

Marcus Langseth Science Oversight Committee (MLSOC)
December 14, 2014
Marriott Marquis Hotel, 780 Mission Street, San Francisco, CA

Executive Summary

The Marcus Langseth Science Oversight Committee held their winter meeting in San Francisco prior to the start of the AGU 2014 meeting. This was a two-day effort as members of the MLSOC participated in an early career workshop which was held on Saturday, December 13, 2014. The MLSOC general meeting held on Sunday December 14, 2014 focused on MLSOC business followed by science presentations from the early career workshop participants and science reports from recent cruises aboard the R/V *Marcus Langseth*.

Welcome and Introductions

Dale Sawyer/Rice University & Chair of the MLSOC opened the meeting with introductions, an overview of the agenda, and recent changes in the membership of the MLSOC committee. Dale thanked Paul Baker/DUKE for his contributions to the committee during his three year term. There are two new members who have joined the committee. They are Greg Mountain from Rutgers and Beatrice Magnani from Southern Methodist University.

Agency Reports

Donna Blackman/NSF gave the NSF report without slides. As stated the National Seismic Facility is a challenging facility to operate and to fund. Donna shared that NSF appreciates the work that Lamont-Doherty Earth Observatory (LDEO) does to manage the facility. The good news is that NSF/MG&G has been able to reduce a portion of the out-year mortgage commitments and should have more funds available in the coming year. The MGG budget has not grown but management is improving. The Cascadia project is winding down so in 2015 Ocean Bottom Seismometer Instrument Pool (OBSIP) costs are reduced. The GeoPRISMS program funding is flat at present but one of the 'Frontier' areas in the GEO Vision document is cross coastal science. MGG & GeoPRISMS received a healthy group of proposals this past year. There were several strong Langseth proposals this cycle, three were in the top-ranked group for all proposals, however the wide ranging regional distribution continues to be a challenge for scheduling. There were two additional strong proposals that would merit funding. Donna is convinced that we need to go to a regional model and she is asking the community to tell NSF where people want to work. The community could benefit from developing international collaborations which can be built upon. We also need to articulate if there are areas that don't hold scientific interest in the next few years. Tom Janecek/NSF informed the group that Donna Blackman is in her last year of rotation. NSF has a posting for a permanent position to take over this role. NSF recognizes the need to make this a permanent position and Tom Janecek is chairing the search committee.

UNOLS Report

Jon Alberts/UNOLS provided the news on recent UNOLS activity. The UNOLS Chair is now Dr. Chris Measures/University of Hawaii and Dr. Peter Ortner/RSMAS is now immediate past chair. The R/V *Point Sur* has been retired and the R/V *Knorr* and R/V *Melville* finished their service as UNOLS vessels in late 2014. As US Navy owned vessels, the Navy will handle the final disposition of these two ships. The two new ships being built by ONR are the R/V *Neil Armstrong* and R/V *Sally Ride*. Construction continues and they are expected to begin supporting science operations in 2016.

LDEO Report

Sean Higgins/LDEO, Director of Marine Operations provided an extensive overview of the operations onboard the R/V *Marcus Langseth* over the past year. The Power Point slides are in the appendices. The 2014 operating year began with a maintenance shipyard period from February to June of 2014 in Detyens Shipyard, Charleston, SC.

Repairs and upgrades of approximately 4 million dollars were completed. This included work on the bow thrusters, main engines, ballast water tanks and generators.

Sean also reviewed operational aspects of the cruises conducted in 2014. Dr. Greg Mountain/Rutgers cruise off the New Jersey coast was challenging with permitting issues and then *Langseth* generator failure issues. The USGS Extended Continental Shelf cruise with Dr. Deb Hutchinson/USGS as Chief Scientist went well in August and September. In September and October the GeoPrisms-ENAM cruise sailed under the direction of Dr. Donna Shillington/LDEO. Environmental compliance was a major hurdle for all these cruises.

In other news, LDEO managed a group purchase of tele-medicine units for the UNOLS-Global ships and will be coming in January. This was funded by ONR.

The schedule for 2015 is still being developed and at present they expect to carry out the USGS Extended Continental Shelf cruise off the US East Coast, the Greg Mountain cruise off New Jersey and possibly a Chief Scientist Training Workshop cruise.

Sean informed us that LDEO is researching a Sercel Streamer system purchase. A new system cost is ~ 18 million, and a used system is ~ 8-10,000 million. LDEO has identified a Seal 408 System from Sercel "Quiet Sea" technology which is a 30 km system. This might be available from industry for 2.6 million dollars. This is very compelling and LDEO will have a status report from the company in the next few weeks. The MLSOC should prepare a statement on how they recommend moving forward on this. The benefits of this system include longer offset streams, new technology, and spares are available. It also has a built-in passive acoustic monitoring system. LDEO has spoken to NSF about this and they are requesting MLSOC input. LDEO will put together a package for the NSF Instrumentation Proposal which is due February 10, 2015.

Jamie Austin hosted an Earthcube workshop this past week in which LDEO participated. A report from this workshop is forthcoming and will be sent MLSOC.

The need for 1-2 years advance notice of where the R/V *Langseth* will be working was revisited again. Donna Blackman/NSF reminded the MLSOC that NSF needs the science community input. Graham Kent/Univ. of Nevada/Reno stressed that this is a moment in time for us to move forward. The *Langseth* has only done (4) 3-D seismic cruises in the past five years. Donna Shillington commented that getting a new streamer is critical to keeping the ship going. The old streamer is old, has been patched together, and we are going to have a failure on one of these cruises. It is running on an old DOS system.

There was continued discussion on this streamer and Jim Holik/NSF reminded us all that there is a process for funding this. Dale Sawyer will organize a letter in support of this from the MLSOC. It will require UNOLS Council approval before being sent onto NSF.

Increasing the Access to and the relevance of Marine Seismic Data

Dale Sawyer led a discussion of how to increase the use of the *Langseth* and bring more people into marine geology. This included an exchange of ideas on:

- How to increase the use of the vessel
- How to do regional planning to put *Langseth* in the right place at the right time
- Keeping the PI's informed so they know when to put in a proposal
- Whether the *Langseth* be more closely tied to the scheduling of the *Joides Resolution*
- IODP is moving toward a regional plan

A question was asked if we should solicit letters of intent from the users and should there be a separate panel?

For the benefit of new members, the MLSOC was reminded that this was attempted in 2011 and 2012 as one of the recommendations that came out of the Incline Village Workshop.

Another question was asked if this long range planning model for the IODP has been put into place. Yes, they have been working to establish a plan for the next 3-4 years out. NSF reminded the audience that the community needs to determine where the science is which will then drive the ship schedule. NSF cannot make a proclamation as to where the ship will be working.

The workshop organized by Jamie Austin, December 2014, did discuss the question if the Langseth should have a linkage to IODP or GeoPrism.

Greg Mountain Cruise

Greg Mountain/Rutgers provided an overview of the 3-D Multi-channel seismic cruise on the Langseth off New Jersey. (July 1-10 and July 19 to August 17, 2014) One of the goals for this cruise was to look at sea-level rise. The New Jersey margin was chosen as a study site because the area has a unique hi-res sediment history, there are 3 drill sites located there, and it is an area of high public visibility. They used a new approach by using P-cable technology.

On the proposal history, they started in 2004, then had to resubmit in 2011, 2013 and then finally got to sea in 2014.

There was a great amount of environmental concern which required permitting and a group effort between NSF, LDEO, various federal agencies and non-governmental organizations. This included the supporting letter which the MLSOC crafted to support this cruise.

The ship also experienced generator problems which required the ship to return to port.

Due to these problems on the Mountain cruise, NSF has agreed to reschedule this cruise. The processing of documents for permitting for 2015 cruise are being prepared and will be ready to release. This will be scheduled in the summer of 2015 in the same operating area.

On lessons learned, having letters from the MLSOC as well as broad community support during the public comment period (30 day window), when the IHA goes public is helpful and important activity for the MLSOC to be engaged in.

It was suggested during the meeting that a tutorial on permitting would be very helpful. The LDEO public relations office can provide guidance. Also in the way of guidance for PI's, it is important to have responses ready in advance as newspapers and reporters want information.

Update on International Collaboration

Dale Sawyer provided an update on recent efforts to engage other researchers.

Letters were sent to (32) international researchers in (18) different countries to see if they were interested in working with us. Of the responses about half would be interested in workshop in 2015 with some interest in the 3D seismic capability. There was a meeting held at the Union Square Hotel on Tuesday December 16th.

Afternoon- 14 December 2014

The afternoon session focused on (11) students presentations.

- Greyson Adams/ Humboldt- Grayson is an undergraduate and working to narrowing his focus.
- Gilleen Arnoux/Univ. of Oregon- Work with the Cascadia project and the data off Oregon

- Tanya Blacic/Montclair State Univ. She is an asst. professor and is interested in seismic imaging and was an ENAM project cruise participant.
- Brian Boston/Univ of Hawaii- Focus on Japan trench & Nankai Trough, was on a Jamstec cruise in 2011.
- Alysia Cox/Arizona State Univ. Alysia is interested in how did earth chemistry affect rocks, water, chemistry & life
- James Gibson/LDEO- Focusing on Cascadia Ridge to Trench Survey and also on the Galacia cruise with Dale Sawyer.
- Shuoshuo Han/LDEO- Juan de Fuca Ridge to Trench project, how the waters enter the fault and oceanic plate
- Jiyao Li/LDEO- works with Donna Shillington, offshore Alaska in August 2011.
- Yen Jo Tan/LDEO- interested in volcano research.
- Amy Wagner/Cal State Univ. She is developing marine geology classes for undergrads.
- Shima Abadi/LDEO, Interested in underwater sound source reconstruction and improving marine mammal monitoring survey.

Science Presentations –

The remainder of the afternoon was dedicated to science presentations, sharing of data analysis, and an exchange of ideas. Each presenter's slides are posted in the meeting appendices.

- Fernando Martinez/Univ of Hawaii- data results from cruise on Langseth Reykjanes Ridge cruise in 2013.
- Jim Gaherty/LDEO- Imaging the Lithosphere cruise in 2011. No-Melt Experiment, central pacific experiment.
- Helene Carton/LDEO / EPR 3D project & Cascadia.
- Tim Crone/LDEO and Shima Abadi/LDEO- Streamer Data-Using the streamer and absolute power levels to determine how noise affects marine mammals.
- Larry Scott/NCS Sub Sea- P-cable provider, New GOM P-cable data.
- Debbie Hutchinson/USGS-Atlantic ECS law of the Sea Extended Continental Shelf, beyond 200 miles where a coastal nation can define its shelf, She describes three cruises for ECS, two in Alaska in 2011 and then the Atlantic coast in 2014 on the *Langseth*. Preliminary data results shown.
- Donna Shillington/LDEO covered the ENAM Experiment- GeoPrisms project. Community open access data set.
- Nathan Bangs/UT Texas shared data results from the CRISP cruise, off Costa Rica in 2011.

Meeting Adjourned

The meeting adjourned at 5pm.

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