

DeSSC Current and Recent past initiatives

DeSSC New User Program (NUP): Facilitate the success of early career researchers

Program Goals:

- 1) Demystify the process (proposal through post cruise) of accessing and using the nations deep-submergence assets
- 2) Encourage new users to reach out to operators and programs early and often
- 3) Excite early career scientists about deep-sea research
- 4) Connect new users to the diversity of groups that can fund their research or support their research
- 5) Increase the efficiency of new PIs and Chief Scientists
- 6) Welcome all researchers into the best scientific community

DeSSC New User Program (NUP): Facilitate the success of early career researchers

2 flavors:

Meeting associated

- 1) 0.5 day workshop for New Users
- 2) Associated with Ocean Sciences or AGU (swap every year)
- 3) Followed by 1 day DeSSC Community Meeting
- 4) NDSF/Agency Reps/DeSSC
- 5) ~20 participants

Non-Meeting associated

- 1) 1.5 day workshop for more advanced New Users
- 2) At WHOI
- 3) Significant time with operators including ship schedulers
- 4) Aimed at post-doc/early faculty

New User Workshop

2023 NUP

- 1.5 days
- NDSF and WHOI heavily involved
- NSF, NOAA, OET, SOI
- Lectures by Scientist and operators
- 10 things you need to know

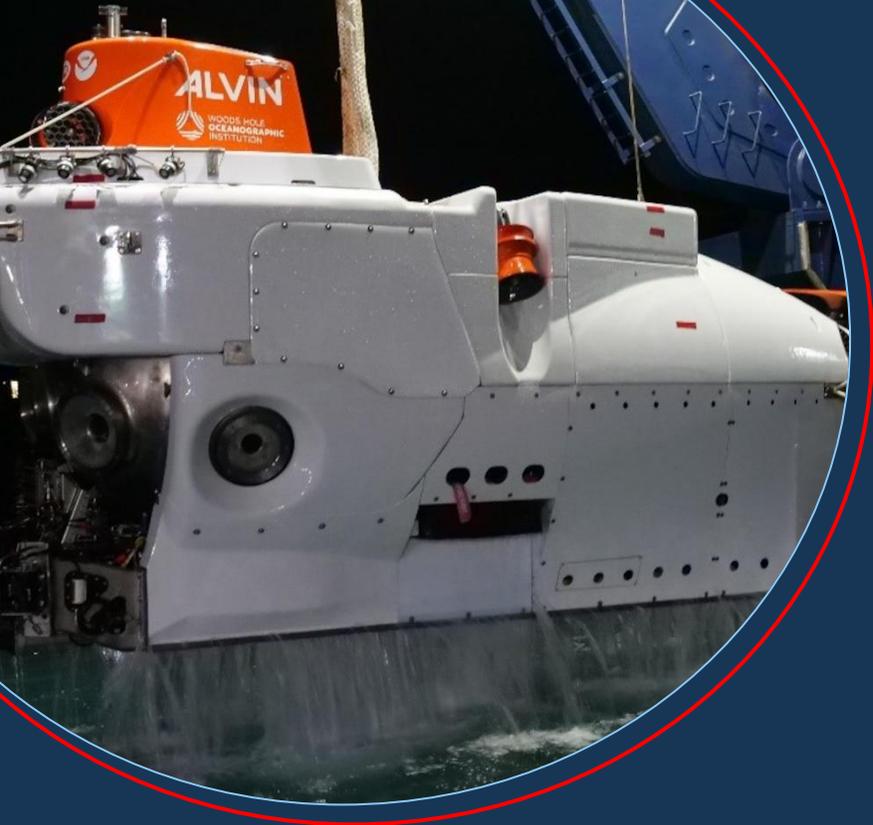
Post NUP Survey Response

Do you feel the interaction with the Vehicle operators were a significant benefit for this workshop?

100% Yes



© Woods Hole Oceanographic Institution, H. Piecuch



6500m depth rated DSV, capable of large payloads with an extensive sensor and imaging suite.
Missions last approx. 9 hours (avg 6 hrs on bottom).

Bruce Strickrott – DSV Alvin Program Manager

- 1 ■ Connect with the Alvin Team to discuss your goals and objectives
- 2 ■ Schedule multiple pre-cruise conversations with our team
- 3 ■ Ask us for engineering guidance for new samplers or sensors
- 4 ■ Every fifth dive of a voyage is a Pilot in Training dive (1 PIT seat)
- 5 ■ Work with our team to obtain NAVY dive clearances
- 6 ■ Deck test your samplers in sea water before the cruise
- 7 ■ Work with our at-sea leads to prioritize your dive objectives
- 8 ■ Maps for navigation need positional info (.grd or corner locations)
- 9 ■ Equipment used in-hull needs special testing
- 10 ■ External equipment housings need special testing



Jason is a remotely operated vehicle (ROV) system designed and built by WHOI's Deep Submergence Laboratory and funded by the National Science Foundation to allow scientists to have access to the seafloor without leaving the deck of a ship.

Matt Heintz - ROV Jason Program Manager

- 1 ROVs are dragging a ship along with them, making them slower moving than an untethered vehicle, this slower pace is more than made up for by working around the clock, i.e. longer dives are more efficient
- 2 ROV are more effective when they work 24-hour ops, use of elevators helps bring samples up while keeping the ROV down on long dives
- 3 Jason has done dives as long as 7 days and covered hundreds of km on a single dive
- 4 Jason brings 8-10 operators
- 5 Jason operators typically work 4on/4off while Jason is on a dive, 3 operators are in the van, pilot, co-pilot navigator, joined by 3 scientists, watch lead, and 2 data/videographers trained by the Jason team
- 6 When you learn that you are funded for a cruise, it's never too early to reach out to the vehicle manager
- 7 Start with a brief outline of your cruise objectives, send to the vehicle manager and we'll set up meetings to discuss
- 8 Include ROV and non ROV evolutions you anticipate accomplishing, when you learn which ship you'll be on, include the ship in these comms
- 9 Make sure you have multibeam maps. Send that data to the operator well in advance, if no maps are available add that time into your cruise plan and make sure the ship operator has a functioning MB, and knows you plan to use it
- 10 If integrating nonstandard equipment onto Jason send the specs, depth rating, wiring/power/data requirements early, send cabling early



6000m depth rated AUV, capable of large payloads with an extensive sensor suite. Missions last from 20 to 30 hours depending on payloads and sensor package. AUV Sentry is designed for rough terrain and low altitude surveys.

- 1 ■ Reach out during Proposal writing
- 2 ■ Pre-cruise planning is key to success at sea
- 3 ■ Understand the data products
- 4 ■ Understand how to prioritize dive objectives
- 5 ■ Meet to discuss capabilities
- 6 ■ Communicate what is critical for your science
- 7 ■ ROV/AUV concurrent operations are complex
- 8 ■ Sentry group provides engineering for development projects
- 9 ■ Don't forget to submit your shiptime request (for Sentry)
- 10 ■ PCAR feedback is critical for helping us improve

Sean Kelley - AUV Sentry Program Manager

Provide guidance on updating data policy

Mild updating

Can you post pictures from Jason on Social Media?

Increase access

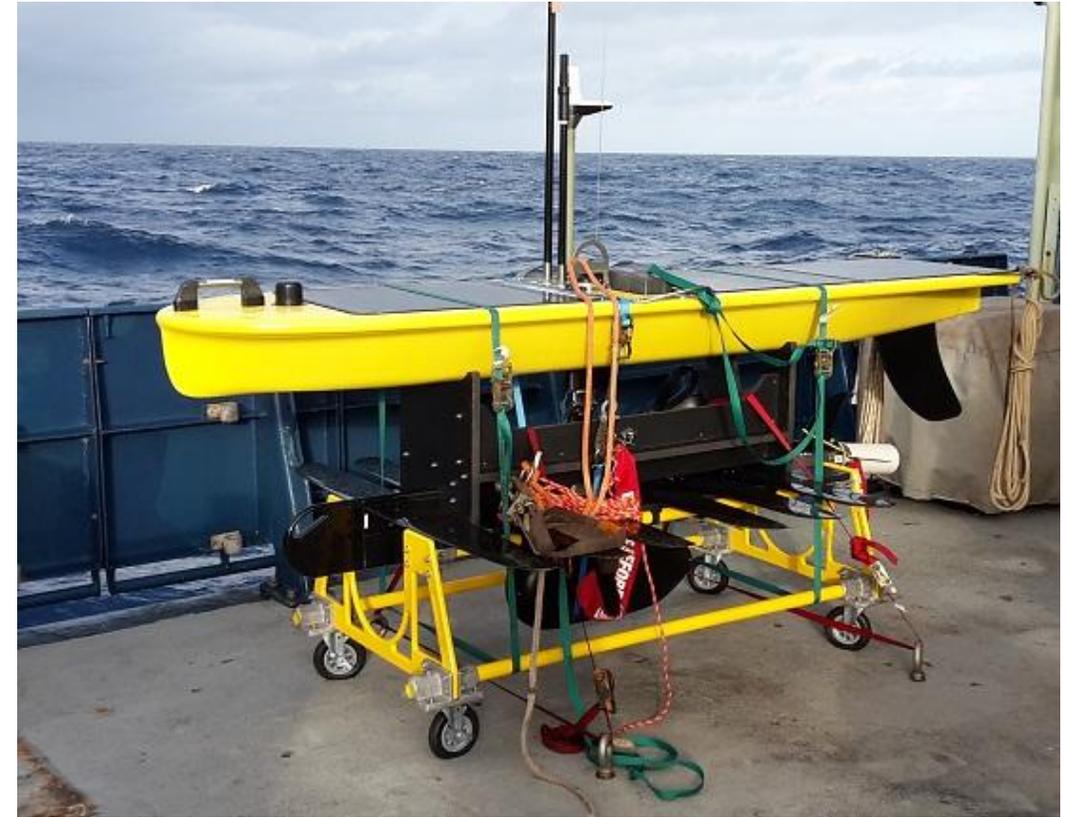
Change a few points "discoveries not intended can still be researched"

The screenshot shows a web browser displaying the NDSF Data Policy page. The browser's address bar shows the URL nds.f.who.edu/data/nds-f-data-policy/. The page header includes the Woods Hole Oceanographic Institution logo and navigation links for 'ABOUT NDSF', 'CONTACT', and 'NEWSLETTER'. Below the header, there are buttons for 'HOV ALVIN', 'ROV JASON', 'AUV SENTRY', 'DATA', 'PLAN AN EXPEDITION', and 'NEWS & MEDIA'. The main heading is 'NDSF Data Policy'. A 'On This Page' section lists the following topics: General, Science Party Responsibilities, Data Acquired with NDSF Vehicles and Instruments, Video and Photo Use, Accreditation, and Copyright, Post-Cruise Data Access and Archiving, and Procedures for Curation and Disposition of Samples Collected. The 'General' section is expanded, showing text that states: 'During each expedition NDSF provides a single copy of the full data distribution to the Chief Scientist and a copy to the shoreside WHOI archive. The Woods Hole Oceanographic Institution (WHOI) maintains an archive for oceanographic data and samples, as well as visual and digital information, obtained using the vehicles and sensors of the National Deep Submergence Facility (NDSF). The federal funding agencies that support the NDSF provide some funding to help support these archives. This archive policy is intended to allow the WHOI/NDSF to fulfill its commitment to properly documenting and preserving these data for future scientific, engineering, and educational use, without compromising the Principal Investigator's (PI) right to sole use of the data for scientific purposes during the two years following data acquisition. Changes and improvements in sensor technology, recording media, and operational characteristics of the NDSF vehicles will necessitate periodic updates of this archiving policy. Suggestions for policy improvements will be presented during WHOI/NDSF facilities reports at DeSSC meetings along with

Wave glider

Added as an asset to support remote use of Sentry

Used to maximize ship time through not requiring babysitting of AUV by UNOLS vessel



mROV Town Hall and a White Paper

ROV Jason is oversubscribed
-2015 Sea Change Report

Smaller vessels (including RCRVs)
are not designed for use with
JASON (and vice versa)

A slightly smaller but highly
capable ROV would increase
access to coastal and diverse
stakeholders

Deep Submergence Science Committee Recommends Acquisition of a Medium-Sized Remotely Operated Vehicle (mROV) to the National Deep Submergence Facility

The Deep Submergence Science Committee (DeSSC) strongly encourages the addition of a working-class, medium-sized Remotely Operated Vehicle (mROV) to the National Deep Submergence Facility (NDSF). The addition of an mROV would facilitate greater accessibility of deep-sea research, provide redundancy for a heavily used asset, and facilitate increased inclusion and accessibility across a diverse user group and suite of stakeholders. In particular, we propose an ROV of similar capability to ROV Jason, but designed for use on smaller research vessels, including the Regional Class Research Vessels (RCRV). This vehicle would also allow new avenues of research through being available for extended research cruises; long duration ROV cruises are often in conflict with the diverse suite of science already supported by ROV Jason and, thus, a second and highly capable ROV would facilitate research in polar or otherwise difficult to support regions of the globe.

ROVs are a cornerstone of deep-ocean research across disciplines, are heavily utilized in ocean science at all latitudes, and are supported by a wide variety of funding streams including NOAA, NASA, ONR, private donors, and NSF. Of note, ROVs are critical for supporting diverse large-scale projects, which includes providing the required annual service of the Ocean Observatories Initiative (OOI) regional nodes. As highlighted in the 2015 Sea Change report, the NDSF Asset ROV Jason is used for much of this research and has been fully scheduled and oversubscribed for decades. In recent years, even during the SARS-CoV-2 pandemic, ROV Jason has reached the limit of what the vehicle can do. The support of the Canadian Science and Innovation Centre for Earth and Ocean Observations has previously led to last minute cancellations, a significant risk to the use of non-default meet the established UNCLOS requirements of the NDSF.



Friday, 23 February 2024

12:45 - 13:45

215-216, Second Floor (NOLACC)

Still Cameras/ Fixed focus

- Now available on HOV Alvin
- Provide unique view of deep sea
- Providing guidance of need for other vehicles
- Different perspective
- Current solution (GoPros) require refinement
- Powerful for outreach and science
- Avoid opening housings between dives
- Better metadata integration