

WINTER | 2013

# MAKING WAVES

## INSIDE THIS EDITION

OCE Division Director's Message  
Proposals That Include Ship Time  
Contact Your OCE Program Officer  
OCE Review Process for Multi-disciplinary Proposals  
Resubmission of Declined Proposals  
IODP News  
INSPIRE  
Upcoming Solicitation Due Dates  
OCE Research in the News  
Upcoming Workshop for Early-Career Researchers  
Guidelines for NSF Proposals and Awards  
Implementation of the New Guidelines for NSF's Merit Review Criteria  
Project Reports  
FastLane Proposal Compliance Checking  
Ocean Research Advisory Panel Seeks Nominations  
Science for an Ocean Nation  
Draft Climate Assessment Report  
Career Opportunities  
OCE Staff Changes  
EOS article on Myths in Funding Ocean Research at the NSF



## OCE Division Director's Message

Welcome to the Winter 2013 edition of the OCE newsletter "Making Waves."

As the chill of midwinter embraces Washington and our elected officials struggle with difficult policy and funding decisions that will have major impacts for the Nation, we bring you the Winter 2013 edition of the OCE newsletter "Making Waves." While there is much uncertainty in the air, NSF is moving forward on numerous fronts that are described in this issue of the newsletter. As always, please send suggestions for topics and ways to improve our newsletter to Editor [Larry Weber](#).



OCE is very grateful to the Committees of Visitors (COV) who chose to publish a synopsis of their findings on our proposal review process in the [18 December 2012 issue of EOS](#). We are pleased that their assessment was complimentary and that their report unraveled many of the myths and mysteries about how we make decisions on proposals. In case you haven't already seen the article, a copy is appended to this newsletter. In addition, I strongly urge you to draw your own conclusions by reading the [COV's full report](#) in which there are numerous data on such things as proposal success rate in relation to various factors.

I especially want to draw your attention to the formal release of *Science for an Ocean Nation: Update of the Ocean Research Priorities Plan* that is now available at the [White House website](#). This important refresh of the 2007 ORPP is highlighted in an article below. The new report is linked to the Implementation Plan of the National Ocean Policy which itself is due to be released shortly.

Lastly, after much positive feedback, plans for launching a "Decadal Survey for the Ocean Sciences" are in development (see the [Summer 2012 newsletter](#)). Pending negotiations and the availability of funds, we plan to launch this effort very soon and a special announcement and call for nominations will follow.

Regards,

*David O. Conover, Director*

**Division of Ocean Sciences**





## Proposals That Include Ship Time

In the Autumn 2012 newsletter, OCE requested that proposals involving significant sea-going work henceforth be submitted to the August 15th target date rather than the February 15th target date. The following is intended to elaborate on the benefits of this request.

Ocean-going science has become increasingly more complicated to schedule and cost estimate. The complexity of acquiring Incidental Harassment Authorization permits and foreign research clearances, as well as the need to coordinate the use of ancillary facilities such as the National Deep Submergence Facility (NDSF), the Ocean Bottom Seismometer Instrument Pool (OBSIP), etc., makes the logistical planning and cost projection for large field projects difficult. NSF's intention is to improve the planning process in order to satisfy science objectives as effectively and efficiently as possible, thus maximizing the amount of field work that can be supported by a finite budget. Also, for planning purposes it is better for us to know our commitments to fleet operations at the beginning of each fiscal year, which begins October 1, and therefore dovetails with the autumn panels.

This process is currently being phased in. Looking ahead, the general expectation for going to sea with large field projects should be at least 16 months from the time of proposal submission. For more local/coastal work, planning ahead is still encouraged, but flexibility will remain part of the scheduling process. If you have any questions, please contact your program officer or Rose Dufour at [rdufour@nsf.gov](mailto:rdufour@nsf.gov) or 703 292-8811.



## Contact Your OCE Program Officer

OCE requests that PIs intending to submit complex and/or big ticket proposals notify their program officers well in advance of proposal submission. While this statement, on the surface, seems simple enough, it raises all kinds of questions. What is "complex" and "big ticket" and "well in advance?" Our intent is not to define these terms, but rather to encourage early engagement on proposal ideas that will involve such things as multiple institutions, international collaborations, other agency or foreign funding sources, co-review with other NSF divisions, the use of large facilities/platforms/equipment, marine mammal permitting, larger than average budgets, and other such factors. Having discussions "well in advance" of proposal submission will enable OCE program officers to coordinate a more effective and efficient review and funding decision process. If in doubt, communicate with your **OCE Program Officer!!!**



## OCE Review Process for Multi-disciplinary Proposals

As noted in the Autumn 2012 issue of the newsletter, the most recent [Committee of Visitors \(COV\) for Ocean Research and Education](#) assessed OCE's proposal review process for fiscal years 2009-2011. Among their findings, the COV reported no systematic difference in success rate for multi-disciplinary proposals versus those having single program review across programs within OCE. Thinking that PIs would welcome this finding, the COV recommended that OCE describe to the community how it handles multi-disciplinary proposals.

First, PIs are encouraged to discuss research ideas with OCE program officers well in advance of submission dates to determine which OCE program they should submit their proposal to, or if the proposal might be more appropriately directed to another division or directorate. For multi-disciplinary research, one goal of these early discussions would be to suggest a lead program for review of the proposal, as well as other programs that might participate in co-review. If there is any uncertainty about whether or not a research topic fits within a division program(s), OCE strongly encourages PIs to communicate with program officers BEFORE submitting a proposal.

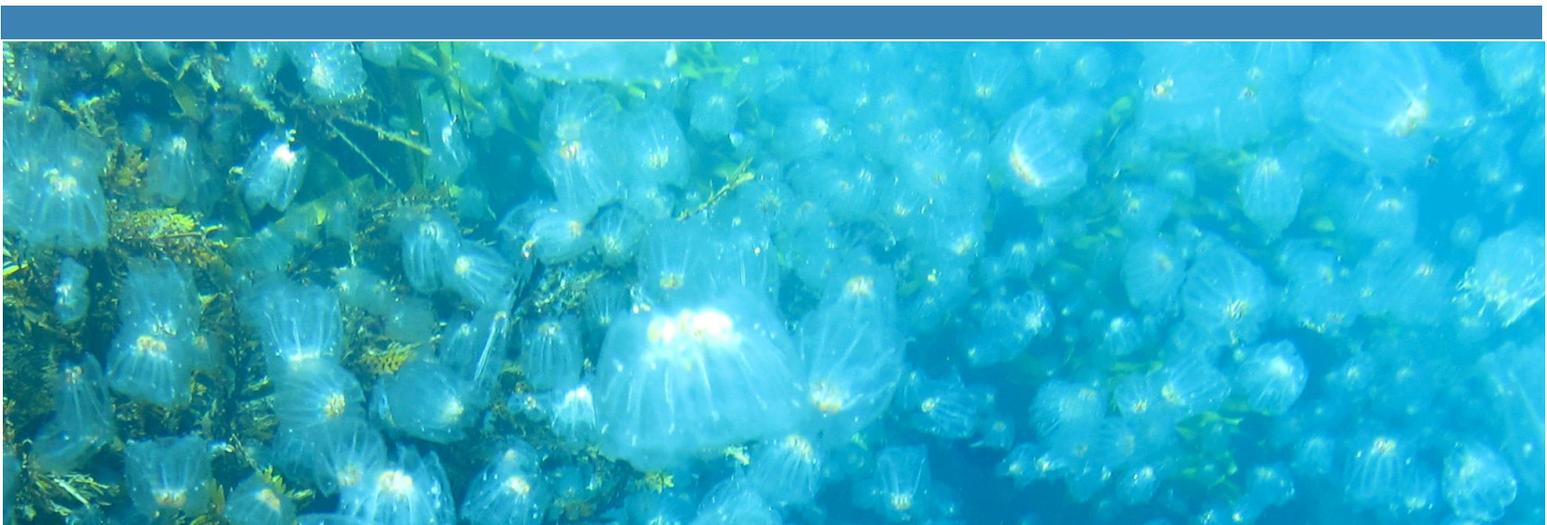
Program officers take a first quick look at submitted proposals to check whether the research fits in their program. If a proposal does not fit and cannot be transferred to an appropriate program, the PI will be asked to withdraw the proposal or it will be returned without review. If the proposed project fits within the purview of more than one program, the lead program

officer will seek co-review from other OCE programs and/or other divisions and directorates. This will include a request for names of potential ad hoc reviewers and/or panelists.

The Biological Oceanography, Chemical Oceanography, Physical Oceanography, and Marine Geology and Geophysics programs all run concurrent review panels in May (for February proposals) and November (for August proposals). Proposals may be co-reviewed by panels in a variety of ways, depending on the nature of the project. In some cases, a panelist from one panel will be asked to sit in and participate in the discussion of a single proposal or group of proposals in another panel. More complex proposals might be discussed in a multi-disciplinary panel made up of members from the relevant disciplinary panels.

OCE also co-reviews a significant number of proposals with programs in other divisions and directorates. In some cases, differences in submission dates and the timing of the review process can make it challenging to co-review these proposals. As encouraged above, it is always best to consult with program officers early in the process.

With advice from peer reviewers with a diversity of expertise, OCE programs are able to make informed decisions about which multi-disciplinary projects to support. Of course, one result may be that the proposal is declined. On the positive side, any of the programs that co-review a proposal may decide to co-fund an award, or any of the programs may decide to fund the project on their own





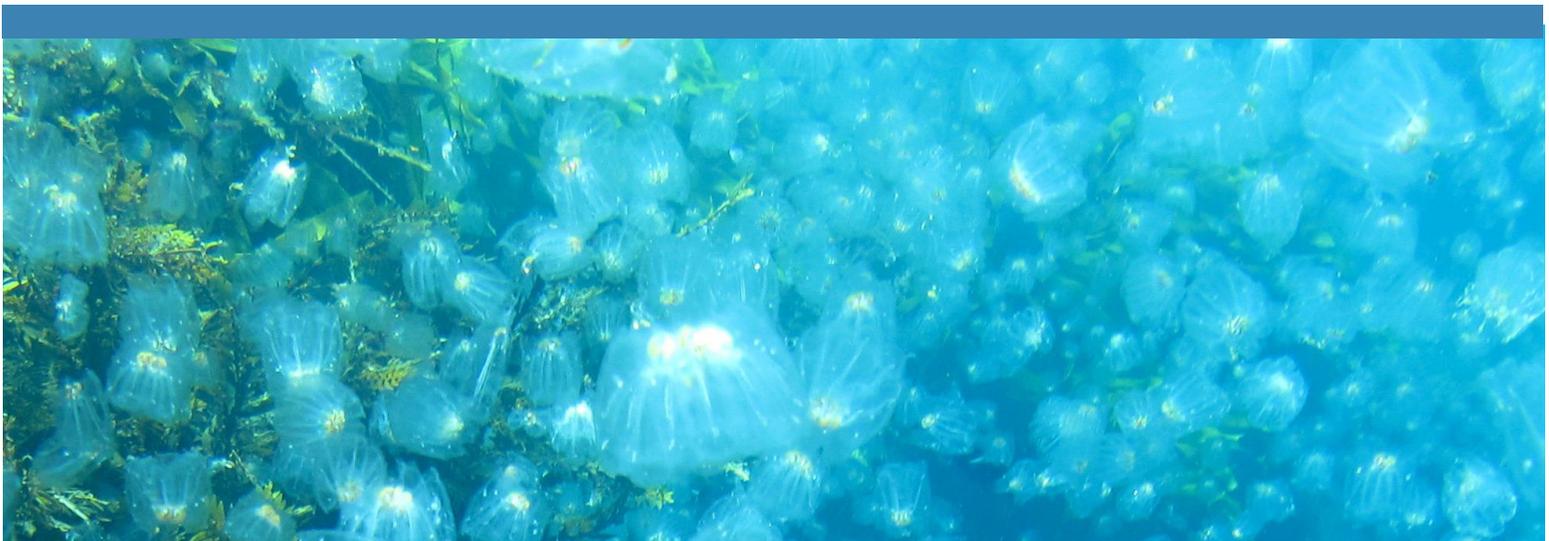
## Resubmission of Declined Proposals

As noted in the article on multi-disciplinary proposals, the most recent [Committee of Visitors \(COV\) for Ocean Research and Education](#) assessed OCE's proposal review process for fiscal years 2009-2011. Another item of interest to COV members was the resubmission of proposals that had been previously declined, and how those proposals fared in the review process. As noted in their [18 December 2012 EOS article](#) that is included at the end of this newsletter, the COV found that 60-75% of funded projects in OCE's various programs resulted from first submissions, 20-22% from second submissions, and 5-10% from third submissions. They also noted that success rates overall were not affected by submission number.

It is important to remember that the above statistics were for the 2009-2011 proposal cycles, and that specifics may be different in the future. Nevertheless, there are two points worth noting. First, because most funded projects result from first submissions, proposals should be as polished as possible before submission. Second, as stated in the [NSF Grant Proposal Guide Chapter IV.E](#), "A declined proposal may be resubmitted, but only after it has undergone substantial revision. A resubmitted proposal that has not clearly taken into account the major comments or concerns resulting from the prior NSF review may be returned without review. The Foundation will treat the revised proposal as a new proposal, subject to the standard review procedures."

Rapidly revised proposals often do not fare well in review. To improve the review process and give PIs more time for well-considered revisions, OCE will normally not encourage resubmission of a declined proposal to the subsequent target date. For example, if a proposal submitted in February is declined and the PI wishes to resubmit, they would typically not do so in August but wait until the following February. Of course, exceptional circumstances may warrant immediate resubmission. Please discuss any questions with your program officer.

After a second submission and decline, a letter to the program justifying resubmission is required. The letter should be sent to the cognizant program officer via email; it will not be made available to the panel.





## IODP News

Upcoming months will be busy for the NSF ODP team. An external panel was convened February 29- March 1 to consider proposals submitted in response to NSF Solicitations 12-611 (Science Support Office for the International Ocean Discovery Program) and 12-612 (Operations Management of the Drilling Vessel JOIDES Resolution for the International Ocean Discovery Program). All organizations that submitted Letters of Intent delivered robust proposals. A panel report is expected to be delivered to NSF in the April timeframe regarding both potential awards. Assuming that the preferred proposal is financially and operationally viable, and subject to the availability of funds within the OCE budget, NSF will then initiate the process for seeking approval from the National Science Board for award of the JOIDES Resolution Operations Cooperative Agreement. Negotiations for awarding the Support Office Cooperative Agreement, which does not require National Science Board approval, would begin in the April-May timeframe.

Several meetings fundamental to launching of the new International Ocean Discovery Program (also known as IODP) will also occur this spring. The first JOIDES Resolution Facilities Board (JRFB) Meeting will be held March 18-20 at NSF. The Terms of Reference for panels advisory to this Board will be approved at the meeting, JR-related policies will be adopted, the FY15 JR operational schedule and possible areas of FY16 operation will be determined, and the JR-related proposals transferred from the current program Operations Task Force will be reviewed. At the request of the JRFB, The U.S. Advisory Committee for Scientific Ocean Drilling reviewed applications from 22 well-respected international scientists and recommended five scientific representatives to serve on this newly-established board. These scientists and their terms of

service are as follows:

- Heiko Palike (University of Bremen) - 3 year term
- Rick Murray (Boston University) - 3 year term
- Susan Humphris (Woods Hole Oceanographic Institution) - 2 year term
- Akira Ishiwatari (Tohoku University) - 1 year term
- Gabe Fillipelli (Indiana University – Purdue University Indianapolis) - 1 year term

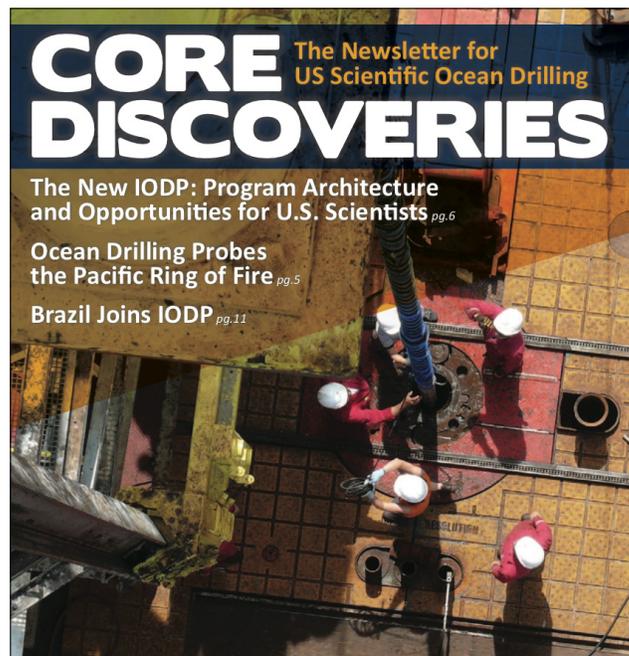
The different terms of service for these initial five scientists will allow for a staggered rotation in the

future as new members are selected to JRFB to serve full 3-year terms. The JOIDES Resolution Facility Board wishes to thank all the scientists who offered their services to the ocean drilling community in this new important oversight role for the JOIDES Resolution.

The ECORD Facility Board will also meet March 7-8, in Edinburgh. Following the ECORD and JRFB meetings, the Chikyu+10 International Workshop will occur April 21-23 in Tokyo, Japan, allowing the international

science community to discuss priority projects for Chikyu's next decade of exploration on behalf of the International Ocean Discovery Program. U.S. scientists wishing to obtain support to attend this workshop should consult the [Chikyu+10 Workshop webpage](#) or e-mail [ussp@oceanleadership.org](mailto:ussp@oceanleadership.org).

The most recent issue of [Core Discoveries, The Newsletter for US Scientific Ocean Drilling](#) includes a short summary of the program architecture and opportunities for U.S. scientists in the new International Ocean Discovery Program. Subsequent issues of Core Discoveries will include additional details and links to information regarding the new program, including more details about the first meeting of the JOIDES Resolution Facility Board.





# INSPIRE

OCE wants to encourage PIs to consider opportunities offered by the Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) awards program. With an FY 2013 investment of \$63,000,000 (pending availability of funds), INSPIRE seeks to create new interdisciplinary opportunities, attract unusually creative high-risk / high-reward interdisciplinary proposals, and provide sufficient funding to pursue novel ideas beyond the exploratory stage. INSPIRE is open to interdisciplinary proposals on any NSF-supported topic, submitted by invitation only after a preliminary inquiry process initiated by submission of a required Letter of Intent. In FY 2013, INSPIRE provides support through the following three pilot grant mechanisms:

- **INSPIRE Track 1.** The maximum award size is \$1,000,000, the maximum duration is five years, and only internal merit review is required. Track 1 awards will generally support an individual PI or a small team. A Track 1 award must be substantially co-funded by two or more intellectually distinct NSF divisions or programs. There is a March 29, 2013 deadline for Track 1 Letters of Intent, leading to invitations to submit full proposals by May 29, 2013.
- **Director's INSPIRE Awards.** These are prestigious individual awards of up to \$1,500,000 to single-investigator proposals that present ideas for interdisciplinary advances with unusually strong, exciting transformative potential. There is no direct submission for Director's INSPIRE Awards; the individual submits an INSPIRE Track 1 Letter of Intent by March 29, 2013 and is nominated for Director's INSPIRE Award consideration by program directors from at least two intellectually distinct NSF divisions or programs. The invited full proposal (deadline May 29, 2013) is similar to a Track 1 full proposal with some additional features. Candidacy for a Director's INSPIRE Award will be evaluated by internal and external review.
- **INSPIRE Track 2.** These "mid-scale" research awards are for up to \$3,000,000 over duration of up to five years. Expectations for cross-cutting advances and for broader impacts are greater than in Track 1, and the review process includes external review. Track 2 projects must be substantially co-funded by at least three intellectually distinct NSF divisions or programs whose research communities do not have a well-established history of collaboration. Letters of Intent submitted by the February 20, 2013 deadline are now being reviewed to determine invitations to submit full proposals in May.

The INSPIRE program is NOT intended to handle proposals that are more appropriate for existing mechanisms. In particular, proposals of the following types should be submitted to existing programs or solicitations, and are not appropriate for submission to INSPIRE:

- Projects in which the scientific advances lie primarily within the scope of one program or discipline, such that substantial co-funding from another distinct program or discipline is unlikely.
- Projects that, in the judgment of cognizant program directors, can be expected to receive an appropriate evaluation through external review in regular programs. (Please note the article above on OCE's existing review process for multi-disciplinary proposals.)
- Projects that continue well-established lines of research, in accordance with expected progress in their fields

Please go to the [INSPIRE Webpage](#) for details, including the program solicitation and FAQs. Questions should be addressed to cognizant [OCE program officers](#).



## Upcoming Solicitation Due Dates

Most OCE programs continue to have 2 target dates per year for unsolicited proposals: February 15 and August 15. The [Ocean Technology and Interdisciplinary Coordination \(OTIC\) Program](#) has a single annual target date of February 15. For other programs under the [Oceanographic Centers, Facilities and Equipment](#) umbrella please go to the website.

**We'd like to highlight the following NSF program solicitations, with their next proposal due dates:**

- [Innovation Corps Teams Program](#) (I-Corps Teams) (NSF 12-602) March 15 and June 17, 2013
- [EarthCube](#) (NSF 13-529) March 26, 2013
- [Integrated NSF Support Promoting Interdisciplinary Research and Education \(INSPIRE\)](#) (NSF 13-518) March 29, 2013 for Track 1 Letters of Intent
- [MacroSystems Biology](#) (NSF 12-532) April 1, 2013
- [Antarctic Research](#) (NSF 13-527) April 15, 2013
- [Centers of Research Excellence in Science and Technology](#) (NSF 13-533) April 22, 2013
- [Dimensions of Biodiversity](#) (NSF 13-536) May 6, 2013
- [Research Experiences for Undergraduates](#) (REU) Sites (NSF 12-569) May 24, 2013 (The May 24 deadline is for REU Site proposals requiring access to Antarctica. All other REU Site proposals must be submitted to the August 28, 2013 deadline.)
- [Hydrologic Sciences](#) (NSF 13-531) June 3, 2013
- [Geophysics](#) (NSF 12-598) June 15, 2013
- [GeoPRISMS Program](#) (NSF 12-537) July 1, 2013
- [Geoinformatics](#) (NSF 11-581) July 1, 2013
- [Innovation Corps Sites Program \(I-Corps Sites\)](#) (NSF 12-604) July 1, 2013
- [Petrology and Geochemistry](#) (NSF 09-543) July 6, 2013
- [Tectonics](#) (NSF 09-542) July 6, 2013
- [Critical Zone Observatory National Office \(CZO-NO\)](#) (NSF 12-595) July 16, 2013
- [EarthScope](#) (NSF 12-550) July 16, 2013
- [Geobiology and Low-Temperature Geochemistry](#) (NSF 09-552) July 16, 2013
- [Geomorphology and Land Use Dynamics](#) (NSF 09-537) July 16, 2013
- [Sedimentary Geology and Paleobiology](#) (NSF 12-608) July 18, 2013 for Track 1
- [Faculty Early Career Development \(CAREER\) Program](#) (NSF 11-690) July 24, 2013 for GEO (see [FAQs by Ocean Sciences PIs for the CAREER Competition](#))
- [Instrument Development for Biological Research \(IDBR\)](#) (NSF 10-563) July 26, 2013



## OCE Research in the News

**Cheryl Dybas**  
NSF Science Information  
Officer for Geosciences and  
Environmental Research



Credit: Danielle Dixon DixoDixon

**This quarter's news of interest to the ocean sciences community includes the following. Keep 'em coming!**

- 1) [Jellyfish "Blooms" Wax and Wane in Natural Cycles](#)
- 2) ["Dark Energy": Life Beneath the Seafloor Discussed at Upcoming American Geophysical Union Conference](#)
- 3) [Coral Reef 911: Corals Attacked by Seaweed Use Chemical Signals to Summon Help](#)
- 4) [Stirred Not Mixed: How Seawater Turbulence Affects Marine Food Webs](#)
- 5) [Small Marine Organisms' Big Changes Could Affect World Climate](#)
- 6) [Why Are Coastal Salt Marshes Falling Apart?](#)
- 7) [NSF Awards Grants for Research on Coupled Natural and Human Systems](#)
- 8) [Magma in Earth's Mantle Forms Deeper Than Once Thought](#)
- 9) [Underwater Whodunit: What's Killing Florida's Elkhorn Coral?](#)  
For additional coverage, see [Ocean Sciences \(OCE\)](#) – News on the OCE web

## Upcoming Workshop for Early-Career Researchers

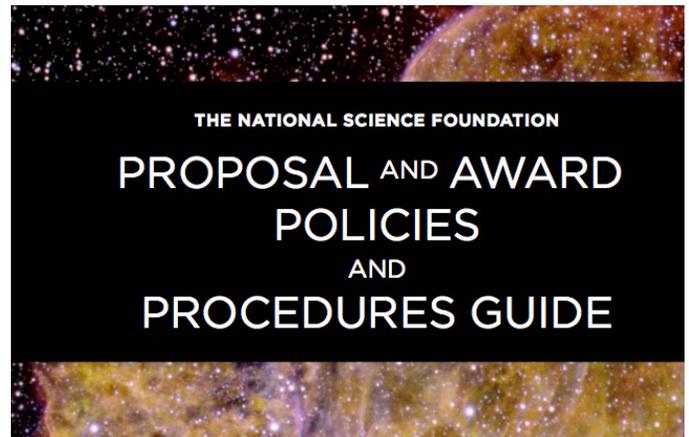
[PICES Summer School on Ocean Observing Systems and Ecosystem Monitoring](#),  
August 19-23, 2013 in Oregon. Application deadline is March 15, 2013.

## Guidelines for NSF Proposals and Awards

In articles below, we share information on NSF proposal submission, review, and reporting. For details on a number of related issues, see:

[FastLane-Related Proposal & Award Policies and Procedures Guide \(PAPPG\) FAQs.](#)

[FAQs on Proposal Preparation and Award Administration.](#)



## Implementation of the New Guidelines for NSF's Merit Review Criteria

In the last OCE newsletter, we highlighted the new guidelines for NSF's merit review criteria that became effective January 14, 2013. Here we briefly describe how the new guidelines will be implemented from the perspective of PIs, reviewers, and NSF program officers.

PIs should review the [Project Summary and Project Description](#) sections of the new Grant Proposal Guide. When preparing a proposal in FastLane, the one-page Project Summary must now be entered into 3 separate boxes labeled Overview, Intellectual Merit, and Broader Impacts. Also, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. Likewise, if reporting on [Results from Prior NSF Support](#), accomplishments related to the intellectual merit and broader impact activities supported by the award must be described in two separate sections.

Reviewers of NSF proposals are asked to address the new guidelines. Reviewer forms in FastLane now begin with:

**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?

**Reviewers are then asked to respond to the following in three separate boxes:**

1. In the context of the five review elements, please evaluate the strengths and weaknesses of the proposal with respect to intellectual merit;
2. In the context of the five review elements, please evaluate the strengths and weaknesses of the proposal with respect to broader impacts; and
3. Please evaluate the strengths and weaknesses of the proposal with respect to any additional solicitation-specific review criteria, if applicable.

For proposals submitted before the new guidelines became effective, reviewers will be instructed to disregard text in the new FastLane review template that does not apply, and to provide reviews in accordance with previous guidelines.

For all proposals submitted or due on or after January 14, 2013, NSF program officers will encourage *ad hoc* reviewers and panelists to assess both intellectual merit and broader impacts in terms of the 5 elements, and will consider all merit review criteria in their funding considerations.



## Project Reports

On March 18, 2013, NSF will completely transfer all project reporting from FastLane to Research.gov. This means that PIs and co-PIs will use Research.gov to meet all NSF project reporting requirements, including submission of annual, final and interim project reports and the Project Outcomes Report. As part of this transition, the project reports function in FastLane was closed starting February 1, and the overdue date will be extended for all project reports scheduled to become overdue between January 31 and April 30, 2013.

For details, see the January 10, 2013 [Dear Colleague Letter](#).

## FastLane Proposal Compliance Checking

Beginning with the system release on March 18, FastLane will begin [automated compliance checking](#) for all required proposal sections. If any of the following required sections are missing, at the time of submission, FastLane will not accept the proposal:

- Project Summary
- Project Description
- References Cited
- Biographical Sketch(es)
- Budget
- Budget Justification
- Current and Pending Support
- Facilities, Equipment & Other Resources
- Supplementary Documentation
- Data Management Plan
- Postdoctoral Mentoring Plan (where applicable)



## Ocean Research Advisory Panel Seeks Nominations

The [Ocean Research Advisory Panel](#) (ORAP) is soliciting nominations for eight new members. The deadline for nominations is March 15, 2013. Anyone (including any organization) may nominate qualified individuals (including oneself) for membership. Please see the [Federal Register announcement](#) for more information and nomination forms.

ORAP is an official Federal Advisory Committee that provides senior-level independent advice and guidance to the National Ocean Council on policies, procedures, and other responsibilities relevant to implementation of

the National Ocean Policy. ORAP also advises on the selection of projects and allocation of funds for the National Oceanographic Partnership Program.

ORAP members represent the National Academies, ocean industries, state governments, academia, and other sectors, including individuals who are eminent in the fields of marine science, marine policy, or related fields such as ocean resource management.



## Science for an Ocean Nation

The White House's National Science and Technology Council has issued the much anticipated follow-up to *Charting the Course for Ocean Sciences in the United States*, our Nation's first ocean research priorities plan. *Science for an Ocean Nation: Update of the Ocean Research Priorities Plan* is now available at the [White House website](#).

Representing a collective view of 25 Federal agencies with extensive input from the ocean community, *Science for an Ocean Nation* presents national research priorities in key areas of interaction between society and the ocean. *Science for an Ocean Nation* is constructed around six societal themes that frame ocean research in terms of the needs of people and communities. The plan addresses natural and social sciences and the tools required to carry out research and translate, disseminate, and apply research results.

Building on its predecessor, *Science for an Ocean Nation*



updates research priorities, reflects emerging areas of research, and highlights accomplishments resulting from *Charting the Course*. Specifically, this updated plan addresses a number of issues that have risen in importance since the first ocean research priorities plan was published in 2007, including ocean acidification and rapidly changing conditions in the Arctic Ocean. It also addresses changes in ocean-related policy and legislation, notably the National Ocean Policy, which calls for science-based decision-making as the Nation works to manage our ocean resources.

## Draft Climate Assessment Report

The National Climate Assessment and Development Advisory Committee has released their [Draft Climate Assessment Report](#) for public review and comments until April 12, 2013. Following review by the National Academies of Sciences and by the public, the draft report will be revised and submitted to the Federal Government for consideration. Please consider contributing to this effort.

## Career Opportunities

OCE expects to recruit a Science Assistant(s) to start in the summer timeframe. NSF Science Assistants typically have a Bachelors or Masters degree in a relevant science or engineering field, or have recently completed their PhD. The Science Assistant position at NSF is for a maximum term of two years. NSF divisions hire Science Assistants from an NSF-wide applicant pool. For more information, please communicate with [Rodey Batiza](#), and watch for the official announcement a [USAJOBS](#) and [NSF Career Opportunities](#).

NSF is recruiting for [Head of the NSF Tokyo Office](#) and [Head of the NSF Beijing Office](#). Formal consideration of applications began February 18 and will continue until selections are made. Appointments will begin on or about September 1, 2013.



## OCE Staff Changes



**Alberto Mestas-Nuñez:** Alberto joined OCE in December as a Program Director in Physical Oceanography. He comes from Texas A&M University-Corpus Christi where he is an Associate Professor in the Department of Physical and Environmental Sciences and a Research Associate at the Harte Research Institute for Gulf of Mexico Studies. His research interests include satellite oceanography, air-sea interactions, and the role of the ocean in climate variability and change.



**Najwa Obeid:** Najwa joined OCE in February as a Knauss Sea Grant Fellow. She is a PhD candidate in environmental engineering at the University of Illinois Champaign-Urbana, and plans to graduate in 2014. Najwa's current research uses a modeling approach based on the concept of coupled human-natural systems to contribute to impact assessment of restoration activities to hydrologic processes in urban watersheds (Lake Michigan community), and to inform decision making through economic evaluation.

**Amber Mitchell:** Amber, who has participated in NSF's Student Trainee program since 2010, has again returned to Hampton University to pursue her major in Criminal Justice. The trainee program allows students to see how the federal government and NSF operate by working during their winter and summer breaks in positions related to daily operations.

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This newsletter is designed to share timely information about the National Science Foundation's Division of Ocean Services. If you have comments or questions, please communicate with the relevant OCE program officer, or with Larry Weber ([lweber@nsf.gov](mailto:lweber@nsf.gov)), who serves as newsletter editor. The newsletter will be distributed by email and posted on the OCE homepage. Please feel free to forward to colleagues.

If you would like to subscribe to the OCE Newsletter, please follow the instructions below:

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## Myths in Funding Ocean Research at the National Science Foundation

PAGES 533–534

Every 3 years the U.S. National Science Foundation (NSF), through its Advisory Committee on Geosciences, forms a Committee of Visitors (COV) to review different aspects of the Directorate for Geosciences (GEO). This year a COV was formed to review the Biological Oceanography (BO), Chemical Oceanography (CO), and Physical Oceanography (PO) programs in the Ocean Section; the Marine Geology and Geophysics (MGG) and Integrated Ocean Drilling Program (IODP) science programs in the Marine Geosciences Section; and the Ocean Education and Ocean Technology and Interdisciplinary Coordination (OTIC) programs in the Integrative Programs Section of the Ocean Sciences Division (OCE). The 2012 COV assessed the proposal review process for fiscal year (FY) 2009–2011, when 3843 proposal actions were considered, resulting in 1141 awards. To do this, COV evaluated the documents associated with 206 projects that were randomly selected from the following categories: low-rated proposals that were funded, high-rated proposals that were funded, low-rated proposals that were declined, high-rated proposals that were declined, some in the middle (53 awarded, 106 declined), and all (47) proposals submitted to the Rapid Response Research (RAPID) funding mechanism. NSF provided additional data as requested by the COV in the form of graphs and tables. The full COV report, including graphs and tables, is available at [http://www.nsf.gov/geo/acgeo\\_cov.jsp](http://www.nsf.gov/geo/acgeo_cov.jsp). The Review Process and Management of OCE COV was impressed with the thoroughness of NSF program officers' evaluations of proposals. Their professionalism provides the community with great confidence that appropriate funding decisions are made. Peer reviews are vital to the process, and thus members of the oceanographic community have a

responsibility to respond promptly to review requests and to provide thorough reviews—the return rate for mail reviews ranged from approximately 50% to 70% for the programs evaluated in 2011. Individual reviewers who were selected at various stages of their careers from relevant areas of expertise, geographic regions, and institutions, generally provided substantive comments to explain their assessments, COV found. Proposals were tracked well, and the process of resubmission effectively utilized peer review to strengthen proposals. When conflicts of interest were recognized, they were treated appropriately. The panel and program officers did a good job of identifying review scores that were poorly matched to review comments and ensuring that proposals were evaluated on substantive comments and not on unsubstantiated scores. Where there was disagreement between the panel and the individual reviews, the panel generally clearly articulated the rationale for its assessment. The documentation provided to principal investigators (PIs) was thorough and provided clear rationales for award/decline decisions. COV concluded that programs evaluated in OCE were well managed. The panel summary documents, coupled with the program officers' analyses and staff diaries, provide an effective quality control system. Program officers coordinated effectively both within and between programs to maintain an efficient review process that reflects the views of the community, achieves program balance, and incorporates alternative points of view. The use of Intergovernmental Personnel Act (IPA) individuals as program officers is very effective, providing fresh ideas and perspectives and giving the community additional insight into NSF's review and funding process. Program officers balanced risk and potential reward in making decisions, and they appeared to be in touch with trends and developments in the field.

Examining Some NSF Urban Myths The data made available to COV from FY 2009–2011 allowed COV to examine the statistics behind numerous “urban myths” that exist in the geoscience community.

- Myth 1: The overall success rate of proposals is exceedingly low. OCE success rates were generally better than those of NSF overall. Success rates in OCE in 2010 and 2011 were 38% and 28%, respectively, similar to those in GEO (35% and 31%) and higher than NSF-wide rates (23% and 22%), even though the OCE median annual award was significantly higher (40% and 25%) than median rates NSF-wide. Success rate did vary by program: for 2011, about 15% for BO to about 30% for CO and PO, with MGG at roughly 27%.
- Myth 2: Multidisciplinary and interdisciplinary proposals are far less likely to be funded than those that follow traditional boundaries. False. Excluding results from RAPID proposals and the large single-discipline GEOTRACES program (which investigates biogeochemical cycles of trace elements and their isotopes in the marine environment), multidisciplinary proposals in CO, PO, and MGG had success rates of –3%, –2%, and –0.5%, respectively, relative to singlediscipline reviewed proposals, while in BO the success rate was +3%.
- Myth 3: Asking for ship time decreases your chances of being funded. Apparently not the case. While there was some variability by program over time, overall, OCE funding rates for proposals without requests for University-National Oceanographic Laboratory System (UNOLS) ship time varied from about

students, underrepresented groups, a Web page, and....

Not really. While reviewer comments varied widely on the merits and scope of proposed BI, the program officers' assessments indicated that it was better to do one (or two) well than to do many superficially.

- Myth 6: Most proposals get a 10% cut in their budget. Not at all. Across the different programs, between 5 and 25% of proposals were cut by more than 10%. Most (70–85%) were funded within 10% of the original budget.
- Myth 7: Proposals rarely get funded on the first try, so get in the queue. False. First submissions accounted for 60–75% of funded projects in each program, 20–22% were second submissions, and 5–10% were third submissions. Perhaps surprisingly, the success rate of a resubmission was generally close to that of a first-time submission. The proportion of submitted proposals that were funded did not vary greatly by program.
- Myth 8: The more reviews you end up with, the less likely your project is to be funded. Again, false. We found no relationship between the number of reviewers for a proposal and funding success. Proposals in OCE had at least three reviews each (which implies, by the way, that you should be prepared to review three proposals for each one you submit).
- Myth 9: It takes more than a year to find out if your project will be funded. Not usually. Over the past decade, more than 62% of proposals were accepted or declined within 6 months of submission. In 2011 the fraction was 85%. This record was 10–15% better than for GEO overall.
- Myth 10: Projects are not funded for as long as they used to be. Not with statistical significance. No systematic change in funded project length was observed over the past decade. Across all programs, projects currently average between 2.5 and 3.5 years in duration, with ocean education projects generally being longer and ocean drilling projects being shorter.
- Myth 11: One bad review, and your proposal is sunk, or as a reviewer, if you don't give a proposal an

“excellent,” you are condemning it to failure. False. The panel and program officers evaluated projects carefully to synthesize input from all sources, paying more attention to specific comments than overall rankings. They balanced program needs and available resources to reach their decisions. Of the more than 6000 reviews submitted during the COV review period, about 80% of scores were “excellent” or “very good,” but about 15% of reviews for funded proposals had ratings of “good,” and a total of 5% had a rating of “fair” or “poor.” The distribution of scores of funded proposals was shifted toward “very good” to “excellent” relative to unfunded proposals, but both funded and unfunded proposals received the full range of available rankings by reviewers. See also Myth 12.

- Myth 12: If you get mostly “excellent” rankings, you will certainly be funded. Not necessarily, as several factors contribute here. Program officers place more weight on the reviewers' comments than on the overall numerical ranking—some “excellent” rankings may not be backed up by substantial reviews or may include comments that were not consistent with a ranking of “excellent.” A ranking of “excellent” for a proposal that other reviewers argue has fundamental problems can diminish the credibility of the review. Each proposal is evaluated in the context of other proposals submitted. The program officers also must balance program needs and available resources to reach their decisions.
- Myth 13: Underrepresented status of the PI affects the likelihood that a proposal will be funded. Based on the data available, apparently no, but the sample size is still very small. The success rates for proposals submitted by female and minority PIs were generally consistent with success rates for male PIs. However, underrepresentation of women and minorities is persistent in the geosciences and in ocean sciences. While OCE has treated proposals fairly and has worked to increase participation by underrepresented groups, the number of PIs from these groups is still extremely low relative

to their proportion within the general population.

### Conclusions

Overall, COV was impressed with the thoroughness of the program officers in their assessment of proposals. OCE program officers, many of whom spend only a short time at NSF, knew the urban myths above and may have promulgated them before their NSF rotation gave them new insights. Increasing the diversity of the OCE community, a problem faced by science, technology, engineering, and mathematics (STEM) fields in general, still needs to be addressed. Increasing participation from underrepresented groups will require concerted effort and expanded community involvement. Program officers and the programs themselves are representative of the OCE community. How can improvements enhance the process? Program officers across OCE specifically asked COV to convince PIs to contact them to ask questions, to explore ideas, and to get feedback. Talking with your program officers is one of the best ways to learn how things really work, to help understand why your proposal was not funded, and to determine how you could improve your project next time. It came as a surprise to COV to learn how infrequently program officers were asked for this advice. The best way to have an impact is to propose good science, be a constructive reviewer, and participate in panels.

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