

Engineering Weekly Report 8/13/2026 - 8/20/2026

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2026/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - Out of Office
 - Working remotely May 11, 2026 – May 14, 2026
 - MIW May 18, 2026 – May 22, 2026
 - CVPR Jun 1, 2026 – Jun 5, 2026
- Francois Cazenave
- Laura Chrobak
- Danelle Cline
 - 901221 - Midwater Time Series
 - SSL training trial with 11 epochs completed for baseline model using ~240K raw localizations. Next steps to train with background pending Rob S final sorting appendicularians from ctenophores and sinkers from marine snow.
 - 901502 - Ocean Soundscape
 - Scoring humpback units by information retention revealed Perch 2 model encodes fine-grained unit differences in labels but these are getting lost in the HDBSCAN UMAP reduction pipeline. This appears to cause fine-grained topics in the topic model to combine.
 - Renew Franny collaborator agreement
 - Worked on IEEE Oceans PBP poster outline with JRyan
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Loaded ~600 potential missing true positives to test set to review to drone.mbari.org. Thanks to Duane and our summer intern, Sarah for this contribution. Reviewing in Voxel51
 - 902111 - Carbon Flux Ecology
 - Performance improvements to fiftyone-sync/embedding service layers to handle very large 2.9 million ISIIS ROI verifications
 - SINKER backend running smoothly except one camera stream did not recover after a recent reset. ADCP out pending a replacement. Minor updates on rsync scripts. Check out the dashboard here: <https://sinker.shore.mbari.org/>
 - Overhead
 - ML Advisory Committee Meeting, Attended a few seminars this week.
 - Out of Office
 - September 21-24 Oceans Conference, Monterey
 - October 18th, SMM 2026 pre-conference Workshop: Evolving AI Applications in Modern Marine Mammal Science: From Computer Vision to Generic and Agentic AI, Puerto Rico
- Duane Edgington

- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Marine26 paper submission rejected. We got 2 of 3 favorable peer reviews, the third was harsh and negative and resulted in overall rejection. Appeal to workshop chairs for rebuttal and submission of rewritten paper to address feedback was rejected out of hand (no mechanism for rebuttal or rewrite and resubmit). So we are not going. Researching alternative publication venues. Following up on useful feedback and suggestions from the positive reviewers that are already proving to be helpful.
 - Reviewing Tim's paper for IEEE Oceans final submission. Due Aug 24. It looks very good.
- 901502 - Ocean Soundscape
 - PyTorch Poster submission accepted! They even refunded the conference fee since presenters attend at no fee!! Woohoo!
 - Working on IEEE Oceans Perch2.0-hoplite poster.
- Out of Office
 - ~~September 8-13 ECCV conference. Present UAVS Yolo26/RFDETR model performance. Have reservations. Registered. cancelled~~
 - September 21-24 IEEE Oceans Conference, Monterey. Present poster on Perch-hoplite. Registered.
 - October 19-24 Pytorch Conference, San Jose. Present poster on Perch2.0 port to pytorch. Registered. Have reservations.
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Got the new portals running on all three shore testing environments
 - Working on deploying to the production environments next
 - Upgrades done on Carson (Packard at a later date)
 - 902403 - Expedition DB Modern
 - Using template from authentication work to start web application that's using new REST API
 - Overhead
 - Group management activities
 - More work on the new engineering drawings application
 - Out of Office
 - Aug 25-27: Monterey Data Conference
 - Sep 21-24: Oceans conference
- Andy Hamilton
- Kent Headley
 - Out of Office
 - Sep 21-24: Oceans conference
- Rich Henthorn
 - 300078 - DMO Support - AUV
 - i2MAP power management
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Discussing upcoming cruise and SES recovery
 - Possible SES redeploy this fall for El Nino
 - Fluorescence camera alternatives
 - Out of Office
 - August 24 - Vacation
 - August 31 to Sept 3 - Vacation
 - Sept 14 to 18 - Durkin Cruise
- Akshay Hinduja

- 902101 - LRAUV Technology Development
 - Minor changes to terrain awareness module on how it handles ABORT missions
 - Prepare for deployment on LRAUV
- 902204 - Scalable Robotics
 - SBN coarse alignment trials. Tried 3 different methods which proved ineffective
 - SVGP-PF can correct large drift to within ~5m. Will develop more on this thread now.
 - Preparing data and reference maps for Tubeworm Slump for extra test datasets in more relief heavy areas.
- Overhead
 - AI at MBARI 101 presentation preparation.
- Brett Hobson
- Irene Hu
 - 901101 - Seafloor Mapping
 - ORP board is running stability tests with batteries. Continued looking into various solutions to test with
 - 901217 - Chemical Sensors
 - Ran preliminary bench tests for wastewater ISUS with Joe. Both LEDs and Phosphortec showed some signal using Hamamatsu's software for the spec. Ran the undiluted nitrate standard to see absorbance. Next step dilution series
 - Various conversations with Claude to design an optical system that bypasses TO can ball lenses and optical fibers. Need to buy some parts and make a new jig.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Alkalinity
 1. Board updated with many new circuit fixes, sent out for layout
 2. Still trying to schedule SEM
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Watched some videos for Part 107
- Scott Jensen
 - 901205 - ESP SURF Center
 - Providing support for the deployment of the USGS FIDO instruments.
 - An odd failure mode has got everyone stumped as to the root cause. There are working ideas as we try to recreate the failure locally so that we can understand it.
 - Developing a website version of the puck reader with a new printer.
 - 901405 - Wave-Energy Conversion for Oceanographic Application
 - In the process of preparing the WEC for deployment we had a miss wire and subsequent damage to some of the electronics. Troubleshooting has not yet isolated the exact failure but a replacement of a PCB does fix the problem.
 - 902106 - Niobicon-Based AUV Docking Development
 - Support of the solar dock build
 - Overhead
 - MARS upcoming deployment is struggling with sealing of the housings and in need of some guidance as to a patch forward.
 - Out of Office
 - September 23-28 (Vacation)
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Created BOM for pic32 SIPPER board in prep for manufacture
 - 901502 - Ocean Soundscape

- Investigating odontocete click detection using claudio. Converting Julia code to python and instituting parallel processing
 - Random sampling of python output indicates it properly recreates Julia output
- Overhead
 - Created m1, oa1, oa2 comms dashboards
- Out of Office
 - ½ day vacation AUG 14
- Chad Keycy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 07/17-07/22 (GMT -4)
 - 07/26-08/07 (GMT +9)
 - 08/26-08/28 (GMT -4)
 - 08/29-09/02 (GMT -5)
- Denis Klimov
 - 300083 - DMO Support - LRAUV
 - This week, the issue of one of the PAR sensors came up; looking at what is going on.
 - 702106 - CeNCOOS
 - Preparing IFCB for Power Buoy Deployment.
 - Also, assisting in restoring the original lead-acid battery setup for Power Buoy. We had mediocre tested capacity of the battery pack, which I traced to four underperforming batteries. Jose ordered four more batteries and currently Jose and Scott are testing a partially assembled pack with the rest of the electronics stack.
 - At some point, we need to reassemble the pack and test its performance again if time allows.
 - 901809 - Deep Sea Bioinspiration
 - We have the first deployment of the Bioinspiration Lab on DP! Setting up the Dark Room 216 for two laser benchtop PIV systems was interesting and challenging.
 - Good thing, we started on a Dark Room configuration weeks in advance which was much appreciated by the DP crew. Activities consisted of configuring light control in the room; custom shelf for the Coherent laser; power supplies and laser control; magnetic hooks for laser safety goggles and a few other smaller tasks. Black painted plywood shelf was made by the crew which turned out to be good and functional. I had to make in a rush an additional plastic shelf edges and also worked on securing the laser and its controls using tarred cord and Velcro.
 - Since the DP Dark Room 226, unlike Lab A226 on shore, is lacking access control, Procedural Entryway access protocol and TWA were created as a spin-off of the A284 TWA, with the appropriate signage. One of the challenges was, the warning labels set on the door pre-cruise were jammed and scraped off; so Tara V. had to create a narrow version of one of the signs which worked out well.
 - The other interesting activity was securing optical breadboards in the DP Dark Room 226 counter space, with anti-vibration padding against the table and the wall surfaces; which I hope will work out well during the cruise but we will see.
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - We are resuming work and discussions on fluorescent camera architecture. Also, we are looking at another SES deployment later this year.

- The plan is, after September recovery, to work on the SW model of the carousel. Capturing such a model would allow access to the feasibility of placing additional (fluorescent) camera housing.
 - 902401 - Geo-Sense
 - We are wrapping up packing for the deployments in Kolumbo and Milos. I handled prepping emergency strobe, emergency RF beacon; sourcing and programming Bayofeng radios for RF beacon detection; untangling optical fiber; and various other tasks.
 - To go: input power electronics 'soft start' and low-voltage disconnect. The first set is working so far; we need a spare just in case.
- Eric Martin
 - Overhead
 - Telepresence updates and launch plans.
- Thom Maughan
 - 300078 - DMO Support - AUV
 - Erik is indicating Hyperion power supply board will need to supply 10amps for 100msec once every 3 seconds.
 - Ordering supply chain limit part, INA228.
 - 300083 - DMO Support - LRAUV
 - BPC2 and Charger board checkout doc, working with Varsha to do the test
 - Built a second pack
 - Python program for exercising serial commands at 10x LRAUV rate caused the hardfault without charging active. Had only previously seen the fault while charging.
 - Chasing the hardfault. Claude review of the stack trace pointed to the i2c library from LPCOpen. Claude suggested a fix, running that.
 - 901217 - Chemical Sensors
 - FPGA boards received from tinyvision. The plan is to use open source FPGA tools and generate Verilog using Gemini or Claude.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Met with Yui regarding MoSoS v5.2 for NanoFET and mini-ISUS
 - Filesystem for onboard NAND+FRAM is nearing completion, many thanks to Jim Davis for his contributions.
 - 902004 - Planktivore
 - Planktivore V2B had a sea trial on Opah. The mission ended early due to an LRAUV elevator fail, however, we were getting very few ROIs. Planktivore team will need to debug.
 - Out of Office
 - Vacation Sep 8,9,10
- Mike McCann
 - 200109 - Core Mooring Data - MDUC
 - Using temperature and humidity from asimethrh as the metsys sensors are faulty
 - Added more filters for selecting deployments for editing
 - 901101 - Seafloor Mapping
 - Suggesting merging the PR that adds triangular mesh generation pipeline to mbmesh
 - Started on poster for Oceans
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Exploring Ciara's Piscovore data lookups that discovered some QC issues
 - Overhead
 - Fixed legacy Expd's annotations.asp so that David Packard / Doc Ricketts queries work
 - Diagnosing problems with automated vfcbydive processing getting stuck

- Out of Office
 - Half time schedule: Generally away Mondays, Fridays, and alternate Thursdays
 - 21-24 September: Oceans Conference
 - 12-16 October: Web3D Conference
- Enoch Nicholson
 - 706008 - READI-Net
 - Reagent assembly caps
 - 901007 - Benthic Biology & Ecology
 - Packard deployment recap
 - 901205 - ESP SURF Center
 - Support for USGS deployments
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Flight request from
 - 902101 - LRAUV Technology Development
 - Lifting hook
 - 902111 - Carbon Flux Ecology
 - Matt Rau welcome
 - Out of Office
 - June 26 to July 6th
 - July 30 to Aug 10
- Tom O'Reilly
- Mike Risi
 - Out of Office
 - Offsite on Tuesday and Friday
 - January 2, 2026 - vacation
 - January 19, 2026 - January 30, 2026 - vacation
 - March 4-5, 2026 - vacation
 - March 16, 2026 - vacation
 - March 30, 2026 - vacation
 - May 18, 2026 - vacation
 - June 22, 2026 - vacation
 - June 29, 2026 - July 1, 2026 - vacation
 - August 17, 2026 - vacation
 - September 8, 2026 - September 10, 2026 - vacation
- Paul Roberts
- Brent Roman
 - Out of Office
 - Sept 8 - Oct 16 (vacation)
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Humpback whale song detection scores are now in place for 7/30 through 8/2.
 - Set up a collaborator agreement with Ariel Raizman.
 - 902101 - LRAUV Technology Development
 - LRAUV: Did fixes [PR#661](#), [PR#666](#), [PR#191](#) (already merged by Quinn).
 - TethysDash
 1. [4.99.103](#) with the only pending endpoint for migration, the one used by the LRAUV for HTTP(s) comms, /dataLink, finally migrated to JAXRS. 🎉. In production since Aug 17 with no issues. I can now proceed removing all the servlet related stuff.

- 2. [4.99.102](#) with improved API in some endpoints for consistency.
 - Dash4 [4.99.38](#).
 - TethysL
 - 1. [4.9.80](#), includes a "relaxation" involving string concatenation expression, which has the potential of being very useful to compose commands involving values for arguments/outputs in the script. Ongoing discussion with Yanwu and Quinn.
 - 2. Fixed [lrauvinfo#2](#)
- 902504 - Scalable Semantic Mapping
 - Dial [2.4.3](#) , [2.4.4](#) , [2.4.5](#) .
- Overhead
 - Some assistance/exchanges with WHOI regarding SSL requirements for LRAUVs to be able to connect to their TethysDash instance.
- Out of Office
 - Sept 8-11: vacation
 - Sept 21-24: IEEE Oceans Conference. Along with our Soundscape intern, Ariel Raizman, will present a poster about humpback whale song structure.
 - Nov 11-12: vacation
 - Dec 9-10: vacation
- Karen Salamy
 - 300057 - Mooring Maintenance
 - Weekly download maintenance and support for all MBARI moorings.
 - Recent deployment of OA1 data is looking really good at the moment.
 - Great new web view of [M1](#), [OA1](#) and [OA2](#) now available (Big shout out to Brett Jones!) at: <http://gizo.shore.mbari.org/m1.html> (Need to be VPN'd in if outside MBARI firewall)
 - 902101 - LRAUV Technology Development
 - Attended a meeting to discuss the Q4 priorities and direction of Dash5
 - Holding a meeting today to go over Dash5 Issues and PRs UI / Design Ownership Assignments
 - Chatted with Carlos and Monique regarding potential upgrades for Dash5.
 - Bug Fixes
 - 1. NextComm widget reads text_nextcomm from TethysDash; merged to develop (#820) (Aug 18)
 - 2. Measurement tool restored to Dash4 parity: open paths until the start point is clicked, polygon fill after the 3rd vertex, Escape dismiss (#830) (Aug 17)
 - 3. Extra-email add aligned with TethysDash 4.99.102 (addExtraEmail + verification code) (#832) (Aug 17)
 - 4. Markers layer: replace window.confirm with useConfirm for remove / remove-all (#787) (Aug 14)
 - Filed Issues
 - 1. #828 — Sent mission appears in Logs but not Comms Queue or pending Schedule (Aug 14)
 - 2. #829 — Add "Save Globally" option for map markers as Map Assets (Aug 14)
 - 3. #831 — Switch extra-email add to addExtraEmail for TethysDash 4.99.102 (Aug 17)
 - In Review
 - 1. #832 — Extra-email addExtraEmail for TethysDash 4.99.102
 - 2. #830 — Measurement tool Dash4 parity
 - 3. #825 — Unknown operator + Event ID on Schedule rows
 - 4. #787 — Restore Markers layer actions and persistence
 - 5. #814 — Mission/Command modal polish

- 6. #813 — SBD chunk progress boxes on Schedule and Comms
 - 7. #812 — Do not ACK cellsat on cell state:2 alone
 - 8. #811 — Script mission ID for set commands
 - 9. #810 — Depth sparkline for dives longer than 8 hours
 - 10. #809 — Reload mission list so new scripts appear in pickers
 - 11. #805 — Pending Schedule mission ID via getScript
 - 12. #790 — Gate map marker edits behind login
- Parked and Archived
 - 1. Watch Summary (#778) parked as lower priority (Aug 13).
- Out of Office
 - March 15-24, 2027 - Vacation
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Updates the [VARS Query](#).
 - Updated the [VARS service stacks](#) on both ships.
 - Updated [Beholder](#). Now discriminates between a fast path (for images in disk cache) vs a slow path for images that need to be extracted from video
 - 901809 - Deep Sea Bioinspiration
 - Working on [NCEI image registration paths](#) and improving feedback to users on the state of uploaded data sets.
 - 902403 - Expedition DB Modern
 - Starting work with Kevin Gomes on getting authentication rolled out for the [web UI](#). See also [expd-quickstart](#) and <https://expd-dev.shore.mbari.org/api/q/docs/>.
 - Overhead
 - Spent some time learning/running/testing local agent applications.
- Quinn Shemet
 - Out of Office
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- Alana Sherman
 - Out of Office
 -
- George Stern
 - 902106 - Niobicon-Based AUV Docking Development
 - Coms testing on the solar buoy in prep for deployment and configured subseapi for remote access
 - Reviewed active diode board layout
 - Identified a 5 to 3.3V ldo board for the docking payload can, testing proved it actually had thermal and short circuit safety features and mostly met specs.
 - 902204 - Scalable Robotics
 - Assembled, disassembled and reassembled the OakD camera many times; fought with USB hubs, software, fake cables, heatsinks and thermal pads, but it is finally together and seems to be working much faster than before
 - Mola fixes and fighting with the console
 - Thermal tests for the oakD camera part 1, seems like it is mostly working at cold, need to repeat with more controlled environment
 - Reviewed Mola ESC controller board layout
 - Tested Mola ESC controller board software to try to reproduce the death chirps, no luck but increased the arm time since it was a little marginal

- Finally reassembled and tested the HSI strobe that has been sitting open in the compass lab for 6mths
- 902304 - Piscivore Cam
 - Finally got a lens holder that, with modifications, will be compatible with the Framos IMX662 modules and sunex lenses we plan to use, not sure what idiot decided to use M1.5 screws that aren't even sold at mcmaster...
 - Began assembling gen4 camera and tweaking some of the prints
 - LED board testing; full tests have to wait until the power supply with PWM capability arrives but partial testing appears to be mostly working, one resistor needs be changed
 - Tested chemically etching PVC wire jackets with acetone to improve potting wetting, looks like it works, hopefully this will solve water wicking along the jacket and shorting to pads when potted
- Out of Office
 - Sick 2 days last week
- Justin Tucker
- Johann Voigtlander
- Emme Wiederhold