Dynamics of Coupled Natural and Human Systems (CNH)

PROGRAM SOLICITATION
NSF 14-601

REPLACES DOCUMENT(S):
NSF 10-612

National Science Foundation

Directorate for Social, Behavioral & Economic Sciences

Directorate for Biological Sciences

Directorate for Geosciences

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

November 18, 2014

Third Tuesday in November, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation invites the submission of proposals to the Dynamics of Coupled Natural and Human Systems (CNH) Program. CNH has functioned as a standing, multi-directorate program that has been co-managed by three directorates (Biological Sciences; Geosciences; and Social, Behavioral, and Economic Sciences) since 2007. From 2001 through 2005, CNH functioned as a special competition in the Biocomplexity in the Environment emphasis area.

While the core purposes and funding mechanisms for CNH remain largely unchanged, this solicitation includes the following changes from the previous solicitation:

- This solicitation provides new language to clarify expectations regarding the kinds of research that CNH will support, including the identification of four components, all of which must be addressed effectively to warrant CNH funding. These four components and the ways that research on these four components must be integrated must now be included in a special section of the Project Description of the proposal.
- This solicitation contains a change in the descriptions of the nature of the research projects that CNH will support. The solicitation also includes a change in the maximum level of support that will be provided for each kind of requested CNH award as well as language that permits any kind of CNH award to be as long as five years in duration.
- This solicitation specifies that only academic institutions and non-profit, non-academic organizations are eligible to submit proposals for CNH funding. This solicitation continues the restriction that only one proposal may be submitted for a project. If multiple organizations are participating in the project, support for secondary organizations must be made via subawards from the lead organization. Of the two types of collaborative proposal formats described in the Grant Proposal Guide, this solicitation allows only a single proposal submission with subawards administered by that lead organization.
- This solicitation provides new guidance regarding mandatory sections for CNH proposals and provides clarification regarding supplementary documents that may be included as well as other facets of proposal preparation.
- This solicitation identifies new solicitation-specific review criteria to be used in coordination with the standing NSF review criteria of Intellectual Merit and Broader Impacts.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 16-1), which is effective for proposals submitted, or due, on or after January 25, 2016.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Dynamics of Coupled Natural and Human Systems (CNH)

Synopsis of Program:

The Dynamics of Coupled Natural and Human Systems (CNH) Program supports interdisciplinary research that examines human and natural system processes and the complex interactions among human and natural systems at diverse scales. Research projects to be supported by CNH must include analyses of four different components: (1) the dynamics of a natural system; (2) the dynamics of a human system; (3) the processes through which the natural system affects the human system; and (4) the processes through which the human system affects the natural system. CNH also supports research coordination networks (CNH-RCNs) designed to facilitate activities that promote future research by broad research communities that will include all four components necessary for CNH funding.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Thomas J. Baerwald - 2017 Lead, telephone: (703) 292-7301, email: cnh@nsf.gov
- Janice Bossart, telephone: (703) 292-7870, email: cnh@nsf.gov
- Richard F. Yuretich, telephone: (703) 292-4744, email: cnh@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.050 --- Geosciences
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 10 to 15

Anticipated Funding Amount: $17,050,000

This total is for awards to be made annually, pending availability of funds.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI:

There are no restrictions or limits.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
  - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.
  - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- **Cost Sharing Requirements:**

  Inclusion of voluntary committed cost sharing is prohibited.

- **Indirect Cost (F&A) Limitations:**

  Not Applicable

- **Other Budgetary Limitations:**

  Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

  November 18, 2014

  Third Tuesday in November, Annually Thereafter

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Standard NSF reporting requirements apply.

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I. INTRODUCTION

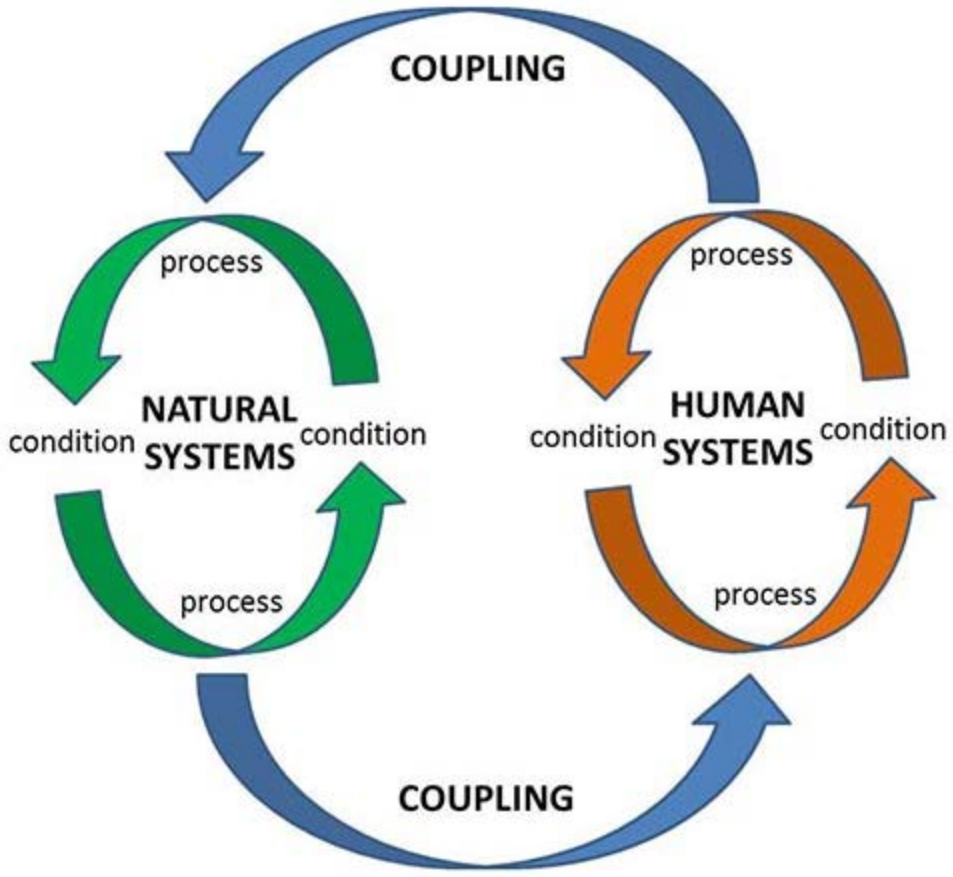
The Dynamics of Coupled Natural and Human Systems Program (CNH) supports research projects that will advance basic scientific understanding about the complex interactions among biophysical and human systems. CNH also supports research coordination networks designed to enhance and expand research communities that focus on the dynamics of coupled natural and human systems.

CNH is a standing program jointly operated by three NSF directorates (Biological Sciences; Geosciences; and Social, Behavioral, and Economic Sciences). CNH provides support only for projects described in proposals submitted for the annual CNH competition.

For more information about CNH, consult the CNH web site at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13681.

II. PROGRAM DESCRIPTION

The Dynamics of Coupled Natural and Human Systems (CNH) Program supports research projects that advance basic scientific understanding about the complex interactions among natural physical and/or biological systems and human social and behavioral systems. CNH projects must include analyses of four different components: (1) the dynamics within one or more natural systems; (2) the dynamics within one or more human systems; (3) the processes through which the natural systems affect the human systems; and (4) the processes through which the human systems affect the natural systems. Projects may examine relevant exogenous factors but must include analyses of the four components identified above. The diagram below illustrates the four requisite components of a successful CNH project.



Natural systems are those whose dynamics are governed by biological and/or physical processes, while human systems are those whose dynamics are governed by human actions. CNH projects examine human and natural systems that comprise many individuals; for example, natural communities or human societies. Projects in which either of the systems is a single individual, component, or organism are unlikely to be supported by CNH.

Following are examples of the kinds of projects that might be supported with CNH support:

- A project might study interactions between the natural vegetation and soil erosion in a specific type of area, the interactions between land use and social governance in the area, how changes in vegetation and soil affect land use and governance, and how land use and governance impact on the vegetation and erosion.
- A project might study the population dynamics of marine fish and their prey in a fishery, interactions between the behavior of fishermen and economic markets for fish, how changes in the abundance of fish affect the economic markets, and how fishing pressure affects the population dynamics of fish and other marine species.

CNH projects should address questions of general, theoretical interest in both the natural sciences and in the social and behavioral sciences. Proposals should present clear, novel, and non-trivial hypotheses that can be tested conclusively using a scientifically sound research design that employs current or innovative methods. A CNH research proposal should demonstrate how the proposed research is well grounded in relevant theory from a range of appropriate fields and how it will advance basic understanding in both the natural sciences and the social and behavioral sciences. The project should focus on one or a limited number of specific questions that follow from the theoretical discussion and review of relevant literature. Projects likely to improve capabilities for predicting the responses of systems to endogenous and exogenous changes, including appropriate estimates of uncertainty in model predictions, are encouraged.

CNH research teams should have expertise that enables the team to conduct the proposed research effectively. Project personnel should include expertise from the natural sciences and the social and behavioral sciences.

CNH projects must show promise of having strong broader impacts with respect to one or more of the following kinds of activity: (1) providing special education and training opportunities related to CNH research; (2) broadening the diversity of scholars engaged in CNH research; (3) contributing to the infrastructure for future CNH research; and (4) using CNH research for societal benefit.

CNH will support research projects in two different categories:

- **CNH Large Research Projects.** Awards in this category provide two to five years of support for projects ranging in size from $500,000 to $1,800,000.
- **CNH Small Research Projects**. Awards in this category provide two to five years of support for projects ranging in size from $150,000 to $500,000.

Large and small research projects are expected to differ in scope. For example, small projects may have fewer study sites or personnel, may study systems with fewer key processes, or may require less time. Proposals for small projects are not expected to compete with proposals for large projects; large and small projects will be evaluated independently. Note that both large and small research projects must include research on all four of the CNH components, as previously described.

Budgets should be developed at levels justified by the planned activities. The amounts listed above are total budgets over the duration of the project, including both direct and indirect costs.

CNH also supports **CNH Research Coordination Networks (CNH-RCNs)**, which aim to enhance and expand research communities focusing on the dynamics of coupled natural and human systems. A CNH-RCN seeks to encourage development of new research directions by supporting groups of researchers to communicate and coordinate their research, educational, and training activities across disciplinary, organizational, and geographic boundaries. Although a CNH-RCN should not support either planning or conduct of individual research projects, it should engage in activities that will facilitate future basic research across scientific communities. The scientific work to be advanced should include all four components necessary for CNH funding. CNH-RCN awards support the means by which investigators can share information and ideas, foster synthesis and new collaborations, develop community standards, and in other ways advance science and education through communication and sharing of ideas. CNH-RCN awards are not meant to support existing networks or the activities of established collaborations.

A CNH-RCN may receive support for four or five years of activity at a level not to exceed $500,000 for the total budget over the duration of the project, including both direct and indirect costs.

CNH-RCN organizers should follow the special instructions for preparation of proposals in the latter part of this solicitation. They should not use the instructions found in the general Research Coordination Network (RCN) solicitation.

CNH funds provide support only for projects based on proposals submitted to and evaluated during the annual CNH competition. CNH funds are not used to provide supplements to current CNH awards. CNH does not support CAREER awards, doctoral dissertation research improvement awards, individual fellowships, or undergraduate research awards. CNH funds are not used to co-fund proposals submitted to regular NSF programs, and CNH does not fund proposals submitted directly for NSF program officer review, such as RAPID or EAGER proposals.

III. AWARD INFORMATION

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

NSF expects to have at least $17,050,000 available to support awards resulting from this competition. Support provided through this competition for awards consists of a range of sizes from roughly $500,000 to no more than $1,800,000 for CNH Large Research Projects; $150,000 to no more than $500,000 for CNH Small Research Projects; and $300,000 to no more than $500,000 for CNH Research Coordination Networks. Budgets should be developed at scales appropriate for the project to be conducted.

Projects should be conducted for the length of time necessary to effectively conduct the project. No CNH award may be more than five years in duration. Depending on the quality of proposals for projects of different size and the availability of funds, NSF anticipates making 10 to 15 CNH awards annually.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI:

There are no restrictions or limits.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

The following information deviates from the Grant Proposal Guide (*GPG*) and the NSF Grants.gov Application Guide:

Proposal Format

Proposals not in conformance with the proposal-preparation requirements of the GPG or NSF Grants.gov Application Guide or the requirements within this solicitation will be returned without review. Please note, however, that the page limits contained in this solicitation take precedence over those given in the GPG and NSF Grants.gov Application Guide.

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This program solicitation requests material about the personnel involved in the project. Please use the following definitions to provide the corresponding information.

- **Principal Investigators** -- Individuals who will assume administrative responsibility for an award resulting from this competition, will help manage the award, and are listed on the cover sheet of the proposal.
- **Senior Personnel** -- All Principal Investigators, any other named senior personnel who will receive salary support, and any non-salaried senior investigators who will play lead roles in the conduct of the project. This group may include active participants in the research team from outside the U.S. (For CNH-RCN proposals, all members of the proposed steering committee are considered to be senior personnel.)
- **Project Participants** -- Every person involved with the research project, including students.

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Proposal Sections to Be Prepared as Directed in the *Grant Proposal Guide* or the *NSF Grants.gov Application Guide*

The following sections of the proposal are mandatory and should be prepared in accordance with instructions regarding those sections in the *Grant Proposal Guide* or the *NSF Grants.gov Application Guide*:

- **Project Summary** (Note the requirements regarding explicit discussion of the intellectual merit and broader impacts in separate subsections.)
- **References Cited** (Note that this is a separate section of the proposal and that it immediately follows the Project Description.)
- **Biographical Sketches** (Note that biographical sketches for the PI, co-PIs, and all senior personnel should include all required sections, including lists of collaborators and other affiliations.)
- **Budgets** (Note that a narrative with budget justification should follow the budget forms, with explanations for all costs being as detailed as possible. Separate budgets for all subawardee organizations must also be attached along with budget narratives for the subaward budgets.)
- **Current and Pending Support** (Note that this proposal is considered a pending activity and should be listed on the form for the PI, co-PIs, and all other senior personnel.)

Proposal Sections with Special Instructions for Proposals Submitted in Response to This Solicitation

The following sections of the proposal are mandatory and should be prepared in accordance to the following supplementary instructions as well as to guidance in the *Grant Proposal Guide* or the *NSF Grants.gov Application Guide*.

Proposal Cover Sheet

The solicitation number for this solicitation should be specified as the program solicitation number.

For the NSF organizational unit to consider the proposal, select one of the following: AGS-DYN COUPLED NATURAL-HUMAN; BCS-DYN COUPLED NATURAL-HUMAN; or DEB-DYN COUPLED NATURAL-HUMAN. Regardless of which NSF unit you select, all CNH proposals will be collectively managed by the cross-directorate team of CNH program directors. Designation of multiple CNH entries is superfluous. Because CNH does not engage in co-review with regular NSF programs, no other program or competition should be specified on the cover sheet. (Applicants should be aware that if DEB-DYN COUPLED NATURAL-HUMAN is used, the proposal categorization form provided in FastLane must also be completed.)

Proposal Title

The title of the proposal should begin with one of the following prefixes to designate the specific kind of proposal being submitted:

- **CNH-L:** (This prefix is used for a CNH Large Research Project.)
- **CNH-S:** (This prefix is used for a CNH Small Research Project.)
- **CNH-RCN:** (This prefix is used for a CNH Research Coordination Network.)

The rest of the title of the proposal should describe the project in concise, informative language so that a scientifically or technically literate reader could understand what the project is about. The title should emphasize the scientific work to be

undertaken. Proposers should not use cute or attention-grabbing phrases, which could lead reviewers to question the intellectual significance of the project.

Personnel Listed on the Cover Sheet

Provide complete information requested on the cover sheet for the PI and for up to four co-PIs. Note the following special requirement:

- **For CNH-RCN proposals**, the network coordinator should be listed as the PI and up to four members of the CNH-RCN steering committee may be listed as co-PIs. Any other members of the CNH-RCN steering committee should be entered into FastLane as other senior personnel.

Project Description

1. CNH Large Research Projects and CNH Small Research Projects

All project descriptions for CNH Large Research Projects are limited to 20 pages in length.

All project descriptions for CNH Small Research Projects are limited to 15 pages in length.

With the exceptions noted below, proposers seeking funding for either a CNH Large Research Project or a CNH Small Research Project may organize the different components of the project description as they wish. **The following sections must be included in the project description, however, using the headers specified for each section**.

- **CNH Components of the Project.** This section must clearly specify the major components of the project and how they include the four components required in CNH projects: (1) the dynamics within one or more natural systems; (2) the dynamics within one or more human systems; (3) the processes through which the natural systems affect the human systems; and (4) the processes through which the human systems affect the natural systems. The section should also clearly specify how research on the different components will be integrated. A diagram illustrating these components and their integration is not required but is strongly encouraged. This section should not be more than one page in length.
- **Broader Impacts.** As specified in the *Grant Proposal Guide* and in the *NSF Grants.gov Application Guide*, the project description "must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities." CNH applicants are encouraged to specify in this section how the planned work is expected to do one or more of the following: (1) provide special education and training opportunities related to CNH research; (2) broaden the diversity of scholars engaged in CNH research; (3) contribute to the infrastructure for future CNH research; or (4) use CNH research for societal benefit. Applicants should be sure to consider all facets of the NSF merit review criterion related to Broader Impacts in the development of their plans.
- **Management Plan.** The management plan should (1) describe the management structure that will enable the team to work effectively and (2) specify the qualifications of each of the senior personnel and the contribution they are expected to make to the project. This section increases in importance as the number of senior personnel or institutions involved in the project increases. The management plan usually is between one and two pages in length.
- **Results from Prior NSF Support.** This section is required only for principal investigators and co-principal investigators who have received NSF funding in the last five years. Refer to the relevant section of the *Grant Proposal Guide* or the *NSF Grants.gov Application Guide* for information about requirements for this section.

2. CNH Research Coordination Networks

All project descriptions for CNH-RCN proposals are limited to 15 pages in length.

With the exceptions noted below, proposers may organize the different components of the project description as they wish. **The following sections must be included in the project description, however, using the headers specified for each section**.

- **CNH Components of the Project.** This section must clearly specify the major research components that the CNH-RCN will plan to advance and how they align with the four components required in CNH projects: (1) the dynamics within one or more natural systems; (2) the dynamics within one or more human systems; (3) the processes through which the natural systems affect the human systems; and (4) the processes through which the human systems affect the natural systems. The section should also clearly specify how proposed activities will aim to advance integration across the different components. A diagram illustrating these components and their integration is not required but is strongly encouraged. (This section should not be more than one (1) page in length.)
- **Broader Impacts.** As specified in the *Grant Proposal Guide* and in the *NSF Grants.gov Application Guide*, the project description "must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities." CNH applicants must specify in this section how the planned work is expected to do one or more of the following: (1) provide special education and training opportunities related to CNH research; (2) broaden the diversity of scholars engaged in CNH research; (3) contribute to the infrastructure for future CNH research; or (4) use CNH research for societal benefit. Applicants should be sure to consider all facets of the NSF merit review criterion related to Broader Impacts in the development of their plans. They may also address other kinds of broader impacts if they believe those additional impacts are noteworthy.
- **CNH-RCN Leadership:** This section should list the names and affiliations of the individual who will serve as the lead coordinator and the other individuals who will serve as members of the CNH-RCN steering committee. This section should not be more than one page in length. Note that all members of the CNH-RCN steering committee should be considered as senior personnel and that a biographical sketch and current and pending support information must be provided for each steering committee member.
- **Management Plan.** This section should describe plans and procedures for the development and assessment of the proposed CNH-RCN, including formal mechanisms to ensure fair and equitable allocation of group resources. This section should clearly define the responsibilities for leadership and the role of the PI and the steering committee. It should delineate the procedures used for the selection of initial network participants as well as the plans for maintaining an appropriate degree of openness and for encouraging the involvement of additional interested parties. The management plan also should identify how the CNH-RCN will evaluate progress toward the network goals.
- **Results from Prior NSF Support.** This section is required only for principal investigators and co-principal investigators who have received NSF funding in the last five years. It is not necessary to report on results from prior NSF support for members of the CNR-RCN steering committee who are not the PI or a co-PI. Refer to the relevant section of the *Grant Proposal Guide* or the *NSF Grants.gov Application Guide* for information about requirements for this section.

Facilities, Equipment, and Other Resources

As specified in Chapter II, Section C.2.i of the *Grant Proposal Guide* and the comparable section of the *NSF Grants.gov Application Guide*, a description of facilities, equipment, and other resources necessary for the conduct of the proposed work must be specified

in this section. Applicants should be aware that descriptions of other resources that may assist in the conduct of the project may be identified, but these descriptions should be narrative in nature and must not include any quantifiable financial information.

This section should describe only facilities, equipment, and other resources that will be used during the conduct of the project. The section should not explain the specific ways in which resources in the project will be used. Such detailed, project-specific explanations constitute an attempt to circumvent the Project Description page limitation and would constitute grounds for returning the proposal without review.

Note that if there are no facilities, equipment, or other resources to describe, a statement to that effect must be included in the proposal.

Special Information and Supplementary Documentation

Following are supplementary documents for which special instructions are provided for proposals submitted in response to this solicitation that supplement guidance in the *Grant Proposal Guide* and the *NSF Grants.gov Application Guide*:

Post-Doctoral Mentoring Plan

As specified in Chapter II, Section C.2.j of the *Grant Proposal Guide* and the comparable section of the *NSF Grants.gov Application Guide*, a post-doctoral mentoring plan must be provided if any funding is requested to support a post-doctoral researcher in the proposal budget. This is required whether the funding for the post-doctoral researcher(s) is requested in the lead institution's budget or through a subaward. The post-doc mentoring plan must be no longer than one (1) page in length for the project as a whole and must be included as a supplementary document. CNH does not permit the inclusion of a *graduate or undergraduate student* mentoring plan as a supplementary document. Proposals may include such plans in the project description.

Data Management Plan

All proposals must include a plan for data management and sharing the products of research. The data management plan must be no longer than two pages in length and must be included as a supplementary document.

The data management plans must address all five of the points specified in Chapter II, Section C.2.j of the *Grant Proposal Guide* and the comparable section of the *NSF Grants.gov Application Guide*. Proposers are especially encouraged to specify how they intend to make data, software, and other products of the research readily available to potential users through institutionally based archives, repositories, or distribution networks so that the products may be easily accessed by others over long time periods.

Letters of Collaboration or Commitment

Brief letters or free-standing e-mail messages from individuals or organizations that will work with or provide in-kind support for the proposed project may be included as supplementary documents. Such letters are not needed from individuals included as senior personnel on a project or from subawardee organizations, because their involvement in the project is affirmed by their biographical sketches or subaward budgets.

Letters of collaboration or commitment should consist only of the willingness to collaborate or provide in-kind support for the project in ways that have been outlined in the project description. Such letters should not argue for support of the project by detailing activities or reasons for support. Such additional text may be included in the project description of the proposal but is not permitted in a supplementary document.

CNH program directors strongly recommend the use of a template like one of the following for letters of collaboration or letters of commitment. If one of these templates or very similar text is not used, *the text provided by the letter's author must be equally brief and to the point*. Inclusion of longer letters may result in the PIs being forced to remove such letters (with no other changes to the proposal permitted) or in NSF's returning the proposal without review.

Suggested template for a letter of collaboration:

> To: NSF Dynamics of Coupled Natural and Human Systems (CNH) Program
>
> From: _____ [Insert the name of the individual collaborator or name of the organization and name and position of the official submitting this letter]
>
> By signing below or by transmitting this message electronically, I acknowledge that I am listed as a collaborator on the proposal titled _____," [Insert proposal title] with _____ [Insert the PI's name] as the Principal Investigator.
>
> I agree to undertake the tasks associated with me as described in the project description of this proposal.
>
> Signed: _____ [Insert the signature or name of the author of this letter]
>
> Organization: _____ [Insert the name of the organization the letter's author is representing or with which the author is associated]
>
> Date: _____ [Insert the date when the letter is signed or transmitted]

Suggested template for a letter of commitment:

> To: NSF Dynamics of Coupled Natural and Human Systems (CNH) Program
>
> From: _____ [Insert the name of the individual or name of the organization and name and position of the official submitting this letter]
>
> By signing below or by transmitting this message electronically, I acknowledge that I am listed as providing resources for the project described in the proposal titled _____," [Insert proposal title] with _____ [Insert the PI's name] as the Principal Investigator.
>
> I commit to provide or make available the resources designated in the project description of the proposal that seeks support for this project.
>
> Signed: _____ [Insert the signature or name of the author of this letter]

Organization: _____ [Insert the name of the organization the letter's author is representing or with which the author is associated]

Date: _____ [Insert the date when the letter is signed or transmitted]

Lengthier letters from others that articulate what activities a collaborator may undertake and/or that provide arguments for support of a project may be included in the project description.

(Note: When special program solicitations, such as the Facilitating Research at Primarily Undergraduate Institutions (RUI) solicitation, permit special kinds of supplementary documents, they may be permitted in proposals submitted to CNH. If you have questions regarding the appropriateness of certain kinds of submissions, contact the CNH program officers well in advance of the proposal-submission deadline for clarification.)

IRB and/or IACUC Certifications

If the submitting organization's Institutional Review Board (IRB) has approved plans for research involving human subjects or the Institutional Animal Care and Use Committee (IACUC) has approved research involving vertebrate animals, certification of that may be included on appropriate sections of the cover sheet. Documentation of the certification may be included as a supplementary document, but that is not required if sufficient information is provided by the sponsored projects office on the cover sheet of the proposal. If such documentation from an IRB or an IACUC is included, it should only be the certification statement. Documents submitted to the IRB or IACUC to obtain approval should not be included, because such documentation will include material appropriate for inclusion in the Project Description but not as a supplementary document.

If the IRB and/or IACUC have not approved the research plans when the proposal is submitted, the appropriate box(es) should be checked on the cover sheet and "Pending" should be listed on the line that follows. If IRB or IACUC approval is granted while the proposal is under review at NSF, certification of the approval should be sent to the CNH program directors. If the IRB or IACUC asks that plans be forwarded to it for approval, have the application ready to go, because notification from the program director that she/he would like to recommend the proposal for an award may come with a very brief time period during which necessary materials (including the IRB or IACUC certification) must be obtained. If the required certifications cannot be supplied quickly, CNH program directors may have to turn their attention to other meritorious projects that can be funded right away.

Most IRB or IACUC approvals are valid for specific time periods. If the expiration of the current approval will occur before or soon after the possible start date for an award, be prepared to seek renewal of the approval so that you have an active certification if you are informed the proposal will be recommended for funding. Once you receive written certification that your renewal has been approved, forward it to the managing program officer of your proposal.

Other Supplementary Documents

Unless authorized here or in the *Grant Proposal Guide* or the *NSF Grants.gov Application Guide*, **no other materials should be included in this section**. Examples of the kinds of materials that applicants have improperly attempted to include in the past are survey or interview protocols; reprints of articles previously published by the investigators; and letters of support that present arguments on behalf of funding the project. Proposals that include supplementary documents not permitted in this section may be returned without review

Appendices

No appendices are permitted.

Other Issues to Address When Preparing a Proposal for This Solicitation

Proposals Involving Multiple Organizations

In the case of proposals involving multiple organizations, a single organization must be identified as the lead, and a single proposal describing the entire project must be submitted by that organization. Funds may be distributed among partner organizations via subawards from the lead organization. A budget on the standard NSF budget form should be submitted for each subawardee. The requirement for a single organization to submit the sole proposal for a project is designed to facilitate effective coordination among participating organizations and to avoid difficulties that ensue in funded projects when individuals change organizations and/or cease to fulfill project responsibilities.

Of the two types of collaborative proposal formats described in the NSF *Grant Proposal Guide*, this solicitation allows only a single proposal submission with subawards administered by that lead organization. Direct submission of linked collaborative sets of proposals by multiple organizations is not permitted.

Subawards

In accordance with the applicable award terms and conditions, proposers are reminded of their responsibilities with regard to subawardees. Should an award be made, the prime awardee is responsible for flowing down the appropriate terms and conditions to, as well as management and oversight of, any subawardees on the project, including any foreign subawardees.

Proposals Involving Collaborators at Foreign Organizations

As a general principle, NSF expects to support the U.S. side of a research and education collaboration. International collaborators should normally seek funding from their own funding sources. However, a foreign institution may receive limited funding through a subaward if this is the most effective way to accomplish the proposed research and if the foreign partner is making a substantive contribution to the project.

While non-U.S. institutions are not eligible to submit proposals to this competition, the lead U.S. institution may, in limited cases, request funding for non-U.S. institutions through subawards. A subaward to a foreign organization may not include infrastructure or major equipment, and CNH will not provide salary support for senior investigators based in other countries except under unusual and well-justified cases.

As described in Chapter V, Section D.1.(i) of the NSF *Award and Administration Guide*, indirect costs may not be charged by a non-U.S. organization unless that organization has a previously negotiated rate with a U.S. federal agency.

Proposers are reminded they must provide biographical sketches of all senior project personnel, including those associated with foreign organizations. Letters of collaboration prepared in accordance with the guidelines specified above should be provided as

supplementary documents from organizations that will not be supported through subawards.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

CNH funding is expected to be available for awards to be made based on evaluation of proposals submitted for this competition. NSF intends to make awards across a range of sizes as specified for the following types of awards.

A. CNH Large Research Projects. Budgets for CNH Large Research Projects may range from $500,000 to no more than $1,800,000.

B. CNH Small Research Projects. Budgets for CNH Small Research Projects may range from $150,000 to no more than $500,000.

C. CNH Research Coordination Networks. Budgets for CNH-RCNs may range from roughly $300,000 to no more than $500,000.

Budgets should be developed at levels justified by the planned activities. The amounts listed above are total budgets over the duration of the project, including both direct and indirect costs.

No award may be more than five years in duration.

Budget Preparation Instructions:

Subawards:

Each subaward budget must be accompanied by a detailed budget justification immediately following the main budget and justification. Each organization submitting a proposal or a subaward budget should have a DUNS number.<

Research Platform Support:

Specific amounts for research cruises, polar logistics, Arctic logistics, or use of aircraft or other atmospheric sciences field facilities should not be included in the budget request. However, the PI should submit the UNOLS request, OPP logistics form, or AGS facilities form with the proposal.

C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

  November 18, 2014

  Third Tuesday in November, Annually Thereafter

All CNH proposals must be submitted by 5:00 PM (local time of submitting organization) on the annual CNH proposal-submission deadline, which is the third Tuesday of November.

D. FastLane / Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://www.grants.gov/web/grants/applicants.html. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

Proposers that submitted via FastLane are strongly encouraged to use FastLane to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in the GPG as Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: http://www.nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (GPG Chapter II.C.2.d.i. contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including GPG Chapter II.C.2.d.i., prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply

both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
    a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
    b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

In addition to considering the intellectual merit and broader impacts of a proposed project, CNH proposals will be judged with respect to their efficacy in responding to three additional sets of questions:

- Does the proposed work address all four of the required components for CNH support: (1) the dynamics within one or more natural systems; (2) the dynamics within one or more human systems; (3) the processes through which the natural systems affect the human systems; and (4) the processes through which the human systems affect the natural systems, and does the proposal provide a solid plan for integrating work on these four components?
- Does the proposed work show promise of strong broader impacts through one or more of the following kinds of activities that will have positive broader impacts: (1) providing special education and training opportunities related to CNH research; (2) broadening the diversity of scholars engaged in CNH research; (3) contributing to the infrastructure for future CNH research; and (4) using CNH research for societal benefit?
- Does the proposal provide a sound management plan to engender confidence that the research team (or the CNH-RCN steering committee) will effectively coordinate activities and attain project goals?

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications. After an administrative review has occurred, Grants and Agreements Officers perform the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process).

B. Award Conditions

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)*; or Research Terms and Conditions* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Thomas J. Baerwald - 2017 Lead, telephone: (703) 292-7301, email: cnh@nsf.gov
- Janice Bossart, telephone: (703) 292-7870, email: cnh@nsf.gov
- Richard F. Yuretich, telephone: (703) 292-4744, email: cnh@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information),

programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on NSF's website.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this mechanism. Further information on Grants.gov may be obtained at http://www.grants.gov.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**

  Send an e-mail to: nsfpubs@nsf.gov

  or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing

instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Office of the General Counsel
National Science Foundation
Arlington, VA 22230