

901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach

Week 51

1. Brian Kieft
 - a. Finally gonna use some of my allocated hours on this program. Assisting with a flight on Friday.

Week 48

1. Duane Edgington
 - a. Team meeting
 - b. Budget update to Tom O.

Week 47

1. Duane Edgington
 - a. Team meeting
2. Paul McGill
 - a. Working with Bill K on ground station wiring

Week 43

1. Paul McGill
 - a. Ordered new cables for UAV telemetry receiver
2. Enoch Nicholson
 - a. Checkout flights for striver & trinity
 - b. Davenport survey

Week 42

1. Duane Edgington
 - a. Generated a one-class detector model using our verified localizations for experimental addition to the detection workflow
2. Enoch Nicholson
 - a. Working on BVLOS app
 - b. New sandwich board sign
 - c. Data organization plan

Week 40

1. Duane Edgington
 - a. Team meeting
 - b. Working on MiW 2024 poster with Melissa

Week 39

1. Duane Edgington
 - a. Team meeting.
 - b. Evaluating most recently created yolov5 detection model.
 - c. Preparing poster for MiW2024 workshop Oct 7-10 with Melissa.
2. Enoch Nicholson
 - a. BVLOS waiver application draft

Week 38

1. Duane Edgington
 - a. Team meeting
 - b. Continuing work, with Danelle, on building new yolo detection model with our ~full dataset, with aidata transform slices plus full rescaled image at 1280x1280. Model training started 9/18.
 - c. Gearing up to make poster for MiW 2024.
 - d. Experimented with DETR transformer, transfer learned for object detection.

Week 37

1. Paul McGill
 - a. Met to discuss response to proposal phase 2

Week 36

1. Duane Edgington
 - a. Working session on UAVS next steps

Week 35

1. Duane Edgington
 - a. Team meeting including presentation of results from our recent model training
 - b. Planning next steps for improving automated detection and classification of items in images.

Week 34

1. Duane Edgington

- a. Trained an “18k” and a “30k” localizations [yolov5x6](#) detection model on [cropped and augmented](#) images from the 901902-uavs dataset, using [aidata](#) and [deepsea-ai](#) toolkits. Evaluating the results.
2. Paul McGill
 - a. Mapped out connector pinout of Trinity battery pack

Week 33

1. Duane Edgington
 - a. Working with Danelle on building a model.

Week 32

1. Duane Edgington
 - a. Team meeting 8/6/2024
2. Paul McGill
 - a. Planning for two flights I'll assist with on Thursday

Week 31

1. Duane Edgington
 - a. Team meetings
2. Enoch Nicholson
 - a. BVLOS flight planning (Trinity)
 - b. Reading up on regulations / state of waivers

Week 30

1. Duane Edgington
 - a. Team meeting
2. Paul McGill
 - a. Met to discuss battery problems and upcoming flight ops
3. Enoch Nicholson
 - a. BVLOS Con ops discussion. Began reaching out to others who have successfully applied for a waiver from the FAA.

Week 29

1. Duane Edgington
 - a. Team meeting
2. Enoch Nicholson
 - a. Designed Striver camera port

Week 28

1. Duane Edgington

- a. Proposal work

Week 27

- 1. Enoch Nicholson
 - a. NB & SC surveys

Week 24

- 1. Enoch Nicholson
 - a. Flight ops TP & DPL

Week 23

- 1. Paul McGill
 - a. Helped with two UAV missions on Wed at New Brighton and Seacliff beaches

Week 22

- 1. Duane Edgington
 - a. Discussion on 2025 proposal and on-board real time AI use cases.

Week 21

- 1. Duane Edgington
 - a. Team meeting

Week 20

- 1. Duane Edgington
 - a. Abstract work
- 2. Enoch Nicholson
 - a. Proposal writing

Week 19

- 1. Duane Edgington
 - a. Project update
 - b. Team meeting
 - c. Work on Realtime-onboard UAV machine-learning whitepaper

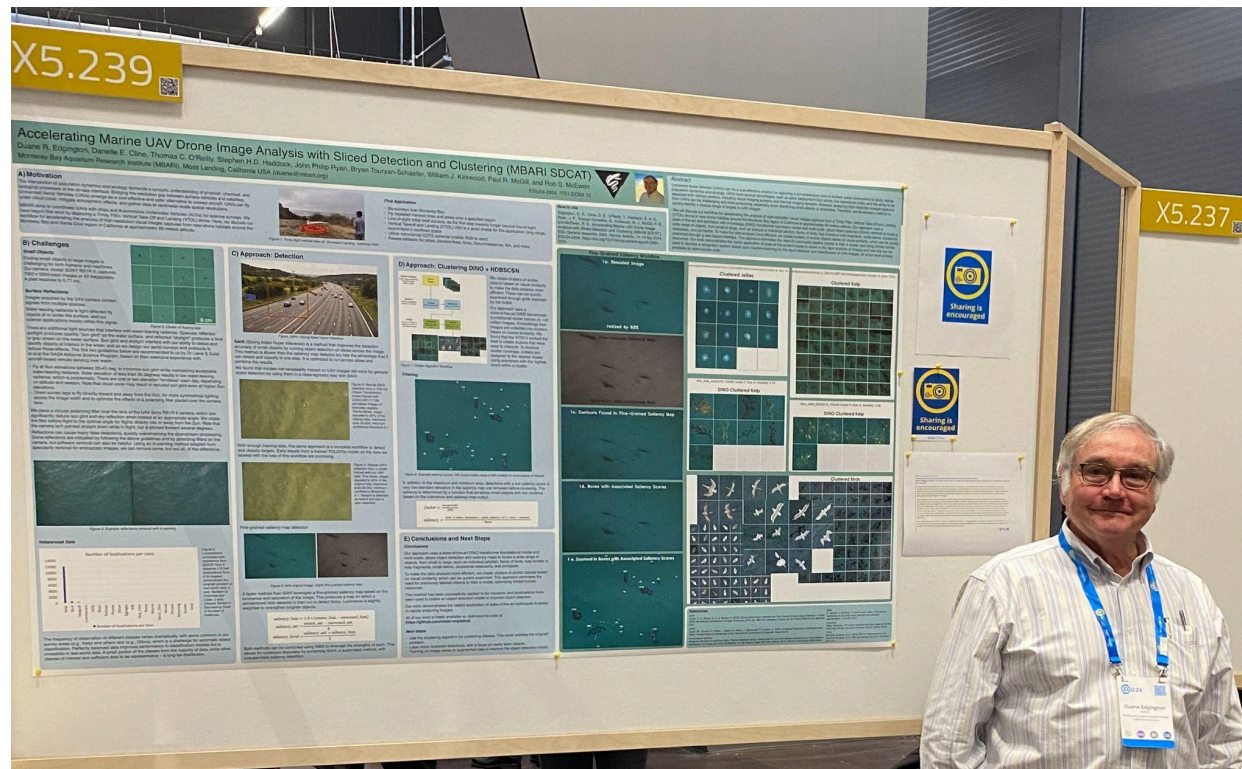
Week 18

- 1. Duane Edgington
 - a. Team meeting
 - b. Work on 2025 proposal
 - c. Work on project update presentation materials

2. Paul McGill
 - a. Set up new antenna on UAV ground station telemetry receiver.
3. Enoch Nicholson
 - a. Passed part 107 test

Week 17

1. Duane Edgington
 - a. Project presented as poster at [EGU 2024](#) meeting. "Accelerating Marine UAV Drone Image Analysis with Sliced Detection and Clustering (MBARI SDCAT)" by *Duane R. Edgington*, Danelle E. Cline, Thomas O'Reilly, Steven H.D. Haddock, John Phillip Ryan, Bryan Touryan-Schaefer, William J. Kirkwood, Paul R. McGill, and Rob S. McEwen, session ITS1.2/OS4.10, abstract EGU24-2934, poster presentation. <https://doi.org/10.5194/egusphere-egu24-2934>



- b.
2. Paul McGill
 - a. Ordered new 2.4 GHz telemetry antenna

Week 16

1. Paul McGill
 - a. Researched and identified a better 2.4 GHz antenna for telemetry

Week 13

1. Duane Edgington

- a. Generated extraction of Kelp images, localizations and metadata for Steve H. / NOAA visitors
- 2. Paul McGill
 - a. Participated in UAV flight at MBARI to show NOAA visitors our operation

Week 12

- 1. Duane Edgington
 - a. Worked with Melissa (thanks!) to complete the poster for EGU2024. Looks great. Will upload to conference site 3/25 for attendees to view, and will have service print a copy to pick up and post at the conference.

Week 11

- 1. Duane Edgington
 - a. Working on Poster for EGU 2024 meeting with Melissa
 - b. Team meeting

Week 10

- 1. Duane Edgington
 - a. Working on next steps with Danelle.
 - b. Need to prepare poster for EGU meeting April 12.
- 2. Paul McGill
 - a. Ran ground station for two flights on Monday.
- 3. Enoch Nicholson
 - a. Built servo linkages

Week 9

- 1. Paul McGill
 - a. Repaired broken telemetry antenna

Week 8

- 1. Duane Edgington
 - a. Final work with Danelle on i-poster for OSM meeting.
 - b. Team meeting 2/20.
- 2. Enoch Nicholson
 - a. Tail build

Week 7

- 1. Duane Edgington
 - a. Assisting with iposter for OSM meeting
 - b. Abstract for EGU meeting has been accepted for presentation.

Week 6

1. Duane Edgington
 - a. Completed and posted a first-cut detection model using the current labeled library.
 - b. Addressing bug in label download that skips labels with “ “ in the label.
 - c. Working on info for OSM poster presentation
 - d. Preparing to train the next-cut detection model.

Week 4

1. Duane Edgington
 - a. Working on building a classification model.
2. Brian Kieft
 - a. Supported coordinated flight LRAUV run off Terrace Pt.
3. Enoch Nicholson
 - a. Started System Diagram
4. Tom O'Reilly



- a.
- b. Teams conducted coordinated surveys with our Trinity UAV and LRAUV last week off Terrace Point, UC Santa Cruz. Objective is to determine whether UAV and LRAUV can detect or measure any near-surface chemical/biological/physical features in common, using UAV's color and multispectral camera payloads and LRAUV's Piscivore and other sensors. These tests help us assess the UAV's potential role as "scout" for phenomena that can be examined in detail by surface/underwater vehicles.

Week 3

1. Duane Edgington
 - a. Team meeting Jan 16. Labeling of clusters continues.
2. Brian Kieft
 - a. Planning for coordinated ops Friday at Terrace Pt.

Week 2

1. Duane Edgington
 - a. Returning to labeling clustered data and preparing for model training.
 - b. EGU 2024 abstract submitted.