National Science Foundation
Office of Polar Programs

United States Antarctic Program
Polar Research Vessel Status Update

UNOLS Council Meeting
November 1, 2018

Tim McGovern
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Antarctic Support Contractor (ASC)
Vessel/Peninsula Integration Effort

Purpose

Why we are here:

Science and budget planning cycle will be impacted by upcoming vessel charter expirations and NSF budget constraints

Goal:

Analyze alternative solutions to integrate station and vessel science operations over the next ten years

Antarctic Support Contractor (ASC)
Vessel/Peninsula Integration Effort

Approach is to look at:
…Moving people with fewer trips to/from station, reducing duration of vessel staying at station
…Vessel alternatives, including extending existing contracts or developing new more capable vessel(s)
…Pier reconstruction, timing and impact to station operations
…How ice and wind may affect station operations without access to pier
…Solid waste storage limitations, hazardous material transportation runs
…One versus two-ship operations
…Science impacts

Report to be submitted to NSF by January 15, 2019

OPP Advisory Committee Ad Hoc Subcommittee
U.S. Antarctic Program's Research Vessel Procurement

Members:

Kim Bernard, kbernard@coas.oregonstate.edu
Amy Leventer, aleventer@colgate.edu
Michael Prince, prince@mlml.calstate.edu
Randy Sliester, ranies@bas.ac.uk
Jim Swift, jswift@ucsd.edu (Chair)
Tom Weingartner, tjweingartner@alaska.edu
(OPP/AC liaison)

Tim McGovern, OPP oversight and assistance


ARSV *Laurence M. Gould* &
RVIB *Nathaniel B. Palmer*

Subcommittee initiated March 2018; report (written) sought September 2018. (Report is not yet complete; current Google doc draft is 94 pages.)

The committee carries out weekly telecons at a standard day and time. These are short in duration and focused. The committee is working diligently and well.

Specific tasks assigned to the subcommittee

1. "Review and verify the continued validity of the UNOLS 2012 Polar Research Vessel Science Mission Requirements, the 2016 NSF/OPP Antarctic Vessels Request for Information, and the 2018 ASC-provided Vessel Studies Reports."

2. "Prioritize each proposed vessel's capabilities and operational requirements."

3. "Consider the two-ship operational model of the US Antarctic Program, and evaluate the advantages and disadvantages of moving to a one-ship operating model."

4. "Engage the broader scientific community to ensure vessel capabilities and characteristics are able to meet a majority of anticipated needs for the duration of the 10-year charter, and possibly for the lives of the vessels (~ 30 years). Elements of the recommended prioritized vessel capabilities should be provided in sufficient detail to enable NSF to make subsequent appropriate adjustments in response to available funding."

5. "Include a summary of the outreach efforts and input received from the science community in the final, submitted report."

Community engagement activities:

The subcommittee prepared a survey to obtain community input on future Antarctic polar marine science and the ship resources required.

The subcommittee assembled lists of names and email addresses to reach. For example, this included all participants-at-sea on *Gould* and *Palmer* cruises.

NSF approved the survey, and the survey was completed, with 91 responses (48% senior scientists, 24% mid-career, 13% early career & post-docs, plus others).

Examples of types information obtained:

What key science drivers coming into prominence – or anticipated to come into prominence – should be taken into account in future ship support for US Antarctic marine science?

Based on experience on USAP and other ships, with what realistic differences in design and outfitting could the *Palmer* and *Gould* have better supported US Antarctic marine science?

Examples of Desired Polar RV Science Features from Past (2012) and Recent Community Input

- Bottom mapping during icebreaking
- Geotechnical drilling capability
- Moon pool (completely enclosed)
  - AUV/ROV
  - Diving
  - CTD rosette
  - Ocean-Bottom Seismograph (OBS)
- Advanced A-frames, winches, cranes
- Enhanced towing in ice
- Accommodation for 50 scientists
- Helicopter complex (deck, hangar, elevator)
- Clear view aft from starboard pilot house control station
- Inter-deck science/cargo elevator
- Box keel with size suitable for growth in sensors

James H. Swift, 01 NOV 2018