ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

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

Funding Opportunity Title: JCSDA - 2015 Research in Satellite Data Assimilation for Numerical Environmental Prediction

Announcement Type: Initial

Funding Opportunity Number: NOAA-NESDIS-NESDISPO-2015-2004220

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

Dates: Letters of Intent are due no later than 5:00 PM Eastern Time on November 20, 2014. For Letters of Intent received after that date, a timely response from the JCSDA may not be possible. Full proposals are due no later than 5:00 PM Eastern Time on January 26, 2015. All proposals must be submitted in accordance with the guidelines below. Failure to follow these guidelines will result in proposals not being considered for funding.

Funding Opportunity Description: The NOAA/NASA/DOD Joint Center for Satellite Data Assimilation (JCSDA) is a distributed center that engages units of NASA: Goddard Space Flight Center (GSFC) Earth-Sun Exploration Division; NOAA: NESDIS Center for Satellite Applications and Research (STAR) , National Weather Service (NWS) National Centers for Environmental Prediction (NCEP), and Office of Oceanic and Atmospheric Research (OAR); US Navy: Oceanographer of the Navy and the Naval Research Laboratory (NRL); and US Air Force Air Weather Agency. The Joint Center's goal is to accelerate the abilities of NOAA, DoD, and NASA to ingest and effectively use the large volumes of data from current satellite-based instruments and planned satellite missions. The JCSDA supports scientific development work in the following priority areas (1) Radiative transfer, (2) Clouds and precipitation data assimilation, (3) Advanced instruments data assimilation, (4) Land data assimilation, (5) Ocean data assimilation and (6) Air Composition data assimilation. JCSDA research is performed internally (internal research) as well as externally using grants and/or contracts awarded via a competitive process open to the broader scientific community (external research). The overarching goal of JCSDA research is to accelerate the assimilation of satellite data in US operational numerical environment forecast models. A primary measure of potential impact in this solicitation will be the acceleration of satellite data usage into NOAA, and DoD forecast systems, and the improvement of forecasts from those systems.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

The NOAA/NASA/DOD Joint Center for Satellite Data Assimilation (JCSDA) is a distributed center that engages units of NASA: Goddard Space Flight Center (GSFC) Earth-Sun Exploration Division; NOAA: NESDIS Center for Satellite Applications and Research (STAR) , National Weather Service (NWS) National Centers for Environmental Prediction (NCEP), and Office of Oceanic and Atmospheric Research (OAR); US Navy: Oceanographer of the Navy and the Naval Research Laboratory (NRL); and US Air Force Air Weather Agency. The Joint Center's goal is to accelerate the abilities of NOAA, DOD, and NASA to ingest and effectively use the large volumes of data from current satellite-based instruments and planned satellite missions.

B. Program Priorities

This announcement calls for proposals for scientific projects in the areas described below. Applicants are encouraged to submit letters of intent, in order to maximize the chances that the proposed effort will be aligned with the objectives of the program priorities and does not duplicate activities already being conducted by the JCSDA and its partners. The full announcement and additional information about the JCSDA could be found on the JCSDA website (www.jcsda.noaa.gov).

As mentioned in the priorities below, the potential of the proposed effort to improve US operational systems forecast skill will be a key factor in the evaluation of proposals submitted to this Funding Opportunity, and given the budget situation, it is not expected that FY2015 funds will be available for projects that do not align closely with these goals.

1. Fundamental scientific improvements to the Community Radiative Transfer Model (CRTM). Projects in this category will be expected to identify actual and recognized shortcomings in the CRTM. Coordination with the CRTM technical team is suggested.

2. Tackle the issue of bias error characterization of satellite data, in cloudy and rainy conditions. This issue is considered critical in the proper handling of cloud and rain-impacted radiances in data assimilation systems.

3. Optimization of the assimilation of DMSP SSMI/S data. Projects selected in this category will be expected to be complementary to existing projects funded under other programs.

4. Assimilation of GPM sensors (passive and active). Projects in this category are encouraged to design scientific techniques, modules, that could be applied generically to similar sensors (such as GCOM-W AMSR2)

5. Accelerate GOES-R data assimilation readiness (data such as radiances, AMVs, etc) from both ABI and GLM sensors. Projects selected in this category will be expected to be complementary to existing projects funded under other programs and use real data as proxy to GOES-R from GOES and Himawari-8 satellites.

6. Optimization of the SNPP sensors data assimilation (ATMS, CrIS, VIIRS, OMPS) in preparation for the assimilation of data from JPSS sensors. Projects selected in this category will be expected to be complementary to already funded projects funded under other programs.

To foster collaboration between JCSDA and the external data assimilation research community, the JCSDA encourages the selected applicants to coordinate with other JCSDA scientists, by participating in JCSDA working groups' regular meetings, and to present their findings at the annual JCSDA workshop. Applicants are encouraged to include this collaboration in their proposal.

As part of the O2R effort, JCSDA plans to make available (to selected projects) computer resources, to perform data assimilation experiments if needed. This infrastructure is equipped with operational assimilation and forecast systems, relevant to this program. It is continuously upgraded and expanded to include additional systems. Applicants are encouraged to include the use of this infrastructure, and avoid using locally developed versions, that might not be relevant to operational systems.

C. Program Authority

Authority for this program are provided under 15 U.S.C. 313, 49 U.S.C. 44720(b); 15 U.S.C. 2901.

II. Award Information

A. Funding Availability

Total funding available for this Notice is anticipated to be approximately $500,000 per year. Individual annual awards in the form of grants or cooperative agreements are expected to range from $90,000 to $150,000. It is anticipated that 3-5 awards will be made.

B. Project/Award Period

Project duration will be 1-2 years, with funding for multi-year projects contingent on satisfactory progress in prior years and funding availability. August 1, 2015 is to be used as the proposed start date on proposals unless otherwise directed by the NOAA program officer. There is no guarantee that sufficient funds will be available to make awards for all projects, or that all research areas of interest will be supported.

C. Type of Funding Instrument

Proposals selected for funding will be funded through a grant or 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, proposals 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.

III. Eligibility Information

A. Eligible Applicants

Eligible applicants are institutions of higher education, other nonprofit; for profits; international organizations; state, local and Indian tribal governments; and Federal agencies. To avoid conflict of interest, applicants, either as Principal Investigator (PI) or co-Investigator (co-I), from the institutions representing the JCSDA partners at the Management Oversight Board (MOB) -who is ultimately responsible for reviewing the selection recommendations-, are not eligible to respond to this call. Therefore, the following federal agencies/divisions are excluded from applying to this opportunity: NOAA/NESDIS/STAR, NOAA/NWS/NCEP, Navy/NRL/MMD, AFWA, NASA/GSFC/Science and Exploration Directorate/Earth Science Division and NOAA/OAR/AOML. Applications from non-Federal and Federal applicants will be competed against each other. Proposals selected for funding from non-Federal applicants will be funded through a grant or cooperative agreement as described in this notice. Proposals selected for funding from NOAA scientists shall be effected by an intra-agency fund transfer. Proposals selected for funding from non-NOAA Federal agency will be funded through an inter-agency transfer.

PLEASE NOTE: Before non-NOAA Federal applicants may be funded, they must demonstrate that they have legal authority to receive funds from another Federal agency in excess of their appropriation. The only exception to this is governmental research facilities for awards issued under the authority of 49 USC 44720(b). Because this announcement is not proposing to procure goods or services from applicants, the Economy Act (31 USC 1535) is not an appropriate legal basis.

B. Cost Sharing or Matching Requirement

No cost sharing nor matching is required under this program.

C. Other Criteria that Affect Eligibility

Each proposal must include the elements listed under Content and Form of Application, or it will be returned to sender without further consideration.

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 Ericka Rosier, NOAA/NESDIS, NOAA Center for Weather and Climate Prediction 5830 University Research Court, Suite 2600 Rm 2623, College Park, Maryland 20740, Phone: 301-683-3512, email: Ericka.rosier@noaa.gov.

B. Content and Form of Application

Letters of Intent (LOI) Instructions: The purpose of the LOI process is to provide information to potential applicants on the relevance of their proposed project to the JCSDA and the likelihood of it being funded in advance of preparing a full proposal. Full proposals will be encouraged only for LOIs deemed relevant. Therefore, while not a requirement, it is in the best interest of the applicants and their Institutions to submit an LOI. The LOI is to provide a concise description of the proposed work and its relevance to the targeted priority project area. The LOI must include the components listed below. If these components are not included, the LOI risks a delayed response and may not be considered by the program reviewers.

1. Investigators must identify the priority project area that is being targeted in the LOI;

2. Investigators must specify a tentative project title in the LOI;

3. LOIs must include the name and institution of all principal investigator(s), and must specify which individual is the Lead principal investigator;

4. LOIs must be no more than two pages in length, single-space 12 point font, and must include a statement of the problem, brief summary of work to be completed, methodology to be used, and approximate cost of the project. Electronic mail and hard copy are acceptable for LOIs ;

5. LOIs must be received by Dr. S. A. Boukabara, Program Officer, JCSDA, NOAA/NESDIS, NOAA Center for Weather and Climate Prediction

5830 University Research Court, Suite 2600 Rm 2617, College Park, Maryland 20740, no later than 5:00 p.m. Eastern Daylight Savings Time November 20, 2014. LOIs can be emailed to Sid.Boukabara@noaa.gov.

The JCSDA executive team will review each LOI to determine whether the LOI is responsive to the program goals as advertised in this notice. A LOI response (e-mail or letter) will be sent back to the investigator encouraging or discouraging a full proposal by or around November, 28 2014. The final decision to submit a full proposal will be made by the investigator.

B. Full Proposal Application

The proposals must include the required elements identified below and total no more than 10 pages in double-spaced, 12-point font format. The signed title page, abstract, detailed budget, investigator(s) vitae, any appendices, and grant application forms are not included in the 10-page limit. Multi-year proposals up to a maximum of 3 years will be considered; however, funding beyond the first year will be dependent upon satisfactory performance and the availability of funds. August 1, 2015 is to be used as the proposed start date on proposals unless otherwise directed by the NOAA Program Officer. All proposals must include the following elements (Proposals not including these elements will be rejected):

1. Title Page. This page shall provide the project title, the name (s) of the lead Principal Investigator (PI), Co-investigator name(s) if any, the respective affiliations, complete addresses, telephone, fax, and email information. The title page is to present the total amount of Federal funds requested for each budget period. The title page shall also identify the specific research area of interest (the most relevant area from those listed in the Program Priorities in this announcement) and clearly identify that the proposal is in response to this announcement.

2. Abstract Page: An abstract must be included and must contain an introduction to the problem, rationale behind the proposal, and a brief summary of work to be completed. The

abstract must appear on a separate page (not part of the 10 page count), headed with the proposal title, Institution(s), investigator(s), total proposed cost and budget period.

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

4. Project Description. The proposed project must be completely described, including identification of the problem, scientific objectives, proposed methodology, outreach and education strategy, and relevance to the program priorities given earlier in this announcement. The maturity of the project in terms of readiness for transition to an operational system should be described. Multi-year applications must include a program description for each year of the proposed activity.

5. Budget and Proposed Budget Justification. The proposal must include total and annual budgets (for multi-year applications) corresponding with the descriptions provided in the project description. A detailed budget must be included in an appendix to the proposal including a narrative providing the basis and justification of the proposed budget, and the indirect cost rate agreement. Joint proposals must include detailed budgets for each institution.

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

7. Current and Pending Support. For each investigator receiving funding, submit a list which includes: project title, supporting agency with grant number, investigator months, dollar value, and duration. Requested values are to be listed for pending support.

8. Applicants are not required to answer any items on the NEPA Questionnaire.

C. Submission Dates and Times

Letters of Intent must be received by NOAA/NESDIS no later than 5:00 p.m. Eastern Daylight Savings Time November 20, 2014. Full proposals must be received no later than 5 p.m. Eastern Daylight Time, January 26th, 2015. Applications received after this date will be rejected. For LOIs sent by email, the date and time indicator on the email will be used. For LOIs sent by hard copy, time and date indicator will be date and time stamped when they are received. For full proposals sent through Grants.gov, the Grants.gov date and time

indicator will be used. Full proposals sent by hard copy will be date and time stamped when they are received.

D. Intergovernmental Review

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

E. Funding Restrictions

Funding beyond the first year will be dependent upon satisfactory performance and the continued availability of funds.

F. Other Submission Requirements

LOIs should be sent to Sid Boukabara@noaa.gov and James.G.Yoe@noaa.gov.

Full proposals from non-Federal organizations must be submitted through www.grants.gov, unless the organization is without internet access. In that case, hard copy proposals may be sent to Dr. S.A. Boukabara, JCSDA, NOAA/NESDIS, NOAA Center for Weather and Climate Prediction (NCWCP), 5830 University Research Court, Suite 2600 Rm 2617, College Park, Maryland 20740.

V. Application Review Information

A. Evaluation Criteria

The evaluation criteria and weighting of the criteria are as follows:

1. Importance/Relevance and Applicability of Proposed Projects to the Program Goals (40 points): This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to JCSDA, Federal, regional, state, or local activities. This includes:

a. Will the proposed project make a significant contribution to the high priority research and technical areas listed above?

b. Does the proposed work have the potential to significantly advance the use of satellite observations in operational prediction models used by one of the JCSDA partners?

c. Does the proposed work include an effective mechanism by which the project's progress can be evaluated?

d. Does the proposed work demonstrate potential for successful transition from research to operations?

e. How mature is the proposed work in terms of its readiness for transition to operations?

2. Technical and Scientific Merit (35 points): 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. This includes:

a. Is the approach technically sound?

b. Does the proposed project build on existing knowledge?

c. Is the approach innovative?

3. Overall Qualifications of Applicants (15 points): This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. This includes:

a. Are the proposers capable of conducting a project of the scope and scale proposed (i.e., scientific, professional, facility, and administrative resources/capabilities)?

b. Are appropriate partnerships going to be employed to achieve the highest quality content and maximal efficiency?

4. Project Costs (10 points): This criterion evaluates the budget to determine if it is realistic and commensurate with the projects needs and time-frame. For the Satellite Data Assimilation competition this includes:

a. Is the budget realistic and commensurate with the project needs?

b. Does the budget narrative justify the proposed expenditures?

c. Is the budget within the range described in this program call?

5. Outreach and Education (0 points): This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. This competition does not use this criterion.

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 evaluation criteria by at least 3 independent peer reviewers. These reviewers may include both Federal and non-Federal individuals.

The merit reviewers' ratings are used to produce a rank order of the proposals. The selecting official shall award in the rank order unless a proposal is justified to be selected out of rank order based upon one or more of the selection factors provided below. The Program Official and/or Selecting Official may negotiate the funding level of the proposal. The Selecting Official makes final recommendations for award to the NOAA Grants Officer who is authorized to obligate the funds and execute the award.

C. Selection Factors

The merit review ratings shall provide a rank order to the Selecting Official for final funding recommendations. The Selecting Official, Dr. Boukabara, shall award in the rank order unless a 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 JCSDA and its federal partner agencies, (4) Program priorities and policy factors, (5) Applicant's prior award performance, (6) Partnerships with/Participation of targeted groups (Reference Section I, B), (7) Adequacy of information necessary for NOAA staff to make a NEPA determination and draft necessary documentation before recommendations for funding are made to the Grants Officer.

D. Anticipated Announcement and Award Dates

Subject to the availability of funds, review of proposals will occur during the fall and early winter of 2015, and funding is expected to begin during August of 2015 for most approved projects. August 1, 2015, is to be used as the proposed start date on proposals, unless otherwise directed by the NOAA Program Officer.

VI. Award Administration Information

A. Award Notices

The notice of award made by NOAA is signed by the NOAA Grants Officer and is the authorizing document. It is provided electronically or by postal mail to the appropriate business office of the recipient organization.

B. Administrative and National Policy Requirements

NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals which are seeking NOAA federal funding opportunities. Detailed information on NOAA compliance with NEPA can be found at the following NOAA NEPA website: http://www.nepa.noaa.gov/, including our NOAA Administrative Order 216-6 for NEPA, http://www.nepa.noaa.gov/NAO216_6_TOC.pdf, and the Council on Environmental Quality implementation regulations, http://ceq.eh.doe.gov/nepa/regs/ceq/toc_ceq.htm Consequently, as part of an applicant's package, and under their description of their program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non-indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems). In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting of an environmental assessment, if NOAA determines an assessment is required. Applicants will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. The failure to do so shall be grounds for not selecting an application. In some cases if additional information is required after an application is selected, funds can be withheld by the Grants Officer under a special award condition requiring the recipient to submit additional environmental compliance information sufficient to enable NOAA to make an assessment on any impacts that a project may have on the environment.

Pre-Award Notification Requirements for Grants and Cooperative Agreements. The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of December 17, 2012 (77 FR 74634) are applicable to this solicitation.

Limitation of Liability. In no event will NOAA or the Department of Commerce be responsible for proposal preparation costs. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds. Recipients and sub-

recipients are subject to all Federal laws and agency policies, regulations and procedures applicable to Federal financial assistance awards.

Unpaid or Delinquent Tax Liability. In accordance with current Federal appropriations law, NOAA will provide a successful corporate applicant a form to be completed by its authorized representatives certifying that the corporation has no Federally-assessed unpaid or delinquent tax liability or recent felony criminal convictions under any Federal law.

Federal Funding Accountability and Transparency Act of 2006. This Act includes a requirement for awardees of applicable Federal grants to report information about first-tier sub-awards 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 Sub-award Reporting System (FSRS) available at www.FSRS.gov on all sub-awards over $25,000.

C. Reporting

All financial and progress reports shall be submitted electronically through the Grants Online system. Reports are to be submitted to the NOAA Program Officer. Financial and Performance reports are due semi-annually.

VII. Agency Contacts

Administrative questions should be directed to Ericka Rosier, by phone 301-683-3512, or email: Ericka.rosier@noaa.gov. For technical questions, please contact Dr. S.A. Boukabara, NOAA Program Officer, via email: Sid.Boukabara@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 organization's 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.

Environmental data and information, collected and/or created under NOAA grants/cooperative agreements must be made visible, accessible, and independently

understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two (2) years after the data are collected or created), except where limited by law, regulation, policy or by security requirements.

1. Unless otherwise noted in this federal funding announcement, a Data/Information Sharing Plan of no more than two pages shall be required as part of the Project Narrative. A typical plan may include the types of environmental data and information to be created during the course of the project; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; policies addressing data stewardship and preservation; procedures for providing access, data, and security; and prior experience in publishing such data.

The Data/Information Sharing Plan will be reviewed as part of the NOAA Standard Evaluation Criteria, Item 1 -- Importance and/or Relevance and Applicability of Proposed Project to the Mission Goals.

2. The Data/Information Sharing Plan (and any subsequent revisions or updates) will be made publicly available at time of award and, thereafter, will be posted with the published data.

3. Failing to share environmental data and information in accordance with the submitted Data/Information Sharing Plan may lead to disallowed costs and be considered by NOAA when making future award decisions.