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UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Marine Seismic Research Oversight Committee

May 11, 2018

Dr. William E. Easterling, Assistant Director for Geosciences
Dr. Richard W. Murray, Division Director, Ocean Sciences
Dr. Bauke Houtman, Section Head, Integrative Programs, Division of Ocean Sciences
Dr. Candace Major, Program Director, Marine Geology and Geophysics, Division of Ocean Sciences
National Science Foundation
2415 Eisenhower Avenue
Alexandria, Virginia 22314

Subject: NSF 18-061 Dear Colleague Letter: Towards a New Approach for Provision of Marine Seismic Capabilities

Dear Drs. Easterling, Murray, Houtman, and Major:

The Marine Seismic Research Oversight Committee (MSROC) was established by UNOLS in 2017 to provide scientific oversight and strategic advice to NSF regarding marine seismic data acquisition facilities and assets. In this role, we provide this letter to express our deep concern with the outcome of the NSF 17-563 Solicitation and the near-term disruption in leading-edge marine seismic capabilities that this will cause, as described in the NSF 18-061 Dear Colleague Letter (DCL), and to suggest actions to address these concerns. The membership is unanimous in the desire to work closely with NSF to establish a sustainable model for the provision of leading-edge marine seismic capabilities, and also to support the marine geoscience community through the transition from current R/V *Langseth* operations to a sustainable long-term solution.

The value of deep-penetration marine seismic datasets such as those acquired by the R/V *Langseth* is well established, and a broad spectrum of fundamental earth science questions has been investigated using the capabilities of the R/V *Langseth's* large tuned airgun source array and long-offset streamers for 2D and 3D data acquisition. We believe that NSF appreciates this value, and we also understand the factors that have motivated the effort to find a new seismic operational model, with or without the R/V *Langseth*. Despite this mutual understanding, the recent DCL has produced both fear for the future of marine seismic research and some sense of dismay among this committee and the community at large. This is due in large part to the announcement that Principal Investigators for new proposals must now identify and arrange for seismic capabilities on their own, which seems to differ substantially from assurances, made on many occasions (including, at NSF's request, by the MSROC via the MSROC website, as part of the MSROC 2017 request for Letters of Interest, and at the MSROC public meeting in New Orleans, December 2017), that NSF was committed to ensuring access to capabilities comparable to those currently provided by the R/V *Langseth*. 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. The angst within the community is evident in the opinions expressed by Columbia

University and the IRIS consortium in recent letters of response to the DCL, which note that the changes outlined in the DCL will result in a major disruption to marine geophysical research and damage to the careers of many younger marine geoscientists. The MSROC shares these concerns. The 2015 *NSF Workshop on Portable Seismic Systems and Commercial Seismic Acquisition* report presents well-researched conclusions that shifting to industry marine seismic providers would be dramatically more expensive than current R/V *Langseth* operations and using "removable" seismic systems on current UNOLS vessels or partnering with international collaborators to use their seismic vessels could not replace R/V *Langseth* capabilities. These operational models would result in reduced data quality or higher acquisition cost.

The MSROC recommends that NSF reconsider the plans outlined in the DCL and agree to at least a six-month-long "grace" period for accepting new proposals to use the R/V *Langseth* to allow for submission of proposals that may currently be in development in conformance with the posted regional plan. 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.

Finally, the committee has discussed the NSF suggestion for planning a workshop for fall 2018. There is a strong consensus among the MSROC membership that a workshop would not be productive at this point and would likely reiterate the strong scientific justifications for acquiring long-offset, large-source seismic reflection data that have been eloquently discussed in several prior workshop reports. Without additional specific guidance from NSF, it is unlikely that such a workshop would lead to an actionable path forward. We feel that the science needs are well known, and that it is the implementation of the science needs that is unclear. 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; ideas for minimizing disruption to scientific continuity and the careers of early-career researchers during the transition from R/V *Langseth* to a long-term operational model; 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.

We understand that this effort will require a close collaboration between MSROC and NSF and we look forward to working closely with NSF to achieve these important goals.

Respectfully submitted,

PATRICK HART

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