

DeSSC report  
May 7<sup>th</sup> , 2015  
UNOLS Council Meeting



# DeSSC membership

## Current members

Amanda Demopoulos (USGS)

Dave Emerson (*Bigelow*)

Vicki Ferrini (*LDEO*)

Peter Girguis, Chair (*Harvard*)

Breea Govenar (*Rhode Island Coll.*)

Nick Hayman (*UTIG*)

Laura Lapham (*Univ. Maryland*)

George Luther (*Univ. Delaware*)

John Wiltshire (*Univ. Hawaii*)

Rob Munier (*ex-officio, WHOI*)

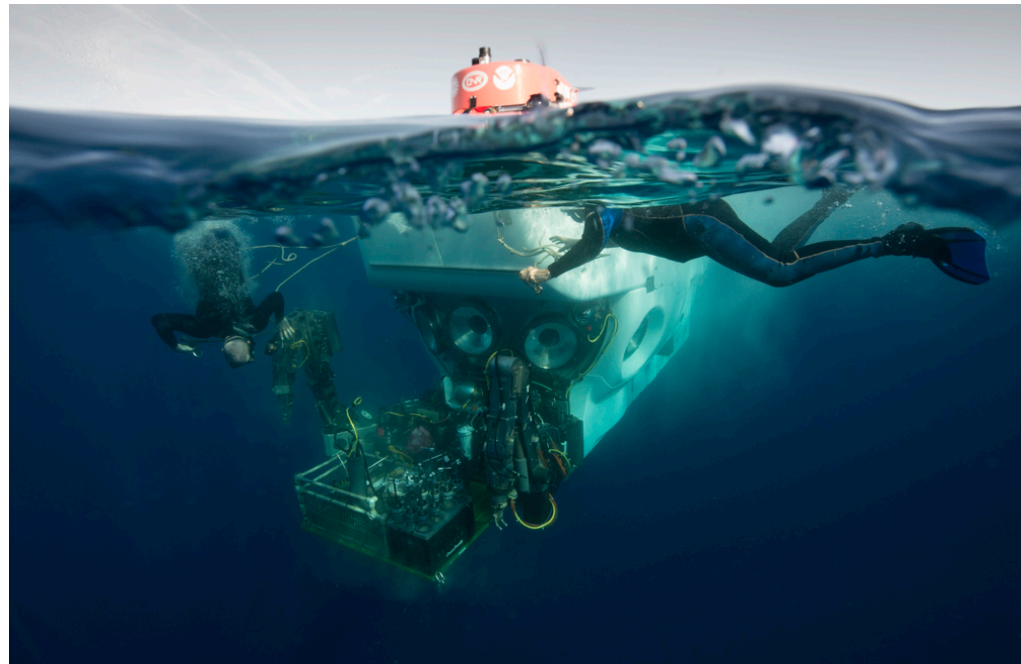
Tim Shank (*ex-officio, WHOI*)

Adam Soule (*ex-officio, WHOI*)



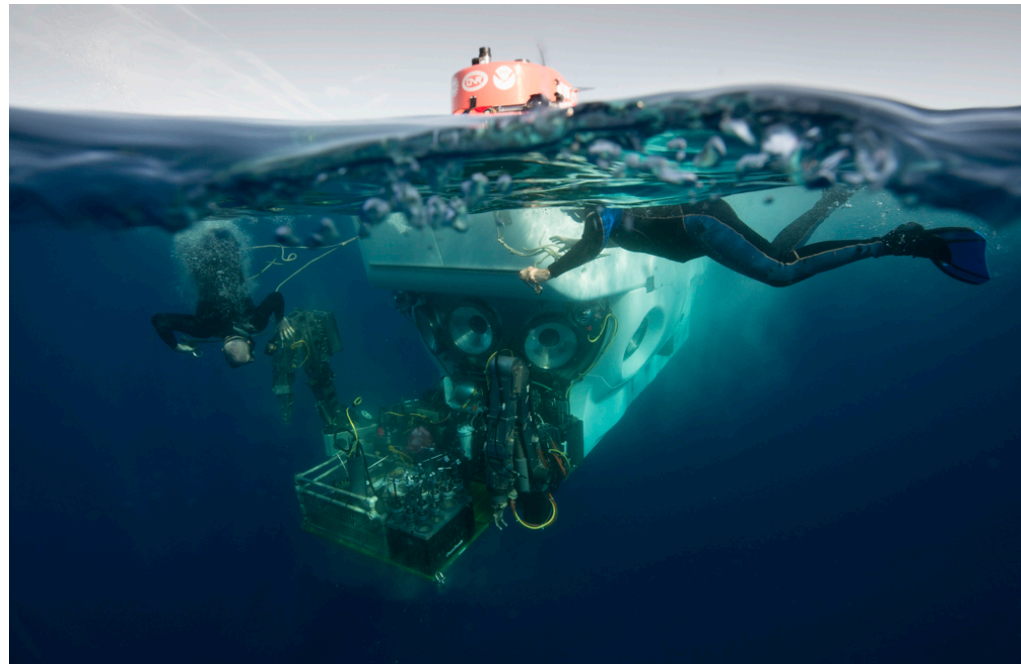
# Alvin: return to operations

- Since the Science Verification Cruise, the *DSV Alvin* has participated in 7 expeditions, with ~160 days at sea.
- Nearly all major “bugs” have been fixed
  - some refinements still remain, e.g. pan and tilt cameras
- Community is, broadly speaking, pleased with the new sub
- Other countries, e.g. Norway and Korea, expressing interest in hiring the sub for collaborative science
- Operating costs continues to be very comparable to ROVs, e.g. *Jason*



# Alvin: return to operations

- *Alvin* schedule is very lean for 2015
  - Related to the retirement of global class vessels
  - Concerns about pilot retention
  - We will be discussing the merits of more coordinated proposal submissions to facilitate efficient use of vehicles.
- *DSV Alvin* will be at WHOI in August.
  - Adam Soule and I are developing an ADVANCED Early Career Training Program while the sub is in the hangar.





# DSV Alvin turns 50!

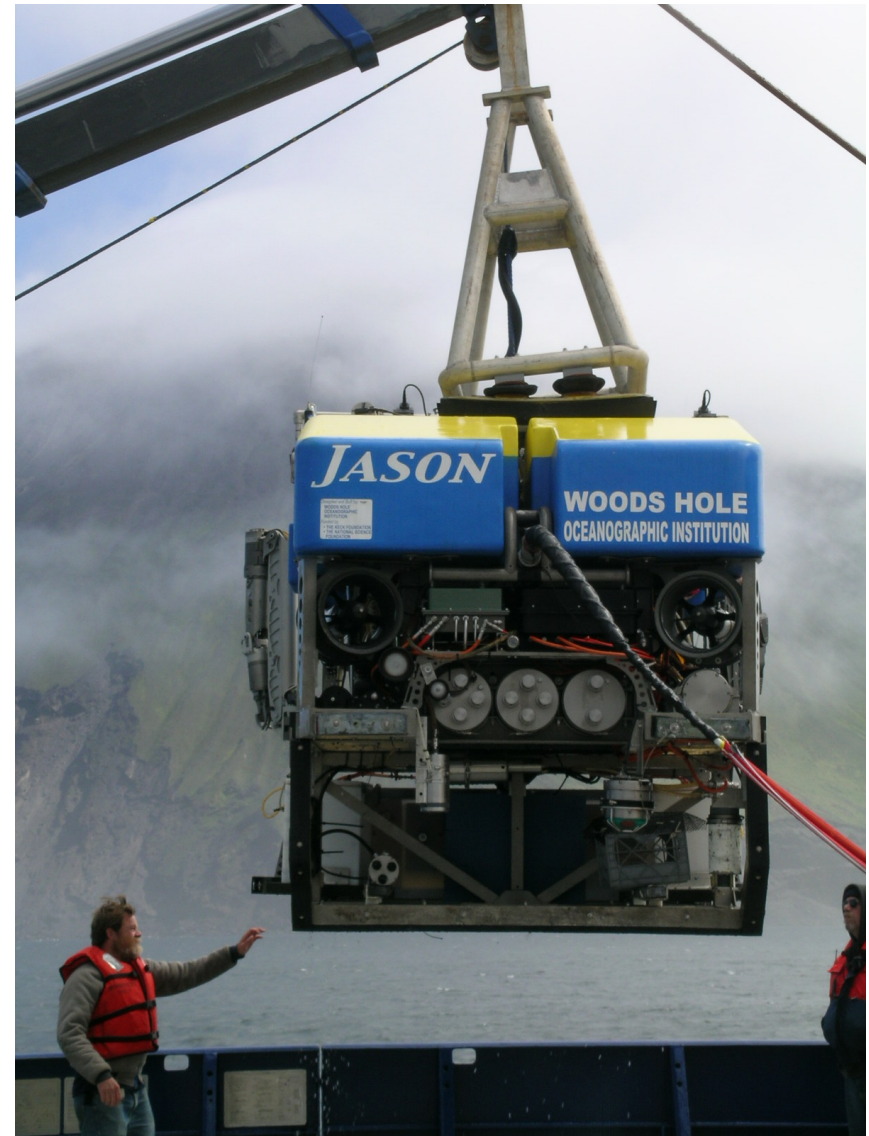
## Deep-sea submersible Alvin turns 50...



# ROV Jason

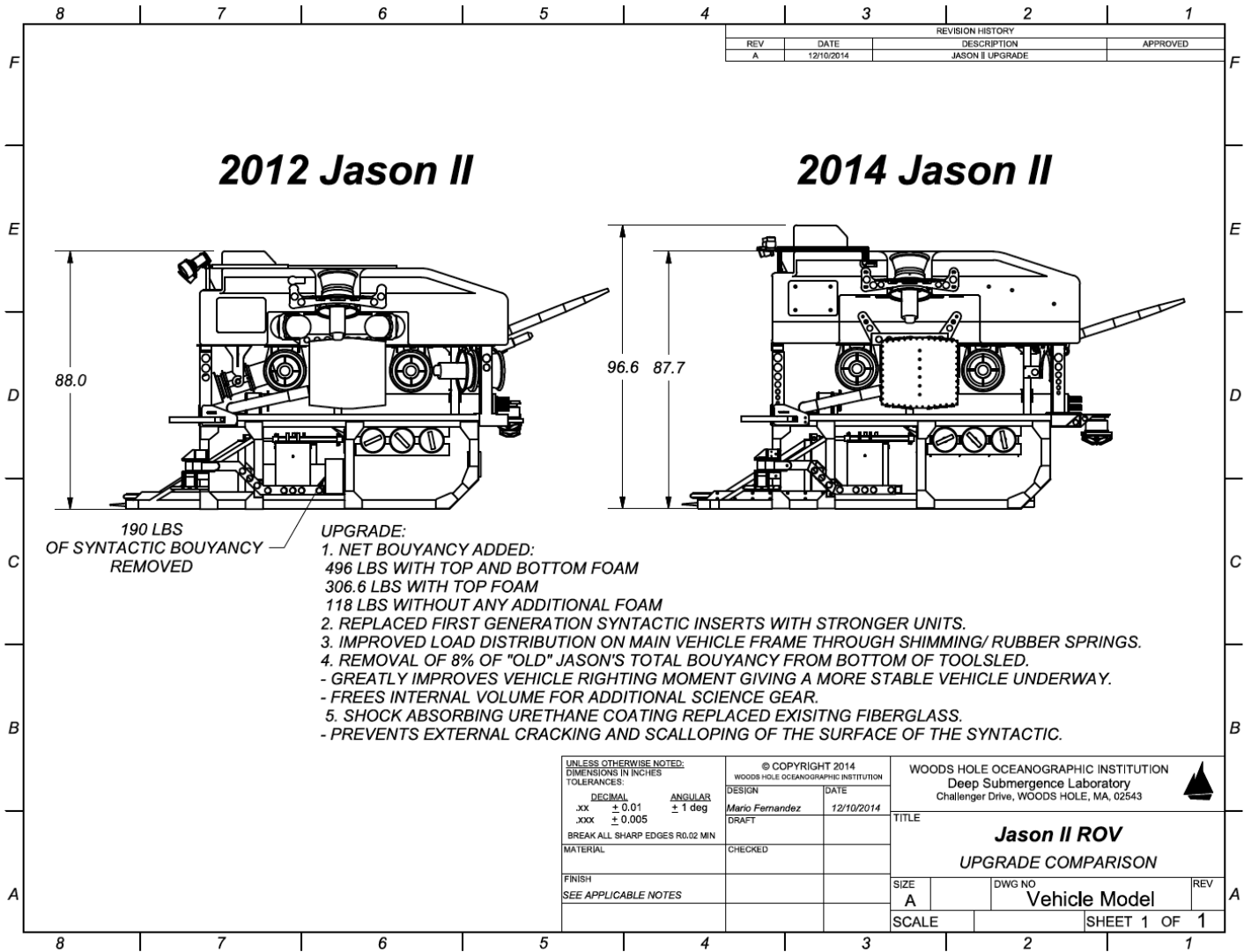
*ROV Jason* continues to perform well.

- Schedule is ample.
- Continued minor upgrades to lighting, video, etc.
- Ongoing discussions are aimed at assessing Jason's capability to provide services for Ocean observing systems.



# ROV Jason

ROV Jason installed with additional, improved floatation (300 lbs additional buoyancy; additional space in tool sled)







# ROV Jason

*ROV Jason* had a scare with a frayed cable late last year.

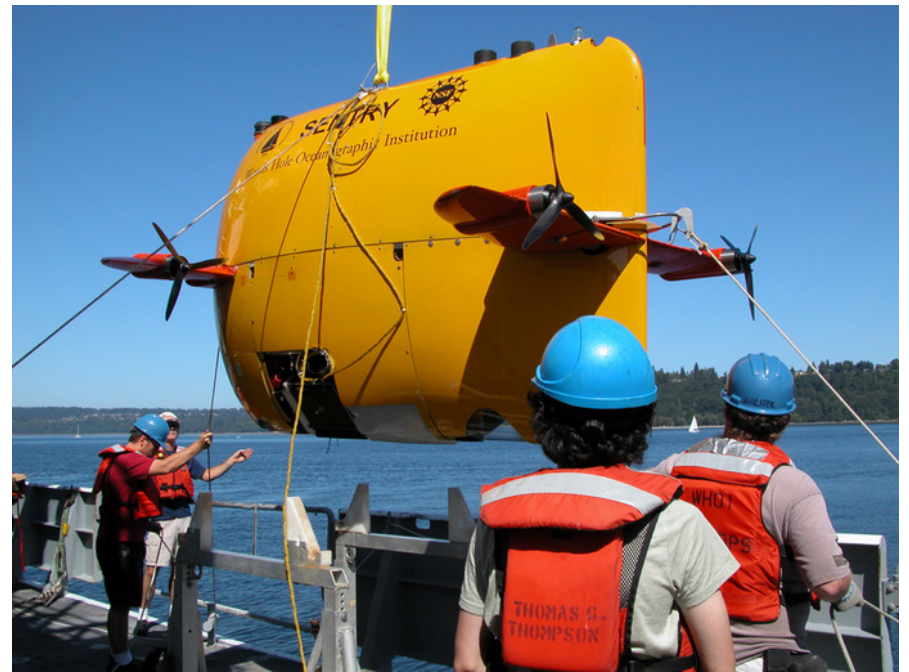
- Cable frayed at multiple locations; vehicle left literally hanging by a thread
- WHOI and Scripps personnel working to understand what happened.



# AUV Sentry

AUV Sentry continues to gain popularity as a platform to deploy with HOVs and ROVs.

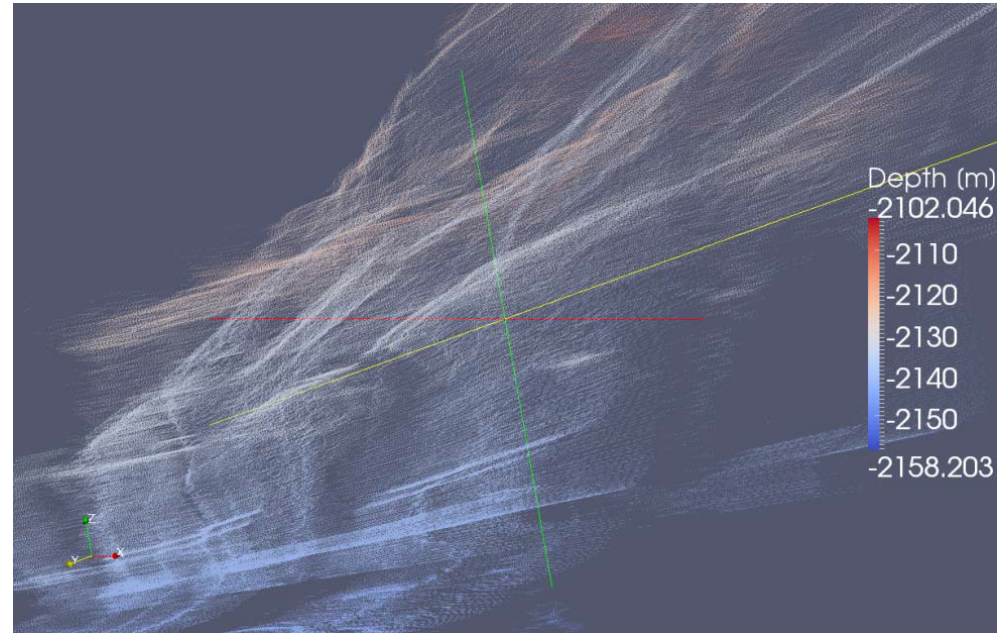
- Maturing in operational efficiency (which is good!)
- Schedule is quite full; also picked up some work that resulted from the loss of the *HROV Nereus*.



# AUV Sentry

AUV Sentry upgrades include

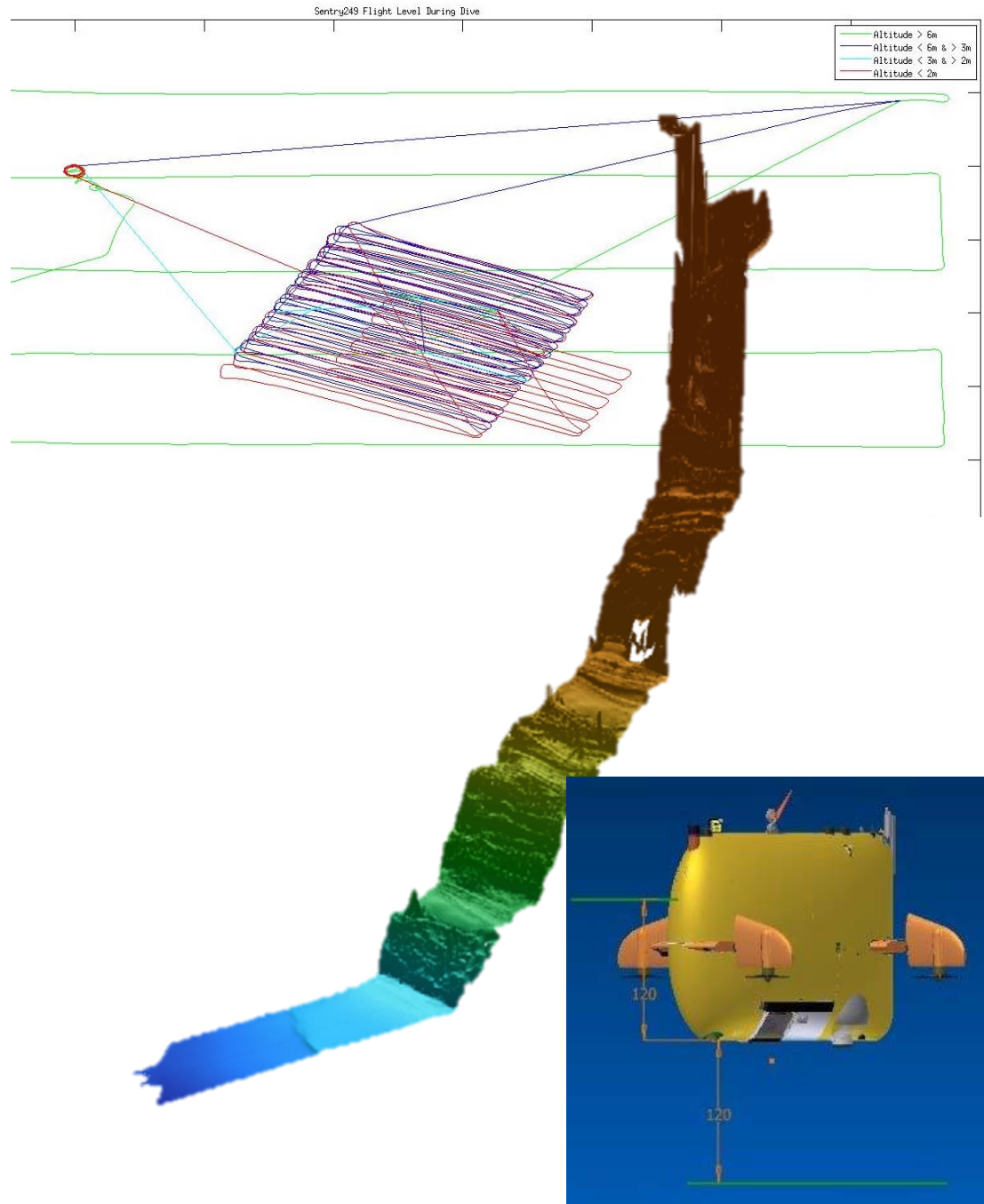
- New Reson AUV3 – dual frequency, 1/3 power, 15lbs lighter
  - *New WHOI driver means full reconfigure and start up in water, which saves power and increases flexibility*
- Blueview™ P900 forward looking sonar
  - *Obstacle Avoidance (big improvement) and science uses = no cost to NDSF*



*Extreme High Resolution Map of Section of Florida Escarpment with Blueview Sonar*

# AUV Sentry

AUV Sentry shows substantial improvements in “bottom following”

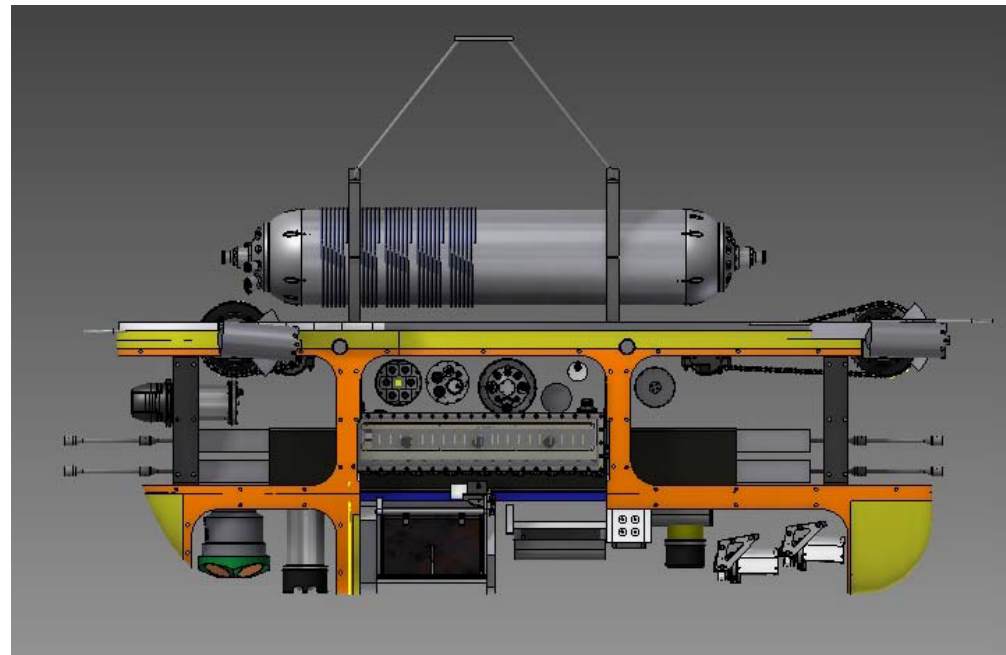
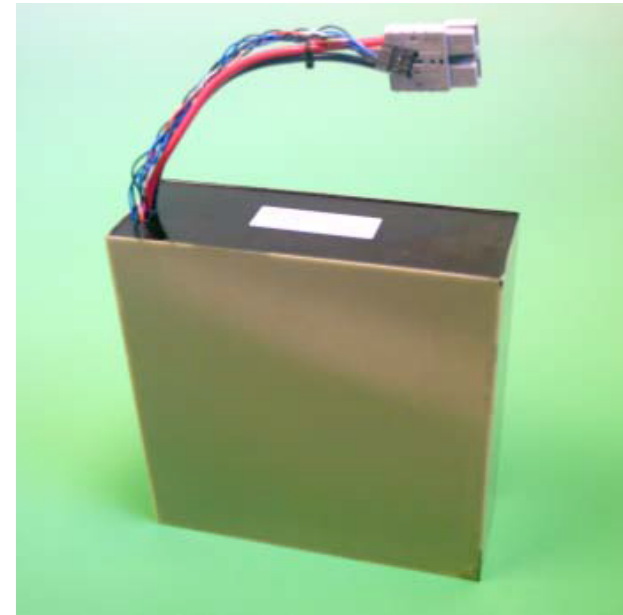




# AUV Sentry

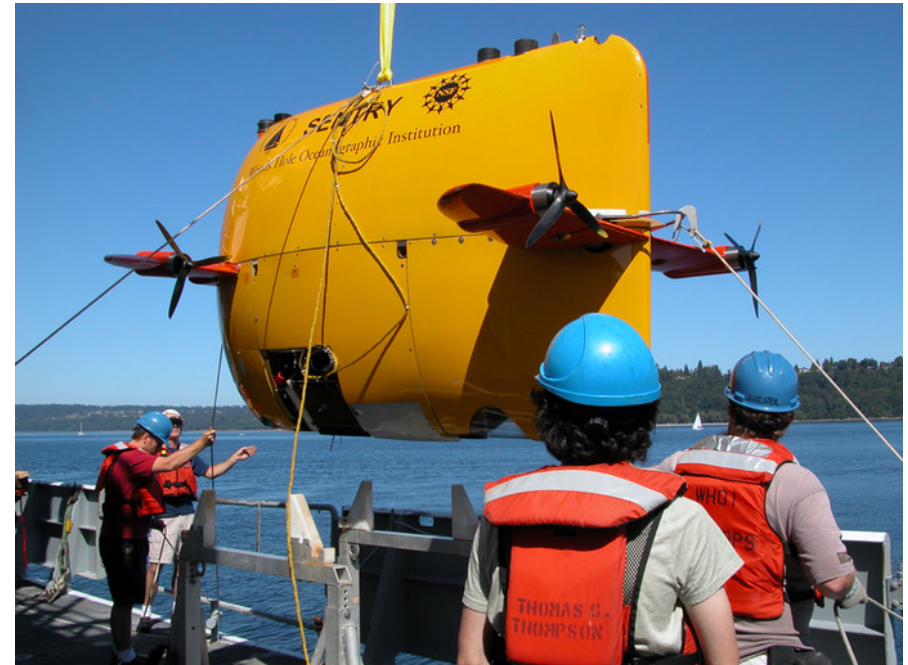
AUV Sentry is moving towards a new battery system

- Interim battery maintenance (July 2015) will provide ~30% more power; slightly faster recharge time; new ceramic cylinder



# AUV Sentry: some potential improvements

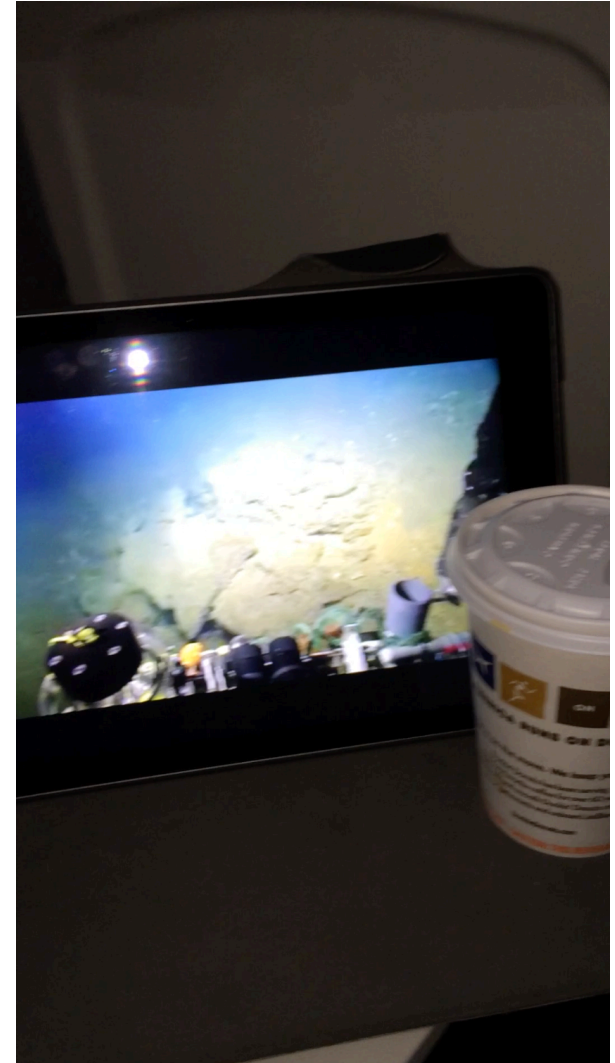
- Consider start supporting some on shore data processing as part of facility operations?
- Will need major replacement of syntactic foam in the next couple of years
- Enhanced sampling capabilities?



# Emerging technologies and broader activities

## NSF-INSPIRE project, TREET (Chris German)

- Aimed as assessing the efficacy of using telepresence in conducting science with deep submergence vehicles.
- Project is coming to an end. There will be a special session at the spring ASLO meeting.
- **Something fun: JetBlue service to the Kick 'em Jenny volcano!**

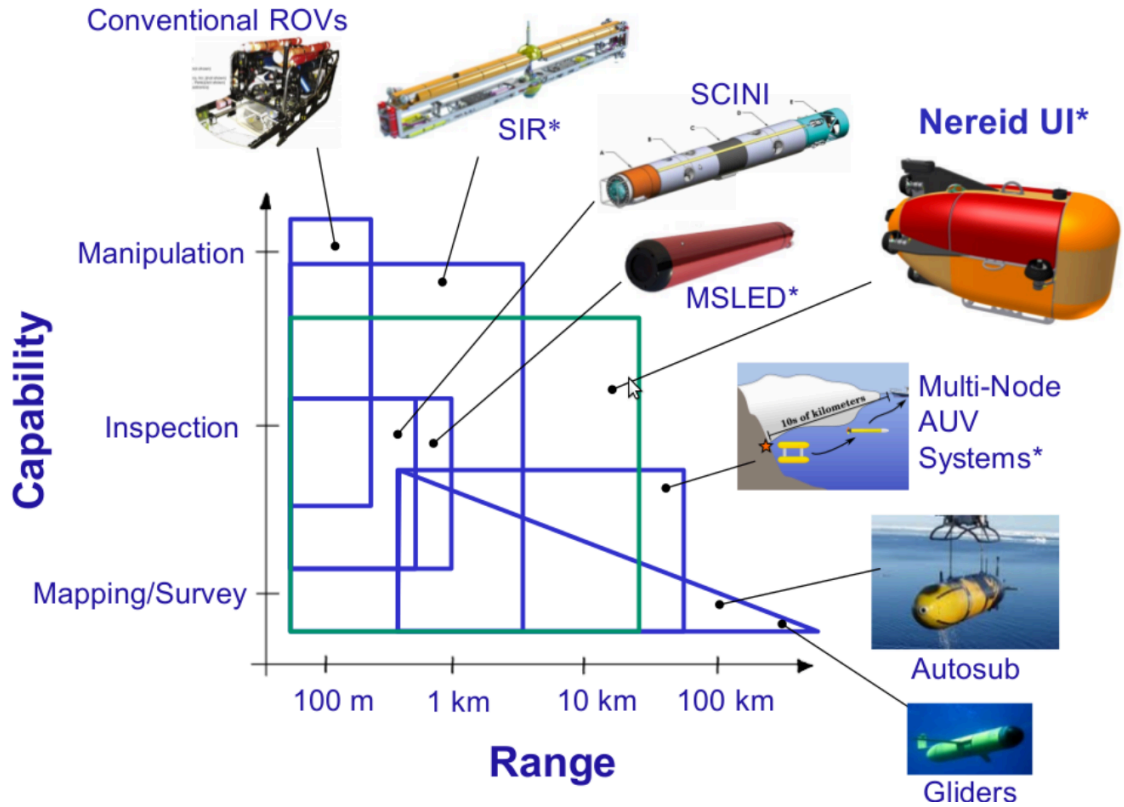
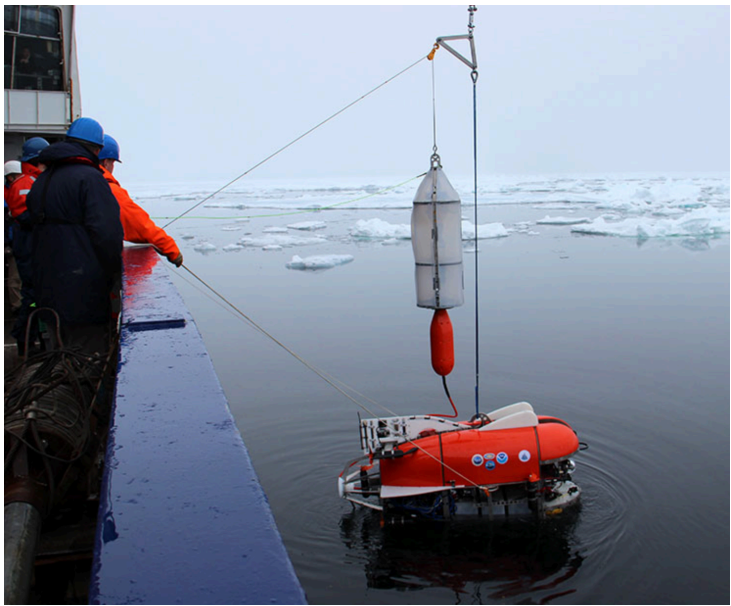


# Emerging technologies and broader activities

## Assessing the need for ROVs in polar research

### E.g. Nereid Under Ice vehicle operations (Andy Bowen)

- Test deployments conducted ~9 months ago under ice, on board the german vessel *Polarstern*





# Emerging technologies and broader activities

## DESCEND II: A workshop to discuss the future of deep sea research

- A workshop will be held in ~6 to 7 months with participants from WHOI, other academic institutions and non-profit organizations.

# Education and Outreach

- **AGU 2014 Early Career science program; ongoing for 2015**
- With support from NSF, we hosted another early career science program, which was very well received
  - *~34 attendees*
- *Karyn Rogers, Vicki Ferrini, and Breea Govenar* led the effort
- They continue to implement education and outreach activities at the behest of DeSSC, to develop and implement new activities (with the approval of DeSSC/UNOLS), and to assist UNOLS with E&O assessment activities



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