

Paul McGill Sorted By Project

300070 - DMO Support - Ventana

- Jose and I are working through issues with the Ground Fault Channel Isolator (Week 2)
- Helping DJ troubleshoot another ground-fault problem (Week 16)
- Working with pilots to solve wiring issue with hydraulic servo valves. (Week 23)
- Worked with pilots to resolve issues with servo valves (Week 24)
- Helped pilots troubleshoot an issue with Ventana's servo valves—problem was a missing ground. (Week 33)
- Did hydraulic and tether loss calculations to help pilots troubleshoot problems. (Week 34)
- Started documenting recent calculations to determine why Ventana's hydraulic system was overheating (Week 44)
- Working on issues with ground-fault channel isolator with Jose. (Week 45)

300079 - DMO Support - Rachel Carson

- Interviewed candidate for ROV pilot position. (Week 1)
- Met with DJ about RS-485 comms to new ROV winch. (Week 10)
- Troubleshooting error with RC's Sea Tel dish-pointing system. (Week 15)
- Spent many hours troubleshooting microwave system with Paul C., Ariana, and Alana, and had partial success but it needs more tweaking. (Week 16)
- Continue to work with Paul C to decommission microwave equipment on the Carson and remove what's no longer used. (Week 33)

701145 - Penguin Hotspots

- Put final details on sonar payload schematics (Week 2)
- Working with John F to get last copper shield parts made (Week 2)
- Corrected errors on sonar payload system schematics and gave prints to Chad. (Week 3)
- Built test cables and programmed firmware onto 4 new AOS boards. Reviewing code to see if I can fix some shortcomings. (Week 3)
- Gave AOS PIC24 board to Jon E. for mounting. Working out discrepancies in hole spacing with Brent J. (Week 5)
- Mounted AOS PIC24 board to sonar chassis and am working with techs to get it wired. (Week 7)
- Tested wiring for Remus sonar payload w/Chad and everything seems to be working. Will proceed with building second payload. (Week 9)
- Assembling second REMUS Sonar payload chassis. (Week 10)
- Building second sonar payload for Remus AUV. (Week 12)
- Tested power supply for second REMUS sonar. Assembling chassis with Chad W. (Week 13)
- Working on getting AOS accelerometers potted. We are short of techs this week. (Week 20)
- Wired AOS sensors to test before potting (Week 21)
- Assembling and wiring the second REMUS sonar payload. (Week 23)
- Got AOS sensors tested, repaired, and molded (Week 24)
- Got sonar payload #2 wired enough for Chad W. to finish (Week 24)
- Tested AOS sensors after potting and all are okay. (Week 25)
- Still dealing with sonar noise issues on REMUS vehicle. Adding a cap between computer ground and chassis has helped a lot but there are other problems. (Week 31)
- Continuing work on machine learning to identify sonar targets (Week 52)

701147 - MARS O&M IV

701147.99 - MARS IV Node Upgrade

901618 - Pelagic-Benthic Coupling and the Carbon Cycle

- Finished collating camera calibration data from last Laser Measure dive and will pass it on to Dan Davis for further analysis. (Week 1)
- Worked with Alana and John F. to correct vignetting in Dual Camera Tripod Near-Field camera. (Week 1)
- Replaced all accessible connector o-rings on Rover, inspected and cleaned all connectors (Week 2)
- Getting faulty Rover cables rebuilt (Week 2)
- Analyzed Loop and Cross data from last Wave Glider deployment (Week 2)
- Had online meeting with collaborators Kathy Dunlop and Nigel Keely to discuss SES (Week 2)
- Got Rover connectors repaired/cleaned and ran in test tank overnight—it's working. (Week 3)
- Replaced battery in Dual Camera Tripod. (Week 3)
- Rewired connector on SES motor, tested, and found problem with home sensor, yet to be solved. (Week 3)
- Finished Rover, SES, and Camera Tripod preparation for cruise. (Week 5)
- Loaded ship (Week 5)
- Currently on cruise waiting for bad weather at Station M to abate. (Week 5)
- Worked with Kent H. to refine Loop & Cross algorithm and identify problems during the last deployment. (Week 7)
- Had meeting with Dan Davis and Duane E. to go over Laser Measure analysis. (Week 8)
- Helping Colleen access current meter data from Smooth Ridge. (Week 10)
- Had 1 hr phone call with Dan Davis to answer his questions about our Laser Measure data. He's making some progress analyzing images. (Week 12)
- Met with Duane E. to strategize about Laser Measure work this year. (Week 13)
- Working on how to analyze calibration measurements from last year. (Week 13)
- Trying to figure out coordinate transformation math for Laser Measure. (Week 15)
- Calculated new Rover position for Wave Glider geolocation attempts next week. (Week 16)
- Met with Duane E. about Laser Measure and am trying to get latest software from Dan Davis. (Week 20)
- Began tracking down lasers and batteries for Smith Macro Cam to be deployed June 29th. (Week 20)
- Arranging to get Laser Measure code from Dan Davis (Week 21)
- Collecting documentation for Squirty sediment-trap agitator for IP license to a New Zealand collaborator. (Week 23)
- Met with Duane E. about Laser Measure, will meet again this week. (Week 23)
- Tested Macro Camera with Alana, resolved battery issues (Week 24)
- Met with Duane E. to get walk-through of Laser Measure setup and use (Week 24)
- Still working on MATLAB licensing issues to run Laser Measure (Week 24)
- Helping to prep Macro Camera for next week's deployment. (Week 25)
- Got Laser Measure code running on my computer, learning how it works. (Week 25)
- Worked on rotation vectors for Laser Measure calibration. (Week 29)
- Tried to fix spare Raspberry Pi for BLISS. (Week 29)
- Having problems with matrix algebra for Laser Measure calibration. Laser dots transformed into camera coordinate system don't make sense, but I'll find the error. (Week 31)
- Still working on Laser Measure calibration. Had a breakthrough with data processing and am slowly progressing. (Week 33)
- Wrote code to generate Laser Measure calibration files for import into Dan Davis' code. Am tweaking calibration files to try to improve accuracy. (Week 34)
- Troubleshoot near-field camera on Dual Camera Tripod to see why it stopped working halfway through the deployment. It was a problem with the Canon camera. (Week 43)
- Made movies from Camera Tripod, Macro Camera, and Rover images. (Week 43)

- Recharged battery for Smith Macro Cam. (Week 43)
- Made movies from camera tripod time-lapse images (Week 44)
- Wrote code to analyze time-lapse images and determine when one or both strobes failed to fire (Week 44)
- Analyzed failure in Dual Camera Tripod near-field camera (Week 44)
- Worked on refining Laser Measure code to reduce errors (Week 44)
- Preparing Squirty hardware for shipment to New Zealand (Week 44)
- Created new calibration files for Laser Measure but still can't pin down source of errors (Week 45)
- Troubleshooting failure in Rover optodes (Week 45)
- Troubleshooting failures in Camera Tripod strobes (Week 45)
- Identified and corrected missing images in Camera Tripod VARS repository (Week 45)
- Got Squirty shipment ready to go to New Zealand but plans changed and now we'll reassemble sed trap in high bay (Week 46)
- Found some errors in Laser Measure calibration but total error is still too large—the search continues (Week 46)
- Serviced all beacons from last cruise by removing batteries, cleaning, repairing labels, and testing (Week 46)
- Worked on finding a replacement stepper motor for SES but will buy assembly from McLane instead (Week 48)
- Wrote draft of text for Laser Measure Web page (Week 48)
- Identified problem with Laser Measure cal files but can't test it until I reinstall Matlab with the new license (Week 48)
- Repaired carousel motor for SES (Week 51)
- Finished writing Web page for Laser Measure (Week 51)
- Repaired carousel motor on SES well enough for testing until new unit arrives (Week 52)

901700 - Acoustical Ocean Ecology

- Added a section to a failure analysis report for the Deimos cable on MARS. (Week 1)
- Did some sonar testing on LRAUV w/Brett and Brian K. Having trouble finding source of 200 kHz noise. (Week 9)
- Spent days rewriting PIC code for AOS (attitude sensor for sonar xducers). Existing code had some serious issues. Not done yet but making slow and steady progress. (Week 12)
- Finally got accelerometer talking to PIC micro for sonar xducer orientation sensor. Continuing to work on code to add features. (Week 13)
- Did more noise testing of AUV sonar payload. Ordered new DC-DC converters for iBase computer to reduce interference. (Week 15)
- Observed deployment of MARS Echosounder and am working with Knute and Chad W. to figure out what is causing a ground fault in the system. (Week 16)
- Worked with Knute to track down source of ground fault on MARS Echosounder. We found two bad connectors and are working on getting them replaced. (Week 20)
- Working on building new cable for MARS Echosounder (Week 21)
- Editing paper on animal avoidance of vehicles. (Week 23)
- Working on AOS PIC24 code—much progress but bugs remain (Week 24)
- Edited first draft of Kelly's paper on robotic observer effect (Week 24)
- Got AOS sensor software to output transducer angles instead of accelerometer counts. (Week 25)
- Worked with Chad W to troubleshoot yet more noise issues with Simrad sonar on REMUS AUV. Shielding additional cables and isolating RS-232 seems to have helped a lot. (Week 33)
- Have resumed writing code to predict fish species based upon their sonar returns (Week 48)
- Spent most of a day updating NVIDIA drivers on DeepDark because latest version of Mathematica wouldn't run with old drivers (Week 51)
- Worked on using Differential Evolution to tune hyperparameters on CNN for sonar return classifier (Week 51)

901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach

- Starting UAV schematics (Week 2)
- Started drawing schematic of Believer UAV wiring and am 95% done with system interconnect diagram. (Week 7)
- Resolved some final details on the Believer UAV schematic. (Week 8)
- Released v1.0.0 of Believer UAV schematic. (Week 10)
- Tested UAV barometer on bench, trying to figure out why it won't talk to Pixhawk4. (Week 15)
- Helped team with 3 successful flights at Hollister airfield on Wed. (Week 15)
- Found design issue with UAV's external barometer board and had Jose make some mods to correct the problem. (Week 16)
- Helped with Trinity flight over Moss Landing on Tue morning—all went well. (Week 31)
- Working with Tom O. on analysis of flight images. (Week 31)
- Met with Tom O about processing of aerial images from Trinity UAV. Tracked down info about local survey markers to compare with Google Earth. (Week 33)

901904 - Deep-Sea Coral-Sponge Community Observatory

- Worked with Alana to see if the new Canon R6 camera will fit into the Coral Macro Camera housing. We think it will but some mods will be required. (Week 1)
- Worked with Alana to get camera and test equipment to her to work at home (Week 2)
- Worked with Alana to get new Canon camera integrated into Coral Macro Camera system. (Week 3)
- Preparing Coral Macro Camera for deployment in two weeks. (Week 7)
- Dealt with last-minute laser and power supply issues with Coral Macro Cam in prep for next week's deployment. Calibrated camera focus and targeting lasers in Test Tank. (Week 8)
- Worked w/Alana and Aaron S. to prepare Coral Macro Camera for deployment this week on Barry's Flyer cruise. It was working when the ship left. (Week 9)
- Participated via telepresence in Barry dive on Davidson Seamount to deploy Coral Macro Camera in octopus nursery. Initial images are stunning and camera will stay there until July. (Week 10)
- Am editing Fanny's paper. (Week 20)
- Processing data from recent recovery of Coral Camera Tripod. (Week 31)
- Preparing for turnaround and redeployment of both coral cameras. (Week 31)
- Got equipment mobilized so Coral Macro Camera can be recovered on Kakani's WF cruise. (Week 34)
- Reviewed images from most recent Macro camera deployment (Week 44)
- Mobing for cruise to deploy Coral Macro Camera on Thu (Week 45)
- Deployed Coral Macro Cam on Sur Ridge from Carson on Thu (Week 46)
- Working on method to focus lens remotely with servo on Raspberry Pi (Week 46)
- Read draft of latest octopus paper based on our Barry Macro Camera images (Week 51)
- Edited Fanny's paper on the Coral Mega Camera (Week 52)

902201 - Blue Whale Observatory

Out of Office

- On vacation last week.
- Out sick on Thu.
- Will be on vacation April 21st thru May 12th.
- Was on vacation April 21st thru May 11th.
- Was out of office Thu for dental work.
- Out last Thu for medical appointments.
- On vacation until Mon, July 18. I have jury duty that week and may not be at MBARI.
- Was on vacation last week.

- Out Monday with medical appointment.
- Will be on vacation Aug 29 thru Sep 5.
- Out on sick leave until Mon, Oct 3.
- Was on sick leave until Mon, Oct 24.
- Took vacation day Monday
- Out on Tue due to possible COVID exposure on Carson
- Out on Mon for medical appointment
- Out on Tue due to possible COVID exposure last week

Overhead

- Setting up new MacBook Pro with Doug C's help. (Week 7)
- Put together and tested new backup SSD for MacBook Pro. (Week 9)
- Still migrating software to new Mac Powerbook. (Week 10)
- Had online meeting with NOAA/PMEL to discuss transfer of Carbon Waveglider parts and design. (Week 20)
- Helped Doc Ricketts pilots troubleshoot suction sampler carousel (Week 21)
- Spent hours troubleshooting licensing issue with my PIC C compiler (Week 21)
- Still dealing with FCC licensing issues for microwave system. (Week 25)
- Reviewed resume for Ventana pilot candidate. (Week 29)
- Reviewing Thom M's docs for Wakestr power controller. (Week 31)
- Helped Chris W come up to speed with the Anritsu antenna analyzer so he can tune his AUV antennas. (Week 33)
- So much email to catch up on... (Week 43)
- Training - Still working through textbook on PyQt6 GUI programming (Week 52)