

# 902111 - Carbon Flux Ecology

## Week 49

1. Brent Jones
  - a. Deployed and recovered CPF with multicam

## Week 48

1. Danelle Cline
  - a. Improvements to ViTS training code and generate latest training data with augmentations for Fernanda to train
2. Duane Edgington
  - a. Discussion with Fernanda S. and Danelle C.

## Week 47

1. Duane Edgington
  - a. Working session, simCLR and PAWS

## Week 46

1. Danelle Cline
  - a. In collaboration with Fernanda, sandbox development of contrastive plankton model for inspired by X-Sample Contrastive Loss Meta FAIR paper
2. Brent Jones
  - a. Ballasted CPF for carrying Fernanda's multi-CAM

## Week 45

1. Paul Roberts
  - a. Data management

## Week 44

1. Danelle Cline
  - a. Paper review of [X-CLR](#) (graph-based contrastive learning) and PAWS for self-supervised methods with Fernanda
  - b. Downloaded ISIIS data for testing

## Week 42

1. Danelle Cline

- a. Created query script to mine to class imbalanced ISIIS data

## Week 40

- 1. Duane Edgington
  - a. Demo'd sagemaker studio for ML classification and for object detection to Fernanda. Resnet, SSD, SWIN, EfficientDet and more...

## Week 38

- 1. Danelle Cline
  - a. Initial training labels are being tested with ResNet18 model. Next steps are to mine for rare examples to balance the training data using vss.
  - b. Evaluating Argo Workflows as a way to orchestrate integrated machine learning workflows in mantis
- 2. Duane Edgington
  - a. Some project administrative support of the tator login

## Week 36

- 1. Duane Edgington
  - a. Working session on aidata tool

## Week 35

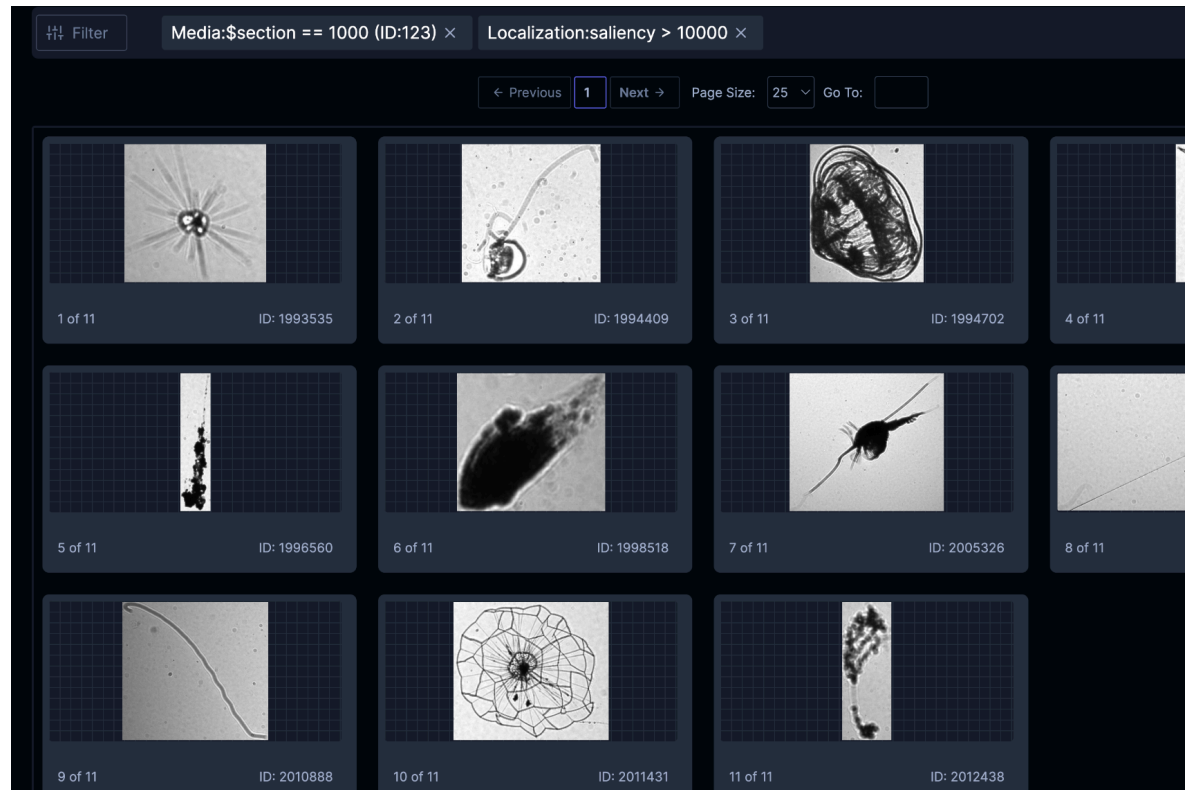
- 1. Danelle Cline
  - a. Working on apache-beam aipipelines for images
  - b. Updated [ai documentation](#)
- 2. Paul Roberts
  - a. Chiton data ingest

## Week 32

- 1. Duane Edgington
  - a. Preparing for the science team to start labeling clusters generated by the pipeline. Assisting Danelle with [documentation](#)

## Week 31

- 1. Danelle Cline
  - a. Adding in performance metrics to pipeline and refactoring for apache beam implementation
  - b. Fixed bugs in small cluster edge cases and added batch inference for performance boost
  - c. Fernanda has loaded 1000 ISIIS images with 20000 particles; expect to start labeling soon. Sneak peek at a few detections with high saliency



d.

2. Duane Edgington
  - a. Project meeting with Fernanda and Danelle
  - b. Looking into fine-tuning ViT [google/vit-base-patch16-224](https://google.github.io/vit-base-patch16-224/)

## Week 30

1. Duane Edgington
  - a. Discussion on database versioning.

## Week 29

1. Danelle Cline
  - a. Finishing up detection, clustering and visual search inference pipeline design in preparation for processing ISIIS data

## Week 27

1. Brent Jones
  - a. Prepping CPF for next week deployment. Fixed a bad valve controller board

## Week 26

1. Danelle Cline
  - a. Proposal input

## Week 25

1. Brian Schlining
  - a. [Registered image sets from Station M for annotation.](#)

## Week 23

1. Danelle Cline
  - a. Finished optimizing FastAPI for bulk changes
  - b. Project proposal input

## Week 22

1. Duane Edgington
  - a. Start work on 2025 proposal
2. Paul Roberts
  - a. Minion housing optics

## Week 21

1. Duane Edgington
  - a. Team meeting
  - b. 2025 proposal work
2. Paul Roberts
  - a. Planktivore and Chiton data management

## Week 20

1. Duane Edgington
  - a. AWS instance selection and quota work
2. Paul Roberts
  - a. Preparing for bringing Planktivore and Chiton images into clustering pipelines

## Week 19

1. Danelle Cline
  - a. Working on optimizing FastAPI for bulk changes
  - b. Evaluating ARGO + Kubernetes integrated ML workflow
2. Paul Roberts
  - a. Chiton deployment and data management

## Week 18

1. Duane Edgington
  - a. AWS discussion

## Week 13

1. Duane Edgington
  - a. Continued testing/fixes for [aidata](#)

## Week 12

1. Duane Edgington
  - a. Learning aidata github repo (replaces bio-ai for extract, transform, load, download)

## Week 10

1. Danelle Cline
  - a. Assisting Fernanda with SDCAT questions and debugging in Colab
  - b. Working on REDIS workflow for automated data loading

## Week 7

1. Danelle Cline
  - a. Tested the ISIIS instrument frame captures with sdcat which is doing a great job clustering. Beginnings of [core ai docs](#).

## Week 6

1. Duane Edgington
  - a. Requirements meeting Feb 1.

## Week 5

1. Paul Roberts
  - a. Planning for LRAUV operations

## Week 4

1. Duane Edgington
  - a. Follow-up on project kickoff 1/18

## Week 3

1. Duane Edgington
  - a. Kickoff meeting Jan 18.

## Week 1

1. Danelle Cline

- a. Some minor work familiarizing with the ISIIS instrument output .avi files. The AVI format has problems with a missing image index but exports ok to frame for processing.