

**UNOLS ANNUAL MEETING**  
**Tuesday and Wednesday, October 13-14, 2009**  
**The National Science Foundation**  
**4201 Wilson Boulevard**  
**Stafford II, Room 555**  
**Arlington, VA 22230**

**Meeting Minutes**

***Executive Summary:***

The UNOLS Annual Meeting was held at the National Science Foundation (NSF) in Arlington, VA on Tuesday and Wednesday, October 13 –14, 2009. The keynote address was delivered by Dr. Jane Lubchenco, Under Secretary of Commerce and Administrator of the National Oceanic and Atmospheric Administration.

The Annual Meeting also included reports on fleet renewal plans, agency activities, UNOLS Committees updates, and a presentation on this year’s accomplishments and goals. Elections were held for three UNOLS Council positions. Dr. Wilford Gardner of Texas A&M University was elected for a first term. Dr. John Diebold of the Lamont-Doherty Earth Observatory and Dr. Bob Collier of Oregon State University were reelected to second terms as Council members.

***Appendices:***

I	<a href="#">Meeting Agenda</a>
II	<a href="#">Participant List</a>
III	<a href="#">UNOLS Year in Review</a>
IV	<a href="#">Office of Naval Research Report</a>
V	<a href="#">National Oceanic and Atmospheric Administration Report</a>
VI	<a href="#">Summary of 2009 operations and the 2010 scheduling process</a>
VII	<a href="#">Ship Utilization Charts</a>
VIII	<a href="#">Summary of Agency Recommendations for 2010 Fleet Operations</a>
IX	<a href="#">UNOLS Process for Review of Agency Recommendations</a>
X	<a href="#">Ocean Class Acquisition Update</a>
XI	<a href="#">Regional Class Acquisition Status</a>
XII	<a href="#">Replacement Human Occupied Vehicle Project</a>
XIII	<a href="#">Consortium for Ocean Leadership</a>
XIV	<a href="#">Ocean Observing Initiative – Project Update</a>
XV	<a href="#">UNOLS Council 2009 Slate</a>
XVI	<a href="#">Interagency Working Group on Facilities Report</a>
XVII	<a href="#">"Science at Sea: Meeting Future Oceanographic Goals with a Robust Academic Research Fleet" - A report of the NRC Committee</a>
XVIII	<a href="#">2009/2010 UNOLS Goals and Priorities</a>
XIX	<a href="#">Marine Technician Recruitment and Retention</a>
XX	<a href="#">Rolling Deck to Repository (R2R)</a>
XXI	<a href="#">Fleet Improvement Committee Report</a>
XXII	<a href="#">Research Vessel Operators' Committee Report</a>
XXIII	<a href="#">Research Vessel Technical Enhancement Committee Report</a>
XXIV	<a href="#">Arctic Icebreaker Coordinating Committee Report</a>
XXV	<a href="#">Marcus Langseth Science Oversight Committee Report</a>

XXVI	<a href="#">Scientific Committee for Oceanographic Aircraft Research Report</a>
XXVII	<a href="#">Keynote Address: A Report from Dr. Jane Lubchenco, Administrator of NOAA</a>
XXVIII	<a href="#">UNOLS Report</a>

**Meeting Summary:**

**Welcome and Introductions** – Vernon Asper, UNOLS Chair, called the 2009 UNOLS Annual meeting to order at 1PM on October 13, 2009 and welcomed everyone. Introductions were made around the room. The meeting agenda is included as *Appendix I* and the attendance list is included as *Appendix II*.

Vernon presented a report on, "The Year in Review" (*Appendix III*) that summarized UNOLS issues, activities and major accomplishments in 2009. In 2009 some of the activities and highlights included:

- The UNOLS Fleet Improvement Plan was published! The document is available on the UNOLS website.
- New UNOLS Brochure, “The Research Fleet” is now available. Contact the UNOLS Office for copies.
- The update of the Research Vessel Safety Standards was endorsed by the UNOLS Council in March 2009.
- Fleet Renewal:
  - NSF’s made their first major award under the American Recovery and Reinvestment Act (ARRA) to the Alaska Region Research Vessel (ARRV) – May 27, 2009
  - Navy RFP for Ocean Class Phase I/II was announced in April 2009
  - Navy announced a solicitation for Ocean Class ship operators. The proposals are due Nov 2, 2009
  - Ocean Class Science Mission Requirements (SMRs) – The Fleet Improvement Committee with input from the community established values and priorities for the Ocean Class SMRs. These were shared with the Navy as they move forward with plans for new vessels.
- Two workshops were held:
  - Marcus Langseth Science Oversight Committee (MLSOC) Workshop - August 12-13-2009, Denver, CO – Focus: planning and promoting future operations of R/V *Marcus Langseth*
  - Crew and Marine Technician Recruitment and Retention Workshop – February 18 & 19, 2009, Austin, TX
- UNOLS Office moved from Moss Landing Marine Laboratories to University of Rhode Island – May 1, 2009
- NRC Study on the “Evolution of the National Oceanographic Research Fleet” – UNOLS provided presentations and Fleet statistics to the committee.
- H1N1 e-Training offered to UNOLS Fleet operators.
- Revival of the Science Committee on Oceanographic Aircraft Research (SCOAR). Dan Schwartz was appointed as the SCOAR Chair.

**Federal Agency Reports:**

**National Science Foundation (NSF)** – Bob Houtman provided a brief report. The ARRA funding was the driver for a large part of the year for NSF. With the ARRA funds, NSF was able to support a lot of things that they would not have been able to do otherwise. The ARRA funds that supported Geo Sciences totaled \$340M, with Ocean Sciences receiving \$114M of those funds. It resulted in support for additional ship days (~400 days).

NSF is operating on a continuing resolution. The forecast is that 2011 will be a sparse year for federal budgets.

**Office of Naval Research (ONR)** – Tim Schnoor provided the ONR report. His slides are included as *Appendix IV*. Tim reported on the Navy AGOR usage in 2009. The six Navy owned ships had a total of 1718 days with 366 of these days supported by Navy. Navy-sponsored research on other UNOLS vessels included work on 10 ships for a total of 351 days.

In 2010 there are 1811 (47%) of the total operating days scheduled on the Navy owned ships. The Navy has scheduled 473 ship days in 2010.

In 2009 INSURV inspections were completed on *Atlantis*, *Knorr*, and *Kilo Moana*. *Thompson* and *Melville* are scheduled for their inspections. There were unplanned drydockings for *Atlantis*, *Melville*, and *Thompson*. When *Melville* was in the yard, its work was moved to *Revelle*. Shipyards are planned for *Kilo Moana* and *FLIP*. The Navy will be looking at the AGOR Z-drives to determine the cause of the problems and what can be avoided.

**National Oceanic and Atmospheric Administration (NOAA)** – Bill O’Clock provided the NOAA report. His slides are included as *Appendix V*. Bill’s report covers:

- FY 2008 Ship & Aircraft Accomplishments
- NOAA Ships & Aircraft in FY2009
- Status of *Okeanos Explorer*
- Status of Recapitalization Plan
- NOAA Survey Vessel (NSV) Study

The FY2008 NOAA accomplishments included:

- Operated 21 vessels which provided 4,960 total ship operating days (reported thru August and planned for September): 3,640 NOAA ship days using OMAO and Program funds and 1,320 charter days using OMAO and Program funds
- Operated 12 aircraft which provided 4210 flight hours (reported thru August and planned for September): 2,430 hours using OMAO funds and 1,780 hours using Line Office program funds and reimbursable funds.
- Continued the recapitalization of NOAA ships:
  - FSV 5 preliminary design moving forward
  - FSV 6 requirements being refined in anticipation of funding
  - *Rude* decommissioned in March
  - *John N. Cobb* decommissioned in August
  - *Okeanos Explorer* commissioned in August
  - *Bell M. Shimada* (FSV 4) launched in September
  - *PISCES* (FSV 3) projected delivery in October

In FY09 there are 19 NOAA Ships and 12 NOAA Aircraft in operation.

Bill reported on the status of *Okeanos Explorer*:

- May 2008 – Completed Conversion Phase II in Bellingham, WA
- May 2008 – Ship Integration begins in Seattle, WA
- July to August 2008 – Conducted ship shakedown
- August 2008 – Commissioned in Seattle, WA
- September 2008 – Completed Mapping Shakedown
- October to November 2008 – ROV and Telepresence Performance Acceptance Testing
- April 2009 – Begin field trials in the Pacific Ocean

NOAA's Recapitalization Plan was approved by OMB in September 2008. The Plan's recommendation for FY2010 to FY2024 is to replace nine active NOAA ships with either the Fisheries Survey Vessel (FSV) or NOAA Survey Vessel (NSV) class and conduct a service life extension on one other active NOAA ship. In response, NOAA was directed to provide to the House and Senate Appropriations Committees a study that evaluates the design and operations of future research vessels in the form of a NOAA Survey Vessel for multi-mission operations, to maximize on-site activities and modularize for versatile platform availability. In 2009, NOAA worked to draft and complete the NSV report before sending it to Congress in mid-year.

The ARRA funding to NOAA went towards infrastructure. NOAA is currently operating on continuing resolution.

Bill provided information on vessel acquisition updates. *Shimada* has some acoustic issues in meeting the ICES curve. They are working on this and will hopefully have a resolution soon.

The NOAA vessel home port on the West coast will be moving from Seattle to Newport, Oregon.

**Department of State** – Liz Tirpak provided the report. The projected date for testing the Department of State's new automated on-line clearance request system is the end of October/early November. A message will be sent through the UNOLS Office. In the course of a year, they have about 300 requests.

Liz reported on some changes at state:

- Guidance can now be provided on-line.
- Maggie Hayes has retired, but will continue to work on the extended continental shelf.
- Evan Bloom is now Liz's supervisor.
- Roberta is still in the office.

**United States Coast Guard (USCG)** – Jon Berkson provided the report for the USCG. *Healy* is back in port in Seattle and will go into the shipyard in October to install a multibeam system. The *Polar Sea* will support the BEST cruise in the spring/summer 2010.

### **Fleet Operations in 2009 and Recommendations for 2010:**

**Summary of 2009 Operations and the 2010 Scheduling Process** – Stan Winslow, Ship Scheduling Committee Chair, reported on the scheduling activities in 2009. His slides are included in *Appendix VI*.

In February 2009 the Large ship schedulers met with NSF and ONR reps at SIO for an initial 2010 scheduling meeting and to make a first cut at 2010 schedule options. The agencies set priorities. From February to July, schedulers broken down into sub-groups for scheduling conference calls by ship class. In May, R/V *Melville* suffered a major engineering casualty resulting in approximately six months out-of-service with major 2009 schedule implications that bleed over into 2010. In July all schedulers met with agency reps at NSF for a one day meeting. Progress was made, but there were still many issues to be worked out. In August additional conference calls were held to work out issues. Double bookings were eliminated and schedulers were told to post their best LOI. In September, the agencies prepared their 2010 scheduling recommendations for the UNOLS Council and schedulers were allowed to post their 2010 schedules.

Jon Alberts continued the report and presented charts and graphs that show the 2010 statistics as well as historical trends (**Appendix VII**). Charts showing the trends in fleet usage profile prior to 2000 as well as those since 2000 were presented. The downward trends in utilization of the east coast Intermediates with Regionals (> 120 ft) and west coast Intermediates and Regionals (>120 ft) could be seen. NSF is supporting 73% of the fleet operations this upcoming year (2010). There are greater than 700 fewer days in 2010 than 2009. The Global ships are at or above capacity. Smaller ships are struggling. Days supported by “other” sources are way down.

**Summary of Agency Recommendations for 2010 Fleet Operations** – Bob Houtman reviewed the Agency recommendations for 2010 fleet operations. His slides are contained in **Appendix VIII**. The agencies wanted to follow the UNOLS process for review of the fleet operations.

The agency recommendations are as follows:

- *Langseth* will be in maintenance from January to March 2010. There were only 5 cruises planned, but there were conflicts with weather windows, so they decided to have a dedicated maintenance period.
- *Endeavor* and *Oceanus* will operate with partial year schedules.
- There are *Sea-Link* submersible cruises on *Seward Johnson*
- Encourage HBOI to inform the Council on the UNOLS status of *Seward Johnson*
- There are “HOTS” cruises on *KM*, *KOK*, *Wecoma*
- Send *Cape Hatteras* to the Gulf of Mexico
- Encourage operators to reduce costs and seek other funding sources
- Emphasize to Institution-owned ships to decide if they can support their vessel operation.

Discussion:

- Dan Schwartz – He gets phone calls from PIs for Ocean Exploration (OE) cruises for 2010 late in the scheduling process. It is a missed opportunity. He is surprised that OE is putting out a call for proposals in the fall for ship time in 2010. The OE work is for Global ships with ROV support.
- Lind Goad:
  - Work in the Atlantic is very low and 2011 looks very low for the Intermediates.
  - The picture is very dismal
  - Proposal pressure is down.
  - We don’t have enough work to support all the ships
  - The community will need to propose work for smaller ships

- Mary Jane Perry – What is the status of the OOI ship time? Linda – There is only about 100 to 150 days for OOI during the construction phase.
- Linda - There are a lot of items not included in the ship operations cost trend charts. She is projecting an over-budget of about \$5M and this does not include any lay-up.
- Linda –MG&G separated out the proposals that requested ship time. This was so that there was not a sticker shock on the cost of the proposal.

**UNOLS Process on Recommending Non-Operational Periods** – Mary Jane Perry provided the report from the UNOLS subcommittee regarding the Agency recommendations for 2010 operations (see *Appendix IX*).

In July 2006, the UNOLS Council was asked to define the criteria and a process for helping the Agencies with non-operational fleet decisions. The process that was developed and that is followed is available at:

[http://www.unols.org/publications/reports/budget\\_impacts/NonOp\\_Process\\_Recmd.pdf](http://www.unols.org/publications/reports/budget_impacts/NonOp_Process_Recmd.pdf)

The criteria call for operations to consider:

- Meeting Science Needs
- Geographic Availability
- Cost of Operations
- Quality of Operations
- Sharing the Pain
- Diversity of Operations.

The UNOLS Subcommittee that reviews the agency recommendations is appointed by the UNOLS Council Chair and is comprised of at least three members from non-operating institutions. The Subcommittee members for this year’s review were appointed in September 2009 and include Vernon Asper (U So MS), Mary Jane Perry (U ME), and John Morrison (UNCW).

The charge to Subcommittee was to provide balanced, fair, and un-conflicted feedback to the Agencies on the adequacy of the recommendations and possible alternative scenarios to consider within 30 days. The Subcommittee shared the draft recommendations with UNOLS ship operators, the Council, the UNOLS Office and any other interested parties.

Mary Jane reported that this year’s subcommittee agreed with the agencies recommendation on fleet operations for 2010.

### **Facility Renewal Activities:**

**Ocean Class Acquisition Update** – Chris McDonald provided the status of the Ocean Class AGOR acquisition effort. His slides are included as *Appendix X*. The slides include information about:

- History/Status of Acquisition Efforts
- History of Specification Development
- Acquisition Schedule
- ONR & UNOLS “At-Large” Representation
- Possible UNOLS Ocean Class Advisory Committee

- Proposed Operator Representation

In 2009 the Acquisition Strategy Report (ASR) was signed on 24 Feb. The Capabilities Development Document (CDD) was signed on Mar 18, 2009, and the Source Selection Plan was signed on April 27, 2009.

The status of the Ocean Class source selection is as follows:

- Phase I/II Solicitation:
  - Released 24 Apr 2009
  - Proposals received 24 Jun 2009
  - Phase I: Preliminary/Contract Design
    - Contract awards ~ Dec 2009
    - Post award conferences ~ Jan 2010
    - First design reviews ~ Mar 2010
  - Phase II: Detail Design and Construction
    - Contract award ~ FY 2011, Q2
- Deliveries:
  - 1<sup>st</sup> ship – FY 2014, Q2
  - 2<sup>nd</sup> ship – FY 2014, Q4

ONR appointed Mike Prince as their Research Facilities Assistant (ONR Code 321RF) as an IPA. Mike reports to Tim Schnoor at ONR and works with Chris MacDonald at PEO-Ships. Mike's contact info is: jonathan.m.prince@navy.mil; office phone at CIRPAS/NPS 831-384-2776 ext 43; mobile phone 571-329-4761. Mike will represent the interests of ONR and the broader UNOLS community during the Ocean Class AGOR design and construction process. He will coordinate with Operator representatives during design reviews and construction. Mike reviewed his responsibilities (see slides).

Chris reported that the Navy plans to work with UNOLS on the possible formation of an advisory committee to serve as a resource for ONR, NAVSEA, the selected operators and the UNOLS Community. Selection of the advisory committee would take place after selection of operator institutions. Navy also plans to include Phase I/II UNOLS Ocean Class AGOR Operator Representatives in the design reviews.

Discussion:

- Kenneth Coale – What sort of input will the operators provide? Chris – The designs are not set yet. Operator reps can provide feedback.
- Dan Schwartz – Is the bridge design locked in? Mike – He doesn't think so.
- Linda Goad – Will the ships have z-drives? Mike – Not necessarily.

**Regional Class Acquisition Status** – Matthew Hawkins reported on the Regional Class acquisition status. His slides are included as *Appendix XI*.

The Regional Class Research Vessel (RCRV) final design packages from both teams were received from NAVSEA. The MOU with NAVSEA ended. NSF convened a "Panel of Experts" on October 7-8, 2009. The panel included some of the original Science Advisory Committee, Naval Architects, Marine Superintendents, Tech Managers, and Noise Experts. A rigorous

design selection plan followed and single design was successfully chosen. NSF follow-up actions will be developed based on the Panel recommendations.

The proposed RCRV schedule is to:

- Move forward with “ARRV-like” process:
  - Phase I - Project Refresh
  - Phase II - Shipyard Selection
  - Phase III - Construction
  - Phase IV - Transition to Operations
- In late 2009, NSF will review the Panel recommendations and have discussions with the UNOLS Community.
- If construction funds are identified:
  - Late 2010: Release Solicitation for “*Construction and Operation of the RCRV*” > Review Proposals
  - & Begin Phase I
  - 2012: Shipyard Selection
  - 2013: Construction
  - 2015: Trials
  - 2016: Begin Science Operations

**Replacement Human Occupied Vehicle (RHOV) Project** – Brian Midson reported on the RHOV project. His slides are included as *Appendix XII*. The project is in its 5th year. During the initial years of the project when the plan was to outsource the entire effort, the cost estimate came in at double the price. A new approach was needed and it was decided to fabricate a new sphere and install it in the *Alvin* vehicle. Brian’s slides showing existing and new components of the RHOV and the sphere fabrication. He showed a short movie clip of the sphere forging and electron welding.

The current project timeline is:

- Readiness Review, September 2009
- Preliminary Design Review, December 2009
- Final Design Review, July 2010
- Sphere Delivery, March 2011
- Initial Sea Trials, Early 2012

**UNOLS Membership Votes:** Ballots were distributed to UNOLS Representatives by mail. Elections for the following UNOLS Council positions will be held during this meeting:

- UNOLS Operator Representative (3 year term)
- UNOLS Council Member At-large (3-year term)
- UNOLS Non-Operator Representative (3 year term)

The slate of nominees is included as *Appendix XV* and can also be viewed at: <<http://www.unols.org/meetings/2009/200910anu/Slate09.html>>.

**Break**

**Consortium for Ocean Leadership** – Bob Gagosian provided an update on Ocean Leadership activities. His slides are included in *Appendix XIII*.



Bob reported in the Interim Report of the Interagency Ocean Policy Task Force dated September 10, 2009. The Policy places an emphasis on stewardship. The Principles include:

- Ecosystem-Based Management
- Protect, Maintain and Restore”
- Minimize adverse environmental impacts
- Best Available Science
- Precautionary Approach

**Areas of special emphasis include:**

- Resiliency and Adaptation to Climate Change and Ocean Acidification
- Regional Ecosystem Protection and Restoration
- Water Quality and Sustainable Practices on Land
- Changing Conditions in the Arctic
- Ocean, Coastal, and Great Lakes Observations and Infrastructure

The sustainable management of ocean ecosystems, and mitigation of and adaptation to impacts from climate change, requires increased capacity to predict, assess and respond to future ocean risks scenarios

**The Ocean Policy science priorities include**

- Changes in Ocean Productivity
- Opening of the Arctic System
- Forecasting and Adapting to Sea Level Rise
- Observing System Requirements

Bob encouraged everyone to review the interim report from Task Force. There will be another opportunity for public comments.

**Discussion:**

- Marcia – Will there be attempts to enact a science policy? Bob – He was pleased at the amount of science that was in report – he thinks it will stay.
- Julie Morris – There is no mention in interim reports of budgets, but there is science. Bob – Hopefully the report will raise the profile of oceans to a higher level.

**Ocean Observing Initiative (OOI)** – Jean McGovern (NSF) provided the OOI report. Her slides are contained in *Appendix XIV*. The OOI Construction Phase began in May 2009 with an authorization of \$386.4M. In September 2009, Year 1 was funded with ARRA support for \$105.93M. The Awardee is Ocean Leadership. The Implementing Organizations are:

- UCSD (cyberinfrastructure)
- WHOI (coastal/global)
- U of Washington (regional)
- TBD (education)
- Other partner institutions

Jean reviewed the Year 1 activities which include:

- Project Staff up

- Education Implementing Organization on board
- Subsystem requirements and detailed design
- Major procurements underway - Cable Contract
- Prototypes and testing
- Permits and Compliance

**Alaska Region Research Vessel Acquisition Status** – Terry Whitledge (University of Alaska Fairbanks (UAF)) reported on the ARRV status. There was a lot of good news this year with the ARRA funding. They are currently in the process of the yard selection and hope to have one by the end of the year. UAF was given permission to purchase the Z-drives because of their long-lead time for fabrication of about 28 months. There is a ship name selection group and about 200 name suggestions were submitted.

UAF is very happy with the ARRV oversight committee contributions. Their help has been greatly appreciated.

In August a business review of the ARRV project was conducted and they had good suggestions.

Sea trials are planned in 2013.

**R/V *Seward Johnson* Status** – Shirley Pomponi (HBOI/FAU) reported that recently *Seward Johnson* was selected to support a Brazilian contract. It is a five year award. The ship will support environmental assessment and monitoring. A science plan for the project is being developed. There will be opportunities for students and for US scientists. It was a very difficult decision to make on removing *Seward Johnson* from the UNOLS fleet to conduct contract work. The ship will still support oceanographic research. HBOI/FAU is a NOAA Cooperative Institution and is partnering with U. Miami and UNCW.

Discussion:

Sandy Shor – What is the future of the HBOI submersibles? Shirley – HBOI is trying to get a commitment for the sub to do Brazilian work. They are also looking at the next generation sub that could be worked off multiple platforms. There is another ship that could possibly support submersible work, *Atlantic Explorer*.

**Interagency Working Group on Facilities** – RDML Kenul (NOAA) provided an update on the 2009 IWG-F activities and plans for 2010. His slides are included as **Appendix XVI** and provide updates on:

- Federal Ship news
- UAS/AUV/Glider Sub-committee
- Joint Arctic Meeting with IWG-OP
- ORRPIS Near-term Priority Infrastructure Inventory

Federal Ship News:

Navy ships - The Oceanographer of the Navy's Office is working to acquire another vessel under the Modified Repeat Program. In FY 2007, Congress allotted \$117 million for an oceanographic survey ship to be built. The Oceanographer of the Navy's Office is also looking to acquire Unmanned Aerial Vehicles (UAVs) in the FY 2012 budget and hopes to

partner with other federal agencies. The Floating Instrument Platform (FLIP) just completed a project off the coast of Hawaii and marine mammal surveys will be conducted in October.

U.S. Coast Guard ships - The *Healy* is in good condition, the *Polar Sea* has undergone some upgrades, and the *Polar Star* is in caretaker status. The USCG received \$30 million in the 2009 Appropriations toward the *Polar Star* but approximately \$30 million more is needed to complete the necessary upgrades. The USCG is conducting a mission analysis report to evaluate future requirements for icebreakers in the Arctic

Environmental Protection Agency (EPA) ships – EPA’s vessels R/V *Lake Guardian*, R/V *Lear*, and OSV *Bold*, are in good condition. There are changes to the EPA issued Vessel General Permit (VGP) that will effect over 70,000 vessels, including research vessels and foreign vessels. The VGP does not cover vessels less than 79 feet or commercial vessels unless they have ballast water discharges. If a vessel wants to discharge water of any kind, a VGP will need to be issued.

NOAA ships - FSV 3 *Pisces* will be commissioned on 6 November 2009. FSV 4 *Shimada*’s delivery date of 4 October 2009 has been delayed. Both *Pisces* and *Shimada* are expected to be operational in FY 2010. Bids closed for the 5th in series FSV 6 contract on 24 September 2009 and will be awarded March 2010. FSV 5 is currently in the design stage. The vessel is expected to be launched in 2014 and will be ported in the Gulf of Mexico. FSV 7 is being planned to replace the *Miller Freeman* for work off Alaska. *Rainer*, the West Coast hydrographic vessel, will undergo a major service life extension/repair and will be off line for 12 months. Funding for Unmanned Aerial Systems (UASs) is in the budget for FY 2010 but not FY 2011.

A subcommittee under IWG-F was formed on Unmanned Aerial Systems (UASs) and Autonomous Underwater Vehicles (UAVs), and Gliders. The purpose is to conduct interagency meetings related to common life cycle infrastructure, operations and maintenance, data management, and development of new technology.

An Arctic Joint Meeting with the IWG on Ocean Partnerships is scheduled for December 4<sup>th</sup> at the Consortium for Ocean Leadership. Themes of the meeting include operations, research, compliance, foreign contacts, and indigenous contacts.

RDML Kenul reported on the ORPPIS: Ocean Research Priorities Plan and Implementation Strategy. A Near-Term Priorities (NTP) inventory of infrastructure was identified that includes:

- Retired assets awaiting disposition
- Currently operating assets
- Assets currently under construction/fabrication
- Assets proposed for construction/fabrication in FY 2009 President’s Budget
- Assets in conceptual state, potential inclusion in future budget request

Conclusions from the inventory included:

- Most infrastructure is currently operational
- Vessels have the longest life span (20-30 years). Lifespan of most other infrastructure is shorter (3-10 years)
- Argo floats, surface drifters, research vessels, and moorings used across nearly all NTP categories

- Cyberinfrastructure and Supercomputing are necessary up-and-coming tools
- Difficult to cull an in-depth analysis from the inventory structure and input received
- Budget recommendations not possible with information received
- No serious impediments in executing the NTPs with the infrastructure information received

**"Science at Sea: Meeting Future Oceanographic Goals with a Robust Academic Research Fleet"** - Ron Kiss (Webb Institute, retired) and Dick Pittenger (WHOI) provided a report on the findings of the NRC Committee on Evolution of the National Oceanographic Research Fleet. Their slides are contained in *Appendix XVII*. Ron reported that the committee's report was just published. The committee roster is listed in the slides.

When the study began, Navy was preparing an RFP for the design of two new Ocean Class ships and desired near-term advice on how advancements in ocean observing technology and the impacts of rising costs will impact the future fleet relative to Navy needs. Therefore, ONR requested the National Research Council (NRC) to appoint an ad hoc committee to review the scientific and technological issues that may affect the evolution of the UNOLS academic fleet, including.

The findings of the study are:

- The U.S. academic research fleet provides an essential, enabling resource for the nation.
- Scientific demands on the U.S. academic fleet are likely to increase in future years. However, aging ships and evolving technology require fleet modernization and recapitalization to maintain the nation's leadership in ocean research.
- The fleet of the future will be required to support increasingly complex, multidisciplinary, multi-investigator research projects, including those in support of autonomous technologies, ocean observing systems, process studies, remote sensing, and modeling.
- Ocean observatories and autonomous vehicles will impact future vessel design requirements for acoustic communications, deck space, payload, berthing, launch and recovery, and stability. Servicing ocean observatories and launching and recovering autonomous vehicles will result in increased demands for ship time.
- There is a need for increased ship-to-shore bandwidth, in order to facilitate real-time, shore-based modeling and data analysis in support of underway programs, allow more participation of shore-based scientists, and increase opportunities for outreach.
- Supporting future research needs will require both highly adaptable general purpose ships and specialized vessels. Some vessels should be capable of operating in high latitudes and high sea states. More capable Coastal, Regional, and Global class ships will also be needed.
- Development of the NSF-sponsored ARRIV has benefited from community-driven ship design, allowing the users to participate more fully and create optimal designs within cost constraints.
- The increasing cost of ship time and economies of scale associated with larger ships may lead to greater usage of the Global class vessels, which have laboratories, deck space, and berthing capabilities that can support multiple science operations.
- The UNOLS consortium management structure is sound and is of benefit to research institutions, federal agencies, state and private interests. The federal agency partnerships that capitalize and support the academic research fleet, particularly between the Navy and NSF, have a proven record of cost savings and asset sharing. However, there are many assets that are not integrated with UNOLS, leading to suboptimal use of the full U.S. research fleet.

Recommendations:

- Federal agencies supporting oceanographic research should implement one comprehensive, long-term research fleet renewal plan to retain access to the sea and maintain the nation's leadership in addressing scientific and societal needs.
- All future UNOLS ship acquisitions, beginning with the planned Ocean Class vessels, should involve the scientific user community from the preconstruction phase through post delivery of the ship.
- The future academic research fleet requires investment in larger, more capable, general purpose Global and Regional class ships to support multidisciplinary, multi-investigator research and advances in ocean technology.
- NOAA should identify which of its 13,200 unmet annual ship day needs could be supported by the UNOLS fleet. NOAA and UNOLS should work together to develop a long-term plan to increase the usage of UNOLS ships in support of the NOAA mission.
- The NSF Division of Ocean Sciences, NSF Office of Polar Programs, and the U.S. Coast Guard should improve coordination of ship operations and support between the UNOLS and polar research fleets.

The final report will be available December 2009. Prepublication copies can be downloaded from [www.nap.edu](http://www.nap.edu).

**2009/2010 UNOLS Goals and Priorities** – Vernon Asper presented the status of the 2009 UNOLS goals and the new 2009/2010 UNOLS Goals and Priorities as established by the UNOLS Council (see *Appendix XVIII*).

2009 Goals and Status:

- Investigate the feasibility of a more flexible UNOLS to meet the needs of additional users – There was a discussion at the 2009 summer Council Meeting regarding work that is in compliance with the Research Vessel designation. The UNOLS Chair will form a subcommittee to explore this topic further.
- Work with the Consortium for Ocean Leadership, the National Research Council, and the federal agencies to ensure that the fleet is right sized and has the right capabilities for ocean sciences in the coming decades - The UNOLS Chair and Ex. Secretary attended the Ocean Leadership meetings.
- Continue to lower barriers to effective use of UNOLS ships caused by disabilities, gender, or other special situations. – Plans for an on-line harassment prevention course are being explored.

2009/2010 UNOLS Goals and Priorities include:

- UNOLS and OPP - Explore the relationship of working with NSF's Office of Polar Programs to coordinate support for Antarctic Research Vessels.
- Greening the Fleet – UNOLS should explore how to make the present and future fleet more environmentally sustainable. New and existing technologies and practices should be used in the construction, operation, and recycling of research vessels and UNOLS should take a leadership role in promoting a green U.S. research fleet, as we move forward in developing the academic fleet.

**Marine Technician Recruitment and Retention** – Jon Alberts and James Holik provided an update on the status of this effort (see *Appendix XIX*). A workshop was held in Austin, TX on February 2009. The key topics discussed included an:

- Aging Workforce
- Competing Employers for highly skilled personnel.
- Increasing more complex work environment
- Finding well suited personnel that have potential and desire to work at sea

With feedback from NSF and the community, UNOLS proposed and was funded to add one full time staff member to the UNOLS Office to conduct and manage a two-year pilot program. At the completion of the two-year pilot program it is expected that the program will be transitioned from the UNOLS office to a UNOLS institution through a competitive proposal process. A centralized Technical Support Manager would provide a focused coordinated effort fleet wide without bias towards any one institution. This would be more effective and cost efficient. It would provide a resource that is not readily available within all technical services groups.

The duties of Technical Support Manager would include:

- Evaluate all UNOLS Institution's Technical Operations in order to better understand shipboard and shore side duties and operations.
- Work to create a UNOLS fleet-wide system for exchange of full-time technicians.
- In cooperation with the National Science Foundation's Program Director for Ocean Instrumentation and Technical Services and the RVTEC Chair, develop a training program for technicians with a focus on increasing versatility and skill level.
- Endeavor to create standard job titles and descriptions throughout the Fleet
- Work with the RVTEC chair to develop an evaluation/certification program to evaluate technicians with regards to experience, specific technical skills, education, training and availability for both full time and contract personnel.
- Maintain a UNOLS Web page to provide information to job seekers.
- Work to establish a data base of contract technicians not currently in the UNOLS fleet that could sail on cruises as needed.
- Visit the UNOLS Institutions to discuss the implementation of the Technician Pool concept with the Operators and to assist in establishing working relationships with the Technical Managers of the fleet.
- Develop a training program for technicians with focus on increasing versatility and skill level.
- Develop a template for a Cruise Support Plan which in essence will be a written agreement between the Institution and the PI as to what the at-sea support will be in terms of equipment and instrumentation provided, technical support and schedule. This document will be prepared by the Institution and delivered to the PI at least 6 weeks before sailing.
- Consider various options for the hosting of the contract technician pool at a UNOLS institution.
- Evaluate ship schedules for potential problems with staffing and to recognize opportunities to increase the technical support if necessary.
- Work with UNOLS office to get an accurate representation on-line for the Fleet's shared-use equipment.

- Work with the NSF Program Manager to revise the Technical Support Proposal Guidelines.
- Conduct and update a needs assessment through surveys of technicians and operators about their needs, concerns and ideas for improving working conditions.
- Increase the visibility and information about jobs on Academic Research Vessels.

The candidate for the position is Ms. Alice Doyle.

Discussion:

- Pete Zerr – When we started this effort it was focused on crewing. The ship’s crewing has been a critical issue and the problem hasn’t gone away. We are looking at a two year pilot program when nothing will be done for the crew.
- Kenneth Coale - He echoes Pete’s comments.
- Dan Schwartz –There is a whole set of problems associated with crewing. There is about \$12K of training required. He is pessimistic about a crew pool.
- Jim Holik – This new UNOLS model was somewhat based on the OPP model. We are trying to augment the UNOLS operations to introduce flexibility.
- Wilf – The pilot program would be done out of the UNOLS office to avoid any biases, but after two years, it would be transferred to another institution. How would biased be addressed at that point? Jon – Like any pooled equipment programs.

**Rolling Deck to Repository (R2R)** – James Holik introduced Vicki Ferrini who gave the R2R report. Her slides are contained in *Appendix XX*.

R2R’s objective is to provide well-documented, high-quality, publicly available data. All underway data are of high value for preservation. Research cruises are staffed by multiple investigators and yield heterogeneous data sets; however, data documentation is difficult and/or sparse. There is little routine QA/QC routinely conducted and it has varied historically depending on operator priorities/capability. Data are not systematically archived at National Data Centers.

Research expeditions involve a variety of data collection activities:

- Operational/Underway (e.g. bathymetry, MET, ADCP, subbottom etc)
- National Facility (e.g. NDSF, Seismic, OBSIP)
- Science party instrumentation (e.g. current meter, sediment traps, chemical/physical probes etc)

The key components of the R2R data stewardship plan include:

- Community Engagement (Operators, Scientists)
- Accommodate full range of vessels and classes
- Data documentation
- Data quality
- Data preservation and dissemination
- Centralized fleet data gateway
- Maximize efficiency (~500 cruises/year)
- Interoperability (NDCs, DACs)

The R2R deliverables and services include basic cruise metadata and data documentation and delivery. Training guides will provide community best practices for data acquisition/reduction. R2R will provide data recovery (original field data distribution) and will support clearance preparation of data to foreign nations.

R2R has worked to provide community engagement, both to the operator community and to the science community.

The Pilot Project progress includes:

- As of 10/12/09 R2R has involved 14 ships and 831 cruises.
- An operator survey was conducted
- There has been development and testing of an Event Logger. It has been tested on several cruises. The implementation plan is for the operator to install the application onboard. The science party would maintain the log underway and results would be loaded in the *rvdata.us* database for dissemination.

R2R's next steps include:

- Expand Community Engagement:
  - Invite the Fleet to join R2R by routinely submitting data
  - Presentations at AGU & Ocean Sciences
  - Operator community input for implementation
  - Science community for development of QA protocols
  - Operator/Chief Scientist Login
  - Mail list & RSS Feeds
- Continue Developing Technical Infrastructure:
  - Real-time data transmission (MET/TSG)
  - Data set documentation
  - Data delivery to NDCs
  - Event Logger
  - Automated QA procedures

*Day 1 Adjourned at 5:05 pm*

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## **Annual Meeting – Day 2**

**Call Day-2 of the Meeting to Order:** Vernon Asper, UNOLS Chair, called Day 2 of the Annual Meeting to order.

### **COMMITTEE REPORTS:**

**Ship Scheduling Committee (SSC)** – Stan Winslow, SSC Chair, had nothing more to add to his report on day 1 regarding ship schedules.

Linda Goad presented the “most gluttonous scheduling award” to the R/V *Thompson*.



**Fleet Improvement Committee (FIC)** – David Hebert, Chair, reported on the FIC's projects completed in 2009 and future activities. His slides are included in *Appendix XXI*.

The Fleet Improvement Plan was endorsed by the UNOLS Council at the March 2009 meeting. The Plan was published in April and is available on-line at: [http://www.unols.org/committees/fic/FIP05/Fleet Improvement Plan 2009 Final.pdf](http://www.unols.org/committees/fic/FIP05/Fleet%20Improvement%20Plan%202009%20Final.pdf)

Dave reviewed the Fleet Improvement Plan recommendations:

- To realize the U.S. Commission on Ocean Policy recommendation for strong support for ocean research, including ample access to modern research vessels, the UNOLS fleet must increase beyond the current projected levels detailed in the *Federal Oceanographic Fleet Status Report* [Interagency Working Group on Facilities (IWG-F)].
- The Federal agencies should continue the fleet renewal activities that are currently underway (the Alaska Region Research Vessel, the three Regional Class ships, and the two Ocean Class ships), under the timeline shown in the 2007 *Federal Oceanographic Fleet Status Report* [IWG-F].
- Begin the process now for new ships that will be needed in 2017 and beyond. Plans for replacement of the two existing general purpose Global Class vessels whose planned end of service life occurs by 2017, must start now. A minimum of one and preferably two new general-purpose Global Class vessel(s) should be planned for, funded, and constructed by 2018.
- New state-of-the-art ships with technically sophisticated equipment will require more highly-trained and specialized personnel to provide technical support. Personnel strategies must be developed to improve the staffing and retention of experienced technical support personnel and crew.
- Recognizing the delays in the timelines for delivering some of the planned ships into the fleet, some of the current ships nearing their end of service life should have their service life extended and be maintained at an adequate operational level to meet near term science requirements until the new ships come on line.
- The Ocean Observatory Initiative (OOI) will place new and increased demands on the vessels of the UNOLS fleet, and on Remotely Operated Vehicles (ROVs) for operations and maintenance. As the observatory systems are installed, the planned end of service dates and geographic locations of these ships should be carefully considered to ensure that OOI ship demands can be met.
- A capable National Deep Submergence Facility (NDSF) that includes a suite of deep submergence vehicles is required for continued support of science on the seafloor and on the mid ocean ridge systems. OOI projects new and increased demands for ROVs for support at their study sites. We recommend that planning and acquisition efforts for new deep submergence assets continue.
- If budget projections remain at the current low level, retirement of the least capable ships near the end of their service lives should be considered. Any decisions on ship retirement versus lay-ups should be made based on multi-year projections of ship time demand rather than single year figures of fleet utilization.
- The smaller (e.g., under 40m) ships of the UNOLS fleet serve a crucial role in supporting science in our nation's coastal zone where the human impacts of development and resource use are greatest. To continue to meet current requirements for the entire academic oceanographic community, UNOLS should encourage the timely replacement of Local

vessels and Coastal/Regional vessels by institutions, state governments, and regional partnerships.

- Federal agencies that operate their own research vessels are encouraged to examine their respective fleet capacities and capabilities to ensure that the Federal fleet as a whole is optimally utilized. Ship capacity that could be used to support academic research ship demand should be identified. Issues of access, facility scheduling, and financial support of an integrated Federal fleet of vessels should be addressed as a coordinated effort between UNOLS and the Interagency Working Group on Facilities.
- We recommend that UNOLS, the federal agencies, and individual operators consider how to make the present and future fleet more environmentally sustainable. New and existing technologies and practices should be used in the construction, operation, and recycling of research vessels and UNOLS should take a leadership role in promoting a green U.S. research fleet, as we move forward in developing the academic fleet.

FIC has been working on an update to the Science Mission Requirements (SMR) and providing input to Ocean Class R/V RFP Development. It was recognized that the SMRs could benefit from some update, re-organization as well as incorporating lessons learned. Stronger statements about minimum requirements and relative priorities are needed to make the SMRs more effective in the design development process. The UNOLS Office created an Ocean Class SMR Table of Values and Priorities. FIC, NSF, ONR and PEO-Ships reviewed the SMR table which, in addition to desired targets, has minimum threshold values. Each item was assigned a level of relative priority (critical, very important and important). The revised SMR table was used as basis for Ocean Class AGOR's specifications in their RFP for Phase I. The revised SMR table was posted on UNOLS web site for community comment. Responses from more than 150 people representing more than 30 institutions have been received.

Dave reviewed the full list of FIC Action items which includes:

- Provide input to the Ocean Class Research Vessel design
- Keep abreast of new technologies entering the UNOLS fleet (e.g., the over-the-side handling system on the RV *Hugh Sharp* and RV *Kilo Moana*, WHOI Long-Coring System)
- Ocean Observatories - Stay in contact with OOI Office.
- Design and Constructions Efforts - Stay engaged in ongoing design and construction efforts (Regional Class, ARRIV, Ocean Class, etc.)
- Keep informed on projects related to improvement of the UNOLS fleet (e.g. fuel saving, Integrated Survey System, bubble sweep down mitigation)

There are positions opening on the FIC membership including the Chair position. This is Dave's last meeting as Chair. On behalf of UNOLS, Dave was presented with a plaque honoring his many years on the FIC and his service as Chair of the committee. The FIC has been extremely active throughout Dave's term and we are very appreciative of his generous contributions of time and efforts.

**Research Vessel Operators' Committee (RVOC)** – Pete Zerr, RVOC Chair, reviewed the highlights of the 2009 RVOC meeting, Committee activities over the past year, and plans for the 2010 meeting. His slides are contained in *Appendix XXII*.

Transportation Workers Identification Credentials (TWIC) are *required for unescorted access aboard Atlantis, Knorr, Marcus G. Langseth, Melville, New Horizon, Oceanus, Roger Revelle, and Seward Johnson*. TWIC is not required for Unescorted Access to *Atlantic Explorer, Blue Heron, Cape Hatteras, Clifford Barnes, Endeavor, Hugh Sharp, Kilo Moana, Pelican, Point Sur, R.G. Sproul, Savannah, Thomas G. Thompson, Walton Smith, and Wecoma*

The Research Vessel Safety Standards, Ninth Edition (RVSS) was approved by the Council in March 2009. The current version is available electronically on the UNOLS website. Pete reviewed the changes made since last revision (March 2003). The overall organization of the document was revised.

The marine superintendents were surveyed to determine the severity of the problem of crewing their respective vessels. The responses to the survey were:

- Two small coastal operators reported that it is not too much of an issue.
- Six operators reported that it is an issue at times.
- Two operators reported that it is always an issue.
- Three operators reported that the problem is serious enough that a cruise or cruises came close to being cancelled or have a high fear that one will need to be cancelled in the future.

Pete reported on the Clean Water Act Requirements for Vessels and EPA's Vessel General Permit (NPDES - VGP). The permit only limits activities in "waters of the United States" (extending to the outer reach of the 3 mile territorial sea"). The permit will limit, in addition to all the existing regulations like oil, garbage, etc.:

- Deck Washdown and Runoff and Above Water Line Hull Cleaning
- Graywater
- Chain Locker Effluent
- Firemain System discharges
- Underwater Ship Husbandry Discharges
- Sonar Dome Discharge
- Boat Engine Wet Exhaust

The permit does not supersede or relieve any otherwise applicable requirements or prohibitions under other provisions of Federal law or regulations; such as, Ballast Water Management Plans, garbage disposal, and oil.

Information about ship inspections, monitoring, reporting, and recordkeeping is included in the slides as well as the Computerized Maintenance Management System (CMMS).

The 2010 Annual RVOC Meeting will be hosted by the University of Rhode Island on April 20-22, 2010.

Discussion:

- Nancy Rabalais suggested that the issue of "flexibility of ship users." This is in regard to better enabling non-traditional users access to the fleet. It should be included on the agenda at the RVOC meeting.

**Research Vessel Technical Enhancement Committee (RVTEC)** – Rich Findley, RVTEC Chair, reported on RVTEC activities in 2009 and plans for the RVTEC Annual Meeting to be hosted by the University of Washington. His slides are contained in *Appendix XXIII*.

The RVTEC 2009 Meeting at the University of Washington included workshops on HiSeasNet, SWAP, Multibeam, and R2R. Some of the agenda highlights included a “Year in Review” presentation, Retention and Recruitment discussion, Network Security, and Data Collection Systems.

In other RVTEC related activities, there is a SCORE working group – OceanScope [http://www.scor-int.org/Working\\_Groups/wg133.htm](http://www.scor-int.org/Working_Groups/wg133.htm), a satellite meeting was held to discuss Fleet Broadband, HiSeasNet, alternate C-Band providers, and KVH Trackphone. There is a retention and recruitment working group and RVTEC is represented on the RVOC Safety Committee.

**Arctic Icebreaker Coordinating Committee (AICC)** – Carin Ashjian (AICC Chair) could not attend the meeting but she sent a written report that Jon Alberts read. The report is included as *Appendix XXIV* and provides details about:

- USCGC *Healy*'s 2009 science season
- *Healy* will enter dry dock at Todd Pacific Shipyard in Seattle WA for maintenance and upgrades, including the installation of a new Multibeam system.
- USCGC *Polar Sea* was on standby to support *Oden* during the McMurdo breakout but her services were not required. She supported work in the Beaufort Sea. There has science cruises planned for 2010.
- USCGC *Polar Star* is in caretaker status at the dock in Seattle WA. The CG is waiting for the results of an engineering assessment study and for a second increment of funding before proceeding to repair the *Polar Star*.
- Efforts to foster good communication between science and northern communities continue.
- The AICC has continued their user debriefs.
- The AICC has solicited nominations for new members. The Committee expects to identify five new members who will take their seats at several time periods between now and January 2010.
- The AICC met June 24-25, 2009 in Arlington VA and will next meet December 8-9, 2009 in Seattle, WA.

**DEep Submergence Science Committee (DESSC)** – Annette DeSilva provided the report on DESSC activities and plans for their fall meeting.

In December 2008, DESSC held their winter meeting at AGU in San Francisco. A new format for the agenda was introduced and consisted of a half day meeting that provided highlights of the NDSF operations for the past year. There was also an opportunity for NDSF users to provide feedback about their experiences in using the *Alvin*, *Jason* and *ABE*. The afternoon of the meeting was devoted to a workshop that the public was invited to. It focused on the design of the replacement HOV (RHOV) and its capabilities. This gave the public an opportunity to comment and provide feedback.

DESSC's spring meeting was in June. This meeting was used as an opportunity to evaluate WHOI's readiness for their Preliminary Design Review (PDR) of the RHOV project. It involved

a lot of pre-meeting reading and evaluations. The PDR review was followed by a half day regular DESSC meeting that included discussions on archiving, user debriefs, imaging, and evaluating the first science cruise of the AUV *Sentry*.

At the end of September 2009, DESSC members participated in another RHOV readiness meeting. It went well, and the members continue to provide comments on WHOI's RHOV documentation.

DESSC's December 2009 meeting will take place on Sunday, December 13<sup>th</sup> in San Francisco. The same format as last year with a half day regular meeting followed by a half day workshop is planned. The afternoon workshops will focus on:

- The science trial cruise of the RHOV. There are some constraints that will be associated with the first cruise. A robust, multi-disciplinary program is required.
- The Hybrid ROV, *Nereus* - *Nereus* has an 11,000m depth capability and had a very successful cruise with Patty Fryer and Tim Shank at the Marianas Trench.

The committee continues conduct debriefs of the NDSF vehicle users.

**Marcus Langseth Science Oversight Committee (MLSOC)** – John Diebold presented the MLSOC slides provided by MLSOC Chair, Steve Holbrook, who could not attend the meeting. The slides are included as *Appendix XXV*.

MLSOC's last meeting was in August 2009 in Denver, CO. It focused on planning a workshop on the "Future of Langseth." MLSOC's next meeting will take place on Sunday, December 13<sup>th</sup> in San Francisco. MLSOC continues to interact with PIs and interface with the operator (LDEO). There will be a call for nominations for positions opening on the committee.

*Langseth* has had ten cruises so far (eight projects) and all were successful. Highlights have included the first multi-streamer 3D cruise (summer 2008), a long 2D streamer (8 km), high-resolution source, and quality shipboard technical support. The 2008 and 2009 cruises to date are listed in the slides. Letters of Intent for 2010 use of *Langseth* include work in the Marianas (47 days), Ontong Java (50 days), and the Aleutians (37 days) for a total of about 173 days scheduled (89 funded and 84 pending). There are only two proposals in the system so far for 2011.

The *Langseth* operations face some challenges:

- Expensive (\$84K/day 3D, \$67K/day 2D)
- Few projects funded (~4/year)
- Long transits (increases day rate)
- Long waits for ship access
- Few young investigators (shrinking community)
- Continued permitting issues

To address these challenges, a workshop is being planned for March 2010: "Challenges and Opportunities in Marine 3D and 2D Seismology." Steve Holbrook and Graham Kent are the co-conveners and the meeting will be held in Incline Village, Nevada.

Discussion:

- Marcia McNutt – An interesting thing for UNOLS to do is to look at the age of Chief Scientists.
- John Diebold – He can provide a list of PIs that are users of *Langseth*. They get the same users over and over. About five are less than 40 years old.
- Linda – UNOLS should take this on as a topic and have an open session at the Ocean Sciences. Young students are being swept up by industry.
- Will Wilcock – you have to convince land seismologists to work on the ships.
- Sandy Shor – Are there non-seismic cruises on *Langseth*? John – LDEO is meeting with NSF to discuss the ship’s general oceanography capability (winches, multibeam, etc).
- Cochran – What about pre-cruise meetings? Linda – This is something that NSF would like to see. Paul Ljunggren – Some of the pre-cruise meetings are taking place at AGU.
- Dave Checkley – Engaging younger scientists is not just a MG&G issue, it is for all of UNOLS.
- Linda – Using transits for collecting data and training younger scientists on how to process data should be considered.

**Scientific Committee for Oceanographic Aircraft Research (SCOAR)** – Dan Schwartz, the new SCOAR Chair, provided the SCOAR update. His slides are included in *Appendix XXVI*.

The SCOAR membership as of October 2009 is listed in the Appendix. On June 11, 2009 SCOAR held a teleconference meeting. It was their first meeting in over two years. SCOAR is planning a Town Hall session during the week of Feb. 22-26, 2010 at the Ocean Sciences Meeting in Portland, OR. The Town Hall meeting will provide an outreach opportunity and will also include show-n-tell displays. SCOAR will also have a poster in the “Ocean Technology & Infrastructure Needs for the next 20 Years” session at Ocean Sciences Meeting.

Dan provided a description of the CIRPAS facility which includes a Twin Otter, Pelican, and Unmanned systems. Images of non-CIRPAS systems and launchers that are used for oceanographic research are included in the slides. Dan presented a video clip of an unmanned aircraft vehicle recovery in the Bering Sea on a NOAA vessel.

Discussion:

- Mike Prince - CIRPAS is a UNOLS designated National Oceanographic Facilities. They are looking for increased access to their facilities.
- Dan – Launch of an UAV from a ship is easy; the hard part is recovery because there is so much stuff hanging off the ships. We should design new ships so that they can accommodate UAV launch and recoveries. They are hoping that the footprint for recovery will get smaller and smaller. John Morrison – One way to do recoveries is to use nets.

**Break**

**Keynote Address:** Marcia McNutt introduced Dr. Lubchenco, Under Secretary of Commerce and Administrator of the National Oceanic and Atmosphere Administration (NOAA). Dr. Lubchenco was on the faculty of OSU from 1977 to 2009. Dr Lubchenco has served on many prestigious committees and Boards (Presidential Appointee on the OSB, National Academy of Sciences, and Pew Oceans committee). She holds at least eight honorary degrees and was the recipient of the Nierenberg award.

Dr. Lubchenco's slides are included as *Appendix XXVII*. The topics of her talk include:

- Overarching Goals
- Strategic Priorities
- Administration Initiatives
- Ocean Policy Task Force
- Budget, ARRA
- News from the NOAA Fleet
- NOAA-UNOLS Shared Challenges and Opportunities

NOAA overarching goals for science, service, and stewardship include:

- Strengthen scientific basis for environmental decision-making
- Improve services: protect life & property, create economic opportunities, enable food & environmental security for all Americans
- Restore oceans and coasts to be healthy, productive and resilient

NOAA is a mission agency, but science is at the core. NOAA has a position of Chief Scientist, but it currently unfilled. It will be filled under this administration. Science is a priority. NOAA's strategic priorities are to:

- Enhance NOAA's Climate Services and Establish a National Climate Service
- Support Healthy Coastal Communities and Ecosystems
- Ensure Sustainable Marine Fisheries
- Strengthen Arctic Science and Service
- Sustain Satellite Based Earth Observations

Details on how NOAA plans to address these priorities are included in the slides.

Dr Lubchenco discussed the Interagency Ocean Policy Task Force. The Task Force was established on June 12, 2009 by a Presidential Memorandum. The Task force is chaired by Nancy Sutley, CEQ, and includes 24 senior policy officials. Deliverables were required within 90 Days (Sept 10, 2009) to address a National Policy, the framework for policy coordination, and implementation strategies. Within 180 Days (December 9, 2009), a Marine Spatial Planning document is required.

Priorities for the National Policy implementation include:

- Ecosystem-Based Management
- Coastal and Marine Spatial Planning
- Inform Decisions and Improve Understanding
- Coordinate and Support
- Resiliency and Adaptation to Climate Change and Ocean Acidification
- Regional Ecosystem Protection and Restoration
- Water Quality and Sustainable Practices on Land
- Changing Conditions in the Arctic
- Ocean, Coastal, and Great Lakes Observations and Infrastructure

NOAA's appropriation trends were presented as well as data on the ARRA funding in 2009. NOAA was awarded \$830M in ARRA funds. Some of the major NOAA projects that were supported by ARRA funds include:

- Climate Computing & Modeling (\$170M)

- Habitat Restoration (\$167M)
- Pacific Regional Center (\$142M)
- Southwest Fisheries Science Center (\$102M)
- Fishery Survey Vessel Construction (\$78M)
- Satellite Development (\$74M)
- Hydrographic Survey (\$40M)
- Vessel Maintenance & Repair (\$20M)

The Ocean Policy includes a recommendation to strengthen and integrate federal and non-federal ocean observing systems, sensors, and data collection platforms into a national system and integrate that system into international observation efforts.

NOAA's fleet recapitalization plans were reviewed. Two of seven planned acoustically-quiet Fisheries Survey Vessels (FSVs) are conducting operations in Alaska and New England. In a survey of Alaskan Pollock, in shallow waters, a new acoustically quiet fisheries survey vessel saw 31% more fish than a conventional ship conducting the same survey. In shallow water, fish showed greater avoidance of a conventional vessel than an acoustically quiet one. Two more FSVs are expected to be operational in 2010. One Coastal Hydrographic Survey Vessel was launched in September 2009. Six additional multi-mission NOAA Survey Vessels (NSVs) will be placed in service between 2018 and 2024. *Okeanos Explorer*, commissioned in August 2008, is NOAA's ship for ocean exploration. The ship has a 'telepresence' capability that allows 'Virtual' expedition management with scientists onshore and enables improved outreach to students, media, and the general public. The vessel is currently working near the Hawaiian Islands, with an expedition to Indonesia anticipated in summer 2010.

NOAA and UNOLS already cooperate on several fronts, including joint research cruises. We also share challenges. The timing of the budget cycle makes scheduling a challenge. Hopefully the Ocean Policy Task Force will help in this regard. It is important that NOAA, UNOLS, and the community work together and speak with 'one voice' on Capitol Hill to promote ocean science.

#### Discussion:

- Dan Schwartz – UNOLS has faced recent challenges in recruiting and retaining crew and techs. Also, there is a "graying" of the science community. Is NOAA seeing this? If so how is NOAA dealing with this? Dr. Lubchenco – NOAA is facing the same issues. A third of their scientists will retire in the next decade. They haven't been hiring young scientists. It is a topic of great concern. With the state of the budget, there needs to be other solutions, not just money.
- Marcia – We have 90 days to react to the Ocean Task Force's weighty topics. What should the community do? We have been trying to address this in a very methodical way. Dr. Lubchenco – Many of the task force recommendations build on the previous studies, but not all of them. Marine spatial planning is not totally new. The Task Force will recommend high level things. These things will have to be implemented. Public comments will help. Marcia – Periodic peer review would be helpful. Community comments now should not be a substitute for bringing in experts later for peer review.
- Sandy Shor – In marine seismic research, the regulatory requirements are daunting and a challenge. Dr. Lubchenco – NOAA will look at the regs to make sure they are not counter-productive.



- Bruce Corliss – UNOLS is beginning a greening the fleet initiative. NOAA’s Great Lake ships are green. Dr. Lubchenco – The Great Lakes ships are all non-petroleum.
- Mike Prince – He is glad to hear about NOAA’s recognition of the challenges. Dr. Lubchenco - Both the NOAA and UNOLS ships have excess capacity and this is due to a funding constraint. If they had more money they would support UNOLS operations, but they would still have a problem of 1-year funding and the timing of their funding cycle.

Vernon Asper thanked Dr. Lubchenco for providing the keynote address.

**UNOLS Report** – Jon Alberts presented the UNOLS Report. Slides are included as *Appendix XXVIII*. Jon introduced Pam Thompson the new UNOLS Administrative Assistant and announced that a new Project Assistant has been hired, Erin Jackson.

Departing Council and Committee members (since Oct 2009) include:

- Council: Mary Jane Perry, Dave Hebert
- DESSC: Jennifer Reynolds
- FIC: Dave Hebert, James Bauer, Newell “Toby” Garfield
- RVTEC: Bill Martin
- AICC: Erica Key, Kate Moran
- MLSOC: Peter Littlewood

New appointments to UNOLS committees include:

- DESSC: George Luther
- FIC: Allan Devol, Clare Reimers
- RVTEC: Rich Findley
- SCOAR: Daniel Schwartz, Steven Ramp, and Roy Woods (ex-officio)

The UNOLS Membership dues accounting for the past year are:

- 2008/2009 Balance Forward: \$ 87.31
- Membership Dues Collected: \$2,950.00
- Total Income: \$3,037.31
  
- Expended (Catering, Room rental) \$ 800.00
- Encumbered (Catering) \$2160.00
  
- Dues Available Balance: \$ 77.31

The UNOLS Calendar and activities at winter conferences were presented.

Vernon Asper provided the Council election results: Dr. Wilford Gardner of Texas A&M University was elected for a first term. Dr. John Diebold of the Lamont-Doherty Earth Observatory and Dr. Bob Collier of Oregon State University were reelected to second terms as Council members.

***The Annual Meeting adjourned at 12:15 pm.***