1. Scope of Program

1.1 Overview

The Applied Sciences Program, Public Health Applications Element, within the NASA Earth Science Division manages this activity. This solicitation seeks proposals:

- To perform short-term, feasibility studies of applications of Earth science research results that will improve decision-making activities in the focus area of Public Health.

The overall objective of these projects is to generate and test preliminary ideas for applications of Earth science products to determine their potential value and readiness for a more in-depth project.

1.2 Program Objectives

The overarching purpose of the Applied Sciences Program is to discover and demonstrate innovative and practical applications of NASA Earth science research, technology, and observations. To this end, the program seeks to increase the benefits to society of the nation’s investments in the NASA Earth science research program.

The Applied Sciences Program supports applied science research, applications, and decision support activities that supply foundational applied knowledge and enable practical applications of Earth science products in partnership with end user organizations. The program thus serves as a bridge between the data and knowledge generated by NASA Earth science and the information needs and decision making of government agencies, companies, and other organizations.

The Applied Sciences Program employs an “end-to-end” approach to extend Earth science research results as inputs to decision-making activities. The Program works together with organizations that develop, own, and employ operational decision support tools, systems, assessments, etc. to serve their mandated responsibilities, such as Federal and not-for-profit organizations. It also works with international, national, and regional associations, such as the World Health Organization and the Red Cross. The Program also allows and encourages private sector companies to submit proposals and/or be involved in project teams.

1.3 Priority Topics

Applicants may propose projects in the priority area of Public Health.

The Public Health application area focuses on Earth science applications to public health and safety, particularly regarding infectious disease, emergency preparedness and response, and

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1 The term “end user” here means the organization(s) that will ultimately operate the improved decision-making activity.
environmental health issues. The application explores issues of toxic and pathogenic exposure, as well as natural and man-made hazards and their effects, for risk characterization/mitigation and improvements to health and safety.

In this solicitation, the program primarily requests feasibility studies of applications of Earth science research results that will improve decision-making activities concerning emerging and reemerging diseases and current infectious disease issues. These studies are particularly encouraged for the regions of North and South America, however, no region is discouraged from proposing. Proposals are encouraged to include different types of models (e.g., ecological forecasting models, Global Climate Models (including regional downscaling)) in their studies to complement the utilization of an array of Earth observations.

The program also will accept proposals that test the feasibility and investigate the integration of previously-funded work into new or different decision-making systems and tools.

The Public Health Program website is available at http://nasascience.nasa.gov/earth-science/applied-sciences/.

2. Category of Projects

Through this solicitation, the Applied Sciences Program supports projects that utilize NASA Earth science research results in decision-making activities for Public Health.

2.1 Project Scope and Purpose

The Applied Sciences Program seeks results-oriented projects focused on the integration of Earth science research results into decision making activities related to Public Health. The objective of a proposed project must be to test the initial feasibility of a concept for potential application of specific NASA Earth science research results to a decision-making activity.

Applicants may propose concepts that would:

- Enhance the performance of existing decision-making activities and processes through the integration of NASA Earth science products; or
- Develop new capabilities for decision making, provided that the need and activity can be clearly defined, and that potential end users are identified.

Proposals that pursue innovative uses and integration of an array of Earth science results and develop and demonstrate improvements to decision-making activities are preferred. NASA Earth science research results can include Earth science measurements (particularly NASA spacecraft observations, both in orbit and planned), outputs and predictive capabilities from Earth science models (especially ones that use NASA spacecraft observations or are NASA-sponsored), algorithms, visualizations, new knowledge about the Earth system, and other techniques and geosciences products. Proposals may blend commercial remote sensing and geospatial information with NASA Earth science measurements to integrate into and improve decision making.
The Applied Sciences Program supports projects that address topics that are of national or regional importance. Projects may be international, national, regional or subregional in scope but all have potential importance at regional or national scales.

2.2 Specific Suggestions and Considerations

The Applied Sciences Program encourages teams to consider using an array of appropriate Earth science research results. The program encourages teams to consider using products from recently-launched NASA missions, Earth science models, and simulated products from future satellite observations (e.g., Glory, NPP, GPM, LDCM, NPOESS, and SMAP). The Program strongly encourages teams to engage people who are knowledgeable of NASA science, model, and sensors (e.g., science teams and instrument scientists) to understand capabilities and limitations.

3. Programmatic Information

<table>
<thead>
<tr>
<th>Expected program budget for new awards</th>
<th>$750K total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated number of awards pending adequate proposals of merit</td>
<td>5-7 projects</td>
</tr>
<tr>
<td>Expected Range of Award per project</td>
<td>$100K - $150K</td>
</tr>
<tr>
<td>Period of Performance</td>
<td>12-24 months</td>
</tr>
<tr>
<td>Expected Project Start Date</td>
<td>circa October 1, 2010</td>
</tr>
<tr>
<td>Contributions from Partner Organizations</td>
<td>Encouraged; however, partner funding does not count toward funding level guidelines.</td>
</tr>
</tbody>
</table>

4. Amendments and Clarifications to the Summary of Solicitation

The following information provides clarifications or amendments to the ROSES Summary of Solicitation. The information below supersedes direction provided in the respective sections of the ROSES Summary of Solicitation.

4.1 Funding Policies: Changes to Section II(a) of the Summary of Solicitation

This solicitation is for new awards. NASA will not accept proposals for successor proposals to solicited projects whose periods of performance are ending – unless the work proposed is to investigate the integration of the previously funded work into new systems and tools. NASA will not accept proposals for supplemental funding of existing, solicited projects in response to this solicitation.

4.2 Eligibility of Applicants: Changes to Section III(a) of the Summary of Solicitation

All organizational sectors are eligible to apply, including academia, private, government, and nonprofit sectors. Multi-organizational and disciplinary teams are strongly encouraged.
4.3 Cost Sharing or Matching: Changes to Section III(c) of the Summary of Solicitation

Contributions and cost sharing from proposing institutions and partner organizations is highly encouraged, but not required. The Program accepts in-kind contributions during the course of the project as cost sharing. Relevant past work, prior results, or previous support and accomplishments can be described, but the Program does not consider these as cost sharing or in-kind contributions for proposals to this solicitation.

4.4 Proposal Format and Contents: Changes to Section IV(b)(ii) of the Summary of Solicitation

Proposals should adhere to the following page guidelines and order. Content descriptions, if specified below, modify Section 2.3 of the NASA Guidebook for Proposers.

Proposal Cover Page...................................................As found on NSPIRES site or Grants.gov (includes budget summary)
Proposal Summary.....................................................300 words (included in cover page)
Table of Contents......................................................................................................1
Decision-making Activity – Description .....................................................................½ - 1
Earth Science Research Results..................................................................................1
Technical/Scientific/Management Section (including charts/figures/tables)..............6-8
  - Integrated System Solution (ISS) chart (optional)
  - Figures and Tables (as appropriate; integrated into text if possible)
Feasibility Criteria....................................................................................................½
Anticipated Results/Improvements............................................................................½
Schedule...................................................................................................................½
Statements of Commitment – Co-Is............................................................as needed
  Statements from End-user Organizations up to 4
Budget Justification: Narrative and Details..................................................as needed
Facilities and Equipment (if applicable)....................................................................1
Curriculum Vitae: Principal Investigator.................................................................2
Each Co-Investigator ..............................................................................................1
Current/Pending Support .......................................................................................as needed
References and citations.........................................................................................as needed

Decision-making Activity
This section must identify and describe the decision-making activity to be enhanced in the project. The section should describe the management, business, or policy topic or issue that it serves, the specific analyses and decisions the end-user organization makes, and how the organization uses the decision-making activity to support its actions and decisions. Applicants are strongly encouraged to quantify the pre-project, baseline performance of the decision-making activity.

Earth Science Research Results
This section must identify and describe the Earth science research results (see Section 1.2 of this appendix) that the proposal seeks to integrate into and improve the decision-making activity.
**Technical/Management/Scientific Section**

As the main body of the proposal, this section should cover the following material:

- Objectives, relevance, and importance of the proposed topic and activity;
- Technical approach and methodology to be employed, including any innovative aspects, integration problems, and rationale for the NASA Earth research results to be integrated;
- Approach to assess the feasibility and quantify improvements;
- Challenges and risks affecting project success

**Feasibility Criteria**

This section must articulate the criteria and measures (both quantitative and qualitative) the team will use to determine the feasibility of the candidate configuration(s).

**Anticipated Results**

This section must state the team’s hypothesis for the expected, quantitative improvement(s) over the “baseline” performance.

**Statements of Commitment**

In addition to the brief statements from Co-Is required per Section 2.3.10 of the *NASA Guidebook for Proposers*, this section may include up to 4, one-page letters from the end-user organizations stating their interest and potential benefit from the proposed project.

**Budget**

The NASA Science Mission Directorate has adopted commercial data purchases as a mainstream way of acquiring research-quality data, as these commercial capabilities become available. Per NASA policy, NASA encourages the use of commercially available data sets by Principal Investigators, as long as it meets the scientific requirements and is cost-effective. In addition to the budget guidance in the *Summary of Solicitation*, the proposal should identify the commercial data sources intended for use and details on the associated cost.

**4.5 Evaluation Criteria: Subfactors for Section V(a) of the Summary of Solicitation and Section C.2 of the NASA Guidebook for Proposers**

In addition to the factors given in the *NASA Guidebook for Proposers*, the evaluation criterion “relevance to NASA’s strategic goals and objectives” specifically includes the following factors:

- Overall intent and ability to demonstrate the feasibility of NASA Earth science research to address a topic of importance to the nation;
- Overall intent and ability to employ NASA Earth science research results to make potentially valuable, substantive improvements to decision-making activities; and,
- Importance, breadth and potential impact of the project.

In addition to the factors given in the *NASA Guidebook for Proposers*, the evaluation criterion "intrinsic merit" specifically includes the following factors:

- Overall quality of the project idea, design, and innovation;
• Overall ability to develop and test the feasibility of the proposed concept;
• Overall plan and ability to use an appropriate array of Earth science results; and
• Overall plan and ability to use Earth science model outputs, model predictive capabilities, spacecraft measurements from more recent NASA Earth science missions, and simulated products from future planned missions;

In addition to the factors given in the *NASA Guidebook for Proposers*, the evaluation criterion “cost realism” specifically includes the following factor:

• Overall approach and ability to manage the project and achieve stated objectives in the time and at the costs specified.

Cost sharing is not part of the proposal evaluation criteria. At the time of project selection when deciding between proposals of otherwise equal merit, NASA will consider the extent to which the proposed project includes funds or in-kind contributions from non-Federal sources and Federal agencies, consistent with Section 4.3 of this appendix and Section III(c) of the *Summary of Solicitation*.

4.6 *Award Reporting Requirements: Changes to Section VI(c) of the Summary of Solicitation*

The following reports will be required of awarded proposals. In cases where teams of organizations or subcontracts exist, consolidated project reports, including financial records, must be submitted and is the responsibility of the lead organization. The proposed budget should provide for these reporting requirements.

*Semianannual Reports – Performance and Financial*

Brief semiannual reports are required that provide information on the following: major activities and accomplishments of preceding six months (including publications and presentations), schedule status, financial activity, and performance measures. The report should be approximately 1-2 written pages, with the actual length depending on the level of activity. The first report must identify changes made during the award negotiations. The Program will work with the project team on an appropriate format.

*Final Report/Feasibility Assessment*

The final report should describe the system configuration(s) assessed in the project, quantitative and qualitative enhancements to the decision support activity, change in performance, feasibility criteria results, explanations of any variations from anticipated results, discussion of major problems (technical and other) encountered and resolved, lessons learned, recommendations, and remaining issues facing the sustained use of the Earth science products in the decision-making activity. The program may request a presentation of the project report, results, and findings.

During contract negotiation, NASA representatives will discuss methods, including electronic reporting, to transmit the reports and presentation packages. The NASA Shared Services Center (NSSC) will also solicit and archive the annual reports and final report.
5. Education and Public Outreach Opportunities

NASA policy strongly encourages participation in Education and Public Outreach (E/PO) activities by members of the science community. You may be eligible to propose a supplemental Education or Outreach effort if your research proposal is selected for award. The research award must have more than 12 months remaining at the time of submission of the supplement proposal. For additional details concerning the submission of Outreach or Education supplement proposals, please see Supplemental Outreach Awards for ROSES Investigators (Appendix E.5) and Supplemental Education Awards for ROSES Investigators (Appendix E.6).

6. Summary of Key Information

<table>
<thead>
<tr>
<th>Expected program budget for first year of new awards</th>
<th>See Section 3 of this appendix.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new awards pending adequate proposals of merit</td>
<td>See Section 3 of this appendix.</td>
</tr>
<tr>
<td>Maximum duration of awards</td>
<td>12 to 24 months</td>
</tr>
<tr>
<td>Due date for Notice of Intent to propose (NOI)</td>
<td>Not requested</td>
</tr>
<tr>
<td>Due date for Proposals</td>
<td>See Tables 2 and 3 in the <strong>ROSES Summary of Solicitation</strong>.</td>
</tr>
<tr>
<td>Planning date for start of investigation</td>
<td>See Section 3 of this appendix.</td>
</tr>
<tr>
<td>Page limit for the central Science-Technical-Management section of proposal</td>
<td>See Section 4.4 of this appendix and also Chapter 2 of the <em>NASA Guidebook for Proposers</em>.</td>
</tr>
<tr>
<td>Relevance to NASA</td>
<td>This program is relevant to the Earth science strategic goals and subgoals in NASA’s <em>Strategic Plan</em>; see Table 1 and the references therein. Proposals that are relevant to this program (see Section 1.2 of this appendix) are, by definition, relevant to NASA.</td>
</tr>
<tr>
<td>General information and overview of this solicitation</td>
<td>See the <strong>ROSES Summary of Solicitation</strong></td>
</tr>
<tr>
<td>Detailed instructions for the preparation and submission of proposals</td>
<td><em>See the NASA Guidebook for Proposers at <a href="http://www.hq.nasa.gov/office/procurement/nraguidebook/">http://www.hq.nasa.gov/office/procurement/nraguidebook/</a>.</em> See also Section 4.4 of this appendix for content guidance and changes.</td>
</tr>
<tr>
<td>Submission medium</td>
<td>Electronic proposal submission is required; no hard copy is required or permitted. See also Section IV of the <strong>ROSES Summary of Solicitation</strong> and Chapter 3 of the <em>NASA Guidebook for Proposers</em>.</td>
</tr>
<tr>
<td>Web site for submission of proposal via NSPIRES:</td>
<td><a href="http://nspires.nasaprs.com/">http://nspires.nasaprs.com/</a> (help desk available at <a href="mailto:nspires-help@nasaprs.com">nspires-help@nasaprs.com</a> or (202) 479-9376)</td>
</tr>
<tr>
<td>Web site for submission of proposal via Grants.gov:</td>
<td><a href="http://grants.gov/">http://grants.gov/</a> (help desk available at <a href="mailto:support@grants.gov">support@grants.gov</a> or (800) 518-4726)</td>
</tr>
<tr>
<td><strong>Funding opportunity number for downloading an application package from Grants.gov</strong></td>
<td>NNH10ZDA001N-PHFEAS</td>
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</tbody>
</table>
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Earth Science Division  
Science Mission Directorate  
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