

ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

Federal Agency Name(s): National Environmental Satellite Data and Information Service (NESDIS), National Oceanic And Atmospheric Administration, Department of Commerce

Funding Opportunity Title: Cooperative Institute for Satellite Climate studies

Announcement Type: Initial

Funding Opportunity Number: NESDIS-NESDISPO-2009-2001411

Catalog of Federal Domestic Assistance (CFDA) Number: 11.440, Environmental Sciences, Applications, Data, and Education.

Dates: Proposals must be received by NESDIS no later than January 5, 2009 5 p.m., E.T. Proposals submitted after that date will not be considered.

Funding Opportunity Description: NOAA National Environmental Satellite Data and Information Services (NESDIS) invites applications for a Cooperative Institute (CI) that will focus on 1) climate and satellite research and applications, 2) climate and satellite observations and monitoring, and 3) climate research and modeling. Through this competition, NOAA intends to establish competitively a new CI according to the policy and procedures described in NOAA Administrative Order 216-107 and the Cooperative Institute Interim Handbook both available at www.nrc.noaa.gov/ci. The proposed CI should be composed of two or more member institutions (e.g., multiple universities). At least one research institution should be in Maryland, Washington D.C. or the adjacent states (Delaware, Pennsylvania, West Virginia and Virginia). At least two research institutions should be in North Carolina or the adjacent states (Virginia, Tennessee, South Carolina and Georgia), with a presence in Asheville, North Carolina.

NOAA has identified three research themes that will address specific needs within the NOAA Mission Support Satellite Service program and the NOAA Climate Goal that would benefit from collaborations with the CI. The CI should possess outstanding capabilities to work in the three research themes summarized below, as well as possess the capability to conduct outreach and education activities in support of these research themes.

I. Climate and Satellite Research and Applications: Research conducted under this theme is associated with the development of new and innovative uses of non-NOAA satellite assets that can ultimately be transitioned into NOAA operations to support

climate information needs. This theme also includes performing research and development aimed at improving the utilization of long time series of satellite measurements that will offer NOAA scientists a homogeneous record of satellite radiances.

II. Climate and Satellite Observations and Monitoring: Research conducted under this theme involves (1) designing indices and applications that incorporate satellite observations to detect, monitor and investigate climatic changes and their impacts on coastal and open ocean ecosystems, (2) identifying and meeting the satellite climate needs of a wide variety of users, including research, business and industry, and government and private sector users, and (3) contributing significantly to climate reanalysis projects when satellite data is a key input.

III. Climate Research and Modeling: Research conducted under this theme is focused on improving climate forecasts on mesoscale, regional and global scales when satellite data is a key input, and developing regional ecosystem models that can incorporate satellite observations to predict the impact of climate change on these ecosystems, particularly those located in the Mid-Atlantic region. The CI is also expected to play a significant role in National Centers for Environmental Prediction (NCEP) Climate Test Bed projects when satellite data is a key input.

This announcement provides requirements for the proposed CI and includes details for the technical program, evaluation criteria, and competitive selection procedures. Applicants should review the NOAA CI Policy and CI Interim Handbook (both available at www.nrc.noaa.gov/ci) prior to preparing a proposal for this announcement.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

One of NOAA's strategic goals is to "understand and describe climate variability and change to enhance society's ability to plan and respond." The Satellite Climate Studies CI will provide strong and sustained academic partners towards realizing this goal. It is essential for NOAA federal scientists to substantially collaborate with outstanding researchers in academia in order to produce climate information and services that are based on satellite data and knowledge from many disciplines (physics, chemistry, biology, geography, earth science, oceanography, meteorology and sociology, etc.).

The sustained nature of a Satellite Climate Studies CI (5-10 years) will provide significant opportunity to enhance NOAA's operational decision support tools to provide climate services for national socioeconomic benefits, a key goal area of research specified by NOAA's 5-year Research Plan and 20-year Research Vision. Additionally, the Satellite Climate Studies CI will also serve another important function in support of NOAA's ongoing research: educating, training and sustaining a world class workforce. These goals will be accomplished through NOAA-academia projects in which the research institution brings a strong heritage in satellite remote sensing and climate applications.

CI Concept/Program Background:

A CI is a NOAA-supported, non-Federal organization that has established an outstanding research program in one or more areas that are relevant to the NOAA mission to understand and predict changes in the Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs. The CI is established at research institutions that also have a strong education program with established graduate degree programs in NOAA-related sciences. The CI provides significant coordination of resources among all non-government partners and promotes the involvement of students and post-doctoral scientists in NOAA-funded research. The CI provides mutual benefits with value provided by all parties.

NOAA establishes a new CI competitively when it identifies a need to sponsor a long-term (5-10 years) collaborative partnership with one or more outstanding non-Federal, non-profit research institutions. For NOAA, the purpose of this long-term collaborative partnership is to promote research, education, training, and outreach aligned with the NOAA mission; to obtain research capabilities that do not exist internally; and/or to expand research capacity in NOAA-related sciences to:

- conduct collaborative, long-term research that involves NOAA scientists and those at the research institution(s) from one or more scientific disciplines of interest to NOAA;
- utilize the scientific, education, and outreach expertise at the research institution(s) that, depending on NOAA's research needs, may or may not be located near a NOAA facility;
- support student participation in NOAA-related research studies; and
- strengthen or expand NOAA-related research capabilities and capacity at the research institution(s) that complements and contributes to the NOAA ability to reach its mission goals.

A CI will consist of one or more research institutions that demonstrate outstanding performance within one or more established research programs in NOAA-related sciences. These institutions may include Minority Serving Institutions and universities with strong departments that can contribute to the proposed activities of the CI.

CIs, conduct research under approved scientific research themes (see Section I.B of the Full Funding Opportunity announcement) and Tasks (additional tasks can be proposed by the CI):

- 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 activities within the research themes of the CI that are approved by the CI Director, in consultation with NOAA, and are relevant to NOAA and the CI mission goals.
- 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 activities require minimal collaboration with NOAA scientists and may include research funded by other NOAA competitive grant programs.

B. Program Priorities

NOAA has identified the need to establish a CI to focus on Satellite Climate Studies in support of the NOAAs Strategic Plan, the NOAA 5-year Research Plan, and the NOAA 20-year Research Vision (all available at www.spo.noaa.gov).

Activities at the CI will support the research themes described below. The CI is expected to work with NOAA to identify promising activities that can be transitioned to operations through test beds and other proven transition models. Additionally, the CI should collaborate and share results with other NOAA programs

and CI that would benefit from such an exchange.

The CI is expected to possess, develop and implement mechanisms to facilitate collaborative research, education, and outreach with NOAA (e.g., post-doctoral appointments, graduate research assistantships and research appointments) and, as necessary, with relevant local, state and Federal agencies. The CI's primary sponsor will be NESDIS/Center for Satellite Applications and Research (STAR, formerly known as Office of Research and Applications, ORA) and NESDIS/National Climatic Data Center. Research and development entities that the proposed CI may work with include NOAA programs, laboratories, science centers, other CI and NOAA-owned facilities; Sea Grant Colleges; other extramural NOAA partners; other Federal agencies; academia; and the private sector.

NOAA has identified three research themes that will address identified needs within the NOAA Mission Support Satellite Services program and the NOAA Climate Goal that would benefit from collaborations with the CI. (For a complete description of the Satellite Services Program and the programs in the NOAA Climate Goals, see www.ppi.noaa.gov/prog_charters.htm.)

Summary of Research Themes at the CI

The CI should possess outstanding capabilities to work in the three research themes summarized below. Additionally, the CI should possess the capability to conduct outreach and education activities in support of these three research themes.

- A. Climate and Satellite Research and Applications
- B. Climate and Satellite Observations and Monitoring
- C. Climate Research and Modeling

Research Themes in Detail

i. Climate and Satellite Research and Applications

Due to the rapidly increasing complexity and number of Earth-observing satellite instruments more applied research is needed at NESDIS and its Cooperative Institutes, research centers, and interagency partners to meet national needs and increase the usefulness of operational satellite data for climate studies. Advanced satellite research will result in new and improved environmental climate products and maintain a pipeline of ideas and employees from universities into NOAA.

As is referenced in NOAA Research Plans (5 and 20 year), non-NOAA satellites (e.g., NASAs EOS and TRMM satellites) are instrumental to filling in data observation gaps, where operational satellites and conventional ground measurements are not available. It is anticipated that the Satellite Climate Studies CI will engage collaboratively with NOAA and the non-NOAA partners to help develop new and

innovative utilization of these important satellite assets that can ultimately be transitioned into NOAA operations to support climate information needs. Due to the growing demand for operational utilization of satellite sensors (many designed to support _weather and warning_ and not _climate_) within rigorous climate studies, there is a gap between current calibration capabilities and climate calibration needs. Climate quality products and services provide a comprehensive set of measurements that allow for very high level long-term instrument calibration and stability, full characterization of the trace gas spectrum and robust high quality data from which to detect change and trends.

The Satellite Climate Studies CI should engage in several important programs being developed at NOAA (e.g., Scientific Data Stewardship, NPOESS, Climate Program Office, etc.) to perform research and development aimed towards the improved utilization of the long time series of satellite measurements that will offer NOAA scientists a homogeneous record of satellite radiances.

ii. Climate and Satellite Observations and Monitoring

Changing climate is one of the most significant long-term influences on ecosystem health and should therefore be included in ecosystem assessments and forecasts. Detecting and understanding the impacts of climate change on coastal, open ocean, and Great Lakes ecosystems will enable NOAA to better predict and prepare for them. It is anticipated that the Satellite Climate Studies CI will use satellite observations to design indices and applications that incorporate satellite observations to detect, monitor and investigate climatic changes and their impacts on coastal and open ocean ecosystems. Climate System Observations are the foundation for research critical to understanding the earth climate system, monitoring current climate variations and placing them into historical perspective, supporting climate information products and services, and improving climate research and modeling. Satellite observations are a critical subset of Climate System Observations.

Climate data records and climate information records consist of two major activities conducted in coordination: data management services and data stewardship. They constitute a comprehensive end-to-end process including movement of data and information from the observing system sensors to the data users. Data management services include the acquisition, inventory, quality control processing, metadata cataloging, validation, reprocessing, storage, dissemination (access and retrieval), and archiving of data. Data stewardship is the application of rigorous processing, analyses, and oversight to ensure that data sets meet the needs of research, business and industry, and government and private sector users.

The services of a Satellite Climate Studies Cooperative Institute are important to NOAA's mission of providing climate data records and information, as the CI will help span the gap between the government and outside users in identifying and meeting the satellite climate needs of those outside users.

Climate reanalysis efforts are a key NOAA contribution to the Climate Change Science Program goal of improving knowledge of the Earth's past and present climate and environment, including its natural variability, and to improve understanding of the causes of observed climate variability and change. Reanalysis efforts also support NOAA's goal to understand climate variability and change to enhance society's ability to plan and respond.

Global climate analyses are required to describe major features of 20th-century climate and to address the causes of observed regional climate variations that are crucial to informing policy decisions. The first-generation reanalyses, based on mid-1990s models and data assimilation systems, lack adequate spatial resolution and contain known deficiencies which limit their usefulness for identifying climate trends and assessing causes of observed change. Advances in models, improved climate data assimilation methods, and new data sources make it desirable and feasible for NOAA to develop and continually update global reanalysis datasets.

Some benefits of an ongoing reanalysis program include: (i) new quality controlled data products for use in the next generation reanalyses; (ii) production and dissemination of improved climate reanalysis data products for assessing climate variability and change; (iii) long term consistent reanalyses for initializing and verifying model hindcasts - a critical exercise for calibrating model forecasts; (iv) fulfillment of NOAA's commitment to the Climate Change Science Program goals; (v) new diagnostic tools to link the behavior of climate and forcing mechanisms in a physically consistent manner; (vi) regular and systematic explanations of past, current, and evolving climate conditions, and (vii) enhanced climate prediction capabilities that enable regional and national decision makers and resource managers to better plan for impacts of climate extremes, variability, and change. Developing improved climate reanalyses and attribution capabilities requires strong links among NOAA's observational, research, and operational prediction efforts.

The Satellite Climate Studies CI is expected to play a significant role in climate reanalysis projects when satellite data is a key input.

iii. Climate Research and Modeling

The National Centers for Environmental Prediction (NCEP) and the Climate Program Office are jointly sponsoring the Climate Test Bed (CTB) at NCEP. The goal of the CTB is to accelerate the transition of research advances into improved NOAA operational climate forecasts, products and applications. The CTB provides an operational testing environment to support short-term competitive applied research and development projects that will result in a direct influence on operational methodologies, and/or new guidance products or techniques leading to improved quality and applicability of operational forecasts. For further details on the Climate Test Bed, visit <http://www.cpc.ncep.noaa.gov/products/ctb/>. CTB science priority areas are focused on enhancing multi-model ensemble based forecasts, anchored by

the NCEP Climate Forecast System, and on improving monthly-to-seasonal climate forecast products and applications, especially for drought. CTB encourages projects that enhance the performance of the NCEP coupled Climate Forecast System (CFS) on monthly-to-seasonal timescales, including testing and assessment of process-level advances to the ocean-atmosphere-land-cryosphere model and assimilation components, generation and evaluation of coupled CFS reanalysis and retrospective forecasts, and improvements to the CFS monthly-to-seasonal forecast suite. CTB also encourages projects that employ the CFS together with other national and international fully coupled (ocean-atmosphere-land) models in the generation and evaluation of Multi-Model Ensemble (MME) forecasts. This includes projects that evaluate MME forecast skill, assemble reforecast datasets for effective calibration, consolidate MME members into a single prediction system, and generate MME-based forecast products. CTB also emphasizes projects that provide climate forecast products for decision support, including enhanced capabilities to predict environmental change, such as drought, on monthly-to-seasonal timescales. This area includes development of new forecast tools based on the ensemble framework; assimilation of new data into drought forecasts; improving monthly-to-seasonal forecasts based on land-atmosphere coupling; and drought forecast verification.

The Satellite Climate Studies CI is expected to play a significant role in CTB projects when satellite data is a key input. One of the locations of the proposed CI is to be in Maryland where the CTB resides or in an adjacent state (including Washington D.C.). This will allow face-to-face science exchanges to ideally improve success rates of CTB projects.

Climate extremes often result from a simultaneous superposition of climate phenomena on a variety of timescales. The future predictive understanding challenges, especially those related to abrupt climate changes will come from combining this understanding - which is still incomplete - with understanding such items as how the mid-latitudes in turn impact the global tropics, and how global warming impacts both tropical and mid-latitude natural variability.

NOAA will look to the proposed CI to improve climate forecasts on mesoscale, regional and global scales when satellite data is a key input. In addition the CI will develop regional ecosystem models that can incorporate satellite observations to predict the impact of climate change on these ecosystems, particularly those located in the Mid-Atlantic region, such as the Chesapeake Bay.

In support of the three research themes, the CI will provide strategic outreach and education activities that inform decision making by communities, stakeholders, and users of climate data. Outreach and education serve as the means of communicating the excitement of research and discovery to the next generation of scientists; it is also the mechanism by which NOAA and NESDIS become integrated into the communities they serve and obtain feedback on their impact and areas for improvement. The CI will strengthen outreach and education by capitalizing on NOAA's current capabilities coupled with capabilities brought in by the participating

institutions. These efforts will infuse climate satellite and research into the daily lives of future scientists, and be responsible for communicating research findings and technological developments to resource managers and key stakeholders.

CI Capabilities and Expertise

To actively participate in these research themes, the proposed CI should possess the flexibility needed to work on multi-disciplinary research in collaboration with its primary sponsor, NESDIS (in particular NCDC and STAR), as well as with NOAA's Climate Goal and NOAA's Satellite Services Program. In addition, the CI should collaborate with other NOAA entities and partners, as appropriate. NOAA requires substantial flexibility from the CI to provide both scientific depth to existing programs and to add new capabilities when NOAA is faced with new drivers and/or mandates.

The CI should have resident or affiliated faculty with broad expertise in conducting research in all three themes. Research under these themes will require expertise in physics, chemistry, biology, geography, earth science, oceanography, meteorology, and sociology, etc. The CI should have staff experienced in managing and implementing multi-investigator, large-scale projects involving partners in Federal, state, and local governments; academia; and the private sector. The CI must have the capability to conduct research related to the three research themes described in Section I.B.

The CI should have the ability to use the rapidly increasing, in complexity and number, Earth-observing satellite instruments available for societal benefits related to improved understanding of climate. This includes the ability to maintain and/or form strong partnerships with international remote sensing science community to improve our understanding of climate and obtain societal benefits. Research towards new climate quality products and services that allow for very high level long-term instrument calibration and stability, such as full characterization of the trace gas spectrum and/or robust high quality data from which to detect change and trends, is also important capability for the CI.

The CI will show expertise in interdisciplinary climate studies such as decadal variability in the North Pacific (which is tied into droughts and fisheries regime changes), and expertise in climate studies that explore relationships between several climate processes such as the impacts of high latitude (polar) processes on regional and global climate and abrupt changes. Also an expertise in probabilistic forecasts of extreme weather events, week-3 and week-4 time-averages, and probabilistic sub-seasonal forecast of extreme events is desirable.

The proposed CI will demonstrate expertise in developing Health Early Warning Systems that predict ocean-related public health risks from pathogens, chemical pollutants, and toxins, and characterize human health impacts of coastal ecosystem

change, in response to natural factors and environmental stressors.

The proposed CI should also conduct innovative research and development using advanced computing systems, research & development for data assimilation, community modeling and ocean modeling support for Integrated Oceanic Observing Systems (IOOS).

The CIs host institution should have doctoral-level education programs in fields relevant to NOAA's climate goal and NOAA's satellite missions and the research themes described in this proposal. The CI is expected to promote student and postdoctoral involvement in research projects in ways to train the next generation of scientists and NOAA employees. The CI should provide 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. CI employees and students will work with NOAA to conduct research that complements the NOAA mission needs. The CI should also have the capability to share research results conducted at the CI with resource managers and other key stakeholders. It is anticipated that approximately 5 NOAA employees from the NESDIS Satellite Climate Studies Branch will be relocated to the new CI. The proposed CI should have the capacity (computers, phones, office space) to host these additional people who will be a necessary component to the successful CI collaborations with NOAA/NESDIS.

Geographical Constraints

The proposed CI should provide the flexibility needed to work on multi-disciplinary research in collaboration with NOAA/NESDIS Center for Satellite Applications and Research (STAR), NOAA/NESDIS, National Climate Data Center (NCDC), NOAA/NESDIS National Oceanic Data Center (NODC), NOAA/NWS, Climate Prediction Center (CPC) and Climate Test Bed (CTB), NOAA/NWS, Environmental Modeling Center (EMC), NOAA/NWS Hydrology Laboratory (HL), NOAA/OAR Climate Program Office (CPO), NOAA/NASA/DOD Joint Center for Satellite Data Assimilation (JCSDA) and NOAA/OAR Air Resources Lab (ARL). The CI should include at least one university in MD, DC or the states adjacent to Maryland (VA, W. VA, DE and PA), to allow students and postdocs to work on a routine (weekly) basis with STAR, NODC, CPC, CTB, EMC, HL, CPQ, JCSDA and/or ARL.

This CI should include a consortium of universities in the Asheville, North Carolina area in order to facilitate closely with NOAA NCDC and their significant efforts to bolster stewardship of climate data and development of Climate Information Records for NOAA. The consortium can be made up of universities located in North Carolina and/or the states bordering North Carolina, but there should be a presence in Asheville, North Carolina to allow students and post-doctorates to be located close enough to work on a routine (weekly) basis with NCDC. It is anticipated that the NOAA Climate Mission will grow in the years ahead and NCDC needs will grow significantly with it.

C. Program Authority

15 U.S.C. 313, 49 U.S.C. 44720(b), 15 U.S.C. 2901, 15 U.S.C. 1540, 33 U.S.C. 883d, 118 Stat. 71

II. Award Information

A. Funding Availability

NOAA expects that approximately \$13M will be available for the CI in the first year of the award. The Task I budget should not exceed \$400,000. The final amount of funding available for Task I will be determined during the negotiation phase of the award based on availability of funding. Funding for subsequent years is expected to be constant throughout the period and will depend on the quality of the research, the satisfactory progress in achieving the stated goals described in the proposal, continued relevance to program objectives, and the availability of funding.

B. Project/Award Period

The award period will be five years and may be renewed for up to an additional five years based on the outcome of a peer review in the fourth year, as described in the NOAA CI Interim Handbook (December 2005). A copy of the Handbook is available at www.nrc.noaa.gov/ci.

C. Type of Funding Instrument

The funding instrument for this award will be a cooperative agreement since several NOAA organizations will be substantially involved in working with the CI. Examples of substantial involvement may include, but are not limited to, proposals for collaboration between NOAA scientists and a CI scientist and/or assistance by NOAA personnel in developing curricula. Because this CI will be awarded to a consortium of more than one institution, the consortium is strongly encouraged to propose a governance structure that includes a single director. NOAA will consider issuing a cooperative agreement to each of the member institutions, if requested in the proposal or if a determination is made by NOAA and the CI that separate awards

would be in the best interest of all parties. NOAA will make the final determination of how many cooperative agreements will be issued for the CI.

III. Eligibility Information

A. Eligible Applicants

Eligibility is limited to non-Federal public and private non-profit universities, colleges and research institutions that offer accredited graduate level degree-granting programs in NOAA-related sciences, as described in the CI Interim Handbook located at www.nrc.noaa.gov/ci/.

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 commitment under the NOAA standard evaluation criteria for overall qualifications of applicants. Acceptable cost-sharing proposals include, but are not limited to, offering a reduced indirect cost rate against activities in one or more Tasks, 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

Not applicable

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 received by contacting Ingrid Guch, NOAA/NESDIS, 5200 Auth Road, Room 701, Camp Springs, Maryland 20746. Applicants are strongly encouraged to apply online through the Grants.gov website. Paper submissions are only acceptable only if

internet access is not available.

Grants.gov requires applicants to register with the system prior to submitting an application. This registration process can take several weeks, involving multiple steps. In order to allow sufficient time for this process, you should register as soon as you decide that you intend to apply, even if you are not yet ready to submit your proposal. If an applicant has problems downloading the application package from Grants.gov, contact Grants.gov Customer Support at (800)518-4726 or support@grants.gov. For non-Windows computer systems, please see www.grants.gov/Mac Support for information on how to download and submit an application through Grants.gov. If a hard copy application is submitted, please include an original of two unbound copies of the proposal. Paper submissions should be submitted to Mrs. Guch at the above-listed address.

B. Content and Form of Application

Proposals must adhere to the provisions under Proposals and the requirements under Required Elements in this section by the deadline of [90 days after RFA publication date].

i. Proposals

a. Proposals 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 proposal be included.

b. Proposals, 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 proposals will not be accepted.

ii. Required Elements

Failure to include the following elements will result in proposals 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 the proposed name of the CI. 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 proposal 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 proposal according to NOAA's standard evaluation criteria described in Section V of this document. The project description includes several sections: (1) Goals Section a description of the goals for the CI, (2) Research Theme Section a description of the three research themes, (3) Education Section a description of the graduate degree program and other education and outreach activities, (4) Business Plan Section - a business plan, and (5) Performance Measures Section - 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 Research Theme Section includes 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 three research themes described in Section I.B. 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 degree 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, as well as conduct outreach and education activities in support of these three research themes.

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 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 gauge, 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 NOAA CI Program Managers and produce an annual research plan that provides specific information about the research projects described in the Research 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 NOAAs approval of the annual research plan. Funding for subsequent years of the award will require additional annual research 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." Applicants must also submit a Standard Form CD511 "Certification regarding Lobbying" and if applicable Standard Form SF-LLL "Disclosure of Lobbying Activities." These and other forms are provided in the Grants.gov application package. The proposal 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. The first year budget should total \$13M and out year budgets for years 2-5 should total \$20M per annum. Beyond the first year budget (which is associated with the activities described in the annual research plan), NOAA uses the proposal 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 research plan or any other proposal submitted to NOAA that includes a detailed budget. 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 proposal. 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

The deadline for receipt of proposals at the NOAA/NESDIS office is 5 p.m.,

ET, January 5, 2009. Proposals received after the deadline will not be considered. NOAA uses information from Grants.gov to determine whether an application has been submitted before the deadline. Hard copy applications will be date/time stamped as they are physically received in the NOAA/NESDIS office. No email or facsimile proposal submissions will be accepted.

D. Intergovernmental Review

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

E. Funding Restrictions

None.

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 (866) 705-5711 or via the internet (www.dunandbradstreet.com). All applicants are strongly encouraged to submit proposals through the Grants.gov portal. If unable to do this, hard copy proposals will be accepted. The hard copies must be submitted by postal mail, commercial delivery service, or hand-delivery. Proposals must be submitted to: NOAA/NESDIS, 5200 Auth Road, Room 701, Camp springs, Maryland 20746, Attn: Mrs. Ingrid Guch. Hard copies must be received at the NOAA/NESDIS office by 5 p.m., ET, January 5, 2009.

V. Application Review Information

A. Evaluation Criteria

Proposals 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.

i. 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, Federal, regional, state, or local activities.

- Does the proposal include research goals and projects that address the critical issues identified in the NOAA 5-year Research Plan, the NOAA Strategic Plan, and the priorities described in the program priorities section (see section I.B. of the Full Funding Opportunity announcement).

- 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?

- Will most of the staff at the CI be located near one of two NOAA facilities, the National Center for Weather and Climate Prediction in Riverdale Park, Maryland, or the National Climactic Data Center in Asheville North Carolina, to enhance collaborations with NOAA? Examples include

(1) Academic institution of higher learning in Asheville North Carolina metropolitan area and/or Washington DC metropolitan area; and/or

(2) Office space located in Asheville North Carolina metropolitan area and/or Washington DC metropolitan area hosting at least 20 consortium personnel; and/or

(3) Willingness to allow at least 20 students or professors to work at the NOAA site in Asheville North Carolina metropolitan area and/or Washington DC metropolitan area.

ii. 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 the NOAA strategic plan and goals?

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

iii. 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 PIs 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 proposal?
 - 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?
- iv. Project costs (5 percent): The budget is evaluated to determine if it is realistic and commensurate with the project needs and time-frame.
- v. 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.
- 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?

B. Review and Selection Process

An initial administrative review/screening is conducted to determine compliance with requirements/completeness. All proposals 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 Federal or non-Federal, will be used in this process. If non-Federal 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 proposals. The Selecting Official selects proposals 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 proposal is justified to be selected out of rank order based upon one or more of the selection factors.

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 proposal is justified to be selected out of rank order based on one or more of the following factors:

1. Availability of funding
2. Balance and distribution of funds
 - a. By research area
 - b. By project type
 - c. By type of institutions
 - d. By type of partners
 - e. Geographically
3. Duplication of other projects funded or considered for funding by NOAA/federal agencies.
4. Program priorities and policy factors.
5. Applicant prior award performance.
6. Partnerships with/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 NOAA Grants Officer.

D. Anticipated Announcement and Award Dates

Review of the proposals will occur within 30 days of the close of the announcement. July 1, 2009 should be used as the proposed start date on proposals.

VI. Award Administration Information

A. Award Notices

The notice of award is signed by the NOAA Grants Officer and is the authorizing document. It is provided by electronic notification or postal mail to the appropriate business office of the recipient organization. NESDIS will notify unsuccessful applicants in writing either electronically or by postal mail. Those proposals that are not ultimately selected for funding will be destroyed.

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.

- i. **Limitation of Liability.** Funding for years 2-5 of the CI is contingent upon the availability of funding. 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.
- ii. **National Environmental Policy Act (NEPA).** NOAA must analyze the potential environmental impacts, as required by NEPA, for each project seeking NOAA funding. Detailed information on NOAA compliance with NEPA can be found at NOAA's NEPA website, 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 proposal. 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 NOAA 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 NOAAs Grants Online system or on paper if no computer access is available.

VII. Agency Contacts

For a copy of the Federal Funding Opportunity announcement and/or application package, please access grants.gov; the NOAA Cooperative Institute website (www.nrc.noaa.gov/ci) or contact Ingrid Guch, NOAA/NESDIS; 5200 Auth Road, Room 701; Camp Springs, Maryland 20746, or by phone at (301) 763-8282 ext. 152, or fax to (301) 763-8108, or via internet at ingrid.guch@noaa.gov.

VIII. Other Information

To use grants.gov, applicants must have a Dun and Bradstreet Data Universal Numbering System (DUNS) number and be registered in the Central Contractor Registry (CCR). Allow a minimum of five days to complete the CCR registration. [Note: Your organizations Employer Identification Number (EIN) will be needed on the application form.] Applicants are strongly encouraged not to wait until the application deadline date to begin the application process through grants.gov.