

DeSSC report
May 3rd , 2016
UNOLS Council Meeting



DeSSC membership

Current members

Amanda Demopoulos (*USGS*)

Dave Emerson (*Bigelow*)

Vicki Ferrini (*LDEO*)

Peter Girguis, Chair (*Harvard*)

Nick Hayman (*UTIG*)

Laura Lapham (*Univ. Maryland*)

George Luther (*Univ. Delaware*)

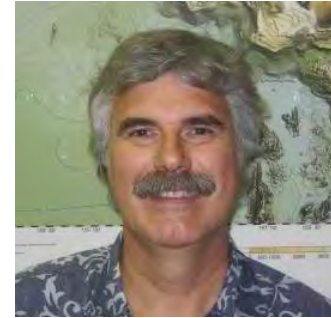
Cindy Van Dover (*Duke*)

John Wiltshire (*Univ. Hawaii*)

Rob Munier (*ex-officio, WHOI*)

Tim Shank (*ex-officio, WHOI*)

Adam Soule (*ex-officio, WHOI*)



Upcoming opportunities to join DeSSC

Looking for a “geochemist”

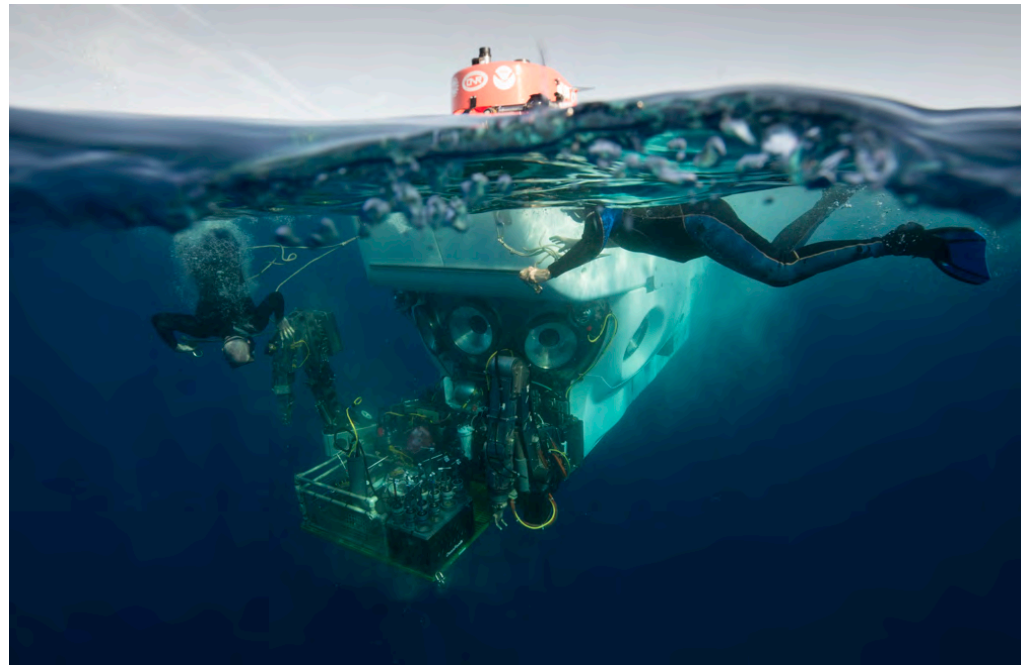
- Representing aquatic/hard rock geochemistry
- Looking to maintain gender balance, career stage
- Applications have already been received

Looking for a new chair

- I’m rotating off summer of 2016
- Two applications have been received
- DeSSC has sought advice from Chris Measures, and will continue to seek additional applicants.

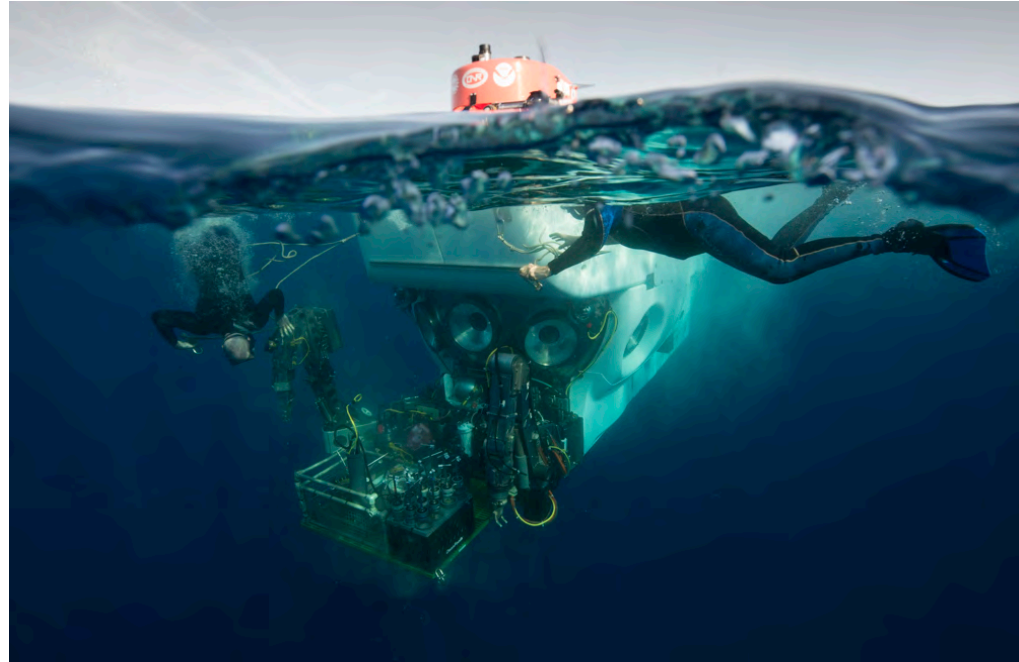
HOV Alvin

- Since return to service, the *DSV Alvin* has participated in ~11 expeditions, with ~250 days at sea.
- All major “bugs” have been fixed
- 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*



Deep submergence chief scientist training program

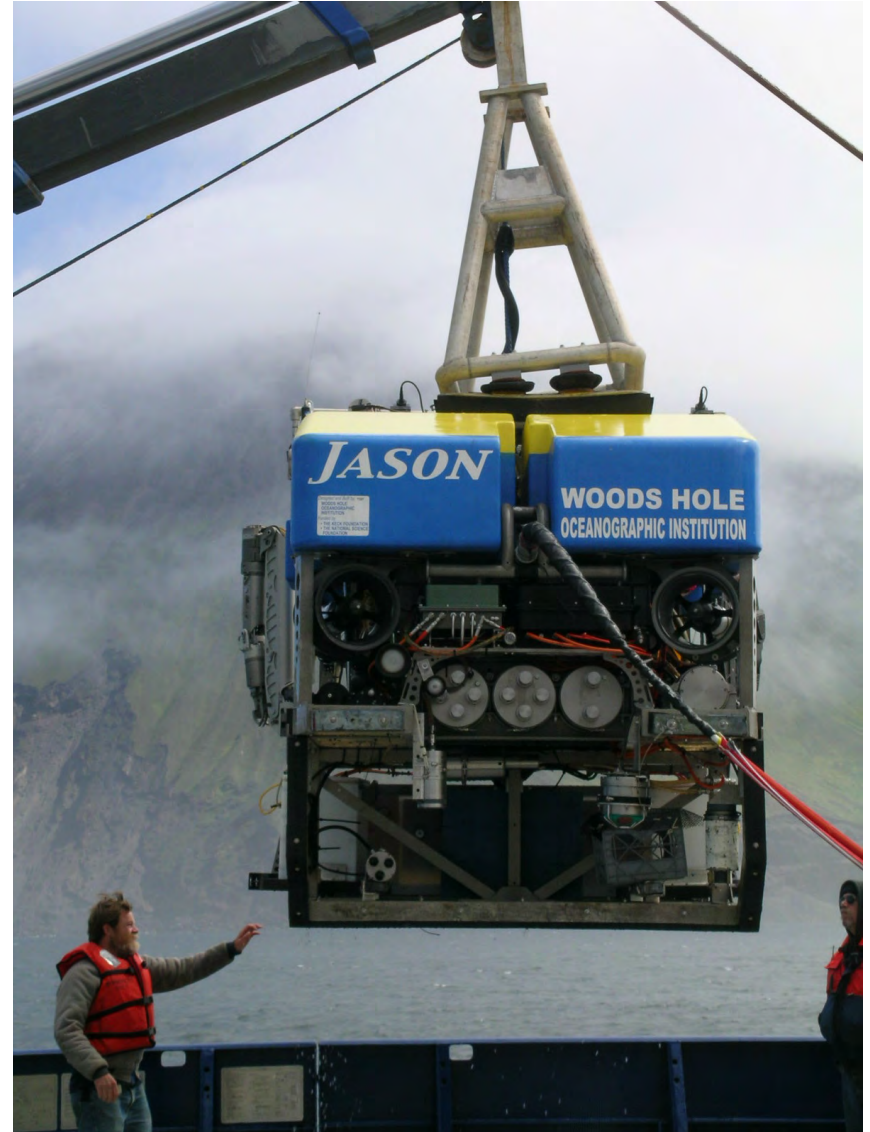
- With support from NSF, DeSSC members will be leading the first “deep submergence” chief scientist training cruise on board the *RV Atlantis* with the *HOV Alvin* and *AUV Sentry*
 - July/ August 2016
 - Telepresence component
 - Led by Cindy Van Dover
 - asst. professors and senior postdocs training on effective cruise planning and execution.
 - An advanced version of the “training program” that Adam Soule and me led at WHOI last summer.



ROV Jason

ROV Jason continues to perform well.

- Schedule is ample.
- Continued minor upgrades to lighting, video, etc.
 - Some MAJOR upgrades as well
- No performance issues



ROV Jason upgrades

Enable heavy lifting (e.g. OOI servicing)

Core components include:

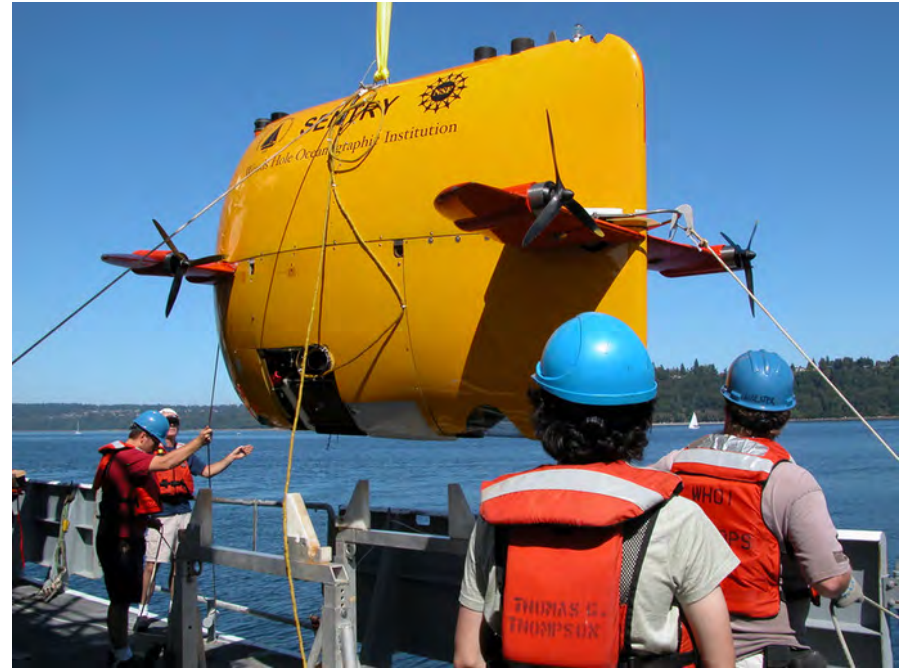
- Stronger cable tether with break strength (BS) of 70,000 lb. (compared to 42,000 lb.)
- An Active Heave Compensated winch to accommodate the new cable
- A new Launch and Recovery System (LARS) to accommodate the increased payload rated to 15,000 lb.
- A new vehicle frame capable of withstanding the increased loads; new swappable heavy lift tool skid that will be used for heavy lift operations
- New science tool skid with increased space and payload for scientific equipment



AUV Sentry

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

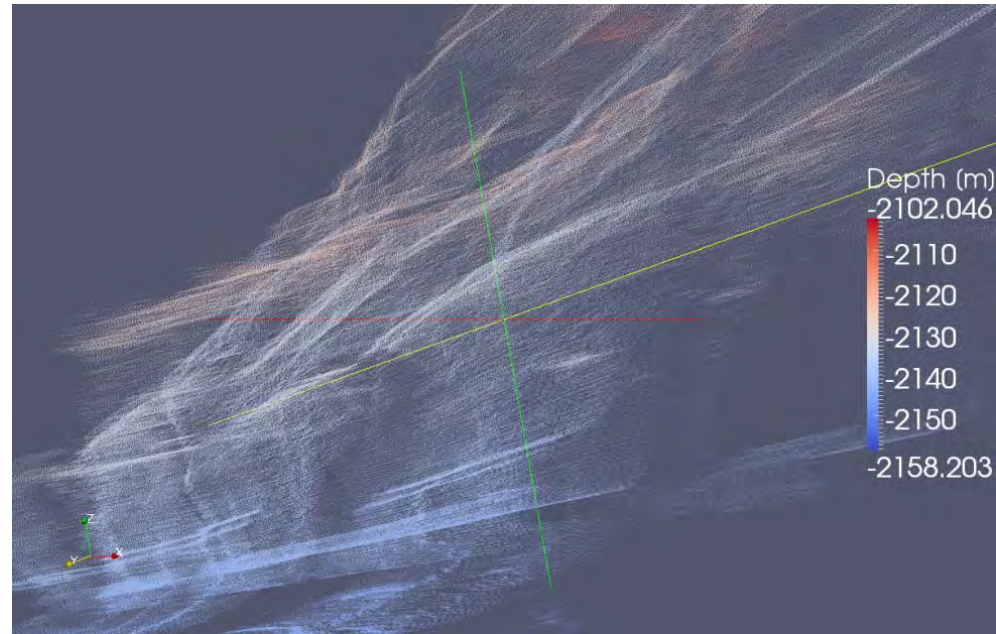
- Maturing in operational efficiency (which is good!)
- Schedule is quite full.



AUV Sentry: recent upgrades

AUV Sentry upgrades include

- New Reson AUV3 – dual frequency, 1/3 power, 15lbs lighter
- Blueview™ P900 forward looking sonar
 - *Obstacle Avoidance (big improvement) and science uses = no cost to NDSF*
 - *VERY useful in El Faro search*



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

A fun story: AUV *Sentry's* “plankzooka”

AUV Sentry equipped with two funnels for capturing and preserving plankton in the water column.

While not an “official” part of the facility, this is an example of a relatively low-cost technology that can be implemented again for future projects.

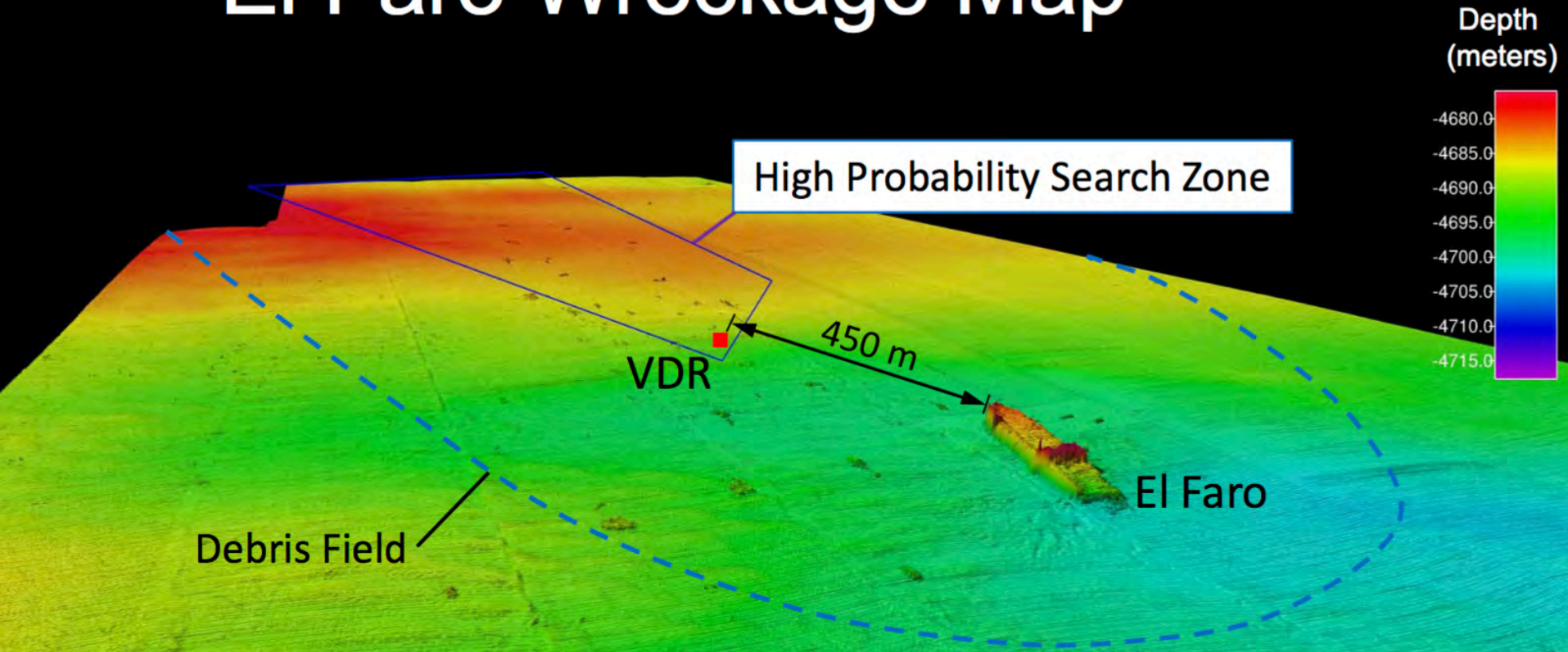


AUV Sentry helps find the El Faro's data recorder

AUV Sentry and RV Atlantis were instrumental in locating the data recorder

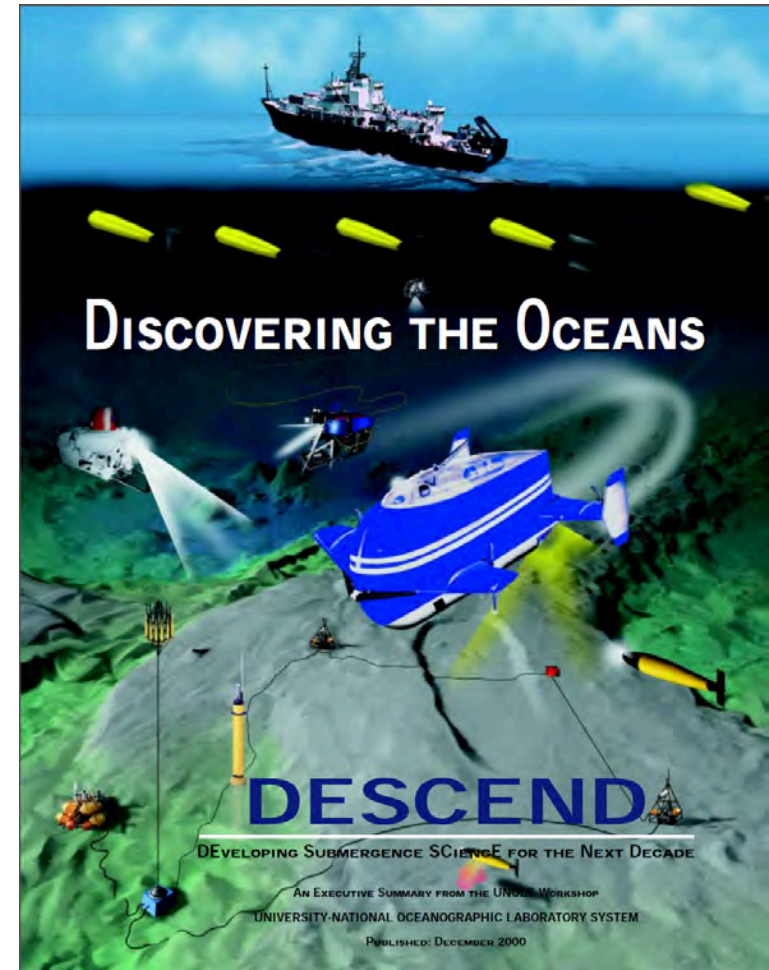
A second mission is needed to recover the recorder.

El Faro Wreckage Map



DESCEND2 workshop (Jan 14-15, 2016)

- ~90 participants
- Identified critical questions and the technologies necessary to address them.
- Report to be provided to NSF and the public ASAP (this summer)
- website is live the UNOLS DeSSC webpage



1999 DESCEND workshop report

Education and Outreach

- **AGU Fall meeting**
- With support from NSF, we've hosted FIVE early career science programs, all of which were very well attended and received
 - ~34 attendees
- *Karyn Rogers* and *Vicki Ferrini* led the effort
- We 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

Thank you



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