

# Navy Support of UNOLS

Knorr 279'



Melville 279'

Thompson 274'



Atlantis 274'



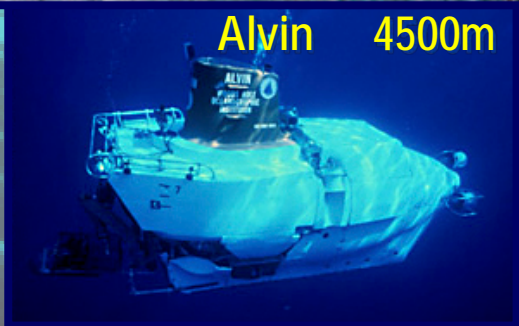
Kilo Moana 172'



FLIP 355'



Alvin 4500m



Revelle 274'



# Issue

- Current Navy POM planning does not support funding Navy portion of UNOLS Fleet Renewal Plan
  - Departure from long-standing Navy participation in Ocean research
  - Focuses virtually all ocean research to near-U.S. areas
  - If funded, plans to do so at the expense of Ocean Science research funds
- This is a fundamental shift in Navy focus and should be decided by Naval corporate leadership

# UNOLS

- University-National Oceanographic Laboratory System is an organization of 61 U. S. institutions formed with the purpose to coordinate oceanographic ships' schedules and research facilities.
- UNOLS was founded in 1972.
- Twenty of the UNOLS institutions are operators of major shared use facilities, including:
  - Research vessels (25)
  - Submersibles
  - Aircraft (piloted and UAV)
  - Major instrumentation

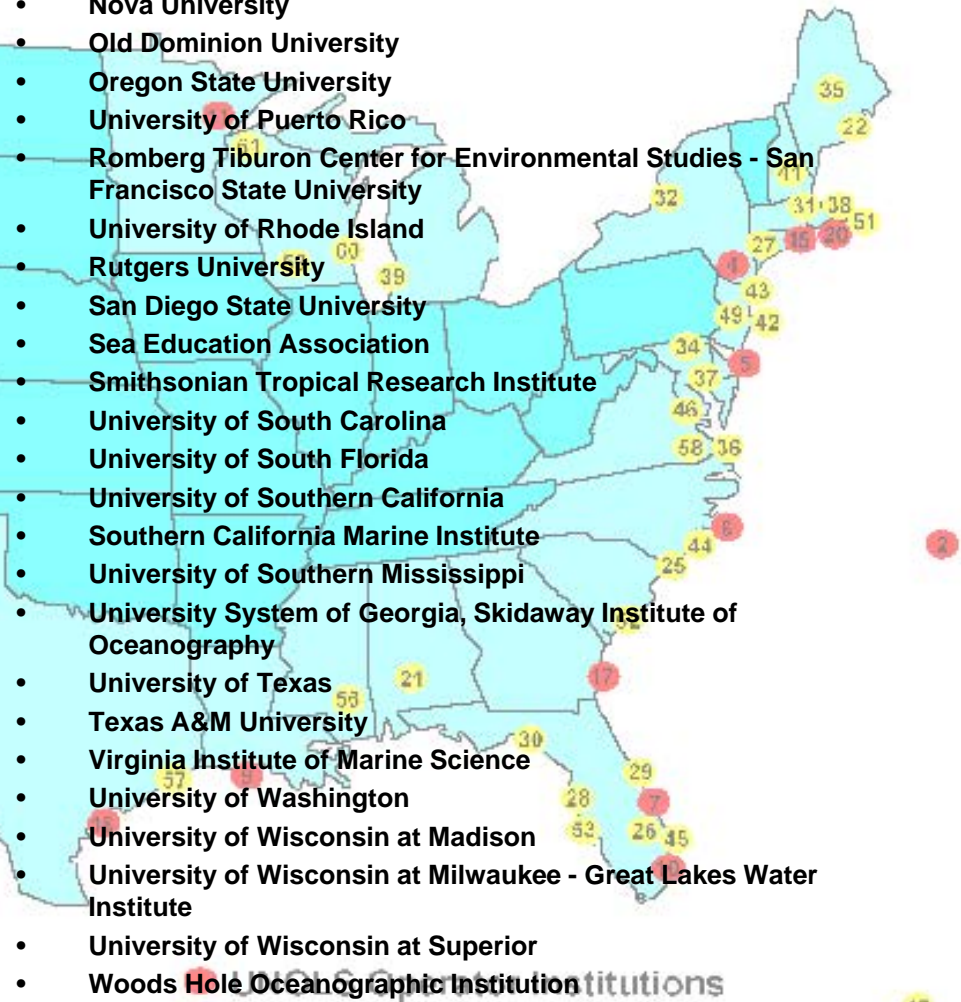
Facilities are either owned by federal agencies or by individual institutions
- UNOLS serves in an advisory role to facility operators promoting best practices and to supporting Federal agencies.
- UNOLS is not a funding agency or a facility operator.

# 61 Member Institutions

## UNOLS Member Institutions

- Alabama Marine Environmental Sciences Consortium
- University of Alaska
- Bermuda Biological Station for Research, Inc.
- Bigelow Laboratory for Ocean Sciences
- University of California, San Diego, Scripps Institution of Oceanography
- University of California, Santa Barbara
- University of California, Santa Cruz
- Cape Fear Community College
- Caribbean Marine Research Center (Perry Institute for Marine Science)
- Columbia University, Lamont-Doherty Earth Observatory
- University of Connecticut
- University of Delaware
- Duke University/University of North Carolina
- Florida Institute of Oceanography
- Florida Institute of Technology
- Florida State University
- Harbor Branch Oceanographic Institution
- Harvard University
- University of Hawaii
- Hobart & William Smith Colleges
- Humboldt State University Marine Laboratory
- The Johns Hopkins University
- Louisiana Universities Marine Consortium
- University of Maine
- The Marine Science Consortium
- University of Maryland
- Massachusetts Institute of Technology
- University of Miami, Rosenstiel School of Marine & Atmospheric Sciences
- University of Michigan
- University of Minnesota, Duluth
- Monterey Bay Aquarium Research Institute
- Moss Landing Marine Laboratories
- Naval Postgraduate School
- \*National Oceanographic Aircraft Facility Operator

- University of New Hampshire
- New Jersey Marine Sciences Consortium
- State University of New York at Stony Brook
- University of North Carolina at Wilmington
- Nova University
- Old Dominion University
- Oregon State University
- University of Puerto Rico
- Romberg Tiburon Center for Environmental Studies - San Francisco State University
- University of Rhode Island
- Rutgers University
- San Diego State University
- Sea Education Association
- Smithsonian Tropical Research Institute
- University of South Carolina
- University of South Florida
- University of Southern California
- Southern California Marine Institute
- University of Southern Mississippi
- University System of Georgia, Skidaway Institute of Oceanography
- University of Texas
- Texas A&M University
- Virginia Institute of Marine Science
- University of Washington
- University of Wisconsin at Madison
- University of Wisconsin at Milwaukee - Great Lakes Water Institute
- University of Wisconsin at Superior
- Woods Hole Oceanographic Institution



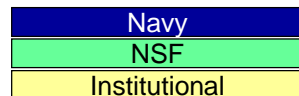
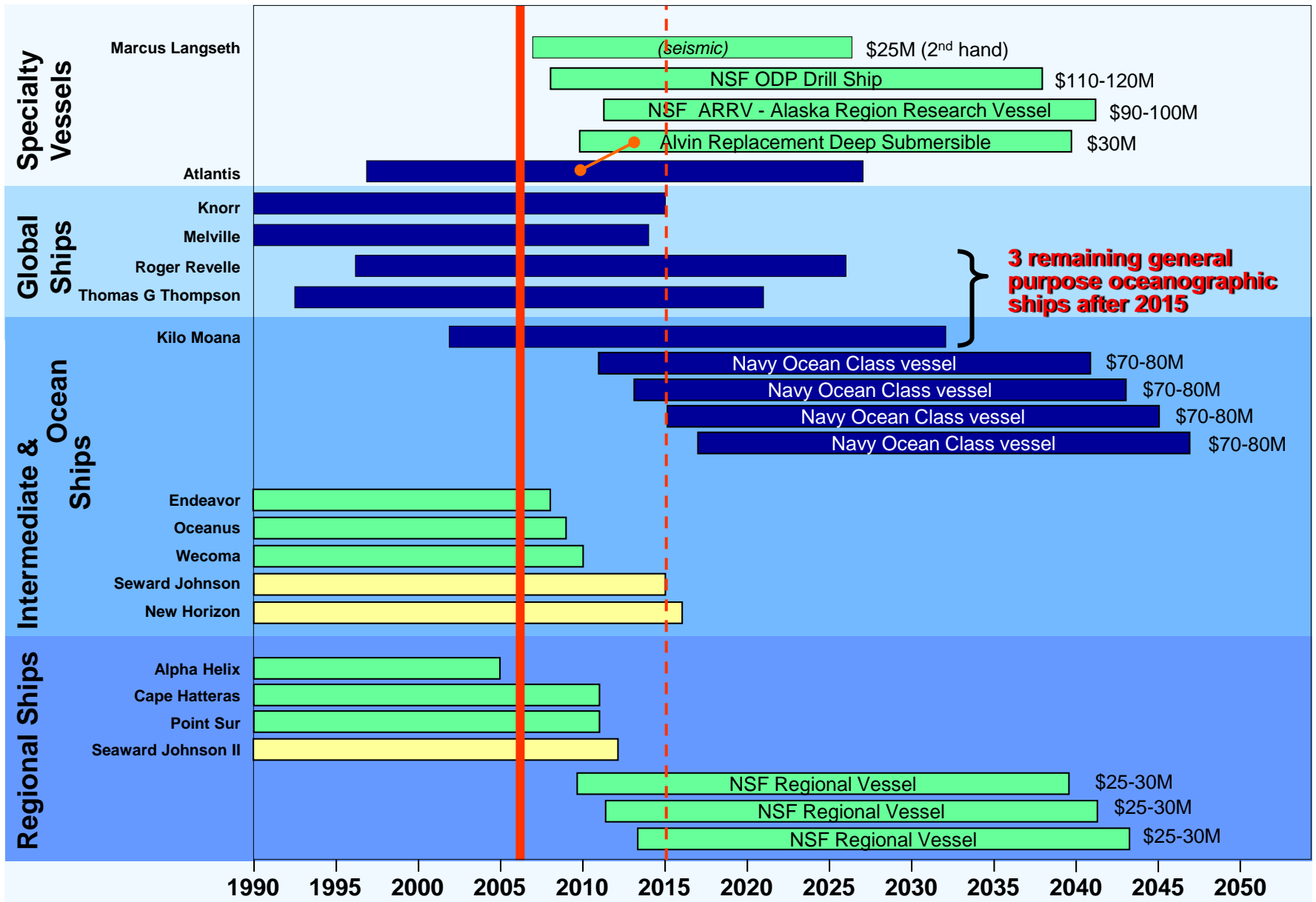
UNOLS Non-Operator Institutions

# UNOLS SHIPS

Owners: **NAVY** **NSF** OTHER

SHIP/CLASS	Operator	Owner	BUILT	Mid-Life	LOA ft (m)	SCI. BERTHS
<u>Global Class</u>						
• Melville	SIO	NAVY	1969	1991	279 (85)	38
• Knorr	WHOI	NAVY	1970	1989	279 (85)	34
• Thomas Thompson	UWASH	NAVY	1991		274 (84)	38
• Roger Revelle	SIO	NAVY	1996		274 (84)	37
• Atlantis	WHOI	NAVY	1997		274 (84)	37
• Marcus G. Langseth	LDEO	NSF	1991	2006	235 (72)	35
<u>Ocean Class</u>						
• Kilo Moana	UHAWAII	NAVY	2002		186 (57)	30
<u>Intermediate Class</u>						
• Seward Johnson	HBOI	HBOI	1985	1994	204 (63)	29
• Wecoma	OSU	NSF	1975	1994	185 (56)	18
• Endeavor	URI	NSF	1975	1993	184 (56)	18
• Oceanus	WHOI	NSF	1975	1994	177(54)	15
• New Horizon	SIO	SIO	1978	1996	170 (52)	19
<u>Regional Ships (FOFC Plan)</u>						
• Point Sur		MLML	NSF	1981	135 (41)	12
• Cape Hatteras	DUKE	NSF	1981	2004	135 (41)	14
• Alpha Helix	UAK	NSF	1966	1984	133 (41)	15
<u>Other Regional and Local Ships</u>						
• Hugh R. Sharp	UDEL	UDEL	2005		146 (44)	16
• Robert Sproul	SIO	SIO	1981	1985	125 (38)	12
• Pelican	LUMCON	LUMCON	1985	2003	116 (36)	17
• Longhorn	UT	UT	1971	1986	103 (32)	12
• Walton Smith	UMIAMI	UMIAMI	2000		96 (29)	16
• Urraca	STRI	STRI	1986	1994	96 (29)	10
• Savannah	SKID/UG	SKID/UG	2001		92 (28)	14
• Blue Heron	UMINN	UMINN	1985	1999	86 (26)	5
• Clifford Barnes	UWASH	NSF	1966	1984	66 (20)	6

# UNOLS Fleet Renewal Notional Plan



# Academic Oceanographic Research Fleet Background

- ADM Burke (1 Jan 1959) endorses TENOC plan to expand academic oceanography including research, installations, shipbuilding. (Result – R/V's Conrad, Thompson, Washington, Knorr, Melville, Gyre, Moana Wave)
- Understanding between NSF and Navy since 1972 (UNOLS formation) to jointly contribute large ship infrastructure and operational costs of academic research fleet.
- ADM Watkins/ Secretary Lehman (1983-1984) understanding for development of AGOR-23 Class (R/V's Thompson, Revelle, Atlantis).
- Chief of Naval Research and National Science Foundation agreed to implement National Academic Research Fleet Long-Range Plan for Renewal.
  - UNOLS Annual Meeting September 2002:
    - Dr. Rita Colwell, Director, National Science Foundation: NSF planning to go forward with Regional Class Ship, Alaska Region Research Vessel, Ocean Observatories project, and International Ocean Drilling Program project.
    - RADM Jay Cohen, Chief of Naval Research: The Navy would like to be able to support construction of the Ocean Class ships.

# SECNAV Report to Congress

- The FY2003 House Armed Services Committee Report (House Report 107-436) called for a report for the renewal of the Ocean and Regional Classes of the academic research fleet, *“The committee recognizes the age of the UNOLS fleet and the need for a rational plan for renewal of the fleet over the next ten years. Therefore, the committee directs the Secretary of the Navy to submit ...**a report detailing specific requirements and outlining a specific plan for UNOLS fleet renewal.**”*
- The SECNAV report stated, *“Although the Department of the Navy was unable to fund the Ocean Class vessels in the President’s FY04 budget request due to higher priorities, the **current plan is to select a single hull form in FY04 and address Ocean Class ship construction ...starting in FY06** at the \$63M to \$80M funding level depending on final hull form selection and **overall Navy program priorities.**”*



# Navy Academic Research Fleet Background

- Navy-owned academic vessels are the largest and most capable.
- Since WWII, Navy has purchased 11 academic research ships:

Name	Service	Funds
– AGOR-3 <i>Robert D Conrad</i>	1962-1989	SCN
– AGOR-9 <i>Thomas Thompson</i>	1965-1990	SCN
– AGOR-10 <i>Thomas Washington</i>	1965-1992	SCN
– AGOR-14 <i>Melville</i>	1969-	SCN
– AGOR-15 <i>Knorr</i>	1970-	SCN
– AGOR-21 <i>Gyre</i>	1974-1994	SCN
– AGOR-22 <i>Moana-Wave</i>	1973-2000	SCN
– AGOR-23 <i>Thomas Thompson</i>	1991-	SCN
– AGOR-24 <i>Roger Revelle</i>	1996-	SCN
– AGOR-25 <i>Atlantis</i>	1998-	SCN
– AGOR-26 <i>Kilo-Moana</i>	2002-	RDT&E Congressional (2 authorizations)

# FY06 Congressional Direction on Ocean-Class Shipbuilding

- CONFERENCE REPORT ON H.R. 1815, NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2006 -- (House of Representatives - December 18, 2005)
- *“While the Ocean-class research vessel provides the Navy with a robust understanding of its battlespace, diversion of fundamental science funds to design and construct such ships would adversely affect the goals of the innovative research account and is an **inappropriate use for scarce Navy basic research funds.**”*
- *“Released with the fiscal year 2006 budget request, the fiscal year 2007 budget projection included \$25.0 million for UNOLS ship construction. The conferees **direct the Navy to request ship construction funds in the Shipbuilding and Conversion, Navy (SCN) account.** The committee expects that the Navy will continue to use the SCN account to provide for the recapitalization of Ocean-class research vessels in the future-years defense program.”*

# Advantages to Partnering on Oceanographic Ship Operations

- Informal agreement for Navy to purchase ocean class ships and NSF to purchase Regional and Specialty Ships.
  - Ocean Class Ships primarily used by Navy to conduct research in Navy areas of interest.
  - Regional/Specialized Ships primarily used by NSF & others for research near U.S.
- Partnering with NSF & others results in significant costs savings to Navy S&T. \$13.2 each year of operations because
  - ability to appropriately size ship for mission
  - share costs of mission equipment
  - share transit costs
  - avoid rentals and achieve multiship at-sea trials
  - consistently operate at lower costs than rentals or Mil Sealift Com
- UNOLS investment consistent with POM-08 Specific Guidance to *“focus S&T investment to increase our capabilities in the areas of ... ASW.”*

# Navy days limited to Navy owned vessels, 2006 schedule

- Present schedule is 778 days for 2006
  - GLOBAL Days (178) \$5,451,790
  - Intermediate Days (269) \$5,223,723
  - Regional Days (212) \$2,587,126
  - Local ship Days (119) \$732,191
  - **Total cost to Navy: \$13,994,380**
- If these days were all on GLOBAL/OCEAN class ships.
  - **778 Days \$23,792,150**

# Ship cost comparison

Ship Source	Op Day cost	Mission Equipment <sup>1</sup>	Total Cost for 30 day mission <sup>2</sup>
<b>UNOLS</b>	<b>\$30K/Op day</b>	<b>All Included</b>	<b>\$900K total cost</b>
<b>NAVOCEANO White ship</b>	<b>\$35K/Op day</b>	<b>Multibeam, CTD and Hydro winch included</b>	<b>\$1,317,000 Total cost</b>
<b>Chouest Leased Ship</b>	<b>\$33K- \$41K/Opday</b>	<b>No Mission equipment Included</b>	<b>\$2,400,240 Total cost<sup>3</sup></b>

1) Mission Equipment is defined as including: Multibeam Sonar, Hydrographic winch with 10,000 M of E/M wire, Doppler Speed Log, Satellite Communication system, Sub-bottom Acoustic profiler, Acoustic Doppler Current Profiler, Met Data Acquisition system and

2) Total mission includes all ship costs, fuel, food and supplies, leasing costs, shipyard installation and removal costs of mission equipment. Cost estimates were from N775 SSBN Force Security estimates and Edison-Chouest Offshore.

3) \$33,000 base day rate assumed for Chouest ship. Shipyard costs would amortize over a longer lease period and reduce effective day rate

# Value of Navy participation in UNOLS 2001 - 2006

- Ability to properly size ships to projects \$46.3M
  - Leverage of Mission equipment purchased by NSF for installation on Navy ships. \$7.9M
  - Leverage of partnering with NSF on transoceanic projects (Conservative) \$3.2M
- Total savings to Navy: \$57.4M**

# Conclusion

- The Academic Research Fleet is important by allowing the Navy to remain a key player in ocean science research and promote ASW focused science & technology research.
- UNOLS promotes efficient use of the ships which lowers overall operational cost to Navy ocean research.
- Partnering with NSF returns significant funds for Naval S&T
- Historically funded by SCN Funds – Funding at the expense of research funds does not make sense

# Recommendation

- Direct construction of 3-4 ocean class ships as corporate SCN requirement beginning in FY08 (FY08, FY10, FY12, FY14)
- Do not reduce ocean research S&T to fund SCN costs of the ships