



## UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Graduate School of Oceanography – University of Rhode Island

220 South Ferry Road, Narragansett, Rhode Island 02882

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24 September 2010

To: Karl Erb/NSF-OPP  
Simon Stephenson/NSF-OPP  
Scott Borg/NSF-OPP

From: Vernon Asper/ UNOLS Council Chair

Dear: Drs. Erb, Stephenson, and Borg,

### **A Suggested Approach and Offer of Support from the UNOLS Council Regarding Acquisition, Operation, and Oversight of Future Southern Ocean Research Vessels**

**Summary:** UNOLS strongly supports enhanced collaboration between OPP and OCE. We suggest that replacement of the *N.B. Palmer* and *L.M. Gould* represents an opportunity to build this collaboration by acquiring and operating these new ships as UNOLS vessels. We offer the experience base and the expertise of UNOLS and the academic fleet operators to assist OPP in further defining the new vessel and the many ways in which coordination of polar and other global research might be improved to benefit both OPP and OCE.

**Background:** The UNOLS organization has provided operational oversight of the US Academic Research Fleet, excepting those vessels operating in the ice-covered Southern Ocean, since 1972. As recommended in the recent NRC report “Science at Sea-Meeting Future Oceanographic Goals with a Robust Academic Research Fleet”, this may be an appropriate time for inclusion of our Southern Ocean research fleet under the UNOLS umbrella.

The Division of Ocean Sciences (OCE) of the National Science Foundation (NSF), the Office of Naval Research (ONR), and other Federal agencies support the UNOLS (University National Oceanographic Laboratory System), through funding and logistics, to oversee and coordinate operations of the U.S. Academic Research Fleet. These vessels are owned by NSF, by ONR or, in some cases, by individual institutions. Advice on scheduling, operational guidance, technical support, and data management structures are provided, however, through UNOLS and its member organizations. UNOLS, also serves, through the Arctic Icebreaker Coordinating Committee (AICC), as an advisory body to the NSF and the US Coast Guard for science operations carried out using the Polar class icebreakers and the USCGC *Healy*. In contrast, scheduling and operational coordination between the Southern Ocean vessels and the US Academic Research Fleet coordinated by UNOLS and, by extension, the general ocean research community and its member institutions, is minimal.

While this historically-based mode of operation has functioned reasonably well, shifting priorities, research interests, and programmatic needs suggest that a new model might greatly benefit the oceanographic community. The NRC report recommends that the Office of Polar Programs, the Division of Ocean Sciences, and the U.S. Coast Guard take steps to improve coordination. The UNOLS Council discussed this recommendation at its March 30-31, 2010 meeting. There was broad agreement that UNOLS has highly relevant expertise in the acquisition and operation of research vessels and would like



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to offer to work more closely with the NSF OPP to utilize this expertise in the acquisition and operation of future Southern Ocean research vessels. As the current charter for the *Palmer* nears its end, the NSF and the research community have an opportunity to reexamine and reshape how polar marine research will be supported in the future.

**Specifics:** We are led to understand that the NSF is exploring the purchase of a Southern Ocean research vessel through the MREFC process. The UNOLS Council strongly supports this approach and welcomes further discussion built on the following points:

1. UNOLS would support OPP in a request for MREFC funding, using the model adopted by OCE in the acquisition and operation of R/V SIKULIAQ, for a new UNOLS Southern Ocean RVIB (Research Vessel Ice Breaker) to replace the *NB Palmer*.
2. A Concept Design for a new RVIB would logically build on community efforts similar to those used at present for the UNOLS Ocean Class vessels, using as a starting point Science Mission Requirements. A preliminary design for this ship has already been developed by the ocean science community through community workshops, forming a basis for community efforts to move forward with development of a conceptual design.
3. It would be appropriate for the new vessel, when completed, to apply for entry into the US Academic Research Fleet and be operated under the UNOLS process. This would provide: fleet-wide coordinated scheduling; operator, technical services, and safety exchange forums; and the potential for participation in fleet-wide equipment pools and common services support. Vessel operations would include those currently accomplished by the *Palmer*, but could also potentially increase the opportunity for the vessel to perform other funded science work when not busy with OPP funded research.

**Some Potential Benefits:** We suggest that this approach would benefit all parties involved with acquisition and operation of the new vessel, and offer some specific examples below.

1. Elimination of commercial contracting: Advantages to the contract approach (e.g. low up-front investment) are offset by high lifetime annual cost and by difficulties associated with contract compliance, different levels of accountability, and lack of flexibility. Further, a contract vessel is virtually precluded from obtaining non-NSF supported work to supplement its schedule and, when this does occur, benefits to NSF are minimal.
2. Efficiency of operation: Incorporation of the Southern Ocean vessel into the US Academic Research Fleet can significantly improve the vessel's operational efficiency and thereby enhance the accomplishment of at-sea ocean science research projects. Vessels in the Fleet can be assigned to projects and operating areas as the need dictates. This ability to schedule through the UNOLS process minimizes vessel downtime and, conversely, the chance that a project might be cancelled due to vessel unavailability.
3. Support: Vessels operated under the UNOLS process derive tremendous benefit through sharing and pooling of resources, and the new RVIB would benefit equally from this sharing. This includes group purchases of equipment and services and the pooling of winches, ocean-going vans, hydrographic wire, ocean bottom seismometers, and other oceanographic gear. UNOLS is also conducting an OCE-funded pilot program to explore opportunities for sharing technicians and, at some point in the future, other personnel between institutions so crews are efficiently utilized and gaps in crew availability can be covered.



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In summary, UNOLS strongly supports enhanced collaboration between OPP and OCE as recommended by the NRC Report, and we support discussions on this subject between the two programs. We believe the acquisition and operations approach suggested above provides an optimal means for acquiring a replacement RVIB with the capabilities needed to support the entire ocean science community. This vessel will provide access to Antarctic seas in a way not possible today for the cutting edge research that is essential to understanding the processes related to climate change and the Antarctic ecosystem. UNOLS offers the experience base and the expertise to assist OPP in further defining the many ways in which coordination of polar and other global research activities and the operation of the Southern Ocean vessels that enable the research can be improved to benefit both OPP and OCE. We stand ready to assist in this process, and we would be pleased to meet with you and your staff to discuss these issues in more detail.

Sincerely,

Vernon L. Asper  
Chair, UNOLS (on behalf of the UNOLS Council)

Cc: Dr. Tim Killeen  
Dr. David Conover  
Bauke Houtman