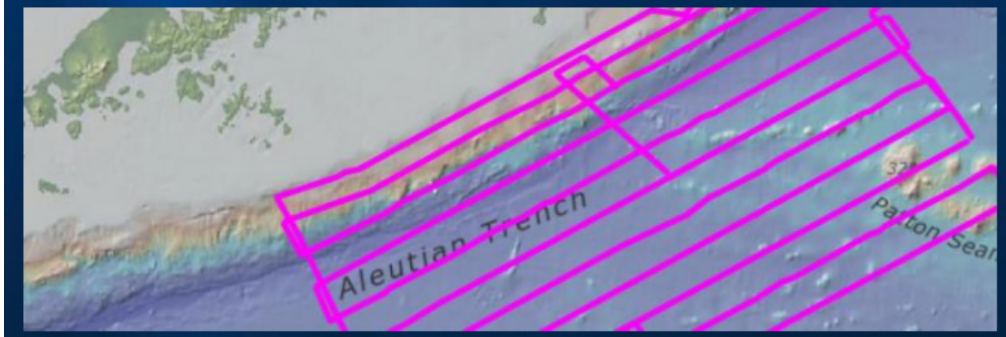
MARINE SEISMIC RESEARCH OVERSIGHT COMMITTEE (MSROC)



ANNOUNCEMENTS

The Marcus Langseth Science Oversight Committee (MLSOC) recently transitioned to the Marine Seismic Research Oversight Committee (MSROC).

Overview

Marine Seismic Research Oversight Committee

The Marine Seismic Research Oversight Committee (MSROC) provides scientific oversight, asset coordination and strategic advice for NSF-supported marine seismic facilities. MSROC fulfills a role as the representatives for the marine seismic research community, ensuring broad access and maximum participation in the utilization of marine seismic assets. MSROC also advises UNOLS and funding agencies on the adoption of technical advances that maintain a cutting edge capability for the facilities that support marine seismic research.

Members

Other Resources & Links

- MSROC Terms of Reference
- R/V Marcus G. Langseth Website
- Regional Framework Plan for Marine Seismics
- MSROC News
- SMR for Global Class Vessel with Seismic Capabilities
- Marine Seismic Imaging Brochure
- Marcus Langseth Environmental Compliance
- Lessons Learned from the Marine Seismic Questionnaire

Terms of Reference

1. INTRODUCTION

The Marine Seismic Research Oversight Committee (MSROC) is an advisory committee established in accordance with Annex IX of the University-National Oceanographic Laboratory System (UNOLS) Charter. The MSROC shall operate pursuant to appointment by UNOLS and in accordance with the UNOLS Charter. This annex is the MSROC Terms of Reference and shall be incorporated as Annex IX to the Charter.

2. PURPOSE

The Marine Seismic Research Oversight Committee (MSROC) provides scientific oversight, asset coordination and strategic advice for NSF-supported marine seismic facilities. MSROC fulfills a role as the representatives for the marine seismic research community, ensuring broad access and maximum participation in the utilization of marine seismic assets. MSROC also advises UNOLS and funding agencies on the adoption of technical advances that maintain a cutting edge capability for the facilities that support marine seismic research.

The MSROC shall work with the science user community, federal sponsors and the operators of marine seismic facilities to establish a regional plan for operations in order to maximize efficient use of these facilities. Additionally, MSROC shall encourage and help facilitate the advancement of cooperative international programs for the enhancement of marine seismic research throughout the academic community.

The MSROC may constitute sub-committees as needed where advice is required for specific facilities and ad hoc issues. Technological and operational issues associated with other marine seismic assets will also be reviewed periodically by the MSROC.

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From 2016 MLSOC AGU meeting minutes:

The transition from the previous MLSOC to the MSROC will have some "bumps along the way". A comment was made that the new committee could easily become the place where all problems land. To prevent this a clear path forward and a well thought out course of action needs to be developed.

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MSROC Membership

Nathan Bangs*, UT Austin
Donna Blackman*, SIO (ex-officio)
Del Bohnenstiehl, NCSU
Patrick Hart, USGS, CA (Chair)
Sean Higgins, L-DEO, (ex-officio)
John Hopper, Geological Survey of Denmark and Greenland
Daniel Lizzaralde*, WHOI (ex-officio)
Beatrice Magnani*, S. Methodist U., TX
Emily Roland, UW
Donna Shillington, L-DEO, (ex-officio)
Joann Stock, CalTech
Anne Tréhu, OSU
Warren Wood*, NRL Stennis

3. MEMBERSHIP / ORGANIZATION

The MSROC membership shall be composed of up to nine individuals who can represent the spectrum of marine seismic research and fulfill the committee tasks as outlined below. The MSROC Chair will also serve as an ex-officio of the UNOLS Council.

At least three members with expertise in long-offset 2-D and/or 3-D MCS studies, ideally one of these members will have significant marine seismic industry involvement.

Two members with expertise in ocean bottom seismology (ideally, one each for active and passive source methods), one of whom can serve as a liaison to/from the OBSIP advisory committee

A member who can serve as a liaison to the IODP community through current membership on one of that program's committees

A representative with expertise in issues related to environmental permitting for marine seismics

A member with expertise in high-resolution seismic imaging for shallow subsurface structure

One or more members from the international geophysics community who can serve as a liaison to represent scientists/agencies on issues pertaining to international projects in marine seismic research

Ex-officio representatives of the UNOLS RVTEC and RVOC committees may serve on the Committee.

The Langseth operating institution and the OBSIP management may designate non-voting ex-officio member(s).

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A member who can serve as a liaison to the IODP community through current membership on one of that program's committees. *(Sean Gulick?)*

A representative with expertise in issues related to environmental permitting for marine seismics

A member with expertise in high-resolution seismic imaging for shallow subsurface structure

One or more members from the international geophysics community who can serve as a liaison to represent scientists/agencies on issues pertaining to international projects in marine seismic research

Ex-officio representatives of the UNOLS RVTEC and RVOC committees may serve on the Committee. *(Lee Ellet or Scott Ferguson / Thomas Glennon or Stewart Lamerdin)*

The Langseth operating institution and the OBSIP management may designate non-voting ex-officio member(s).

4. SPECIFIC TASKS

(a) Implementation of the Regional Framework Plan

The Regional Framework Plan for the marine seismic data acquisition is designed to reduce overall data acquisition costs, provide guidance to the community about when to submit proposals for research in a particular area, encourage investigators (both U.S. and potential international teams) with new ideas to submit a proposal that could mesh geographically (e.g., modest transit), and provide rotating access to all regions of scientific interest within a timeframe of several years.

The MSROC will develop and implement a mechanism for ongoing regional planning that maps out and advertises areas of operation several years in advance. Areas of operation will be identified based on community interest and input, and detailed planning will include considerations for both vessel-based operations and OBSIP utilization. When relevant, opportunities for coordination with other geoscience assets, such as land instrumentation through the IRIS Portable Array Seismic Studies of the Continental Lithosphere (PASSCAL) Instrument Center for onshore-offshore experiments, may be addressed.

MSROC will actively and continuously seek input on regional planning from the U.S. and international science communities through a variety of means, including for example letters of interest, online bulletin boards, community science plans, input from agencies and operators, and through the one open regional planning meeting held each year. As part of regional planning activities, the MSROC will help identify and convey to the research community new collaborative opportunities.

In addition to longer-term regional planning the MSROC will also be available to provide perspective and advice to the operators and funding agencies regarding short-term scheduling issues.

4. SPECIFIC TASKS

(b) Act to engage and coordinate international participation in the regional framework planning process and to identify international resources that might be available to U.S. researchers. Regularly review the technological information available for use of assets and identify needed updates.

The MSROC will solicit international input and participation in the regional planning process both through committee membership (section 3) as well as through the annual open regional planning community meeting. It will seek to promote international collaborations through information gathering and sharing (e.g. web sites on upcoming US and international programs, focused breakout sessions at international meetings such as EGU). It will also serve as a resource for the international community interested in using US marine seismic facilities to help facilitate the process and identify/address agency and other issues.

(c) Regularly review the technical capabilities of existing marine seismic assets to ensure they meet the needs of the scientific community, and advocate for upgrades when compelling needs for new capabilities are identified.

The MSROC will provide high-level input on scientific needs and guidance on prioritization for implementation of upgrades and deployment of new marine seismic capability. It is expected that the OBSIP liaison on the MSROC will serve as the conduit for information to/from the OBSIP advisory committee. Additional ad hoc groups will be formed as needed to address other marine seismic technical and operational issues.

4. SPECIFIC TASKS

(d) Promote the engagement and training of the next generation of marine seismic researchers.

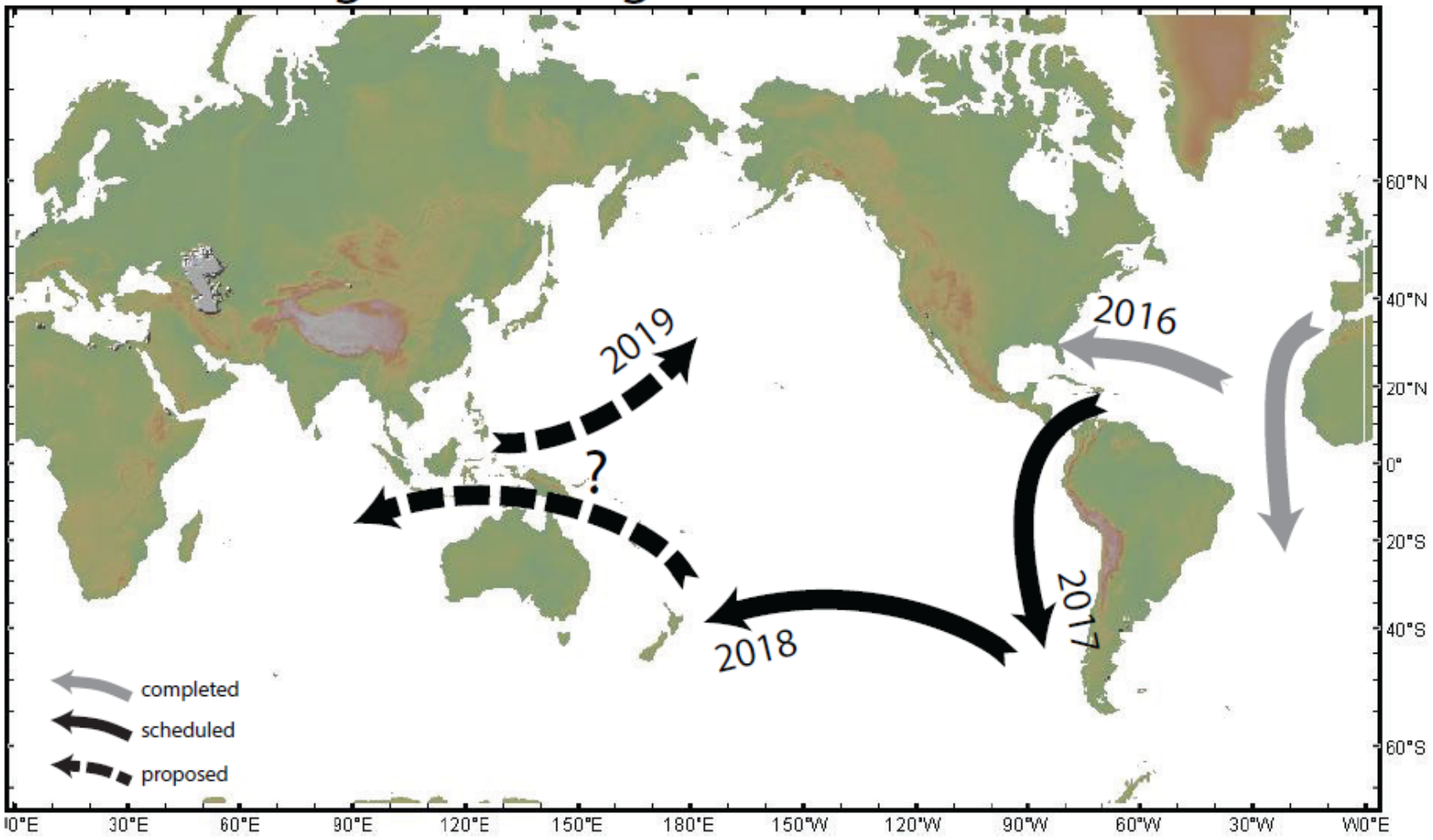
The MSROC will help to identify and develop opportunities to broaden participation in marine seismic research, including promotion of training opportunities to help grow the research community with expertise in these approaches (e.g. training cruises and/or data processing webinars, classes, and short courses).

MSROC will seek opportunities to promote marine seismic research and maintain the vibrancy of the field such as community workshops. It will also consider mechanisms to convey marine science research outcomes to the broader community and/or public.

(e) Provide outreach tools and a feedback mechanism to the community, including a forum for input on emerging directions in marine seismic studies

The MSROC will establish mechanisms for feedback from and to the community regarding existing marine seismic research capabilities and emerging directions (for example, “how-to” guides, science user reports on recent expeditions, web sites and online bulletins).

Long-Term Langseth Cruise Track



Provision of Marine Seismic Capabilities to the U. S. Research Community

PROGRAM SOLICITATION
NSF 17-563

National Science Foundation

Directorate for Geosciences
Division of Ocean Sciences

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

August 21, 2017

IMPORTANT INFORMATION AND REVISION NOTES

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 17-1), which is effective for proposals submitted, or due, on or after January 30, 2017.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Provision of Marine Seismic Capabilities to the U. S. Research Community

Synopsis of Program:

Proposals are solicited to support needs of the marine seismic research community that are currently provided by the specialized seismic research vessel R/V *Marcus G. Langseth*. The vessel is owned by the National Science Foundation and operated by the Lamont Doherty Earth Observatory of Columbia University (LDEO). NSF has determined that the current operational model is unsustainable and, with this solicitation, seeks proposals that provide comparable access to marine seismic capability through innovative approaches to R/V *Marcus G. Langseth* use or by other means.

The successful proposal will be administered as a Cooperative Agreement over the five-year period of performance.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Bob Houtman, telephone: (703) 292-8583, email: bhoutman@nsf.gov
- Candace Major, Program Director, Marine Geosciences Section, telephone: (703) 292-7597, email: cmajor@nsf.gov
- Richard Murray, Division Director, Ocean Sciences Division, telephone: (703) 292-7240, email: rwmurray@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.050 --- Geosciences

Excerpt from Provision of Marine Seismic Capabilities to the U. S. Research Community
PROGRAM SOLICITATION NSF 17-563

NSF/OCE anticipates that proposals are likely to fall into one or more of the three categories listed below, with each category subject to operating within the specified annual budgetary constraints and in the context of providing the required seismic capabilities necessary to meet the scientific needs described above.

1. A qualified institution, organization, or consortium provides access to alternative technologies to replace the existing approaches used by R/V *Marcus G. Langseth*. NSF encourages creative strategies for meeting NSF's seismic research needs. In this approach, NSF would follow established U.S. governmental procedures for divestment of R/V *Marcus G. Langseth*, as described in Section III.B. below, and the vessel would no longer be available to researchers.

2. A qualified institution, organization, or consortium assumes ownership of R/V *Marcus G. Langseth*, following the NSF procedures for divestment, described in Section III.B. below, and commits to supporting NSF-funded research at the usage levels described above. Such support of NSF-funded research need not involve R/V *Marcus G. Langseth* if, for example, such an organization or consortium has other assets that could also, or instead, be used. If NSF no longer owns the vessel, any remaining ship-time after annual NSF seismic needs are met would be available to support the business model of the new owner(s).

3. NSF retains ownership of the vessel and a new financial and operational structure is established for management of R/V *Marcus G. Langseth*. In this model, the institution, organization, or consortium would guarantee access to the vessel via UNOLS for 75-150 days, subject to annual budgetary constraints. Due to the overall age of the vessel and the potential for vessel replacement in the future, however, NSF will not commit to a service life extension via a mid-life refit for R/V *Marcus G.Langseth*.

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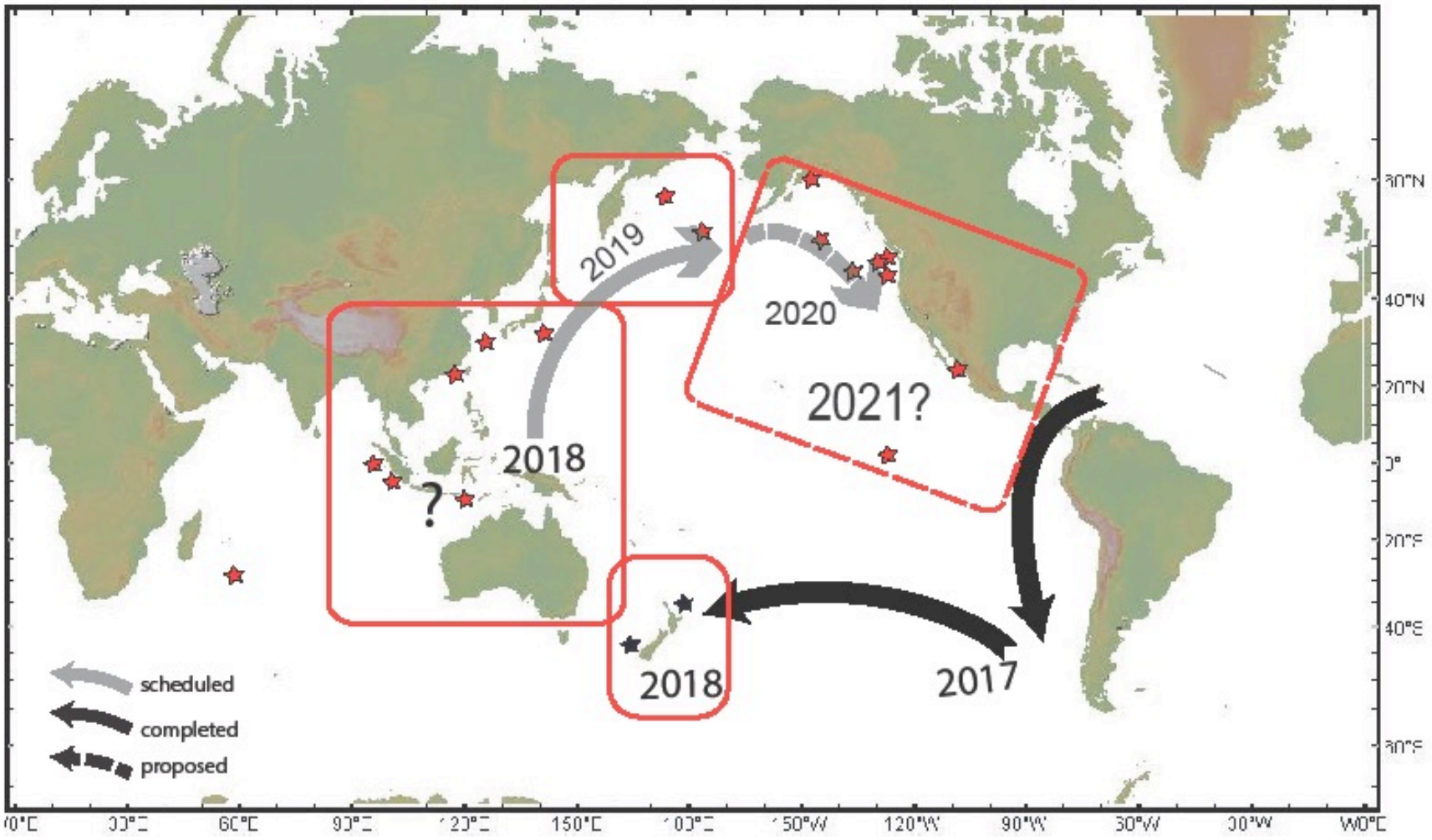
If no acceptable proposals are received, NSF will divest from R/V *Marcus G. Langseth* and will work with academic, international ,and/or commercial partners for ad hoc access to third-party seismic capabilities within budgetary and logistical constraints and responsive to science proposals.

Long-Term Langseth Cruise Track



From the NSF_2015_Seismic_Portable_Workshop_Report:

Recommendations (with input from the MLSOC)

1. Eliminate the “portable system” option. A portable/removable system hosted on the Revelle (the most suitable candidate) would be a significant step backward, to Ewing and pre-Ewing capability, and would be inadequate to meet current and future science needs.

2. Do not adopt an industry-only approach. Relying fully on industry contracting to conduct the current level of academic seismic research would cost more, especially if long transits were needed. Thus, less science could be accomplished for the same research dollars. While contracting industry could work for the occasional project, uncertainties of contracting schedules and market availability would not be a feasible alternative to support an ongoing academic program in marine seismics.

3. Retain the Langseth as the facility for academic marine seismics and geophysics and search for new external support. Under the new regional model for seismic operations, there is opportunity for potentially attracting paid foreign usage for research programs aboard the Langseth. With areas of operation decided a few years in advance, foreign scientists and their funding agencies would have the time needed to secure funding and meet their permitting requirements. This avenue could be pursued under existing NSF ownership of the Langseth.

4. Pursue international facilities agreements, including MOUs, through NSF perhaps making use of the channels of communication already in place for IODP. MLSOC members are willing to reach out to international colleagues, but agency-level discussions will need to occur in tandem.

5. Immediately communicate the OCE plan for near-term marine seismics. There is currently high uncertainty about the future of Langseth, in both the US and foreign research communities, in light of the SeaChange Report and the NSF public response. Many infer that OCE will lay up Langseth soon and this impedes forefront scientific planning. OCE should determine and announce a near-term period for which Langseth will continue to serve the academic marine seismic community (something like 5 yrs), during which time international support and a potential consortia model(s) would be vigorously explored. Certainty of operations is essential for engaging foreign entities in paid usage discussions, reliability of access will be key for attracting/retaining prospective consortia members (regardless of whether/when an ownership transfer occurs), and a reduction in proposal pressure 'backlash', such as occurred in recent past times of high uncertainty for marine seismics, may be avoided.

From 2016 NSF Dear Colleague Letter: Provision of Marine Seismic Capabilities:

Examples of possible approaches could include, but are not limited to, the following, with each subject to operating within the annual spending caps of ~$8M for ship operations and ~$2M for technical support:

1. A financial and operational change in the management of R/V *Langseth*. NSF would conduct an open solicitation for operation and management of R/V *Langseth* that would provide at a minimum the current technological capabilities of the vessel, and would meet the research needs of the academic community.

2. A change in the ownership of R/V *Langseth*. NSF would conduct an open solicitation for ownership of R/V *Langseth* that would provide NSF with an average of a to-be-determined number of days at sea per year to serve the U.S. academic research community. If NSF, as a Federal agency, no longer owns the vessel, the remaining R/V *Langseth* time would be available to support the business model of the new owner.

3. Use of other vessels for marine seismic data acquisition. If divested from R/V *Langseth*, NSF/OCE would work with academic, international, and/or commercial partners for potential access to third party seismic capabilities, for a to-be-determined average number of days at sea per year, within budget constraints.

4. Use of alternative and/or developing technologies to supplement or supplant existing capabilities. NSF would be interested to learn of other creative approaches to meeting NSF's seismic research needs, such as enhanced large-scale deployments of Ocean Bottom Seismometers (OBSs), alternative sound sources, or other technologies that could either complement use of, or supplant the need for, R/V *Langseth*.

5. Development of alternative vessel scheduling plans including, for example, a multi-year scheduling plan in which large and complex marine seismic programs funded by NSF would be conducted only on a to-be-determined periodic basis. Such a schedule could align well with the community's parallel need for multiyear planning for complex research projects, and could also allow