

Marine Seismic Research Oversight Committee Annual Meeting (MSROC)

Date: Sunday December 10, 2017

10:00 am to 5:00 pm

Hilton New Orleans Riverside,

2 Poydras St.

New Orleans, LA

MSROC Minutes:

The UNOLS Marine Seismic Research Oversight Committee, (MSROC) met on Sunday 10 December 2017 in New Orleans, Louisiana for the committee's first annual public meeting. The meeting was well attended by committee members, researchers, members of the federal agencies, and was facilitated by the UNOLS Office.

Pat Hart/USGS and MSROC Chair opened the meeting with introductions of all those in attendance followed by a discussion on the goals of the meeting, review of the agenda, and how best for the committee to move forward.

Pat Hart then presented the MSROC Chair report. The groundwork for the transition of the *Marcus Langseth Science Oversight Committee* into the *Marine Seismic Research Oversight Committee* started with the Sea Change Report in early 2015. The report clearly stated that: "the current business, financial, and resultant operational model for *R/V Langseth* is unsustainable". While NSF has stated that they would continue to accept proposals, there is still some uncertainty within the community.

The Chair's report then gave a quick review of the MSROC terms of reference and tasks that the committee is responsible to work on.

In August 2016, NSF issued a Dear Colleague letter (DCL) which stated that the NSF's Division of Ocean Sciences (OCE) is seeking written expressions of interest regarding the provision of marine seismic capabilities to the U.S. academic research community and federal and state agencies involved with marine seismic research and exploration programs. This DCL is part of OCE's effort to develop a long-term and stable seismic capability.

The MSROC has spent the past year tracking these issues. In July of 2017, the MSROC met at the Univ. of Washington to begin the work of setting up committee goals and tasking. The first task was to update the regional planning map, which was completed and posted on the committee web site. The committee is currently waiting for the NSF decision on what the new operating model will be, which will enable NSF to update regional planning map.

In November 2017, the MSROC solicited from the marine seismic research community letters of interest for programs, which would require marine seismic capabilities comparable to the *Langseth*. The committee received 16 letters of interest which have since been reviewed by the MSROC and then forwarded to NSF program managers.

Pat's closing Chair remarks reiterated that the committee wants to have a positive impact and will continue to work towards this goal as the MSROC committee goes forward.

NSF Briefing and Discussion

Maurice Tivey/NSF gave an Ocean Bottom Seismometer update. In May 2017, an OBSIP solicitation was released which stated that the Division of Ocean Sciences in the Geosciences Directorate of the National Science Foundation (NSF/OCE) intends to issue a solicitation to establish, manage, and operate a National Ocean Bottom Seismometer Instrument Pool (NOBSIP) through a competitive, merit-based external peer-review process. This initiative is expected to result in the award of a five to ten-year Cooperative Agreement (CA) for this activity. The proposals were due in late October 2017 and an NSF decision will be issued soon. The panel is set to meet at the beginning of 2018. It will be a \$1.8 million grant for a 5-year period. The IRIS grant expires at the end of January 2018, but a no-cost extension was granted for 2018. NSF has instructed the community to submit proposals to IRIS for the time being. Proposals can be submitted at any time, there is no deadline. The number and types of OBS's in the pool may need recapitalization over a 2-3 year period once the new operator is in place. The OBS governance will need to be decided and an NSF program manager will be assigned when the new operator is in place. Maurice Tivey will rotate off from his position at NSF in August of 2018 and NSF will advertise for a new rotator.

Marine Seismic Capability-

Rick Murray/NSF provided an update on the marine seismic capability solicitation. NSF cannot provide many details while it is still under review, but NSF did state they received one or more proposals. The review panel has met and has fulfilled its responsibilities. Rick Murray thanked the committee for their service. NSF has socialized this with the broader community over the past few years and will make a decision soon. An NSF internal seismic group and others within OCE are discussing the infrastructure and the challenge of balancing science and infrastructure. Rick encouraged the MSROC to look forward and to look beyond the platform, while keeping the focus on seismic research. NSF understands the challenge for the MSROC. NSF should reach a decision in early calendar 2018 and in the meantime is still accepting proposals for MG & G programs.

UNOLS Update

Jon Alberts/UNOLS shared an update on activities within the UNOLS Office. The focus was on the UNOLS Office re-competition, which is currently in progress. The UNOLS office hosted at the Univ. of Rhode Island will complete their term on 30 April 2019. In compliance with the UNOLS Charter, the office must be re-competed among UNOLS member institutions after no more than two (5-year terms). Proposals for the UNOLS Office are due by 16 March 2018.

The Fleet Improvement Committee, (FIC) is working on developing the next set of science mission requirements for UNOLS global class vessels. A survey is being developed which will solicit input from the sea going community as to the science drivers and capabilities that will be required in the next generation of global class vessels. A town hall is planned for Ocean Science 2018 in Portland, Oregon on Monday 12 February 2018.

LDEO Update and discussion

Sean Higgins/LDEO provided a report as the operator of the *R/V Marcus Langseth*. He covered recent ship related activities as well as some highlights of recent cruises. LDEO continues to work closely with Holly Smith/NSF to comply with environmental permitting as required on marine seismic expeditions.

Updates on the recent cruise on the *R/V Marcus Langseth* were also shared.

The LDEO technical group has recently developed a new quality assurance/quality control tool for data collected by the 3D streamers. It was used on the SHIRE program and will be used on the early 2018 cruises.

The technical support on the *Langseth* has been doing an amazing job and the ship and systems are all working very well including the compressors. They have recently acquired many spares, including streamer sections, which are currently being shipped to Lamont. There has been a recent effort on data archiving, going back 30-40 years

IODP Update- Sean Gulick/UTIG

Sean Gulick/IODP Co-Chair of the Science Evaluation Panel presented a detailed report on the International Ocean Discovery Program with a focus on the current structure, how proposals work through proposal process system and future directions for the MSROC planning purposes.

There are (3) facilities that are overseen by separate facility boards. The Joides Resolution is overseen by the JR Facility Board, the Mission Specific Platforms are overseen by the ECORD Facility Board, and the Chikyu is managed by the IODP board.

The proposal submission history for the past ten years was illustrated with details on the specific science themes. We discussed a list of proposals that are with the science evaluation panel now that need survey data before the programs go forward.

The Science Support Office organizational chart was reviewed with an explanation of the various tasks each group is responsible for.

The SEP Review procedures were explained in detail. This includes close cooperation between the Science Evaluation Panel and the Environmental Protection and Safety Panel

The workshop report from the Australian Workshop was briefly mentioned with one of the main outcomes was to reinforce need for site survey data and high quality seismic reflection profiles.

OBSIP- Delwayne Bohnenstiehl

Del presented the update on the OBSIP Oversight Committee. IRIS has recommended the OBSIP committee should remain in place and meet during the OBSIP no-cost extension period, which runs through January 2019. During this time, the instrument centers will be receiving funding and there are two large programs planned for CY 2018. Bob Woodward and Kasey Aderholt will continue to track the QA/QC issues. During the transition, it was suggested that the MSROC needs to help in this area. How the future oversight of the OBSIP will be structured is uncertain, the quality of the data needs to be monitored.

There have been 3 OBS Research Symposiums, (Redondo-2013, Vancouver- 2015, Portland, ME 2017) and the future of the symposium needs to be considered with who will take the lead still uncertain.

IRIS is still in place through CY 2018. The new award decision should be made by August 2018.

Alaska Amphibious Community Seismic Experiment. Emily Roland/UW

Emily Roland/UW provided us with an overview of the AASE-Marine Seismic Community Project update with a list of the principal investigators who are participating. Details on the GeoPRISMS workshop held on 10 Dec 2017 were given. A history of the project dating back to the 2014 Snowbird Workshop were highlighted. A discussion on why the Alaska Convergent Margin was chosen, what the science targets are and the current station locations were shown. The new technology to be employed will include trawl resistant OBS's. The plans for the Education and Outreach will include "apply to sail" berths for graduate students and early career scientists. Berths will be reserved for K-12 teachers too.

The deployment cruises will begin in May 2018 and then the recovery will happen in late summer of 2019. The award for this program was made in August 2017.

New Zealand Langseth Programs- Nathan Bangs/UTIG

Nathan provided an overview of the New Zealand Seismic Surveys with the *R/V Marcus Langseth* along with the *R/V Tangaroa*.

This will consist of three programs, SHIRE from November 1, 2017 to December 7, 2017, followed by NZ3D from January 6 to Feb 9, 2018, and finally SISIE, from Feb 13 to Mar 12, 2018. The science goals of each program are in the slides. The specific on station locations, instruments to be deployed, number of students and some preliminary data was shown.

Regional Framework and International Tasks/ Pat Hart

Pat Hart reported out on the recent MSROC effort to reach out to the marine seismic community to collect letters of interest. This was a focused solicitation to PI's asking them to share potential projects using capabilities similar to those of the *Langseth*. Pat collected the 16 responses and with the assistance of Donna Blackman/SIO. The collected responses were compiled and forwarded to NSF and this data should assist in the next iteration of the regional framework map. The PI's were specifically asked for an explanation of how mature the proposals were.

Growing Experience with High-Resolution 3D marine seismic in research and industry- Tip Meckel/Univ. of Texas/Austin

Tip Meckel gave this talk on HR3D methodology, which is a relatively new technology that can provide much more detailed sub bottom imaging than conventional high-res 2D methods. HR3D marine surveys have been recently acquired in the Gulf of Mexico by UT as well as in Europe by researchers from Tromso, Geomar, and Southampton. Tip explained technical aspects of the system and provided a discussion on some of the science applications that the technology can be used. Slides showed the geometry of the array and survey specifications. There are no unique concerns regarding the health, safety and environment aspects of this technology. In October 2013 and April 2014 the system was put to sea on a commercial vessel, *R/V Brooks McCall*. Portable air compressors were used and pictures of the deck lay out were provided. Examples of the survey data were shown. There are training opportunities with Tip Meckels group.

USGS Coastal and Marine Geology- High resolution marine seismic capabilities, Maureen Walton/USGS

Maureen Walton presented a good overview with slides of the USGS Coastal and Marine Geology program with their (3) science centers in Santa Cruz, St. Petersburg and Woods Hole. The USGS mission and research goals were reviewed. Details on the major marine seismic research targets were explained and some of the high-resolution marine seismic capabilities and equipment was described. The hazards to populated areas are the focus of the USGS in these plate boundary areas. Some of the research questions that are being asked and some data that has been collected to answer these questions was presented.

The subject of integrating 2D and 3D studies were discussed, How to develop 3 d capabilities for areas around the Santa Barbara Channel, Alaska-Queen Charlotte field work was covered.

Improving high-resolution imaging was discussed including ongoing research on both data acquisition and processing techniques.

Seismic Data Acquisition Training Cruise, Anne Trehu/OSU

Anne Trehu provided a report on the Seismic Early Career Chief Scientist Training Cruise in September of 2017, funded by NSF. The led PI was Masako Tominaga/TAMU and the Co-PI's were Anne Trehu & Mitch Lyle from OSU, Greg Mountain/Rutgers, and Rebecca Fowler/Outreach Specialist. Anne reviewed the process and timeline in planning this early career workshop and expedition.

The cruise was on the *R/V Roger Revelle* from 24 September 2017 to 4 October 2017 on the Cascadia Margin off Oregon coast. The planning involved 3 days of webinars facilitated by the UNOLS Office in April 2017. The application process was described and details on the science plan were shared. Some early data that was collected was shown. Feedback from the participants was collected and shared, as well as recommendations for future training.

Revisit Earlier MSROC topics

Pat Hart then provided an opportunity to revisit earlier discussion on these various topics.

- Marine Science assets.
- Does MSROC have a role in the operation of some of these seismic assets
- Inventory of the high resolution seismic acquisition equipment
- Compressors, lease versus buy
- Possible high-res 3D training cruise in 2019 or 2020, see Pat's slides. Perhaps in the Gulf of Mexico with cost sharing collaboration with another federal agency such as BOEM and USGS?

5 pm Meeting adjourn.