Kathleen E. Abbott

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Education

MIT-WHOI Joint Program in Oceanography — Cambridge, MA
PhD student in physical oceanography — *2020 - present*

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

Research Experience

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

- Developed maps of nighttime radiance to understand and visualize changes in light pollution over time in a dark-sky park
- Collected field data for GIS projects including exotic species classification and backcountry campsite use

Helen Fellow — *Sept. 2018 - Aug. 2019*

- Developed computational techniques using Python, High Performance Computing to detect (sub)mesoscale eddies in Northwestern Atlantic Ocean using satellite data
- Adapted Lagrangian particle tracking code to backtrack bluefin tuna larvae in Gulf of Mexico

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

- Collected field data such as streamflow, water quality grab samples, irradiance and anadromous fish activity
- Led GIS and data science projects including modeling riparian shade and vegetation, analyzing Klamath River water quality and assessing low-streamflow conditions in Trinity River watershed
- Organized four volunteer watershed restoration projects in Santa Rosa region after wildfires

UC Berkeley Department of Earth and Planetary Sciences — Berkeley, CA
Researcher — *Aug. 2016 - Dec. 2017*

- Developed technique with Professor Mark Richards to estimate age and deformation of inflationary lava flows in hotspot regions
- Built models with Matlab of seafloor bathymetry subjected to loading by inflationary lobes

Summer of Applied Geophysical Experience (Los Alamos National Lab) — Santa Fe, NM
Researcher — *June 2016 - July 2016*

- Collected data in the field using seismic reflection and refraction, gravity measurements, magnetotellurics, transient electromagnetics (TEM) and well logging
- Analyzed TEM and well data in the Buckman Well Field to investigate source of groundwater hydrological anomaly

UC Berkeley College of Engineering — Berkeley, CA
Environmental Engineering Research Intern — *May 2015 – Aug. 2015, July 2016 – Aug. 2016*

- Conducted research with PhD student Gabrielle Boisrame on connection between fire and groundwater flow in Yosemite National Park's Illilouette Creek Basin
- Used time-domain reflectrometry probes to gather soil moisture data and pressure chamber to measure water potential
- Analyzed data and gathered satellite photos of region to study

Work Experience

The Daily Californian — Berkeley, CA
Managing Editor — *Aug. 2015 - May 2016*

- Held No. 2 position at award-winning newspaper, managing a staff of more than 200 students
- Oversaw print production four times per week and a constantly updated website

Staff Representative *May 2017 – August 2017*

- Organized and financially managed summer orientation and annual retreat to Lake Tahoe
- Served as confidential resource for staff members needing advice or conflict resolution

Night Editor *December 2014 – April 2015*

- Held responsibility for night production, last person to approve paper before submitting to printers
- Mentored copy editors through process of writing headlines, copy editing stories

Senior Staff Writer *August 2013 – December 2014, August 2016 – May 2017*

- Wrote more than 75 stories on Berkeley goings-on, scientific news, sexual assault and student government

California Academy of Sciences San Francisco, CA

Education Intern *May 2014 - Aug. 2014*

- Designed displays and enrichment activities on California geology and owl-pellet dissections for the Academy's Naturalist Center
- Organized the center's extensive rocks and mineral collections

Teaching and Mentoring

American Museum of Natural History New York, NY

Helen Fellow *Sept. 2018 - Aug. 2019*

- Mentored six high school girls in computational science analysis of satellite data
- Developed own curriculum for twice-weekly two-hour lessons, available at https://github.com/amnh/BridgeUP-STEM-Oceans-Six

Luther Burbank and West Side elementary schools Sonoma County, CA

AmeriCorps Member *Jan. 2018 - Apr. 2018*

- Taught six-week curriculum on watersheds and water quality to more than 50 elementary and middle-school students

CalTeach Berkeley, CA

Student Teacher at Willard Middle School *Jan. 2014 - May 2014*

- Worked in a fieldwork placement in a local Berkeley school teaching middle-school math

Publications

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*

Presentations

Abbott K, Lindo-Atichati D. Mesoscale eddy-carbon interactions in the Sargasso Sea. Oral presentation at: International Union of Geophysics and Geodesy General Assembly; 2019 July 8 - 18; Montreal, QC.

Abbott K, Lindo-Atichati D, McWilliams J, Gula J. Visualizing (sub)mesoscale eddy dynamics in the Sargasso Sea. Poster presented at: American Meteorological Society Atmospheric and Oceanic Fluid Dynamics Meeting; 2019 June 24 - 28; Portland, ME.

Abbott K, Lindo-Atichati D, McWilliams J, Gula J. Mesoscale and submesoscale eddy dynamics in the Northwestern Atlantic. Poster presented at: Association for the Sciences of Limnology and Oceanography Aquatic Sciences Meeting; 2019 Feb. 23 - March 2; Puerto Rico, U.S.

Abbott K, Heyvaert C, Turner R, Creager, C. Klamath River Baseline Water Quality Assessment. Oral presentation at: Spring 2018 Klamath Basin Monitoring Program meeting; 2018 May 2-3; Yreka, Calif.

Abbott K, Le L, Butkus S. Seeing the 'Random Forest' for the Trees: Predicting Riparian Vegetation in Mark West Creek. Poster presented at: 36th Annual Salmonid Restoration Conference; 2018 Apr. 11-14; Fortuna, Calif.

Awards and Honors

National Science Foundation Graduate Research Fellowship *2020-2025*

American Meteorological Society Graduate Student Fellowship *2020-2021*

Ida M. Green Fellowship *2020-2021*

AMNH Hackathon "Most innovative solution" *Feb. 2019*
Developed clustering and classification tools to identify mineral compositions within meteorites

Society of Professional Journalists finalist for news reporting *May 2017*
Broke news of sexual harassment violations within University of California system

Phi Beta Kappa *May 2017*