Research Coordination Networks (RCN)

PROGRAM SOLICITATION

NSF 11-531

REPLACES DOCUMENT(S): NSF 10-566



National Science Foundation

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Education & Human Resources

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Office of Cyberinfrastructure

Office of International Science and Engineering

Office of Polar Programs

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

May 24, 2011

RCN SEES Track

June 15, 2011

RCN UBE and UBE Incubator Track

February 03, 2012

RCN SEES Track

June 15, 2012

RCN UBE and UBE Incubator Track

February 04, 2013

RCN SEES Track

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

Proposals Accepted Anytime

General (non-targeted) RCN proposals should be submitted to a participating program in BIO, GEO, SBE, OCI or OPP. Refer to the specific program website for submission dates. PIs are encouraged to discuss suitability of an RCN topic with the program.

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 11-1, was issued on October 1, 2010 and is effective for proposals submitted, or due, on or after January 18, 2011. Please be advised that the guidelines contained in NSF 11-1 apply to proposals submitted in response to this funding opportunity.

Cost Sharing: The PAPPG has been revised to implement the National Science Board's recommendations regarding cost sharing. Inclusion of voluntary committed cost sharing is prohibited. In order to assess the scope of the project, all organizational resources necessary for the project must be described in the Facilities, Equipment and Other Resources section of the proposal. The description should be narrative in nature and must not include any quantifiable financial information. Mandatory cost sharing will only be required when explicitly authorized by the NSF Director. See the PAPP Guide Part I: *Grant Proposal Guide (GPG)* Chapter II.C.2.g(xi) for further information about the implementation of these recommendations.

Postdoctoral Researcher Mentoring Plan: As a reminder, each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Please be advised that if required, FastLane will not permit submission of a proposal that is missing a Postdoctoral Researcher Mentoring Plan. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

Revision Summary

This revision of the RCN solicitation announces:

- A new targeted opportunity for RCN activities in Science, Engineering and Education for Sustainability (RCN-SEES).
- That the targeted RCN-PLS track will no longer be offered. RCN proposals on topics at the intersection of MPS and BIO programs are encouraged and will be considered for co-review between relevant programs in BIO and MPS. See the Dear Colleague Letter issued jointly by these two directorates: http://www.nsf.gov/pubs/2011/nsf11010/nsf11010.jsp
- The addition of the Directorate for Engineering and the Directorate for Computer and Information Science and Engineering as participating organizations.
- New deadlines for submission of proposals to the RCN-UBE targeted track.
- Clarification of proposal preparation guidelines, especially concerning the definition of steering committee members as senior personnel, and submission instructions for general RCN proposals.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Research Coordination Networks (RCN)

Synopsis of Program:

The goal of the RCN program is to advance a field or create new directions in research or education. Groups of investigators will be supported to communicate and coordinate their research, training and educational activities across disciplinary, organizational, geographic and international boundaries. RCN provides opportunities to foster new collaborations, including international partnerships, and address interdisciplinary topics. Innovative ideas for implementing novel networking strategies, collaborative technologies, and development of community standards for data and meta-data are especially encouraged.

Proposed networking activities directed to the RCN program should focus on a theme to give coherence to the collaboration, such as a broad research question or particular technologies or approaches.

Participating core programs in the directorates for Biological Sciences (BIO), for Geosciences (GEO), and for Social, Behavioral and Economic Sciences (SBE), and offices of Cyberinfrastructure (OCI) and of Polar Programs (OPP) will accept general RCN proposals. These directorates and offices are joined by directorates for Education and Human Resources (EHR), for Mathematics and Physical Sciences (MPS), for Computer and Information Science and Engineering (CISE), and for Engineering (ENG), and the Office of International Science and Engineering (OISE) in participating in the targeted Science, Engineering and Education for Sustainability (RCN-SEES) track described below. BIO and EHR are alone participating in the Undergraduate Biology Education (RCN-UBE) track described below.

Additional targeted tracks within the RCN programs are intended to foster linkages across directorates.

- RCN-SEES: The Science, Engineering and Education for Sustainability track focuses on interdisciplinary
 topics that will advance sustainability science, engineering and education as an integrative approach to
 the challenges of adapting to environmental, social and cultural changes associated with growth and
 development of human populations, and attaining a sustainable energy future.
- RCN-UBE: The Undergraduate Biology Education track could focus on any topic likely to lead to improved participation, learning, or assessment in undergraduate biology curricula.

Several other NSF solicitations accept RCN proposals, or support research networking activities if appropriate to the solicitation. Please see section **IX. Other Information** of this solicitation for a listing.

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

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

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- Education and Human Resources
- 47.078 --- Office of Polar Programs
- 47.079 --- Office of International Science and Engineering
- 47.080 --- Office of Cyberinfrastructure
- 47.081 --- Office of Experimental Program to Stimulate Competitive Research

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 15 to 25 Varies across disciplinary research programs and RCN tracks.

Anticipated Funding Amount: \$7,500,000 to \$17,500,000 Pending availability of funding. Varies across disciplinary research programs and RCN tracks.

Eligibility Information

Organization Limit:

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.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- · Letters of Intent: Not Applicable
- Preliminary Proposal Submission: Not Applicable
- 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. proposer's local time):

May 24, 2011

RCN SEES Track

June 15, 2011

RCN UBE and UBE Incubator Track

February 03, 2012

RCN SEES Track

June 15, 2012

RCN UBE and UBE Incubator Track

February 04, 2013

RCN SEES Track

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

Proposals Accepted Anytime

General (non-targeted) RCN proposals should be submitted to a participating program in BIO, GEO,

SBE, OCI or OPP. Refer to the specific program website for submission dates. Pls are encouraged to discuss suitability of an RCN topic with the program.

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: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

The National Science Foundation announces plans to expand its support of research coordination networks designed to foster communication and promote new collaboration among scientists, engineers and educators with diverse expertise and who share a common interest in a new or developing area of science or engineering. By encouraging the formation of new groups and networks, the RCN program will advance fields and create novel directions and opportunities for research and science education. It is anticipated that this program will contribute to further progress in all areas of science, education and engineering, and strengthen collaborative and interdisciplinary research and international partnerships. However, RCNs are intended to foster networking activities and thus will not directly support costs related to laboratory and field research. RCNs can be used for synthesis activities where existing data and collaboration are utilized to advance knowledge in disciplinary and cross-disciplinary areas. Past RCN awards can be found on the RCN program page at: http://www.nsf.gov/funding/pgm_summ.jsp?

II. PROGRAM DESCRIPTION

Support will be provided for groups of investigators to communicate and coordinate their efforts across disciplinary, organizational, institutional, geographical and/or international boundaries. The objectives are to facilitate open communication and exchange of information and resources, to integrate research and/or education activities of scientists, educators, and engineers working independently on topics of common interest, to nurture a sense of community among young scientists, educators, and engineers, and to minimize isolation and maximize cooperation so as to eliminate unnecessary duplication of efforts.

Specific features of the program include:

- 1. Topic/focus of research coordination. For all tracks, research coordination network (RCN) proposals should identify a clear theme as the focus of its activities. RCN proposals should spell out the theoretical and/or methodological foundations of the network's proposed activities, and should specify what activities will be undertaken, what new groups of investigators will be brought together, what products will be generated by network activities, and how information about the network and opportunities to participate will be disseminated. The proposal should also outline the expected benefits of the network's activities in moving a field forward and the implications for the broader community of researchers, educators and engineers.
- 2. General RCN proposals. General RCN proposals should focus on a research question, topic or particular technologies, approaches, or development of standards relevant to one or more participating units. For example, a BIO-based RCN might focus on specific organisms or biological process, a GEO-based RCN might focus on systems approach to understanding a particular geological phenomenon or process. For the general RCN program, consideration will be given to all well-justified, cohesive proposals advancing research coordination in a field or combination of fields under the purview of the NSF Directorates and Offices listed under the Summary for Program Requirements, or interdisciplinary networks that cross between Directorates or Offices, with the exception of EHR, CISE, MPS, and ENG, which will only support proposals submitted to the Science, Engineering and Education for Sustainability (RCN-SEES) track. In addition, EHR is supporting proposals submitted to the Undergraduate Biology Education (RCN-UBE) track.

General RCN proposals are expected to be 5 years in duration and budgets should not exceed \$500,000. Investigators should consult program descriptions on the NSF website and are strongly encouraged to contact appropriate program directors to discuss suitability of an RCN idea prior to submitting a proposal. If an RCN project is relevant to multiple programs, divisions, or directorates, before submitting a proposal the investigator should consult with program directors in those programs for guidance on suitability for co-review among programs and instructions on how to submit.

3. Targeted Undergraduate Biology Education track. BIO and EHR (Division of Undergraduate Education- DUE) have developed a targeted Undergraduate Biology Education track (RCN-UBE) in recognition of the importance of networking activities to advance biology education. RCN-UBE proposals could focus on improving learning in "gateway" courses (e.g., exploring the use of methods that foster active learning or inquiry-based learning), improving learning through the use of emerging technologies in the biology curriculum, strategies and approaches for engaging biology faculty in professional development activities related to undergraduate education, incorporating emerging sub-disciplines into the biology curriculum (e.g., informatics research, proteomics, systems and computational approaches, ecological stoichiometry), improving assessment of student learning, improving the transition of students from two-year to four-year institutions, or incorporating authentic research experiences in undergraduate laboratory courses, with an emphasis on introductory and lower division courses.

RCN-UBE proposals are expected to be 5 years in duration and budgets should not exceed \$500,000. To assist initial networking efforts of scientists and educators who are developing innovative proposals for the RCN-UBE track, the RCN-UBE track will accept Incubator proposals for up to \$50,000 for one year.

4. Targeted Science, Engineering and Education for Sustainability track. The Science, Engineering and Education for Sustainability (RCN-SEES) track represents an NSF-wide activity seeking to foster interdisciplinary research and education that advances sustainability science and engineering as an integrative approach to the challenges of adapting to environmental, social and cultural changes associated with growth and development of human populations, and attaining a sustainable energy future. Many questions in sustainability science and engineering are motivated by the need to solve problems and to predict and mitigate future risks. For example, how vulnerable are regional socio-economic systems to unpredictable natural events, altered hydrological regimes, and loss of biodiversity? What are the engineering options and costs for reconfiguring natural ecosystem services disrupted by expansion of urban centers? How do we develop effective modeling and simulations for improved knowledge of energy processes that can lead to design of affordable technologies, which consider social, environmental and economic implications, and can provide universal accessibility to sustainable energy sources? What is the role of education and public communications in social-systems dynamics and the resilience of socio-economic systems, and how can learning sciences' research and educational practice foster knowledge, attitudes, and behaviors that affect sustainability? Addressing these types of questions and others requires a multifaceted, systems-level consideration of our natural and built environments, human populations, behavior, social systems and energy use and advances in technological development and implementation.

The RCN-SEES track recognizes the growing need and urgency for research collaborations that productively cross the boundaries of the natural sciences, engineering, mathematics and the computational sciences, and the social, behavioral and economic sciences to develop new understanding, theory, models and technology to sustain and improve the quality of life for humankind within a healthy Earth system. The challenge of sustainability is of global concern and the RCN-SEES track is also envisioned as a means to strengthen connections and collaborations of US scientists with the broader international science and engineering community. An RCN-SEES proposal should have a theme relevant to sustainability science, engineering, and education as the focus of its activities, and is expected to involve a highly interdisciplinary set of participants and be long term (4 to 5 years duration, maximum proposed budget of \$750,000).

For more information about the NSF investments in Science, Engineering and Education for Sustainability, consult the SEES website http://www.nsf.gov/geo/sees/)

- 5. **Principal investigator (PI).** Although research coordination networks are expected to involve investigators from multiple sites, a single organization must serve as the submitting organization for each proposal. The PI is the designated contact person for the project and is expected to provide leadership in fully coordinating and integrating the activities of the network. Strong, central leadership and clear lines of responsibility are essential for successful networking.
- 6. Steering committee. Members of the steering committee will be network participants that assume key roles in the leadership and/or management of the project. The steering committee should include all Co-Pls, if any listed on the cover page of the proposal, and any other senior personnel, including any foreign collaborators involved as leaders or otherwise considered senior personnel. Therefore, the steering committee constitutes all the senior personnel for the RCN proposal. The name and home organization of each steering committee member should be listed in the project summary. As these individuals are all senior personnel, their Biographical Sketches and Current and Pending Support statements must be included in the appropriate sections of the proposal.
- 7. Network participants. The size of a network is expected to vary depending on the theme and the needs of the proposed activity. The network may be regional, national, or international. It is expected that a proposed network will involve investigators at diverse organizations. The inclusion of new researchers, post-docs, graduate students, and undergraduates is encouraged. Specific efforts to increase participation of underrepresented groups must be included. In the proposal, an initial network of likely participants should be identified. However, there should be clearly developed mechanisms to maintain openness, ensure access, and actively promote participation by interested parties outside of the initial participants in the proposed network.
- 8. Coordination/management mechanism. The proposal should include a clearly defined management plan. The plan should

include a description of the specific roles and responsibilities of the PI and the steering committee. Mechanisms for allocating funds, such as support for the work of a steering committee, should be clearly articulated. The plan should include provisions for flexibility to allow the structure of the group to change over time as membership and the network's foci evolve. Mechanisms for assessing progress and the effectiveness of the networking activities should be part of the management plan.

- 9. Information and material sharing. The goals of this program are to promote effective communication and to enhance opportunities for collaboration. Proposers are expected to develop and present a clearly delineated understanding of individual member's rights to ideas, information, data and materials produced as a result of the award that is consistent with the goals of the program. Infrastructure plans to support the communication and collaboration should be described. When the proposed activity involves generation of community resources such as databases or unique materials, a plan for their timely release and the mechanism of sharing must be described in the Data Management Plan, a required Supplementary Document. In addition, a plan for long-term maintenance of such resources must be described without assuming continued support from NSF.
- 10. International participation. NSF encourages international collaboration, and we anticipate that many RCN projects will include participants, including steering committee members, from outside the US. International collaborations should clearly strengthen the proposed project activities. As NSF funding predominantly supports participation by US participants, network participants from institutions outside the US are encouraged to seek support from their respective funding organizations, notably participants from developed countries. NSF funds may not be used to support the expenses of the international scientists and students at their home organization. For RCN projects that involve international partners, NSF funds may be used for the following:
 - · Travel expenses for US scientists and students participating in exchange visits integral to the RCN project
 - RCN-related expenses for international partners to participate in networking activities in the US.
 - RCN-related expenses for US participants to conduct networking activities in the international partner's home laboratory

III. AWARD INFORMATION

No specific funds are set aside for general RCN proposals submitted under this announcement. Within the previous RCN solicitation, the Foundation invested approximately \$1.7 million in FY 2010 for 9 general RCN awards within BIO. With increased participation from multiple directorates, this number will be expected to increase. Approximately 5 awards are anticipated for the RCN-UBE track, approximately 7 for RCN-UBE incubator awards, and approximately 7 for RCN-SEES awards. Individual awards for the general RCN, and RCN-UBE may be up to \$50,000 over a duration of five years and up to \$750,000 over a duration of 5 years for RCN-UBE awards. Awards for RCN-UBE incubator proposals may be up to \$50,000 for one year. Estimated program budget, number of awards and average award size/duration are subject to the quality of proposals received and the availability of funds. Please see the solicitation description for additional information.

IV. ELIGIBILITY INFORMATION

Organization Limit:

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

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Additional Eligibility Info:

Organization Limit: Although the research coordination networks are expected to be multi-organizational, a single organization must serve as the lead and all other organizations as subawardees. Organizations ineligible to submit to this program solicitation may not receive subawards. If they are part of the proposed network, their participation is expected to be supported by non-NSF sources.

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 email 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.

Proposers interested in submitting RCN proposals are strongly encouraged to contact the NSF program officer in their area of research/education prior to proposal submission for guidance on program participation and to determine project suitability.

The following exceptions and additions apply to proposals submitted to this Program:

Before submitting for the general or targeted RCNs: Read the entire solicitation and identify the programs that overlap your discipline or the area of potential research. Use the NSF organization listing at http://www.nsf.gov/staff/orglist.jsp to narrow the directorate, division, and program where you need to apply. You are strongly encouraged to discuss your proposal with the appropriate program officer to determine whether the proposed project is within the scope of the RCN, and to identify applicable submission deadlines. This step is especially important for cross-disciplinary proposals.

Cover Sheet: Select this program solicitation number from the pulldown list. (Grants.gov Users: The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page.) Submission requirements for the general RCN include:

- For BIO, OCI, and OPP proposers should select the program or cluster appropriate to the proposal topic from the drop down menu during submission via Fastlane. Programs within the Division that you selected will appear automatically in the "Current List of NSF Selected Units" at the bottom of the screen.
- Note: GEO and SBE list a limited number of programs in FastLane, however all programs and clusters may participate in RCN; proposals to GEO and SBE received by their selected units will be directed to appropriate participating programs.

Proposers wishing to submit to targeted tracks RCN-SEES, RCN-UBE or RCN-UBE Incubator should select "Research Coordination Networks program" from the FastLane menu during online submission.

Grants.gov users should refer to Section VI.1.2. of the NSF Grants.gov Application Guide for specific instructions on how to designate the NSF Unit of Consideration.

An informative title for the proposed project, that begins with "RCN:", "RCN-SEES:", "RCN-UBE:", or "RCN-UBE Incubator:" as appropriate, must be provided.

Often proposals are co-reviewed by two or more NSF disciplinary units and, as appropriate, OISE. For proposals with an international dimension, the country or countries involved should be reported on the cover sheet.

Entries on the FastLane Cover Sheet are limited to the principal investigator and a maximum of 4 co-principal investigators. Additional senior personnel, serving as members of the steering committee, should be listed on the Project Summary page and entered into FastLane as Senior Investigators (this latter provision allows their Biographical Sketches and Current and Pending Support statements to be included in the FastLane proposal).

For Grants.gov users - NSF allows one principal investigator/project director and a maximum of 4 co-principal investigators/project directors to be identified on a proposal. Instructions for entering additional senior project participants are included in Section V.5. of the NSF Grants.gov Application Guide.

For more FastLane and Grants.gov instructions see section D below.

Project Summary: May not be more than one page in length, and must consist of three parts: (1) a list of steering committee members along with their home organizations; (2) a succinct summary of the intellectual merit of the proposed project including the goal of the proposed network, major planned networking activities, and mechanisms for actively promoting participation by all interested parties; and (3) the broader impacts of the proposed work. Proposals that do not separately address both intellectual merit and broader impacts will be returned without review.

Project Description (maximum 15 pages, or eight pages for RCN-UBE Incubator): The following exceptions and additional items should be noted.

- 1. "Results from Prior Support" need not be included unless the proposed activity is clearly a logical extension of an activity supported by NSF (see the Special Information and Supplementary Documentation section below), in which case describe (up to 5 pages to be counted within the 15-page limit) the prior activity and how it relates to the proposed activity.
- 2. In addition to objectives, rationale, justification, research coordination activities, and special features stated in Section II above, the project description should address aspects of network Management, Coordination, and participant Diversity, within the 15 page project description, as described below. All major organizational collaborations should be described and justified in terms of how each serves the needs or enhances the goals of the network. Note: Management and Coordination plans are not required for RCN-UBE Incubator proposals.

Management plan. Describe plans and procedures for the development and assessment of the proposed activity. Include formal

mechanisms to ensure fair and equitable allocation of group resources. Clearly define the responsibilities for leadership and the role of the PI and the steering committee. Delineate the procedures used for the selection of initial network participants, the plans for maintaining an appropriate degree of openness and for encouraging the involvement of additional interested parties. Means for self-evaluation of progress toward the network goals should be presented as an important part of the management plan.

Coordination plan. If the proposed network will work with an established network or group, or if there is a similar activity being planned or ongoing in other countries, describe the plans for coordination and cooperation among the relevant networks.

Increasing diversity. A research coordination network is an important opportunity for encouraging the involvement of investigators from under-represented groups and investigators located in a diverse range of organizations. Describe (1) a well designed plan to increase participation of members of under-represented groups that is specific to the proposed project; (2) a plan to involve investigators at a variety of organizational settings; (3) if applicable, a plan to include new researchers, post-docs, graduate students and undergraduates; and (4) how the plans for increasing diversity are integrated with the proposed project plan.

Budget: Provide yearly budgets for the duration of the proposed project. When subawards are involved yearly budgets are required for each subaward. FastLane or Grants.gov will generate cumulative budgets for the primary and subaward organizations. Budget justification (of up to three pages) is required. Organizations ineligible to submit to this program solicitation may not receive subawards. If they are part of the proposed network, their participation is expected to be supported by non-NSF sources. Allowable costs for international collaboration are described in Section II. Program Description.

Funds may be requested to promote collaborative activities, such as short visits among member laboratories, exchange visits of students, sharing of unique facilities, establishment of a public web site, network retreats, partial support of workshops uniquely tied to the network activities, etc. Any well-justified activity that fulfills the goals of the Program will be considered. Innovative ideas for implementing novel networking strategies to promote research collaborations and enable new research directions or advancement of a field are especially encouraged. Funds from this program may not support independent, individual research projects of the participants; nor are they to be used as a mechanism for a mini-grant awarding program.

Note that funds requested to support activities of the network participants, such as participant travel, materials and supplies for the network projects, and network retreats should be listed as "participant support" in the proposed budget, and managed by the submitting organization. Please refer to the GPG (http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpg_2.jsp#IIC2givc) regarding proposed international travel.

Special Information and Supplementary Documentation: In addition to the applicable items described in the Grant Proposal Guide (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg), include the following information, clearly labeled, in the Supplementary Docs section of the proposal (No other material will be allowed):

- Current Activities: PI and the steering committee members listed in the project summary must provide a single-page (per investigator) description of the relationship between the proposed project and current research activities in his/her laboratory. This page replaces the "Results of Prior Support" section normally found in NSF proposals.
- 2. Conflicts of Interest list: Provide a list, in a single alphabetized table, with the full names and institutional affiliations of all people with conflicts of interest for all senior personnel (PI, Co-PIs if any, and steering committee members) and any named personnel whose salary is requested in the project budget. Conflicts to be identified are (1) PhD thesis advisors or advisees, (2) collaborators or co-authors, including postdocs, for the past 48 months, and (3) any other individuals or organizations with which the investigator has financial ties.
- 3. Data Management Plan: As specified in the NSF Grant Proposal Guide (Chapter II, Section C.2.j), all proposals must include a maximum 2-page Data Management Plan as a Supplementary Document. Although collection of new data is not supported in RCN projects, this plan should describe issues related to information exchange, intellectual property rights, derived products, databases, software, model output, and materials sharing. For example, if the proposed activity is expected to result in community resources (such as databases or collections of biological materials), the Data Management Plan should present a clear plan for sharing of these resources not only among the network participants but with the scientific community at large. The Data Management Plan should also address plans for determining authorship or proper attribution of credit for peer-reviewed or other publications, Internet resources, etc. that may be expected to result from the activity. General RCN proposals submitted to appropriate core programs should also ensure that they fulfill any program-specific guidelines for the Data Management Plan if applicable.
- 4. Postdoctoral Researcher Mentoring Plan. Each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Please be advised that if required, FastLane will not permit submission of a proposal that is missing a Postdoctoral Researcher Mentoring Plan. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement. The Postdoctoral Researcher Mentoring Plan is considered an integral part of the project and therefore subject to reviewer, panel, and program evaluation. Successful proposers will be expected to address this issue in annual and final project reports.
- 5. Letters of Collaboration. This section could include any letters of collaboration from individuals or organizations that are integral parts of the proposed project, such as the involvement of collaborator organizations that are not supported by subawards or documentation of permission to access materials, data or other associated project activities. Letters of collaboration should focus solely on affirming that the individual or organization is willing to collaborate on the project as specified in the project description of the proposal. No additional text, especially elaboration of the nature of activities to be undertaken by the collaborator and endorsements of the potential value or significance of the project for the collaborator, may be included. The template that should be used for the preparation of letters of collaboration is provided below.

Letters of collaboration should not be provided for any individual designated as a principal investigator or senior personnel (i.e., not required for any steering committee member), nor are letters of collaboration required for any organization that will be a subawardee in the proposal budget.

Letters of collaboration are not required for potential participants in the RCN although such individuals might be mentioned in the project description. RCN participants are not necessarily collaborators in the overall RCN project; their level of involvement in the RCN is likely to change through time, and an up front commitment is neither necessary nor helpful to the review process.

Each letter of collaboration must be signed by the designated collaborator. Requests to collaborators for letters of collaboration should be made by the PI well in advance of the proposal submission deadline, because they must be included at the time of the proposal submission. Letters deviating from this template are not accepted and may be grounds for returning the proposal without review.

Template to be used for letters of collaboration

To: NSF RCN Program

From:

(Printed name of the individual collaborator or name of the organization and name and position of the official

submitting this memo)
By signing below (or transmitting electronically), I acknowledge that I am listed as a collaborator on this RCN proposal, entitled "(proposal title)," with(PI name) as the Principal Investigator. agree to undertake the tasks assigned to me or my organization, as described in the project description of the proposal, and I commit to provide or make available the resources specified therein.
Signed: Organization: Date:

B. Budgetary Information

aubmitting this mama

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

Other Budgetary Limitations:

Funds from this program may not support independent, individual research projects of the participants; nor are they to be used as a mechanism for a mini-grant awarding program.

C. Due Dates

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

May 24, 2011

RCN SEES Track

June 15, 2011

RCN UBE and UBE Incubator Track

February 03, 2012

RCN SEES Track

June 15, 2012

RCN UBE and UBE Incubator Track

February 04, 2013

RCN SEES Track

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

Proposals Accepted Anytime

General (non-targeted) RCN proposals should be submitted to a participating program in BIO, GEO, SBE, OCI or OPP. Refer to the specific program website for submission dates. PIs are encouraged to discuss suitability of an RCN topic with the program.

Each of the targeted RCN tracks have specific annual deadlines; proposals for these tracks should be submitted to the RCN solicitation.

D. FastLane/Grants.gov Requirements

• For Proposals Submitted Via FastLane:

Detailed technical instructions regarding the technical aspects of preparation and submission via FastLane are 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.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane Website at: https://www.fastlane.nsf.gov/fastlane.jsp.

· 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://www07.grants.gov/applicants/app_help_reso.jsp. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding 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.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program where they will be reviewed if they meet NSF proposal preparation requirements. 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 who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the 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.

A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgements.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

Additional Solicitation Specific Review Criteria

RCN proposals will be evaluated for their creativity, innovation, and potential to advance, transform, or establish new areas of science.

RCN proposals must establish the infrastructure to create new networks of scientists who have not previously worked together. RCNs cannot use resources to fund research or to sustain existing networks.

For all proposals involving international collaborations, reviewers will consider: mutual benefits, true intellectual collaboration with the foreign partner(s), benefits to be realized from the expertise and specialized skills, facilities, sites and/or resources of the international counterpart, and active engagement of U.S. students and early-career researchers in the RCN activities.

NSF staff also will give careful consideration to the following in making funding decisions:

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- 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.

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 formulate a recommendation to either support or decline each proposal. 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 is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, 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.

In all cases, 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 and 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

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 letter, 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 letter; (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 letter. 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 at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after 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 that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

Pls are required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational), publications, and other specific products and contributions. Pls will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report 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.

Pls must provide the names and institutional affiliations of all RCN participants, including students, in FastLane project reports and must maintain a website for dissemination of RCN information, including opportunities for participation.

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:

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; email: support@grants.gov.

RCN Contacts available at http://www.nsf.gov/bio/ef/rcn_sees_contacts_2011.htm

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, National Science Foundation Update is a free e-mail subscription service 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 Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the NSF web site.

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

Two other inter-directorate programs accept RCN proposals:

- Dynamics of Coupled Natural and Human Systems (CNH) Program http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13681
- Ecology of Infectious Diseases (EID) Program http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5269

For instructions on submitting RCN proposals to either of those programs please read the solicitation.

In addition to opportunities via the RCN solicitation, international RCN-like activities can be furthered via various NSF support programs within specific directorates. Further information can be found by referencing the following solicitations, which are given as examples.

International Collaboration in Chemistry between US Investigators and their Counterparts Abroad (ICC)

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13627&org=CHE&from=home

Materials World Network: Cooperative Activity in Materials Research between US Investigators and their Counterparts Abroad (MWN)

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12820&org=NSF&sel_org=NSF&from=fund

International Materials Institutes (IMI)

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5328&org=NSF&sel_org=NSF&from=fund

Dimensions of Biodiversity

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503446

Basic Research to Enable Agricultural Development (BREAD)

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503285

Programs managed by the Office of International Science and Engineering

http://www.nsf.gov/div/index.jsp?div=OISE

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 40,000 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 (703) 292-5111 (NSF Information Center):

• 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). 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 Division of Administrative Services National Science Foundation Arlington, VA 22230

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