

Morgan Selby - Curriculum Vitae

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Education

B.A. in Environmental Chemistry and Education, *magna cum laude* May 2023

Colby College, Waterville, ME

Relevant Experience

Associate Scientist I

2023 - present

Cooperative Institute for Research in Environmental Science, University of Colorado Boulder

- Measured atmospheric volatile organic compounds (VOCs) via integrated whole air samples and a custom two channel custom gas chromatography mass spectrometer.
- Participated in the multi-agency and international field campaign, AEROMMA (Atmospheric Emissions and Reactions Observations in Megacity and Marine Areas).
- Contributed to troubleshooting and performing maintenance on custom two column GC-MS (ACCBAR).
- Flew and collected atmospheric whole air samples based on meteorological, spatial, and chemical environmental factors aboard the DC-8 research aircraft.
- Conducted in-situ and canister sample calibrations using dynamic calibration system.
- Reduced chromatography data from field and laboratory experiments through the program TERN.
- Analyzed AEROMMA data in Igor.
- Expanded upon previously existing Igor code to improve information recorded from the dynamic calibration system.
- Built ascarite traps for the first column of the GC-MS.

Atmospheric Chemistry Research Assistant

2021-2023

Chemistry Department, Colby College

- Investigated VOCs across Maine forest types and South Portland heated oil tanks.
- Designed and executed field data collection using thermal desorption (TD) tubes.
- Managed instrument calibration via the calculation and generation of liquid phase GC-MS standards.
- Quantitatively and qualitatively analyzed TD-GC-MS spectra for the accurate identification of field samples.
- Improved design and built a new iteration of a custom automated drone sampling box.
- Flew drone and collected arial TD samples to measure VOC concentrations above the forest canopy.

Pedagogical Partner Learning Assistant

2022-2023

Center for Teaching and Learning, Colby College

- Utilized education research and coursework to support Earth Systems Chemistry professors in activity and pedagogy development.
- Individually worked with students to build positive learning strategies.
- Crafted and taught curriculum for weekly supplemental instruction sessions.
- Acted as a liaison between students and professors to advocate for student needs and facilitate effective communication.

Organic Chemistry Tutor

2022-2023

Chemistry Department, Colby College

- Selected as a tutor due to outstanding performance in Organic Chemistry I and II.
- Personally tutored students in course material and provided intensive exam prep.
- Designed and implemented supplemental materials to facilitate student achievement.

Presentations

"Investigation of Atmospheric Volatile Organic Compounds in Forest and Coastal Maine Locations" Colby Chemistry Seminar, speaker. Waterville, ME. May 2023.

"Investigation of Atmospheric Volatile Organic Compounds in Forest and Coastal Maine Locations" Colby Undergraduate Summer Research Symposium, poster. Waterville, ME. August 2022.

"The Distribution of Biogenic Volatile Organic Compound Emissions Across Maine Forest Types" Colby Undergraduate Summer Research Symposium, poster. Waterville, ME. August 2021.

Leadership/Engagement

Watershed High School (guest presenter)	October 2023
Student Airborne Research Program (flight mentor)	June 2023
Children's Discovery Museum (volunteer)	2022-2023
Waterville Junior High (student teacher)	January 2023
Colby Women's Volleyball (team captain)	2021-2022

Honors and Awards

Maine Section of the American Chemical Society Outstanding Student Award in Chemistry	2023
Stanislav J. Presolski Award	2023
Mary Bierwirth Award	2023

Chi Epsilon Mu Award

2020

G.R.I.T Award

2019

Academic Memberships

Phi Betta Kappa

2023