Register, Vol. 67, No. 210, pp. 66177-66178 for additional information. Organizations can receive a DUNS number at no cost by calling the dedicated toll-free DUNS Number request line at 1(-866)- 705-5711 or via the internet (<http://www.dunandbradstreet.com>).

V. Application Review Information

A. Evaluation Criteria

Applications will be evaluated using the standard NOAA evaluation criteria. Various questions under each criterion are provided to ensure that the applicant includes information that NOAA will consider important during the evaluation, in addition to any other information provided by the applicant.

1) Importance and/or relevance and applicability of proposed project to the program goals (25 percent): This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, regional, state, or local activities.

* Does the application include research goals and projects that address the critical issues identified in NOAA's 5-year Research Plan, NOAA's Strategic Plan, and the priorities described in the program priorities (see Section I.B.)?

* Is there a demonstrated commitment (in terms of resources and facilities) to enhance existing NOAA and CI resources to foster a long-term collaborative research environment/culture?

* Is there a strong education program with established graduate degree programs in NOAA-related sciences that also encourages student participation in NOAA-related research studies.

2) Technical/scientific merit (30 percent): This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives.

* Does the project description include a summary of clearly stated goals to be achieved during the five year period that reflect NOAA's strategic plan and goals?

* Does the CI involve partnerships with other universities or research institutions, including Minority Serving Institutions and universities that can contribute to the proposed activities of the CI?

3) Overall qualifications of applicants (30 percent): This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project.

* If the institution(s) and/or principal investigators have received current or recent NOAA funding, is there a demonstrated record of outstanding performance working with NOAA and/or NOAA scientists on research projects?

* Is there nationally and/or internationally recognized expertise within the appropriate disciplines needed to conduct the collaborative/interdisciplinary research described in the application?

* Is there a well-developed business plan that includes fiscal and human resource management, as well as strategic planning and accountability?

* Are there any unique capabilities in a mission-critical area of research for NOAA?

* Has the applicant shown a substantial investment to the NOAA partnership, as demonstrated by the amount of the cost sharing contribution?

4) Project costs (5 percent): The budget is evaluated to determine if it is realistic and commensurate with the project needs and time-frame.

5) Outreach and education (10 percent): NOAA assesses whether this project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources.

B. Review and Selection Process

An initial administrative review/screening is conducted to determine compliance with requirements/completeness. All applications will be evaluated and individually ranked in accordance with the assigned weights of the above-listed evaluation criteria by an independent peer review panel. At least three experts, who may be or will be used in this process. If experts participate in the review process, each expert will submit an individual review and there will be no consensus opinion. The merit reviewers' ratings are used to produce a rank order of the applications. The Selecting Official selects applications after considering the peer reviews and selection factors listed below. In making the final selections, the Selecting Official will award in rank order unless the application is justified to be selected out of rank order based upon one or more of the selection factors. The Selecting

Official makes the final award recommendation to the Grants Officer authorized to obligate funds.

C. Selection Factors

The merit review ratings shall provide a rank order to the Selecting Official for final funding recommendations. The Selecting Official shall award in the rank order unless the application is justified to be selected out of rank order based upon one or more of the following factors:

1. Availability of funding

2. Balance/distribution of funds

a) Geographically

b) By type of institutions

c) By type of partners

d) By research areas

e) By project types

3. Whether this project duplicates other projects funded or considered for funding by NOAA or other agencies.

4. Program priorities and policy factors

5. Applicant's prior award performance

6. Partnerships and/or participation of targeted groups

7. Adequacy of information necessary for NOAA staff to make a National Environmental Policy Act (NEPA) determination and draft necessary documentation before recommendations for funding are made to the Grants Officer.

D. Anticipated Announcement and Award Dates

Review of the applications will occur within 30 days of the close of the announcement. October 1, 2012 should be used as the proposed start date on applications. The Cooperative Institute will be announced and awarded in a manner consistent with established NOAA Grants announcement and award procedures and regulations. Notification of the award and announcement of award dates will occur after NOAA Grants Management Division approval of the selectee.

VI. Award Administration Information

A. Award Notices

Successful applicants will receive notification that the application has been recommended for funding to the NOAA Grants Management Division. This notification is not an authorization to begin performance of the project. Official notification of funding, signed by the NOAA Grants Officer, is the authorizing document that allows the project to begin. Notification will be issued to the Authorizing Official and the Principle Investigator of the project electronically via Grants Online or in hard copy. Unsuccessful applicants will be notified that their proposal was not selected for recommendation. Those applications that are not selected for funding will be destroyed.

To enable the use of a universal identifier and to enhance the quality of information available to the public as required by the Federal Funding Accountability and Transparency Act of 2006, to the extent applicable, any applications awarded in response to this announcement will be required to use the Central Contractor Registration and Dun and Bradstreet Universal Numbering System and be subject to reporting requirements, as identified in OMB guidance published at 2 CFR Parts 25, 170 (2010),

http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr25_main_02.tpl

http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title02/2cfr170_main_02.tpl

B. Administrative and National Policy Requirements

The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of February 11, 2008 (73 FR 7696) are applicable to this solicitation. <http://www.gpo.gov/fdsys/>.

NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for each project seeking NOAA funding. Detailed information on NOAA compliance with NEPA can be found at NOAA's NEPA website, <http://www.nepa.noaa.gov/>, and the Council on Environmental Quality implementation regulations, http://ceq.eh.doe.gov/nepa/regs/ceq/toc_ceq.htm.

After the award has been made, the recipient is 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) for each project proposed under this award. In addition to providing specific information that

will serve as the basis for any required impact analyses, the recipient may also be requested to assist NOAA in drafting an environmental assessment, if NOAA determines such assessment is required. The recipient will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of its application. The failure to cooperate with NOAA shall be grounds for not funding a particular project. In cases where additional information is required after a project 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 assess any impacts that a project may have on the environment.

C. Reporting

Financial reports are to be submitted to the NOAA Grants Officer and Performance (technical) reports are to be submitted to the NOAA program officer annually. Near the end of each award year, NOAA will provide the CI with guidance on what information should be submitted as part of the annual performance report. This information will be used by NOAA to assess the quality of the research and provide NOAA with general information about the quality of activities at the CI, including how many students are participating, scientific output, and number of employees associated with the CI receiving NOAA support. Reports should be submitted electronically through NOAA's Grants Online system or on paper if no computer access is available.

The Federal Funding Accountability and Transparency Act of 2006 includes a requirement for awardees of applicable Federal grants to report information about first-tier subawards and executive compensation under Federal assistance awards issued in FY 2011 or later. All awardees of applicable grants and cooperative agreements are required to report to the Federal Subaward Reporting System (FSRS) available at www.FSRS.gov on all subawards over \$25,000.

VII. Agency Contacts

Philip L. Hoffman; philip.hoffman@noaa.gov; 301-734-1090

VIII. Other Information

U.S. Department of Commerce regulations implementing the Freedom of Information Act (FOIA) 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 Federal 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 which is exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as "Privileged, Confidential, Commercial or Financial Information." Based on these markings, the confidentiality of the contents of those pages will be protected to the extent permitted by law.