



# Polar Research Vessel and UNOLS

UNOLS Council Meeting

June 6-7, 2012





## Polar Research Vessel Committee

Rob Dunbar/Stanford- Chair

Hugh Ducklow/MBL

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Carin Ashjian/WHOI

Larry Lawver/UTexas

Dale Chayes/LDEO

Doug Russell/UW

Dan Oliver/UAK

Maria Vernet/UCSD

Eugene Domack/Hamilton

Bruce Huber/LDEO

Craig Smith/UH

Annette DeSilva & Jon Alberts/UNOLS



## PRV Committee Goals

The key charges to this committee were:

- Update the science questions and review/modify the vessel science mission requirements defined in an ARVOC study conducted between 2002 and 2006
- Articulate and evaluate emerging new science drivers
- Utilize the UNOLS model for developing science mission requirements based on current and broad science community input
- Submit a report to NSF in two stages with an interim report due in August 2011 and a final report due by December 2011



## Workshop- Meetings- Report

- PRV Workshop- NSF Feb 28 & March 1, 2011- 70 participants- Flesh out Science Questions and Drivers
- PRV Committee met in Palo Alto on May 5 & 6 to continue to identify science questions and writing the interim report.
- Interim Report Submitted to NSF/OPP on 31 August 2011, followed by request for community feedback
- UNOLS and PRV are developing science capability tables- Summer/Fall 2011
- PRV met again at NSF on December 1 & 2, 2011.
- Final report submitted to NSF in February, 2012.



## Interim Report- Approach Taken

- Review the Science Questions developed in the 2002-2006 study to determine if still valid.
- Determine new science drivers and grand challenges and attempt to predict out 30 years
- Careful not to get bogged down on science mission requirements, but to identify science capabilities which come out of science questions.

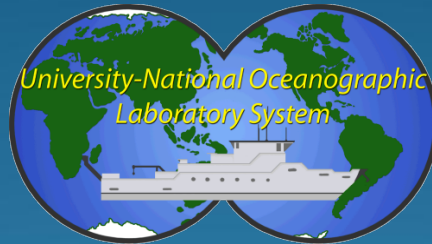


## Grand Challenges

- # 1- The Ice Sheet to Marine Transitions zone- understanding the processes and thresholds at the boundaries between the ice sheet and ocean.
- #2- What is the role of the polar oceans in the global carbon cycle?

## Additional Science drivers

- What is the geologic nature and extent of the polar continental shelves and what natural resources do they contain?
- How do polar organisms respond to environmental change?
- What will be the effects of sea level rise?
- How will unique polar marine ecosystems respond to climate change?



## Specification

- Icebreaking Capability Continuous transit through 4.5 feet sea ice at 3 knots
- Crew and marine technicians plus 45 scientists
- Length Overall ~115m (380 ft)
- Beam ~23m (75 ft)
- Draft ~9m (30 ft)
- Displacement ~ 11,000 LT (11,200 MT)
- Propulsion Horsepower ~16.8 MW (22,400 HP)
- Special features-Box keel, 4m x 4m interior moon pool, lab van capable (4 or 5), helicopter support, 24/7 internet, small boat operations, designed for flexible use of both starboard and port rails for instrument deployment



- [http://www.unols.org/committees/fic/smr/PRV/PRV\\_SMR\\_FinalReport\\_Feb2012.pdf](http://www.unols.org/committees/fic/smr/PRV/PRV_SMR_FinalReport_Feb2012.pdf)





Update: As of 31 May 2012

The PRV report has circulated through the NSF office, including review by the NSF Director and the MREFC panel.

OPP has been instructed to wait until the Blue Ribbon Panel report is published (due mid July 2012) to ensure the report recommends the PRV be developed.

We fully anticipate the report to recommend the PRV and will continue along the MREFC process.