Plant Genome Research Program (PGRP)
FY 2012 Competition

PROGRAM SOLICITATION
NSF 12-517

REPLACES DOCUMENT(S):
NSF 11-500

National Science Foundation

Directorate for Biological Sciences
    Division of Integrative Organismal Systems

Full Proposal Target Date(s):

March 05, 2012

IMPORTANT INFORMATION AND REVISION NOTES

Revision Notes

The requirement to use acronyms [Genome-Enabled Plant Research (GEPR), Transferring Research from Model Systems (TRMS) and Tools and Resources for Plant Genome Research (TRPGR)] to designate proposal areas has been eliminated.

The Improving Plant Genome Annotation (IPGA) area of opportunity will **not** be offered in FY 2012.

A new opportunity, Mid-Career Investigator Awards in Plant Genome Research (MCA-PGR), will be available in FY 2012.

Please note that proposals at all scales are welcome, from single investigator to multi-investigator consortium projects, commensurate with the scope of the proposed research.

Letters of Collaboration: format for submitting letters of collaboration has been revised to better align with divisional protocol. A template is provided that must be used for the preparation of letters of collaboration.

Conflict of Interest document: format for submitting the required Conflict of Interest document has been revised.

Important Reminders

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.

Data Management Plan: The PAPPG contains a clarification of NSF's long standing data policy. All proposals must describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. FastLane will not permit submission of a proposal that is missing a Data Management Plan. The Data Management Plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: http://www.nsf.gov/bfa/dias/policy/dmp.jsp. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

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.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Plant Genome Research Program (PGRP)

Synopsis of Program:

This program is a continuation of the Plant Genome Research Program (PGRP) that began in FY 1998 as part of the National Plant Genome Initiative (NPGI). Since the inception of the NPGI and the PGRP, there has been a tremendous increase in the availability of functional genomics tools and sequence resources for use in the study of key crop plants and their models. Proposals are welcomed that build on these resources to develop conceptually new and different ideas and strategies to address grand challenge questions in plants of economic importance on a genome-wide scale. There is also a continued need for the development of novel and creative tools to facilitate new experimental approaches or new ways of analyzing genomic data. Especially encouraged are proposals that provide strong and novel training opportunities integral to the research plan and particularly across disciplines that include, but are not limited to, plant physiology, quantitative genetics, biochemistry, bioinformatics and engineering.

Three kinds of activity will be supported in FY 2012: (1) Genomics-empowered plant research to tackle fundamental questions in plant and agricultural sciences on a genome-wide scale; (2) Development of tools and resources for plant genome research including novel technologies and analysis tools that will enable discovery; and (3) Mid-Career Investigator Awards in Plant Genome Research (MCA-PGR) to increase participation of investigators trained primarily in fields other than plant genomics. **Proposals addressing these opportunities are welcomed at all scales, from single-investigator projects through multi-investigator, multi-institution projects, commensurate with the scope of the work proposed.**

The PGRP encourages proposals from investigators and institutions that have not participated in the program before. Proposals are encouraged from early-career investigators and proposals submitted to the CAREER program (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214&org=BIO) are considered by the PGRP. Early-career investigators are strongly encouraged to contact a PGRP Program Director for further guidance.

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.

- Diane Jofuku Okamuro, Program Director, 690N, telephone: (703) 292-4400, email: dbipgr@nsf.gov

- Nora L. Lapitan, 690N, telephone: (703) 292-4400, email: dbipgr@nsf.gov

- Thomas Okita, 690N, telephone: (703) 292-4400, email: dbipgr@nsf.gov

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

- 47.074 --- Biological Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant or Cooperative Agreement

Estimated Number of Awards: 10 to 15 Approximately 10-15 new awards will be made, pending availability of funds.

Anticipated Funding Amount: $15,000,000 Up to $15 million is available for FY 2012 new awards, pending availability of funds.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Proposals may only be submitted by U.S. academic institutions accredited in, and having a campus located in the U.S., U.S. non-profit research organizations including museums, research laboratories, professional societies and similar organizations in the U.S. that are directly associated with educational or research activities, and consortia of only the eligible organizations listed here. When a consortium of eligible organizations submits a proposal, it must be submitted as a single proposal with one organization serving as the lead and all other organizations as subawardees. Separately submitted collaborative proposals will not be accepted and will be returned without review. Organizations ineligible to submit to this program solicitation may not receive subawards.

PI Limit:

Principal Investigators for the Mid-Career Investigator Awards in Plant Genome Research [MCA-PGR]: Individuals should have an independent, non-tenure track or tenure track position at a U.S. academic or non-profit research institution, have an active research program, and have received training primarily in fields other than plant genomics. Individuals eligible for a MCA-PGR award will be seeking training in a new area of plant research that employs genomics technologies and resources.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI: 1

- Please note that there continues to be a limit on the number of proposals in which an investigator can be included. An investigator may submit only **one** proposal as a principal investigator, co-principal investigator, or senior personnel for whom funds are requested in response to this Program Solicitation. Proposals received in excess of this single proposal limit will be returned without review.

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:** Not Applicable

C. Due Dates

- **Full Proposal Target Date(s):**

    March 05, 2012

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 National Science Foundation (NSF) announces its intention to continue to support plant genome research through the Plant Genome Research Program (PGRP). Since its inception in 1998 as part of the National Plant Genome Initiative (NPGI), the NSF PGRP has followed the long-range plans for the NPGI and, working closely with the US Department of Agriculture (USDA), Department of Energy (DOE), National Institutes of Health (NIH), the Agency for International Development (USAID), the US Forest Service, and more recently the US Geological Survey (USGS), has contributed to tremendous advances in plant genomics and plant sciences. The program is currently following the third five-year plan (National Plant Genome Initiative: 2009-2013; http://www.nsf.gov/bio/pubs/reports/npgi_five_year_plan_2009_2013.pdf). Following the goals set out in this plan, the PGRP encourages new, innovative ideas in the form of basic research and tool development projects that will advance the whole field of plant biology and accelerate basic discovery and innovation in economically important crop plants to meet societal needs. Potentially high-risk, high-payoff proposals or proposals that present unconventional ideas are welcomed. The list of ongoing projects available at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5338&org=BIO should be consulted to ensure that, if funded, a planned project would make a significantly new scientific contribution to the field.

Proposals that focus on individual genes or gene families should be sent to other BIO programs (see web pages available through http://www.nsf.gov/dir/index.jsp?org=BIO for listing of programs and funding opportunities). Proposers are strongly encouraged to contact a Program Director prior to submission to determine the suitability of the project for the PGRP.

Simultaneous submission of proposals to this program and another federal agency is permissible with prior written approval of the agencies involved. A proposal from the same submitter that is a duplicate of, or substantially similar to, a proposal already under consideration by NSF will be returned without review.

II. PROGRAM DESCRIPTION

In the fourteen years since the NPGI and the PGRP began, a wealth of genomic resources have been developed for plant biology. Using these resources and the advances that have been made in technology development and bioinformatics, it is now possible to address fundamental questions in plant biology and begin to achieve a systems-level understanding of economically important plant processes in the context of the physiology of the plant in a changing environment. In addition, new tools and methodologies continue to be needed to advance the field of plant biology as well as to tackle questions that are intractable using current approaches. Finally, there is a critical need for training in the use of these new tools and technologies, especially for those scientists who possess expertise in traditional fields of plant biology, such as plant physiology and biochemistry.

Three kinds of activities will be supported in Fiscal Year 2012: (1) Genomics-empowered plant research to tackle fundamental questions in plant and agricultural sciences on a genome-wide scale; (2) Development of tools and resources for plant genome research, including novel technologies and analysis tools to enable discovery; and (3) Mid-Career Investigator Awards in Plant Genome Research (MCA-PGR) to increase participation of investigators trained primarily in fields other than plant genomics.

Proposals are solicited from single investigators, small groups, or multi-institution "virtual centers." The scale of the project in terms of personnel and budget should be developed in the context of the proposed activities. The management plan should be appropriate for the proposed activities and a carefully developed budget, research plan and timetable will strengthen a proposal. Proposers are encouraged to think "outside the box" and to put forward imaginative and creative ideas, selecting the experimental crop systems best suited to the research focus and taking advantage of all available genomics tools and resources. This could include the limited use of model plant systems to rapidly test hypotheses and/or gene function. Proposers should clearly justify the relevance of the research activities to the overarching goals of the PGRP.

The PGRP is committed to broadening participation. NSF believes that the available research tools and resources should enable any institution to take part in plant genome research. New investigators and investigators who have not participated in the PGRP in the past, or are from small institutions, are strongly encouraged to submit a proposal. Individuals and small groups of investigators from Primarily Undergraduate Institutions (PUI), Historically Black Colleges and Universities (HBCU), Hispanic Serving Institutions (HSI), and Tribal Colleges and Universities (TCU) are especially encouraged to apply. The PGRP encourages proposals from early-career investigators and considers proposals submitted to the CAREER program (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214&org=BIO). New investigators or mid-career investigators considering submission of a proposal for training in the use of genomic tools/approaches are strongly encouraged to contact a PGRP Program Director for further guidance.

Focus Areas for FY 2012

The whole field of plant biology is being advanced by increased use of the new tools and resources that have become available through the NPGI. While there still remain some large community resources to be built, those available now are more than sufficient to address many of the major unanswered questions in plant biology, some of which have not been tractable using traditional approaches. In keeping with the focus of the PGRP, projects should be developed on a whole genome, whole organelle or whole network scale. In FY 2012, proposals are especially encouraged in the following areas:

- Development of a genome-level understanding to link genes and pathways to physiological functions in crop plants
- Development of a genome to systems-level understanding of plant-environmental interactions, especially with respect to adaptation to climate change and response to abiotic and biotic stresses
- Systems-level approaches to understand the interaction between the genome and the epigenome in the regulation of economically important processes in crop plants

While tremendous advances have been made in the development of tools and technologies for plant genome research, there is still remains a need for additional resources, particularly for innovations in high-throughput, high resolution phenotyping platforms to alleviate the constraint for effective utilization of genomics data and tools in the study of plants and plant processes. Proposers are encouraged to develop novel approaches focused on a specific problem or need. Potentially high-risk, high-payoff proposals or proposals that present unconventional ideas are welcomed. Priority will be given to the development of new or novel tools that are likely to contribute broadly to the advancement of the field of plant genomics. In FY 2012, proposals are especially encouraged in the following areas:

- Improved tools for genome sequence assembly and analysis, especially to enable effective use of sequence data produced by next-generation sequencing technologies in the absence of physical maps
- Novel methodologies for high-throughput plant phenotyping, especially under field conditions and over time

- Improved data visualization tools

Use of model systems in the development of tools and technologies is allowed if it is clear that the tools and technologies developed would be widely applicable for use in plants of economic importance.

Projects that focus on development of community resources, either through production of research resources or novel tools or establishment of a service, must be justified in terms of potential demand, efficiency and cost-effectiveness. The plans for release of project outcomes, including the timing and form of released resources, tools or materials, must be described explicitly along with the terms of access. If appropriate, plans for continued maintenance or operation of such a service after the award should be described without assuming long-term NSF support.

Mid-Career Investigator Awards in Plant Genome Research (MCA-PGR)

New ideas, approaches and technologies are needed to advance the field of plant genomics to meet societal needs. Opportunities for mid-career plant researchers/scientists to move into, or adopt genomics tools and technologies to solve relevant questions will greatly enhance the whole field. The Mid-Career Investigator Awards in Plant Genome Research (MCA-PGR) opportunity seeks to increase participation of mid-career investigators primarily trained in fields other than plant genomics. Especially encouraged are proposals from investigators trained in plant physiology or plant biochemistry. Mid-career investigators trained in genomics of non-plant systems, informatics, and other disciplines that are critical to advancing the field of plant genome research (engineering, mathematics/statistics, physiology and quantitative genetics), are also encouraged to apply. Proposals submitted to the MCA-PGR opportunity should have a research theme that is consistent with the overall goals of the PGRP as well as critical training components proposed for the applicant. Proposers are encouraged to take advantage of opportunities to develop new curriculum or course offerings that build on outcomes of the MCA-PGR activities.

NSF expects that MCA-PGR projects will take full advantage of data, materials, information, expertise, and facilities available through PGRP funded projects. Whenever appropriate, the applicant should network with existing PGRP-supported activities (Consult http://www.nsf.gov/bio/pubs/awards/pgr.htm? WT.si_n=ClickedAbstractsRecentAwards&WT.si_x=1&WT.si_cs=1&WT.z_pims_id=5338&). Funds may be requested to support research visits to existing PGRP-supported laboratories, for participation in training opportunities offered by existing PGRP projects and for use of genome research facilities not available at the applicant's institution. If necessary, funds may also be requested for salary support of the applicant during the training period(s).

Investigators interested in the MCA-PGR opportunity are strongly encouraged to contact a Program Director for further guidance prior to submission of a proposal.

Additional Considerations as Appropriate

Integration of Research and Education and Broadening Participation

Activities supported by the PGRP should provide an ideal environment for training of young scientists in modern research technologies, introducing them to new paradigms in plant biology, and promoting increased participation by members of under-represented groups. Informatics skills are critical to making the maximum use of genome resources. Accordingly, proposers are expected to integrate these kinds of training into their projects at all levels, wherever appropriate. NSF expects proposers to take advantage of the unique opportunities the proposed project provides in terms of education and incorporate these into the plan at a scale that is commensurate with the scale of the proposed activity. Focused activities that fit well with the specific opportunities offered by the project would be viewed as a strength. Proposers are encouraged to take advantage of existing programs and networks where appropriate, building in additional opportunities unique to the project's research goals. New activities that link and/or enhance ongoing PGRP-supported training and outreach efforts and enable them to increase visibility and impact are encouraged.

Data Sharing

Massive amounts of data continue to be generated through PGRP activities. Proposers are strongly encouraged to consider their project outcomes in the context of the whole field of plant biology and ensure maximal accessibility and visibility. Outcomes are expected to meet current community standards for genomic data and to be deposited into existing long-lived community databases where appropriate. Projects that produce resources of utility to other researchers, whether part of a large-scale community resource project or not, are expected to release outcomes as soon as appropriate, once specified quality standards have been met.

International Collaboration

Plant genome research is actively pursued all over the world. The PGRP encourages international research collaborations, particularly with investigators from developing countries, and especially where there is a common research focus or system. When applicable, proposed research activities should be coordinated with similar efforts in other countries to maximize efficiency and avoid unnecessary duplication of effort.

However, foreign participants should secure support for their component of the collaboration from their own national programs. The PI is encouraged to contact a PGRP Program Director for guidance regarding allowable costs when considering international collaborations.

Industrial Collaboration

Private industry has already made significant investments in plant genomic research. Innovative collaborations with industry are encouraged when they advance the goals of the PGRP. However, NSF funds may not be used to support the industrial collaborators. Participation of a company as a provider of a service should be managed according to the submitting institution's procurement policy. When private industry is involved, the proposer is responsible for ensuring that any intellectual property issues are handled according to NSF Policy (see section A-1 under Special Information and Supplementary Documentation below).

Additional Funding Opportunities

The PGRP will accept **Research in Undergraduate Institution** (RUI) proposals. Information on the scope of RUI projects and the format of these proposals can be found at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5518&org=NSF.

The PGRP will also accept **Research Coordination Network** (RCN) Proposals. Information on the scope of RCN projects and the format of these proposals can be found at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=11691&org=BIO&from=home.

Proposals are encouraged from early-career investigators and proposals submitted to the **CAREER** program (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214&org=BIO). Early career investigators are strongly encouraged to contact a PGRP Program Director for further guidance.

Finally, proposers are encouraged to consider inclusion of activities described in the Dear Colleague Letter for **Developing**

Country Collaborations in Plant Genome Research (NSF 04-563: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf04563). Proposed collaborative activities should focus on research problems important to developing countries that include scientist-to-scientist interactions potentially leading to long-term partnerships among participating laboratories. The exchange of ideas and people should be reciprocal and should be built on equal partnerships between U.S. scientists and scientists of developing nations. Examples of activities to be supported would include, but not be limited to, joint research projects and long-term (one year) or short-term (between one and three months) reciprocal exchange visits. Collaborations should be developed that bring complementary sets of expertise to bear on problems of importance to the participants from developing countries and that meet their identified needs. The described activities should meet the budgetary and organizational guidelines described in the Dear Colleague Letter.

This solicitation does not apply to conference and workshop proposals, requests for supplemental funding, and RAPID or EAGER applications, all of which should be submitted, following the standard guidelines, by selecting" In response to GPG" on the proposal coversheet and then selecting the "Plant Genome Research Project".

Supplemental Funding Requests

March 1 annually (or next business day if that is a weekend or holiday) is the target date for most IOS programs for REU, RET, RAHSS, and ROA supplement requests as well as proposals for Conferences, Symposia and Workshops (Meetings). Guidance for IOS PIs preparing supplemental requests is posted at: http://www.nsf.gov/bio/ios/suppopp.jsp.

Conferences, Workshops and Symposia

The PGRP supports conferences, symposia and workshops in plant genomics that bring experts together to discuss current research, to expose other researchers or students to new research methods and approaches, and to discuss future directions of major research activities in plant genomics and bioinformatics. Conferences will be supported only if equivalent results cannot be achieved at regular meetings of professional societies or an established conference series. More information about submission of these proposals can be found at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Proposers are encouraged to contact a Program Director prior to submission of a proposal about the suitability of the activity for PGRP support.

EArly-concept Grants for Exploratory Research (EAGER)

The EAGER funding mechanism may be used to support exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches. This work may be considered especially "high risk-high payoff" in the sense that it, for example, involves radically different approaches, applies new expertise, or engages novel disciplinary or interdisciplinary perspectives. These exploratory proposals may also be submitted directly to an NSF program, but the EAGER mechanism should not be used for projects that are appropriate for submission as "regular" (i.e., non-EAGER) NSF proposals. PI(s) must contact the NSF program officer(s) whose expertise is most germane to the proposal topic prior to submission of an EAGER proposal. This will aid in determining the appropriateness of the work for consideration under the EAGER mechanism; this suitability must be assessed early in the process. For guidelines, see the most recent version of the NSF Grant Proposal Guide (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg).

Grants for Rapid Response Research (RAPID)

The RAPID funding mechanism is used for proposals having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events. PI(s) must contact the NSF program officer(s) whose expertise is most germane to the proposal topic before submitting a RAPID proposal. This will facilitate determining whether the proposed work is appropriate for RAPID funding. For guidelines, see the most recent version of the NSF Grant Proposal Guide (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg).

Science Across Virtual Institutes (SAVI)

SAVI is an innovative concept to foster interactions among scientists and educators around the globe based on the principle that excellence in STEM research and education exists in many parts of the world, and that scientific advances can be accelerated by scientists, engineers, and educators working together wherever they are. SAVI focuses on interactions between cohesive teams of researchers across national borders and takes advantage of existing U.S. and foreign investments in frontier research by leveraging complementary intellectual strengths and sharing unique research infrastructures. Virtual institutes will serve as research hubs in which new ideas originate, multidisciplinary research is fostered, diversity is valued, and long-term professional networks are developed between U.S. researchers and students and their international counterparts. The Dear Colleague Letter is accessible through http://www.nsf.gov/pubs/2011/nsf11087/nsf11087.jsp.

III. AWARD INFORMATION

Depending on the nature of the proposed activity, projects will be supported either as grants or cooperative agreements. The award size will be determined based on the nature of activities and at a level that would be enabling, as well as the availability of funds. Proposers are strongly encouraged to develop a carefully crafted budget in line with the scope and scale of the project. The role and budget for each investigator (PI, co-PI, collaborator) should also be commensurate with the activities proposed. An investigator may submit only one proposal as a principal investigator, a co-principal investigator, or senior personnel for whom funds are requested in response to this Program Solicitation. Proposals received in excess of this single proposal limit will be returned without review. The estimated number of awards is 10-15, pending availability of funds. The anticipated award date is October 2012. Approximately $15 million is available for new awards supported through this solicitation, pending availability of funds.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Proposals may only be submitted by U.S. academic institutions accredited in, and having a campus

located in the U.S., U.S. non-profit research organizations including museums, research laboratories, professional societies and similar organizations in the U.S. that are directly associated with educational or research activities, and consortia of only the eligible organizations listed here. When a consortium of eligible organizations submits a proposal, it must be submitted as a single proposal with one organization serving as the lead and all other organizations as subawardees. Separately submitted collaborative proposals will not be accepted and will be returned without review. Organizations ineligible to submit to this program solicitation may not receive subawards.

PI Limit:

Principal Investigators for the Mid-Career Investigator Awards in Plant Genome Research [MCA-PGR]: Individuals should have an independent, non-tenure track or tenure track position at a U.S. academic or non-profit research institution, have an active research program, and have received training primarily in fields other than plant genomics. Individuals eligible for a MCA-PGR award will be seeking training in a new area of plant research that employs genomics technologies and resources.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI: 1

- Please note that there continues to be a limit on the number of proposals in which an investigator can be included. An investigator may submit only **one** proposal as a principal investigator, co-principal investigator, or senior personnel for whom funds are requested in response to this Program Solicitation. Proposals received in excess of this single proposal limit will be returned without review.

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.

Proposal Cover Sheet: For MCA-PGR proposals only, the project title must start with "MCA-PGR: ...". When completing the Cover Sheet, click on the GO button at "Program Announcement/Solicitation/ Program Description No." Highlight Plant Genome Research Project and click on the Select button. Your proposal will automatically be assigned to IOS--Plant Genome Research Project. Grants.gov Users: The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page. Grants.gov users should refer to SectionVI.1.2. of the NSF Grants.gov Application Guide for specific instructions on how to designate the NSF Unit of Consideration. Be sure to complete the remainder of the cover sheet information. Please note that a maximum of 4 Co-PIs can be listed on the cover page.

Additional Co-PIs and other Senior Personnel should be included in the complete list provided in the Project Summary.

BIO Proposal Classification Form (PCF): Complete the BIO PCF, an on-line coding system that allows the Principal Investigator to characterize his/her project when submitting proposals to the Directorate for Biological Sciences. Once a PI begins preparation of his/her proposal in the NSF FastLane system, selects any program within the Directorate for Biological Sciences as the first or only organizational unit to review the proposal, and saves the cover sheet, the PCF will be generated and available through the Form Preparation screen. Additional information about the BIO PCF is available in FastLane at http://www.fastlane.nsf.gov/a1/BioInstr.htm.

Grants.gov Users: Refer to Section VI.5. of the NSF Grants.gov Application Guide for specific instructions on how to submit the BIO Proposal Classification Form.

Project Summary (maximum 1 page): The project summary should consist of three separate parts in the following order:

1. A list of senior personnel (PI, Co-PIs, key-collaborators) along with their home institutions;

2. The intellectual merit of the proposed activity, including a summary of the scientific objectives and approaches; and

3. Expected broader impacts of the proposed research.

Both the intellectual merit and the anticipated broader impacts must be addressed or the proposal will be returned without review. See Section VI. of this solicitation for additional information. The potentially transformative aspects of the proposed research should

be addressed, as appropriate (http://www.nsf.gov/pubs/2007/in130/in130.jsp). Please consult http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf for additional information about broader impacts.

Project Description (maximum 15 pages, including figures and tables): In addition to the standard description in the GPG, the guidelines below should be followed, noting that the page allowances listed are part of the overall 15-page maximum:

- Results from prior NSF support (maximum 5 pages): Only the most relevant prior awards (PGRP or non-PGRP) should be listed in this section for the PIs and Co-PIs listed in the "Project Summary." In addition to results from relevant NSF awards, results from any other closely related awards from the Federal government should be described if applicable.

- Relevance and justification: Briefly, but explicitly, explain the relevance of the proposed research to the stated goals of the PGRP.

- Research plan: Describe the goals of the project, scientific and technical approaches, including informatics where appropriate, with expected outcomes. Descriptions must be sufficiently detailed to allow adequate review.

- Plan to integrate research and education: It is expected that all proposals will include activities that integrate research and education. NSF expects that each proposal will include a thoughtful training and/or educational component that takes advantage of unique and specific opportunities the proposed project would provide. The scale of the training and educational activities should be commensurate with the scale and scope of the proposed research and integrated well into the overall project plan. Broadening participation of members of under-represented groups and small colleges and universities is especially encouraged. The following items should be included if larger scale training activities are proposed: (1) a well-designed plan to increase participation of members of under-represented groups and small colleges and universities that is specific to the proposed project, (2) an education plan, which can be (but is not limited to) a training plan for students at all levels, an outreach activity for secondary school teachers and students, or a workshop to train other researchers in new concepts or techniques being developed by the project, and (3) a description of how these plans are integrated with the proposed research plan. A clear and realistic discussion of how the plan will be implemented should be included in the proposal. Simply describing general policies and ongoing efforts at the investigators' institutions will not be sufficient.

References Cited: Indicate with an asterisk any cited publications that resulted from prior research funded by NSF for the PI, or Co-PI when following the GPG guidelines for all references cited.

Biographical Sketches (2 pages each): Biographical sketches following the GPG guidelines must be listed for the PI, Co-PIs and each of the Senior Personnel listed on the Project Summary page.

Proposal Budget: Provide a summary budget and a yearly budget for the duration of the proposed project. When subawards are involved, summary and yearly budgets are required for each subaward. A Budget Justification should be provided (maximum 3 pages per budget and subaward budget). A careful and realistic budget that is consistent with the proposed activities will add to the overall strength of a proposal. Funds for facility construction or renovation may not be requested. Funds to cover the cost of attendance of the PI at each year's annual awardee meeting in Arlington, VA should be requested.

Current and Pending Support: Current and Pending Support following the GPG guidelines must be listed for the PI, Co-PIs and each of the Senior Personnel and Key Collaborators listed on the Project Summary page.

Facilities, Equipment and Other Resources: Provide a description of available facilities and priorities for their use. For projects requiring additional equipment, justify the need for these resources in the context of the innovative work proposed.

Special Information and Supplementary Documentation:

Include the following materials in addition to the Project Description. These materials should be labeled clearly and included in the Supplementary Documents section of FastLane or Grants.gov. Provide only the allowable and applicable items as noted in the GPG or NSF Grants.gov Application Guide and this section. Include the materials in the proposal by transferring them as .PDF files through the "Supplementary Docs" module of FastLane or Grants.gov.

(A-1) Sharing of Results and Management of Intellectual Property (maximum 3 pages): Describe the management of intellectual property rights related to the proposed project, including plans for sharing data, information, and materials resulting from the award. This plan must be specific about the nature of the results to be shared, the timing and means of release, and any constraints on release. The proposed plan must take into consideration the following conditions where applicable:

- Sequences resulting from high-throughput large-scale sequencing projects (low pass whole genome sequencing, BAC end sequencing, ESTs, full-length cDNA sequencing, etc.) must be released according to the currently accepted community standard (e.g. Bermuda/Ft. Lauderdale agreement) to public databases (GenBank if applicable), as soon as they are assembled and quality checked against a stated, pre-determined quality standard. "At publication" is not acceptable.

- Proposals that would develop genome-scale expression data through approaches such as microarrays or next-generation sequencing should meet community standards for these data (for example, Minimum Information About a Microarray Experiment or MIAME standards). The community databases (e.g. Gene Expression Omnibus) into which the data would be deposited, in addition to any project database(s) should be indicated.

- If the proposed project would produce genome-scale data sets generated using proteomics and/or metabolomics approaches, NSF encourages that they be made available as soon as their quality is checked to satisfy the specifications approved prior to funding. The timing of release should be stated clearly in the proposal. The community databases into which the data would be deposited, in addition to any project database(s) should be indicated.

- If the proposed project would produce community resources (biological materials, software, etc.), NSF encourages that they be made available as soon as their quality is checked to satisfy the specifications approved prior to funding. The timing of release should be stated clearly in the proposal. The resources produced must be available to all segments of the scientific community, including industry. A reasonable charge is permissible, but the fee structure must be outlined clearly in the proposal. If accessibility differs between industry and the academic community, the differences must be clearly spelled out. If a Material Transfer Agreement is required for release of project outcomes, the terms must be described in detail.

- When the project involves the use of proprietary data or materials from other sources, the data or materials resulting from NSF funded research must be readily available without any restrictions to the users of such data or materials (no reach-through rights). The terms of any usage agreements should be stated clearly in the proposal.

- Budgeting and planning for short-term and long-term distribution of the project outcomes must be described in the proposal. If a fee is to be charged for distribution of project outcomes, the details should be described clearly in the proposal. Letters of commitment should be provided from databases or stock centers that would distribute project outcomes, including an

indication of what activities would be undertaken and funds needed for these activities (if any).

- In case of a multi-institutional proposal, the lead institution is responsible for coordinating and managing the intellectual property resulting from the PGRP award. Institutions participating in multi-institutional projects should formulate a coherent plan for the project prior to submission of the proposal.

IMPORTANT: Appendix A-1 is submitted as a supplementary document in lieu of the DATA MANAGEMENT PLAN (DMP) required of all proposals submitted to NSF (see GPG Chapter II.C.2.j). Because the DMP is required, FastLane will not allow submission of a proposal with a DMP in excess of the 2-page maximum. For this reason, please submit as a supplementary document and add the text "SEE APPENDIX A-1 UPLOADED AS A SUPPLEMENTARY DOCUMENT" to the DMP field in FastLane.

(A-2) Management Plan (maximum 5 pages): Projects involving multiple investigators and multiple institutions, or which include a community service component, must provide a description of the management plan for coordinating the activities of the group, or management of the service aspect.

- This description should include plans for internal means of communication, coordination of data and information management, evaluation and assessment of progress, allocation of funds and personnel, interaction with the customers in a service project, and other specific issues relevant to the proposed activities.

- For multi-investigator proposals, a table summarizing the role of each investigator is required. The exact time commitment of each key project member should be indicated in the management plan, regardless of any request for his/her salary from NSF. For community resource projects, a timetable with yearly goals should be provided that includes benchmarks for the major anticipated outcomes and expected dates for their release.

- If the proposal includes a service component such as a multi-user facility or production and distribution of community research resources, a description of how activities within the facility will be managed, how quality will be controlled, how community input will be solicited, what methods will be used to make the community aware of the service to be rendered, and how the community will access resources to be produced, should be provided. The plan should also document institutional commitment to the facility, user fees if anticipated, and plans for long-term support after the end of the project. For a complex project, appointment of a project manager and/or administrator is strongly encouraged.

- The NSF encourages appointment of an outreach/education coordinator where appropriate. A postdoctoral fellow or a senior graduate student interested in education and outreach activities may be appointed to this role.

(A-3) Coordination with Outside Groups (maximum 2 pages): If the proposed activity is part of a national or international collaborative project, describe the relationship of the proposed activity to the overall collaborative project and how the components will be coordinated. General letters of support are not allowed.

(A-4) Responses to Prior Reviewer Comments (**OPTIONAL**; maximum 1 page): If the proposal is a resubmission, describe any changes made in response to prior reviewer comments. Use of this Appendix is optional: you are not required to indicate whether or not a proposal is a resubmission or address prior reviewer comments. However, it is important to note that, as per the NSF Proposal & Award Policies & Procedures Guide (PAPPG), a proposal that was previously reviewed and declined by NSF may be returned without review if it has not been substantially revised since the last submission.

(A-5) Postdoctoral Mentoring Plan (maximum 1 page): The PAPPG includes guidelines implementing the mentoring provisions of the America COMPETES Act (ACA) (Pub. L. No. 110-69, Aug. 9, 2007.) As specified in the ACA, each proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. See the PAPP Guide Part I: Grant Proposal Guide Chapter II for further information about the implementation of this requirement.

(A-6) Plans for Undergraduate and Graduate Student Mentoring (maximum 1 page): All proposals that include funding to support undergraduate or graduate students must include a description of the mentoring activities that will be provided for all such individuals, regardless of location. This part of the proposal will be evaluated under the Foundation's broader impacts merit review criterion.

(A-7) Training Plan (for MCA-PGR proposals only; maximum 1 page): A training plan for mid-career investigators should include: 1) a brief and informative introduction or background section on current research and expertise; 2) a statement of training objectives and plan for achieving them (these may include scientific as well as other career preparation activities); and 3) an explanation of how the proposed activities will enhance the applicant's career development and transition of research to the field of plant genomics; and 4) any curriculum development or enhancements that would result from the support.

Proposals that contain any material not specifically requested or in excess of the page allowances will be considered noncompliant and may be returned without review. It is the submitting institution's responsibility to ensure that the proposal is compliant with the guidelines.

Letters of Collaboration. Supplementary Documents may include letters of collaboration from individuals or organizations that are integral parts of the proposed project but are not supported by subawards. Such involvement may include subsidiary participation in some aspect of the project, cooperation on outreach efforts, or documentation of permission to access materials or data. 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. 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 must be used for the preparation of letters of collaboration is provided below.

Letters of collaboration should not be provided from any individual designated as a principal investigator or senior personnel, nor are letters of collaboration required from any organization that will be a subawardee in the proposal budget.

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 will not be accepted and may be grounds for returning the proposal without review.**

Template to be used for letters of collaboration

To: NSF _____(*Program Title*)_____ 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 proposal, entitled

"_____(*proposal title*)_____," with _____(*PI name*)_____ as the Principal Investigator.; I 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: _____

Single Copy Documents:

Conflict of Interest Document: A single integrated document (in Excel spreadsheet form only) should be uploaded into the Single Copy Documents (not Supplementary Documents) section of FastLane at the time of proposal submission. Hard copies or e-mail copies will not be accepted. The document should consist of an Excel spreadsheet that lists by column: (A) full names (Last name, first name, middle initial) of all people having a conflict of interest with any senior personnel and any named personnel member whose salary is requested in the project budget; (B) institutional affiliations, (C) type of conflict, and (D) Name of PI/co-PI/senior personnel having the conflict. The spreadsheet should be alphabetized on Column (A). Conflicts to be identified are (1) Ph.D. thesis advisors or advisees, (2) collaborators or co-authors for the past 48 months, including postdoctoral advisors and advisees and (3) any other individuals or institutions with which the investigator has financial ties (please specify type). With regard to publications developed by large consortiums, only co-authors that an individual has directly interacted with should be included as a conflict. Members of current Advisory Committees who receive reimbursement for travel or honoraria should be included in the last category. GPG Exhibit II-2 contains information on conflicts of interest that may be useful in preparation of this list.

In addition to the Conflict of Interest Document, other correspondence to the program not intended to be sent to reviewers such as a list of potential reviewers can be sent as Single Copy Documents. Please note that key project personnel may be required, prior to an award decision, to submit copies of any intellectual property agreements or material transfer agreements they have signed, or are planning to sign, that would impact the unrestricted and timely distribution of the outcomes of the NSF funded research. Submission of a Single Copy Document will allow these documents to be reviewed by the NSF officials only, and they will remain confidential.

Checklist for Proposal Preparation

- For MCA-PGR proposals only, title begins with "MCA-PGR: ....".

- Project Summary contains all requested information, including broader impacts of the proposed work and any potentially transformative concepts

- Project Description is 15 pages or less in length, including figures and tables

- References Cited includes publications resulting from prior research funded by NSF (marked*)

- Biographical Sketches (2 pages each) included for PI, Co-PIs and Senior Personnel listed in the Project Summary

- Current and Pending Support Statements included for PI, Co-PIs and Senior Personnel listed in the Project Summary

- Appendices (A-1), (A-2), (A-3), (A-4), (A-5), (A-6), and (A-7) [if applicable] uploaded in Supplementary Documents

- Supplementary documents include letters of collaboration from databases or stock centers that would distribute project outcomes, if applicable

- No general letters of support are included in Appendix (A-3)

- Conflict of Interest list uploaded as a single integrated alphabetized spreadsheet into Single Copy Documents

This checklist is not intended to be an all-inclusive repetition of the required proposal contents and associated proposal preparation guidelines. It is, however, meant to highlight certain critical items so they will not be overlooked when the proposal is prepared.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

- **Full Proposal Target Date(s):**

    March 05, 2012

Proposers anticipating proposal submission after the target date should contact a Program Director prior to the target date for guidance regarding acceptance of late submissions.

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 judgments.

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

For proposals involving international collaborations, reviewers will be asked to assess the international collaboration in terms of mutual benefits, true intellectual collaboration among the international partners, benefits to be realized from the expertise and specialized skills, facilities, sites and/or resources of the international counterparts, and active research engagement of students and early-career researchers, where such individuals are engaged in the project.

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 and Panel Review.

Site visits may be conducted if necessary.

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.

PIs 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. PIs 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.

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:

- Diane Jofuku Okamuro, Program Director, 690N, telephone: (703) 292-4400, email: dbipgr@nsf.gov

- Nora L. Lapitan, 690N, telephone: (703) 292-4400, email: dbipgr@nsf.gov

- Thomas Okita, 690N, telephone: (703) 292-4400, email: dbipgr@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, 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.

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**   (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), 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
Division of Administrative Services
National Science Foundation
Arlington, VA 22230

Policies and Important Links | Privacy | FOIA | Help | Contact NSF | Contact Web Master | SiteMap

The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
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