

Paul McGill Sorted By Project

300070 - DMO Support Ventana

- Met with DJ about shielding in Ventana's tether (Week 13)
- Working with Jose on ground-fault isolator PCB (Week 30)
- Working with Jose on ground fault isolator board (Week 31)
- Met with Jose and DJ at Ventana to plan physical layout of ground-fault isolator board (Week 32)
- Continue to work on DTech Ground Fault Isolator board with Jose. (Week 35)
- Went to Monterey Bay Academy on Tue to participate in UAV testing. Things were broken, lessons were learned. (Week 44)
- First powerup of new channel isolator board for ground fault system. Jose and I found some issues that we're working on. (Week 48)
- Tested ground-fault channel isolator board with Jose. Made some changes to DTEC board and now they seem to work together. (Week 50)

701127 - MARS O&M III

- Helped MARS team to understand their ground-fault circuit. (Week 50)

701145 - Penguin Hotspots

- Working with Chad W. on wiring of REMUS sonar payload (Week 22)
- Test fitted sonar Faraday shield into Jon's chassis and it all looks good. Moving ahead with more shield boxes. (Week 31)
- Working with James M. to get 3 more WBT Mini Faraday Shields built (Week 32)
- Ordered more power converters for Simrad sonar and did calcs to figure out how to modify them. (Week 36)
- Working on schematics for REMUS sonar payload. (Week 44)
- Getting copper parts machined to assemble second sonar Faraday shield. (Week 44)
- Working on system schematics for REMUS sonar payload. (Week 45)
- Slogging ahead with schematics. System diagram done, working on can wiring. (Week 46)
- Much progress on REMUS sonar payload schematics. (Week 48)
- Integrated AOS board into system schematic (Week 50)
- Got Brent's AOS code and was able to compile it and program AOS boards. (Week 50)

901618 - Pelagic-Benthic Coupling

- Updating Microchip compilers to resurrect Squirty pump controller (Week 1)
- Worked on Squirty pump controller but having problems with Microchip programming tool. (Week 2)
- Did some cleanup of archived Rover data. (Week 2)
- Working with Duane E. on Laser Measure, trying to analyze images from last Oct. Still not working but we're knocking down problems. (Week 4)
- Lots of back and forth with Dan Davis to work out issues with Laser Measure. Trying to find images that will let us calculate laser direction vectors. (Week 5)
- Getting quotes for Squirty battery assembly. (Week 6)
- Successfully deployed and recovered Larval Pump Sampler on Mon and Tue Rachel Carson/Ventana cruise. (Week 10)
- Processing video from last dive series. (Week 11)
- Worked with Mariah to make a new calibration grid for Laser Measure and ordered a new metal print from Bay Photo. (Week 11)

- Calculated new estimated positions for Rover and SES so that Wave Glider can talk to them at Station M. (Week 12)
- (Week 12)
- Worked with Wave Glider team trying to locate Rover at Station M. Cleaned up code for calculating position from acoustic ranges to improve accuracy. (Week 13)
- Met with Kent H. to discuss how to get Loop and Cross code deployed on Wave Glider. (Week 13)
- Created schematic and specifications for sediment trap agitator pump battery. (Week 13)
- Did battery inventory to prepare for next Li battery order. (Week 13)
- Did calculations and generated figure for Rover paper (Week 21)
- Compiling an inventory of laser serial numbers and current locations (Week 21)
- Working with Kent H. on Loop and Cross algorithm (Week 21)
- Working on Rover paper (Week 22)
- Helping Alana with wiring of Macro Camera (Week 22)
- Did calculations to figure out where Rover should be so WG Tiny can find it (Week 23)
- Working with Kent H. on algorithm for Loop and Cross code (Week 23)
- Prepared laser target to adjust lasers before next week's cruise. (Week 24)
- Worked with Alana to test Macro Camera in Test Tank. (Week 24)
- Ordered connectors for Squirty stirrers (Week 24)
- Did calculations to try to locate Rover based on sparse data from WG Tiny (Week 24)
- Had Zoom meeting with team at Teledyne Benthos about our needs for Rover modems (Week 30)
- Met with Duane E to review progress on laser measure camera calibration and image analysis (Week 30)
- Working with Duane E. on Laser Measure images from last deployment. (Week 31)
- Took used Rover batteries to e-waste. (Week 32)
- Working with Benthos to get quote for new MF modem. (Week 32)
- Responding to reviewer's comments on Rover paper (Week 34)
- Tested burn-wire boards and sent one to Benthos (Week 34)
- Got optode cable built for Oct Rover turnaround (Week 34)
- Finished Squirty schematics. (Week 35)
- Responded to reviewer's comments on Rover paper, and found a few more errors. (Week 35)
- Preparing Macro Cam for next Monday's cruise (Week 36)
- Pressure tested new Squirty pump with John F., all is good. (Week 39)
- Got pumps wired and tested for deployment next week. (Week 39)
- Packing for Flyer cruise next Wed. (Week 39)
- Met with Teledyne/Benthos reps to discuss Rover and SES modems. (Week 39)
- Pressure tested Squirty pump (Week 40)
- Finished wiring Squirty pumps and controllers (Week 40)
- Did final edits on Rover paper (Week 40)
- Submitted abstract for Ocean Sciences Meeting (Week 40)
- Loaded Flyer for cruise leaving Wed (Week 40)
- Was on Western Flyer for Smith cruise, but came in early on Monday due to ship engine problems. (Week 41)
- Unloaded ship (Week 41)
- Looked over Laser Measure results sent by Dan Davis and sent him measurements of our test targets. (Week 41)
- Dealing with instruments brought back after our truncated Western Flyer cruise. (Week 42)
- Troubleshooting failures in Rover and SES. (Week 44)
- Continue to troubleshoot Rover and SES faults (Week 45)
- Responding to multiple interview and article requests for Rover (Week 46)
- Working on getting instruments ready for hopefully a Jan 2022 deployment (Week 46)
- Preparing for Jan cruise of unknown data. (Week 48)
- Alana and I replaced Li batteries in Rover. (Week 50)
- Finished repairs to stbd propulsion motor controller. (Week 50)
- Troubleshot Rover MF modem. It's dead and replacement is on order. (Week 50)

901700 - Acoustical Ocean Ecology

- Ordered parts for power supply for Enet switch in LRAUV sonar payload. (Week 2)
- Got home copy of OrCAD connected to CIS database at MBARI (Week 2)
- Working on mechanical layout of sonar Faraday shield. (Week 4)
- Worked with Chad W. in lab to test new DC-DC converter to power Enet switch in sonar payload. It doesn't cause interference so I'll integrate it into switch. (Week 5)
- Made initial model of sonar Faraday shield. Need to make more measurements to get hole placement correct. (Week 5)
- Modified Enet switch for wider power supply range and delivered to Chad W. (Week 6)
- Beginning to spin up on Deimos (sonar plugged into MARS) redesign for this year. (Week 6)
- Got PC boards back from techs to build Sonar Faraday Shield. Some minor adjustments need to be made but we're getting much closer. (Week 10)
- Did initial assembly of WBT Mini Faraday shield and adjusted design dimensions where needed. Met with James M. to work on PCB layout for power filter on shield. (Week 11)
- Shopping for Enet switches for MARS Echosounder (Week 12)
- Made adjustments to parts for WBT Mini Faraday shield and received new parts from James M. Will attempt to assemble them this week. (Week 12)
- Resumed hyperparameter tuning on CNN for sonar identification. (Week 12)
- Mostly completed assembly of sonar Faraday shield. Got Johnny to fab some last copper parts that I'll attach this week for testing next week. (Week 13)
- Assembled and tested latest revision of Faraday shield for MBT Mini sonar (Week 21)
- Obtained and configured Vicor Micro boards for MARS Echosounder (Week 21)
- Tested latest incarnation of sonar Faraday shield with Chad W. (Week 22)
- Ordered power supplies for MARS Echosounder (Week 22)
- Working with Chad W. to figure out best design for next MARS Echosounder extension cable (Week 23)
- Helped Chad figure out ground fault on current MARS Echosounder (Week 23)
- Met with Chad W. and François to start design of MARS Echosounder frame and housings (Week 24)
- Drawing schematics for MARS Echosounder (Week 30)
- Built current limiter to protect Vicor on MARS Echosounder. Not working yet but figuring it out. (Week 31)
- Tested current regulator for MARS Echosounder but it didn't work well so am building a different version (Week 32)
- Trying find a place for current limiter board in the MARS Echosounder can (Week 34)
- Finished system schematics for MARS Echosounder and got half of chassis wiring finished. (Week 35)
- Tested MARS interface can for MARS Echosounder. Found minor issues and am fixing them. (Week 36)
- Had Zoom meeting with former colleagues of Kelly at UNH and NOAA to help them address EMI noise issues with a Simrad WBT-Mini sonar. (Week 36)
- Finished schematics for MARS Echosounder and identified suitable 375 V connector. (Week 39)
- Finished wiring of MARS connector interface (Week 40)
- Met with Craig Dawe to set up tests for MARS Echosounder. (Week 41)
- Did Test-Tank-side testing of MARS Echosounder and was stymied by networking issues. (Week 42)
- Finished analysis of Deimos cable failure, which appears to be failure of ODI connector. (Week 50)

901800.98 - Bioacoustic Payload

- Settled on design for Remus payload chassis, going to fabrication (Week 23)

901803 - Carbon Wave Glider Development

- Inspected last of parts received from end-of-year orders (Week 5)
- Inventoried and delivered more parts to Craig O. (Week 6)
- Ordered sheet metal parts for test stands (Week 10)
- Ordered more parts for work stands. (Week 11)

- Ordered parts for work stand. (Week 12)
- Had meeting with Andrea and team to decide how to move forward this year and next. (Week 13)
- Met with Andrea F. and worked on project abstract for Monday's presentation (Week 21)
- Had Zoom meeting with PMEL to discuss DIC analyzer testing strategy (Week 22)
- Ordered more parts for Craig O. (Week 23)
- Helped Craig O. with assembly of manifolds (Week 24)
- Ordered many parts for DIC analyzers (Week 24)
- Coming up with new labor estimates for next year's proposal in light of unforeseen delays in this year's progress (Week 30)
- Team met with Francisco and Yui about state of project and how it might be useful to Francisco's lab (Week 30)
- Made labor estimates for different scenarios depending on what resources we're given this year and next. (Week 31)
- Reviewed budget so that accounting can allocate remaining project funds to discretionary account. (Week 42)
- Team members met to discuss transfer of hardware and software to NOAA PMEL. (Week 44)

901904 - Deep-Sea Coral-Sponge Community Observatory

- Working on wireless data connection for Macro Cam (Week 1)
- Worked out system-level wiring with Alana for Coral Macro Camera. (Week 2)
- Finished system schematic for Coral Macro Cam wireless data connection. Reviewed with Alana and ordered a bunch of connectors. (Week 4)
- Ordered connectors for Coral Macro Cam wireless comms. (Week 5)
- Reviewed Coral Macro Cam schematic with Alana. (Week 5)
- Reviewed schematics with Alana. (Week 6)
- Tested magnetic reed switches through Ti housing, and they work. (Week 6)
- Reverse-engineering POE injectors so they can be modified to deliver power both ways. (Week 6)
- Met with Aaron to figure out housing sizes needed for Deep Sea Connect hardware. (Week 11)
- Attempted to stabilize Coral Cam video from last deployment with limited success, now trying to calculate dense optical flow so we can get an idea of how the camera is moving in the current. (Week 12)
- Worked with Aaron S. to size housings for Deep Sea Data Connect. (Week 12)
- Drawing schematics to get new laser power supply and flasher fabricated for Coral Macro Cam. (Week 12)
- Working with Adriana S. on configuration of wireless access points. (Week 21)
- Building test rig for cold-room test of targeting laser (Week 21)
- Installed battery in DiSCO camera (Week 22)
- Compiled inventory of our numerous lasers (Week 22)
- Worked with Alana to test Coral Camera Tripod in Test Tank (Week 24)
- Collecting parts for wiring of Deep Sea Data Connect (Week 32)
- Finished schematic for ROV cable on Deep Sea Data Connect for Coral Macro Cam (Week 34)
- Tested new laser aiming system for Macro Cam, met with Jim B. to agree on settings (Week 34)
- Ordered cable and connectors to extend RF cables for Deep Sea Data Connect (Week 34)
- Trying to solve weird Sony camera issue with Alana (Week 34)
- Tested ROV cable for Coral Macro Camera so it's now ready for potting. (Week 35)
- Finished system schematics for Deep Sea Data Connect. (Week 35)
- Finished assembling and testing laser targeting system for Coral Macro Camera, will mount them on tripod on Thu. (Week 35)
- Tested Deep Sea Data Connect with Alana. Finishing wiring and mechanical design of components. (Week 36)
- Tested Coral Macro Camera in Test Tank with Alana et al. (Week 39)
- Loaded ship for Carson cruise on Thu. (Week 39)
- Deployed Coral Macro Cam from Carson, will get picked up this week (Week 40)
- Made a movie of images from recent Coral Macro Camera deployment and am working on write-up for board bullets. (Week 41)

- Working with Alana to troubleshoot failure of Coral Macro Cam during last deployment. We can't figure out what stopped data collection after 6 hours. (Week 42)
- Working with Alana to integrate targeting laser system into main camera housing. (Week 44)
- Reconfiguring Coral Macro Camera to put laser drivers inside camera housing (Week 45)
- Met with Doc Ricketts pilots to interface Deep Sea Connect hardware with ROV (Week 45)
- Working to get Coral Macro Cam reassembled (Week 46)
- Tested Deep Sea Connect can on Ricketts ROV (Week 46)
- Worked with Alana and Aaron to get Coral Macro Cam ready for Barry cruise leaving Thu morning. Alana and I will support deployment through telepresence. (Week 48)
- Ordered dummy plugs for Deep Sea Connect antenna connectors. (Week 50)

Out of Office

- Will take vacation Feb 16th thru 19th.
- Took vacation day Fri
- Took vacation day on Friday
- Took Fri off as shore leave
- Out for routine medical test on Tue
- Medical appointment Tue morning
- I've been taking a vacation day on Fridays
- On vacation this week

Overhead

- Set up meeting with Univ of Manitoba researcher who wants advice on operating UAVs in polar regions. Bringing Ben Erwin into the discussion. (Week 1)
- Worked with Jose to set up OrCAD CIS access from my laptop (Week 1)
- Ben E. and I had Zoom meeting with Karen Alley at Univ of Manitoba to advise her on using UAVs in polar regions. (Week 2)
- Watched "Picture a Scientist" and attended discussion. (Week 2)
- Annual evaluation with Alana. (Week 4)
- Updated the OS on my laptop after many backups. (Week 4)
- Jon E. and I had Zoom meeting with International Titanium Association, who want to publish an article about our uses of Ti for our projects. (Week 4)
- Got TWIC renewed. (Week 6)
- Edited third draft of Ti trade publication article. (Week 6)
- Started PCB Designer online courses. Trying to finish OrCAD online courses before they expire on April 3. (Week 10)
- Contacted WHOI about Lithium battery design policies in place there (Week 21)
- Catching up on a lot of email after vacation (Week 30)
- Replace swollen Li-ion battery in my laptop. (Week 31)
- Attended UAV workshop led by Bryan T-S. (Week 39)
- Did calculations to determine if a UAV flying from Monterey Bay Academy is within the MBNMS regulatory zone. It isn't, but we'll inform the Sanctuary regardless. (Week 42)
- Working on signal processing paper with Yanwu and John Ryan (Week 45)
- Interviewed EE candidate Ian Miller (Week 45)
- Multiple interviews for EE hire (Week 46)