

Engineering Weekly Report 8/20/2026 - 8/27/2026

<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
 - 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
 - Assisted Tim in completing his full paper for IEEE Oceans. He got it done, and uploaded successfully into papercept
 - 901502 - Ocean Soundscape
 - Perch-hoplite IEEE Oceans Conference poster session abstract uploaded successfully into papercept. One page, IEEE format.
 - Poster draft for 2026 Oceans conference completed and handed to Melissa for draft full size printout. Comments incorporated into the draft. Melissa will turn it into an artful final poster.
 - Presented poster material to the soundscape analysis team. Created some new plots and graphics after the feedback.
 - Presented poster material to seminar speaker Laela Sayigh of Woods Hole Oceanographic Institution. She is great, and was engaged by the material. Dolphins and orcas are relatives, after all...
 - First draft public github repo underlying the 2026 Oceans work completed. To complete this week and then turn on "public"
 - PyTorch conference poster proposal accepted! The conference refunded my registration fee, and sent invites to make a publicity video and complete the poster that will be published with the conference. I will also be making a public repo for the poster work (Perch2.0 and perch-hoplite ported to pure pytorch, no TensorFlow)
 - 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
 - Out of Office
 - Aug 25-27: Monterey Data Conference
 - Sep 21-24: Oceans conference
- Andy Hamilton
- Kent Headley
 - 701147 - MARS O&M
 - It's been decided to chase down the Helium leak test issue before deploying. This requires disassembly of the MARS node. After troubleshooting is complete, the node will be need to be re-tested. Meanwhile, Bryan continues to work on the wet-node simulator.
 - During tank testing, worked with Bryan to chase down a missing environmental message. Also, the early thermal test results sounded positive, and it remains to determine the best strategy to optimize cooling fan life and temperature operating point.
 - 901101 - Seafloor Mapping
 - Per Dave Caress' note, the Revelle cruise to Axial is cancelled due to an unscheduled dry dock repair for a leaking oil seal.
 - 901221 - Midwater Time Series
 - developed update for abortOnTimeout behavior attribute to make implementation consistent across sub-classes and to make it work correctly regardless of clock used (System or Mission). Posted summary and requested comments.
 - 902204 - Scalable Robotics
 - sat in on meeting with Quinn and Eve re MB-System processing basics.
 - built and tested Cerulean sonar on blueboat (in lab). Added cerulean command group to procman
 - Used Claude to vibe code a Cerulean bathymetry visualizer prototype (not currently in a repo).
 - Overhead
 - With John Ryan, co-hosted an Ocean Soundscape demo for Therese Bronn
 - (off the clock) : Ocean soundscape code cleanup, added color palette selection to hydroseek game, prototyped a sound match game.
 - misc admin
 - Out of Office
 - Sep 21-24: Oceans conference
- Rich Henthorn
 - Out of Office
 - August 28 - Dr appt, WFH
 - August 31 to Sept 3 - Vacation
 - Sept 14 to 18 - Durkin Cruise
- Akshay Hinduja
 - 902101 - LRAUV Technology Development
 - Write a few scripts to test terrain awareness module readiness when interfaced on front seat on Galene. Tests for lcm topic connections, r/w permissions.
 - Setup backseat-helper, decided to follow latest deployable-ai system when backseat-helper libraries are used, but terrain awareness module owns the actual bridge.
 - 902204 - Scalable Robotics

- Test SVGP-PF approach on Sponge Ridge, Portuguese Ledge and Tubeworm Slump datasets. Tubeworm slump is facing difficulties likely due to not enough coverage in SVGP maps.
 - Works very well in Sponge Ridge examples, especially with passover near large relief features. Works decently in smaller portuguese ledge 5cm dataset.
 - Setup system for true live-stream capability
 1. Enable WAL reading of scans db
 2. Enable direct lcm-log read
 3. Enable live lcm-log read.
 - Next: Fuse PF localization with graph-based SLAM with loop closures. Generate realtime map for quick product before polished MBSYSTEM grids.
- Out of Office
 - Aug 25, 2026 Sick day
 - Sep 24, 2026 - Oct 2, 2026 - IROS 2026
 - Sep 21, 2026 and Sep 23, 2026 - Oceans 2026
- Brett Hobson
- Irene Hu
 - 901101 - Seafloor Mapping
 - Ran noise test for ORP board using batteries. ORP1 is slightly cleaner but both are clean. Ran a differencing comparison with both on same channel, there is a 170 uV or so offset
 - Source impedance test with coin cells and voltage dividers to look at how each channel sags with source impedance
 - 901217 - Chemical Sensors
 - Water quality ISUS dilution series showed some interesting results. 235 nm LED provides 5-6X more sensitivity in bench setup; for 255 nm LED, the wavelength chosen for absorbance calibration was way on the shoulder (240 nm)
 - Went over new optical rig with Joe, he is making it
 - Ordered LEDs on starboards from epigap. LEDs are made to order and in low stock with suppliers
 - Looked into options for a cheap Xenon flash lamp. Some tradeoffs are involved with potential light leakage from out of spectrum and changes in spectral signature
 - 901805 - Coastal Biogeochemical Sensing Program
 - Alkalinity
 1. UCSC school of earth sciences SEM proved impossible to schedule; contacted the Baskins SEM and got good response. After a few exchanges with the staff scientist and Claude, ordered stubs, carbon tape, and silver paint to prep samples before SEM session. Made a plan sheet.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Finished studying for Part 107 and scheduled test for next week
- Scott Jensen
 - 901205 - ESP SURF Center
 - Supporting on going FIDO deployments
 - 901405 - Wave-Energy Conversion for Oceanographic Application
 - Complete repairs after miss wiring incident
 - Collecting and installation of new SLA batteries
 - 902106 - Niobicon-Based AUV Docking Development
 - Supporting and oversight of electronics
 - 902609 - TIDE Omics

- Selecting parts for first prototype
- DQ2533 - UW Tidal Turbine
 - Packaging and return of HDS battery
- Out of Office
 - September 23-28 (Vacation)
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Finalized BOM for PIC32 SIPPER. Ordered parts. Putting together manuf package for etechs next week
 - Overhead
 - Improved OASIS dashboard website
- Chad Key
 - 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
- Eric Martin
 - 902204 - Scalable Robotics
 - Proposal feedback
 - 902504 - Scalable Semantic Mapping
 - Supported blueboat testing
 - 902606 - Low Altitude Survey AUV
 - Working on concept work.
 - Overhead
 - Launched Livelink last thursday, you can find it at livelink.shore.mbari.org
 - Out of Office
 - Sick 8/24-8/26
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - BPC2 testing with two backplanes. Fix for hardfault has been tested over the weekend and overnight in both charging and load delivery.
 - Instrumented the code for i2c timing analysis and seeing that the Inspired Energy batteries have different i2c response timing when charging. It also looks like different versions of the battery sticks have different response timing.
 - Testing a release candidate for the next LRAUV battery swap
 - 901217 - Chemical Sensors
 - Investigating FPGA vendors and toolchains for MMSv2
 - Troubleshooting MSC3 Fram fails probe problem. Looks like the i2c bus speed is clocking faster when the FRAM fails probe. Hard to reproduce.
 - Helping Josh troubleshoot MMSv1 analog board calibration.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Working with Jim on tiny file system for nanoFET (FRAM + NAND).
 - Reviewing bug list for MoSoS v5.2. Working on improving the command structure in the 5.2 code stream and keeping 5.1 as 'float compatible'

- 902004 - Planktivore
 - Proposal feedback
 - Review of Yanwu's paper - nicely written.
 - Investigating strobes on v2b, Paul was able to workaround the cross wired strobes in the firmware. Opah is ready for redeployment with Planktivore V2B
- Out of Office
 - Vacation Aug 28
 - Vacation Sep 8,9,10
- Mike McCann
 - 200109 - Core Mooring Data - MDUC
 - Working on the [delayed-mode processing](#) and metadata management
 - Scheduling meeting for September to introduce <https://mooring-ssds.shore.mbari.org/>
 - 901101 - Seafloor Mapping
 - Using Monterey Bay EM300 data to help evaluate mbgrd2gltf and mbmesh work
 - Overhead
 - Advised Video Lab on having vfcbydive work for D1496
 - 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
 - 901007 - Benthic Biology & Ecology
 - Met with Jim to discuss last deployment and to plan for next.
 - 901205 - ESP SURF Center
 - Supporting ongoing FIDO deployments
 - 902609 - TIDE OMICS
 - BBQ
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Met with Happywhale
 - 902101 - LRAUV Technology Development
 - Finished gated lifting hook design and submitted WO
 - Out of Office
 - June 26 to July 6th
 - July 30 to Aug 10
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - Performed updates of navproc-rcsn
 - Working on CTD WebApp development
 - 300059 - DMO Support - RV David Packard
 - Support work on pan and tilts
 - 300070 - DMO Support - Ventana
 - Prototyping absolute position commands for VISCA pan and tilts
 - Met with Chad, DJ and Ethan to discuss light pan and tilt control electronics
 - 902606 - Low Altitude Survey AUV
 - Meetings for concept design review
 - 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
 - 708184 - ESP Monitoring PNW
 - Supporting ESPfriday deployment
 - 901205 - ESP SURF Center
 - Allow ESP 3G to load “standard” cartridges without heater boards for dynamic id
 - 902101 - LRAUV Technology Development
 - Made ESP summary regex more efficient and generated output for target sample volume
 - 902204 - Scalable Robotics
 - Helped George Stern debug USB cabling issues on new Rock3C board in Mola
 - Optimized LCM for 100Mbit Ethernet links
 - Configured Rock3C to act as a multicast “querier”
 1. So we can operate LCM when off the building network
 - 902304 - Piscivore Cam
 - Gleaned a better understanding of RockChips ISP (particularly AutoExposure)
 - DQ2435 - GLERL AK
 - Added Emails for monitoring ESP can temperature
 - Out of Office
 - Sept 8 - Oct 16 (vacation)
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Group meeting, with seminar speaker Laela Sayigh (WHOI).
 - Completed OCEANS 2026 poster submission process.
 - 902101 - LRAUV Technology Development
 - TethysDash: Various versions during the last few days, from [4.99.104](#) to [4.99.118](#) with various fixes and enhancements.
 - Dash4 [4.99.39](#).
 - 902504 - Scalable Semantic Mapping
 - Dial [2.4.7](#), [2.4.6](#).
 - 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
 - Worked with Kevin Gomes to monitor newly fixed connections to Mt.Toro which experienced a nearly 4day outage and brought down M1, OA moorings and AIS. We monitored the mooring data downloads (possibly the longest mooring data download

- gap in MBARIs history) over a 2-3 hour window. All mooring downloads caught up over that time period. If nothing else, this was a good test of our existing system.
- 902101 - LRAUV Technology Development
 - Meeting to discuss Dash5 UI coding pace and responsibilities moving forward
 - Features
 1. SBD chunk progress boxes on Schedule and Comms — merged ([#813](#))
 - Bug Fixes
 1. Measurement tool restored to Dash4 parity — merged ([#830](#))
 2. Extra-email add aligned with TethysDash 4.99.102 — merged ([#832](#))
 3. Do not ACK cellsat commands on cell state:2 alone — merged ([#812](#))
 4. Reload mission list so newly added scripts appear in pickers — merged ([#809](#))
 5. Use script mission ID for set commands — merged ([#811](#))
 6. Restore Markers layer actions and persistence — merged ([#787](#))
 7. Send again / modal polish follow-ups: preview seed, SBD payloads, Command confirm height, more-menu hop ([#814](#))
 8. Clear new-marker `setTimeout` handles on cleanup ([#790](#))
 - Issues Filed
 1. [#834](#) — UX layout audit (non-modal Log, Schedule, Comms, and Docs rows)
 2. [#835](#) — “Timed out” status conflates TethysDash tracking expiry with Iridium delivery failure
 - In Review
 1. [#814](#) — Mission/Command modal polish — fixed height, Send again, Cancel flow
 2. [#825](#) — Unknown operator + Event ID on Schedule rows
 3. [#810](#) — Depth sparkline for dives longer than 8 hours
 4. [#805](#) — Pending Schedule mission ID via `getScript`
 5. [#790](#) — Gate map marker edits behind login
 - 3-Week Coding Sprint
 1. Met with Brian and Emme to discuss Dash5 issues and questions. Emme and I will be doing a 3-wk code sprint to address various issues in the backlogged Dash5 issue list. My code sprint list currently includes:
 - *Sprint Backlog*
 - [#719](#) — Science charts reload on every scroll
 - [#285](#) — Send mission on launch event
 - *In progress*
 - [#779](#) — Display mission ID (not filename) in Schedule — PR [#805](#)
 - [#788](#) — Gate overview map marker editing behind login — PR [#790](#)
 - [#799](#) — Mission modal & Schedule log polish — PR [#814](#)
 - [#801](#) — Sparkline gone after >8h underwater — PR [#810](#)
 - 902111 - Carbon Flux Ecology
 - Met with the SINKER science team yesterday to discuss the next development sprint ahead of the Sept 8 instrument recovery and redeployment. The primary goal for the sprint (2 weeks) is to expand the sinker-dash Charts tab with near-real-time science visualizations — moving beyond raw camera and ADCP data to display derived data products that let the team quickly assess the state of particle sinking processes.
 - Confirmed that the `Durkin_Data` NFS mount (thalassa.shore.mbari.org/Durkin_Data) is already available on sinkerdev at `/mnt/Durkin_Data/SINKER/Sinker_analysis/`, with existing ROI and contour image directories from prior deployments.
 - Paul Roberts endorsed a VARS GridView-inspired layout with OpenSeadragon for mosaic deep-zoom.

- Before Sep 8 - My [Actions Items](#) (Issues #36, #80) are to:
 1. Build Phase 1 Charts tab: display most recent static images from Durkin_Data analysis directories
 2. Have those most recent images refresh every so many (timeframe still TBD)
 3. Create bookmarkable URL states for those images
 - Overhead
 - Set up a new GitHub repository to store all expd-legacy code. This repo will only be updated via rsync when a file on the main codebase (wwwroot) is updated or changed. Otherwise, the new repo will be mostly a read-only archive.
 - 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
 - Working on a [proposal to refactor how localizations are stored in VARS](#).
 - Addressed security holes in annosaurus. Updated the [user documentation](#). Added documentation for [advanced queries for external applications](#).
 - Add features to [Oni](#) to support [KB Editor](#) development.
 - Added an [authentication](#) doc to [vars-quickstart-public](#) to help an external contractor navigate VARS service auth.
 - Upgrade VARS Service stacks on the Rachel Carson and David Packard.
 - Fixed an issue with merging annotations for a subset i2MAP dives with their position/CTDO then remerged all i2MAP dives.
 - Modified [beholder](#) to skip ffmpeg calls if a client has disconnected before the request was serviced.
 - 901809 - Deep Sea Bioinspiration
 - Working on improving the user experience for submitting datasets. Adding fixes so that when a user uploads to NCEI, the dataset gets registered to the correct email address. ([#59](#))
 - 901221 - Midwater Time Series
 - Ported some very old non-functioning scripts ([1](#), [2](#)) for summarizing ctd profiles from ROVs from groovy to scala.
 - 902403 - Expedition DB Modern
 - Refactored the [expd-support](#) project (used for migrating code from the old database to the new one) to remove dead and proto-typing code. Updated the migration of data tables to be able to pick up from where they left off in case of failure. (The process can run for hours)
 - Fixed a “first-log-in” issue that allowed multiple user accounts to be created for a single user in [expd-rest-api](#).
 - Overhead
 - Invited to apply to the board of directors for the [Marine Debris Foundation](#).
 - Out of Office
 - Sep 9 - Vacation
 - Oct 21 - 24 - Oceans Conference, Monterey
 - Nov 12 - Vacation
- Quinn Shemet
 - Out of Office
 -
- Alana Sherman
 - 902208 - Mini ROV Operations

- Finishing packing for R/V Gaia Blu
- Overhead
 - Reviewing Phase 1 responses
- Out of Office
 - Out sick
- George Stern
 - 902106 - Niobicon-Based AUV Docking Development
 - Assembled load resistors and kept dock between 20 and 80% charged for solar production test
 - Tested cheap amazon linear regulator thermal and short circuit and later discovered LDO SOT223 pinouts vary widely between chips and replacement options for the cots regulator board I ordered are worse than what is on the board so I need to make a new board if I want better ripple rejection and lower short circuit current; at least it was safe enough it can be deployed as is for a bit.
 - 902204 - Scalable Robotics
 - Mola OakD finally reassembled and thermal testing completed; discovered USB C panel mount to USB A connector does not connect one high speed pair so the USB C connector orientation matters and the humidity sensor that has never worked is because it does not have a humidity sensor (BMP not BME)
 - 902304 - Piscivore Cam
 - Oclea COTS board mods to Etechs
 - Continued assembling chassis and tweaking 3D printed parts to fit unmodeled flexes, assembled external can for pressure test
 - Began testing the completed breakout board; for some reason, some of the jumper values did not propagate from the vaulted schematic into the BOM which was used for assembly so the card fried on power up. Everything seems to be working so far after fixing the broken parts and correcting the jumpers to match the schematic but 50% of board features are future growth and will be tested after the first few deployments.
 - Reviewed LED power supply board layout
- Justin Tucker
- Johann Voigtlander
- Emme Wiederhold