

Engineering Weekly Report 8/19/2021 - 8/26/2021

Executive Council Notes

- LRAUV operations in the Great Lakes have ended, and the two vehicles are boxed up on their way back to MBARI. While there were a couple of issues, the vehicles, ESP samplers and HAB toxin module all worked great. During the deployment, Brian and Yanwu developed a new, autonomous mission to trigger the ESP/SPR module to sample at the best position within a bloom. 25 new operators were trained, and nine of them piloted the vehicles for much of the deployment. Makai flew almost 500 km throughout southern Lake Michigan and collected 56 archive samples that will be analyzed for eDNA for prey fish. Brizo zigzagged through western Lake Erie to collect the same number of samples while monitoring the extent and toxicity of a Harmful Algal Bloom in real-time.

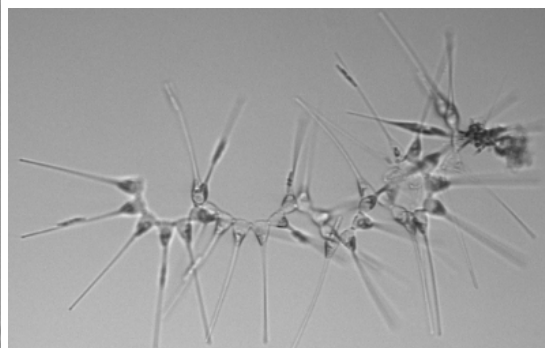
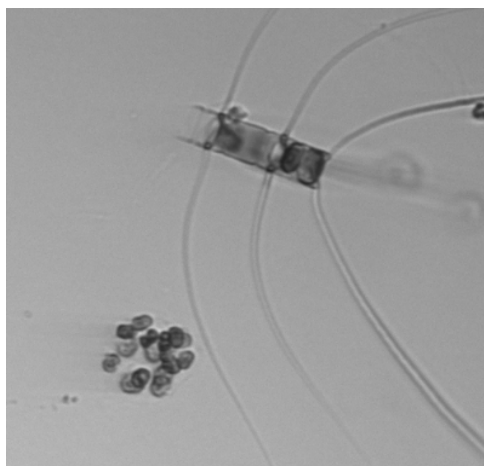
Individual Activities

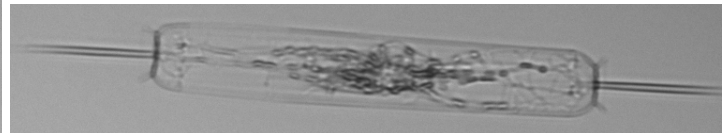
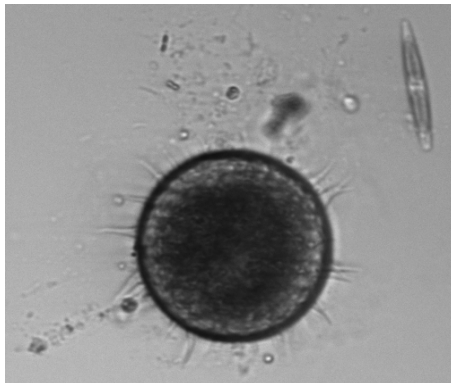
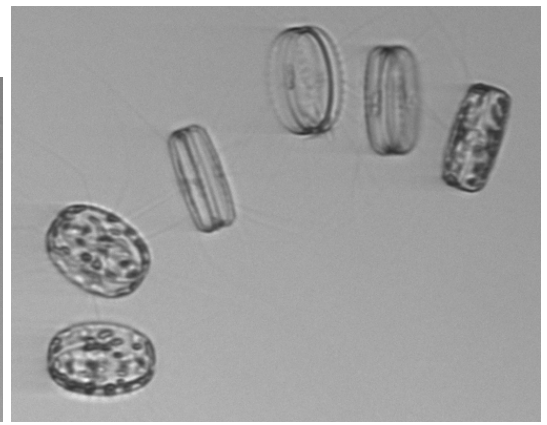
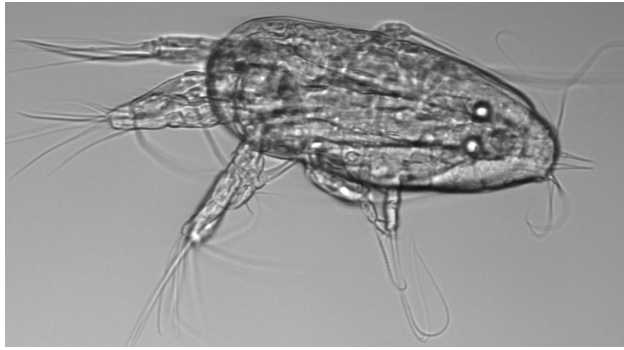
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Prepared the buoy and deployed it on Friday.
 - 902106 - Niobicon-Based AUV Docking Development
 - Designing buoy
 - Out of Office
 - Took 2 days off due to sick child.
- Mark Chaffey
- Danelle Cline
- Duane Edgington
 - 901603 - Video TAG: Visualizing Ocean Change
 - IJCAI 2021 workshop on Long-tailed distribution learning, Outlier detection, and on Continual semi-supervised learning, Aug 19-20. Some excellent presentations. Very relevant to our large unbalanced data streams (like species abundance seen in video).
 - Work on phase 1 MT feedback.
 - 901618 - Pelagic-Benthic Coupling
 - Update to Dan Davis collaborator agreement (new text and terms and conditions) signed by Dan and by Duane. In MT hands.
 - 902005 - VARS Annotation Assistance
 - Work on phase 1 MT feedback.
 - Out of Office
 - Tuesday Aug 24. Vacation
 - Thursday afternoon Aug 26. Personal leave.
 - IJCAI 2021 workshop on Long-tailed distribution learning, and on Continual semi-supervised learning, Aug 19-20. Conference Aug 21-26. Virtual (Montreal time)
- Jon Erickson
 - 800139 - EyeRIS
 - Paul R. is doing assembly on the strobes for the LRAUV version.
 - 901217 - Chemical Sensor Program
 - Finished three pressure tests to failure for the ISUS-APEX carbon fiber tubes. All three failed within 200 psi. of each other at 4,400 psi.
 - 901405 - Wave-Energy Conversion for Oceanographic Applications

- 902010 - Mesopelagic LRAUV
 - Aaron is starting glue up on the strain gauges on one tube.
 - Working on the drop weight changes necessary to get a 2 kg. weight in.
- Overhead
 - Spent most of one day with Quest as part of tests to get on the Mars node.
- Kevin Gomes
 - 300057 - Mooring Maintenance
 - Troubleshooting data outage from M1 after system patching
 - 901009 - CANON
 - Helped troubleshoot AIS feed
 - Overhead
 - Vacation
 - Proposal responses and helping answer questions
 - Other management activities
 - Meetings with AWS
 - Hiring committee progress
 - Submitted DQ for AWS Imagine Grant
- Andy Hamilton
- Kent Headley
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Proposal stuff
 - TRN
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Deployment shore-support
 - Monitoring instrumentation
 - Out of Office
 - Sept 24 - Oct 1, vacation
- Brett Hobson
- Scott Jensen
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Helped ready for deployment!
 - 901805 - Coastal Biogeochemical Sensing
 - Working out temperature issues with unipolar bias scheme
 - Planning for future revisions of nanoFET
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Working on making final release of HE Thruster but stock issues are causing problems.
 - 902106 - Niobicon-Based AUV Docking Development
 - Design and part identification for buoy battery storage electronics
 - Out of Office
 - September 13-17 vacation
- Brent Jones
 - 901009 - CANON
 - Installing XEOS rover and apollo-mono on WW.
 - Looking into how to plumb the position reports from the rover into various repo's around MBARI
 - 901502 - Passive Acoustic Sensing
 - Ran the first Sperm whale click matched filter and successfully found known clicks from oct2016
 - 901805 - Coastal Biogeochemical Sensing
 - Installed new batteries on Spray29. Removed old batts. Proceeding with normal turnaround procedures

- Out of Office
 - 2 sick days (definitely not covid)
- Chad Kech
- Brian Kieft
 - Out of Office
 - Jun 28-30 (phoenix MST)
 - Jul 1-9 (vacation HST)
 - ~~Aug 5-6 (vacation)~~
 - Aug 1-11 (Great Lakes, Great LRAUVs EDT)
 - Aug 16-21 (Great Lakes, Great LRAUVs EDT)
 - Sep WHOI?
 - October 25-31 (PLOCAN glider school tentative GMT+1)
- Denis Klimov
 - 901903 - Bio Raman
 - Looking into setup of mounting new lab jack to hold new long probe head for DORISS-2
 - Overhead
 - Final assembly of IFCB was completed and tested; and deployed on Power Buoy
- Diana LaScala-Gruenewald
 - 901915 - Improving MBARI Data Impact
 - Learning how ERDDAP is set up, how to add content
 - Now have an ERDDAP running in a docker container on my local machine
 - Working on adding tables, then connecting to database
 - Overhead
 - Weekly meeting(s)
 - Out of Office
 - Aug. 30 & 31 - Backpacking, won't be reachable
- Eric Martin
 - Out of Office
 - July 19-Aug16 Pacific Northwest for Dorado support.
- Thom Maughan
 - 300083 - DMO Support LRAUV
 - Locating hardware to work with Tanner
 - 901805 - Coastal Biogeochemical Sensing
 - pHFET-SOS bug fixes and enhancements are finished the release is done for MPHOX/MFET firmware. Release notes updated, procedure for nsFOCE firmware updated and config written.
 - Attended NanoFET analog temperature sensitivity data review. NanoFET v2 was given the green light.
 - 901713 - Nearshore FOCE
 - Working with Dale on MPHOX to Labview communications. Implemented a firmware change to simplify the Labview code.
 - James Mc is planning to update the 10 nodes on nsFOCE this week.
 - 902004 - Planktivore
 - Assembling parts, getting organized.
 - Met briefly with Larry on plans for housing fabrication. Larry should be starting in a couple weeks.
 - Out of Office
 - Vacation last week in Aug for memorial and family reunion in Colorado. 25 Aug to 3 Sep.
- Mike McCann
 - 901101 - Seafloor Mapping

- Got CRUD testing working for smdb REST, but projecting a 2,000 line testing script!
 - Exploring GraphQL for smdb in [Issue 43](#)
- 901111 - AUV Infrastructure Support
 - Waiting on delayed mode LRAUV data from the Great Lakes for creating STOQS databases
- Out of Office
 - Vacation day: Friday 27 August 2021
- Rob McEwen
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Looking at WEC-Sim
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Completed Drone License part 107 renewal.
 - Out of Office
 - 25 Aug - 8 Sept
- Paul McGill
 - 901618 - Pelagic-Benthic Coupling
 - Responding to reviewer's comments on Rover paper
 - Tested burn-wire boards and sent one to Benthos
 - Got optode cable built for Oct Rover turnaround
 - 901700 - Acoustical Ocean Ecology
 - Trying find a place for current limiter board in the MARS Echosounder can
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Finished schematic for ROV cable on Deep Sea Data Connect for Coral Macro Cam
 - Tested new laser aiming system for Macro Cam, met with Jim B. to agree on settings
 - Ordered cable and connectors to extend RF cables for Deep Sea Data Connect
 - Trying to solve weird Sony camera issue with Alana
 - Out of Office
 - Took vacation day Fri
- Ed Mellinger
- Tom O'Reilly
 - 901101 - Seafloor Mapping
 - Refining C++ gridded map visualizer, adding capability to select points
 - 901112 - Monterey Bay Time Series
 - Successfully deployed Imaging Flow Cytobot (IFCB) on wave energy buoy on August 20, telemetry now being received on shore. Excellent image quality, can be viewed at the [IFCB dashboard](#).
 - Worked with team to more effectively utilize buoy cell modem connection for IFCB telemetry retrieval.
 - Brief selection of images





- Craig Okuda
 - Out of Office
 - Vacation day
- Doug Pargett
 - 881135 - 3G ESP Cartridge Redesign
 - Pressure testing of Alpha 3 cartridge
 - Setting up to test a press fit seal pin on cartridges
 - 901205 - ESP SURF Center
 - Meetings, lab organization.
 - Out of Office
 - Sick leave
- Ben Raanan
 - Out of Office
 - June 8-22
- Mike Risi
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - June 4-11: Vacation
 - June 28-July 2: Vacation
 - August 30-September 14: Ocean Imaging Cruise
 - September 14-17: Vacation
 - Vacation on alternate Fridays
- Brent Roman
 - 708165 - NOAA-MERHAB
 - Baud rate hack continues to hold
 - 901205 - ESP SURF Center

- ESP firewall now separates ESPs into groups
 1. e.g. NOAA ESPs cannot “see” MBARI’s on the VPN
 - 901913 - Demonstrating high-speed communication with a submerged AUV
 - Chris Wahl mounted high speed cell modem on WG-Tiny
 1. Delivered upload rates >400KB/s within 7 miles of shore
 2. M1 comms are spotty, but 250KB/s when available
 - Out of Office
 - August 25 - September 17
- Carlos Rueda
 - 901009 - CANON
 - MXM code updates, including migration to Github actions for CI and slack notifications.
 - 901502 - Passive Acoustic Sensing
 - Improving notebook that exercises Google Humpback whale song detector on Soundscape recordings. Thanks team for the productive discussions.
 - 901513 - Targeted Sampling by AUVs
 - Code updates.
 - 902009 - AUV UI
 - Doing TethysDash backend modeling toward supporting command status.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Presented an update about the Mission/Behavior documentation site and tools.
 - Overhead
 - IE meeting and discussions about REST/GraphQL APIs, and brief TethysI presentation/demo.
- Karen Salamy
- Brian Schlining
 - 500055 - Video Annotation DM
 - Investigating some new merge issues between VARS and EXPD
 - 902002 - Fathomnet Detect and Classify
 - Working through remaining issues and tasks before the September 30th release.
 - Supporting applications have been deployed to quasar.
<https://docs.mbari.org/internal/fathomnet-validator/>
 - Overhead
 - Responding to phase 2 requests for 2022 proposals.
 - Out of Office
 - Aug 30 - Sep 10 - Vacation
- Rich Schramm
 - Out of Office
 - 7/1 - 8/30 Vacation
 - 8/31 last day
- Alana Sherman