

OCE | DIVISION
OF OCEAN
SCIENCES

MAKING WAVES

NEWSLETTER

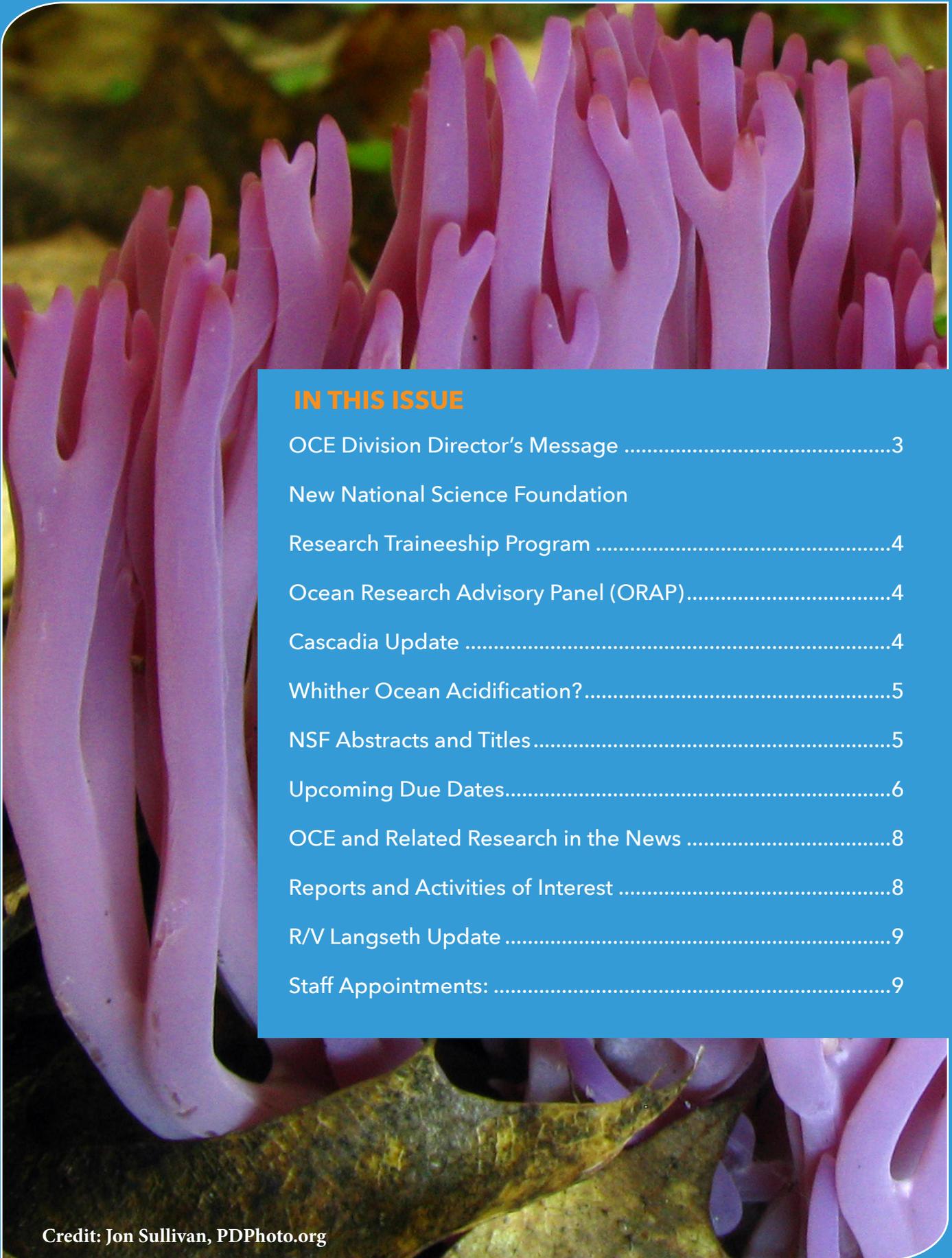
June 2014



Underwater spinners
Credit: Andre Seale, University of Hawaii



National Science Foundation
WHERE DISCOVERIES BEGIN



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Credit: Jon Sullivan, PDPhoto.org

OCE Division Director's Message



Welcome to the spring 2014 OCE newsletter – Making Waves! Thanks to the excellent editorship of Larry Weber, this newsletter has become an important communication vehicle for the Division. Our goal has been to provide short informative pieces that provide guidance to the community in their dealings with the Foundation. Starting with this issue, [Jane Montgomery](#) will serve as editor. Please send Jane your suggestions for improvements or topics you would like to see covered.

The National Science Foundation funds some of the most innovative science in the world, science that can and does make for great public interest. It's important to acknowledge NSF when you present NSF-funded results, whether it's in a newspaper or magazine article, radio or TV interview, professional presentations and publications, etc. We need to highlight the results produced by the tax dollars invested in NSF, and we can't do that if PIs don't let others know who

funded the research. So next time you are presenting your findings – be sure to tell the world NSF supported the work!

These days we hear so much doom and gloom about budgets. I also frequently hear that many feel that research funding was much more plentiful years ago. On a recent research cruise I got a much needed reality check. In April, I had the privilege to go on the Atlantis II to participate in the Science Verification Cruise for the newly rebuilt deep submersible, ALVIN. While on board I read *Water Baby: The Story of Alvin* by Victoria Kahari. To read its history, this amazing sub has been in peril from lack of funds for much of its life since it was commissioned in 1964. Despite its funding woes, Alvin has been doing great science for nearly 50 years! OCE is no different. In 2013, OCE funded over 400 awards sending more than \$345 million to researchers and institutions throughout the country! These awards are supporting the discoveries and career aspirations of approximately 520 individuals in our ocean science community. There is no question we have funding challenges. I hope, however, that we all take a moment to stop and appreciate the wealth of resources we do have and the great science it supports!

I close by saying that I am here to serve and my door, e-mail, and phone line are always open. I welcome your comments and concerns.

With warm regards,

Deborah A. Bronk
Division Director,
 Division of Ocean Sciences
dbronk@nsf.gov; 703-292-7715

Ocean Research Advisory Panel (ORAP)

Leveraging Ocean Education Opportunities

A Report to the National Ocean Council



Ocean Research Advisory Panel

December 2013

In December 2013, the Ocean Research Advisory Panel (ORAP) issued two reports in response to requests from the National Ocean Council:

- “Leveraging Ocean Education Opportunities” provides input on leveraging Federal ocean education efforts to maximize investments, and more effectively linking informal ocean education efforts to education standards.
- “Implementing Ecosystem-based Management” addresses ecosystem-based management of the U.S. marine environment as called for in the National Ocean Policy.

Both reports are available on the ORAP website at <http://www.nopp.org/committees/orap/publications-and-reports/>. ORAP is a Federal Advisory Committee providing independent advice and guidance to the National Ocean Council.

Whither Ocean Acidification?

When the results of the FY 2014 Science, Engineering and Education for Sustainability (SEES), Ocean Acidification (OA) call are finalized, NSF will have supported over \$50M since 2010 on research focused on this topic. The current solicitation is the final SEES call for OA research. After this final competition, proposals focused on ocean acidification can still be submitted to core disciplinary programs as appropriate. Programs in the Divisions of Ocean Sciences (OCE), Polar Programs (PLR), Integrated Organismal Systems (IOS), Molecular and Cellular Biosciences (MCB), and Environmental Biology (DEB) participated in the cross foundation OA program, and any resubmitted or new proposals must target the appropriate programs. Determining whether biological proposals should be targeted for Biological Oceanography (OCE) versus Physiological and Structural Systems (IOS) is likely to be the most challenging decision and we urge prospective investigators to contact both programs in advance to discuss potential submissions. It should also be recognized that some programs in the Directorate for Biological Sciences (BIO) have pre-proposal requirements and prospective investigators should plan their proposal development with these requirements in mind. Because we anticipate a high continued interest in ocean acidification research, the Biological Oceanography program must redirect any proposals that are not primarily focused on marine ecology to more appropriate programs in BIO.

NSF Abstracts and Titles

The March 28, 2014 [Important Notice No. 136](#) stated that the NSF award abstract, with its title, is an official NSF document that describes the project and justifies the expenditure of Federal funds. When proposals are recommended for awards, OCE program officers will work with PIs to ensure that abstracts and titles follow NSF guidelines.

There are two major components of the NSF Abstract:

- A **nontechnical** description of the project that states the problem to be studied, and explains the project's broader significance and importance, that serves as a public justification for NSF funding. This component should be understandable to an educated lay reader. It may include such information as the theoretical or analytical foundation of the proposed research, the fundamental issues that may be resolved by the research, the project's relation to NSF's mission, the project's place in the context of ongoing research in the field, the project's potential impact on other fields, and the prospect that it will lead to significant advances or the integration of related lines of inquiry.
- A **technical** description of the project that states the goals and scope of the research, and the methods and approaches to be used. In many cases, the technical description may be a modified version of the project summary submitted with the proposal.

Thus, an NSF award abstract which is intended for a broad audience may differ from the Project Summary that is submitted as part of a technically reviewed proposal.

Furthermore, the title of an NSF supported project must describe the purpose of the research in nontechnical terms to the fullest possible extent.

Upcoming 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 programs under the Oceanographic Facilities and Equipment Support umbrella please go to the solicitation.

We'd like to highlight the following NSF funding opportunities, with their next due dates:

U.S. Science Support Program associated with the International Ocean Discovery Program (USSSP-IODP)	NSF 14-549	Full Proposal: June 30, 2014
GeoPrisms Program	NSF 14-556	Full Proposal: August 1, 2014
Faculty Early Career Development (CAREER) Program	NSF 14-532	Full Proposal: July 21, 2014 (BIO, CISE, EHR) Full Proposal: July 22, 2014 (ENG) Full Proposal: July 23, 2014 (GEO, MPS, SBE)
Marine Geology and Geophysics		Full Proposal: August 15, 2014
Physical Oceanography		Full Proposal: August 15, 2014
Biological Oceanography		Full Proposal: August 15, 2014
Chemical Oceanography		Full Proposal: August 15, 2014
International Research Experiences for Students (IRES)	NSF 12-551	Full Proposal: August 19, 2014
Paleo Perspectives on Climate Change (P2C2)	NSF 13-576	Full Proposal: October 15, 2014
East Asia and Pacific Summer Institutes for U.S. Graduate Students (EAPSI)	NSF 13-593	Full Proposal: November 13, 2014
Ocean Drilling Program (OD)	NSF 13-593	Full Proposal: Accepted Anytime
Experimental Program to Stimulate Competitive Research: Workshop Opportunities (EPS-WO)	NSF 12-588	Full Proposal: Accepted Anytime
Grant Opportunities for Academic Liaison with Industry (GOALI)	NSF 12-513	Full Proposal: (for OCE-related projects, follow OCS program deadlines)

OCE and Related Research in the News

- 1 Overfishing of Caribbean coral reefs favors coral-killing sponges
- 2 Deep-diving sub Alvin cleared to return to service
- 3 Palau’s coral reefs surprisingly resistant to ocean acidification
- 4 Scientists to study Pacific Ocean’s “global chimney”
- 5 Oh, the places you’ll go—if you’re an Atlantic slipper shell
- 6 Related coral species differ in how they survive climate change effects
- 7 Wetlands’ ability to overcome sea level rise threatened
- 8 Breaking the Ice
- 9 Long-term predictions for Miami sea level rise could be available relatively soon
- 10 Into the abyss: Scientists explore one of Earth’s deepest ocean trenches
- 11 Octillions of microbes in the seas: Ocean microbes show incredible genetic diversity
- 12 Undersea warfare: Viruses hijack deep-sea bacteria at hydrothermal vents

For additional coverage, see [Ocean Sciences \(OCE\) – News](#).

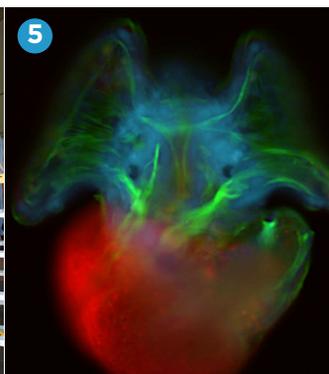
For news-related questions, contact [Cheryl Dybas](#), NSF Science Communications Officer for Geosciences and Environmental Research.



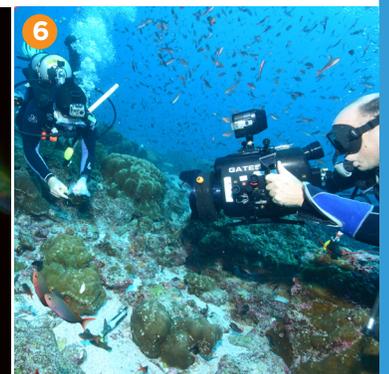
Credit: Joe Pawlik, UNCW.



Credit: WHOI.



Credit: Andreas Hejnol, Sars International Centre for Marine Molecular Biology.



Credit: Joshua Feingold, Nova Southeastern University.

Reports and Activities of Interest

Science Plan for the next phase of US CLIVAR.

In December 2013, the US CLIVAR (Climate Variability and predictability) program published its new science plan outlining its vision for the next 15 years. The mission of the US CLIVAR Program is: To foster understanding and prediction of climate variability and change on intraseasonal-to-centennial timescales, through observations and modeling with emphasis on the role of the ocean and its interaction with other elements of the Earth system, and to serve the climate community and society through the coordination and facilitation of research on outstanding climate questions. To achieve that mission, US CLIVAR has the following goals:

Understand the role of the oceans in observed climate variability on different timescales.

- Understand the processes that contribute to climate variability and change in the past, present, and future.
- Better quantify uncertainty in the observations, simulations, predictions, and projections of climate variability and change.
- Improve the development and evaluation of climate simulations and predictions.
- Collaborate with research and operational communities that develop and use climate information.

In addition US CLIVAR has identified four cross-cutting Research Challenges that involved:

- Decadal variability and predictability
- Climate extremes
- Polar climate
- Climate and ocean carbon/biogeochemistry

The new science plan is available on the [US CLIVAR web site](#).

A Planning Workshop for an International Coupled North Atlantic-Arctic Science Program Heather Benway, Don Rice, Mike Sieracki

U.S. and international activities are currently underway to study and measure the physical dynamics and sensitivities of large-scale circulation in the North Atlantic-Arctic Ocean system and links to climate. There is a strong need for an analogous investment in the study of biogeochemical and ecosystem processes and how they interact with physics over a range of time and space scales. U.S., Canadian, and European scientists are poised to address important interdisciplinary questions related to North Atlantic and Arctic circulation, climate, and ecosystem function, and the infrastructure to support a collaborative international research program is emerging. An international planning workshop co-sponsored by NSF and the European Union (EU) was held April 14-16, 2014 in Arlington, VA to develop a core science vision and detailed science plan to guide the next phase of research focused on the coupled North Atlantic-Arctic system. The workshop brought together a broad range of expertise in the natural and social sciences, and included crosscutting plenary talks, focused small-group discussions, and dialog with EU and U.S. agency representatives. A draft science plan will be posted for public comment as soon as it is available.

R/V Langseth Update

Donna Blackman, Jim Holik, Rose Dufour

OCE continues to recognize that marine seismic studies contribute in unique ways to new understanding of Earth Systems. Within OCE, we often discuss ways to maximize scientific use of NSF's seismic platform, R/V Marcus G. Langseth. The Integrated Programs Section (IPS) manages the ship, associated technician, and equipment aspects of Langseth support. Science programs that support a majority of proposals where the Langseth is required to meet objectives are: OCE- Marine Geology & Geophysics (MGG), which will soon also be handling all IODP site characterization requests; and GeoPRISMS (joint with EAR). Science programs that may occasionally support Langseth work include: EAR-Integrative Earth Systems (supersedes Continental Dynamics); NSF-wide Science, Engineering, and Education for Sustainability programs- Hazard SEE and Coastal SEES.

Currently, IPS expects to be in a position to annually support up to ~180 days of work on Langseth. The actual level of NSF use will depend on science program recommendations for well-reviewed, high priority proposals. Analysis of MGG and GeoPRISMS requests for 2008-2013 indicates that Langseth project success rates (27-30%) have been comparable or slightly higher than the overall annual success rate for non-Langseth MGG proposals during the same period.

A unique capability that Langseth brings to the academic community is 3-D multi-channel seismic (MCS) imaging. Although 3-D projects have greater technical support costs, and thus reduce the total number of days supportable in a given year, this should not be viewed as a reason to avoid submitting these proposals. When the scientific goals of a study require 3-D imaging, and the case can be well justified based on available information, a proposal is warranted and will be seriously considered by NSF. The Foundation invested in this vessel specifically to bring this capability to the marine science community. As always, large collaborative projects should be discussed with your Program Director in the early stages of proposal development.

Following the recommendations from various community workshops, NSF is evaluating a regional model for scheduling the vessel. Both permitting and scheduling for Langseth are very challenging and require long lead times. For that reason, NSF wants to provide a forecast for submitting proposals in the near term. Specifically, proposals for the Atlantic region should be submitted by the summer 2014 target dates if you envision work in the next couple of years. Proposals submitted to work in other ocean basins will be considered in the upcoming cycle but should not expect to go to sea before 2016; the actual timing of transit from the Atlantic will depend on the amount of funded work in that region.

Staff Appointments:

- Acting Section Head, Larry Weber, Ocean Section
- OCE Summer Student, Charlise Mason

This newsletter is designed to share timely information about the National Science Foundation's Division of Ocean Sciences. If you have comments or questions, please communicate with the relevant OCE program officer, or with Jane Montgomery 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.

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