

## DRAFT 5

### Second Meeting of the Ocean Exploration Advisory Board La Jolla, CA March 31- April 1, 2015

#### Notification and Availability of Meeting Materials

The meeting was announced to the public by *Federal Register* Notification on March 13, 2015, and on the Ocean Exploration Advisory Board (OEAB) website at [www.oeab.noaa.gov](http://www.oeab.noaa.gov). Background material and presentations prepared for the OEAB are posted at the OEAB website.

#### Ocean Exploration Advisory Board Members in Attendance

Vice Admiral Paul G. Gaffney II, U. S. Navy (Ret.), Monmouth University, Chair  
Dr. James Austin, University of Texas  
Dr. Amanda Demopoulos, U.S. Geological Survey  
Dr. Jacqueline Dixon, University of South Florida  
Ambassador Cameron Hume, Consultant  
Mr. John Kreider, Oceaneering, Inc.  
Mr. David Lang, OpenROV  
Dr. Darlene Lim, NASA Ames Research Center  
Ms. Nicolette Nye, National Ocean Industries Association  
Dr. Richard Rikoski, Hadal, Inc.  
Mr. Lance Towers, PE, Boeing, Inc.

#### NOAA Management and Staff in Attendance

Dr. Alan Leonardi, Director, Office of Ocean Exploration and Research (OER)  
Mr. John McDonough, Deputy Director, OER  
Ms. Yvette Jefferson, Alternate DFO, acting as DFO  
Ms. Kasey Cantwell, Rapporteur, NOAA OER staff

#### Invited Briefer

Dr. William Burnett, Deputy Commander and Technical Director, Naval Meteorology and Oceanography Command

#### Meeting Summary

1. **Meeting Opening.** The Designated Federal Official opened the OEAB meeting on March 31, 2015, at the Scripps Institution of Oceanography in La Jolla, CA. Minutes of the December 2-3, 2014 meeting were discussed and approved. The Chair reviewed the previous meeting, the charge to the Board and previewed the agenda.
2. **OER Budget.** The OER Director briefed the Board on the current state of the Fiscal Year 2016 President's Budget for OER. A brief discussion of whether Science, Technology, Engineering, and Mathematics (STEM) activities would remain in the NOAA budget after Congressional action ensued.
3. **Exploration and Research Priorities.** The OER Director briefed the Board on exploration and research priorities for FY 2015 and 2016, including activities planned for the NOAA Ship *Okeanos Explorer*; the Ocean Exploration Trust (OET) and the E/V *Nautilus*; Extended Continental Shelf (ECS) mapping initiative; OER competitive grants; and technology development. There was considerable discussion about planned ocean exploration activities in the context of the Board's understanding that it could only realistically make recommendations for underway exploration starting with the FY 2017 and beyond. The Board was generally supportive of plans for the Caribbean, Gulf of Mexico, West Coast EEZ and Arctic exploration activities.

The Board indicated a desire to understand more about plans for any NOAA-funded exploration activities, especially using *Okeanos Explorer* west of the Hawaiian Islands. To that end the Board requested that OER brief it further on exploration requirements and opportunities in the Atlantic, Caribbean and Gulf of Mexico for FY 2017 and beyond. Further, the Board endorsed the importance of ECS surveys and requested an in-depth briefing of ECS accomplishments (surveys and data analysis, and preparation of materials defining the potential expansion of the U.S. continental shelf) to date, and plans to complete the surveys required to assist the US government in making its ECS claims. The Board requested briefings from Dr. Larry Mayer of the University of New Hampshire, Dr. Debbie Hutchinson of USGS, and OER at the next OEAB meeting.

During the course of discussions between OER and Board the following topics were discussed and are expected to continue to be general discussion topics in future meetings:

- the expected life span of *Okeanos Explorer* and *Nautilus* and the platform and/or technology alternatives (e.g. “flyaway” systems) that may be available when the end of the ships’ useful lives is reached.
- options to widen the bathymetric survey aperture of exploration vessels (i.e. using autonomous underwater vehicles (AUVs) deployed from exploration vessels to increase the area surveyed) and increase the capability to measure and sample the water column and bottom when a “telepresence” vessel stops for remotely operated vehicle (ROV) operations.
- the general commitment of OER when it partners with other agencies or private organizations to conduct exploration activities.
- The efficacy of the NOAA Fleet Allocation Process for determining how many days at sea aboard the OKEANOS EXPLORER and other NOAA vessels will be available to OER when non-NOAA ships are potential exploration vessels.
- NOAA OER budget levels needed to achieve a useful and national leadership role.

The Board highlighted the chronic budget constraint that has characterized OER since it was established as the context for this discussion. The Board was explicit that there is an imperative for a national commitment to ocean exploration and that NOAA should be the clear leader of a national program of ocean exploration. The Board agreed that while the NOAA ocean exploration program should be characterized by a degree of risk and with high impact, it should directly address NOAA mission needs, especially “environmental intelligence.”

4. **OER Mission Statement.** OEAB member John Kreider led a discussion to suggest the “mission statement” for use by OER in developing its new Strategic Plan in 2015. The Board recommended a short, direct, leadership-implying, easy-to-remember mission statement that indicates both “what” the mission is and “why” it is important.
5. **OER Strategic Planning.** OER’s John McDonough led the Board through the outline for the next OER Strategic Plan (2016-2020). The plan is done once every five years for the next five-year period. While it should be reasonable in its expectations, it will not be constrained by the current budget level, but, rather, articulate the goals for an effective OER program that properly leads the nation, is focused on NOAA mission needs, and encourages partnerships.

6. **Navy Survey Activities.** Dr. William Burnett, Naval Meteorology and Oceanography Command, briefed the Board on the Navy's operational oceanographic survey capability. He focused on the global-ranging T-AGS survey ships. He discussed their bathymetric survey effort, including its aperture-widening, off-board complement of Under Water Unmanned Vehicles (UUVs—also called AUVs), gliders and small survey launches. He emphasized the ability of military survey vessels to enter other nations' EEZs without permission as long as they were conducting non-research operations. While Navy-operated ships do not engage in research or exploration they do, incident to operations, make discoveries.
7. **Citizen Exploration.** Board member David Lang gave a presentation on Citizen Exploration. It elicited a great deal of positive discussion and enthusiasm. Not only do today's technologies allow the average citizen to become an explorer, but low cost, powerful computing devices and sensors allow many the opportunity to create exploration tools and technologies themselves. At the conclusion of his briefing, the Board recommended that NOAA OER look for opportunities to send a representative citizen explorer to sea, at least annually, with the task to report, live, back to his/her fellow citizen explorers on his/her experiences.
8. **Baltimore National Forum.** OER's John McDonough briefed the Board on the results of the 2014 National Ocean Exploration Forum in Baltimore. He indicated that once cleared by NOAA, the minutes of the meeting would be on the OEAB website. A draft version was made available to the OEAB. He led a discussion about the next National Forum in Baltimore in November 2015. The Board recommended that:
  - a. OER present an update on recommendations made at the first Forum in 2013 (Ocean Exploration Forum 2020) and the mini-Forum in 2014 to the OEAB during its next meeting planned for the summer/fall of 2015 and again at the November 2015 Forum in Baltimore;
  - b. the Forum be organized around a "partnership" theme at which the participants would hear from every potential exploration agency (e.g., Navy, National Science Foundation, Department of the Interior, National Aeronautics and Space Administration, U.S. Department of Education (for STEM)); be briefed on the latest plans for NSF's Ocean Observatories Initiative and Ocean Networks Canada, especially with respect to their discovery aspects; and a discussion about citizen explorers and the ocean industry as national ocean exploration partners.
  - c. a better, more meaningful term than the generic "forum" be found.
9. **Competitive Grants Process Review.** The Board is required to conduct an annual review of the competitive grants selection process OER uses to assess its effectiveness and quality. To that end, OER briefed the Board on its now-fully implemented Federal Funding Opportunity (FFO) process. The process is the same as that used widely within NOAA. It is akin to the NSF peer review process, but adds a pre-proposal White Paper step in the process. The Board voted unanimously (with one recusal) to endorse the FFO process. There are no results of the process of to date. In 2016 the Board will review the process and selection results from 2015.
10. **UNOLS Vessel Tour.** Several Board members and the OER Director visited the Navy-owned, University of Washington-operated, UNOLS vessel, R/V *Thomas G. Thompson* (AGOR-23) pier-side in San Diego. The UW Marine Superintendent (Captain Doug Russell) and *Thompson* Master (Captain Russ Devaney) toured the party through the ship. During the course of the tour, Captain Russell explained the UNOLS fleet and

organization and discussed the *Thompson's* operating costs (\$34K per day in 2014 with over 300 days at sea), operations concepts, and full spectrum oceanography capability.

11. **Public Comment.** The meeting was opened for public comment at 10:00 on April 1, 2015. There were no public visitors or calls into the meeting at that time. Note: Dr. William Burnett, a briefer on March 31<sup>st</sup>, sat in on the full day's discussion on March 31 as a member of the public.
12. **Next OEAB Meeting.** The next OEAB meeting is planned for the late summer or early fall at the University of Rhode Island, Graduate School Of Oceanography, at a date to be determined. Proposed meeting topics include:
  - an update on the OER budget;
  - further discussion of at-sea operation during FY 2015-2017, especially with respect to the importance of priorities in the Central and Western Pacific and the Indian Ocean compared to those in the Atlantic;
  - OER's latest mission statement;
  - a "scorecard" report on progress made toward implementing Ocean Exploration 2020 recommendations;
  - informational briefings on U.S. and NOAA Extended Continental Shelf activities;
  - a presentation of project management by OEAB member Lance Towers;
  - a briefing by OEAB member Chris German and his student explorer team;
  - briefings from the Ocean Exploration Trust, URI's Inner Space Center, and the Global Foundation for Ocean Exploration;
  - a briefing by NASA's Dr. Mary Voytek, or scientist with similar expertise, on astrobiology sensing
  - follow-on OEAB discussions on broad topics related to a national program of ocean exploration;
13. **Meeting Close.** Ms. Yvette Jefferson closed the Second OEAB meeting at 1145 on April 1, 2015.