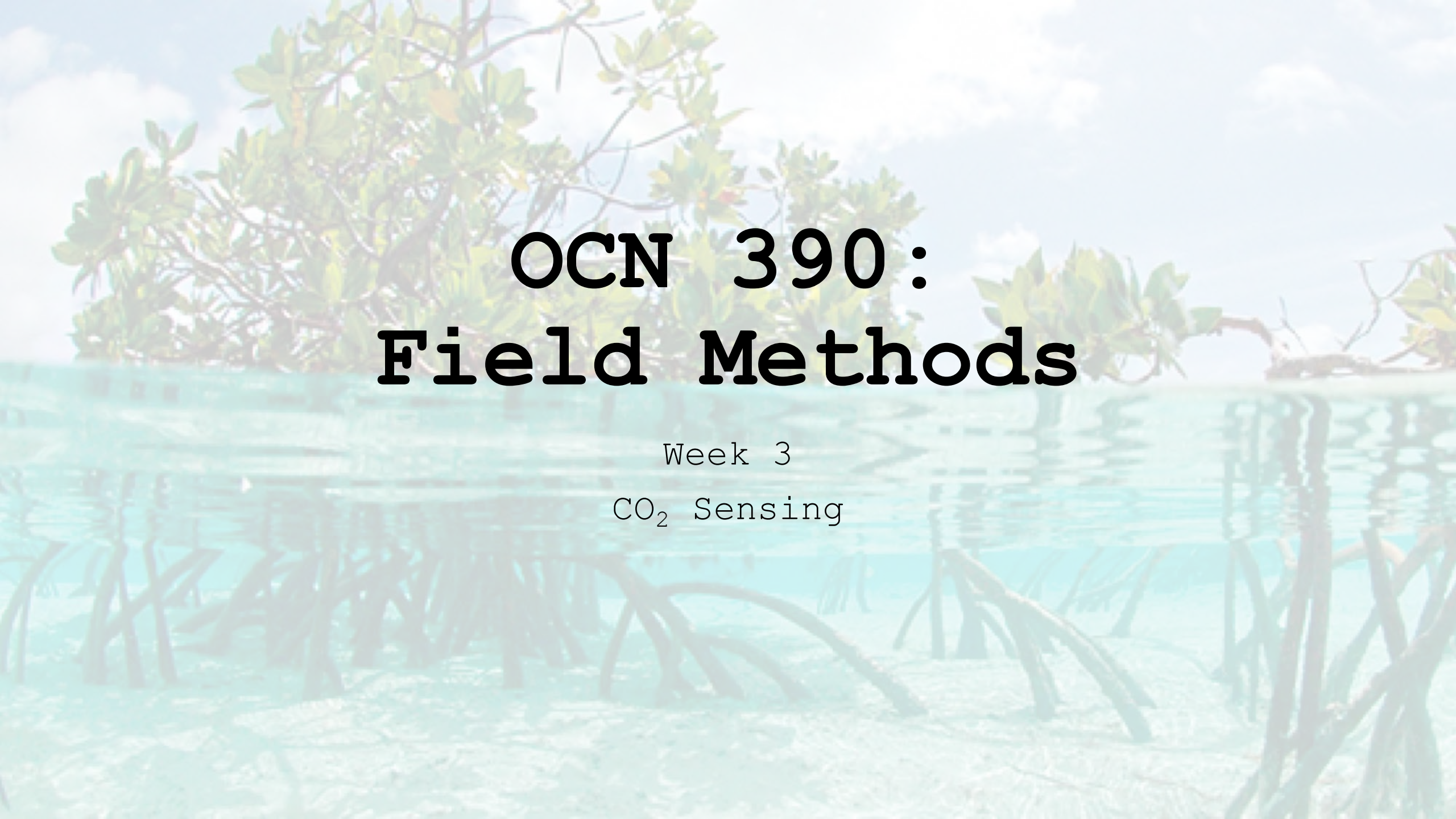


OCN 390: Field Methods

Week 3

CO_2 Sensing

Outline

- Names
- Masks: nose + mouth, including (especially!) when speaking
- Nature journals—any feedback from you?
- Nature journal review
- Data competition
- CO_2 sensing: why bother?
- Overview of hardware
- Team formation
- Assignment description

Nature journals

Any feedback? Anyone get ice cream?

Weekly Assignment

- Deadline: Fridays @ 11:59 pm
- **What: photo of your journal page uploaded to that week's discussion thread.**
- Grading: any honest effort gets full credit. I'm definitely not judging artistic capabilities but you will lose credit if you clearly didn't try.
- Rotate images!
- You can take one week off without losing points if you want/drop lowest grade.
- If you upload anything inappropriate, you'll be referred to Dean's Office. Please just don't do this!

This is a graded discussion: 2 points possible — due Jan 29

Week 2 Journal (1st Entry)

Philip J. Bresnahan

Upload photos of your journal entries here! Please rotate images prior to uploading so that we're looking at the same orientation you used when writing/drawing. Feel free to add other notes to your post as well but the only required thing is a photo/scan of your journal. And please comment (politely, duh) on other people's posts if you feel compelled!

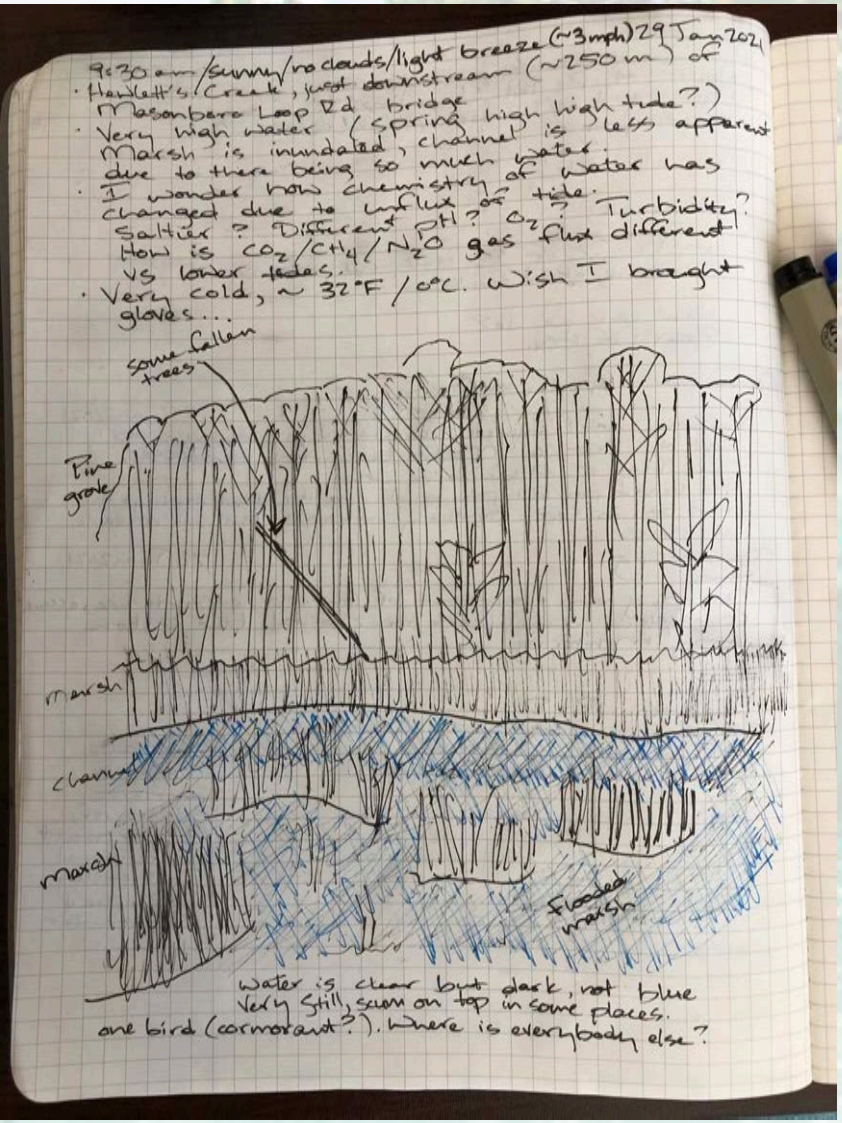
Search entries or author | Unread | Subscribe

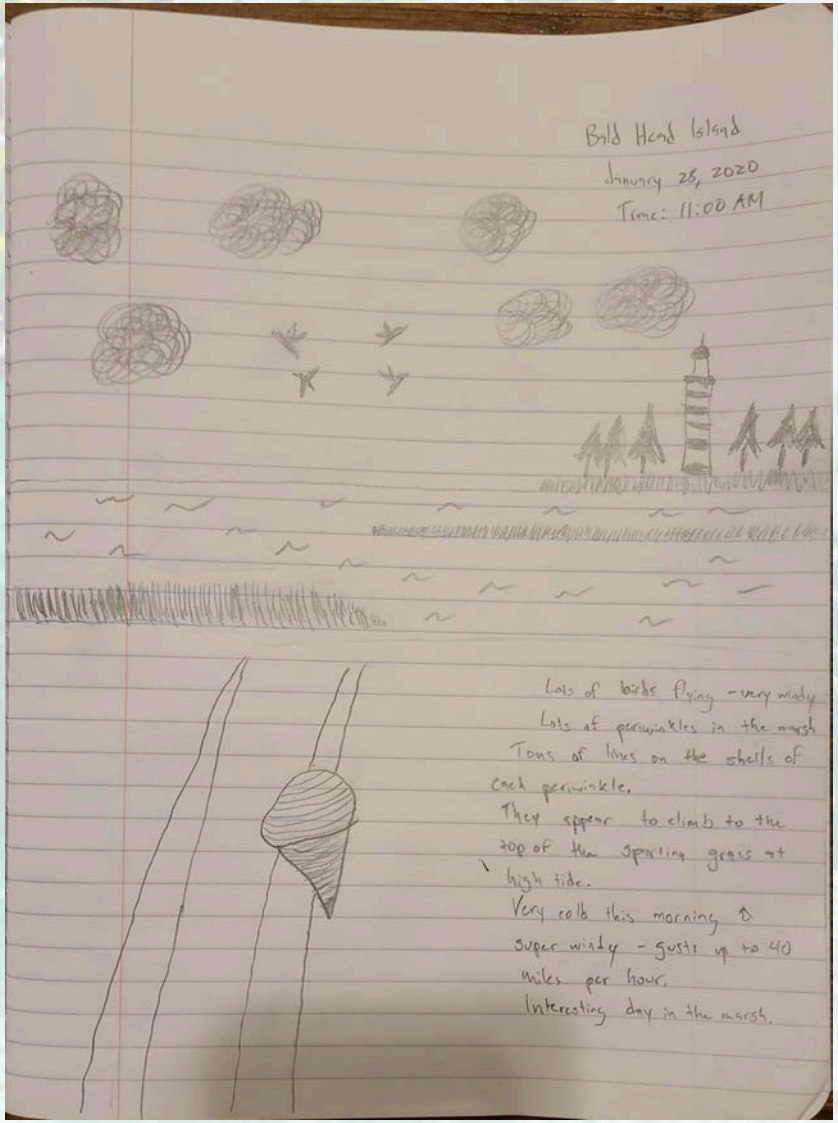
Edit View Insert Format Tools Table

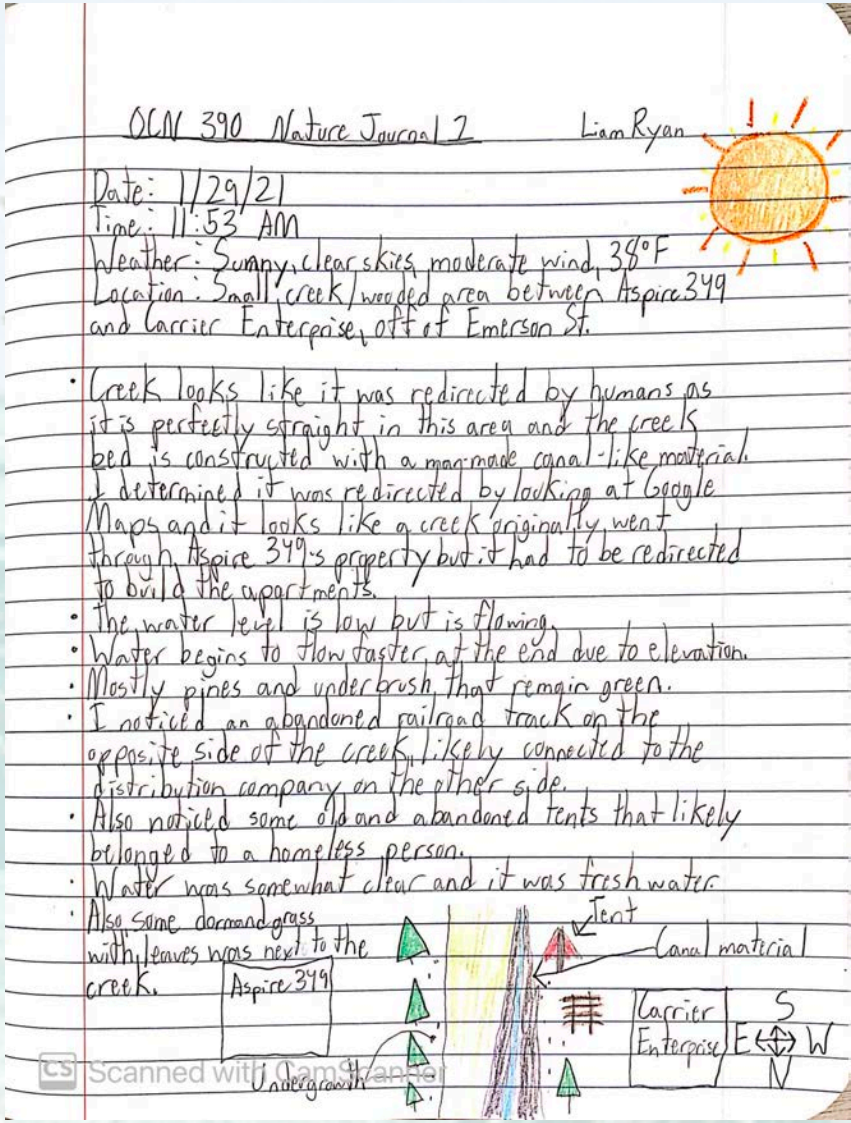
12pt Paragraph

Upload Image
User Images

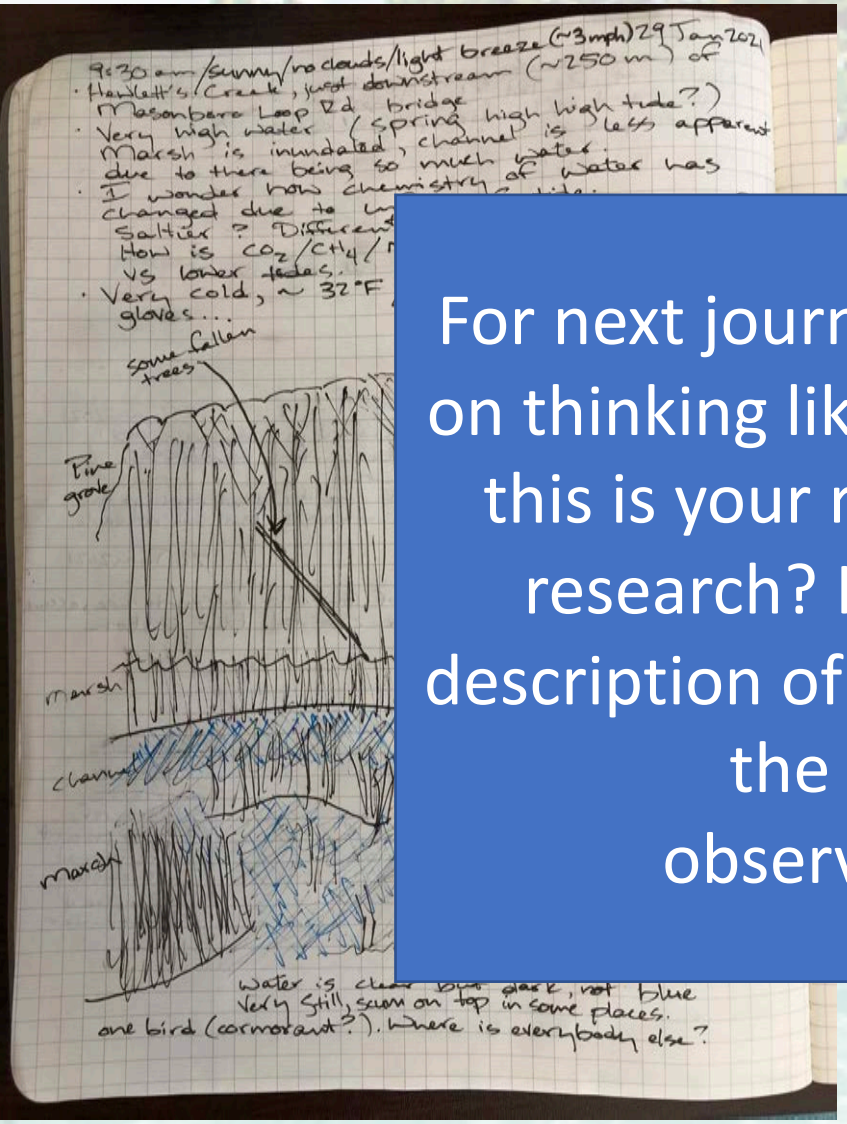
Nature journal feedback

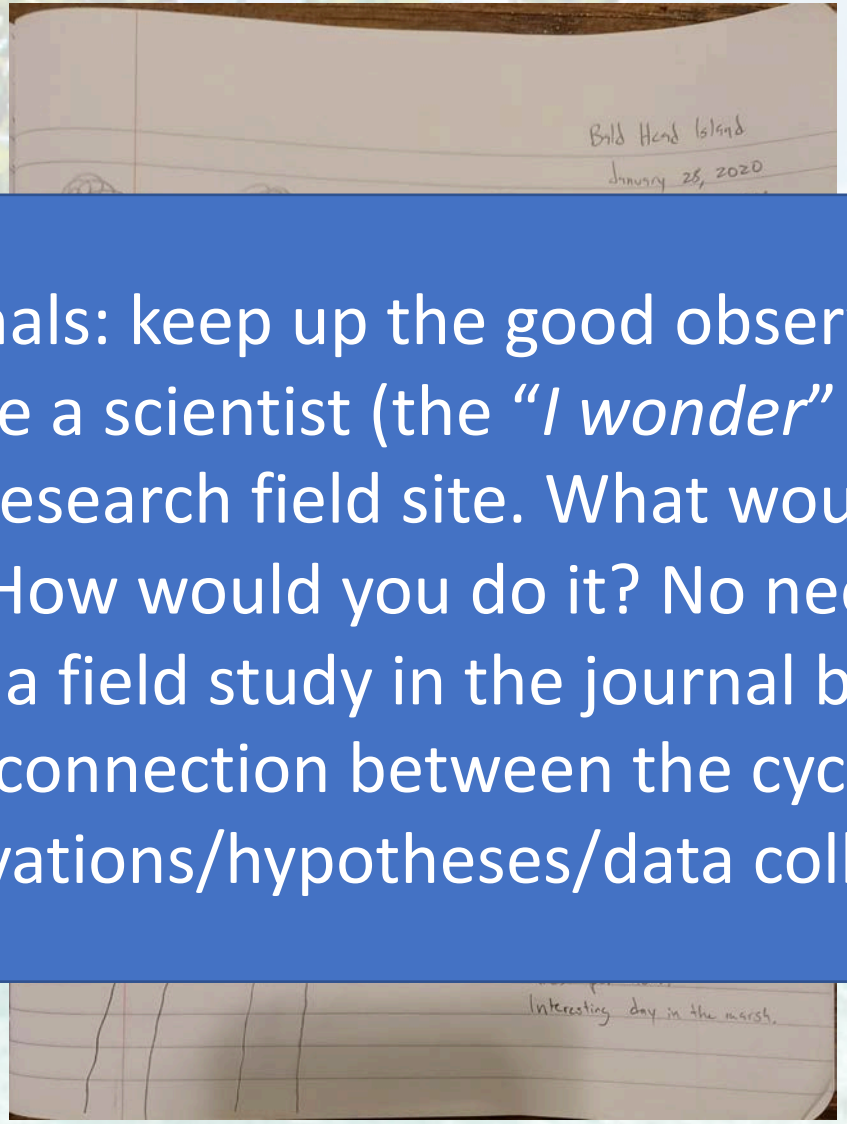


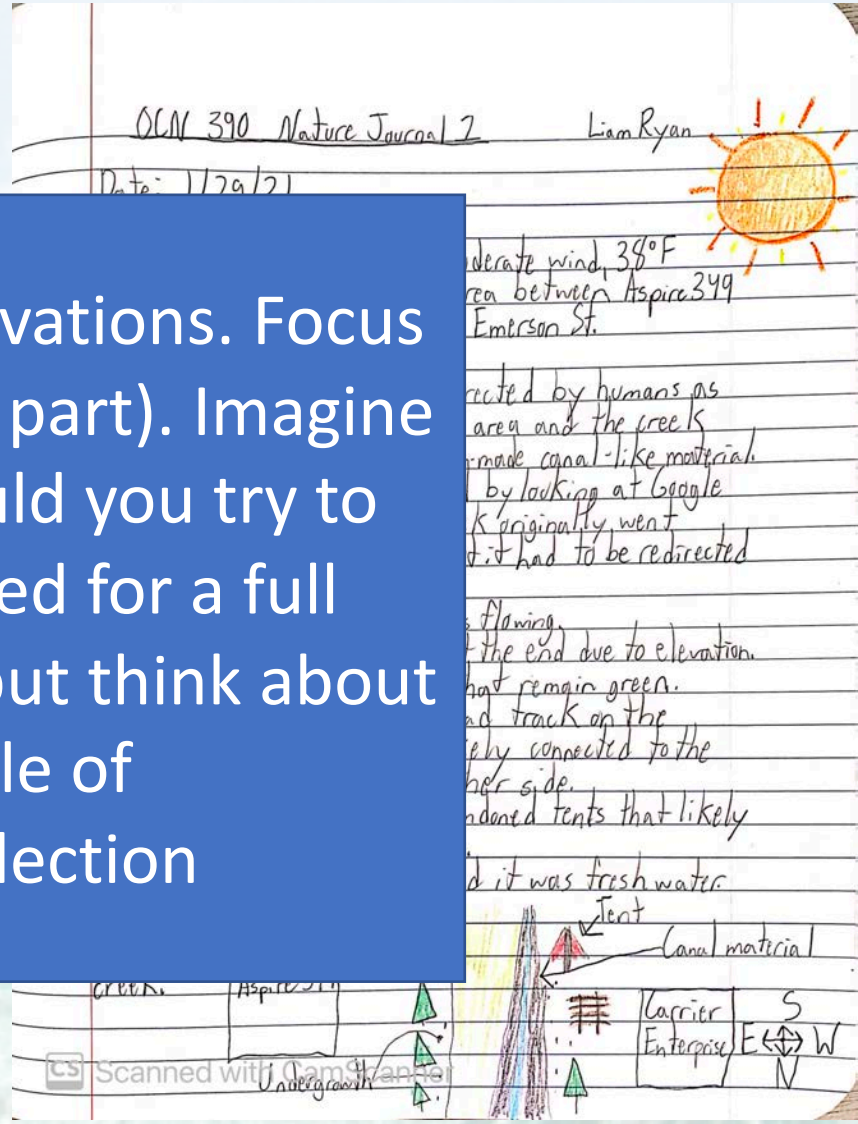




Nature journal feedback







For next journals: keep up the good observations. Focus on thinking like a scientist (the "*I wonder*" part). Imagine this is your research field site. What would you try to research? How would you do it? No need for a full description of a field study in the journal but think about the connection between the cycle of observations/hypotheses/data collection

Data Competition

TWO STUDENT OPPORTUNITIES

$9,000+ AVAILBLE IN PRIZES

Vembu Subramanian Ocean Scholars Award

Apply today for the Vembu Subramanian Ocean Scholars award! Do not miss the opportunity to present your research at a conference. There are two $1,250 prizes.

SECOORA 2021 Data Challenge: Using Buoy and Shore Station Data to Meet User Needs

SECOORA is asking students and early career professionals to create tools that uses SECOORA buoy and/or shore station data. There are two $3,500 prizes.

MORE INFO: WWW.SECOORA.ORG/FUNDING-OPPORTUNITIES/

Deadline to submit is March 12, 2021 for the two opportunities.

SECOORA
Southeast Coastal Ocean Observing Regional Association

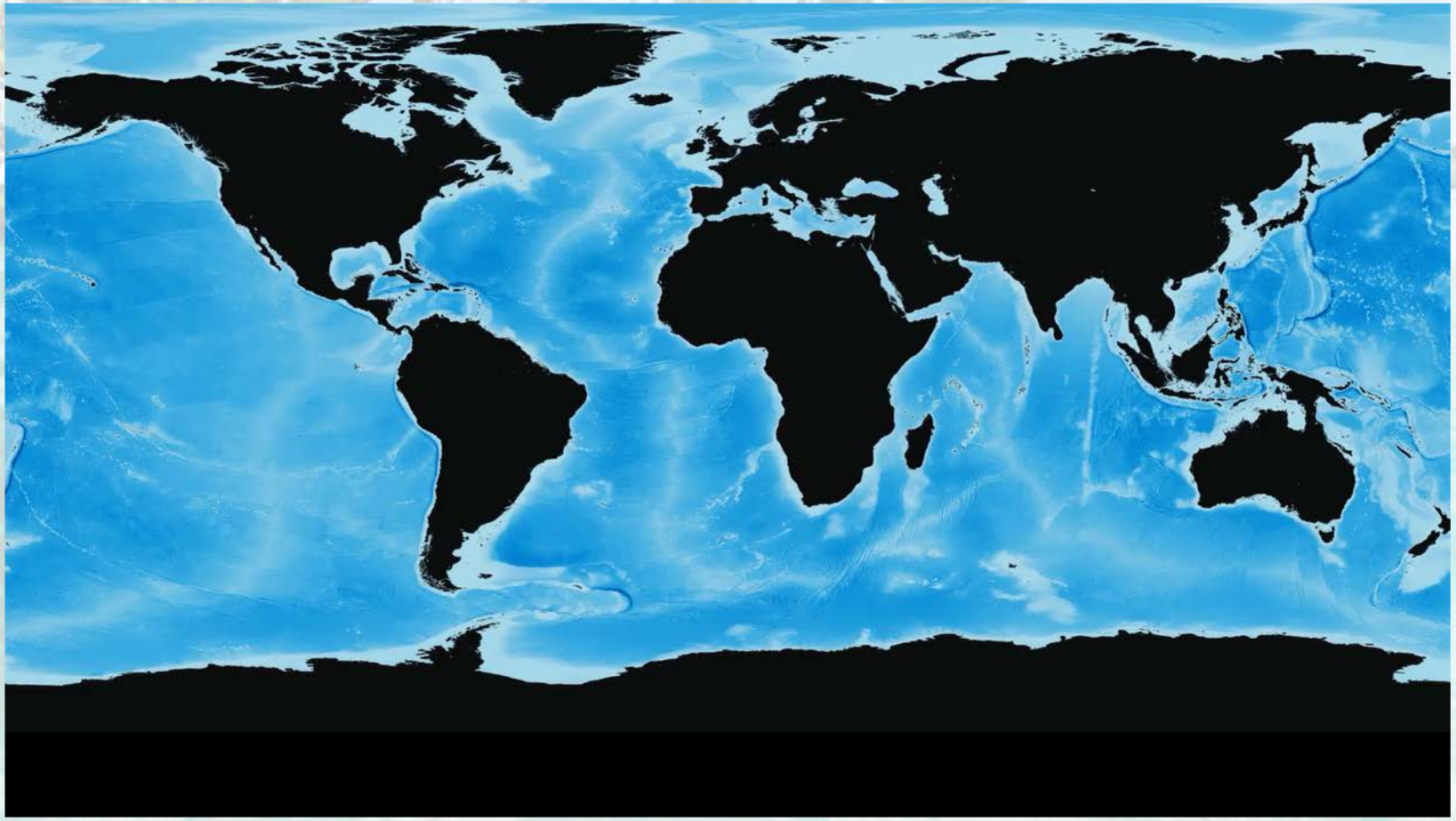
CO_2 Sensing

Why bother?

A few reasons to measure CO_2

- Respiration/photosynthesis of planet/ecosystem/individual
- Air quality for health
- Indoor air quality (circulation/ventilation)
- Atmospheric changes due to humanity
- Emissions monitoring: regional/site-specific
- Air-water flux: how much CO_2 is coming out of/going into water
- Hypercapnia: too much CO_2 in bloodstream
- Professor told you to

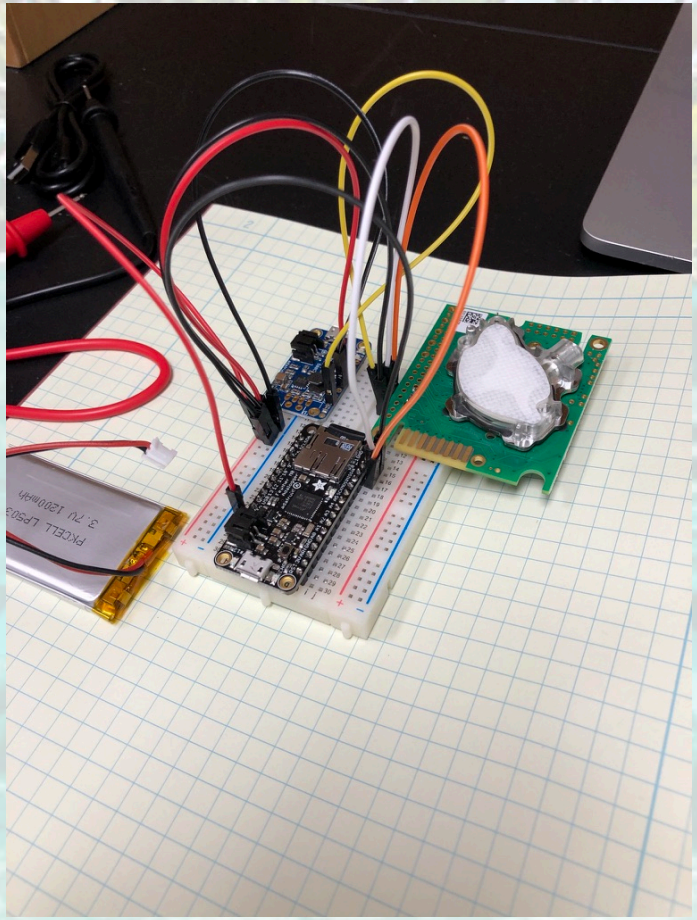
Atmospheric CO_2



https://climate.nasa.gov/climate_resources/142/video-super-hd-view-of-global-carbon-dioxide/

Team Formation

Main Project



- Build a functional CO2 sensor
- Design, execute, and describe (multiple formats) a field study

Team Formation

- Team K-30 (https://senseair.com/products/flexibility-counts/k30/)
  - 1—Evan
  - 2—Stephen
  - 3—Devan
- Team PowerBoost (https://learn.adafruit.com/adafruit-powerboost-500-plus-charger)
  - 1—Nick
  - 2—Zac
  - 3—Summer
- Team Processor (https://www.microchip.com/wwwproducts/en/ATsamd21g18)
  - 1—Billy
  - 2—Anna
  - 3—Holland
- Team Adalogger (https://learn.adafruit.com/adafruit-feather-m0-adalogger)
  - 1—Liam
  - 2—Hannah
  - 3—Danielle
- Team Arduino software/firmware (https://www.arduino.cc/en/software)
  - 1—Michael
  - 2—Madison

Assigment

- Each team will write a single, ≥ 200 words (~ 1 short paragraph per person) description of their part.
- Focus on: what it does, how it works, how it interacts with the other four things, why it's necessary
- Describe it as though you are describing it to someone in middle school who doesn't have electronics experience (*e.g.*, don't use lots of fancy technical words, simplify and focus on functionality)
- Post to Canvas by 11:59 pm on Friday and come prepared to describe it in class next week (pick a presenter ahead of time; no slides/images for presentation, just a quick oral description)

Rest of class period

- Work in your small groups:
  - Virtually (email/zoom/chat/whatever) or very far away from each other (> 6’)
  - I am not asking you to gather outside of this class time or in other places!
- Assign roles (especially who will submit, who will speak next week); these should rotate throughout semester