

Date: 6 September 2016
From: UNOLS Council Non-operator Subcommittee (Gregory Cutter, Chair; Mark Brzezinski; Tammi Richardson)
To: NSF and ONR (hereafter ‘the Agencies’)
Subj: Response to document “2017 U.S. Academic Research Fleet Operations Support Findings and Recommendations”
Ref: The above document (submitted to Dr. Chris Measures-UNOLS Chair, 27 July 2016)

The following comments from the UNOLS Council Non-operator Subcommittee are in response to the Agencies’ positions, guidelines, and recommendations as detailed in the “2017 U.S. Academic Research Fleet Operations Support Findings and Recommendations.” The UNOLS Council was also given an opportunity to review this response.

We are happy to see that the Agencies see no need to recommend non-operational periods for any of the UNOLS vessels in CY 2017, but we are keenly aware of the need to continue redefining Full Optimal Year values for every research vessel in the UNOLS fleet. Our comments focus on the Agencies Positions, Decisions and Recommendations, and Guidelines.

Agency Positions.

All Agency positions are essentially identical to those in the past, particularly since the Decadal Survey, and have been commented on in previous Non-operator responses. The Fleet Improvement Committee is paying particular attention to fleet right-sizing, but in this respect is assuming that Service Life Extensions of the two Global Class Vessels, R/V *Revelle* and R/V *Atlantis*, will be funded, as well as the acquisition of (at least) two new Regional Class RVs. Thus, the FIC is beginning initial work on defining the Science Mission Requirements for the next Global class (See comments below).

Agency Decisions and Recommendations.

Recommendation 2 involves outreach to the community with regards to rethinking the way cruises are conceived of as being either major ocean expeditions for the Globals, with 34+ berths, or sub-basin scale cruises with 12-18 scientists. We think that the science verification cruises being completed on R/V *Armstrong*, those just starting with R/V *Ride*, and over a year of full time operations with R/V *Sikuliaq* will provide proof of these vessels’ capabilities. We caution that science capability and berths are not equivalent and that the ability of these vessels to serve large programs will require continued evaluation. Nevertheless, the UNOLS office will need to prepare a “marketing” strategy for these three ships, one that includes an early career cruise to get young scientists familiar with these vessels.



Recommendation 3 has already been embraced by the scientific community and has been fully implemented, and the University of Washington is steadily working on a funding model for the R/V *Barnes* replacement.


Agency Guidelines.

Most of the guidelines listed are identical to those in previous years, but we note that the concept of using a two-ship operation instead of one Global is problematic given that most cruises share samples and sampling systems (i.e., most cruises for Globals are interdisciplinary) so the applicability of this approach would be very limited. We also note that past two-ship operations (e.g., SoFex) have fully utilized the space afforded by two global class vessels (R/V *Melville* and R/V *Revelle*) with similar plans being considered for the 2018-2020 NASA EXPORTS program.

Supporting Information and Findings

Given the sinusoidal variations in ship requests (Figure 4) we have to be careful in interpreting trends, but clearly the fleet utilization (Figure 1) is declining steadily; this appears to be driven primarily by overall funding, not by a lack of scientific initiative (i.e., requests). The decline in Global utilization (Figure 2) since 2012-2013 is probably due to the cycle of OOI, Repeat Hydrography/CLIVAR, and GEOTRACES cruises (e.g., RH and GEOTRACES were on Healy in 2015). It is anticipated that these programs (e.g., planned GEOTRACES Pacific in 2018; OOI global array servicing) and other newly developed ones (e.g., NASA/NSF-funded EXPORTS) will increase Global demand and should shift this trend upward. Moreover, given the ages of the Global class vessels, notwithstanding SLEP, and the long lead time for new ship funding and construction, the FIC has started writing new Science Mission Requirements for replacement Global vessel(s).

Sincerely,



Chris Measures/UNOLS Chair

