

OCE | DIVISION
OF OCEAN
SCIENCES

MAKING WAVES

NEWSLETTER

Summer 2016



Scientists Rebecca Vega-Thurber, Ryan McMinds and Jerome Payet check on experimental coral plots.
Credit: Cory Fuchs, UCSB



National Science Foundation



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A healthy coral reef in the Line Islands in the central Pacific Ocean.
Credit: Brian Zgliczynsk

OCE DIVISION DIRECTOR'S MESSAGE



Greetings to one and all, and welcome to the Spring/Summer issue of "Making Waves"! It has been a full year since our last newsletter, and we are now moving to having two each year ("Spring/Summer" and "Fall/Winter") to help consolidate our efforts and get on a regular production schedule. If you have suggestions as to how we can further improve "Making Waves", including suggestions on what we are missing or what we should shorten, please let us know.

The last year has been packed with activity for OCE. Perhaps most significantly, given that OCE personnel are our most important asset, we have benefitted from some important staffing changes, including—as but one example—two new Section Heads (Don Rice for the Marine Geosciences Section, and Lisa Clough for the Ocean Section). I would like to thank Mete Uz, from the Physical Oceanography program,

for working so ably as interim Ocean Section Head through this transition. Don and Lisa join Bob Houtman, Section Head for Integrative Programs, in overseeing all of our various science and infrastructure programs. Elsewhere in this newsletter please enjoy reading and learning about the new Program Officers, Science Assistants, and Staff who have joined Team OCE. Also, please introduce yourself to these great folks at meetings, workshops, and other opportunities. Remember...if you have a question—"Contact your Program Officer"!

Speaking of Don Rice, and as further testimonial to the quality of individuals at NSF and in our field, I want to let everyone know that Don was the 2015 recipient of the Ocean Sciences Award from AGU. In this newsletter we have reproduced Bob Anderson's warm citation, and join in celebrating Don's immense leadership to the ocean community "in sensu maxima".

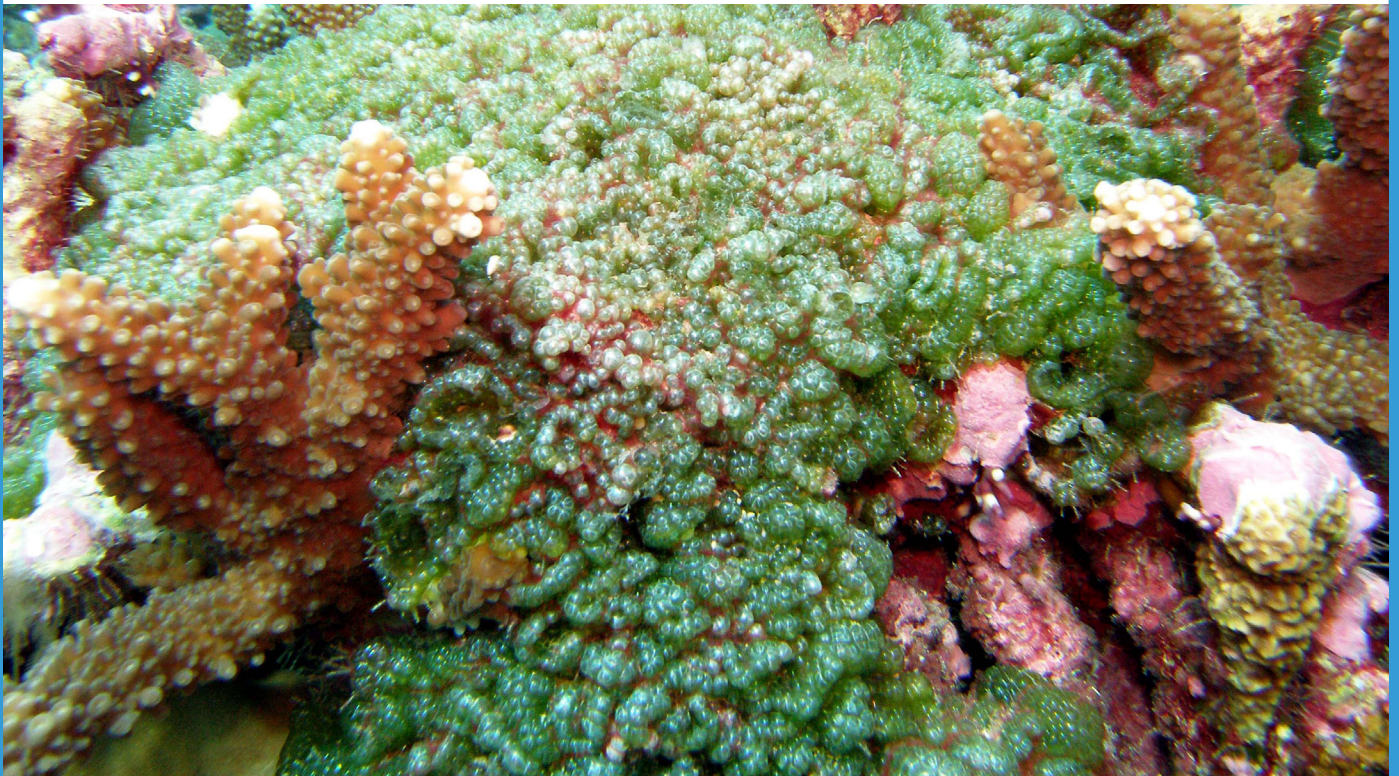
We have focused on continued implementation of the recommendations of the NAS's *"Sea Change (2015-2025 Decadal Survey of Ocean Sciences)"*, managing our core science and technology programs, working with our partners at NSF and within other Federal agencies, and many other activities. As an example, I highlight two important on-going generational-scale efforts in Ocean Sciences. First, we are moving forward with our long-term oversight of the Ocean Observatories Initiative (OOI). We released a Dear Colleague Letter earlier this year soliciting input on the planned re-competition of the OOI Cooperative Agreement, and anticipate releasing a solicitation in the coming months. Second, we are pleased that NSF's planning for

construction of two new Research Class Research Vessels (RCRV), which will be essential parts of the Academic Research Fleet, is part of the President's FY2017 budget request for NSF. Both of these endeavors, along with our continued commitment to provide a diverse intellectual and innovative portfolio for ocean science research and education, ensure that we will be well poised for the coming years of basic science research. Such basic science is critical to our global ocean leadership, and provides core knowledge essential to our economy and national security.

As always, we would like to hear from any of you about your assessment of where our field is going, how we as a community should plan for the future, and so on. These are both challenging and extremely exciting times for ocean sciences, and we need your help as we move deeper into this 21st century. We are committed to serving the community, and a key aspect of such service is learning what you think and care about. Please reach out and let us know.

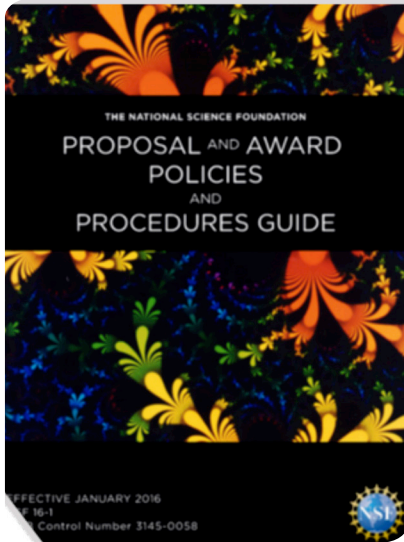
Stay in touch!

Rick Murray, Division Director
Division of Ocean Science
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Fleshy algae may soon smother this otherwise healthy coral reef.
Credit: Jennifer Smith

REVISED NSF PROPOSAL & AWARD POLICIES & PROCEDURES GUIDE (PAPPG)



Any proposal submitted, or due, on or after January 25, 2016 should be submitted in accordance with the revised PAPPG, [NSF 16-1](#) (which replaced NSF 15-1).

Part I, the [NSF Grant Proposal Guide \(GPG\)](#), contains NSF's proposal preparation and submission guidelines and is a must read before preparing your proposal.

Significant changes to the PAPPG include:

- Enforcement of 5 p.m. submitter's local time across all NSF funding opportunities;
- Implementation of NSF's [Public Access Policy](#);
- Provision of Collaborators and Other Affiliations information as a new single-copy document, instead of as part of the Biographical Sketch;
- Submission of Biographical Sketches and Current and Pending Support separately for each senior personnel;
- Submission of proposal certifications by the Authorized Organizational Representative (AOR) concurrently with proposal submission;
- Electronic signature and submission of notifications and requests by the AOR only;
- Revision of timeframe for submission of final project reports, project outcomes reports and financial closure of awards to 120 days after the award end date; and
- Numerous clarifications throughout the document.

Make sure that you and your Sponsored Projects Office are familiar with these changes!

UPCOMING DEADLINES AND TARGET 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:

NSF funding opportunities with their upcoming due dates:

Title	Program Guidelines	Due Dates
Biological Oceanography	PD 98-1650	Full Proposal: August 15, 2016
Chemical Oceanography	PD 98-1670	Full Proposal: August 15, 2016
Faculty Early Career Development Program (Career)	NSF 15-555	Full Proposal: July 22, 2016
GeoPRISMS Program	NSF 16-560	July 26, 2013
Marine Geology and Geophysics	PD 98-1620	Full Proposal: August 15, 2016
Ocean Drilling Program	PD 14-5720	Accepted anytime Physical Oceanography
Paleo Perspectives on Climate Change (P2C2)	NSF 13-576	Full Proposal: October 15, 2016
Physical Oceanography	PD 98-1610	Full Proposal: August 15, 2016

PROGRAM NEWS

Proposals That Include Ship Time: Revisited -- and Revised!

“ I need UNOLS ship time
So when should I submit my proposal? ”

Here in OCE we are aware that there has been some confusion over the past couple of years about when to submit NSF proposals that include a request for ship time. As reported in several recent issues of Making Waves, we developed a plan to restructure the proposal submission and scheduling processes so there would be enough lead time to make the overall process as efficient and cost-effective as possible. For a variety of reasons there was some concern that the plan could adversely impact ocean-going science.

Our purpose here is to reformulate OCE guidance on the submission of NSF seagoing science proposals in terms that emphasize the need for sufficient lead time between proposal submission and the expedition itself.

When should an ocean-going science proposal be submitted to NSF?

- For research requesting Global- or Ocean-class UNOLS vessels: The proposal with UNOLS Request attached should be submitted at least **18 months** before the anticipated time of the first cruise.
- For Intermediate-, Regional-, and Local-class vessels: The proposal with UNOLS Request attached should be submitted with as much lead time as is practical, but we recommend doing so **at least 12 months** before the anticipated time of the first cruise.

Keeping the above lead time guidance in mind, **proposals may be submitted for either of the two annual OCE target dates -- 15 February or 15 August.** *(Yes, this is a change from the earlier guidance we provided in the Fall 2012, Winter 2013, and Fall 2014 issues of Making Waves.)*

Is that a hard-and-fast rule? Or are exceptions possible?

- While it is impossible to foresee every possible situation or research opportunity that might occur, as a rule ship time will only rarely be scheduled within the same year in which a proposal is submitted.
- Highly-meritorious RAPID proposals are notable exceptions that would be handled on a case-by-case basis by the cognizant science, ship operations, and facilities program officers in dialog with the ship operator and the principal investigator.

What else should a principal investigator do before submitting a proposal to go to sea?

- Once the scientific scope of the research is defined, prospective PIs should carefully and realistically consider the technological and logistical requirements of the expedition and then align the request for a specific ship and the amount of ship time accordingly.
- Principal investigators should educate themselves regarding potential scheduling opportunities by either contacting ship operating institutions, calling the UNOLS Office, and/or logging onto the UNOLS scheduling web site (accessible with password provided by UNOLS).

And last but not least, early engagement with your cognizant program officer at NSF – even before the proposal writing is begun – is always wise, especially if the project is logistically complex and carries a hefty price-tag. As we've said many times before: If in doubt about what you are doing or what you need to do, get in touch with your program officer!

OCE ENCOURAGES SUBMISSION OF PROPOSALS TO THE CAREER PROGRAM

The Division of Ocean Sciences encourages submission of proposals in response to the CAREER solicitation [NSF 15-555](#) which can be found at:

The next annual GEO CAREER proposal deadline is July 22, 2016.

CAREER: The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations. Such activities should build a firm foundation for a lifetime of leadership in integrating education and research. NSF encourages submission of CAREER proposals from junior faculty members' at all CAREER-eligible organizations and especially encourages women, members of underrepresented minority groups, and persons with disabilities to apply.

Anyone with questions about the program is encouraged to contact [Gayle Pugh](#).

FROM THE BIOLOGICAL OCEANOGRAPHY PROGRAM: Projects Involving Collaboration with Federal Scientists - Rules of Engagement

The Biological Oceanography Program recognizes that significant expertise, data, and other resources are available within the Federal science community, and collaboration between Federal and academic researchers can be a powerful approach to address compelling questions within the ocean sciences. Although we welcome and will support partnership efforts, they must be developed within NSF guidelines. NSF's Grant Proposal Guide states that "NSF does not normally support research or education activities by scientists, engineers, or educators employed by Federal agencies or Federally Funded Research and Development Centers" ([PAPPG, Ch. I.E.7](#) "Other Federal agencies")

Therefore, the Biological Oceanography Program will not accept proposals with budgets including salary, travel, or other funding for Federal scientists, or proposals that have Federal scientists listed as a principal investigator, with few exceptions. Projects that include Federal researchers must clearly indicate that the participation of all Federal employees is at no cost to NSF. Some institutions may allow Federal scientists to be listed as (unfunded) co-principal investigators; that decision rests with the submitting institution.

The Program encourages the scientific community to contact us with any questions about Program practice and NSF policy before developing and submitting proposals involving unfunded collaboration with Federal researchers. Proposers who think their project may meet one of the few exceptions allowing federal scientist support must contact a cognizant NSF Program Officer before preparing a proposal for submission. This could help to avoid proposals being returned without review.

OCE and **EAR** recently released a Dear Colleague Letter ([NSF 16-061](#)) that invites proposals for "Onshore-Offshore Seismological Studies in the Aleutian Arc." This opportunity takes advantage of the Earthscope Transportable Array deployment in Alaska in 2017-2018, as well as OCE's investment in the Ocean Bottom Seismometer Instrument Pool (OBSIP) that includes capacity for shallow water deployments.

PIs are strongly encouraged to contact one of the program officers listed below early in the proposal development process:

- [Maurice Tivey](#) - Marine Geology and Geophysics
- [Deborah Smith](#) - Marine Geology and Geophysics
- [Jennifer Wade](#) - GeoPRISMS
- [Gregory Anderson](#) - EarthScope

[Dear Colleague Letter NSF 16-061](#)

[FAQs NSF 16-065](#)

USA SCIENCE AND ENGINEERING FESTIVAL

This year, OCE participated in the 4th annual USA Science and Engineering Festival held 15-17 April 2016 at the Walter E. Washington Convention Center in Washington D. C. It is the largest national science festival and attracted 350,000+ attendees (K-12 students and their families) over the course of three days. The OCE exhibit was well attended and included a hands-on-activity to demonstrate seafloor coring that involved pushing bubble straws through the layers of a cake and then examining the "cores", a replica core of the Cretaceous meteorite impact, rocks and mud from the seafloor and much more. The most asked question was "Can we eat the cake?"



JOB ANNOUNCEMENTS

OCE is recruiting for a rotating program officer to work with the Physical Oceanography Program in the division's Ocean Section (see Dear Colleague Letter [OCE 16-001](#)). The projected start date is Summer 2016. For more information, contact Eric Itsweire at eitsweir@nsf.gov.

The Physical Oceanography Program is also recruiting for a new science assistant starting this summer. We are looking for someone with a BS/MS in physical oceanography, ocean engineering or related field. This is a two-year temporary position. For more information, contact [Eric Itsweire](#). We wish to alert you to a just released opportunity for enrolled graduate students.

DEAR COLLEAGUE LETTER (NSF 16-067):

Improving Graduate Student Preparedness for Entering the Workforce, Opportunities for Supplemental Support

Summary of Opportunity

The Directorate for Geosciences (GEO) invites advisors of PhD students currently supported on active research grants to apply for supplemental funding to enhance the professional development of their students. This is a pilot program that will run for two years. Funding is available to support professional development experiences through research internships developed in partnership with the [U.S. Geological Survey \(USGS\)](#) and the [National Oceanic and Atmospheric Administration \(NOAA\)](#) as described in the Graduate Research Internship Program ([GRIP, NSF 16-015](#)), with the following differences:

Eligibility

The opportunity described in this Dear Colleague Letter is limited to PhD students supported on current awards within the Divisions of Earth Sciences (EAR), Ocean Sciences (OCE), Polar Programs (PLR), and Atmospheric and Geospace Sciences (AGS). Internships are limited to U.S. citizens. PhD students from underrepresented groups and those attending Minority Serving Institutions are particularly encouraged to apply to this opportunity. The OCE contact is [Lisa Rom](#).

OCE AND RELATED RESEARCH IN THE NEWS:

- ① Human-driven carbon release rate unprecedented in past 66 million years
- ② NSF awards rapid response grants to study current El Niño, one of the strongest on record
- ③ Scientists discover that salty sea spray affects clouds
- ④ A fine kettle of fish?
- ⑤ Climate can grind down mountains faster than they can rebuild
- ⑥ Low-oxygen 'dead zones' in North Pacific linked to past ocean warming
- ⑦ Grass-planting change boosts coastal wetland restoration success
- ⑧ Warming waters contributed to the collapse of New England's cod fishery
- ⑨ Clues to future of undersea exploration may reside inside a jellyfish-like creature
- ⑩ New, forward-thinking report addresses environmental research, education
- ⑪ Life on Earth: National Science Foundation awards \$23 million for studies of planet's biodiversity
- ⑫ NSF awards \$20.4 million for research on how humans, environment interact
- ⑬ In year of U.S. wildfires, Nepal earthquake, NSF awards \$27.5 million in hazards research grants
- ⑭ Mercury-laden fog swirls over coastal California
- ⑮ Expedition to the Aleutian Islands: Geoscientists head to remote Alaska volcanoes
- ⑯ NSF selects first Long-Term Ecological Research network communications office
- ⑰ The truth about sharks
- ⑱ Methane-eating microorganisms help regulate emissions from wetlands
- ⑲ Coral reefs defy ocean acidification odds in Palau
- ⑳ Warmer, lower-oxygen oceans will shift marine habitats

OCE HIGHLIGHTS



Dr. Donald Rice, Section Head, Marine Geosciences Section, Division of Ocean Sciences, received the 2015 Ocean Sciences Award at the 2015 American Geophysical Union Fall Meeting, held 14-18 December in San Francisco, Calif. The award is given in recognition of outstanding and long-standing service to the ocean sciences.

Don Rice is well known for his successful direction of the chemical oceanography program at the National Science Foundation (NSF) over the past 2 decades. The vibrant health of the program today, even within a declining research budget, speaks to his leadership, vision, and diligence in the pursuit of research excellence, a diverse portfolio, and cultivation of scientists at all career levels.

Don has been instrumental in developing the field of ocean biogeochemistry through his leadership in the Joint Global Ocean Flux Study (JGOFS) and the Ocean Carbon and Biogeochemistry program (OCB). His tactical skill in finding ways to support critical science informs his success as much as his intellectual acumen. JGOFS and OCB followed different programmatic models, and yet a third is employed for GEOTRACES, at the intersection of trace metal biogeochemistry, paleoceanography, and physical oceanography.

Don's exemplary broad, balanced, and objective style of program management has advanced and nurtured ocean sciences. Many of us go into science believing our work will one day benefit society, but for Don Rice, this responsibility is a centerpiece of his career. After establishing himself for his research in ocean sediment chemistry, Don obtained a master's degree in public health to help promote research on the impact of ocean processes on human health, as well as the impact of human activities on the health of the ocean. To this end, he serves as lead NSF program officer in the NSF-National Institute of Environmental Health Sciences Joint Program for Centers of Excellence in Ocean and Human Health. Both ocean and society are threatened by global warming, and Don has acknowledged this by his tenure on the U.S. Global Change Research Program's subcommittee on "Global Change and Human Health" since 1997, as well as the U.S. Global Change Research Program Carbon Cycle Interagency Working Group.

Don Rice's intellectual creativity extends beyond the ocean sciences, including mastery of Greek, Latin, and Sanskrit. He is truly a Renaissance man, making him uniquely deserving of the American Geophysical Union (AGU) Ocean Sciences Award.

*—Robert F. Anderson, Lamont-Doherty Earth Observatory
Palisades, N.Y.*

OCE STAFF CHANGES



Hedy Edmonds joined the Chemical Oceanography Program in January as Lead Program Director. Hedy has been with NSF since 2009 as a Program Director with the Arctic Natural Sciences (ANS) program in the Division of Polar Programs. In her time with the ANS program she co-funded, with CO, the Arctic GEOTRACES expedition. Hedy has a B.S. in chemistry from Yale University and received her Ph.D. in Chemical Oceanography from the MIT/WHOI Joint Program. After postdoctoral research at the University of Rhode Island and the Southampton Oceanography Centre, she spent ten years on the marine science faculty of The University of Texas at Austin. Her research interests include the use of natural and anthropogenic radioisotopes as tracers of a variety of oceanographic processes, and the global distribution and significance of mid-ocean ridge hydrothermal activity.



Julie Kellner joined the Biological Oceanography Program in April 2015 as a Program Director. Her research utilizes mathematical and biophysical models to explore ecological and anthropogenic processes that influence population and community dynamics, biodiversity maintenance, and the movement of individuals across heterogeneous seascapes. Her interests include population connectivity of marine communities in tropical, temperate and deep-sea ecosystems, marine invasive species, and ecological and economic tradeoffs of ecosystem-based management. Julie received a Bachelor of Science in ecology, behavior and evolution from UC San Diego.

She then continued her studies at UC Santa Barbara, where she earned a master's degree in biological sciences, a certificate in college and university teaching, and a Ph.D. in ecology, evolution and marine biology. After concluding her formal education, Julie was a Knauss Marine Policy Fellow with the NOAA Biogeography Branch and a postdoctoral researcher in environmental science and policy at UC Davis. She is currently a scientist in the biology department at the Woods Hole Oceanographic Institution where her lab's research spans the fields of spatial, theoretical and marine ecology



Deborah Smith joined the Marine Geology and Geophysics Program in September 2015 as a Program Director. Debbie is a sea-going geoscientist. Her research interests include the construction and evolution of the oceanic lithosphere, the establishment of tectonic and magmatic segmentation at rift zones, and the formation and evolution of long-lived faults. After receiving her Ph.D. from Scripps Institution of Oceanography, Debbie went to the opposite coast as a Postdoctoral Scholar at Woods Hole Oceanographic Institution (WHOI). She is now a Senior Scientist at WHOI.



Lisa Clough took over as the Head of the Ocean Section, comprised of the Biological and Physical Oceanography teams, on May 3rd, 2015. Her relocation was relatively easy, as she had served as the Program Director for NSF's Antarctic Integrated System Science for a total of four years, so her office move was about 100 meters from PLR to OCE, all on the 7th Floor of NSF's Arlington offices.

A coastal oceanographer by training, Lisa spent ~20 years at East Carolina University, in North Carolina, achieving the rank of Full Professor of Biology, and serving as the Associate Vice Chancellor for Research for two years. Her outreach activities include serving as Chair of the UNOLS Arctic Icebreaker Coordinating Committee, trustee for SURA (Southeastern Universities Research Association) and member of the Board for NCABR (North Carolina Association for Biomedical Research), and PTRF (the Pamlico-Tar River Foundation). She has received both Arctic and Antarctic Service Medals from the US Government, and the Distinguished Public Service Award from the U.S.C.G. Lisa lives in Falls Church, VA with her husband Mike McDonald, and their two boys, Patrick and Ryan.



Andrea Portier joined OCE in August as a Science Assistant in Marine Geology and Geophysics. She received her Bachelors of Science from Ohio State University, and will receive her Masters of Science from University of Florida this December, with a focus in paleoclimate studies using radiogenic isotopes of marine sediments. Prior to coming to NSF, Andrea participated in a diverse range of field work and science education and outreach opportunities throughout the world including Guatemala, Greenland, and Uganda.



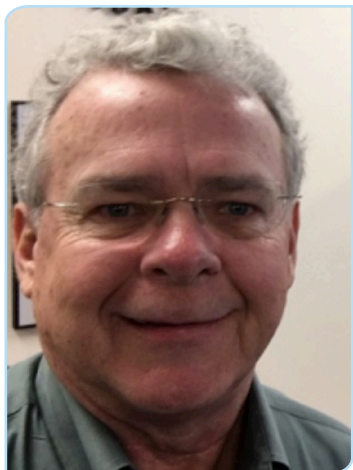
Maurice Tivey joined NSF in August as a new program director in the Marine Geology and Geophysics Program. Maurice received a Bachelor of Science in geology and physics from Dalhousie University and a Masters and PhD in geological oceanography from the University of Washington. Prior to joining NSF, Maurice was a Senior Scientist at Woods Hole Oceanographic Institution in the Marine Geology and Geophysics Department where he was Department Chair from 2008 to 2013. Maurice is a seagoing geophysicist with a specialty in marine magnetism and plate tectonics. He has participated in over 45 research cruises and has been a diver in the deep submersible's Alvin, Nautille and Shinkai 6500. His research interests include the analysis of marine magnetic anomalies, the physical properties of ocean crust, rock magnetism, midocean ridge crest processes including the formation and evolution of ocean crust, oceanic core complexes, and hydrothermal systems.



Caroline Belleman joined OCE in August as a Science Assistant in the Chemical Oceanography Program. She received her Bachelors of Science in Oceanography from the University of Washington in Seattle. Her focus was in marine geochemistry, particularly in using trace metals and other sediment characteristics as tracers to investigate the sources and transport pathways of recently deposited sediment. Prior to working at the NSF, Caroline was a college student, part-time volleyball coach and soccer referee.



Rachel Orange comes to NSF from the University of Hawaii, where she earned a Bachelor of Science in Biology and a Master of Science in Oceanography. She worked for the Hawaii Undersea Research Laboratory at the Data Department Manager in support of deep-diving human occupied submersible operations. She also worked on outreach and communications for the Hawaii Natural Energy Institute. In her free time, Rachel was active in various community groups and competed in outrigger canoe paddling.



Kevin Butler joined the Ocean Sciences Division, Geosciences Directorate at the National Science Foundation on October 19, 2015, where he works as a Program Assistant. He and his wife Judy are natives of Northern Virginia, and make their home in Annandale.

For the previous fourteen years, Kevin was a Park Ranger with the National Park Service (NPS) where he served as an Archives and Museum Technician, an Interpretive Ranger, Education Specialist, Visitor Center manager, and at NPS headquarters in Washington DC writing policy, and developing training programs for the NPS records management program.

While continuing to enjoy his many interests fostered in the Parks, Kevin looks forward to his new career in Ocean Sciences.

MAKING WAVES

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

- 1 Send an email to listserv@listserv.nsf.gov.
- 2 In the text of the message, put the following command:
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