Continental Scientific Drilling Coordination Office for the Division of Earth Sciences (CSDCO)

PROGRAM SOLICITATION
NSF 13-514

National Science Foundation

Directorate for Geosciences
Division of Earth Sciences

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

February 22, 2013

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 13-1, was issued on October 4, 2012 and is effective for proposals submitted, or due, on or after January 14, 2013. Please be advised that the guidelines contained in NSF 13-1 apply to proposals submitted in response to this funding opportunity. Proposers who opt to submit prior to January 14, 2013, must also follow the guidelines contained in NSF 13-1.

Please be aware that significant changes have been made to the PAPPG to implement revised merit review criteria based on the National Science Board (NSB) report, National Science Foundation's Merit Review Criteria: Review and Revisions. While the two merit review criteria remain unchanged (Intellectual Merit and Broader Impacts), guidance has been provided to clarify and improve the function of the criteria. Changes will affect the project summary and project description sections of proposals. Annual and final reports also will be affected.

A by-chapter summary of this and other significant changes is provided at the beginning of both the *Grant Proposal Guide* and the *Award & Administration Guide*.

Please note that this program solicitation may contain supplemental proposal preparation guidance and/or guidance that deviates from the guidelines established in the Grant Proposal Guide.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Continental Scientific Drilling Coordination Office for the Division of Earth Sciences (CSDCO)

Synopsis of Program:

The Division of Earth Sciences (EAR) at the National Science Foundation (NSF) requests proposals from interested groups to support current and future continental scientific drilling activities. We request proposals for the establishment of a *Continental Scientific Drilling Coordination Office* (CSDCO) that will help coordinate planning for continental scientific drilling projects, in collaboration with the Earth science community, and will have the capability to supply continental scientific drilling support and expertise for NSF-funded research.

The CSDCO may work with the commercial drilling community or other drilling organizations to determine the type and availability of drilling services that may be available for NSF-funded scientific projects that require continental drilling. The CSDCO, if requested by the PI of the scientific project, may assist with the development of requests for bids to provide the drilling services. The CSDCO is expected to play a proactive role in the community to encourage innovation in drilling technologies and methods in response to community needs and will help guide the development of new drilling designs as requested by the research community.

The successful proponent will be expected to manage drilling activities for the US scientific community, as needed. Requirements for drilling activities will be derived both from long-range science plans developed by the community as well as research proposals funded by NSF. We encourage collaborations with international partners such as the International Continental Scientific Drilling Program (ICDP) and with scientists funded by other sources. The CSDCO will be capable of assisting in the planning and execution of all aspects of the drilling activities that EAR supports.

Interested parties must propose to this solicitation with a plan to provide for these services under a single award. The CSDCO award will be administered as a Cooperative Agreement with an anticipated duration of up to five-years beginning on October 1, 2013. A mid-term management review will be required, which will guide a decision to re-compete or renew the Cooperative Agreement for up to a further five-year period.

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.

- David Lambert, telephone: (703) 292-8558, email: dlambert@nsf.gov

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

- 47.050 --- Geosciences

Award Information

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: 1 It is estimated that 1 award will be made as a cooperative agreement.

Anticipated Funding Amount: $500,000 to $750,000 per year pending availability of funds

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: 1

One proposal per Organization is allowed.

Limit on Number of Proposals per PI: 1

One proposal per PI is allowed.

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

  February 22, 2013

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: Additional award conditions apply. Please see the full text of this solicitation for further information.

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

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I. INTRODUCTION

Continental scientific drilling (CSD) is a tool to access Earth's geologic history, properties, and processes at locations where such information may otherwise not be available. Data from samples and measurements obtained through scientific drilling provide key parameters that allow researchers to address questions with relevance to society as well as to other fields beyond the Earth Sciences.

The importance of scientific drilling has been identified by numerous recent National Academy of Sciences/National Research Council reports (*e.g., Understanding Earth's Deep Past*, 2011; *New Research Opportunities in the Earth Sciences*, 2012). CSD is an essential element to addressing scientific grand challenges related to global and environmental change, geodynamics, and natural resource systems and concerns. Data obtained from CSD efforts give researchers the opportunity to test and develop hypotheses that are based on observations made elsewhere. CSD enables the science community to develop models that are of global reach and with high spatial and temporal resolution.

The drilling community is intellectually diverse, reflecting the many applications of drilling as a tool to addressing key scientific questions. Recent projects have yielded critical information and understanding about climate change, sea level fluctuations, hotspot volcanism, ice dynamics, active tectonics, and human-climate interactions. High resolution lake core records from the tropics to higher latitudes have revealed important information about climate history and dynamics (monsoonal circulation, solar variability, heterogeneity of system response, drought as a mechanism of human migration and development, and teleconnectivity between continental systems) in near and deep time. Multi-platform drilling on the near continental shelf has allowed Earth scientists to better understand critical transitions and thresholds in Earth-life systems in geologic time. Drilling into continental hotspots has allowed researchers to better characterize the nature of deep mantle plumes and investigate potential geothermal resources related to hotspot activity. These examples coupled with newly emerging drilling needs for earthquake and volcanic hazard assessment, geothermal activity, critical zone processes as well as Earth-life interactions, demonstrate the necessity for a strong and responsive scientific drilling capability.

The success of scientific drilling in the United States, and on U.S.-involved international projects, is dependent on the leadership of a strong CSDCO. The CSDCO organization must have the financial and managerial capacity and expertise to monitor an NSF Cooperative Agreement. A successful CSDCO is needed to identify new capabilities and technologies; to establish and manage the CSD planning process; and to create a structure to facilitate and enable the community and its CSD activities, including education and public outreach activities.

II. PROGRAM DESCRIPTION

Statement of Work

The Division of Earth Sciences at the National Science Foundation requests proposals for the establishment of a *Continental Scientific Drilling Coordination Office*, an organization that will provide scientific leadership and oversight of CSD activities funded by NSF. The successful awardee must demonstrate an in-depth understanding of current, state-of-the-art drilling technologies for recovery of rock, regolith, sediment, and soil cores and must demonstrate the ability to successfully manage drilling activities for the scientific community as needed. The awardee organization must also demonstrate the ability to successfully manage and monitor an NSF Cooperative Agreement.

The CSDCO will play a proactive role in the community to encourage innovation in scientific drilling, coring and downhole sampling technologies in response to community needs and will help to develop new designs as requested by the research community. Requirements for drilling activities and development of new drilling, coring and downhole sampling tools will, to a large degree, be derived from research activities funded by NSF (including activities with international partners). However, the successful awardee will also be expected to work closely with the community to develop cutting edge scientific drilling, coring and downhole sampling technologies and methods and shall partner, when appropriate, with scientists on the submission of proposals seeking funding for these developments. The successful group will be required to work closely with investigators, other agencies, contractors, and other national programs to prepare operational plans to support CSD activities worldwide, including providing detailed schedules, budgets, and resource requirements for PI-driven projects proposed to NSF.

If NSF determines that a scientific drilling project is supportable, then the CSDCO may be formally directed by NSF, if requested by the PI of the scientific drilling project, to devote resources to manage the work described in the successful proposal via commercial drilling operators or other drilling organizations. These drilling activities may be supported via funding supplementary funds to the scientific drilling project and may be sub-contracted or sub-awarded to the selected drilling organization.

The awardee will prepare, and annually update, a comprehensive five-year plan for CSD development and use necessary to support the U.S. research community. This plan will include drill allocation to specific projects to the degree that these commitments are known and can be estimated. To develop this document, the awardee will interact closely with the research community, NSF Program Managers, developers of drill core instrumentation and downhole geophysical logging tools, and relevant industry partners.

Primary Tasks

The sections below outline primary activities to be carried out by the *Continental Scientific Drilling Coordination Office* (CSDCO). This list is not comprehensive but is provided to enable proposers to formulate their management concepts and organizational structure.

The CSDCO will play a proactive role in the community to encourage innovation in scientific drilling, coring and downhole sampling technologies in response to community needs. To that end, the following tasks will be essential to the operation of the office:

- Provide community leadership in continental scientific drilling research and development
- Ensure that an efficient and effective project governing structure is in place throughout the award period to support all CSDCO activities. This structure will be designed to ensure close involvement of the research community in the development of CSDCO capabilities, to focus scientific talent on common objectives, and to encourage broad participation.
- Establish appropriate community advisory and working groups to develop long-range scientific plans for continental scientific drilling
- Act as a focal point for community input related to continental scientific drilling research and drilling activities
- Develop plans for appropriate scientific workshops and conferences related to continental scientific drilling
- Provide a clearinghouse for information related to continental scientific drilling research and development as a service to the research community
- Coordinate information exchange between the U.S. continental scientific drilling community and international groups, including ICDP
- Support pre-drilling activities that will strengthen a science proposal that requires CSD and is intended for submission to one of EAR's science programs. These activities could include community planning meetings, site surveys, equipment design, and drilling plan and budget preparation.
- Provide scientific direction and oversight of drilling projects funded by EAR that will be carried out by an entity capable of providing the necessary drilling services and with the business and financial capability to receive federal funding
- Develop a website that describes current drilling capabilities that are available and are of use in continental scientific drilling, with examples of recent activities, as well as detailed conceptual descriptions of future drilling systems
- Develop a drilling educational component for university level students, including support for summer internships at CSDCO or at an active drilling project, and support for drilling projects by students using shallow drilling equipment.

In addition to the items above, proponents must describe the administrative, scientific, and technical staff required; the available office environment; and any leveraged support services needed to ensure success of the *Continental Scientific Drilling Coordination Office*. Proposals should clearly present the management structure, capability, experience and qualifications of the Organization(s) necessary to carry out the CSDCO tasks. Explain the roles and responsibilities of each known or planned team entity (including Key Personnel), the basis for its inclusion, and how it best contributes to accomplishing continental scientific drilling objectives. The proposers must demonstrate a knowledge of and the ability to interact with the academic research community engaged in CSD. The awardee organization must also demonstrate the ability to successfully manage and monitor an NSF Cooperative Agreement.

III. AWARD INFORMATION

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: It is estimated that 1 award will be made as a cooperative agreement.
Anticipated Funding Amount: $500,000 to $750,000 per year. Estimated annual program budget and average award size/duration are subject to the availability of funds.

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: 1

One proposal per Organization is allowed.

Limit on Number of Proposals per PI: 1

One proposal per PI is allowed.

Additional Eligibility Info:

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.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

C. Due Dates

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

  February 22, 2013

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

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

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years (FY) 2011-2016*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the core strategies in support of NSF's mission is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions 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 variety of learning perspectives.

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

A. Merit Review Principles and Criteria

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

1. Merit Review Principles

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

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind

the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

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

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

2. Merit Review Criteria

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

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

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

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

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

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

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

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

Additional Solicitation Specific Review Criteria

Proposals will be assessed according to the credentials of the proposing group, which must demonstrate expertise and past accomplishments in scientific drilling, the ability to develop new cutting-edge drilling technologies, as well as the ability to interact with the academic research community and industry. This should include, but is not be limited to, a demonstrated ability in project management and oversight, advisory committee organization, interactive web site development, and the ability to work with the academic research community and NSF to plan and manage successful drilling operations. The awardee organization must also demonstrate the ability to successfully manage and monitor an NSF Cooperative Agreement. A lead principal investigator must be designated who will have direct day-to-day involvement with these activities and who will serve as the point of contact for the Division of Earth Sciences.

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.

Special Award Conditions:

The award associated with this solicitation will be a Cooperative Agreement (CA), not a standard grant or a contract, that will fund annual CSDCO operations in accordance with approved Annual Program Plans. Any special requirements not stated herein will be negotiated at the time of award.

NSF reserves the right to initiate annual site reviews of the awardee and to conduct a mid-term management review that will inform NSF's decision whether to accept a renewal proposal for continued management and operations of the CSDCO or to recompete CSDCO management.

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 reportwill 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.

In additional to the annual report, the awardee will also submit an annual Program Plan and Budget in advance of the next funding increment for the upcoming fiscal year of support of the CSDCO.

The awardee will prepare, and annually update, a comprehensive five-year plan for CSD development and use necessary to support the U.S. research community. This plan will include drill allocation to specific projects to the degree that these commitments are known and can be estimated. To develop this document, the awardee will interact closely with the research community, NSF Program Managers, developers of drill core instrumentation and downhole geophysical logging tools, and relevant industry partners.

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:

- David Lambert, telephone: (703) 292-8558, email: dlambert@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.

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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:

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