

# KATHLEEN ABBOTT

MIT Earth, Atmospheric and Planetary Sciences  
Building 54-1621, 21 Ames St., Cambridge MA 02139  
keabbott@mit.edu | katyabbott.github.io

## EDUCATION

---

**MIT-WHOI Joint Program in Oceanography** Cambridge, MA  
*Ph.D. Candidate in Physical Oceanography* 2020 - present

*Thesis title:* Biogeochemical cycling and microbial dynamics at the submesoscale

**University of California, Berkeley** Berkeley, CA  
*B.A. in Geophysics, Applied Mathematics* 2013 - 2017

## RESEARCH EXPERIENCE/EMPLOYMENT

---

**MIT-WHOI Joint Program in Oceanography** Cambridge, MA  
*Graduate Student Researcher advised by Dr. Amala Mahadevan* June 2020 - present

**Big Bend National Park** Big Bend, TX  
*GIS Technician* Sept. 2019 - June 2020

**American Museum of Natural History** New York, NY  
*Visiting Scientist* Sept. 2019 - Sept. 2020

*Helen Fellow* Sept. 2018 - Aug. 2019

**North Coast Regional Water Quality Control Board** Santa Rosa, CA  
*AmeriCorps Member* Oct. 2017 - Aug. 2018

## FELLOWSHIPS

---

**National Science Foundation Graduate Research Fellowship** 2020-2025

**MIT Ida M. Green Fellowship** 2020-2021

**American Meteorological Society Graduate Student Fellowship** 2020-2021

## PUBLICATIONS

---

**Abbott K.**, Mahadevan, A. (In prep). *Stratification controls on coastal upwelling in the North Indian Ocean from remote sensing and in situ observations.*

Grone, J., Poirier, C., **Abbott K.**, Wittmers, F., Jaeger, G.S., Mahadevan, A., Worden, A.Z. (In prep). *HLII Prochlorococcus dominates Bay of Bengal phytoplankton with high abundance and growth rate.*

**Abbott, K.**, Richards, M. (2020). *Elastic Flexure of Young, Overlapping Basaltic Lava Flows Offshore the Galápagos and Hawaiian Islands: Observations, Modeling, and Thermal/Chronological Analysis*. *Geophysics, Geochemistry, Geosystems*, 21(3).

## SELECTED PRESENTATIONS

---

\*- indicates authors contributed equally

**Abbott, K.**, Mahadevan, A., Pachiadaki, M., Freilich, M. (2022) *Microbial community composition and response to subduction in the Mediterranean Sea*. Talk at the CALYPSO DRI fall meeting; Boston, MA.

Middleton L.\*, *Abbott K.\**, Mahadevan A. (2022). *CALYPSO: Initial insights on the role of submesoscale subduction for biogeochemical cycling in the Balearic Sea*. Poster at the Ocean Carbon & Biogeochemistry Summer Workshop; Woods Hole, MA.

**Abbott K.**, Lindo-Atichati D. (2019). *Mesoscale eddy-carbon interactions in the Sargasso Sea*. Talk at the International Union of Geophysics and Geodesy General Assembly; Montreal, QC.

**Abbott K.**, Lindo-Atichati D., McWilliams J., Gula J. (2019). *Visualizing (sub)mesoscale eddy dynamics in the Sargasso Sea*. Poster at the American Meteorological Society Atmospheric and Oceanic Fluid Dynamics Meeting; Portland, ME.

**Abbott K.**, Lindo-Atichati D., McWilliams J., Gula J. (2019). *Mesoscale and submesoscale eddy dynamics in the Northwestern Atlantic*. Poster at the ASLO Aquatic Sciences Meeting; Puerto Rico, U.S.

## TEACHING

---

**WHOI summer math review lecturer, Multivariable Calculus** *Summer 2021, 2022*

**The Carpentries workshop teaching assistant** *2020 - 2021*

- Summer 2021 (4-day workshop): Taught incoming WHOI summer student fellows and PhD students introductory programming in Bash and Python
- Fall 2020 (1-day workshop): Taught WHOI technical and scientific staff how to use Python to analyze geospatial data

**American Museum of Natural History instructor, BridgeUP STEM** *Sept. 2018 - Aug. 2019*

- Curriculum available at <https://github.com/amnh/BridgeUP-STEM-Oceans-Six>

## LEADERSHIP AND SERVICE

---

*Seminars and meetings*

- **Co-organizer, MIT Program in Atmospheres, Oceans and Climate Colloquium** *December 2022 - present*
- **Co-organizer, CALYPSO DRI fall meeting** *September 2022*

- **Co-lead for CALYPSO DRI biology working group** *October 2022 - present*

*Diversity, Equity and Inclusion*

- **Joint Program Applicant Support & Knowledgebase (JP ASK) board member** *August 2022 - present*

## OUTREACH

---

**Penikese Island School Science + Nature Summer Camp** *July 2022*

**Ocean HackWeek, virtual** *August 2020*

**NYC Astronomy on Tap talk on detecting ocean carbon from space** *2019*

**Watershed Stewards Program (AmeriCorps)** *2017-2018*

- Taught three classrooms (more than 60 students) a six-week curriculum about environmental science and conservation
- Led outdoor education activities for local elementary and middle schools in Klamath-Trinity River and Humboldt communities

## MENTORING

---

**JP ASK student mentor (5)** *Fall 2020 - present*

**Peer mentor for MIT EAPS undergraduate students (2)** *2021 - present*

**Peer mentor for WHOI Summer Student Fellow** *2022*

## FIELDWORK

---

**CALYPSO (Balearic Sea) ONR DRI cruise** *Feb. 17 - March 11, 2022*

- Biogeochemical sampling co-lead

**Sub-Mesoscale Ocean Dynamics Experiment pilot cruise (San Francisco coast)** *Oct. 19 - Nov. 8, 2021*

- Biogeochemical sampling and underway CTD operations

## AWARDS AND HONORS

---

**AMNH Hackathon “Most innovative solution”** *Feb. 2019*  
Developed classification tools to identify mineral compositions within meteorites

**Society of Professional Journalists finalist for news reporting** *May 2017*

**Phi Beta Kappa** *May 2017*

**Summer of Applied Geophysical Experience** *June 2016*