

**UNOLS Fleet Improvement Committee Meeting  
Woods Hole Oceanographic Institution  
Carriage House, Quissett Campus  
Woods Hole, MA  
Wednesday & Thursday, May 4-5, 2016**

***Meeting Minutes***

***Appendices***

- [2016 Spring Council Meeting – Appendix XVIII: Ocean Observing Initiative Update](#)
- [2016 Spring Council Meeting – Appendix XIX: Ocean Class AGORs – R/V Neil Armstrong and R/V Sally Ride](#)
- [2016 Spring Council Meeting – Appendix XX: Mid-Life Refit Plans for Thompson, Revelle, and Atlantis](#)
- [2016 Spring Council Meeting – Appendix XXI: Regional Class Research Vessels](#)
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- [2016 Spring FIC Meeting – Appendix I: Participant List](#)
- [2016 Spring FIC Meeting – Appendix II: R/V Langseth & MLSOC/FIC Liaison Report](#)
- [2016 Spring FIC Meeting – Appendix III: Fleet Status – Retirements, Additions, Service Life](#)
- [2016 Spring FIC Meeting – Appendix IV: Fleet Improvement Plan Recommendations](#)
- [2016 Spring FIC Meeting – Appendix V: Assessment and Debrief Process for New Vessels](#)
- [2016 Spring FIC Meeting – Appendix VI: FIC Membership Status](#)

***Summary of Meeting Action Items***

<b>Action Item</b>	<b>Assignment</b>
USCG Ice Breaker Plans – NSF indicated that it is appropriate for UNOLS to engage USCG regarding science configuration/outfitting recommendations.	UNOLS - AICC and FIC
Provide UNOLS input to NSF’s Polar Vessel RFP. Jim Swift and Bob Houtman will discuss with Tim McGovern.	Jim Swift and Bob Houtman
Full Optimal Year (FOY) Range Definitions and Utilization Charts <ul style="list-style-type: none"> <li>• Adjust the FOY at the start of the year to accommodate major events.</li> <li>• Experiment with the display of the utilization chart.</li> </ul>	Annette DeSilva with FIC
NSF Division of Ocean Sciences (OCE) Strategy for Supporting Coring for Scientific Research – The report is available at: <a href="http://www.nsf.gov/div/index.jsp?div=OCE">http://www.nsf.gov/div/index.jsp?div=OCE</a> . UNOLS/FIC comment is welcome.	FIC
Projected Service Life End (SLE) Date Chart – Maintain updates and post on the FIC Webpage.	Annette DeSilva
Ship Service Life Memos – Contact Tom Janacek (NSF) for Ship Service Memos. FIC will reviewed memos and make SLE recommendations	<ul style="list-style-type: none"> <li>• Annette DeSilva will request memos</li> <li>• FIC will review and make SLE</li> </ul>

	recommendations
<p>Mid-life refits for the Global ships:</p> <ul style="list-style-type: none"> <li>• FIC is welcome to provide input regarding refit plans for Globals</li> <li>• Request that Rick Keil participate in the <i>Thompson</i> shakedown cruise.</li> <li>• Mid-life for <i>Revelle</i> – Jim Swift will contact the individuals at SIO who are planning <i>Revelle's</i> mid-life refit to express FIC interest in updates. A presentation at the fall meeting on the Global mid-life plans will be on the agenda.</li> </ul>	FIC and Annette DeSilva
Coastal/Local ships – UW would like a more direct recommendation in support of the <i>Barnes</i> replacement from the FIC. FIC to take this under consideration.	FIC
<p>Science Mission Requirements for Global Class</p> <ul style="list-style-type: none"> <li>• Develop the mission scenarios / science drivers.</li> <li>• Compare these to the Global class capabilities.</li> <li>• Collect lessons learned from recent vessel construction projects</li> <li>• Gather UNOLS Community input</li> <li>• Engage federal agencies</li> <li>• Design the SMR so that it is living</li> </ul>	Subcommittee - Greg Cutter, Jim Swift, Clare Reimers, and Byron Blomquist.
<p>Gather post-cruise feedback on <i>Sikuliaq</i>, <i>Armstrong</i> and <i>Ride</i> as they enter into science operations:</p> <ul style="list-style-type: none"> <li>• Conduct debriefs with PIs who used new vessels (see 2016 debrief assignment spreadsheet).</li> <li>• Send the debrief questions to Carin Ashjian (Armstrong SVC lead).</li> <li>• Recommend that a FIC member participate in <i>Sally Ride</i> SVC</li> <li>• Create a private Library/Archive on the FIC website that includes: <ul style="list-style-type: none"> <li>○ Lessons Learned documents</li> <li>○ Debriefs Summary Reports</li> <li>○ ADCP report</li> <li>○ SVC reports</li> <li>○ MAC reports</li> <li>○ SAT reports</li> <li>○ Sea Trial reports</li> </ul> </li> </ul>	FIC and UNOLS Office
Winches – Contact RVOC Chair and inquire about the status of the Appendix B compliance	Jim Swift
Chief Scientist Training Programs (CSTP) – Draft a Guide/Lessons-Learned document that could be used to assist PIs who plan to lead a CSTP.	UNOLS Office
Guest Speakers for future FIC meetings – Jules Hummon (ADCP) and a representative from MAC (Vicki Ferrini) were suggested.	Jim Swift and Annette DeSilva
FIC Membership – In February 2017 there will be an opening. Continue to recruit for Acoustics Expertise	FIC and Annette DeSilva

**Meeting Minutes**

**Wednesday, May 4, 2016 - Joint Session of the UNOLS Council and Fleet Improvement Committee**

**Call Meeting to Order:** Chris Measures, UNOLS Chair, called Day-2 of the Council meeting to order and welcomed the FIC members. Participants introduced themselves.

**Ocean Observing Initiative:**

**OOI Program status and future plans (NSF)** - Greg Ulses (Ocean Leadership OOI Program Director) provided the report. His slides are included as ***Council Meeting Appendix XVIII***. Greg provided an overview of the:

- OOI components
- Ocean Education Portal
- Cyber Infrastructure (CI) Schedule

The expected completion date for all OOI programs is the end of the year. The Coastal Arrays will be serviced twice a year and the Global Arrays will be serviced once a year.

Discussion:

- Kipp – how has the ship time use changed, if at all, since the start of the project? Greg – this ship time estimate tracks operational well with the projected use.
- Jon Alberts – The days track well, but we thought that the Coastal arrays could be serviced by regional ships. We are now finding that Ocean to Global Class ships are required.
- Mark B – How much flexibility is there in terms of the schedule of the OOI cruises? Greg – there is a little flexibility in terms of the windows. There are weather windows to factor in.

Greg continued his report. There are ongoing Issues with OOI glider fleet. These are system level problems with Teledyne Webb. It is an O-ring problem. This has impacted the number of gliders that have been deployed. They might be one or two gliders short in this first year.

Greg highlighted the relationship with OOSC and thanked them for their feedback and recommendations regarding the OOI project.

Discussion:

- Kipp Shearman – The *Sea Change* report recommended a 20% cut in OOI operating costs. Greg – OOI is operating at a higher O&M rate this year, but in the next two years, they will reduce costs by 20%. This is their first operating year and they are gaining experience in the operational requirements. At this time, they don't know how the reduction in O&M will impact the project.
- Rick Murray – The cost for OOI will not exceed \$44M. NSF has released a Dear Colleague letter asking for a request for information. The re-compete of OOI will address the budget reduction. They are keeping the community informed and seeking feedback throughout the re-compete process. Potential responders will have access to the CI data soon. It is a very new system. CI is the biggest unknown. Schedule for the re-compete: current OOI contract ends in April 2017. It is a challenging and aggressive schedule.
- Kipp Shearman – The *Sea Change* report recommended budget cuts to infrastructure. Have the infrastructure budget reductions resulted in a shift to increases in the science budget?

Rick Murray – Last year NSF was able to shift \$6-7M from infrastructure to science thanks to help from Rose Dufour and Bob Houtman. Every dollar that comes out of infrastructure is going to science. Once OOI is reduced, they expect \$15M funds going to science.

- Sean Higgins – Once the OOI is stable, there is interest in putting new instruments on OOI. Bob Houtman – NSF has considered the concept of adding instruments to the arrays. Pls can now submit proposals to their science programs. The \$44M O&M would include support to the OIs for testing and evaluation of the new sensors for compatibility. Lisa Clough– This process is in place now.
- Jon Alberts – How will changes to the sensors be prioritized and scheduled? Greg – this will be on the case-by-case basis. The proposals are starting to come in. Bob Houtman – This will be an annual process that involves the OOSC, the OOI Science Oversight Committee (SOC) and NSF, etc. It will become a part of the annual work plan. There will be no additional cruises to install new sensors (the sensors would need to be installed during the scheduled OOI cruises). Some of the sensor settings will need to be preserved so as to not jeopardize on-going time series experiments that are in process by community members.
- Rick Murray –OOI is a community facility. The SOC and the OOSC will assist. As we go through the re-compete, they will make sure they have a robust committee of external community members. These types of questions will be vetted through the community.
- Chris Measures – There was a SOC and OOSC joint meeting at Ocean Sciences (early morning). Larry made some interesting ground rules – no looking back. The meeting was very productive and set new directions/priorities for OOI. OOI is getting good community involvement.
- Larry – He agrees. During the construction phase, the community could not contractually react, now they can as OOI transitions to operations.

#### **Facility Modernization and Upgrade Activities:**

**Ocean Class AGORs – R/V *Neil Armstrong* and R/V *Sally Ride*** – Tim Schnoor provided the report. His slides are available at: ***Council Meeting - Appendix XIX***

- R/V *Neil Armstrong* (AGOR 27) – Photos of the ship are included in the slides as well as an update on the project status. The Science Verification Cruises (SVC) have gone very well. The material condition of the ship is excellent (as cited in the JMS inspection report).
- R/V *Sally Ride*:
  - The ship will have the EM122 system, the newest Kongsberg.
  - Delivery is expected by June 29<sup>th</sup>. It depends on the anchoring deployment system. The Navy is looking at every means of re-engineering the anchor chain payout.
  - See the slides for an update on the Project Status.
  - The crew on the *Ride* will come from a variety of SIO ships, so it isn't the *Melville* crew intact.
  - The science cruise will start on November 7<sup>th</sup> for CalCOFI

Tim reported on “The Good, the Bad, and the Ugly” regarding the ships:

- The good:
  - Ships are quiet
  - They have tier three engines that are clean and fuel consumption is better
  - Bubble sweep down and acoustic system performance is still being evaluated

- Acoustic systems have been very good
- DP and maneuverability is very good
- Open back deck can support OOI operations.
- The bad –
  - The lightweight ship, rides high.
  - The ships' motion is greater than predicted.
  - Main crane location makes it impossible to use.
  - Airborne noise is high and might require a box on the stack.
  - The main deck takes on a lot of water.
  - There are over 100 deficiencies.

Discussion:

- Tim Schnoor – It would be unfortunate if the *Armstrong* was committed to OOI servicing in the Atlantic. This would constrain its schedule from supporting other science. Will the RCRVs be able to handle the OOI servicing? NSF – They understand the issue.
- Chris Measures – How was the shipyard? Tim gave it high marks. There was a big learning curve on the part of the shipyard.

**Regional Class Research Vessels** – Bob Houtman provided the report. His slides are included as ***Council Meeting - Appendix XX***.

Bob reviewed the RCRV Timeline. The project is now in the Phase II Award. In February 2016, they began the shipyard selection process. If funding for ship construction is awarded, the ship operator selection solicitation could be released in February 2017. The first ship could enter service in 2020. Depending on funding, a second ship could enter service two years later.

Discussion:

- Kipp Shearman – Is there any negative fall-out if a 3<sup>rd</sup> RCRV is added? Will we have to find additional savings to meet the 5% budget reduction recommended by *Sea Change*? Bob Houtman – they will do whatever it takes to accommodate the recommendations. Adding a third ship is not a negative.
- Tammi Richardson – Who does the design review? Bob Houtman – The current design had a lot of input from UNOLS, community, and design reviews. The current design was the outcome of two design competitions early in the process. The design also has to meet the project plan. Tammi - The reason that she asks is because she was a recent PI on the *Armstrong* and there are some felt they had no input into the design.

**Polar Research Vessel Acquisition Status** - Bob Houtman presented a written report that Tim McGovern had prepared. The slides are included as ***Council Meeting - Appendix XXI*** and the written report is below.

General Update:

- The LM GOULD 10-year contract expires in 2020, when the vessel will be 22 years old. The NB PALMER 10-year contract expires in 2022, when it will reach the end of its nominal 30-year service life.
- NSF/PLR released an RFI in early December for two ships to commence operations as each vessel contract expires. The RFI closed at the end of January and the responses were quite favorable. Unlike in previous RFI's, this time we included our

historic and projected operational budget, which constrained responses to vessels/operations NSF/PLR could reasonably predict to afford. We also released the RFI early enough so that potential bidders could suggest design/build/operate options.

- In the coming year NSF/PLR will be working with its prime Antarctic contractor (ASC) to begin establishing a project office to initiate development of an RFP.

#### NB PALMER

- NBP SLEP: The SLEP report on the NBP was submitted to NSF and reviewed. In general, the vessel is in good condition and, with some continued maintenance, should be able to operate well beyond its nominal 30-year service life. This information was useful as NSF/PLR moves ahead with resoliciting for an icebreaking research vessel.
- The NBP will undergo its second biennial NSF vessel inspection the first week of May 2016 in Punta Arenas, Chile. The inspection reports have helped NSF and ASC identify and correct issues with the ship's science labs, decks, winches and other critical areas. For 2016, the NBP is scheduled to operate 263 sea days. Cruises will support USAP, UNOLS, and NOAA operations.
- Unmanned Aerial Systems (UAS) operations continue to grow in the Antarctic, particularly from ships. NSF/PLR has developed an Airworthiness Flight Safety Review Board (AFSRB) to review UAS requests and provide guidance in the development of UAS Concepts of Operation. In 2016 one cruise will conduct UAS operations. In 2017 we are looking at a minimum of three UAS's to be deployed from the NBP.

#### LM GOULD

- The LMG completed its first NSF vessel inspection in September 2015. As it did for the NBP, the vessel report has helped identify and correct areas of concern. For 2016, the LMG is scheduled to operate 268 sea days in support of Palmer Station and USAP science.

#### POLAR ICEBREAKERS

- POLAR STAR: The STAR recently completed the 2016 Operation Deep Freeze, the annual break-in to McMurdo Sound. The vessel conducted all operations on time, though the STAR continues to experience rather serious engine and maintenance issues. The Coast Guard (CG) continues to work hard to overcome these challenges. Science systems on the STAR (and SEA) remain in a much-decayed state, and the CG's intention is to begin removing them if no agency steps forward with funding to revive them. NSF is not able to provide the necessary funding.
- POLAR SEA: The Coast Guard recently completed an analysis on the SEA to determine its material condition. The report, which has yet to be released, will apparently help determine whether the SEA is suitable for overhaul and reactivation as a stopgap measure until new polar icebreakers come online.
- New POLAR ICEBREAKERS (PIB): The Coast Guard held an "industry day" in March that presented the basic operational requirements of the new PIB(s) to the US shipbuilding industry. Note that there are some substantial scientific capabilities included in the requirements document that NSF/PLR does not support. Congress has made clear their intention that agency-specific requirements in the new PIBs

need to be funded by the requesting agencies. NSF's current and projected budget is not able to support these additional capabilities and feels that research vessels should conduct science operations. On an as-needed basis, a research vessel can be paired with a heavy icebreaker to operate in heavier ice conditions. The science capabilities included in the requirements document were, in large part, placed there by NOAA.

Discussion:

- Q) Is it appropriate for FIC and AICC to provide feedback to the USCG regarding plans for their new icebreaker? Bob Houtman - NSF fully supports that FIC and AICC provide feedback to USCG.
- Comment – UNOLS/AICC would like to provide community input to the NSF Polar RFP. Jim Swift and Bob Houtman will contact Tim McGovern.

**Mid-Life Refit Plans for *Thompson, Revelle, and Atlantis*** – Doug Russell provided the report. His slides are included as ***Council Meeting - Appendix XXII***.

- Doug said that new ship construction is in many respects easier than conducting a ship mid-life refit. You never know what you will find during a mid-life.
- The ship will be repowered and will get all new control systems. The z-drives will remain, as they have come to know the z-drives very well.
- The hydro winches will be refurbished/upgraded.
- The ship will be blasted down to bare metal and repainted.
- An instrument well will be added. This will allow the USBL to put down the hull (ROV *Jason* will love this).
- The crew and technicians will be partially employed during the mid-life refit. They are working to retain everyone because they are a great crew. The crew will have housing during this period.
- There is also funding to support 1-1/2 techs during the mid-life.

**Break**

**Green Ship Initiative** – Bruce Corliss reported on the Green Boats and Ports III Workshop held at URI's Graduate School of Oceanography on April 5-6, 2016. His slides are included as ***Council Meeting - Appendix XXIII***. Bruce Corliss gave a brief summary from each of the workshop presentations (see slides).

Discussion:

- Sean Higgins – Is Rolls Royce approving use of bio-lubricants? Bruce – not sure, but they are running up against this issue with the R/V *Endeavor*.
- Bruce Appelgate – In California they are recycling fiberglass foam for surfboards.
- Bruce Corliss highlighted that all of the presentations are available on the UNOLS web site along with the live-streams.
- Chris Measures thanked Bruce for his efforts in leading this initiative. He hopes that this will continue.
- Kipp Shearman – Are we expanding the use of biofuels? Bruce Corliss – It can be good for local vessels. For Global ships it can be a challenge because it is difficult to find fuel sources globally.

**Science Party Cruise Orientation Presentation** – Pete Girguis reported that he sailed on the R/V *Falkor* recently. At the start of the cruise, the science party is provided with an hour and half long orientation PowerPoint at sea practices. It is a very clean presentation. It is simple and to the point. Pete shared the PowerPoint with the Council and suggested it could be a good model for UNOLS.

Discussion:

- Rose Dufour – We have discussed this sort of presentation at the RVOC meeting and she appreciates the Council considering this. It is good to have a standard message.
- Chris Measures suggested that the UNOLS Office take this on as an action.
  - Annette – it would be good to have input from Marine Op, Marine Tech, and scientists. Pete offered to assist and stated that it would be good to have a standard deck of slides.
  - A Subcommittee was formed – Jon Alberts, Annette, Doug Russell, Scott Ferguson, and Pete Girguis.

**Adjourn UNOLS Council Meeting** – A motion was made to adjourn the Council Meeting (Ferguson/Russell). Motion passed.

**WHOI Tour** – Council and FIC meeting participants were offered a tour of the Laboratory for Ocean Sensors and Observing Systems (LOSOS) Building.

***This concludes the joint session of the UNOLS FIC/Council.***

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### ***Lunch Break***

**Resume FIC Meeting:** Jim Swift, FIC Chair, resumed the FIC meeting and provided an opportunity for introductions. The FIC Meeting participant list includes as ***Appendix I.***

**Review Council Tasking to FIC** – Jim Swift reported that one task came out of the Council joint session and that is to work with the AICC on planning for the Polar ships.

**R/V *Langseth* & MLSOC/FIC Liaison Report** – Bob Houtman and Jon Alberts lead the discussion on *Langseth* operations and future plans. Slides are included as ***Appendix II.***

Deb Smith (NSF) presented her slides from yesterday at the Council Meeting Executive Session. She showed the seismic science portfolio of research topics and the methods that they use. NSF is proposing to transition the MLSOC so that it's scope is broader and addresses all ocean seismic research. Committee representation will need to be expanded to cover the entire scope of research on the advisory.

NSF would like to survey the community for feedback regarding the new roll of this advisory committee. Process:

1. NSF will provide the survey questions to UNOLS Office.
2. UNOLS Office will provide the questions to the MLSOC and Council for feedback.

3. Release the survey for community input by the end of May
4. End of June, the responses will be provided to Council and NSF

Discussion:

- Sean Higgins – There have been seismic workshops in the past (Holbrook, etc.). They have been successful.
- Bob Houtman – Workshops that engage the early career workshops would be good.
- Jim Swift – Is commercial work being considered for *Langseth*? Sean – they are still looking into this.
- Rose Dufour – We need to think about how to get students out to sea from this community.
- Sean Higgins – He has been involved with STEM-SEAs. They are actively looking into this.
- Al Suchy – how are things looking in terms of sustainability with year after year below 200 operating days on the *Langseth*? Sean – it is very challenging. It is not a good sustainable model. They really need to be at 220 days to survive. Lower than that is tough on people and equipment.

**Opportunity for Agency and Guest Comments** - Jim Swift – Is there anything that the agencies would like FIC to take on?

NSF (note – many of these suggestions are geared towards UNOLS in general – not just FIC):

- Bob Houtman suggested:
  - Making the *Langseth* operation sustainability
  - Coring capabilities – Review the Coring report recommendations and provide feedback.
- Rick Murray – In terms of OOI, we need UNOLS to help spread the work. We rely on UNOLS to spread the word on the whole portfolio of facilities available to the community.
- Bob Houtman - in terms of *Sea Change*, NSF is interested in moving Infrastructure funds to both science and technologies.
- Jim Swift – Resources are very limited. Should we be assisting to keeping things operating? For example, retaining techs on ships. Bob – the FIC is in the position to advocate for this.

Navy:

- Tim Schnoor
  - With respect to the mid-life refits of the Globals, if there is anything that the FIC sees as important and should be considered, provide input.
  - He wonders if the FIC is transitioning from “Fleet” to “Facilities.” Bob Houtman – he feels that most of the issues that FIC is dealing with are connected to the Fleet. Rick Murray– he doesn’t think that we should change the name of the committee

NOAA

- Tracy Miller
  - They are interested in unmanned systems.
  - They are also interested in the SMRs for Global ships.

Discussion:

- Sean Higgins – Where will the \$350M proposed funding for RCRV construction come from?  
Rick Murray – The RCRVs are being funded out of MRE-FC account. These funds are

separate from central funds, not Directorate. If RCRVs are funded for construction, the money comes into MRE-FC account. The operating costs will be \$3.5M to \$4M each annually. If a third gets funded, then NSF would have to identify an additional \$3.5 to \$4M. Rose – If the ship is in the Gulf, there will likely be other non-NSF users.

- Annette – What is the status of the Coring Workshop Report? Rick Murray – The report articulates the science drivers. The report is open and they welcome FIC comment. NSF is taking a close look at the recommendations to determine how it can be accommodated.

#### **Review Fleet Status – Retirements, Additions, Service Life:**

**Sale of *New Horizon*** – The ship was sold, but hasn't been in operation yet by the new owner.

**Projected Service Life End Dates** - Annette DeSilva presented the Service Life End (SLE) Date chart (**Appendix III**) and asked if any changes are needed.

- Since funds are available for the *Revelle* mid-life, a red dashed line can be added to tentatively extend *Revelle's* life.
- Once the *Thompson* mid-life is successfully complete, the red-dash can be changed to black dash.
- The service life for *Armstrong* is 2045 and 2046 for *Ride*.
- *Barnes* will operate in 2017. As long as the ship continues to pass the inspection and has work it will continue to operate.
- NSF requested that UNOLS post the SLE chart with the FIC reference on the FIC webpage

**Ship Service Life Memos** – Annette requested NSF & ONR to share any ship service life memos with FIC. The FIC uses the memo recommendations to adjust the SLE chart.

- Bob Houtman suggested that we contact Tom Janacek (NSF) for the Ship Service Memos.

**Full Optimal Year (FOY) Range Definitions** – Annette DeSilva presented the current FOY definitions. See **Appendix III**.

- Annette asked if we should reexamine the FOYs. There are general changes that could be considered. There are also changes that occur annually (example – *Revelle*, *Atlantis*, and *Thompson* mid-life refits require that these ships be out of service for approximately 12 months.
- Bob Houtman – he stressed the importance of the FOY when trying to explain the unassigned capacity to the general public and leaders, it is very important that these get adjusted.
- Rick Murray – Adjust the FOY at the start of the year to accommodate major events.
- NSF – It is useful to show how each day of the ship's year is scheduled. A 365-day schedule is useful.
- An example of the 365-day utilization chart and chart that displays the utilization based on % was displayed and generated discussion/suggestions:
- Put the pale blue bar before the white box.
- Rick Murray – Instead of indicating days as “non-op days,” refer to them as days required for safety and maintenance.
- Annette will experiment with the display of the utilization chart.

- Joan Bernhard – To simplify the chart, take the type of agency funded days out and replace with a solid bar to show “funded” days (separate chart can show utilization by agency). Make a chart that shows “funded days,” “obligated days,” and “available days.” The obligated days are those days required for mob, demob, maintenance, etc.

### **Break**

**Implementing the Fleet Improvement Plan (FIP) Recommendations** – Jim Swift reviewed the FIP Recommendations. Slides are included as **Appendix IV**.

#### **Mid-life refits for the Global ships:**

- The *Thompson* mid-life plans are set and in contract.
- Doug Russell – There is a science committee a UW who assisted and provided feedback.
- Jim Swift – FIC is happy to review their report.
- Tim Schnoor – He hopes that they would engage the Multibeam Advisory Committee (MAC) and Jules Hummon (ADCP).
- Doug Russell – he will put together plans for the *Thompson's* post mid-life shakedown cruise.
- FIC can request that Rick Keil participate in the shakedown.
- Mid-life for *Revelle* – Jim Swift can contact the individuals at SIO who are planning *Revelle's* mid-life refit and request that FIC be kept informed on plans.
- We will ask for a presentation for the fall meeting on the *Revelle* mid-life plans.

#### **RCRVs**

- Jim Swift – If an RCRV is assigned to the Gulf of Mexico, will the design be okay for that region? Nancy Rabalais – The ship is large and the draft is deep, but they don't have any objections.
- No RCRV action, we will continue to get updates.

#### **Langseth**

- The general-purpose oceanography capability is off the table.
- UNOLS task - The FIP is a living document and should be updated to remove the General Purpose reference from *Langseth*

**Global SMRs** – This will be addressed later in the meeting.

#### **Are the Coastal/Local ships being neglected?**

- Doug Russell – He would have loved a more direct recommendation in support of the *Barnes* replacement from the FIC?
- Nancy Rabalais – Many of the smaller vessels are owned by non-federal entities.
- Annette – at past meetings we have heard about the *Barnes* replacement plans and design. They are now in the fundraising mode.
- Doug would like a more definitive statement from UNOLS in support of a *Barnes* replacement.
- FIC can make a recommendation that UNOLS provide a letter of support for *Barnes*. The letter would come from the UNOLS Chair. This can be a discussion topic.

**High Latitude Access** – FIC will discuss this topic more in the future.

**Recommendations in addition to Fleet Improvement Plan** – FIP page 33 discussed additional recommendations. These are important. There was a brief discussion on establishing “Centers of excellence.”

**New Handling systems** - Jim Swift asked if these have been adequately addressed at past meetings. Al Suchy commented that they are addressed in RVOC and RVTEC meetings. They have also been reported on in past FIC meetings.

#### **Science Mission Requirements for Global Class**

- At a previous meeting, a subcommittee was formed to draft mission scenarios for the Global Class. The subcommittee includes Greg Cutter, Jim Swift, and Clare Reimers. Byron Blomquist asked to be added.
- There was discussion on the process going forward. We need to know what is essential in the SMRs.
- Al Suchy – The SMR process is iterative.
- Annette suggested a process that is a bit similar to past efforts:
  - Develop the mission scenarios / science drivers.
  - Then compare these to the Global class capabilities.
  - Collect lessons learned from recent vessel construction projects
  - Gather UNOLS Community input
  - Engage federal agencies
- Design the SMR so that it is living

#### ***Adjourn Day-1***

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#### **Thursday, May 5, 2016**

**Call Day 2 of the FIC Meeting to Order** – Jim Swift called the meeting to order.

**Gathering post-cruise feedback on *Sikuliaq*, *Armstrong* and *Ride* as they enter into science operations:** The FIC discussed the following related topics.

**2016 Sikuliaq Debrief** - One cruise has taken place this year, the Coring Shakedown cruise. A debrief was conducted with PI, Mitch Lyle. Jim reviewed Mitch Lyle’s debrief.

- Mitch appreciated the opportunity to comment about the cruise.
- Anti-roll is still not repaired. The repair is scheduled.
- Byron Blomquist – He is glad to hear that they are going to fix the roll. Will they also fix the anchor-banging problem? Bob Houtman – They have tried to fix it on three occasions, but it still hasn’t worked.
- Bob Houtman – Internet is still slow. NSF is looking at new KA band.

Next the FIC discussed the debrief process and what to do with the Debrief Reports (see ***Appendix V***).

- It was suggested that we collect the debrief documents and put them in a private location on the FIC page.
- FIC members who conduct the debriefs, should send the debrief to Annette after completion.
- Before sending debriefs to the marine superintendents, we should get permission from the Chief Scientist..
- Tim Schnoor – The SVCs are taking place on *Armstrong*. The post-SVC reports are going to Carin Ashjian. Al Suchy – Carin Ashjian would be very receptive in interacting with the FIC.
- It was suggest that we collect the various reports and add them to the Private FIC page. These documents will be useful planning documents for new construction efforts and mid-life refit planning.

**Summary of ADCP issues** – Prior to the meeting, Annette requested input from Jules Humman regarding ADCP performance. Jules provided her reports from the *Sikuliaq* and *Armstrong*.

- Issues were identified, repairs made and performance was improved.
- Jules did this for NSF. FIC was a secondary recipient.
- Bob Houtman – FIC should have a home for this information. Create an Library/Archive. The archives can include:
  - Lessons Learned
  - Debriefs
  - Jules report
  - SVC reports
  - MAC reports
  - Etc.
- Al Suchy offered to send all of the SAT reports for *Armstrong* to Annette. WHOI also has a report from Tim Gates. They do not have the MAC report. MAC is still working on it.
- Jim Swift – For *Sikuliaq* there was an oversight committee. Bob Houtman –He is not sure where the documents reside, but can check.

**Review 2016 schedules and make debrief assignments** – FIC reviewed the assignment spreadsheet and volunteered for debriefs.

**Polar Vessels and discussion on UNOLS Role in future designs** - Jim Swift opened the discussion on how we can assist NSF.

- Polar vessels are being used for non-Polar work. Should FIC have a role in providing feedback on the science capability of the replacement ships? Jim feels that we can provide useful information.
- Jim Swift will reach out Tim McGovern.
- The PRV refresh can be reviewed by FIC.

**New Technologies and System Evaluations:**

- Univ. of Hawaii & SIO ROV updates:
  - Annette spoke with Bruce Appelgate. There have been no SIO ROV activities since the last meeting. Will be part of an SVC.

- Hawaii ROV – There have been no operations. The ROV is scheduled for Aloha support in the fall for Bruce Howe.
- Engine Control, Caley Systems, and any other refit activities on R/V *Kilo Moana*:
  - Tim Schnoor – the system was factory tested and passed. The ship has done some wire testing. This should cure some of the issues that the crew has experienced with blackouts. The ship should be back in the water by August and time for testing.

***Break***

**Discussion on Winches** - Jim Swift will contact the RVOC Chair and inquire about the status of the Appendix B compliance

**Early Career Investigator Programs:**

- Annette DeSilva recommended that a “lessons learned” document be drafted to assist PIs who plan to carry out a Chief Scientist Training Program (CSTP). FIC members felt that this is a Council task.
- A negative of the CSTP is that there are only two participants who are selected to serve as the chief scientists.
- Greg Cutter – he has a program where they assign a different chief scientist to each station during the cruise. This allows everyone to share in the experience.

**Other Business**

- FIC Guest Speakers – FIC suggested Jules Hummon for ADCPs and a representative from MAC.
- FIC Membership Status –
  - No changes
  - In February 2017 there will be an opening and we will continue to recruit for Acoustics Expertise

***Adjourn FIC Meeting***