

Justin Tucker Sorted By Project

300060 - DMO Support - Paragon

300062 - DMO Support - Doc Ricketts

- Structural analysis of IBC lifting bracket (Week 3)
- Lifting bracket weld analysis (Week 6)
- Reanalysis of lifting bracket (Week 10)
- Follow up analysis on lifting bracket. (Week 12)
 - Weld and material specification along with final 3D FEA check (Week 12)
- Finalize material, welding, and heat treatment plans for lifting bracket (Week 13)
- Experimented with electrical conductivity measurements for heat treatment QC (Week 13)

300078 - DMO Support - AUV

- Work on INS vibration isolation design (Week 7)
- INS housing assembly drawing update (Week 24)
- INS housing post test analysis (Week 24)
- Updates to INS assembly drawings (Week 25)
- Recovery hook analysis and design (Week 25)
- Recovery test tube design support (Week 40)

708178 - Marine E Development NAV

- Battery proposal review and meeting (Week 6)
- Battery housing basic review (Week 20)

901007 - Benthic Biology & Ecology

- Introduction of BRS, system and CAD familiarization (Week 3)
- Working through layout for Rev C improvements (Week 4)
- Valve design revamp (Week 6)
- Continue work on valve design tolerances (Week 7)
- Redesign of ball check valve (Week 7)
- Source FKM u cup seal (Week 7)
- Continued design of BRS base assembly (Week 9)
- Finalizing drawings for the lower part of the assembly (Week 10)
- Working with shop to plan manufacturing schedule and quotes (Week 10)
- Continued design of upper assembly (Week 10)
- Continuing work to get quotes and lead times on parts for manufacturing (Week 11)

- Testing volute shape for pump (Week 11)
- Continuing design on lid assembly (Week 11)
- Modification and finalization of BRS PEEK parts (Week 12)
- Troubleshooting flush pump valve assembly (Week 13)
- Misc print prep for auxiliary parts (Week 13)
- Ongoing review and updates to BRS drawings (Week 14)
- BRS pump troubleshooting (Week 14)
- BRS build (Week 20)
- BRS build continues (Week 21)

901101 - Seafloor Mapping

- AUV design trade studies (Week 1)
- Thermal experiment flow simulation to assess pressure and thermal uniformity through nozzle array. (Week 2)
- CAD model updates for as built sled strobe arms (Week 2)
- Strobe model updates for screenshots/renders of Jason on LASS for NSF proposal (Week 3)
- Worked on benchmarking strobe thermal improvement (Week 4)
- Mapped out strobe hydraulic layout (Week 4)
- Compiled payload mass budget for AUV proposal (Week 6)
- Kinematic analysis for reversed ram placement on LASS (Week 6)
- Update AUV battery mass estimates (Week 7)
- AUV concept 3D mock ups (Week 11)
- AUV concept study (Week 12)
 - Battery sphere battery packing efficiency (Week 12)
 - LASS graphics for simulation (Week 12)
 - Concept study mass and buoyancy calc updates (Week 12)
- Existing sled coordinate system exports (Week 12)
- New INS bracket design (Week 13)
- Graphics for abstract creation (Week 13)
- Finished LASS INS upgrade bracketry drawings (Week 14)
- AUV concept sketch models (Week 14)
- Proposal support, battery packaging (Week 23)
- LASS Lidar position estimate (Week 24)
- AUV proposal, 6DOF cost and mass estimate (Week 24)
- AUV proposal refinement (Week 25)
 - 6DOF mass and foam updates (Week 25)
 - Housing cost estimates (Week 25)
- LASS orientation plate modification design (Week 27)
- Proposal support (Week 27)
- Orientation plate and bracket updates (Week 29)
- INS build support (Week 31)
- Support for continued updates to LASS orientation plate (Week 34)
- Deployment prep and assembly of LASS (Week 39)

- LASS deployment prep (Week 40)
- LASS follow up on post cruise tasks (Week 42)
- Updates to eye safe cover for LIDAR (Week 46)

901405 - Wave-Energy Conversion for Oceanographic Applications

- 2 point mooring analysis studies (Week 9)
- Continued 2 point mooring simulation (Week 10)
- Working through 2 point mooring simulations (Week 11)
 - Improvements to post processing scripts (Week 11)
 - Working through design of experiment automation setup. Investigating use of DAKOTA (<https://dakota.sandia.gov/>) (Week 11)
- Mooring line pull angle study (Week 14)
- Battery design discussions (Week 21)
- Prep for spotter buoy deployment (Week 22)
- Battery housing weekly discussions (Week 22)
- Battery housing preliminary design (Week 23)
- Weekly meetings, housing design considerations (Week 25)
- Weekly HDS meetings (Week 27)
- HDS meeting (Week 40)
- Housing design for HDS battery (Week 40)

902010 - Mesopelagic LRAUV

- Model updates to CTD cover (Week 3)
- Hovering module familiarization (Week 3)
- Organized priority list for next steps. (Week 4)
- DVL housing assembly and rework troubleshooting (Week 6)
- DVL housing assembly and modifications (Week 9)
- DAT cover (Week 20)
- Propeller scaling (Week 20)
- Planktivore nose fairing design and analysis (Week 20)
- Planktivore fairing design for 1500m vehicle (Week 21)
- Propeller scaling and drag analysis. (Week 22)
 - ANSYS fluent training (Week 22)
- CFD analysis of planktivore at yaw angles (Week 23)
- OpenProp propeller design investigation (Week 27)
- Amalga composite tube order for destructive testing (Week 30)
- Continuing composite tube analysis and design of experiment for scaled test samples (Week 34)
- Carbon tube scaled test sample order (Week 46)
- Composite tube testing plan (Week 48)
 - Endring and endcap design and analysis (Week 48)

902101 - LRAUV Technology Development

- Hovering module support, brackets and system mass (Week 29)
- Working through a solidworks macro to export mass properties for the entire assembly. (Week 30)
- Update and reprint of thruster alignment templates (Week 30)
- Continued model reorganization for mass and buoyancy calculations. (Week 31)
- Build 5 COM and COB documentation (Week 48)

902208 - Mini ROV Operations

- Thruster motor replacement search (Week 27)
- Thruster motor vendor discussions (Week 29)
- Thruster motor replacement analysis (Week 31)
- Thruster upgrade shaft redesign (Week 46)

Out of Office

- Fridays through March 2026
- Expected leave April 1st - 31st
- Expected leave April 1st - 30th
- On leave April 8th - May 5th
- Out Monday 6/9, traveling and partially available 6/6 and 6/10
- Out 8/29
- Out 8/29 and 9/3
- Out 10/27-11/7

Overhead

- OpenFOAM updates on VM (Week 2)
- Review document prep (Week 3)
- ANSYS license evaluation (Week 25)
- ANSYS licensing comparison (Week 27)
- Miscellaneous proposal support (Week 27)
- Open house (Week 29)
- ANSYS license update (Week 30)
- ANSYS updates and debugging link to Solidworks (Week 34)
- Working through a simscape setup for the Ricketts LARS (Week 35)
- Physical system modeling of LARS. Integration of power electronics model. (Week 39)
- Simscape modeling for LARS (Week 40)
- LARS modeling design review prep (Week 42)