

Engineering Weekly Report 7/30/2026 - 8/6/2026

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

Executive Council Notes

-

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
 - Out of Office
 - CVPR Jun 1, 2026 – Jun 5, 2026
- Danelle Cline
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - No luck finding velella conaria. Finding ctenophore sp. A in i2MAP data, however.
 - 901221 - Midwater Time Series
 - Database management consolidating 310k i2MAP annotations into a single annotation project. Export 100-1000m depths to Voxel51 for fast annotation which yielded some additional data outside of 200/300m annotated data. Rob S to review. DINOv3 model trained to exercise the code; next steps self-supervised training on 285k unlabeled data.
 - 901502 - Ocean Soundscape
 - Applying best sweep parameters to STM (sound topic model) code for Oceans poster and continuing work optimizing the challenging panacetacea dataset.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Summer intern presentation support, added lazy loading to [modelhub](https://cortex.shore.mbari.org/modelhub/) <https://cortex.shore.mbari.org/modelhub/>. Sarah is doing a great job on paper, presentation, and work will be integrated into the production pipeline.
 - 902111 - Carbon Flux Ecology
 - Improvements to DINOv3 model training code, discussions with IS about data migration plans.
 - 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
 - Vacation July 27-31
- Duane Edgington
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Discussed with Danelle. (also i2MAP)
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach

- UAVS paper submitted. Registered for ECCV conference and the MARINE26 workshop.
 - Work continues comparing yolo26Medium with RFDETRMedium. Preparing for follow-on training sessions to make Large and XL and 2XL models to compare and contrast. All training on NVIDIA DGX Spark boxes.
- Overhead
 - New MacBookPro received (thanks IS!). Can't migrate from old system to new with time-machine or Apple Migration Assistant (per IS), so starting the long process of manual migration of data and settings and authorizations and apps and mounts and... I got ChatGPT to write me a multi-page checklist and migration plan. Oh Boy.
- Out of Office
 - September 8-13 ECCV conference. Present UAVS Yolo26/RFDETR model performance. Have reservations. Registered.
 - 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.
- Kevin Gomes
 - Out of Office
 - Jun 29 - Jul 1 : Vacation
 - Aug 25-27: Monterey Data Conference
 - Sep 21-24: Oceans conference
- Andy Hamilton
- Kent Headley
 - 701147 - MARS O&M
 - Node is in the tank this week
 - Supporting Bryan for thermal analysis
 - 901101 - Seafloor Mapping
 - Helped with Dorado Mapping AUV deployment last week at Portuguese Ledge
 - Provided TRN support
 - Data flow OK; TRN convergence not as expected, suspect that Phins INS pitch is inverted.
 - Overhead
 - retirement related cleanup activities (O'Reilly)
 - hyperion meeting
 - attended (virtually) memorial service
 - misc admin
 - Out of Office
 - Sep 21-24: Oceans conference
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Fluorescence camera design
 - 902401 - Geo-Sense
 - Setup for Lightscline use
 - Out of Office
 - August 10 to 13 - Vacation
 - August 31 to Sept 3 - Vacation
 - Sept 14 to 18 - Durkin Cruise
- Akshay Hinduja
 - 901809 - Deep Sea Bioinspiration
 - Meetings and debrief, facilitate log sharing to help with debugging

- 902101 - LRAUV Technology Development
 - Generated a few plots and videos of gazebo sim runs of terrain awareness module.
 - Setup next meeting
- 902204 - Scalable Robotics
 - Closed out branch develop/degeneracy in mbes_localization, to be merged with main
 1. Contains Solution Remapping implementation for PlaneICP and VoxelPlaneICP along with custom partial factors for graph measurement additions, applied to both reference and Loop closure factors.
 2. Implemented and tested state of the art systems like DCCReg in Point Cloud Registration library, however experimental results did not correlate with published numbers. Solution remapping works better for bathy data. PCR fork will have a PR sent for upstream inclusion, otherwise it is on an open fork on github.
 - Patched and Forked GTSAM 4.2.2 in CompasLab github which enables Graduated Non Convexity optimizer for partial factors.
 - Started new branch exploring bathy_nn_learning for a drop in replacement of FPFH for coarse match and place recognition.
- Out of Office
 - WFH Aug 03-05
 - Off Aug 04
- Brett Hobson
- Irene Hu
 - 901101 - Seafloor Mapping
 - ORP boards are ready. Various troubleshooting, issues include: USB from one computer isn't enough to supply power; BME280 address was wrong in code; pin assignments for ADC had changed since i wrote first draft; needed more sig figs in measurements; ORP sensor itself seems to drift voltage a lot; SPI read/write issue stemming from different libraries; unintended voltage divider from filter and input bias resistors. Board behavior seems to be as expected now.
 - Working on some circuit fixes
 - 901805 - Coastal Biogeochemical Sensing Program
 - Alkalinity
 1. Run some tests to determine if current through anode = current through cathode. Seems so for the floating anode
 2. Observed some rebound behavior in current, led to new sequencing making liberal use of short anode functionality. Some troubleshooting (pin assignment is wrong on mphox schematic; wasn't fully implemented in code).
 3. Measurements with new protocol and high short-anode resistor to look at discharge of built up voltage across anode/cathode. Saw several plateaus which Claude said is due to reduction of species built up during anodic drive.
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Reviewed schematics to see where we might be able to insert a connection to a new fluorometer. We'd have to make a new connection.
- Scott Jensen
 - 901205 - ESP SURF Center
 - Completed re-write of pump controller code
 - Completed lab testy
 - Prepare for field testy
 - 901405 - Wave-Energy Conversion for Oceanographic Application
 - Monitoring battery pack testy

- Preparation for battery integration
- 902106 - Niobicon-Based AUV Docking Development
 - Testing of wec subsea bottle
 - Power supplies look good and draw minimal power
- DQ2517 - ONR Middleware
 - A little bit of time thinking about first article prototype architecture
- Out of Office
 - August 13 -14 (vacation)
- Brent Jones
- Chad Keczy
 - 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
- Thom Maughan
 - 300078 - DMO Support - AUV
 - Hyperion power supply board checkout
 - 300083 - DMO Support - LRAUV
 - Hardware checkout for BPC2 and Chargers. Component level troubleshooting to revive some boards due to EAR holdup on NexPCB
 - Chasing a bug that happens during charging, takes hours to reproduce.
 - 901217 - Chemical Sensors
 - Evaluating FPGA for generating timing for MMS digital replacement. Also looking at chaining PWM peripherals on an ST Micro
 - 901805 - Coastal Biogeochemical Sensing Program
 - MoSoS v5.2 for NanoFET. Homebrew filesystem for FRAM/NAND is working on NanoFET.
 - 902004 - Planktivore
 - Prep for Barry Lab crews was halted due to challenges with the Science can on the ROV. Planktivore V1 did not go out on the cruise.
 - Overhead
 - Helped James debug the Barry Lab flowmeter
 - Expense report issues, double billing
 - Out of Office
 - Vacation Sep 8,9,10
- Mike McCann
 - 200109 - Core Mooring Data - MDUC
 - Added SSDS provenance tracking for plot_netcdf products in mooring-ssds
 - Changed colormap of [wind temperature contour plot](#) to turbo
 - Thinking about when we can [transition](#) away from the legacy processing
 - 901101 - Seafloor Mapping
 - Addressed some issues with metadata loading from the spreadsheets
 - Continuing to review capstone student work – gave feedback to their professor

- 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
 - Out of Office
 - June 26 to July 6th
- 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
 - September 8, 2026 - September 10, 2026 - vacation
- Paul Roberts
- Brent Roman
 - 901205 - ESP SURF Center
 - Supporting the heroic efforts of our team during their ESP 3G deployments on an ASV in Lake Huron
 - 902204 - Scalable Robotics
 - Working with George Stern to substitute Rock 3C for the RockPi 4 in Mola
 1. Better SSD hardware and more efficient software raised fps from 12 to 30
 - 902304 - Piscivore Cam
 - Supporting deployments
 - Out of Office
 - Sept 8 - Oct 16 (vacation)
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - John, Ariel, and Carlos met with Jim Darling (Whale Trust) and Franny O. (collaborator, former summer intern) to discuss humpback whale song analysis and present intern project progress. Very productive meeting.
 - Working with our summer intern toward completion of project and poster preparation for OCEANS. Great results already and lots of exciting future directions. Also working with Danelle and Franny toward including topic modeling elements.
 - 902101 - LRAUV Technology Development
 - LRAUV-ESP: worked with Brent R. to run simulations in preparation for Brizo deployment. No changes in the ESPComponent have been necessary. Updated these [notes](#) as part of this.
 - TethysDash: fixed a regression involving the database when a deployment was created with a start date in the future. So far, this has been the only regression after the very significant changes in recent releases, in particular including the complete replacement of the database access mechanism!

- Pushed a new setup ([lrauvsim_docker](#) repo) with the result of revisiting the bin/LRAUV dockerization effort, now using a direct copy of built artifacts into a rockylinux:8 image.
 - Provided some assistance regarding LRAUV command and mission structure. Updated [this documentation section](#) as well.
- 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
 - Working with Jules, Jason and Fred on shore testing OA1 Mooring before deployment
 - aandraaO2 was not downloading data. The issue was a typo in the getOA1_202608 script and data is now downloading.
 - 901101 - Seafloor Mapping
 - Issues Filed
 1. #309 — Falkor (too) EM2040 AUV surveys not loading: fnv_start_and_end_data fails with unknown string format (Jul 29)
 2. #310 — Packard ship surveys missing + directory rename typo (Jul 29)
 3. #312 — ValueError crashes FNV load on XML-style header lines (Aug 3)
 4. #313 — Vehicle Name filter requires Django restart to reflect new values (Aug 3)
 5. #314 — get_or_create in load_from_grds() creates duplicate missions when filenames change between runs (Aug 3)
 6. #316 — load.py spreadsheets phase: fall back to partial path match when exact mission name not found (Aug 4)
 - Bug Fixes
 1. Fixed nginx serving SMDB app instead of the default welcome page (Jul 29)
 2. Fixed ValueError for <epoch> XML-style header lines in .fnv files; added error handling for malformed data lines (PR #315) (Aug 3)
 - Reviews
 1. Addressed Copilot review comments on PR #307 (Jul 29)
 2. Diagnosed issue #310 (Packard ship surveys missing) (Jul 29)
 - 902101 - LRAUV Technology Development
 - Features
 1. #797 — SBD chunk progress boxes on Schedule and Comms tabs; in-transit (pulsing) and confirmed (green) states (PR #813)
 2. #799 — Send again from Schedule tab skips the mission wizard; fixed modal height on Mission and Command modals; Cancel closes the full flow (PR #814)
 - Bug Fixes
 1. #801 — Depth sparkline restored for vehicles submerged longer than 8 hours (PR #810)
 2. #798 — Cellsat commands no longer falsely ACK on cell state:2 alone (PR #812)
 3. #796 — Mission set commands now use the script's actual mission ID, not the file path (PR #811)
 4. #779 — Pending Schedule rows now display the correct mission ID via getScript at queue time (PR #805)
 5. #792 — Mission list reloads after new scripts are added so they appear in pickers (PR #809)
 - Maintenance

- 1. Merged PR #789 — auth gating: write actions hidden behind login while read views stay open
 - 2. Added Copilot-first review step to docs/developer-onboarding.md
- In Review
 - 1. PR #787 — Markers layer actions and persistence
- Overhead
 - Meetings
- Out of Office
 - March 22-24, 2027 - Vacation
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - Out of Office
 - Jul 13 - 17: Vacation
 - Jul 27 - Aug 6: Vacation
- Quinn Shemet
 - Out of Office
 -
- Alana Sherman
 - 902401 - Geo-Sense
 - Trying to work through details and finish packing for R/V Gaia Blu cruise
 - Pulling together stuff from the lab
 - Still some issues to iron out with integration to the ship, and complexities of two different tracking systems
 -
 - 902600 - Davidson Seamount Hot Spot
 - Last prep for the cruise:
 - 1. Loading software on the laptops
 - 2. Loading proper documentation
 - 3. Last minute testing
 - Overhead
 - Last week was almost entirely spent on the M-Team review of the proposals.
 - Out of Office
 -
- George Stern
 - 902106 - Niobicon-Based AUV Docking Development
 - Processed historical solar energy data from the victron console; most deployments are missing data and system seems to almost purposefully make it hard to extract anything more than general “its functioning” trends from generation and load.
 - Working with James on placement for the diode oring board, it is very tight...
 - 902204 - Scalable Robotics
 - Finished ESC processor board schematic and board mechanical inputs
 - Ordered parts and kitted DF13 breakout board for Etech assembly
 - Disassembled the OakD500m in prep for swapping Rock Pi
 - Initial thermal mitigation testing for the Rock Pi
 - 902304 - Piscivore Cam
 - Finished light power supply schematic and board mechanical inputs
 - Ordered parts and kitted light board for Etech assembly
- Justin Tucker
- Johann Voigtlander
 - 902208 - Mini ROV Operations

- MiniROV has been packed up
- Inventories have been made and sent to Matt
- Working on acoustic release latching using the sonardyne head
- Ordered a spare yale grip
- Working with Aaron and Evi for our Greek collaborators sensor deployment requirements
- Talking with Peitro to understand the APOS Kongsberg USBL system more.
- 902312 - Seafloor Processes
 - Remotely supporting Eliana for CSEM in Svalbard. There was an issue with one of the dataloggers connecting to the network.
- 902504 - Scalable Semantic Mapping
 - Blueboat had some rewiring done to clean it up a bit. A new powered USB hub has been added to resolve the webcam browning out the RPI.
 - The new DeltaT sonar has a new mount.
 - Cables have been ordered to wire in the DeltaT into the Norbit bulkhead.
 - Requirements for Milos have been set. I've been talking to GT and Aaron for the requirements for Tahiti and Antarctica blueboat trips.
- Emme Wiederhold