Operations Management of the Drilling Vessel JOIDES Resolution for the International Ocean Discovery Program (IODP)

PROGRAM SOLICITATION
NSF 12-612

National Science Foundation

Directorate for Geosciences
Division of Ocean Sciences

Letter of Intent Due Date(s) ***(required)*** (due by 5 p.m. proposer's local time)*:*

October 30, 2012

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

January 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:

Operations and Management of the Drilling Vessel JOIDES Resolution for the International Ocean Discovery Program (IODP)

Synopsis of Program:

The International Ocean Discovery Program (IODP) will serve to advance basic research in the marine geosciences and will be supported by the National Science Foundation (NSF) and several international partners. IODP builds on a rich legacy of scientific ocean drilling pioneered by NSF in the 1960's with the Deep Sea Drilling Project, which provided a test of the plate tectonic hypothesis and a basic reconnaissance of deep sea sediments and crustal rocks. This was followed in 1985 by the Ocean Drilling Program, which focused on examination of Earth, ocean and climate processes. The current Integrated Ocean Drilling Program commenced in 2003 and has served as an expanded program of scientific ocean drilling based on "Earth, Oceans and Life: Scientific Investigations of the Earth System Using Multiple Drilling Platforms and new Technologies; Integrated Ocean Drilling Program Initial Science Plan, 2003 - 2013" (http://www.iodp.org/initial-science-plan). IODP, anticipated to commence October 1, 2014 with the science plan available at http://www.iodp.org/Science-Plan-for-2013-2023/, builds upon lessons learned in the previous programs and will involve a multi-platform international program based on cooperation rather than integration. IODP planning for *JOIDES Resolution* operations will be conducted under a Facilities Governing Board rather than an integrated Science Advisory Structure, and management and funding for JOIDES Resolution operations will occur independently of the other IODP drilling platforms.

The NSF acquired and converted a drilling vessel with enhanced scientific research capabilities as the U.S. operational contribution to the Integrated Ocean Drilling Program. This activity was successfully completed in 2009.

The converted vessel, along with additional support elements directly provided by NSF to the science community, has fostered continuing U.S. leadership in scientific ocean drilling as well as increased participation of the broader international geoscience community. Independent reviews of both the current Integrated Ocean Drilling Program performance and the new Science Plan, titled *Illuminating Earth's Past, Present, and Future: The International Ocean Discovery Program Science Plan for 2013-2023*, have been highly favorable. The plan provides a strong scientific rationale for the continuation of scientific ocean drilling.

This solicitation seeks the services of a qualified organization, through a Cooperative Agreement, to provide technical and scientific management and operation of the JOIDES Resolution drilling vessel in support of the IODP Science Plan. The *JOIDES Resolution* is currently operated under the IODP System Integration Contract to the Consortium for Oceanographic Research. As the prime subcontractor, Texas A&M University is the current *JOIDES Resolution* science operator, with the vessel procured through long-term lease from owner Overseas Drilling, Limited under a contract with the Texas A&M University Research Foundation. This long-term lease contains provisions for one-year extensions through September 30, 2023 and is re-assignable to a new operator pending approval by the vessel owner. The initial period of the award is intended to cover a five year period beginning on October 1, 2014. A comprehensive Management Review will be conducted after the three initial years of operation, and the results will guide a decision to re-compete or renew the Cooperative Agreement, with renewal contingent on submission of a meritorious proposal.

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.

- James F. Allan, Program Director, National Science Foundation, 725, telephone: 703-292-8144, fax: 703-292-9085, email: jallan@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

Anticipated Funding Amount: $50,000,000 to $70,000,000 Based on operating costs for drilling schedule described in section on Proposal Deliverables. Subject to the availability of funds from NSF and its IODP partners. Current costs for *JOIDES Resolution* operations are available through published IODP Annual Program Plans (http://www.iodp.org/app/). Proposals that present creative cost-saving business plans that leverage NSF's investment in scientific ocean drilling are encouraged.

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.
- For-profit U.S. organizations partnered with U.S. academic institutions.

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: Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- 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

- Letter of Intent Due Date(s) ***(required)*** (due by 5 p.m. proposer's local time)***:***

  October 30, 2012

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

  January 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

Scientific ocean drilling is a valuable capability in modern geoscience research and education. Its broad use as a scientific tool ranges from investigating the causes of change in the Earth's climate to the rifting and drifting of continents. Drilling is the primary method of sampling sediment and crustal rock from the large percentage of the Earth's surface covered by oceans, and is the only technique for sampling anything more than a few tens of meters below the ocean floor.

The Deep Sea Drilling Project, which began in 1968 under NSF sponsorship served as a test of the plate tectonic hypothesis and a basic reconnaissance of deep-sea sediments and crustal rocks. In 1974, the Deep Sea Drilling Project became an international program, with several European nations, Japan and the USSR entering into an agreement with NSF for providing scientific and financial participation.

The Deep Sea Drilling Project was followed in 1985 by the Ocean Drilling Program, which was a focused examination of earth, ocean and climate processes. International participation in planning, research and funding of operations grew from an initial five countries in the Deep Sea Drilling Project to over 20 nations.

For both the Deep Sea Drilling Project and the Ocean Drilling Program, NSF provided the primary facility by contracting and converting an industry drill ship for scientific drilling - the *Glomar Challenger* for the former, and the JOIDES Resolution for the latter. Both vessels served as facilities to carry out investigations proposed by the scientific community over the course of each program. The Ocean Drilling Program was structured in such a way that formal agreements between NSF and international partners terminated at the end of 2003 and were subsequently replaced and augmented by agreements for the Integrated Ocean Drilling Program.

Over the preceding decade, the NSF has participated in the Integrated Ocean Drilling Program, designed to address scientific objectives described in the Initial Science Plan (http://www.iodp.org/isp). Among these are (1) Understanding the Deep Biosphere and Subsea floor Ocean, (2) Environmental Change, and (3) Solid Earth Cycles and Geodynamics. The United States and Japan serve as co-leads, with membership from 23 other countries. Japan constructed a heavy riser drillship for the IODP (*Drilling Vessel or D/V Chikyu*), the United States has contributed a leased, lighter vessel (*D/V JOIDES Resolution*), and the European Consortium for Ocean Research Drilling (ECORD) has contributed Mission Specific Platforms for shallow water and Arctic drilling. This multi-platform program expanded on the single platform Ocean Drilling Program. NSF invested $115 million from the Major Research Equipment and Facilities Construction (MREFC) account in FY 2005 - FY 2007 to refit and optimize the leased *JOIDES Resolution* for 21st century science. This refurbishment project provided the U.S. research community and its international partners with a unique, world-class facility for ocean discovery.

The Integrated Ocean Drilling Program significantly expanded the scope of the predecessor programs. It is currently scheduled to conclude September 30, 2013. The program has undergone major restructuring and simplification by its international partners. To streamline program management and reduce costs, the international partners have come together to design a new management structure and business model that enhances the multi-platform capabilities and ambitious science goals. The three distinct platform types (*JOIDES Resolution, Chikyu,* and Mission Specific Platforms) will be operated independently by the respective countries.

The *JOIDES Resolution* will be operated by the United States in partnership with countries and other entities contributing funds for JOIDES Resolution operations. Much of this new management structure is already in place and full implementation will follow in the new International Ocean Discovery Program (IODP), to be initiated October 1, 2014.

The Science Plan for the period 2013-2023: *Illuminating Earth's Past, Present, and Future: The International Ocean Discovery Program Science Plan for 2013-2023* (http://www.iodp.org/Science-Plan-for-2013-2023/) provides justification for United States' participation in the IODP and reflects the top priorities of the international science community. Top priorities of the U.S. science community are outlined in a report from a workshop that took place from April 30 - May 2, 2012 (http://iodp-usssp.org/wp-content/uploads/Workshop_BuildingUSStrategies_Report.pdf). These priorities include borehole observatories to study fundamental aspects of the deep biosphere, high resolution studies of past climate at high latitudes, studies of collisional plate boundaries such as Cascadia that periodically generate giant earthquakes and tsunamis, and the commitment to operate the *JOIDES Resolution* more efficiently through setting regional ship tracks in advance.

The scientific accomplishments and the potential for future scientific discoveries envisioned in the new science plan were reviewed in the National Research Council report *Scientific Ocean Drilling: Accomplishments and Challenges (2011)* (http://www.nap.edu/catalog.php?record_id=13232#toc). The NRC review was favorable concerning both scientific progress and management of scientific ocean drilling, and recommended continuation for another decade with the *JOIDES Resolution* playing a key operational role. Nevertheless, a recent, separately commissioned review by a subcommittee of the NSF Advisory Committee for Geosciences accepted the NRC findings, but recommended that approval by NSF to move forward with IODP be predicated upon a cost-effective and affordable *JOIDES Resolution* facility business plan and a consequently acceptable Division of Ocean Sciences balance between infrastructure cost and science support.

As of April 2012, there were 54 highly rated *JOIDES Resolution* drilling proposals held within the Integrated Ocean Drilling Program Advisory Structure that address the new science plan. They will be carried over into IODP and will be joined by additional proposals that are being actively solicited and submitted. In the modified management structure, long term planning of *JOIDES Resolution* drilling operations will be done by a Facility Governing Board, which will include all partners contributing to *JOIDES Resolution* operations, members of the international science community, and the vessel's science operator.

This Solicitation seeks to implement and execute the IODP Science Plan through selection of a highly qualified organization having the requisite skills and experience to effectively support planning for the new IODP and manage operations of the *JOIDES Resolution* for the period between 2014 and 2023.

II. PROGRAM DESCRIPTION

NSF's Division of Ocean Sciences (NSF-OCE) intends to provide cost effective support of IODP scientific ocean drilling operations, to be conducted by the Drilling Vessel *JOIDES Resolution* within available resources. Work will be performed over the life of the program in accordance with the prospective Cooperative Agreement (CA) and each fiscal year's approved Annual Program Plan (APP). Annual Program Plans will include a detailed budget for each task element described below, itemized by expected costs of salaries and fringe benefits, travel, supplies, shipping, communication, ship operations, other contractual services, equipment, other direct costs, etc.

Through this solicitation, NSF-OCE intends to:

a. Foster technical improvements to the facility, including equipment and operating procedures to better acquire, store and access research data.

b. Improve managerial and procedural aspects of site operations that will facilitate more effective use of the facility by the research community and continual enhancements to maintain a state-of-art facility.

c. Improve financial and business processes to ensure cost-effective operations and effective fiduciary oversight by NSF and other partners.

d. Improve relationships with shipboard and shore-based users that will enhance both the facility itself and research conducted at the facility.

The Awardee will ensure that planning, execution, and reporting of science operation of the JOIDES Resolution for the IODP integrates the requirements of NSF with the needs of the national and international scientific community. This long-term program of scientific ocean drilling will include but not be limited to the scope of activities described in the following elements.

1. IODP ***JOIDES Resolution*** Management and Administration:

The Awardee will establish and maintain an organizational structure and staff capable of effectively planning, coordinating, overseeing, reviewing, and reporting of IODP activities conducted by the *JOIDES Resolution*. Proposals should clearly show lines of authority, responsibility and communication between NSF, the Awardee and partners, and include a discussion of management procedures for selecting, monitoring, and controlling subcontracted efforts for shipboard and shore-based support to meet the scientific and technical objectives of the Program. The Awardee will describe the framework for implementing a robust program evaluation and measurement system, including: clear and mutually agreed-upon goals, performance measures and, where appropriate, performance targets, periodic status reporting to NSF, and the process for evaluation and feedback to assess performance, including assessment of user community satisfaction, The coordination and development of Annual Program Plans identifying programmatic goals, schedules and tasks, major planning and review activities, required budgets, recent scientific results/accomplishments and lessons learned is a principal activity within this element. Detailed Quarterly and Annual Reports are required to summarize actual program results with respect to the Annual Program Plan.

The Awardee will perform operational management support activities relating to government-owned equipment inventory (https://infoshare.nsf.gov/showFile/3174/bsr409.pdf) and scientific assets, permitting of drilling operations, insurance and indemnification against drilling specific risks, and environmental impact assessments for drilling operations scheduled for the *JOIDES Resolution*. The *JOIDES Resolution* is under long-term lease from the vessel owner Overseas Drilling, Limited under a contract with the Texas A&M University Research Foundation, with this contract re-assignable to a new operator, pending approval by the vessel owner. This contract allows for one-year extensions for the period of the award, with copies available by request. The *JOIDES Resolution* will operate under the existing June, 2008 Programmatic Environmental Impact Statement (valid through June, 2028; http://www.nsf.gov/geo/oce/envcomp/IODP_USIO_Final_PEIS.pdf and http://www.nsf.gov/geo/oce/envcomp/IODP_USIO_Final_PEIS_Appendices.pdf) and the June 30, 2008 NSF Record of Decision regarding the United States Implementing Organization's Participation in the Integrated Ocean Drilling Program (Federal Register, v. 73, n. 126, p. 36919; http://www.nsf.gov/geo/oce/envcomp/IODP_USIO_PEIS_RODv3.pdf).

The Awardee will participate in annual program reviews by panels of experts convened by NSF who will review Awardee performance and management under the CA. NSF will conduct Management and Business System Reviews of the awardee. The Business Systems Review is typically conducted once during the five year duration of the award, and is designed to examine the business and administrative framework used by the awardee. Periodic management reviews, distinct from science reviews, will focus specifically on management performance. The user community will also be periodically surveyed about the level of satisfaction with the services provided by the awardee. Any potential Awardee that has not previously managed an activity of this scale may be required to undergo a pre-award audit and review of their financial and procurement systems.

Proposals to conduct *JOIDES Resolution* drilling operations in support of the IODP may or may not involve multiple organizations. For multi-institutional team proposals, NSF considers access to team members a vital aspect of successful oversight. Consequently, an essential feature of the Cooperative Agreement will involve providing NSF with advance notice and subsequent access to meetings, teleconferences, and substantive communications between the Awardee and its principal sub-awardees, in full recognition of privity limitations. Also, the Awardee will be fully responsive to NSF requests to convene such meetings and communications related to performance of the CA.

2. Technical, Engineering, and Science Support

The Awardee will have responsibility for planning, providing and maintaining the services, materials, platforms, ship and shore-based laboratories, instrumentation and supplies necessary to support US-conducted IODP expeditions. These activities will include conducting long range science support and operational planning in coordination with the IODP science planning structure.

The Awardee will formulate specific operational plans for each fiscal year, to include identification of sites and essential site survey data, prioritization and scheduling of operations to achieve drilling objectives, and execution of the scientific experimentation and measurements to be conducted at proposed drill sites, taking vessel seaworthiness, overall safety and environmental factors into consideration. The Awardee will provision and outfit the ship with the supplies and equipment necessary for each drilling leg, and identify and prioritize technology developments necessary to meet operational and scientific requirements. Ship and shore based marine technical support is required for making improvements to shipboard spaces, developing new technology to support scientific and operational needs of the IODP, and improving reliability and performance of existing coring systems.

Accompanying tasks relating to IODP ship based personnel include selecting an Operations Superintendent and providing up to 28 Technical Support personnel to assist the activities of the Science Party, consisting of up to 35 Scientific Personnel funded under a separate Cooperative Agreement with NSF. Awardee support for carrying out the scientific drilling programs during typical expedition lengths of up to 60 days will include coordinating pre-cruise activities, providing suitable work and habitability spaces aboard ship, and supporting the scientific party's efforts to oversee shipboard data and sample analyses.

The Awardee will assure that qualified crew members are provided for effective shipboard operation of the *JOIDES Resolution*, consistent with good marine safety practices, applicable regulatory body standards and international conventions. Awardee support of the administrative and business aspects of ship management will include procuring appropriate amounts of insurance, coordinating port call activities, acquiring U.S and international permitting for operations in territorial waters and providing centralized shipping and receiving services.

3. Engineering Development

The Awardee will utilize IODP resources to provide and oversee engineering development projects in accordance with the long-term programmatic engineering needs and funding availability, as prioritized by the IODP Facilities Governing Board. Projects may include application of new technologies to improve drilling and logging efficiency, core quality, data acquisition and data processing.

4. Core Curation

Awardee services will include providing for and managing proper curation and storage of samples and maintaining inventories of sample availability and usage of the IODP and predecessor program core collection archived at the Gulf Coast Repository (GCR) in College Station, TX and the Kochi Core Repository in Japan. The curation and distribution of samples will be managed according to current, established Integrated Ocean Drilling Program norms and standards, as described on the Gulf Coast Repository website (http://iodp.tamu.edu/curation/gcr/index.html). The Awardee will ensure that the international scientific community is well-informed of sample availability and procedures for accessing samples and the associated program data, and that sample and data requests are promptly serviced.

5. Data Management:

The Awardee will manage expedition data supporting IODP activities and provide long-term archival access to data and support of information technology (IT) services. The Awardee will provide and maintain state of the art data acquisition and data processing equipment aboard the drilling vessel and in shore based laboratories, as well as computer systems managers for each drilling expedition. Plans for data distribution and handling will be developed based on recommendations from the *JOIDES Resolution* Facilities Governing Board. Shipboard and shore based data will be archived and made available to the science community through on-line databases, and database services for IODP partners will be provided as required.

The awardee will be required to submit a written summary of the policies, procedures, and practices employed by the awardee's organization as part of the organization's IT security program, in place or planned, to protect research and education activities in support of the award.

6. Publications:

The Awardee will provide the required support services for publication of technical results obtained from *JOIDES Resolution* drilling expeditions to include editing, production, and graphics services for all required reports and scientific publications and warehousing and distribution of IODP and predecessor program publications. Examples of publications are (1) Quarterly and Annual Reports for activities performed under the Cooperative Agreement, (2) Scientific Prospectus and Preliminary Reports for each expedition and Proceedings of the Integrated Ocean Drilling Program for *JOIDES Resolution* IODP expeditions. These will be expected to be published electronically, and made available to the general public via a website.

7. Alternate Drillship Use for Supplementing Science Initiatives

NSF expects to engage the services of the *JOIDES Resolution* for less than twelve months per contract year of performance. To promote efficiency and cost minimization, NSF strongly encourages but will not require the Awardee to pursue third party entities that pay for the use of the *JOIDES Resolution* during periods when the vessel is not engaged in IODP Expeditions. In furtherance of this activity, NSF will collaborate with the Awardee in determining the time period(s) (i.e., windows of opportunity) when the *JOIDES Resolution* will be available for non-NSF alternative use. The Awardee may use reasonable efforts to seek alternative users (third-party) of the *JOIDES Resolution* during these periods in coordination with Overseas Drilling Limited (ODL), the vessel's owner, although NSF funds may not be used for this purpose. NSF must approve, in writing, any proposed alternative use arrangement. NSF's approval will not be unreasonably withheld.

The Awardee will ensure that NSF retains first priority for use of the *JOIDES Resolution* for its funded scientific operations during the period of contract performance.

The Awardee will further ensure that any alternative use arrangement provides for the hold harmless and indemnification of NSF, compensation for any replacement, repair, and/or refurbishment of any NSF equipment damaged or lost during operations or consumables used, "down time" of the vessel due to repair and/or replacement work. The Awardee will also provide inventory control, inspection, and oversight of NSF equipment before, during and after its use. NSF will be provided written confirmation of the forgiveness by ODL of NSF/Awardee obligations for day rate payments during the period when the *JOIDES Resolution* is used by a third party.

Proposal Deliverables

Responses to each proposal deliverable given below will be weighted equally in review of submitted proposals.

Proposals should:

1. Clearly present the management structure, capability, experience and qualifications of the Organization(s) necessary to carry out the program. 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 IODP objectives. Provide a plan for subawardee and subcontract oversight that ensures subawardee and subcontractor performance and thus Awardee responsiveness to NSF direction.

2. Thoroughly describe the approach intended to perform each described task. Describe the approach to providing and overseeing the shipboard and shore-based facilities, equipment, organization and technical staffing necessary for successful scientific operation of the *JOIDES Resolution*. Discuss any special qualifications or organizational experience relevant to the performance of the Program described herein, and how this will help assure successful performance of the prospective Cooperative Agreement.

3. Construct a drilling schedule from the four hypothetical expeditions given below. For each hypothetical expedition, describe how you would plan and achieve the scientific and drilling objectives. Include any logging operations that would be needed scientifically. Assume that operations begin from a port call in Miami in January, and end 8 months later in Halifax, Canada. Give two alternative plans for Expedition 2, with and without the optional activity. Explain the benefits of the proposed approach, how it will make efficient use of material and personnel resources, and how costs will be controlled.

Expedition 1 - Blake Ridge

- Drilling location: approximately 30 degrees N, 73 degrees W.
- Scientific objective: obtain a complete stratigraphic record for detailed paleoceanographic study.
- Drilling objective: approximately 400 meters below sea floor.

Expedition 2 - Mid-Atlantic Ridge

- Drilling location: approximately 30 degrees N, 41 degrees W.
- Scientific objectives: Drill into an active hydrothermal field and recover core documenting the internal structure of hydrothermal deposits.
- Drill into mid-ocean ridge axis to document the architecture of ocean crust.
- Drilling objective: approximately 100 meters into basement at each site.
- Optional activity: Establish one hole in the ocean crust as an observatory to monitor long-term borehole changes in fluid temperature, flow, chemistry, and microbial activity in three independent, isolated zones.

Expedition 3 - Rockall Plateau

- Drilling location: approximately 56 degrees N, 23 degrees W.
- Scientific objectives: Document the early rifting history of this margin
- Drilling objective: Drill approximately 100 meters into basement at each site.

Expedition 4 - Newfoundland Ridges

- Drilling location: approximately 41 degrees N, 49 degrees W.

Scientific objectives: obtain a complete stratigraphic record for detailed paleoceanographic study.
- Drilling Objective: approximately 1000 meters below sea floor.

4. Provide estimated costs for each year of the potential 10 year performance period, accompanied by an activity-based quantitative cost model detailing fixed and variable costs- i.e., separate out estimated expedition costs and tie-up costs. Assume 8 months of operations per year, with four months of tie-up. Assume, for the purposes of this cost estimate, that NSF will be responsible for supporting all tie-up costs, even though these costs could potentially be mitigated through non-IODP alternative use. As a basis for estimating costs of the first year of operations, use the hypothetical expeditions given above to provide a modular budget, both with and without the optional activity in Expedition 2. Then, use these first year operational cost estimates as a basis for estimating costs of the following 9 years. Current costs for *JOIDES Resolution* operations are available through published IODP Annual Program Plans (http://www.iodp.org/app/).

5. Discuss the envisioned approach for developing robust Annual Program Plans (APPs) to accomplish IODP research themes. Describe strategies to be followed that would mitigate the effects of budgetary imperatives that could reduce the amount of planned vessel operating days in a given fiscal year.

6. Discuss how the proposing organization will assure success relative to measures of performance applicable to Operations Management of the *JOIDES Resolution*, including Government Performance Results Act criteria, Quality of Product/Services, Cost Control, Timeliness, Business Relations and consistent completion of activities defined by Annual Program Plans within budget and schedule.

7. Include an aggregated description of the internal and external resources (both physical and personnel) that the organization and its collaborators will provide to the project, should it be funded. Such information must be provided 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. Reviewers will evaluate the information during the merit review process and the cognizant NSF Program Officer will review it for programmatic and technical sufficiency.

Government Furnished Information:

A Proposer's Conference may be announced by NSF prior to the full proposal deadline, if organizations that have submitted a Letter of Interest request it.

Large Facility Manuals and Guidelines:

1. Large Facilities Manual (Web Link)
2. Roles and Responsibilities of NSF Staff Involved in the Management and Oversight of Large Facilities (Web Link)
3. Risk Management Guide (Web Link)
4. Guidelines for Reporting Requirements (Web Link)
5. Guidelines for Financial Management

III. AWARD INFORMATION

Anticipated Annual Funding Amount: $50,000,000 to $70,000,000, which is based on operating costs for the drilling schedule described in section on Proposal Deliverables. Annual amount is subject to the availability of funds from NSF and its IODP partners. Current costs for *JOIDES Resolution* operations are available through published IODP Annual Program Plans (http://www.iodp.org/app/). Proposals that present creative cost-saving business plans that leverage NSF's investment in scientific ocean drilling are encouraged.

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.
- For-profit U.S. organizations partnered with U.S. academic institutions.

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.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent***(required):***

Submission of Letters of Intent is required. Each lead proposing organization must submit a Letter of Intent through FastLane. Proposing organizations anticipating the submission of a collaborative proposal should submit only one Letter of Intent from the lead organization.

Letters of Intent will be used by NSF to ensure that the appropriate expertise is available for participation in the review and selection process, to foresee potential conflicts of interest, and to anticipate special award conditions that may be necessary to accommodate the proposed organizational and governance structure. The Letter of Intent is a statement of a proposer's preliminary plans; the senior personnel, collaborating or partnering organizations, and proposed plans may change between submission of the Letter of Intent and submission of the Full Proposal.

Full Proposals may be submitted only by organizations that have submitted a Letter of Intent by the due date, or that have been identified as a non-lead proposing organization in the Letter of Intent for a collaborative proposal.

Letter of Intent Preparation Instructions: Complete submission of a Letter of Intent (LOI) requires two separate components that must each be submitted prior to the LOI due date.

FastLane LOI Component-Via Fastlane, submit the following LOI information:

- Project Title
- Synopsis (a brief abstract of maximum 2,500 characters of plain text)
- Point of Contact for NSF Inquiries
- Project PI Information
- Participating Organizations

Submission of this component via FastLane will produce an LOI ID that must be included in the PDF LOI Component described below.

PDF LOI Component-Via an email to the Cognizant Program Officer, submit a document of no more than 5 pages in Portable Document Format (PDF) that addresses the following:

- a description of the proposed organizational structure for science operation of the JOIDES Resolution, including the identification of all collaborating and partnering institutions and their roles;
- a list of proposed Key Personnel, including all PIs, Co-PIs and senior personnel, that identifies full names and affiliations;
- a description of the organization's overall management concept for the JOIDES Resolution;
- a description of the major elements of the organization's transition plan and estimated resource needs for assuming management of the JOIDES Resolution

When submitting a Letter of Intent in response to this Program Solicitation please note the conditions outlined below:

- Sponsored Projects Office (SPO) Submission is not required when submitting Letters of Intent
- Other Participating Organizations are allowed
- Submission of multiple Letters of Intent is not allowed

Letter of Intent Preparation Instructions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- Sponsored Projects Office (SPO) Submission is not required when submitting Letters of Intent
- Submission of multiple Letters of Intent is not allowed

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.

Refer to Section II, Program Description, for specific proposal preparation information and instructions. The

proposal page limit is 100, including all diagrams, charts and figures. The entire proposal, including all charts, diagrams and figures, must be submitted via FastLane or Grants.gov. Due to the complexity of the proposals being submitted, however, use of FastLane to prepare and submit proposals is strongly encouraged.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

C. Due Dates

- Letter of Intent Due Date(s) ***(required)*** (due by 5 p.m. proposer's local time)***:***

  October 30, 2012

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

  January 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

Review criteria will also include the following, assigned to the Proposal Deliverables described in Section II as noted below:

1. Assessment of the proponent organization's structure, competence, overall ability, and past history in providing service and support to the community of Earth and Ocean Sciences (Deliverable #1).
2. Thoroughness of the proposal in addressing the various elements of JOIDES Resolution Operations Management included in the Program Description section of the solicitation (Deliverables # 2, 5, and 6).
3. Effectiveness of the proposal in conveying an understanding of the required effort, proposing an appropriate and efficient business model, and the approach used to achieve an appropriate balance of cost-effective resource allocation (Deliverables #3, 4 and 7).

B. Review and Selection Process

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

A panel of at least eight members of the science community will review all proposals submitted under this solicitation, and will make a summary recommendation with relative ranking to the cognizant Program Officer.

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, not a standard grant or a contract, that will fund annual IODP operations in accordance with approved Annual Program Plans. Any special requirements not stated herein will be negotiated at the time of award.

This award will be subject to the following Cooperative Agreement Terms and Conditions:

1. Cooperative Agreement Financial & Administrative Terms and Conditions (CA-FATC): http://www.nsf.gov/pubs/policydocs/cafatc/cafatc_212.pdf Cooperative Agreement Supplemental Financial/Administrative Terms and Conditions for Large Facilities (CAFATC): http://www.nsf.gov/pubs/policydocs/cafatc/cafatc_lf212.pdf

Costs associated with this award will be in accordance with 2 CFR 220 -- Cost Principles for Educational Institutions, or 2 CFR 230 -- Cost Principles for Nonprofit Organizations, or Federal Acquisition Regulation (FAR) Part 31-, as applicable.

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.

The Awardee must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. Within 90 days after expiration ofthe Cooperative Agreement, the Awardee 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 the Awardee Principal Investigator. The Awardee should examine the formats of the required reports in advance to assure availability of required data.

The Awardee is 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. The Awardee 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 Awardee 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 Awardee.

Other Reporting Requirements

The NSF will issue an annual written mission forecast of IODP goals and requirements for the *JOIDES Resolution*. (Typical length of Expeditions is about 60 days.) Within 120 days thereafter, the Awardee will submit an Annual Program Plan that establishes the technical approach to fulfilling NSF goals and requirements and cost targets for expenditures. The Program Plan will cover the upcoming operational year and will address, but not be limited to, Programmatic Goals, Metrics and Milestones, Field Activities, Staffing and Organization Plans, Project Budgets, Major Planning Activities, and Insurance, Permitting and Environmental Considerations. Program Plan contents will reflect the schedules, funding levels, guidelines and formats approved by the NSF Program Officer, with detailed budgets for each Work Breakdown Structure Element. The approved Program Plan will serve to guide IODP* Management Operations for each respective year during the Cooperative Agreement period of performance. Significant changes, apparent to the Awardee or identified by the NSF Program Officer, in objectives or activities described in the annual Program Plan, must be approved by the NSF Grants and Agreements Officer prior to implementation. Included are changes involving a funding re-distribution in excess of an amount yet to be negotiated between NSF Program Officials and the Awardee. The impacts and reasons for the proposed changes must be explained. The changes may or may not require modification of the approved budget. Awardee shall provide NSF Program Officials with copies of all significant revisions to documentation, upon request, substantiating all changes to the Program Plan, whether or not NSF approval is required. All significant changes shall be reported in the quarterly report.

In addition to the Annual Program Plan and Annual Project Report, Quarterly Operations and Management Reports, Annual Management Performance Review Reports, Monthly Reports of activities in support of Alternate Drillship Use, a Final Technical Report and a Project Outcomes Report serve as the main programmatic reports. Expedition/Operations reports will include Environmental Assessments (as required), Cruise Scientific Prospectuses, Daily Ship Status Reports, Weekly and Site Summary Reports, Preliminary Reports, Initial Scientific Reports, and Scientific Results.

News releases and other similar items prepared by the Awardee and/or its subcontractors/employees that describe IODP activities or research results will be submitted for NSF review at least two days prior to publication and will acknowledge the sponsorship of the NSF and its international IODP partners. Public information brochures, and other similar IODP-related material prepared by the Awardee will be sent to the NSF before being made available to the public. The text of any planned Congressional testimony related to the Integrated Ocean Drilling Program will be submitted to NSF for approval prior to its presentation.

The Awardee will acknowledge the support of the NSF on any signs identifying the IODP at its various locations. An acknowledgement of NSF support and disclaimer must appear in any publication of any material based upon or developed under this contract in substantially the following terms:

"The International Ocean Discovery Program is sponsored by the National Science Foundation and other participating countries. Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the National Science Foundation." (The preceding sentence may be omitted from scientific articles or

papers published in scientific journals.) Also, support of other agencies or international contributors shall be acknowledged as appropriate.

Prior to award of the Cooperative Agreement, the potential Awardee may be required to participate in a review of their financial and procurement systems. Within a 2 year period following award of the Cooperative Agreement, the Awardee may be required to participate in a Business Systems Review, which is intended to evaluate Awardee business practices against government requirements, as well as to provide guidance on best practices.

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:

- James F. Allan, Program Director, National Science Foundation, 725, telephone: 703-292-8144, fax: 703-292-9085, email: jallan@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.

Important information for programs with deadline dates of January 14, 2013 or later:

- If the program you are submitting to has a deadline date of January 14, 2013 or later, and you submit your proposal prior to this date, you must prepare your proposal in accordance with the Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 13-1), which requires that the one-page Project Summary include 1) an overview; 2) a statement on intellectual merit of the proposed activity; and 3) a statement on the broader impacts of the proposed activity. (See GPG, Chapter II.C.2b)
- If you are your proposal prior to January 14, 2013, with the intention of submitting it on or after January 14, 2013, the information that you included in the Project Summary in FastLane will be inserted into the overview text box of the Project Summary. Per PAPPG guidelines, you will need to include this information in the three text boxes (overview; statement on intellectual merit; statement on broader impacts) or FastLane will not accept your proposal. (See GPG, Chapter II.C.2b)

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 (NSF Information Center): (703) 292-5111
- TDD (for the hearing-impaired): (703) 292-5090
- To Order Publications or Forms:

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

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

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

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

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

Suzanne H. Plimpton
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230