MSROC response to NSF Dear Colleague Letter 18-061

Patrick Hart MSROC Chair
UNOLS Fleet Improvement Committee Meeting
Alexandria, VA
Monday & Tuesday, July 9-10, 2018

MSROC received the NSF DCL on April 10 and submitted a letter of response to NSF on May 11.

The UNOLS Council is aware of the content of this letter as it was passed on to the Council and received Council endorsement before being sent to NSF. On June 19th I gave the following presentation at the UNOLS Council summer meeting In Williamsburg, VA.

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The month-long period between receiving the DCL and MSROC response was primarily due to wanting input not only from the MSROC and Council membership but also from as much of the marine research community as possible.

The MSROC quickly decided a letter directly to NSF would be the most appropriate response. I'll present a summary here of the process and reasoning that went into preparing that letter and also discuss the reply we received from NSF.

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MSROC held a pair of teleconferences that allowed all members, including ex-officios to participate in at least one of the calls. During the time leading up to these teleconferences I was in contact with five groups who were also preparing responses to the DCL:

IODP
IRIS
Lamont-Doherty
Early Career Researchers (~50)
Geophysics Students (~100)

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The discussions with these groups and their letters of response identified several primary areas of concern regarding the potential impact of the plans laid out in the DCL and, for the most part, MSROC shares these concerns.

MSROC understands continuing with the status quo is not sustainable and we, as an advisory committee, made a conscious effort to suggest what we feel are practical modifications to the DCL plans that could partially mitigate the concerns expressed in the other letters of response.

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Summary of primary concerns:

1. There is no existing plan to provide seismic acquisition capabilities comparable to the Langseth beyond 2020.

From MSROC letter of response:
"In addition we request that NSF push back the R/V Langseth divestment date to mid-2021 to allow for additional favorably-reviewed experiments that fit within the current regional plan developed by NSF to be conducted. It is important to understand that these regions are quite remote from current exploration industry operations. It would be substantially more affordable and expedient to take advantage of planned proximity of the R/V Langseth as opposed to paying for an industry seismic vessel (at likely double the R/V Langseth day rate) to transit to the area at some point in the future."

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From NSF reply to MSROC letter of response:
"You have asked us to "reconsider" this time frame. We will not do so."

From NSF reply to Early Career Researchers' letter of response:
"As such, the 2020-time frame was chosen very carefully to allow the development of proposals for future work, take into account the Langseth's age, and other considerations."

2017 Letters of Interest

Primary Contact	Location	Objective	Type	Team	Proposal Status	2016 LOI?
Blackman	Central Atlantic	Detachments & plate bounday evolution	Long-offset 2D w/ OBS	US	Discussion stage	No
Canales	Southern Cascadia	Incoming plate hydration near trench	Long-offset 2D w/ OBS	US/Canada	To NSF by end of 2017	Yes
Canales	SW Indian Ridge	Moho at slow spreading center	OBS/ 3D/ Long 0ffset 2D	US/Canada/UK/ South Africa	Previously submitted/ will revise and resubmit	Yes
Carbotte	Cascadia	Subduction zone rupture segmentation	Long-offset 2D	US/Canada	Submit proposal early 2018	Yes
Dunn	Havre Trough	Ultra-slow spreading & structure	OBS tomography	US/New Zealand	Previously submitted/ will revise and resubmit	Yes
Goldberg	Cascadia	CO2 Sequestration	3D	US/Canada/ Iceland	To DOE early 2018	No
Goldfinger	Cascadia	Subduction zone structure, processes	Long-offset 2D	US/Canada/ Germany	Draft proposal early 2018	No
Hill	Cascadia	Subduction zone structure, hazards	3D	US/Canada	Discussion stage	No
Lizarralde	Aleutians	Oceanic-arc crustal processes	Long-offset 2D w/ OBS	US	Submitted to GeoPRISMS 2017	Yes
Malkowski	Bering Sea	Deep-marine stratigraphy	2D w/ multibeam	US	Discussion stage	No
McClain	EPR two sites	Ridge processes, hydrothermal systems	2D w/OBS maybe 3D	US/Mexico/ Germany?	Discussion stage	Yes
Sahakian	Cascadia	Shallow rupture constraints	Long-offset 2D maybe 3D w/OBS	US	Discussion stage	No
Shillington	Hawaii	Intraplate magmatism, lithosphere properties	Long-offset 2D w/ OBS	US/UK	Submitted to NSF; pending	Yes
Shillington	Emporer Seamount	Intraplate magmatism, lithosphere properties	Long-offset 2D w/ OBS	US/UK	Submitted to NSF; pending	Yes
Trehu	Cascadia	Subducting plate fragmentation	Long-offset 2D w/ OBS	US currently	Discussion stage	No
Worthington	SE Alaska	Queen Charlotte fault structure	Long-offset 2D w/OBS + seismicity	US/Canada	Submit end 2017	No

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2. As of April 10, PIs would need to contract for industry vessels or set up international collaborations on their own for new proposals.

From the 2015 Seismic Acquisition Workshop report:
"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."

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Although the US academic community cannot plan on using international vessels to fill the entire gap left by divestment from the *Langseth*, this could be a part of the solution. Therefore, John Hopper, international member of MSROC, is taking the lead in compiling a comprehensive summary of international seismic vessels, their capabilities, contacts, schedules and estimated day rates.

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To assist PIs (not only early Career PIs) preparing proposals and making arrangements for seismic capabilities, MSROC discussed the possible value of having a seismic facilities coordinator. The process of proposal through data acquisition would likely be much more efficient if PIs could have guidance from an individual with knowledge of international vessels and agreements, and with industry contracts and contracting experience.

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3. Quote from the MSROC letter to NSF:

*"In addition, **the statement in the DCL that, as of April 10, NSF would no longer accept proposals that would require the use of the R/V Langseth caught many off guard**, including researchers working on proposals following up on the Letters of Interest submitted to MSROC and passed on to NSF."*

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From NSF reply to MSROC letter of response:
"You, and others (as referenced in your letter), have expressed concern about the appearance of suddenness. In your letter, you refer to being "caught off guard". However, as repeatedly stated, perhaps most clearly in Solicitation 17-563: "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 solicitation itself, and previous documents, also explicitly stated "that divestment from R/V Langseth would occur should such models or strategies which could be successfully implemented not be forthcoming."

The Lindsay Worthington/Emily Roland Cook Inlet proposal was in final review on April 10 with the intention of submitting to NSF on April 13. The ship time request had already been submitted and they were definitely caught off guard that their proposal would not be accepted.

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4. The potential negative impact of DCL 18-061 would fall disproportionally on early career researchers.

From NSF reply to MSROC letter of response:
“We have identified ways to mitigate the impact on early career scientists, particularly for a period that we and the community hope is truly "transitional".”

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“We have identified ways to mitigate the impact on early career scientists, particularly for a period that we and the community hope is truly "transitional".”

MSROC agrees that training opportunities on high-resolution 2D and 3D marine seismic cruises combined with on-shore data processing webinars could fill much of the gap left by Langseth divestment. A seismic facilities coordinator could be of great assistance in the preparation of marine seismic acquisition proposals and the logistics of cruise preparation.

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Possible Fall 2018 Workshop:

From Kandace Binkley email to OCENEWSLETTER listserv distributing DCL 18-061:
"A community workshop, to be held in the Fall of 2018, will be the first step in evaluating future research needs and identifying creative options for providing the necessary marine seismic infrastructure."

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From MSROC letter of response:
"We would like to propose instead an in-person meeting between MSROC, NSF and possibly a few other key individuals. Topics for discussion would include: pros and cons of declined proposals received in response to the NSF solicitation (with the understanding this would require the permission of the submitting institutions); whether modifications to these proposals could make them acceptable; … and the best way to plan, organize and conduct another workshop that would have the best chance for finding a sustainable model acceptable to both the research community and NSF. "

The results of the 2014 and 2015 seismic workshops should to be carefully reviewed prior to the planning of a new workshop