



The latest addition to the UNOLS fleet, R/V Marcus G. Langseth

2007 Annual Report

Message from the UNOLS Chair

The Continuing Value of UNOLS

Recently I was asked by the officers of the Board of the Consortium for Ocean Leadership to provide a brief history of support for major facilities in the ocean science community as part of an exercise for preparing the Board for having to make difficult choices among facilities that are requiring progressively more of the research budget for ongoing maintenance and operation. That exercise gave me an opportunity to reflect on the rationale that led to the establishment of UNOLS in the early 1970s, and with the Office up for recompetition at the moment, what the continuing rationale is for an organization like UNOLS.

For those of you too young to remember, the roots of what ultimately became UNOLS began in the recommendations of the Stratton Commission to create an association of institutions that would coordinate ship scheduling and planning, with some assurance of multi-year funding for ship operations. Originally, there were two versions of the plan: one put the management authority in the hands of the oceanographic institutions and the other at the National Science Foundation. When UNOLS was formed in 1971, the 18 academic institutions operating the 35 ships in the academic fleet were responsible for management and operations.

Over the years, UNOLS has grown to 61 members, the vast majority of which are not and never have been ship operators, but truly reflect the community of ship users. There is a very different “feel” to UNOLS because it is an organization of and for the members, as opposed to being, for example, merely an advisory committee structure to a federal agency. Within the constraints of the resources available to support UNOLS activities, the organization decides

what committees to establish and what issues to address. Although traditionally hosted at an academic institution, the UNOLS Office acts even-handedly on behalf of the entire community of ship users and other UNOLS facility users to be responsive to their needs, in both a reactive and proactive sense. UNOLS is a lean academic organization that is recompeteted frequently, assuring fresh ideas enter the organization not only through the elected leadership, but also in the executive office.

The near-term future for UNOLS, and all organizations with oversight over oceanographic facilities, will be difficult. The National Science Foundation and other federal agencies have struggled mightily to keep their part of the bargain that grew out of the Stratton Commission, that the fleet would be assured multi-year funding, but it has been increasingly difficult with the federal budget deficit situation. For UNOLS to continue to serve its community, it will have to do more than just its historic functions of scheduling and managing facilities. It will have to take on a larger role in helping to set priorities through its ability to reach out to the community of facility users. If UNOLS fails to take on this responsibility, and engage in a meaningful way with other facilities operators, I fear that the task will be done for us, and UNOLS will be increasingly irrelevant as it continues to manage an ever shrinking and less capable asset pool. The choice is ours to make, but we cannot delay.



*Marcia McNutt
UNOLS Chair*

Monterey Bay Aquarium Research Institute

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- **Scientific Committee for Oceanographic Aircraft Research Meeting – via Teleconference**

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April 2007

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FORWARD

We would like to once again thank the many UNOLS Committee members who devoted much time and effort to support the UNOLS mission of working cooperatively to improve access, scheduling, operation and capabilities of current and future academic oceanographic facilities. The committee minutes and presentations in this report reflect their many hours of dedicated service to the UNOLS Community.

Special thanks also to the Federal Agency Representatives at the National Science Foundation, the Office of Naval Research, the National Oceanic and Atmospheric Administration, U.S. Coast Guard, U.S. Geological Survey, and the Minerals Management Service for their ongoing support.

- Mike Prince, UNOLS Executive Secretary



UNOLS Vision and Mission Statements

Vision - *The US Ocean Science research and education programs are healthy and vigorous, thanks to broad access to the best possible mix of modern, capable, efficiently run, and well-operated research vessels, aircraft, submersibles and other major shared-use facilities.*

Mission - *UNOLS provides a primary forum through which the ocean research and education community, research facility operators and the supporting federal agencies work cooperatively to improve access, scheduling, operation, and capabilities of current and future academic oceanographic facilities.*



UNOLS Elections held in October 2007

The following persons were elected to terms
on the UNOLS Council:

- Dr. Nancy Rabalais, Louisiana Universities Marine Consortium - Elected as At-Large Representative
- Dr. John Morrison, University of North Carolina Wilmington - Elected as Non-Operator Representative

Arctic Icebreaker Coordinating Committee

Carin Ashjian, Chair &
Margo Edwards, Committee Member

USCGC Healy completed a dry dock period in February 2007 and conducted sea trials and a shakedown cruise in March, before sailing in early April to start the 2007 science missions. Three cruises took place in 2007. The first program was carried out from April 10 to May 12 in support of the Bering Ecosystem Study (BEST). Ray Sambrotto, (Lamont-Doherty Earth Observatory) was the Chief Scientist. This cruise was followed by Jackie Grebmeier's program on May 16 to June 14 to study Benthic Predators in the Northern Bering Sea. At the completion of the second cruise, no operations were planned until August and *Healy* returned to Seattle for the unscheduled period. The last cruise of the season was scheduled for August 17 to September 15 in support of Larry Mayer's Multibeam Sonar Mapping program.

Both the AICC and the USCG worked to communicate the 2007 *Healy* science plans with local Alaskan communities. *Healy's* Captain, Ted Lindström traveled to Barrow, Alaska in mid-February 2007 to meet with local community leaders, whaling captains, scientists, the chair of the Alaska Eskimo Whaling Commission (AEWC; Harry Brower), and the president of the Barrow Whaling Captains Association (Eugene Brower). The visit was very successful. On February 28th, scientist representatives from each of the 2007 cruises, Dave Forcucci (USCG, *Healy* Science Liaison), and Carin Ashjian (AICC Chair) attended the AEWC Mini-Convention at the invitation of the AEWC chair to present plans for *Healy's* science activities in 2007. The meeting went very well and efforts to enhance communications were welcomed.

A small "Icebreaker Retreat" was held December 7th and 8th, 2006 at the USCG Base in Alameda, CA and was attended by

representatives from the AICC, science users, USCG, NOAA, and NSF. The goal of the retreat was to continue to strengthen interactions between the USCG and the science community. The discussions at the retreat were geared toward "big picture" issues such as the future of the USCG fleet of icebreakers, integrating science and USCG missions and how to improve communications at all levels within science and USCG hierarchies. Several recommendations resulted from the retreat, the most relevant to UNOLS being that a workshop be held to identify science priorities on polar icebreaking needs in response to the National Academy of Science report, "*Polar Icebreaking Roles and U.S. Future Needs: A Preliminary Assessment*" (Published 2005).

The AICC held a regular meeting in Seattle on January 9-10, 2007. During the meeting, outgoing AICC Chair, Margo Edwards, received the USCG Distinguished Public Service Award, that service's top civilian public service award. There were a few membership changes. Robin Muench replaced Robert Bourke, Kate Moran replaced Margo Edwards, and Carin Ashjian replaced Margo Edwards as Chair of the AICC. Steve Hartz replaced Dale Chayes as the Research Vessel Technical Enhancement Committee's (RVTEC's) liaison to AICC.

In other icebreaker news, USCGC *Polar Sea* supported Deep Freeze in 2007, together with the Swedish icebreaker *Oden*. The *Polar Sea* departed Seattle on November 18, 2006 and arrived at McMurdo on January 1, 2007. The *Oden* made the first pass through the first year ice and *Polar Sea* followed, widening the channel. Favorable offshore wind conditions blew ice out of the ship channel, making operations easier. *Polar Sea* departed McMurdo in mid-February, arriving back in Seattle in April, 2007. *Polar Star* remains in caretaker status at the USCG Base in Seattle.

Deep Submergence Science Committee

Deborah Kelley, Chair

The annual DESSC community meeting for 2006 was held on November 9th at the Seattle Aquarium and coincided with the Western Society of Naturalists (WSN) annual meeting. This forum was selected in an attempt to better reach and engage the deep submergence biologists. The WSN Student mixer immediately followed the DESSC meeting, and DESSC members Deb Kelley and Craig Young were invited as their guest speakers. Although the DESSC meeting attendance was light, the WSN Student mixer was very well attended by about 100 students. NSF has requested that DESSC continue to alternate their winter meetings between the American Geophysical Union (AGU) meeting in San Francisco and a national biology meeting. The committee will explore biology forums to determine which meetings would potentially attract the most interest and participation of biologists to the DESSC meeting. Suggestions are welcome.

The spring DESSC meeting was held in late May 2007 at Woods Hole Oceanographic Institution. The agenda was very full with open discussions between the Committee and the National Deep Submergence Facility (NDSF) Operator on vehicle and system operations, desired improvements, and planned upgrades. Facility tours were provided of the Hybrid Remotely Operated Vehicle, *Nereus*; Autonomous Underwater Vehicle, *Sentry* (both under fabrication); and the Advanced Imaging and Visualization Laboratory.

In mid 2007, community feedback was solicited on the design for the Remotely Operated Vehicle (ROV), *Jason*. WHOI planned to replace the *Jason 2* control vans at the end of the 2007 season. Feedback on the van layout and features was desired and an online survey to gather van input was made available. The community and

DESSC feedback resulted in a van design that better engages the science party in the ROV operation.

Fleet Improvement Committee

Dave Hebert, Chair

The Fleet Improvement Committee continued to focus its efforts on producing an updated UNOLS Fleet Improvement Plan. FIC worked with the Federal Interagency Working Group on Facilities (IWG-F), formally known as the Federal Oceanographic Facilities Committee (FOFC), who were also developing a fleet renewal plan for federally owned research and survey vessels. The larger vessels of the UNOLS Academic Fleet (Global, Ocean, Intermediate, and Regional ships) are only one component of the federal fleet. However, the UNOLS fleet also includes smaller and institution-owned vessels not considered by IWG-F.

In order to make consistent projections of the capabilities of the fleet, IWG-F and FIC agreed to have a uniform classification of the different vessels based on their mission capabilities. FIC and IWG-F agreed to keep the Global Class as is with a full-operating year (FOY) defined as 300 days. The Ocean Class vessels, at this time, the *R/V Kilo Moana* and the Alaska Region Research Vessel (ARRV), have a FOY of 275 days. The present Intermediate Class, whose vessels are projected to retire within the next decade, would use 250 days for a FOY. The Regional Class vessels, which include the three new planned National Science Foundation (NSF) vessels, would have a FOY of 200 days. It was decided to also include the *R/V Atlantic Explorer*, *R/V Cape Hatteras* and *R/V Point Sur* in this class. The other two classes of vessels are not considered in the IWG-F report. FIC placed the *R/V Pelican*, *R/V Sharp*, *R/V Sproul*, and *R/V Walton Smith* in a group called the Regional/Coastal Class since they don't meet the Science Mission Requirements (SMRs) of the Regional Class. Their FOY would be

180 days. The other class of vessels is the Local Class with a FOY of 110 days.

Another area that was addressed by both FIC and IWG-F, was defining the start and end years for vessel operations. It was necessary to have a consistent method of determining when a vessel enters the fleet and begins research operations and when the vessel ends service. It was decided that if a vessel operated for at least one day in a particular year, it would be counted as operating during that year. Thus, in 2005, when both groups started to work on fleet renewal plans, there were 27 vessels operating in the academic fleet of which 17 were in the IWG-F plan. In 2007, there were 23 UNOLS vessels of which 15 were also included in the IWG-F plan. Federal Fleet renewal plans include construction of the ARRV and three Regional Class vessels by NSF and plans by the Navy to build two Ocean Class vessels. With these planned new vessels and the retirement of all of the Intermediate Class vessels, the *R/V Knorr* and *R/V Melville* by 2017, the academic fleet portion of the IWG-F plan would consist of 12 vessels. The overall UNOLS fleet would be 18 vessels at this time.

While the IWG-F draft fleet plan was in review, it was determined that the report should be a federal fleet status report. This decision does not affect the content with respect to the academic fleet.

The Fleet Improvement Plan consists of three major sections. The first section describes the scientific initiatives and their requirements for use of research vessels, as well as the features that these vessels should have, to meet the scientific goals. The second section consists of explaining what UNOLS is, a description of present UNOLS facilities, how these facilities are scheduled and past trends in fleet utilization. In 2007, FIC held several teleconferences to discuss these sections of the plan. The final section makes projections of future utilization and requirements to meet scientific needs. FIC is considering what

additional requirements would be needed beyond the current fleet renewal plans if there is increased funding in the oceanographic research budget.

FIC continues to stay abreast of the Ocean Observatory Initiatives (OOI) design efforts and its projected facility support requirements. In 2007, the OOI Office provided FIC with updates on ship time needs for installing and maintaining the observatories systems.

While work of the Fleet Improvement Plan has taken most of the committee's time, FIC has also been involved in other fleet renewal efforts: NSF and PEO-Ships placed a stop-work order on the Phase I designs of the Regional Class Research Vessel (RCRV) when initial cost estimates came in higher than the amount of funds available. With consultation of the Regional Class Technical Advisory Group (who represent the oceanographic community in the competitive design process), several modifications to the design specifications were made. NSF and PEO-Ships presented the revised specifications to FIC for comment in early January 2007. FIC agreed with the modifications to the performance specifications. As mentioned earlier, the Navy plans to build two Ocean Class research vessels. ONR asked FIC to review the UNOLS Ocean Class SMRs that were drafted in 2003 to ensure that they still adequately represent the future requirements for this class of vessels. FIC reviewed the document and provided an updated version in August 2007 <http://www.unols.org/committees/fic/smr/ocean/ocsmr_version_1.html>. FIC was also kept informed on the progress of the conversion of the *R/V Marcus Langseth*.

A FIC subcommittee, led by Terry Whitlege, drafted guidelines that address the 'Americans with Disabilities Act' (ADA) on UNOLS vessels. Review of the draft document began in the fall 2007. Once adopted, FIC will incorporate the ADA guidelines into the SMRs.

With the completion of SMRs for the Regional and Ocean Classes, FIC decided that the Global Class SMRs should also be updated. A subcommittee was formed and



a request for input on desired capabilities for these vessels was sent out to the community. The response was not overwhelming. Thus, one last call for input was conducted in

2007.

For the initial years of *R/V Kilo Moana* operation, FIC conducted debrief interviews of the chief scientists of the ship in order to better understand how oceanographic operations should be conducted from a SWATH vessel. One concern that had risen was the 'load handling system' (e.g., CTD operations) from such a platform. The University of Hawaii moved forward to acquire a new over-the-side handling system for *R/V Kilo Moana* that will allow a hands-free deployment and recovery of the CTD. The *R/V Kilo Moana* is awaiting the delivery of their system. A similar handling system has been installed on University of Delaware's ship, *R/V Hugh R. Sharp*. Since this is a new system to the Fleet and because the *R/V Hugh R. Sharp* has other new systems to UNOLS (e.g., a dropped transducer centerboard), FIC has decided to conduct debriefs of the chief scientists to determine the capabilities and performance of these systems and any 'lessons learned' for consideration in future vessel construction.

Finally, FIC suggested that UNOLS establish a web page where students and others can request to be science participants (e.g., watch keepers) on oceanographic research cruises and for chief scientists to advertise opportunities on their upcoming expeditions. This has been implemented and there is a link to the cruise opportunity website on the UNOLS homepage.

The Committee membership status is as follows: Dave Hebert is Chair of FIC. Toby Garfield, Jim Bauer, and Clare Reimers are serving second terms. Jim Cochran started his second term on FIC in October 2007. Two new members, Maureen Conte and Al Hine, joined FIC in 2006. Ex-officio members include Al Suchy representing RVOC and Marc Willis representing RVTEC. In September 2007, David Checkley from the University of California San Diego became the newest FIC Committee member. Terry Whitledge ended his second term on FIC in fall 2007. His many contributions to the committee and UNOLS over the years have been greatly appreciated. We will miss his dedication and enthusiasm.

Ship Scheduling Committee **Elizabeth Brenner &** **Rose Dufour, Co-chairs**

The start of the 2008 academic research vessel scheduling began in spring 2007. Letters of Intent (LOIs) are begun by schedulers by May 15th (to coincide with the May NSF panel meetings). Once LOIs were formulated, the intent was to coordinate a meeting with schedulers of Global/Ocean Class vessels, using video conferencing. The schedulers met at SIO, while program managers gathered at NSF.

The Intermediate/Regional/Local Class ship schedulers also spent time working through their LOIs during conference calls in July 2007. Again, respective east and west coast institutions worked together in order to optimize the opportunities by working closely on development of their draft/LOI schedules.

This scheduling process culminated in an all hands September 2007 Ship Scheduling meeting in Arlington, Virginia. The backdrop for the 2008 LOIs and schedules was the use of UNOLS's new Scheduling and Ship Time

Request System. Many of the schedulers were able to beta test the system, and have suggested minor adjustments. Overall, schedulers are finding this system user friendly, and a vast improvement with the integration of various sources of information brought together in this format.

An early appraisal of the UNOLS ship time request spreadsheet indicated a 2008 projection at 3594 ship days. This is roughly the equivalent projection seen last year at this time for 2007 ship days. The steady increase from 2006's 3500ish days to the current total of 4240 ships days was mostly the result of ONR "plus-up" money, mainly supporting *R/V Melville* in the Western Pacific, NSF's internal monetary shifts, and some NOAA/DART (Deep-ocean Assessment and Reporting of Tsunamis) support. The balance came from various additions throughout the fleet, which normally happens during the course of scheduling. However, some of the increase came from ship day additions that are unlikely to be duplicated, specifically 32 days from India's National Institute of Oceanography and the University of California's support of *R/V Revelle* for 68 days. This all took place in 2006 for 2007 schedules.

In this post 9/11 era, foreign clearances can be a full time job for institutions that work abroad. In 2007, some of the UNOLS vessels experienced difficulty in obtaining foreign clearances or had a complicated time in securing clearances. For example, the Department of State was involved with expeditions at sea, helping scientists determine EEZs confusion in real-time. In many instances, changes were made in the cruise plans while at sea to accommodate the inability to work in foreign EEZs. A need for a thorough understanding at the pre-cruise stage of potential conflicted areas would help in avoiding last minute changes. These changes can have a varying degree of inconvenience, from foreign observers onboard expecting data (*R/V Roger Revelle's* Bangladesh clearance) to cruises postponed

altogether weeks before the start of cruise (*R/V Seward Johnson's* Venezuelan clearance). An EEZ mapping tool that the US Department of State Geographer has shared with us can be found at: <http://www.vliz.be/vmcddata/marbound/>. This searchable database can plot coordinates, giving an output of EEZ claims.



Finally our term as co-chairs of the Ship Scheduling Committee expired in October 2007. We would like to thank the ship scheduling community for their support during the past four years. It has been a true honor and a learning experience to serve the community, especially during these rather tricky years of budget shortfalls. Stan Winslow became the new SSC chair in fall 2007.

Research Vessel Operators' Committee Matt Hawkins, Chair

The 2007 Research Vessel Operator's Committee (RVOC) meeting was hosted by Florida Institute of Oceanography (FIO) on April 24–26, 2007. The agenda was full and provided for a productive meeting. Keeping with recent tradition, the meeting kicked-off with a presentation by guest-scientist Rick Cole (University of South Florida College of Marine Science, FIO). Learning about

the science that takes place aboard UNOLS vessels has been a welcome addition to the RVOC meetings. Reports from agency representatives, committee liaisons, the UNOLS Risk manager, and foreign operator representatives, as well as, status reports on group purchases, research vessel updates, and safety statistics filled day one of the meeting.



An interesting and informative presentation was made by Captain Dave Shoemaker. Captain Shoemaker was one of 23 survivors of the fishing vessel *Galaxy* that exploded, burned and ultimately sank in the Bering Sea five years ago. Other important agenda items were Transportation Workers Identification Credentials (TWIC), a winch and wire update, and discussions on progress to establish wire and cables safe working loads. Mr. Patrick Laffin, of the Federal Bureau of Investigation (FBI) presented an awareness talk on “Intelligence Threat.”

A special session for all marine managers, directors, superintendents, and funding agency representatives was held on the morning of the third day. The topic was “Lean Six Sigma in Ship Operations” presented by Dr. Bahadir Inozu, Chief Executive Officer for Novaces, LLC. The primary goal was to demonstrate Lean Six Sigma methodology (improve work place, meet goals, better serve customers) to UNOLS Operator Members.

In other activities, the RVOC continues work on updating the Research Vessel Safety Standards. The Committee conducted chapter reviews via phone and web conferencing on an almost weekly basis during the winter

months. They met in April 2007 to finalize revisions and updates to the document.

Scientific Committee for Oceanographic Aircraft Research

Mike Prince
UNOLS

The Scientific Committee for Oceanographic Aircraft Research (SCOAR) last met on November 13, 2006 via phone conference. They continued discussions about a better method for disseminating information about the nation’s fleet of research aircraft and about getting scheduled on one. Much of the SCOAR meeting focused on NSF’s atmospheric science facilities assessment activities. An NSF Facilities Assessment sub-committee on airborne platforms has been formed and is co-chaired by Bruce Albrecht (U. Miami/RSMAS) and Jeff Stith (NCAR/RAF). Bruce Albrecht participated in the SCOAR meeting and explained the subcommittee tasking. One of their goals will be to establish a web-based site that provides information on atmospheric science facilities and instrumentation as a resource for the atmospheric science community. SCOAR expressed interest in a facility/instrumentation webpage and will continue communications with the Facility Assessment sub-committee to determine how oceanographic aircraft facilities can be included in their resource listing.

The SCOAR has had some membership changes and will be seeking new members. Charlie Flagg, an inaugural member of SCOAR, has completed his service to the Committee. The Committee Chair position is currently open.

Marcus Langseth Science Oversight Committee

W. Steve Holbrook, Chair

In early 2007, *R/V Marcus Langseth* was moved from a shipyard in Nova Scotia, Canada to Galveston, TX for completion of conversion work and scientific outfitting. *R/V Langseth* is a modern seismic vessel that was acquired by NSF and will be operated by Lamont-Doherty Earth Observatory (LDEO) as a National Oceanographic Seismic Facility.

The newest UNOLS Committee, the Marcus Langseth Science Oversight Committee (MLSOC), visited the ship in Galveston and held their first official meeting on March 19, 2007. The Committee, Chaired by Steve Holbrook (U. Wyoming), had an opportunity to tour the *R/V Langseth's* scientific spaces and conversion work.

The committee discussions focused on identifying and prioritizing issues that the MLSOC should address. The key issues that were discussed include:

- LDEO staffing of 3D, 2D, ocean bottom seismometer, and general oceanography cruises. Adequate staffing levels for these types of operations are critical.
- Shipboard processing needs. A shipboard processor may be desirable for some cruises.
- Lowering the threshold of expertise needed to use the facility.
- Shakedown cruise planning – The meeting participants discussed testing and calibration cruise planning and recognized the importance of optimizing the cruise plan in order to maximize the amount of testing that can be accomplished.
- Marine Mammal Observation – MLSOC recognizes that LDEO and NSF will need to take the lead in this area.

- Ombudsman role – MLSOC will work to liaison between the oceanographic user community, federal agency representatives, and the facility operator. Web postings on the UNOLS site, an annual community meeting at the AGU fall meeting, and direct contact with Principal Investigators are some of the mechanisms that will be used to enhance communications.
- Long-Range Planning – The MLSOC will work to identify geographic research areas of interest and then communicate these pending sites to the community.

R/V Langseth will carry out sea trials in 2007 and science operations are scheduled to begin in early 2008.

Research Vessel Technical Enhancement Committee

Bill Martin, Chair

The 2007 RVTEC meeting was held Nov 6-8 at Moss Landing Marine Laboratories. Day 1 of the meeting included reports from NSF, ONR, NOAA and USCG as well as from six of the UNOLS Standing Committees. A report from the newest UNOLS ad hoc committee, “Data Management Best Practices” also provided much interest. Guest speaker on the first day of the meeting was Dr. Marcia McNutt, UNOLS Chair and CEO of the Monterey Bay Aquarium Research Institute (MBARI).

Tours of MLML’s vessel *R/V Point Sur* and MBARI’s *R/V Western Flyer* and their AUV rounded out the afternoon’s activities.

Continuation of the many updates and reports began on day 2. RVTEC Chair, Bill Martin, UW gave an update on the Transportation Worker Identification Credential (TWIC). The guest speaker on day 2 was Phil Gibson, President, Tension Member Technology (TMT) who gave an informative presentation

on wires and cables.

The meeting concluded with the election of Stewart Lamerdin, MLML to his second term as RVTEC Vice-Chair.



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2007/2008 Important Issues and Objectives

Issue: Capitalizing UNOLS

Acquiring new research vessels to replace the aging fleet is challenging. The Navy's commitment to build Ocean Class ships was reduced from four ships to build two new ships. It is a difficult and lengthy process building new ships from NSF sources of funds. Ship procurement is costly with the current economic boon in U.S. shipyards; overseas procurement is a political minefield.

On the positive side, NOAA was able to refit their Ocean Exploration ship with a new ROV. Private foundation investment in ocean research has never been higher. Law of the Sea, ocean observing, etc. means that ships will be needed!

Issue: Operating UNOLS

Operating the academic fleet has presented increasing challenges. There are fewer agencies supporting fleet operations. It is difficult retaining a talented group of technical support at sea, with increased needs for high levels of training. There are overall higher costs associated with fuel, SOLAS, homeland security, etc. UNOLS will need to consider using the fleet in different, more efficient ways. We need to begin thinking about the more fuel-efficient "green (environmentally friendly)" ship of the future.

Issue: Equal Access

In regard to the issue of equal access to ships, UNOLS is making progress in ADA access. ADA guidelines for UNOLS vessels have been adopted. However, evidence suggests that we still need to increase awareness on what actions constitute sexual harassment and the negative consequences of such behaviour on UNOLS vessels. This item will be addressed by UNOLS over the next year.

2008 UNOLS Goals

- **Promote broad, coordinated access to oceanographic research facilities**
 - **Maintain a system and procedures that facilitate and promote broad access to research vessels and other major ocean science facilities.**
 - **Support coordinated, efficient and effective scheduling of research vessels and facilities.**
- **Support continuous improvement of existing facilities**
 - **Foster co-operation among facility operators, funding agencies and research scientists with the goal of continuously improving the quality and capability of existing ocean science facilities and the quality, reliability and safety of their operation.**
- **Plan for and foster support for the oceanographic facilities of the future**
 - **Provide leadership and broad community input to the process of planning for and supporting the improvement, renewal and addition of facilities required to support the ocean sciences in the future.**
- **Enlarge the group of supporters for the UNOLS fleet both in terms of capitalization and operations.**
- **Extend our planning horizon to ensure that we are building a UNOLS fleet that really meets what the infrastructure needs will be for ocean sciences in the coming decades.**
- **Continuously work to lower barriers to effective use of UNOLS ships caused by disabilities, gender, or other special situations.**



What is UNOLS?

The University-National Oceanographic Laboratory System is an organization of 61 U.S. institutions that have academic research and education programs in the ocean sciences and an interest in promoting the best possible national shared use facilities to support these programs. Eighteen of the UNOLS institutions are operators of these major shared use facilities, including research vessels, submersibles, aircraft and major instrumentation. Facilities are owned either by one of the federal agencies or by individual institutions. UNOLS serves in an advisory role to the facility operators and to the supporting.

The UNOLS Office would like to acknowledge the continued support of the following federal agencies:

The National Science Foundation

The Office of Naval Research

The National Oceanic and Atmospheric Administration

U.S. Coast Guard

U.S. Geological Survey

Minerals Management Service



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