

Thom Maughan Sorted By Project

901009 - CANON

- Worked right thru the meeting with Nate / JHU. Follow up meeting scheduled on Monday (with google calendar reminder on my phone). (Week 1)
- Meetings with Nate and Johns Hopkins team over next steps on eDNA effort. The portable battery operated eDNA lunchbox is the focus. (Week 2)
- My order for 2 made in Nov 2021 was cancelled in Jan with refund. Purchased a Xavier NX off ebay in order to return the loaner to another project. Told to hold off purchasing a 2nd. (Week 2)
- Met with Nate to discuss 'functional notions' of next eDNA lunchbox build. (Week 4)
- Team selected Yellow and agreed on Pelican 1200 / 1300 for form factor. (Week 4)
- Researching battery options. (Week 4)
- Working to draft a notional project plan for the embedded eDNA processing project. (Week 5)
- Started a conversation on Slack with Kent and Nate for embedded software to support eDNA processing workflow (Week 6)
- Battery options. (Week 6)
- Meeting with Francisco, Nate, Kent (Week 9)
- Looking at battery and battery management options. (Week 10)
- Working eDNA tackle box design with Nanuk case. Met with Nate to go over requirements then met with Paul Coenen to give overview and priorities. (Week 12)
- Xavier NX to Kent. (Week 12)
- Reading thru basestack release notes. (Week 12)
- Ordered battery options for new tackle box and spin box as well as a compact freezer for the chemistry. (Week 12)
- Working with Kobun and Paul C on eDNA tacklebox requirements. (Week 13)
- Talked with Kobun about project priorities as both Paul and I are timeslicing to support other projects - doing what we can without adding stress. (Week 13)
- Battery testing and chem chiller testing. (Week 13)
- Setup of Xavier NX for dev, not sure I'll get to the new basestack install. (Week 13)
- Got out eDNA sequencing and species id tackle box running, finished testing the battery backup circuit. (Week 15)
- Meetings with Johns Hopkins team. Thanks to Kevin Gomes for help with Slack. Learned about the ESP efforts. (Week 15)
- GPU laptop assist (Week 17)
- Setup base NVidia image (x2) for Xavier NX in eDNA lunchbox. (Week 17)
- eDNA meeting to discuss plans and coordination between wet side team and sequencer/bioinformatics effort. Very helpful. (Week 18)
- Reading about BentoBox (Week 18)
- Created an account for Katie Pitz on DeepRip for a bioinformatics run. (Week 20)
- eDNA lunchbox software update (Week 24)
- Battery backup circuit debug. (Week 24)
- Debugging startup switch issue when started on battery without wall supply (Week 25)
- Nomachine setup for Xavier NX. (Week 25)
- Setting up Xavier NX after office move. (Week 30)
- Laptop setup (Week 30)
- Xavier NX and basestack (Week 31)
- Backup battery design (Week 31)

- Working on details for a mock custom microfluidics 'lab on chip' quote to inform CANON proposal budget. (Week 32)
- Battery charging circuit research (Week 32)
- Xavier NX and basecamp (Week 32)
- Microfluidics research for quote (Week 33)
- Software setup on xavier for minion (Week 33)
- Working microfluidics quote (Week 34)
- eDNA toolbox charged up, tested, provided to Kobun for filming. (Week 34)
- Met with Kobun prior to his departure for Peru to discuss next steps after eDNA tacklebox. (Week 38)
- Battery backup circuit design (Week 39)
- Xavier NX rtc parts ordering (Week 39)
- Hardware mod for Xavier NX for RTC support (Week 41)
- Started coming up to speed on software stack rebuild - packages have changed. (Week 41)
- Debugging button start on battery power (Week 42)
- Working thru ont-guppy v6.3.8 arm install (Week 42)
- Met with Kobun to review specs for eDNA workflow server. Gathered quotes and am working with the vendor to get the most bang for the buck. (Week 44)
- The two bio-informatics HiPP machines are built and in test at the vendor. Shipment should be in a week or so (Week 49)
- Working with IS on getting rackspace/ups/power for the two bioinformatics servers. These are Ubuntu 22.04 machines with NVidia GPUs. Planning to meet with Doug/Peter/Joe on HiPP IS labor division. Physical space, power and security patches for sure. Would like NFS mounts if possible. (Week 50)
- The two GPU based rack mount servers for bio-infomatics arrived. Named deepedna1 and deepedna2. Met with Joe, Peter and Doug to discuss IS involvement and long term plans. Great meeting. (Week 51)

901713 - Nearshore FOCE

- Not needed at the meeting, on standby for to help support pH. (Week 5)
- James McClure is frontending the MpHOx board support quite nicely. roi. (Week 8)
- (Week 10)
- Debrief with Chris on results from Octopus garden cruise. Have not had a chance to diagnose the battery voltage measurement discrepancy. (Week 12)
- Reloaded v3.9.1 on a borrowed MpHOX. Provided two options for pump control to nsFOCE team. Updated nsFOCE MpHOX User's Guide and the MpHOX for labview development. (Week 37)
- Pumps configured by James, Chad is indicating nsFOCE is functioning. (Week 38)
- Testing nsFOCE use case in latest pHFET-SOS release candidate (Week 48)

901805 - Coastal Biogeochemical Sensing Program

- Met with Yui and Jacki to overview pHFETSOS usage, setup tests, and prep for bugfest on v4. (Week 1)
- Brought OCR and MFET to my house to work on the driver for the Spray deployment.. (Week 1)
- Working on v4.x release, bug fixes, features. (Week 2)
- Spray planning meeting (Week 2)
- Updating nanoFET support in pHFET-SOS. Programming the two boards for Scott to test hardware build. (Week 4)
- Met with Yui on m2m interface for pHFET-SOS. Also discussed data dongle. (Week 4)
- Working on release of pHFET-SOS v4.1 (Week 4)
- Comm protocol discussions with Irene. (Week 4)
- Working on release of v4.x pHFET-SOS with support for nanoFET, new sampling routine for BEAMS and the Barry lab, m2m protocol enhancements, bug fixes. (Week 5)
- Handed off nanoFET programmed and tested to Scott for hardware checkout. Need to thoroughly review/test the menu system and config. QA works, ADC test code works. (Week 5)

- Working on new datalogging/controller mode for BEAMS and Barry lab (Week 6)
- New features, bug fixes (Week 6)
- Instrument driver OCR-504 (Week 6)
- OCR-504 support is in place for MFET. Driver, config, and sampling are tested. Ready for Spray integration testing. (Week 8)
- Pump sequencer framework in place for BEAMS v1, Barry Lab octopus respirometer exp, self calibrating MpHOx. In progress on state machine implementation. (Week 8)
- Met with Chris Lovera regarding octopus respirometry. We rescheduled the firmware upgrade until Thursday as hardware is being scrounged. Deployment is next Wed. (Week 8)
- (Week 8)
- Pump sequencer for Barry lab octopus garden (Week 9)
- Bug fixes, new features (Week 9)
- Working on pHFET-SOS v4.x release. (Week 10)
- Provided support and updated firmware with new pump sequencer for octopus respirometer experiment. (Week 10)
- Debrief with Chris L. on octopus respirometer experience. (Week 10)
- Parts purchased for MCAP / MpHOx, qty=30. Sourced most of the ICs on Aliexpress, hoping the Shenzhen shutdown does not affect delivery. (Week 11)
- (Week 11)
- Big push to wrap up development and release v4.x pHFET-SOS for lab testing. (Week 12)
- Working to understand Seabird SBE37 SI firmware change. Opened a support case with Seabird, waited, escalated to the tech support manager, waiting... Working on a driver that handles both 'old' and 'new'. (Week 12)
- Purchased parts from Chinese contract manufacturer inventory for a quantity 35 build of mphox and mcap thru Aliexpress. Most parts were showing 2Q2023 lead times from US distributors. (Week 12)
- Support for Wirewalker/RBR - added posix timestamp, 2 second sampling, implemented init fix per Scott Jensen that solved a spurious character problem at wakeup. (Week 13)
- Chasing ymodem bug which turned out to be specific to a version of teraterm and not a pHFET-SOS bug. (Week 13)
- Finishing revised CTD driver. (Week 13)
- Testing Spray version of the MFET code with OCR-504 and pH support. (Week 13)
- Released v4.1.1 pHFET-SOS for MFET on Wirewalker, MFET+OCR504 on Spray, and MPHOX for Cal Poly Pier deployment. Lab testing in progress. (Week 15)
- Worked with Jacki on test plan. (Week 15)
- Worked with Irene on nanoFET and discuss plans for use of tagging in git. (Week 18)
- Worked with Irene on nanoFET, will resume after wrapping up another project. (Week 19)
- Support for Brent on integration of MFET with OCR504. (Week 20)
- Starting to organize parts ordered from Chinese contract manufacturers for an MpHOX, MFET build. (Week 20)
- Wired up MFET+OCR504 to the Spray chassis in BOG lab to enable remote dev by Brent. (Week 21)
- Worked on nanoFet, configured ads1248 for all inputs, however that did not solve the current draw problem. (Week 21)
- Working on bug fixes / enhancements for mphox/mfet. (Week 21)
- Support for Spray pH and OCR-504 integration (Week 22)
- Packed the dev box for remote work. (Week 24)
- NanoFET hardware debug (Week 27)
- IrDA / Bluetooth dongle electronics (Week 27)
- Updated nanofet firmware, met with Scott. It looks like it's ready for analog testing. (Week 30)
- pH sensor options to replace Honeywell ISFET (Week 30)
- Suggested using glass electrode (half cell) with solid state Ag/AgCL electrode. Not likely due to previous ISFET investment. Carbon labs are looking at another ISFET vendor. (Week 31)
- Nanofet software (Week 31)

- Hallway pitch to Yui for a glass electrode halfcell with solid state AgAgCl electrode. Another ISFET vendor is being pursued so not likely of interest to the Carbon lab. (Week 32)
- Debugging a ymodem issue. (Week 33)
- Wirewalker power cycle race condition that caused MFET to stop sampling after 2000+ profiles. Setting up a test harness to reproduce. (Week 33)
- Chasing ymodem bugs, found root cause issue was in microsd card f_read fail on MFET, two different MFETs had this problem. Looking into update of FatFS and building a test case (Week 34)
- Working a bug on MpHOX test menu (no data config'd causes crash). (Week 34)
- Added support for 128KB FRAM and provided a pre-release of phfet-sos to enable nanoFET lab testing with a durafet. (Week 37)
- Released v4.1.4 phfet-sos on MpHOX update for CENCOOS. In progress on Wirewalker MFET fast sampling. (Week 37)
- Continuing to run tests on microSD cards on MpHOX and MFET to create a test case for the bad block problem. So far, no errors using ymodem on 40+ MByte files. Changed the incoming QA procedure for new microsd cards from 'format with windows' to format with microsd card association utility. (Week 37)
- Working on continuous sampling in deployment for Wirewalker. (Week 37)
- Running tests on micro sd cards and ymodem. (Week 38)
- Joseph tested the pump sequencer and firmware for CENCOOS pier MpHOX - all went well and the system was delivered. (Week 38)
- Continuing to run microsd card stress test. (Week 39)
- Talked with Taylor about Martz lab experience with microsd cards. Found out they are using industrial 2GB cards. Ordered some for test. (Week 39)
- Working on merge of Irene's code. (Week 39)
- Preparing release for next two pump deployment to Palmyra. (Week 39)
- Met with Yui on remainder of 2022 planning, working on new feature list, update for Wirewalker use case. (Week 40)
- Ordering industrial microSD 1G SLC cards for filesystem testing. (Week 40)
- Evaluating Code Composer Studio v12 in hopes it fixes git integration. (Week 40)
- Finished implementing and test of high rate sampling mode for the Wirewalker use case for Tuesday deployment possibility. (Week 41)
- Working on new feature list. NanoFET as a peripheral, merging pico-ph driver and eddy covariance. (Week 41)
- CCS v11 git integration appears to have fixed a painful bug that was hampering move to git... Thanks to Irene for blazing that trail. (Week 41)
- Cable diagrams, cabling for mfet to nanofet for driver dev. (Week 42)
- Testing industrial microSD (Week 42)
- New feature dev: experiment duty cycle, m2m, self cal (Week 42)
- Merging Irene's pico-pH driver (Week 42)
- Working on nanoFET instrument driver for MFET. Hit a snag on electrical mod for output voltage from MFET to drive nanoFET. Ordered a small boost converter. (Week 44)
- In progress on experiment duty cycle statemachine. (Week 44)
- Working on merge of Irene's instrument drivers and eddy covariance code. Updating drivers to new driver model. Wiring up instruments and testing. (Week 47)
- Finished nanoFET as a pH instrument driver on MFET / MPHOX. (Week 47)
- Scoping m2m protocol (Week 47)
- Designing experiment duty cycle feature. (Week 47)
- Driver testing for pico-ph, nanofet, ocr504, ctd sbe37 and 5860 with updated driver framework. (Week 48)
- Verifying bug fixes, release prep for pHFET-SOS. (Week 48)
- Industrial microSD stress testing - good so far. (Week 48)
- BME280 support for nanoFET. (Week 48)
- Release pHFET-SOS v4.1.6 for lab testing. Support for new sensors and first release for nanoFET (Week 49)
- Ongoing testing of v4.1.6. Assisting setup for lab testing. (Week 50)

- Experiment duty cycle feature. (Week 50)
- Support for glider integration and testing (Week 51)

902000 - Multi-Spectral StealthCam

- 160 hours allocated have been moved to other projects. (Week 47)

902004 - Planktivore

- Where there's smoke, there's ... Larry Bird has been 'on fire', machining titanium for the compute node housings. Joy. (Week 1)
- Last minute review on the endcap and connector placement. Ethernet connector moved to improve the 'meat'. (Week 1)
- First rev of Camera Control boards sent out for fab on the 26th arrived on Jan 4 and parts kit and manufacturing request for a build of 2 sent to EE Techs (Week 1)
- Parts are arriving from China just in time for the Camera Control build. (Week 1)
- Jon E provided the 100m nb battery housing design prints and we had a doorway review. A couple minor tweaks and it will be submitted to the shop for fab (qty 2). First class job by Jon. (Week 1)
- Found a copper pour problem on the Camera Controller pcb, fixed and sent out to Bay Area Circuits for fab on the 9th, boards due on the 13th. (Week 2)
- Held project kickoff on Wednesday. Great discussion and appreciated Colleen Durkin's interest, thanks to Francisco for inviting her. (Week 2)
- Parts are coming in from the Aliexpress order. (Week 2)
- Harddrive failed on Larry's mill, ordered a refurbished drive and channeled Zorba to do the fix. Got the floppy drive working, Win 95 mill software installed and parameters loaded in the 25+ year old Sony industrial PC. (Week 2)
- Larry has the compute node housing machined and is starting on the microscope housings. (Week 2)
- Meeting with Paul to discuss requirements for imaging section on Fluum, fast turn optics frame prototype options for Fluum. 3D printed housings are planned for Fluum and thanks to Paul we have a thermal management plan as well. (Week 2)
- Planktivore status update for Francisco, Henry, Paul and Steve H. (Week 4)
- Started weekly Planktivore engineering meetings on Monday 1pm. (Week 4)
- Testing Strobe, Strobe_Energy, Strobe_Driver boards. (Week 4)
- Updated Strobe_Energy layout to move components off the bottom side to relieve tight fit. Out for fab. (Week 4)
- Parts kit for build of cam_ctrl and assembly instructions delivered to James, board is assembled and ready for bringup. (Week 4)
- Working on inventory of parts ordered, kitting, and expense report. (Week 5)
- Board bullets reviewed and submitted. (Week 5)
- Strobe, strobe energy, strobe driver boards are functional. Improvements are planned and most interesting is Paul's new circuit idea for thermal protection. (Week 5)
- Cam_ctrl board bringup with VS code PlatformIO. (Week 5)
- Strobe board was found to need a revision to place the LEDS under the acrylic ball lens with correct optics (Week 5)
- Hosted Monday engineering meeting, working to improve meeting format. (Week 5)
- Monday engineering meeting. Larry is finishing titanium work, beautiful stuff. (Week 6)
- Updating LED strobe for proper optical spacing beneath lenses (Week 6)
- Received updated strobe_energy board, kitting for assembly (Week 6)
- Met with Larry/Paul to review optical chassis mounting (Week 6)
- Pressure sensor wiring, dimension (Week 6)
- Rock Lab is in use for rock cutting next week. Fluum moved into hallway and covered. Denis is looking into an alternative space. (Week 8)

- Strobe boards with revised optical spacing are due in Friday, parts kit, assembly request in place. (Week 8)
- Larry is making wonderful progress on the Titanium housings. Spray mounting bracket, compute chassis, fluum imaging section are in the todo list of this good worker as his impending retirement looms. (Week 8)
- Denis has finished assembly of Aquavore imaging aquarium. Testing can commence when lab space is resolved. (Week 8)
- LED Strobe assembly in progress. We'll have lighting and cameras ready for test when the strobe is finished. (Week 9)
- Energy board update is in progress. (Week 9)
- LED Strobe assembly and test (Week 10)
- Setup and test in the Rock Lab (Week 10)
- Camera and lens assembled on Paul's frame. Working thru assembly process to add Strobe. (Week 10)
- Paul found an optical path length problem, working on a solution (Week 10)
- Larry has completed the titanium housing fab. Pressure test will be on an ROV dive to 1200m Mar 17. Larry is working on Spray Mounting bracket and foam. (Week 10)
- Denis' Aquavore is assembled and Paul ran first image test. (Week 10)
- Weekly meeting... (Week 12)
- We hit a milestone. Using camera GPIO as trigger, fired the strobe and imaged with revised optical path (prism, camera and telecentric lens) in Aquavore. Wahoo. (Week 12)
- Working with Denis on best way to wire things up for testing and moving the 2 camera / microscope assemblies between Aquavore and Fluum. Denis' test setup design is great, well thought out. (Week 12)
- Housing went out on the Flyer cruise for pressure test, have not heard results yet. (Week 12)
- Working on Noot battery pack assembly. (Week 12)
- Syntactic foam design is complete and Larry is in progress on the fab. He has designed the Spray mount and is expecting to finish by retirement. Congrats to him on 25 years (as of Mar 17). Very much appreciate his work ethic. (Week 12)
- Paul has revised the optical path, working thru the finer points of a custom prism mount. He's finished the mods for the retaining pins on the strobe ball array. (Week 12)
- Weekly meeting (Week 13)
- Assembly and test of 0.5x and 4x microscope 'pipes' with Aquavore. Working with Paul R and Denis on tuning lighting and alignment. (Week 13)
- Overlapping Denis schedule has worked well, he has completed test setup and strobe assembly to perfection. EE-Techs have built deployment set of strobe boards for the titanium housing. (Week 13)
- Imaging of plankton on 30 Mar in Aquavore milestone. (Week 13)
- Larry has completed Spray mount, syntactic foam, housing on 30 Mar, another milestone. Arranged Todd Walsh photoshoot. (Week 13)
- Working with Larry to transition remaining tasks on Fluum to Aaron / Roman. Arranged with Norm to have Larry onsite next week to walk us through dis-assembly and assembly of the housing. (Week 13)
- Received Spray batteries! (Week 13)
- Buoyancy test on Monday in the Test Tank followed by Buoyancy test of Planktivore on Spray. (Week 15)
- Working thru measurements and fitment of optical chassis in titanium housing. (Week 15)
- Met with Yui on Spray schedule, met with team on date for Spray deployment. We are aiming for at sea testing on Spray by May 10. Lots to do. (Week 15)
- Working to be deployment ready on 5 May and in the water on Spray 10 May, drafted punch list (Week 17)
- Worked with Paul R to finish camera control board bringup, invert trigger signal. (Week 17)
- Base configuration of 3x Xavier NX + 2TB Samsung 970 with the latest Jetpack 4.61, (Week 17)
- Benchtop 'soak' test of two cameras, camera controller and xavier nx over the weekend. No problems, but no ROI's either as the cameras are pointed at nothing. (Week 17)
- Porting i2c driver for Keller PA7LD pressure sensor from whaleshark tag. (Week 17)
- Worked with Denis to provide design requirements and test his acrylic lens extractor - works great! We are now enabled to move forward with cameras in housings. (Week 17)
- Worked with Jon to get o-ring analysis on reduced (2.738) diameter acrylic. (Week 17)

- Worked with Aaron on pressure test plan using the Noot housing filled with RO water with compensation. Test started 25 Apr, 10 cycles to 750 psi, with an hour hold time at 750 on one cycle. Passed test for 500m. (Week 17)
- 2nd camera controller board is stuffed with low profile (expensive!) machine pin headers, in progress on benchtop integration test. (Week 17)
- In progress on Xavier NX, camera control mounting in compute node. Wiring diagram, in progress on housing wiring with help from Denis. (Week 17)
- Worked with Aaron on revised syntactic design to address buoyancy / trim challenges. So far so good with Aaron's water jet approach. Reviewed foam calcs with Paul and found I made an error but we can trim the length to compensate. (Week 17)
- Worked with Paul and Denis on housing assembly. (Week 18)
- Worked with Paul to resolve software issues on camera controller and setup of nomachine for remote access to XavierNX - learning opportunity. (Week 18)
- Ballast and trim Planktivore (Week 18)
- Mounted Planktivore on Spray with revised foam. Comms roll maneuver was successful, almost too good. Brent J says good to go. (Week 18)
- Working plans for engineering test at sea next week. (Week 18)
- Roman M has done a great job fabricating the Planktivore+Spray service cart spec'd by Brent (Week 19)
- Tank testing the Spray comm's roll, turtle roll (Week 19)
- Plankton imaging and lighting adjustments in a bucket of seawater from the shore. (Week 19)
- Pre-deployment testing and checklist for both Spray (Week 19)
- Deployment on Wednesday, 40m depth envelope resulted in 54m max depth due to overshoot. We aborted the 2nd yoyo as we ended up with too little depth margin to the bottom and the wind was starting. Thanks to the Planktivore team for the great effort pulling it together. The plankton images are wonderful. (Week 19)
- We are working towards a Monday May 16th mission with greater depth and longer range along the C1 to M1 line. (Week 19)
- Post cruise engineering data. Investigated Spray primary lithium battery behavior under load. Canceled Monday's deployment on Sunday. (Week 20)
- Working on a cruise plan / checklist doc. Trying to get Planktivore out one more time before handing the vehicle to the Carbon Lab. (Week 20)
- Attended Embedded Vision conference in Santa Clara. Talked to various vendors about low(er) power solutions for Dual 12MPixel, 12Bit, image pipelines with OpenCV support. Amberella was recommended by Leopard Imaging. AI at the Edge was the theme of the show. (Week 20)
- Exploring Xilinx and Lattice FPGA product offerings (Week 20)
- Test and prep for Monday deployment of Planktivore on Spray with dive to 150m over the canyon. Canceled due to Covid exposure. (Week 21)
- Handing Spray over to the Carbon Lab. Removed Planktivore and transferred to table cart to enable Chris or Brent to do the battery swap and reconfig in B109 (Week 21)
- Assembly and test of Noot battery housing. Working alternate deployment plans to test pressure gated sampling and collect more plankton data. (Week 21)
- Paul setup ZFS to pool nvme drives on DeepRip. We debugged the sata drives and found power supply cables that were not compatible (corsair vs evga). One of the four drives was bad. RAID controller on the motherboard setup was problematic however ZFS handled pooling the drives wonderfully. (Week 21)
- Planktivore has been removed from Spray. (Week 22)
- Working on assembly and test of Noot housings. (Week 22)
- Brackets for mounting Planktivore to Noot. (Week 22)
- Replace failed (due to bad cable) harddrive in DeepRip. Paul ran an eyris processing job that pegged all 128 threads on 64 cpus. Processor temp was getting close to 70 C, fans remained quiet. (Week 22)
- Assembled Noot with temporary bracket for mounting to Planktivore. Tested in the harbor for 10 minutes and again in the test tank. Planktivore 'imaging at depth' feature was tested, works great. (Week 24)
- Draft of phase 1 proposal (Week 25)
- Researching lower power hardware options capable of openCV + nvme + global shutter imager. (Week 25)

- 2023 Phase 1 proposal (overhead) (Week 27)
- Camera Controller, Strobe Driver and Strobe hardware updates. (Week 27)
- Migrated board sleep power supply design from a personal project for use on Camera Controller. Designed, made review slides, layed out pcb for Wakestr, RTC + Vreg + Sleep and Wake signals. (Week 30)
- Wakestr, smart power supply for power reduction. (Week 31)
- Camera control board update. Finished 'Wakestr' design, layout and review with Paul M. Created assembly package and kit of parts. In progress on high efficiency buck-boost converter with support for battery backup to allow linux shutdown in case of power loss. (Week 32)
- Noot battery housing pressure test prep and test by Aaron S - passed (Week 33)
- Spray + Planktivore prep for flight test deployment. Lack of lab space is hampering progress. (Week 33)
- Working on updated camera controller design to reduce power. In progress on board bringup for wakestr v1.1. (Week 33)
- Prep Planktivore for deployment (Week 34)
- Camera controller updates for power reduction, wakestr board bringup, boost converter review package. (Week 34)
- Working deployment plan and coordinating vehicle access with Yui. Window of opportunity to get out on Spray 34 before first of Oct. (Week 37)
- Working with Brent J. on best course wrt battery replacement. (Week 37)
- Roman finished Spray blocks with an inaugural use of new water jet. Mobile cart based Planktivore lab... (Week 37)
- Also, worked Castroville fast access with Greg / Norm - big help. (Week 37)
- Design review for rev 2 Planktivore housing with Jon E, Paul R and Brent J. (Week 38)
- Prep and test Planktivore and Spray 34 for deployment. Brett made quick work of reconfiguring the Spray for Planktivore after I located a connector. Also, many thanks to Brett Hobson helping recover the Spray drop weight off the bottom of the test tank. (Week 38)
- Worked on Camera Controller pcb design / layout during the PGE battery fire on Tues. (Week 38)
- Met with Yui regarding Spray and the Planktivore test plan. (Week 38)
- Boards and stencil have arrived for boost converter, boost. (Week 39)
- Camera controller design update in progress (Week 39)
- Prep and deployment of Spray 34 + Planktivore on Thurs 9/22. Pressure test and dive to 70m for 20min. Yoyo to 200m was scrubbed. Thanks to Jared and Emily for the Paragon support and Brent on shore commanding and analyzing Spray data. (Week 39)
- Prep and deployment of Spray 34 + Planktivore on Mon 9/26. Pressure test and flight test yoyo to 200m. Thanks to Jared, Joe Warren for Paragon support and Brent on shore. (Week 39)
- Brent analyzed flight data and found we are a profiling float instead of a glider. Syntactic foam shape is coarse and needs refinement to lower the drag. (Week 39)
- Plankton images were great and Paul's web tool makes access easy.. Many thanks to Colleen for verifying that we are seeing pseudo-nitzschia chains in both the high magnification and low mag microscopes! Looks like Akashiwo in the high mag. (Week 39)
- (Week 39)
- No word yet on Planktivore lab space. Working spray battery storage problem. Ed Pelzer, Jose Rosal helping. Tin shed, high pressure test room, (Week 40)
- Jon is in progress on the Rev2 housing design. (Week 41)
- Ordered cable for battery housing, working to get Paragon deployment setup ready (Week 41)
- Board bullets and Project slides for board meeting. Created mosaics (Week 42)
- Attended Lucendi holographic microscope demo. (Week 42)
- Jon held design review for Planktivore Rev 2 housing. Gave feedback and approval to move forward with fab. (Week 44)
- Weights for internal components. Also sent a prelim camera controller solid model to Jon. (Week 44)
- In progress on camera controller update for Rev 2 housing. Buck-boost converter daughter card, boost v1.0, pcb was stuffed and with a couple of blue wires was functioning. Tested at 6v to 48v input, with 12v 4amp

output. Updated the design to fix the probs, added additional copper, sent out for fab. Moving forward with the rest of the camera controller design. (Week 44)

- Working on components of Camera control. Boost v1.1 board build and test. Puzzling thru optimizing impulse response / loop compensation across the input voltage range (4.5v to 50v) in LTpowerCAD. Board works great and is ready for Indtec assembly. (Week 47)
- Working on update for LED strobe design - aiming for 3x light output to support shorter pulses for higher speed LRAUV. (Week 47)
- Reviewing Fluum updates from Denis (Week 48)
- Reviewing Jon's housing design (Week 48)
- Budget and project organizing (Week 48)
- Parts ordering and kitting for board build at Indtec. (Week 48)
- Working on Cam control board. Getting quotes for pcb assembly. (Week 49)
- Working with Denis on Fluum (Week 49)
- Working with James Mc on test of buck-boost converter efficiency and providing design overview doc. (Week 50)
- Parts and docs kit for Indtec. Sent quote request. (Week 50)
- Working on Camera Controller design (Week 50)
- Year end project admin and budget (Week 50)
- Year end budget. (Week 51)
- Review of setup parts in machine shop with Denis and Paul (Week 51)
- Work on camera controller hardware design (Week 51)

Out of Office

- Vacation delayed
- Vacation delayed but needed.
- Mar 21 to Mar 30 Driving to Montana to help daughter move
- 8 Feb day off for bereavement
- Mar 21 to Mar 30 Driving to Montana, flying back.
- May 27 - 31 Camping
- Jul 6 - 13 Camping
- Mar 21 to Mar 30 Driving to Montana, flying back. (Dates might change)
- Mar 28 to Mar 30 Driving to Montana, flying back. (Canceled due to project commits)
- TBD trip to Montana.
- Jul 6 - 19 Camping, Bear Lake Monster Swim
- May 27 - 31 Camping at Caswell Memorial Park by Stanislaus river
- Jun 12 - 22? TBD. Remote work from Colorado for elder care.
- Jun 12 - 22? Arrived Colorado 6/15. Remote work from Colorado for elder care.
- Vacation 6/23 -,6/28. Colorado
- Was Jul 6 - 19, Now Jul 8, 11. Additional 2 weeks vacation deferred until after phase 1. Camping, Bear Lake Monster Swim
- 2week Vacation postponed until sometime in August.
- 2week Vacation postponed until sometime in Sept
- 2week Vacation postponed until sometime in early Sept.
- 2week Vacation changed to one week in order to work proposal.
- 1+ week starting on the 14th.
- 1+ week starting on the 14th is delayed until after Planktivore.
- Planned Sep Vacation delayed until Planktivore deployment.
- A week in October, exact date tbd
- A week or so in October, exact date tbd
- A week or so in October/November, exact date tbd
- A week or so in November, exact date tbd

- Nov. 14 - 16 Colorado
- Dec 22 - 28 Colorado
- Dec 22 - 28 Vacation Colorado
- Jan 4 - 8 CES

Overhead

- Many thanks to Kent for another git coaching session. (Week 1)
- Invited to High School tech advisory meeting Jan 12.. Looped in Brett Hobson also. (Week 1)
- Contact tracing departure on Wednesday, packed up project boxes, tested on Friday, brought everything back on Monday. Worked a day on the weekend. (Week 2)
- Contingency project on Thursday afternoons (Week 4)
- Contingency project on Thursday afternoons (Week 5)
- Contingency project: Serial Monster 10 pcb assembly of the processor section is complete. (Week 8)
- Had an opportunity for growth working thru a 'kerfuffle' (Week 12)
- Helping Giancarlo with equipment loans of embedded compute and cameras (Week 12)
- DEI training (Week 13)
- Staff council meeting. (Week 20)
- Went on a Waveglider deployment with Jared (Chris out sick) and was able to have recent hire Lenka go out as crew. (Week 20)
- Office move coordination with Greg Voogd. Best plan is to wait until Danelle's office gets a 20amp dedicated service. Looks like mid-June. In the meantime will use B109 for Spray Glider support. (Week 20)
- Planktivore Proposal (Week 27)
- Support for other proposals (Week 27)
- Office move, inventory filtering. (Week 30)
- Responded to request to clear out Planktivore project from Rock Lab. Requested lab space. Moved some of the supplies to Castroville, the rest crowded into new office. (Week 31)
- Provided project info to group leads. (Week 32)
- Move Planktivore project out of Rock Lab. Request for lab space, no answer yet. (Week 32)
- Intern presentations. Roy G implemented the hot knife release modelled after the SharkCafe Cam release. (Week 32)
- Staff Council (Week 33)
- Planktivore Proposal response (Week 37)
- Proposal discussion with Andy and Paul (Week 39)
- Planktivore day in the life filming (Week 39)
- Primary lithium storage quest (Week 39)
- NVidia Jetpack 5.0.2 Webinar. Roadmap notes: (Week 40)
 - Jetpack 6 on linux kernel 5.15 ubuntu 22.04 planned mid 2023. Support for Orin, Xavier is dropped. (Week 40)
 - Jetpack 5.x feature releases for Xavier will end with 5.2 around Apr 2023. Sustaining bug fix releases into 2024. (Week 40)
- George / Shannon have a conflict for a student tour on Friday Oct 21. Signed up to host the tour along with Chad. (Week 41)
- Staff council (Week 42)
- Cal Poly tour prep (Week 42)
- Techfest for Jared and Emily (Week 44)