



# UNOLS NEWS

Volume 27, No. 1

April 2011

### UNOLS Council

- Bruce Corliss (Duke), Chair
- Peter Ortner (U. Miami), Chair-Elect
- Vernon Asper (USM), Immediate Past Ch.
- Kenneth Coale (MLML)
- Robert Collier (OSU)
- Wilford Gardner (TAMU)
- John Morrison (UNCW)
- Robert Pinkel (SIO)
- Nancy Rabalais (LUMCON)
- Deborah Steinberg (VIMS)
- Clare Reimers, FIC Chair
- Dave Fisichella, RVTEC Chair
- Robin Muench, AICC Chair
- Peter Girguis, DESSC Chair
- Joe Malbrough, RVOC Chair
- Graham Kent, MLSOC Chair
- Stewart Lamerdin, SSC Chair
- Daniel Schwartz, SCOAR Chair
- Larry Atkinson, OOSC Chair

### Executive Secretary

Jonathan Alberts

## A Message from the UNOLS Chair...

2010 was a notable year for UNOLS. The Deepwater Horizon catastrophe in the Gulf of Mexico created the need for monitoring work, as well as an opportunity to study various aspects of the oil spill, and six UNOLS vessels carried out research cruises as part of the national response to the oil spill crisis. This rapid response was made possible by close coordination between NSF, the UNOLS Office, and vessel operators and highlighted the importance of having an academic fleet that can respond quickly to catastrophes.

Fleet replacement issues have been a high priority for UNOLS and the federal agencies for many years, and considerable progress was made in 2010. The *Sikuliaq* construction is moving forward and at this writing the keel has been laid in Marinette, WI, with an anticipated start of vessel operations in 2014. The Ocean Class operator competition was held by the Navy in 2010 and two operators, Woods Hole Oceanographic Institution and Scripps Institution of Oceanography, were chosen. Final design plans are being developed, with a tentative plan to have these vessels delivered in 2014 and 2015. The Regional Class Research Vessel (RCRV) acquisition effort moved forward in December when NSF released an “Intent to issue a solicitation for construction and operation of RCRVs” announcement, which included some of the anticipated proposal procedures. The latest news from NSF is that the Request for Proposals (RFP) for the construction and operators for three vessels will be released in early summer with a proposal deadline in early fall. If everything goes as planned, the first vessel will come online in 2019.

One concern that has been discussed at Council meetings in recent years is the drop in ship time demand on most classes of vessels. In response to this, the UNOLS Office developed and is carrying out a ship time survey to better understand the possible reasons for the decline. The initial results show a number of factors in play, and the survey will be the subject of discussion at upcoming UNOLS meetings.

Technical support is one of the critical aspects of vessel operations and UNOLS tech support has been outstanding in the past. But, technician recruitment and retention have been challenging and can affect the quality of operations in the future. In response to this, UNOLS and NSF have begun a technician internship, as well as considered how to develop a technician pool that can be used across the fleet. The initial results of these efforts are encouraging and will continue to be developed in the coming year.

One objective for UNOLS this year is to develop a plan to green existing and future research vessels and to promote marine sustainability

### Highlights

- Message from the UNOLS Chair..... 1
- Call for Council Nominations... .. 2
- Facility Renewal Project Updates..... 3
- UNOLS Ship Time Demand Survey..... 8
- Tech Manager Pilot Program.....9
- MATE Internship Program.....10
- R2R Update.....12
- UNOLS Goals and Priorities..... 13
- UNOLS Outreach Activities..... 13
- Committee News.....14
- Research Vessel Safety Standards - Appendix A & B..... 20
- UNOLS Calendar..... 21



in the community. As part of this effort, a UNOLS Green Vessel workshop will be held in January 2012 and will bring together marine architects, designers, operators, scientists and agency representatives to exchange information on current technologies, designs, and best practices, and to develop guidelines that can be used for future research vessels. Agency representatives are supportive of this initiative, and we expect a number of participants from the private sector. An announcement of the workshop will be posted later this year on the UNOLS website, as well as in EOS.

I hope that you enjoy this edition of the UNOLS newsletter, edited by Annette DeSilva. The UNOLS annual meeting will be held at the National Science Foundation in the fall, and we encourage members to attend and participate in the ongoing discussions.

Regards,

Bruce Corliss



*Bruce Corliss, UNOLS Chair*

## Call for UNOLS Nominations UNOLS Council – Two Positions

The University-National Oceanographic Laboratory System (UNOLS) is an organization of academic oceanographic institutions working in cooperation with agencies of the U.S. Federal Government to ensure broad access to modern, well-operated, state-of-the-art research vessels, aircraft, submersibles, and facilities required to support a healthy and vigorous research and education program in the ocean sciences. UNOLS is currently engaged in a variety of important Fleet initiatives; such as, academic research fleet renewal, greening the fleet, and assessing future facility demands that will be placed upon the fleet with the implementation of ocean observatories and observing systems. Individuals who wish to contribute to these and other UNOLS efforts are needed to fill two UNOLS Council seats. The UNOLS Council members represent and act on behalf of the UNOLS membership as the operating and governing body of UNOLS.

A Nominating Committee that includes John Morrison (Chair), Nancy Rabalais, and Deborah Steinberg has been formed to prepare a slate of candidates. Nominations are being sought from UNOLS institutions to fill two Council positions opening in 2011. Requirements for the positions are as follows:

- One At-Large Position - affiliation with any UNOLS institution.
- One Operator Position - affiliation with a UNOLS facility operator institution.

Terms of office are three years for Council Members with the possibility of re-election for a second term.

Nominations for the slate may be submitted by anyone affiliated with a UNOLS institution to <[office@unols.org](mailto:office@unols.org)>. A 2-page CV and statement of interest should accompany all nominations. The Nominating Committee must give due consideration to the qualifications of the individuals nominated, as well as to maintenance of regional and disciplinary balance on the Council. The committee will then recommend a slate of candidates that will be voted upon by the UNOLS membership at the 2011 Annual Meeting in the fall. For more information about UNOLS and its activities, visit the website, <http://www.unols.org>. The UNOLS Charter is located at: <http://www.unols.org/info/ucharter.html>.

**Visit UNOLS on Facebook!**

Photos from recent events as well as a listing of upcoming meeting are posted.



## FACILITY RENEWAL PROJECTS – DESIGN, CONSTRUCTION, AND REFRESH

### R/V *Sikuliaq* – The Alaska Region Research Vessel takes Shape

By Daniel Oliver (UAF)

With the start of 2011, Marinette Marine Corporation in Marinette, Wisconsin got started on construction of the R/V *Sikuliaq*. After many years of planning and the past year of going through a design verification process with the shipyard, construction started on 4 January 2011 with the cutting of the first plate of steel. Through the design verification process the contract design for *Sikuliaq* was validated and any issues with construction were identified and corrected prior to starting physical construction. Most notably was the addition of six feet to the length to account for increased weight of the ship. The six feet was added at the parallel mid-body and resulted in an additional six feet of open main deck aft for working science. At 260 feet now, *Sikuliaq* will be delivered in 2013 to start a period of science and ice trials prior to beginning funded science in early 2014.

As part of the design verification process, the shipyard has constructed full size mock ups of all the science laboratories, science control room, pilothouse, and ADA stateroom. Over the past months the mock ups have been visited by the *Sikuliaq* Oversight Committee and a number of ship masters to walk through the mock ups and offer comments on improvements for science and ship operations. The use of mock ups has been a big success and the feedback provided has lead to numerous arrangement changes for improved use of those spaces.

Figure 1 is an updated profile of the ship that incorporates the changes coming out of the design verification process and mock up visits. You can see a new forward mast with its science instrument platform, a revised bridge arrangement that improves all around visibility, and the longer main deck aft with the two cranes now staggered to provide full reach of the main deck.

The project's contract with Wartsila for the azimuthing propulsion units, Z-drives, is progressing well and on schedule for delivery of the Z-drives to the shipyard in December 2011. All major components for the Z-drives are being fabricated and assembly of the

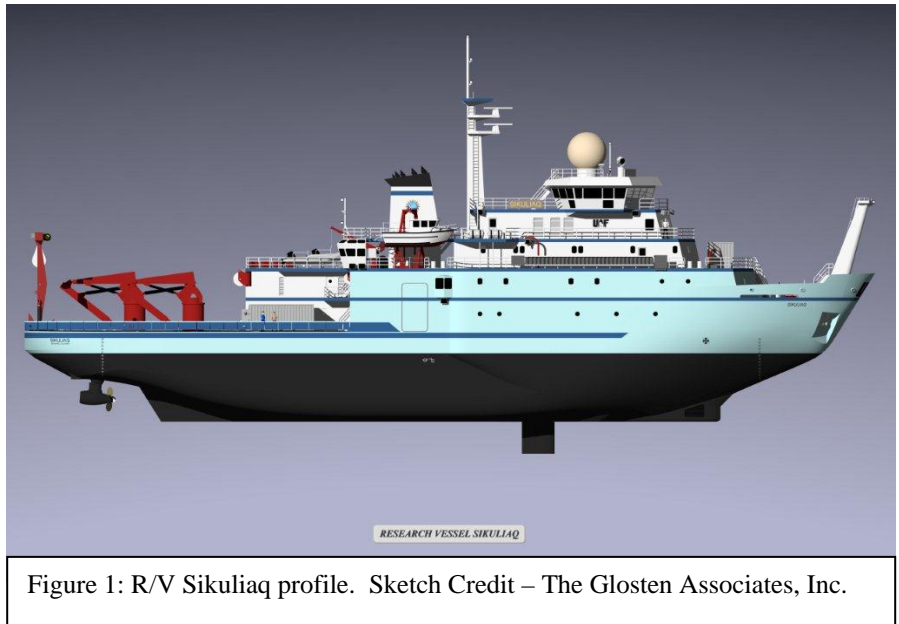


Figure 1: R/V *Sikuliaq* profile. Sketch Credit – The Glostén Associates, Inc.

two units will start in early summer.

A keel laying ceremony was recently held on April 11, 2011 in Marinette. *Sikuliaq*'s co-sponsors, former UAF School of Fisheries and Ocean Sciences Dean Vera Alexander and Emeritus faculty member Bob Elsner inscribed their initials into the ship's keel that they have been such a big part of planning for.

The best part of any ship building project is walking through the shops where you can see and touch the pieces as they come together. Figures 2 through 5 illustrate some of the fabrication steps underway.



Figure 2: Steel plate is being cut using a computer controlled plasma cutting machine.

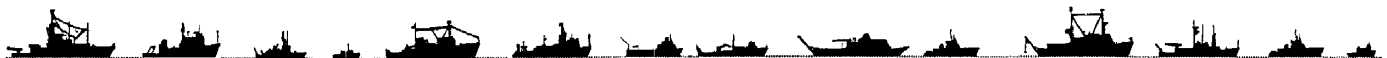




Figure 3: After being cut, the various pieces are staged for assembly into panels.

Figure 4: In preparation for starting to fabricate modules, the cut plate and shapes are joined together to form panels.



Figure 5: The start of the first module, which is just forward of the main machinery room.



## Ocean Class Research Vessels

By Mike Prince, (ONR)

Phase I of the Ocean Class Research Vessel acquisition program has been underway for a little over a year. The two competing shipyard and design teams, Dakota Creek Industries/Guido Perla & Associates and Marinette Marine Corporation/The Glosten Associates, produced contract designs and cost proposals for AGORs 27 and 28. These proposals were due by March 31, 2011. The Navy can now begin a period of evaluation to select the best value design and proposal. The plan is to award Phase II Detailed Design and Ship Construction contracts before the end of September

2011. Delivery of the first ship is planned for the summer/fall of 2014 and the second ship in the winter of 2014/15. The Navy is also working with the ship operators (Woods Hole Oceanographic Institution and Scripps Institution of Oceanography) and with the Fleet Improvement Committee (FIC) to plan the installation of mission equipment, initial outfitting and the post-delivery testing and science trials. FIC is putting together an Ocean Class advisory group to help with this process and to provide advice as needed during the detailed design stage.

---

## Regional Class Research Vessel Update

In December 2010 NSF announced an intent to issue a solicitation for construction and operation of Regional Class Research Vessels (RCRVs). The solicitation would be for the construction of up to three RCRVs using an existing, NSF-owned design and once constructed, for the management of vessel operations. The prospective awardee (an academic institution) would be required to demonstrate its ability to assemble a team (other academic institutions) to direct and manage the technical oversight, procurement, construction, scientific outfitting, sea trials and post delivery activities of the RCRVs. NSF's announcement of intent to issue a solicitation for construction and operation of RCRVs is available at: [http://www.nsf.gov/geo/oce/programs/rcrv\\_planned\\_solicitation.pdf](http://www.nsf.gov/geo/oce/programs/rcrv_planned_solicitation.pdf). Additionally, community questions regarding the solicitation along with their respective NSF responses are posted at: [http://www.unols.org/committees/fic/regional/RCRV\\_Solicitation/RCRV\\_Solicitation.html](http://www.unols.org/committees/fic/regional/RCRV_Solicitation/RCRV_Solicitation.html).

Proposals in response to the

solicitation will be required to address four project phases:

- Phase I – Project Refresh
- Phase II – Shipyard Selection
- Phase III – Construction
- Phase IV – Transition to Operations

Phases I and II will be funded through Research and Related Activities (R&RA) funding within the Division of Ocean Sciences. Funding for Phases III and IV is planned through NSF's Major Research Equipment and Facilities Construction (MREFC) account, subject to approval by the National Science Board (NSB) and appropriations from Congress.

The current RCRV design was developed through an interagency agreement with NSF and the Navy, which produced two competing vessel designs for a 155' multi-purpose oceanographic research vessel capable of operating for up to twenty one days in the three distinct geographic regions; the US East, West and Gulf Coasts. A panel of experts was convened by NSF in 2009 to review the designs and recommend the one considered most

favorable for further development.

During Phase I, the recommended design will be re-evaluated and refreshed by the Awardee based on (1) current regulatory requirements, and (2) NSF determinations based on input from the UNOLS Fleet Improvement Committee (FIC).

Following Phase I and confirmation of future construction funding, the Awardee will manage the shipyard selection process (Phase II) and the entire construction effort (Phase III) for up to three hulls. The hull and propulsion equipment of the three RCRVs will be identical and the arrangements nearly identical. Slight variations in the science outfitting may be made to suit the particular region. Construction shall be at a single US shipyard using a sequential build strategy. The Awardee will also manage the trials and delivery of all three hulls (Phase IV) with close cooperation by the other institutions in the team.

If an organization currently operates a UNOLS vessel, it must remove the existing vessel from the



academic research vessel fleet in order to be eligible for selection as either the proposal Lead or Supporting Institution.

This information is preliminary in nature and subject to revision

prior to release of the Solicitation and as the RCRV project moves forward.

Release of the RCRV construction and operation solicitation is expected in early

summer 2011. The anticipated RCRV timeline is included in the table below.

RCRV Anticipated Timeline	
Activity/Milestone	Date
RCRV Solicitation for Construction and Operation	Summer 2011
RCRV Proposals for Construction and Operations Due	Fall 2011
Award Phase I	Spring 2012
Conceptual Design Review (CDR)	Fall 2012
Preliminary Design Review (PDR)	Summer 2013
NSB Approval for inclusion as an FY 16 MREFC Budget Request	Spring 2014
Award Phase II	Fall 2014
Final Design Review (FDR)	Fall 2015
Award Phase III (Construction)	Spring 2016
First Hull Delivered	Summer 2018
First Hull in Operations	Spring 2019

## Polar Research Vessel - Science Mission Requirements Refresh Project

Research in the polar regions requires specialized logistics and infrastructure that can operate safely and effectively in ice-covered waters. For the past 20 years, the *Nathaniel B. Palmer* (NBP) has provided the polar research community with an excellent platform for year-round operations in polar regions where waters are often stormy or covered with sea ice. The NBP has successfully hosted a variety of high profile research projects, and this research has resulted in a wealth of transformational, peer-reviewed, publications over her 20 years of service. This research has provided scientists with an improved understanding of oceanographic processes operating in the polar regions. However, high priority research questions with important ramifications for understanding global environmental change remain, such as the need to understand oceanographic processes that are increasingly tied to long-

term stability of polar ice sheets. Addressing these questions requires enhanced access to ice-covered regions. To advance polar research in the future a vessel is needed that incorporates science mission capabilities articulated by the research community and increases the reach of U.S. researchers into a greater portion of ice-covered seas.

In 2010, UNOLS was tasked by the National Science Foundation (NSF) to establish a committee to review science mission requirements (SMR) identified during the Polar Research Vessel (PRV) study completed in 2006. A call for PRV Committee (PRVC) members was announced and in response a PRVC was formed that represents the various marine research disciplines, as well as maritime technical experts from the UNOLS community and industry. Committee members include: Rob Dunbar, Stanford (Chair); Carin Ashjian, WHOI; Vernon Asper, USM; Dale Chayes,

LDEO; Eugene Domack, Hamilton; Hugh Ducklow, MBL; Bruce Huber, LDEO; Larry Lawver, UTexas; Doug Russell, UW; Dan Oliver, UAF; Craig Smith, UH; and Maria Vernet, UCSD.

Through consultation with the research community, the committee is assessing whether existing PRV SMRs meet current and emerging needs for polar research. The committee has also been asked to identify any additional SMRs required to ensure that the PRV will meet the needs of the polar marine research community for the next 30 years.

As a first step, the PRVC and UNOLS Office developed a survey to gather feedback from the polar marine research community on the anticipated science missions and the capabilities that will be required by a PRV to carry out these missions. The UNOLS Office published the survey on line and compiled the responses that were submitted.



Next, the PRVC convened a community workshop to identify “Marine Science Drivers for the Polar Regions.” The workshop was held on February 28 and March 1, 2011 in Arlington, VA and approximately 50 researchers, technical experts, and agency representatives attended. The results

from the on-line survey were presented. All of the presentations from the workshop are available on the UNOLS website at <http://www.unols.org/committees/fic/smr/PRV/workshop.html>.

The PRVC will prepare a report to NSF that shows a clear connection between critical science

questions and the PRV SMRs identified. It is anticipated that an interim report from this activity will be sent to NSF in July 2011. The final SMR refresh effort will be conducted over the next year.

## UNOLS *Alvin* Upgrade Project Update

By Kurt Uetz, *Alvin* Upgrade Project Manager

DSV *Alvin* completed dive #4664 in the Gulf of Mexico on December 15, 2010. After a successful expedition, scientists and engineers were offloaded and the R/V *Atlantis* proceeded to a shipyard in Jacksonville, Florida, for some planned repairs, and upgrade of the Launch and Recovery System to accommodate the changes to be made on *Alvin*. R/V *Atlantis* will resume its operational schedule in late April. Meanwhile, *Alvin* was transported back to Woods Hole where disassembly of the vehicle began during the

first week of February.

The new personnel sphere fabrication is 95% complete and it will soon be transported to Southwest Research Institute in Texas for final assembly. This will include installing the hatch and components (springs, dogs, retainers, etc) as well as installing the five new viewports. The three forward-looking viewports are 7” in diameter while the side viewports are 5” (the same as on the current *Alvin*). This new viewport arrangement will provide significant improvement over the current vehicle’s capabilities. The sphere

will also have geometric sphericity measurements taken using a laser



The 6500 meter personnel sphere at the fabrication facility. Note the three forward facing 7” viewports plus two 5” side viewports (photo courtesy of Southwest Research Institute)

trackball instrument. The sphere has a designed 82.5 inch outer diameter and the fabrication tolerance has a mere .125 inch allowed for less than optimal sphericity. Measurements taken using a micrometer during fabrication indicate the sphere is within .020 inch of design diameter.

Following assembly, the personnel sphere will undergo hydrostatic testing in Annapolis,

MD. The sphere is designed for water depths of 6500 meters and will be tested with a 1.25 safety factor (about 8000 meter depth) at over 12,000 psi. After the hydrostatic testing, the sphere will be delivered to Woods Hole for vehicle re-assembly and systems integration.

Vehicle designs are complete, and the project successfully completed its Final Design Review at NSF in September 2010. The project has now entered its procurement and fabrication stage. The syntactic foam has been delivered and will undergo a rigorous test program at WHOI before being shipped vendors for shaping.

Overhaul and refurbishment of those vehicle systems that will continue to be used on *Alvin* will be performed in parallel with the construction of new components. Assembly and systems integration is expected to commence in September 2011, with sea trials and certification dives out of Bermuda in April 2012. This will be followed by a science shakedown cruise.

You can follow the progress of this exciting project at: <http://www.who.edu/page.do?pid=51855>.





DSV *Alvin* arriving in Woods Hole after a long ride from Florida (photo courtesy of Rod Catanach, Woods Hole Oceanographic Institution)



DSV *Alvin* on deck and ready for overhaul (photo courtesy of Rod Catanach, Woods Hole Oceanographic Institution)

## UNOLS Conducts Survey to Assess Recent Decline in Ship Time Demand

In recent years the number of proposals submitted to federal agencies that include ship time requests has dropped significantly. The average annual number of ship time requests for the four years 2008 to 2011 was about 500 requests, which is about 300 requests lower annually from the previous four years when the average number of requests submitted was about 800 requests. In terms of science days requested, this represents a decline of more than 5,000 days on average annually. A variety of reasons for the decline in ship time demand have been suggested.

To better understand the nature of the ship time demand decline, UNOLS developed a survey to collect data from the oceanographic community. With the survey results, we hope to:

- Determine if the decline in ship time demand can be expected as a long-term trend,
- Identify any issues or barriers (real or perceived) related to submitting proposals that include ship time requests and work to reduce those barriers,
- Develop strategies for reducing any barriers that might be identified and to expand access to UNOLS vessels, and
- Re-evaluate the future fleet capacity and composition in comparison to anticipated ship time demand.

The survey was announced to the community on February 11<sup>th</sup> and within three weeks over 230 surveys were completed and submitted. The preliminary results from the survey were presented during the March Council meeting.

The survey remains open and we encourage additional members of the community to respond. Of particular interest is feedback from the community of new investigators. We hope that you will help us reach out to this group and to all of your colleagues.

The survey is available at: <[http://www.surveymonkey.com/s/unols\\_vessel\\_usage\\_survey](http://www.surveymonkey.com/s/unols_vessel_usage_survey)>.

Your input is greatly appreciated. The results of the survey will be broadly presented later in the year. Thank you if you have already completed the survey!

**NOTE: At the time of this publication, over 330 surveys have been submitted. Thank you to everyone who has responded!**





## Technician Recruitment and Retention Pilot Program ~ Progress Report

by Alice Doyle, UNOLS Technical Services Manager

The first year of the Technician Recruitment and Retention Pilot Program was filled with a lot of asking questions and listening. As far as “doing,” some of the major action items have been in support of recommendations of the Crew & Tech Recruitment and Retention Workshop of February 2009 and work with the RVTEC community to develop new ideas for Tech Recruitment and Retention within the fleet. The activities can be broken down as follows:

- Collecting Information
- Finding Technicians
- UNOLS/MATE 6 month Internship
- Training & Education
- Technician Pool
- Recruitment/Outreach

**Collecting Information** involved talking with UNOLS technician managers and technicians within the fleet, technicians from other sea-going technical support programs, scientists, and private industry. It also included visits to various institutions within the fleet (WHOI, LDEO, URI, UDel, OSU, SIO, and Duke Marine Lab). A lot was gained as far as understanding the operations at the institutions within the fleet and other technical support models.

I also worked with various Technician Managers to assist them in **Finding Technicians** to fill the holes in their schedules. The primary focus was to use full-time technicians already in the fleet. This type of exchange is a win-win situation. It allows the technicians to see another operation, increases knowledge sharing between institutions and fills what would

have been a gap in support. If full-time technicians were not available, other sources of technicians were explored including technicians from Raytheon Polar Services Contractor (RPSC) (US Antarctic Program contractor), independent contractors and commercial contractors. Focus was placed on matching the skill sets of the technician with the skill sets required by the institutions to ensure success.

By the end of 2010, five full-time technicians, seven independent contractor/commercial technicians and one RPSC were placed onboard various UNOLS vessels. The overall results were very positive with the technicians appreciating the opportunities to see other programs and the institutions appreciating the expertise of the technicians and the ease of finding the technicians. Some notable quotes included one by a technician, “I enjoyed seeing how another institution’s operations worked” and by a host institution, “I was expecting at least a few headaches and did not have any.”

Another recommendation from the 2009 Workshop pertained to the development of a longer-term internship program. UNOLS and the Marine Advanced Technology Education (MATE) center have joined forces to develop a **UNOLS/MATE Internship Program**. More on this internship can be found in the article “UNOLS/MATE Long-term Internship Program” on page 9.

A **Training and Education** survey was conducted within the RVTEC community to help to get a better idea of some of the demographics of the technicians, review the current training models

within the fleet, begin to develop a training database for the fleet to assist marine technicians in finding beneficial courses and to see if there are any need/opportunities for future group training/education. The results from the survey indicated that there are a lot of newer technicians within the fleet (<5 years as a Marine Technician) and that, although a small majority of the Marine Technicians believed they received *enough* training/education, 98% felt they could use more. The courses that were listed as beneficial and those that technicians are interested in taking are currently being compiled. I hope that this will become a tool for technicians seeking training in the future.

As a result of the emphasis on training, a five day at-sea practical Marine Technician (MT) education and training course is being planned for June 2011 onboard the RV *Melville*. The anchor course of the cruise will be a practical course on multibeam operation but other core Marine Technician education modules will also be involved (e.g. ADCP, CTD, terminations, echosounders, R2R, winch and wire, satellite communications, etc). The cruise will be an opportunity for the technicians to learn from experts but also share knowledge. The end result will create more educated technicians, which leads to better technical support.

One of the hot-topics when the Tech Recruitment and Retention Pilot Program began was the concept of a **Technician Pool**. Recognizing that the instrumentation and equipment onboard the UNOLS vessels is growing in complexity, the NSF Ocean Sciences Technical



Services Program Manager would very much like to augment the technical support on intense research cruises (e.g. large, multiple PI cruises with demand for 24-hour operations). To achieve this augmentation without overworking the already busy full-time technicians, the NSF envisions creating a Technician Pool. The pool of generally sea-going technicians would be hosted through a single Tech Pool Host Institution. These technicians, while being employed by the Tech Pool Host Institution, would work at other institutions needing to either fill holes or augment their technical support.

Although efforts have been made in creating guidelines for the Tech Pool Host Institution and the NSF sent out a Letter of Interest to which four institutions replied; the NSF has put this effort on hold due to some weak schedules within the fleet and the current unknown budget situation. With some of the ships having weaker schedules, we anticipate that some full-time technicians may have to assist on other vessels should additional technical support be required.

Finally, I have also been investigating mechanisms for **Recruitment/Outreach** for technical support. As each institution is in charge of recruiting

and hiring their own technicians, my focus has been more on outreach. How do we let promising students know about careers that are available in the UNOLS fleet? The UNOLS office produced a job-specific tri-fold that outlines the fleet and jobs within the fleet. We hope to find new venues to distribute this and other (to be developed) outreach materials to help get the word out about jobs available within the UNOLS fleet.

It has been a busy and productive year and next year looks like it will be the same. If you have any questions or ideas please contact me at [alice@unols.org](mailto:alice@unols.org) or 303-319-9906.

## UNOLS/MATE Long-term Internship Program

*By Alice Doyle, UNOLS Technical Services Manager*

As part of the Technician Recruitment and Retention Pilot Program, UNOLS and the Marine Advanced Technology Education (MATE) Center have teamed up to create a new extended (5-6 month) internship program. The program is funded jointly by the NSF Ocean Science Division's Oceanographic Technical Services Program and the MATE Center through its grant from NSF's Research Experience for Undergraduates program.

The concept of a longer-term internship program developed from a recommendation from the Crew and Tech Recruitment and Retention Workshop held in Austin, TX in February 2009. The program can be a win-win situation for both the intern and the fleet. This longer internship represents an increase from the existing MATE internships, which last one to eight weeks. The goal of the internships is to give

opportunities to people with demonstrated potential to gain the on-the-job skills and experience necessary to assume positions within the marine workforce, and especially on vessels within the UNOLS fleet. This is a "grow your own" approach to hiring technicians.

The internship will have both on-shore and at-sea components. On-shore tasking will include, among other areas, pre-cruise preparation, instrumentation/ equipment maintenance and calibration, and cruise mobilization. The at-sea components will consist of the core elements of the Marine Technician position as well as the specifics of the funded science of the cruises on which s/he participates.

Rich Findley, the past RVTEC Chair and Alice Doyle, the UNOLS Technical Services Manager, compiled an ad-hoc RVTEC Internship Subcommittee to develop

the UNOLS/MATE Internship Guidelines and assist in choosing the candidate. The Subcommittee consisted of six UNOLS Marine Technicians (both seasoned and newer technicians), the MATE Internship coordinator and the UNOLS Technical Services Manager.

The Internship Guidelines are based from the MATE Center's Marine Technician and Ocean Instrument Technician Knowledge and Skills Guidelines (KSGs) developed in 1998 and 2010, respectively. The RVTEC Subcommittee created the Guidelines by narrowing down the KSGs to focus on the primary entry-level skills required of Marine Technicians within the UNOLS fleet. The subcommittee recognized that each internship opportunity will be unique and each experience will depend on the expertise of the mentor and the science cruises on which the intern



participates. The Guidelines were developed as a tool for the mentor (and the intern) to better understand what the RVTEC community feels is important in developing a new Marine Technician.

The internship was advertised to the UNOLS community as well as dozens of colleges and universities across the country and the MATE network of previous interns in September 2010 with applications due in early November 2010. Twenty-nine application packets from students or recent graduates at 25 different colleges and universities were received and the quality of the applications was beyond expectation. The subcommittee had a difficult time narrowing the field to its top five candidates from which the host institutions chose.

The original intention of year one of the Pilot Program was to develop a single six-month internship (Jan-Jun 2011) to be hosted by Duke University Marine Laboratory and Woods Hole

Oceanographic Institute (WHOI) with the intern spending approximately three months at each institution. Due to the high caliber of the applications received and the opportunities within the fleet for another intern, a second internship, to be hosted by Oregon State University, has been developed. This internship will run from March through July 2011.

Kyle McDermott was chosen as the intern for the joint Duke/WHOI internship. Kyle is from Raleigh, NC and has a degree in Marine Technology from Cape Fear Community College. Through his degree, he participated on several cruises on the *RV Dan Moore*. After his graduation, he worked as an Instructional Technician with the CFCC Marine Technician program. OSU chose Erik Arnesen for their internship. Erik is from Rohnert Park, CA, and he earned a BS in Geology with a minor in mathematics from Sonoma State University. Erik spent five years in the US Navy (two years at sea) and

is looking forward to combining his love for mechanical work with his physical science base and computer skills.

This is an exciting new program, which is expected to benefit both the interns and the fleet! In order to learn from the year one experiences, follow-up with both the host institutions and the interns will be conducted to understand the strengths and weaknesses and help the program become even more beneficial.

Please feel free to contact Alice Doyle, the UNOLS Technical Services Manager ([alice@unols.org](mailto:alice@unols.org)) or Tami Lunsford, the MATE Internship Coordinator ([tlunsford@marinetech.org](mailto:tlunsford@marinetech.org)) with any questions about the internship or to receive a copy of the UNOLS/MATE Internship Guidelines.



Intern, Kyle McDermott, aboard R/V *Cape Hatteras*. Photo courtesy of Tina Thomas (Duke U.)



## Rolling Deck to Repository (R2R) Update

R. Arko, S. Carbotte, V. Ferrini, S. Miller, K. Stocks, C. Chandler, A. Maffei, S. Smith, M. Bourassa

The NSF-funded Rolling Deck to Repository (R2R) program is working with the fleet community to ensure the documentation, assessment, and preservation of data from underway sensor systems on U.S. research vessels. The program concluded a successful first year in 2010, reaching a key goal of bringing every UNOLS vessel online. The R2R catalog (<http://www.rvdata.us/catalog>) now includes 26 in-service vessels, and has inventoried over 7 million files from 2,070 cruises.

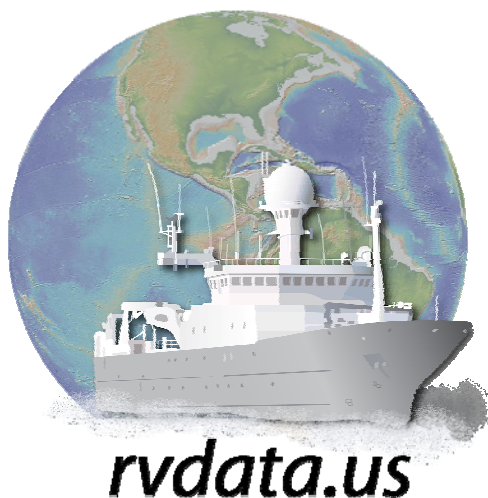
The R2R catalog contains a record for each cruise with its unique ID, title, vessel name, operator, ports/dates, chief scientist, ship track, and file inventory; as well as a profile for each vessel with its sensor systems organized by device type, manufacturer, model, and directory structure. Development in the coming year will expand the vessel profiles to include file formats, data types, and installation locations. The catalog now also includes “reciprocal links” to partner data systems that hold additional content for selected

cruises including the Biological and Chemical Oceanography Data Management Office (BCO-DMO), Shipboard Automated Meteorological and Oceanographic System (SAMOS), Marine Geoscience Data System (MGDS), and Index to Marine & Lacustrine Geological Samples (IMLGS).

Collaborative work between R2R and the NOAA Data Centers continues on multiple fronts. We have developed a shared template for cruise-level metadata and associated controlled vocabularies, based on the ISO 19115 international standard. Following our existing protocol for submission of multibeam data to the National Geophysical Data Center (NGDC), we have now established a parallel protocol for submission of ADCP data to the National Oceanographic Data Center (NODC). Additional data types will follow in the coming year. By routinely archiving underway data at long-term national repositories, R2R assists investigators in complying with the new NSF Data Sharing Policy.

The R2R Event Logger prototype was successfully deployed on a series of 2010 sampling cruises on *Oceanus* and *Endeavor*, and we are now developing a Web-based pre-cruise configuration tool in response to user feedback. The SAMOS project continues recruitment of UNOLS vessels, most recently adding *Atlantic Explorer* and *Kilo Moana*, and has drafted a next-generation protocol for near-real-time data transfer. We have developed software for routine production of final navigation, as well as drafted requirements for quality assessment of multibeam data and post-processing of gravity/magnetics data.

The R2R program continues to report results and solicit feedback at annual UNOLS Council and RVTEC meetings, present work at inter/national conferences (including Ocean Sciences, IMDIS, AGU, and Eurofleets in 2010), and visit operating institutions to meet with technicians and learn about their vessels. Contact us at [info@rvdata.us](mailto:info@rvdata.us).



## UNOLS Goals and Priorities

The standing goals and priorities for UNOLS are to: 1) Promote broad, coordinated access to oceanographic research facilities, 2) Support continuous improvement of existing facilities, and 3) Plan for and foster support for the oceanographic facilities of the future. UNOLS strives to meet these goals through the activities of the Council and Committees.

In 2009/2010 the UNOLS Council adopted additional goals and priorities to: 1) Explore a cooperative relationship between UNOLS, NSF's Office of Polar Programs (OPP), and NSF's Ocean Sciences Section (OCE) for polar facility coordination, and 2) Initiate a Green Ship Initiative. Progress continues to be made in both of these areas.

The cooperative relationship between UNOLS and OPP and OCE has grown over the past year with the participation of both OCE and OPP in UNOLS Council and Committee meetings. Additionally, OPP engaged UNOLS in a project to refresh the Polar Research Vessel (PRV) Science Mission Requirements (see article on page 5). Other programs that OCE and OPP are increasing their level of mutual

cooperation and coordination with UNOLS include the:

- At-Sea Science Technician Exchange Program,
- UNOLS Marine Technician training cruise,
- Fleet broadband on *NB Palmer* & *LM Gould (LMG)*,
- ADCP Support,
- UNOLS Winch Wire Pool, and
- UNOLS Science Van Pool.

Currently, OPP and OCE are discussing the feasibility of having a UNOLS Regional Class research vessel support operations out of Palmer Station, Anvers Island, Antarctica. The vessel would support local diving operations, monitoring equipment maintenance, deploy and recover AUVs. A regional vessel could help Palmer Station by extending small boat operations beyond the current limitations. Having a Regional vessel available would free up the *LMG* for other cruises and extend the operations of the small boat ops, and field camps along the peninsula.

The other initiative that began in 2010 and is taking shape is "Greening the Fleet." Bruce Corliss, UNOLS Chair, is planning a workshop that would assess current technologies,

designs and practices for environmentally sustainable research vessels. Tentatively the workshop is planned for January 11-12, 2012 at the Nicholas School of the Environment, Duke University, Durham, NC. The format would be a 1 ½ day workshop with invited presentations on various aspects of green ships. The workshop will be broadly announced on the UNOLS website, mailing lists, and advertisements.

A new UNOLS goal was introduced for the 2010/2011 year to explore options for establishment of a UNOLS speaker series. The speaker series would be designed to highlight UNOLS ships and oceanographic research and to serve as an outreach activity to non-UNOLS colleges and universities, with particular attention given to institutions with under-represented minorities in the marine sciences. The series could be introduced as a pilot program. Stay tuned for additional details as this program develops.

UNOLS welcomes community input regarding these issues and hopes that the membership will work to help us achieve our goals.

---

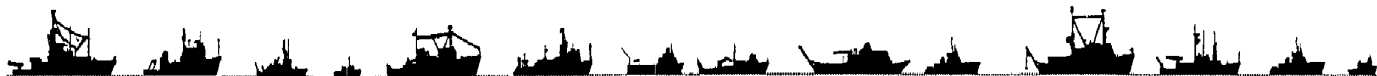
## UNOLS Public Outreach Resources

*By Erin Jackson, UNOLS Office*

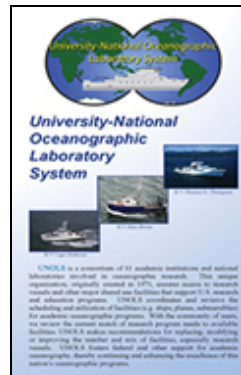
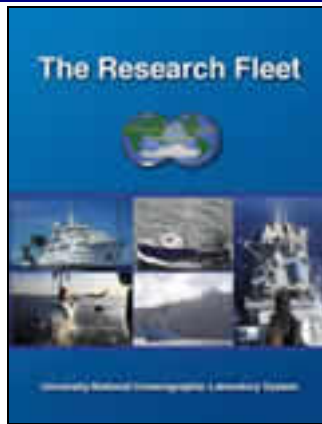
In December 2010, the UNOLS Office launched a "Public Outreach Resources" webpage at <http://www.unols.org/info/outreach.html>. This webpage contains a library of informational resources, such as slide packages, booklets, brochures, and posters, all available for use through the UNOLS Office.

The slide packages cover general information about the UNOLS Organization and the U.S. Academic Research Fleet. In addition, the slide package titled, "Understanding the US Academic Research Fleet and how to use it," covers how to use the UNOLS Fleet. Both are great for class lectures, as

well as for use with the general public. The booklets, brochures, and poster are available in hard copy for institutional events and informational purposes. *The Research Fleet* booklet is available by the box (70/book) or individually and covers UNOLS history, the types of oceanographic research that



take place on UNOLS vessels, common tools used aboard UNOLS vessels, as well as an overview of Global Initiatives in Ocean Science. The UNOLS tri-fold brochure and poster provide information on the UNOLS organization, such as office contacts, funding support, committee descriptions, and membership. In addition, the poster shows the UNOLS National Oceanographic Facilities (Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS), UNOLS National Deep Submergence Facility, and UNOLS National Oceanographic Seismic Facility-R/V *Marcus G. Langseth*). All of the printed resources provide specifications about each UNOLS vessel. To request any of these resources please contact the UNOLS Office at 401-874-6825 or [office@unols.org](mailto:office@unols.org).



The UNOLS Office now has a Facebook page! You can visit us at <http://www.facebook.com/unols> to learn about upcoming meetings, news, and activities, as well as to see pictures from past UNOLS meetings and events.



## UNOLS COMMITTEE NEWS

### Fleet Improvement Committee Happenings

By Clare Reimers, FIC Chair, Oregon State University, [creimers@coas.oregonstate.edu](mailto:creimers@coas.oregonstate.edu)

With an eye on trends in the utilization of UNOLS facilities, the Fleet Improvement Committee (FIC) has been busy this past year in activities of fleet renewal, oversight and planning for the ocean research of tomorrow. The committee placed a high priority on providing NSF a thorough set of recommendations on 13 areas of inquiry that were raised by the Regional Class Research Vessel (RCRV) design down-select process. NSF will provide their feedback to these recommendations and they will be available to community to guide the final design and outfitting requirements. FIC also provided input on baseline mission equipment for the Ocean Class AGOR designs and suggested elevating the priority level of equipment for pelagic acoustics. Additionally, the committee has recruited individuals to serve as science advisors for an Ocean Class Advisory Committee.

Oversight of specialized technologies within the UNOLS fleet has kept FIC abreast of significant upgrade projects on the R/V *Marcus G. Langseth*, load handling systems on the R/Vs *Kilo Moana* and *Hugh Sharp*, and the WHOI Long-Coring System. The committee would like to learn more about new technologies available to the fleet and in 2011 will invite speakers to FIC meetings to discuss advances in topical areas. FIC will also be following the execution and outcomes of two cruises in 2011 designed as forums for teaching early career marine scientists how to effectively plan for, acquire, utilize and report on time at sea for multi-disciplinary research and education. The new training opportunity was broadly announced to the UNOLS community in the first part of 2011 and a strong response was received. The training cruises will take place in July and again in September 2011 from Newport, OR.



## DEep Submergence Science Committee (DESSC) News

Dear Colleagues,

I hope this letter finds you all well. 2010 was quite a year for the National Deep Submergence Facility (or NDSF). The Autonomous Benthic Explorer, or *ABE*, was lost at sea in March 2010. Shortly thereafter, the *DSV Alvin* operations were suspended due to concerns about minor defects in the sphere. The *ROV Jason* was asked to step in on extremely short notice, to complete *Alvin*'s mission in the Pacific Northwest. We then watched in awe and horror as oil and gas leaked into the Gulf of Mexico. National Deep Submergence Facility (NDSF) vehicles were called in to play a role in the numerous RAPID research projects that were funded in response to the oil spill. On top of all this, the facility continued to experience a 30% decrease in demand for the vehicles, raising concerns about the future of the facility.

Despite these challenges, there were many exciting advances and developments in the facility. The *AUV Sentry* was brought into the facility upon the loss of *ABE*, and has proven to be a most effective successor. *DSV Alvin* and *ROV Jason* continued to participate in time-critical research in the Gulf and elsewhere. In honor of the *DSV Alvin*'s last dive prior to the upgrade, the NDSF staged a highly lauded exhibition at the American Geophysical Union Annual meeting in San Francisco, which led to numerous articles and radio shows about the history and future of *Alvin* and the other NDSF platforms. Now, the *ROV Jason* is preparing for exciting upgrades to its launch and recovery system, while the *DSV*

*Alvin* upgrade is fully underway.

What should we take away from the events of 2010? It is apparent that the NDSF is in the midst of great change, both to the vehicles and hardware as well as to the facility's infrastructure and management. Our goal at DESSC is to provide feedback and guidance as



The sphere mock-up is shown on display in the NDSF Booth at the Fall AGU Meeting Exhibit Hall. Photo courtesy of Annette DeSilva.

appropriate to the NDSF, to insure that the facility continues to meet the changing needs of the scientific community while maintaining the highest standards for safety and scientific support. This is, without question, a collaborative effort and I am grateful for the hard work and leadership of NDSF management over the past year. Indeed, we are working together to develop better shipboard and shoreside data and management "pipelines" that will facilitate access to data generated during each expedition. We are also working to further refine existing policies on access and ownership to data and images generated by the facility. Most exciting, in my opinion, are our efforts to broaden the NDSF user base and to heighten

awareness about the facility and its role in national and international research. These and many other issues that are relevant to your research are summarized in the DESSC meeting minutes (<http://www.unols.org/committees/dessc/index.html>). Please take a moment and take a look at what's going on at DESSC, and feel free to offer any comments or ideas.

It is my conviction that the NDSF has played an incomparable role in advancing our understanding of the ocean, its role in planetary processes, and the life that thrives therein. It is our intention at DESSC to insure that the NDSF continues to evolve to meet the changing needs of its users, and maintains its position as a premier facility in deep submergence research. With a bit of hard work and a little luck, we can look forward to a spectacular year of research and discovery. Thank you all for your time, and as always feel free to send us your ideas and comments.

Regards,

Peter R. Girguis  
Associate Professor  
Harvard University

P.S. As many of you know, we held a raffle at the 2010 Fall AGU meeting for a used *DSV Alvin* viewport (from 1983). Celine Chan, Lead Systems Analyst/Programmer at Lamont-Doherty Earth Observatory, was the winner.

**Congratulations!**



## Research Vessel Operators' Committee News

By Joe Malbrough, RVOC Chair

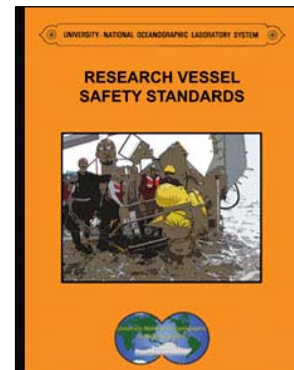


As I write this in early 2011, institutions and organizations are feverishly jockeying and scheming to form partnerships and liaisons in order to compete for the intended NSF solicitation for construction and operation of a new

Regional Class Research Vessel. Who wouldn't want a new regional class research vessel? It will indeed be a very interesting year for all participants.

During last year's RVOC Committee Meeting on April 20, 2010, the committee members first learned of BP's *Deepwater Horizon's* uncontrolled release of a blown out well and subsequent oil leak which set in motion one of the largest oil-spill response efforts in history. The following UNOLS research vessels conducted research activities in response to the Gulf of Mexico oil spill: R/V *F. G. Walton Smith*, R/V *Cape Hatteras*, R/V *Endeavor*, R/V *Pelican*, R/V *Oceanus* and R/V *Atlantis*. The R/V *Pelican* was located within seven miles of MC 252 on April 22, 2010 and witness the sinking of the *Deepwater Horizon* drilling rig. The R/V *Pelican* was ordered out of the closed zone area by the

team lead by Vernon Asper (USM), (Vernon was the UNOLS Chair at the time of the cruise) to begin conducting water and sediment sampling directly related to the oil spill response. NSF RAPID response funding, which supported some of the oil-spill response activities, will continue into 2011 for some UNOLS vessels.



The Safety Committee, which is chaired by Dan Oliver and is a subcommittee of RVOC, has published a draft version of Appendix B to the *Research Vessel Safety Standards* (RVSS). Appendix B, titled, *UNOLS Overboard Handling Systems Design Standards Criteria for the Design and Operations of Overboard Handling Systems*, is posted on the UNOLS home page, [www.unols.org](http://www.unols.org). The Appendix standardizes basic requirements for the UNOLS fleet to follow with regard to design, documentation, training and use of overboard handling systems. Feedback to the draft Appendix B can be provided to Jon Alberts at [jon@unols.org](mailto:jon@unols.org). Jon will consolidate the responses and provide the comments back to the Safety Committee.

Soon, the Safety Committee anticipates sending out an updated Appendix A to the RVSS, *UNOLS Rope and Cable Safe Working Load Standards* for review. The pending update to Appendix A incorporates comments received from the fleet through the Appendix A workshops. When the draft update comes out please take the time to review it, as compliance with Appendix A becomes mandatory this summer. Additional details about Appendix A and B are contained on page 20.

**Annual RVOC Meeting-** The 2011 RVOC meeting will be held at Scripps Institution of Oceanography on April 26-28th.



View from the R/V *Pelican* of the 2010 Gulf of Mexico Oil Spill.  
Photo courtesy of Chris Berkey.





## Arctic Icebreaker Coordinating Committee (AICC) News

By Robin Muench, AICC Chair

### Introduction

Interest continues in the Arctic consequent to both climate change and resource development considerations. Following a highly successful summer 2010 field season, the icebreaker USCGC *Healy* is undergoing routine maintenance and upgrades to ship and science support systems. The Coast Guard has continued planning for repairs and upgrades sufficient to allow the USCGC *Polar Star* to return to service. Recently it was learned that the Coast Guard plans to decommission the USCGC *Polar Sea*. AICC efforts have continued their focus on interactions among the Coast Guard, scientists using the icebreakers as research platforms, other government agencies, international activities, and Alaska Native groups who are concerned with protecting the Arctic environment and its wildlife.

### Icebreaker Activities

Icebreaker activities for the coming 2011 summer field season in the western Arctic will consist of three cruises aboard the *Healy* in support of the same multiyear projects that were supported during summer 2010. The first will be an interdisciplinary June-July field project in the Chukchi and Beaufort seas, funded by the National Aeronautic and Space Administration (NASA) to continue an assessment of climate-related biogeochemical and ecological changes in the region. The NASA work will be followed by a continuation in August-September of the U.S. Geological Survey (USGS) - funded Extended Continental Shelf (ECS) mapping

conducted jointly with the Canadian icebreaker CCGS *Louis St. Laurent*. The final 2011 cruise, scheduled in October, will carry out mooring deployments and water sampling on the Beaufort Sea shelf in support of the National Oceanographic Partnership (NOPP) and the National Science Foundation (NSF) Arctic Observing Network (AON).

In FY2011, the *Polar Sea* will be decommissioned and the Coast Guard plans to transition the vessel's crew to the *Polar Star*, enabling an orderly transition. Repair and upgrading of the *Polar Star* continues. Reactivation of *Polar Star* and return to operations is expected in FY2013. [1]

### AICC Activities

AICC convened its fall meeting at the USCG facility in Seattle, Washington on 9-10 December 2010. AICC efforts continue to foster communications among scientific researchers, the Coast Guard, science-oriented government agencies, and northern Alaska Native communities. These communications have included efforts to minimize potential impacts of research activities on the Arctic marine environment, including local subsistence hunting, as well as informing northern communities of new research results. Concerns have arisen and been addressed regarding increasing foreign research vessel operations in the western Arctic and their potential impacts. Some activities of interest have included:

- Continued to improve communications among Alaska Native groups, chief scientists, and the USCG: drafted an online tutorial focused on assisting new

investigators, and discussed ways to better utilize the Native Participant (formerly the Native Observer) program whereby Alaska Natives participate in shipboard activities.

- Finalized discussions pursuant to writing a science berthing plan to provide consistent, firm guidelines for use of designated science berths aboard *Healy* by scientists, while also allowing for use of excess spaces by Coast Guard personnel;
- Discussed means, including more active interactions with UNOLS tech support programs, for minimizing technical staff turnover.
- Continued discussion and development of plans for more efficient on-deck stowage of vans and for provision of an improved winch monitoring and control system.
- Discussed and put into motion plans for improved mechanisms for tracking and storing hazardous materials aboard ship.
- Continued discussion of the MOA between NSF and USCG concerning provision and maintenance of shipboard science equipment, with growing concern over provision for the *Polar Star*.

Present AICC membership is as follows (additional details are available at <http://www.unols.org/committees/aicc/>): Robin Muench, ESR (Chair); Lee Cooper, UMCES (Deputy Chair); Robert Campbell, URI; Karen Frey, Clark U.; Steve Hartz, UAF (RVTEC Rep.); Jeremy Mathis, UAF; Larry Mayer, UNH; Don Perovich, CRREL; Luc Rainville, APL/UW; Doug Russell, UW (RVOC representative); and



Carin Ashjian, WHOI (*ex officio*, Past Chair).

The AICC last met on 9-10 December 2010 in Seattle, Washington. Materials presented, minutes, and an attendee list are available at <http://www.unols.org/meetings/2010/index.html>. The next meeting will take place on 20-21 April 2011 at the NSF facility in Arlington, Virginia. Additional

information concerning some of the foregoing topics, as well as polar icebreaker operations in general, can be found on the IceFloe website that is maintained by the USCG at <http://www.icefloe.net/>.

Editorial Note – The decommissioning plans for *Polar Sea* were learned after this article was submitted. The information about the decommissioning plans was

added by the editor based on the following reference:

[1] Testimony of Admiral Robert J. Papp, Jr., Commandant, U.S. Coast Guard - Coast Guard Fiscal Year 2012 Budget Request Before The House Subcommittee on Coast Guard and Marine Transportation, March 1, 2011 - [http://www.uscg.mil/announcements/alcoast/059-11\\_alcoast.txt](http://www.uscg.mil/announcements/alcoast/059-11_alcoast.txt)

## Scientific Committee for Oceanographic Aircraft Research News

*Excerpts of the report provided by Daniel S. Schwartz, SCOAR Chair, to the UNOLS Council in March 2011*

The SCOAR met once in person in 2010 at the Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) facility in Marina California. At that meeting, SCOAR resolved to recommend that ONR support a technology and scientific demonstration project that would employ an unmanned aerial system (UAS), to be launched from, and recovered aboard, a UNOLS vessel, and that it be employed to collect useful scientific data while operating away from the ship. ONR is currently working with a Principle Investigator on the feasibility of such an operation as part of an upcoming Physical Oceanography cruise of the R/V *Roger Revelle*, in the Indian Ocean. There are a number of technical, logistic and infrastructure challenges to be worked out and we hope to report further progress on this UAS and off-board aerial sensor demonstration. SCOAR continues to play a facilitating role in offering assistance to individuals involved with this demonstration, as planning continues.

SCOAR currently has an opening for another member. Please

see the call for nomination on page 18. Individuals who use aircraft (manned and/or unmanned) and airborne sensors in their scientific research endeavors are encouraged to apply. Experience with the CIRPAS facilities is particularly desirable.

The next meeting of the SCOAR will take place this summer at CIRPAS at the Marina, California facility.

The UNOLS aircraft facility, CIRPAS, will in the near future have another platform that offers great promise for ship-based air operations. It is called the Neptune UAS. What is unique about this particular UAS is that it is recovered in the water, alongside the ship, rather than by a sometimes complicated on-board capture system. Thus, flights terminate in a low inertia recovery to the water, promising greater reliability of operations. We expect to see trials in the future, and will be soliciting interest among investigators who may want to make use of this technology.

At previous meetings, we have suggested that a possible use of a

ship-deployed UAS would be for marine mammal observation for a vessel performing seismic profiling, to ensure that there is no danger to marine mammals. Current practice requires visual observers with big-eye binoculars, limited to daylight, to scan for marine mammals. A UAS would not only scan a much larger area around and ahead of the ship, but also by employing FLIR sensors it could likely continue the search at night or in poor visibility. CIRPAS has a couple of different multi-spectral optical turrets that could provide this capability. The potential use of these systems for marine mammal observation can be explored further.

Airborne environmental and oceanographic sensors and platforms are rapidly evolving with promising increases in capability and applicability. In an era of austere Federal budgets, these may offer a cost effective way to acquire data over a variety of spatial and temporal scales. It is worth our community's attention to monitoring of developments in these fields as we enter the second decade of the twenty-first century.



## Research Vessel Technical Enhancement Committee (RVTEC) News

By David Fisichella, RVTEC Chair

The Research Vessel Technical Exchange Committee had an active year in 2010. Major changes to the committee's charter were proposed that will create Chair, and Chair-elect positions to replace the current Chair and Vice Chair arrangement. This will align RVTEC with other UNOLS committees and provide for a more seamless transfer of leadership in the future.

Other important activities in 2010 included compliance to the new Appendix A (wire safety standards) of the RVSS and eminent release of Appendix B (Winch safety standards) of that same document. With compliance of Appendix A scheduled for 2011 Rich Findley and Aubri Steele of the University of Miami scheduled workshops to address how these new standards should be incorporated into ship operations.

The annual RVTEC meeting was held this year in Bermuda. Some of the issues discussed included bandwidth issues for Internet connectivity to the fleet, the continued integration of the R2R program and its impact on the science technicians, and the response to the Gulf oil spill, and the fleet's role.

One of the goals established for 2011 is for increasing the level of participation in the annual meeting and changing the format to encourage a greater exchange of ideas related to the fleet's technical services.

## Ocean Observing Science Committee (OOSC) News

By Larry Atkinson, OOSC Chair

A new UNOLS committee has just been created to provide advice and guidance on decisions and plans from the science perspective related to NSF observing investments such as the Monterey Accelerated Research System (MARS) and the Ocean Observing Initiative (OOI) as well as other ocean observing support systems. The OOSC will be an essential element in the process of communicating the science user perspective to the National Science Foundation and to the project teams involved in developing, deploying and operating ocean observatories.

The OOSC was formed in late 2010 and is still filling out its membership. Members to date are Larry Atkinson (ODU) Chair, Emmanuel Boss (U. Maine), Suzanne Carbotte (LDEO), Steve DiMarco (TAMU) and Mary Jo Richardson (TAMU).

In the coming months OOSC will meet to refine its charge to ensure it meets the needs of the research community and NSF.

## Welcome Aboard!

The following individuals were elected to the Council or appointed to UNOLS Committees last year:

- Council: Peter Ortner (Chair-Elect), Larry Atkinson, David Fisichella, Graham Kent, Stewart Lamerdin, Joe Malbrough, and Deborah Steinberg
- DESSC: Vicki Ferrini, Samantha Joye, Evan Solomon, and John Wiltshire
- FIC: Fernando Martinez, Alexander Shor
- RVTEC: David Fisichella (Chair)
- RVOC: Sam De Bow (Interim Chair-Elect)
- AICC: Robert Campbell and Doug Russell
- SCOAR: Phil McGillivray
- MLSOC: Graham Kent (Acting Chair), Nathan Bangs, Jeff Rupert, David Scholl, and Alexander Shor,
- SSC: Stewart Lamerdin (Chair) and Rose Dufour and Liz Brenner (Co -Chair-Elects)

Thank you for your willingness to serve the UNOLS community and welcome aboard!

## Council and Committees – Departures

UNOLS thanks those Council and Committee members who completed their terms and service for UNOLS in the past year. The following individuals are recognized:

- Council: Peter Wiebe, John Diebold, Rich Findley, and Stan Winslow
- DESSC: Bill Chadwick, Jeff Karson, Craig Young, and Deb Kelley
- FIC: Jim Cochran
- RVTEC: Rich Findley
- RVOC: Pete Zerr
- MLSOC: Michell Lyle
- SSC: Stan Winslow and Liz Caporelli
- SCOAR: John Bane, Daniel Riemer, Nick Shay, and Richard Zimmerman

The time, service, and contributions provided by these individuals are greatly appreciated. *Thank you for your service to UNOLS!*



## RESEARCH VESSEL SAFETY STANDARDS

### ~ Appendix A and Appendix B ~ Wires and Winches ~

*By Dan Oliver, RVOC Safety Committee Chair*

It has been two years since the ninth edition of the Research Vessel Safety Standards was published in March 2009. One of the changes for how the UNOLS fleet operates that was included in the ninth edition was the addition of Appendix A; UNOLS Rope/Cable Safe Working Load Standards. The required compliance date for the UNOLS fleet with the requirements of Appendix A was set at 18 months after promulgation which made it 12 September 2010. The required compliance date was extended at the end of last summer by nine months to June 12, 2011.

Appendix A was an effort to standardize across the fleet minimum requirements for all UNOLS institutions to follow for using wire ropes and cables for science work. It also introduced a fleet wide standard that allows operation of science wire rope and cables at a factor of safety less than 5.0 when additional requirements beyond the minimum are met. Tables 6.1 through 6.4 in Appendix A provide a matrix of requirements for operating with varying factors of safety:

- Table 6.1 sets the minimum requirements and is applicable for operating with a factor of safety of 5.0 or greater.

- Table 6.2 allows operation at a factor of safety from less than 5.0 to 2.5.
- Table 6.3 allows operation at a factor of safety from less than 2.5 to 2.0.
- Table 6.4 allows operation at a factor of safety from less than 2.0 to 1.5.

Tables 6.2 through 6.4 each have increasing requirements beyond the minimum contained in Table 6.1 for tension monitoring, alarms, sheaves, deck safety, wire testing, and training to operate at lower factors of safety.

There is no requirement in Appendix A for any UNOLS institution to operate with a factor of safety less than 5.0. That is left to each UNOLS institution to decide on and will depend on many factors such as age of the equipment, the type of science that is done, the size of operating crews, even the culture within the institute. For institutions that need to make science handling equipment upgrades to operate at a factor of safety less than 5.0, such as installing tension monitoring systems or replacing sheaves, this can be done by submission of a proposal under NSF's Shipboard Scientific Support Equipment program.

In the near future the Safety Committee will be putting forth an

amendment to Appendix A that incorporates feedback received during the Appendix A workshops that Rich Findley has been giving in the past six months. There are no significant changes in the pending amendment so no further extension on compliance with Appendix A is expected. Take some time to review again what it will take for your institution to comply with the requirements in Appendix A as the deadline this summer approaches.

A counterpart to Appendix A is Appendix B which is currently in draft form and posted on the UNOLS website for review and comments. Appendix B brings design standards to the UNOLS fleet for science load handling systems. As with Appendix A, there are requirements for UNOLS institutions to comply with for handling systems. Take advantage of the review period to thoroughly review the draft and provide your comments back to the Safety Committee.

Another opportunity to the UNOLS fleet for feedback on both Appendix A and B will be during the upcoming Research Vessel Operators Committee meeting scheduled for 26-28 April in San Diego. One of the agenda topics for that meeting will be a review of both appendices and an opportunity to get feedback from the vessel operators.



~ Call for Nominations ~  
**Scientific Committee for Oceanographic Aircraft Research**

The Scientific Committee for Oceanographic Aircraft Research is seeking applications and nominations to fill a committee position that is currently open. Experience with the use of aircraft (manned or unmanned) or coordinating the use of aircraft with other marine facilities in your research is highly desirable. In particular, individuals who have used or plan to use the aircraft facilities that are part of the Navy's Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) are desired. Regional and institutional diversity will be considered in choosing a new member. The term of office is three years and a member may serve one additional three-year term. For more information about SCOAR visit the website at: <<http://www.unols.org/committees/scoar/index.html>>.

Committee members are appointed by the UNOLS Chair based on the recommendation of the Committee and with the concurrence of the UNOLS Council. Applicants or nominees should submit a brief statement of interest in serving on SCOAR along with a CV to the UNOLS Office by email to <[office@unols.org](mailto:office@unols.org)>. Statements of Interest and CVs are requested by May 1, 2011. For additional information about UNOLS Committees visit the website at: <<http://www.unols.org/committees/index.html>>.



<b>Upcoming UNOLS Meetings</b>		
<b>Meeting</b>	<b>Dates</b>	<b>Location</b>
Arctic Icebreaker Coordinating Committee (AICC) Spring Meeting	April 20-21, 2011	NSF, Arlington, VA
Research Vessel Operators' Committee (RVOC) 2011 Annual Meeting	Apr 26-28, 2011	San Diego, CA
Deep Submergence Science Committee (DESSC) Spring Meeting	June 16-17, 2011	Woods Hole, MA
Arctic Icebreaker Coordinating Committee Fall Meeting	Dec 1-2, 2011	Seattle, WA

*I would like to thank all who contributed information and articles for this issue of UNOLS News. Articles are always welcome and encouraged. Copy can be submitted by e-mail to <[office@unols.org](mailto:office@unols.org)>.*

*Thank you,  
 Annette DeSilva  
 Editor, UNOLS News*

E-mail: [office@unols.org](mailto:office@unols.org)  
 Phone: (401) 874-6825  
 Fax: (401) 874-6167  
 Mail: UNOLS Office  
 Graduate School of Oceanography/URI  
 215 South Ferry Rd  
 Narragansett, RI 02882

