

Victoria Treadaway  
victoria.treadaway@noaa.gov

## EDUCATION

---

University of Rhode Island Graduate School of Oceanography, Narragansett, RI  
**Ph.D. Oceanography** **2019**

Thesis: "Behavior and Transport of Organic Acids in the Troposphere using Observational Data and Models"

University of Rhode Island Graduate School of Oceanography, Narragansett, RI  
**M.S. Oceanography** **2015**

Thesis: "Measurement of Formic and Acetic Acid in Air by Chemical Ionization Mass Spectroscopy: Airborne Method Development"

Linfield College, McMinnville, OR  
**B.S. Chemistry** **2010**

## RESEARCH EXPERIENCE

---

Cooperative Institute for Research in Environmental Science, University of Colorado Boulder  
**Research Scientist I** **2023 - present**

- Measured atmospheric volatile organic compounds (VOCs) via integrated whole air samples and a custom two channel custom gas chromatography/mass spectrometer (GC/MS).
- Performed troubleshooting and basic maintenance on the GC/MS
- Reduced chromatography data with TERN, an IGOR-based chromatographic peak fitting software
- Analyzed data using IGOR
- Co-developed and deployed an updated cleaning system for the WAS system with updated LabVIEW MICAS software
- Co-developed and deployed a new calibration system for the GC/MS with updated LabVIEW MICAS software
- Supervised an associate scientist and graduate student during the AEROMMA field campaign

University of Miami, Rosenstiel School of Marine and Atmospheric Science  
**Postdoctoral Associate** **2019 - 2022**

- Studied chemical transport in the Asian Summer Monsoon
- Collected volatile organic compounds using multiple Whole Air Sampler (WAS) systems for high altitude aircraft
- Performed chemical analysis using Gas Chromatography/Mass Spectrometry/Flame Ionization Detection/Electron Capture Detection (GC/MS/FID/ECD)
- Analyzed data using Python and IGOR

University of Rhode Island Graduate School of Oceanography  
**Research Assistant** **2011 – 2019**

- Performed chemical analysis using High Performance Liquid Chromatography (HPLC) and Chemical Ionization Mass Spectrometry (CIMS)
- Developed calibration protocols for CIMS
- Analyzed data using Matlab, Python, and NCL

University of Rhode Island Graduate School of Oceanography  
**Carbon, Hydrogen, and Nitrogen (CHN) Elemental Analyzer Operator** **2016 – 2017**

National Center for Atmospheric Research  
**Advanced Study Program Graduate Student Visitor** **Fall 2016**

Delta Environmental Laboratories, LLC  
**Technical Staff** **2010-2011**

- Collected environmental samples
- Analyzed water and sediment samples for biological and chemical oxygen demand, particle size, and total organic carbon
- Coordinated daily laboratory activities
- Assembled and submitted CA Water Quality Control Board proposals
- Prepared client laboratory reports and invoices

## TEACHING EXPERIENCE

---

University of Rhode Island

- Teaching Assistant – Living by the Ocean **Spring 2019**
- Teaching Assistant – Climate Change and the Oceans **Fall 2018**
- Teaching Assistant – Chemical Oceanography **Spring 2015, 2016, & 2018**

Guest Lecturer – Climate Change and the Oceans **Fall 2018**

Guest Lecturer – Introduction to Marine Pollution **Spring 2017**

Guest Lecturer – Summer Undergraduate Research Fellowship in Oceanography **Summer 2015 – 2018**

## FIELD EXPERIENCE

---

Atmospheric Emissions and Reactions Observed from Megacities to Marine Areas (AEROMMA)	Summer 2023
Asian Summer Monsoon Chemical and Climate Impact Project (ACCLIP)	Summer 2021 & 2022
Dynamics and Chemistry of the Summer Stratosphere (DCOTSS)	Summer 2021
Front Range Air Pollution and Photochemistry Experiment (FRAPPÉ) <ul style="list-style-type: none"> <li>Primary CIMS Operator</li> </ul>	Summer 2014
R/V Endeavor Cruise 575 <ul style="list-style-type: none"> <li>Wet Chemistry Supervisor</li> </ul>	February 2015
R/V Atlantic Explorer Bermuda-Atlantic Time Series (BATS) Cruise	September 2013
Deep Convective Cloud and Chemistry Experiment (DC3)	Summer 2012

## PUBLICATIONS

H INDEX = 4

- 
- Warren P. Smith, Laura L. Pan, Douglas Kinnison, Elliot Atlas, Shawn Honomichl, Jun Zhang, Simone Tilmes, Rafael P. Fernandez, Alfonso Saiz-Lopez, **Victoria Treadaway**, Karina E. Adcock, Johannes C. Laube, Marc von Hobe, Corinna Kloss, Silvia Viciani, Francesco D'Amato, C. Michael Volk, Fabrizio Ravagnani, "Evaluating the Model Representation of Asian Summer Monsoon Upper Troposphere and Lower Stratosphere Transport and Composition using Airborne In Situ Observations", *JGR Atmos*, in review, 2023
  - Treadaway, V.**, Atlas, E., Schauffler, S., Navarro, M., Ueyama, R., Pfister, L., Thornberry, T., Rollins, A., Elkins, J., Moore, F., Rosenlof, K., "Long-range Transport of Asian emissions to the West Pacific tropical tropopause layer", *J. Atmos Chem*, <https://doi.org/10.1007/s10874-022-09430-7>, 2022.
  - Xin Chen, Dylan B Millet, ..., **Victoria Treadaway**, Patrick R Veres, James Walega, Carsten Warneke, Rebecca A Washenfelder, Petter Weibring, Bin Yuan, "On the sources and sinks of atmospheric VOCs: an integrated analysis of recent aircraft campaigns over North America", *Atmos. Chem. Phys.*, <https://doi.org/10.5194/acp-19-9097-2019>, 2019.
  - Treadaway, V.**, Heikes, B.G., McNeill, A S., Silwal, I K C., O'Sullivan, D. W., "Measurement of formic acid, acetic acid, hydrogen peroxide, and methyl peroxide in air by chemical ionization mass spectrometry: airborne method development", *Atmos. Meas. Tech.*, 11. 1901-1920, [doi.org/10.5194/amt-11-1901-2018](https://doi.org/10.5194/amt-11-1901-2018), 2018.
  - Heikes, B G., **Treadaway, V.**, McNeill, A S., Silwal, I K C., O'Sullivan, D. W., "An ion-neutral model to investigate chemical ionization mass spectrometry analysis of atmospheric molecules -

application to a mixed reagent ion system for hydroperoxides and organic acids”, *Atmos. Meas. Tech.*, 11, 1851 – 1881, doi.org/10.5194/amt-11-1851-2018, 2018.

6. O’Sullivan, D. W., Silwal, I. K. C., McNeill, A. S., **Treadaway, V.**, and Heikes, B. G., “Quantification of gas phase hydrogen peroxide and methyl hydroperoxide in ambient air: Using atmospheric pressure chemical ionization mass spectrometry with O<sub>2</sub><sup>-</sup>, O<sub>2</sub><sup>-</sup> (CO<sub>2</sub>) reagent ions”, *Int. J. Mass Spectrom.*, 424, 16-26, https://doi.org/10.1016/j.ijms.2017.11.015, 2017.

## PRESENTATIONS

---

- “Distributions and correlations of organic trace gases measured during the Asian Summer Monsoon Chemical and Climate Impact Project (ACCLIP)” Oral Presentation, AGU Fall Meeting, San Francisco, CA **December 2023**
- “Tropical Cyclone Impacts on Upper Tropospheric Halocarbon and Hydrocarbon Mixing Ratios” Poster Presentation, 7<sup>th</sup> Annual SPARC General Assembly, Boulder, CO **October 2022**
- “The Role of Deep Convection on Upper Tropospheric Chemical Composition” Invited Talk, University of Miami COMPASS Seminar **October 2020**
- “Formic and Acetic Acid Observations over Colorado by Chemical Ionization Mass Spectrometry and Organic Acids’ Role in Air Quality”, Poster Presentation, AGU Fall Meeting, San Francisco, CA **December 2015**
- “Near surface to upper tropospheric formic and acetic acid during FRAPPÉ and DC3”, Oral Presentation, Front Range Air Pollution and Photochemistry Experiment Science Team Meeting, Boulder, CO **May 2015**
- “Observations of formic and acetic acid by chemical ionization mass spectrometry in the Deep Convective Clouds and Chemistry Experiment”, Poster presentation, AGU Fall Meeting, San Francisco, CA **December 2013**
- “Surface-enhanced Raman scattering of p-aminothiophenol on Ag<sub>100-x</sub>Au<sub>x</sub> alloy nanoparticles”, Poster Presentation, American Chemical Society National Meeting, Salt Lake City, UT **March 2009**

## AWARDS

---

- NCAR's Computational & Information Systems Laboratory Core Hour Award **2018**
- Travel Support for the ACCORD Fire Data Analysis Workshop, NCAR **2017**
- NCAR Advanced Study Program Graduate Student Visitor Stipend **2016**
- Webb Family Endowment Fund for Oceanography, University of Rhode Island **2015**
- Alumni Award, University of Rhode Island **2015 & 2018**

## SERVICE AND COMMUNITY OUTREACH

---

### Ad Hoc Reviewer

- *Journal of Geophysical Research: Atmospheres*
- *EGUsphere*
- *ACS Earth and Space Chemistry*

AGU Outstanding Student Presentation Awards Judge

**2023**

GLOBE International Virtual Science Symposium Judge

**2017, 2019 - 2023**

### Oceanbites Writer

**2017 – 2018**

- Translate journal articles for the general population
- My articles can be found at [oceanbites.org/author/vtreadaway/](https://oceanbites.org/author/vtreadaway/)

Bay Informed Discussion Series - A graduate student led lecture series explaining scientific research to the general public

- Committee Member **2016-2019**
- Lecturer - Title: *Storms on the Horizon: Climate Change and Weather* **June 2017**

URI Endeavor Open House Tour Guide

**October 2017 & 2018**

Metcalf Institute Science Immersion Workshop for Journalists

**Summer 2016, 2017, & 2018**

- Guide and Science Translator

Science Exploration Volunteer - Volvo Race Science Exploration Zone **2018**

**May 2015 &**

South Kingstown High School Science Fair Judge

**January 2017**

NCAR Super Science Saturday

**November 2016**

## MEMBERSHIPS

---

American Chemical Society

American Geological Union

American Meteorological Society

- Board of Early Career Professionals Member **2021 – present**
- Board of Early Career Professionals Chair-Elect **2022 – 2023**
  - Program Chair for the 12<sup>th</sup> Annual AMS Conference for Early Career Professionals at the AMS Annual Meeting January 2024
- Board of Early Career Professionals Chair **2024 – present**

Global Learning and Observations to Benefit the Environment Program (GLOBE)

URI Graduate Assistants United Union

- Chair of the Speak Out for Science Committee **2016 – 2019**

- Secretary

**2017-2018****SKILLS & WORKSHOPS**

---

**Advanced** Matlab, Microsoft Office Suites**Intermediate** NCAR Command Language (NCL), UNIX environment, IGOR, Python**Beginner** Fortran, Weather Research and Forecasting Model, ARC GIS, MUSICA, LabVIEW

Unlearning Racism in Geoscience (URGE)

**Spring 2021**

Fundamentals of Atmospheric Chemistry and Aerosol Modeling

**August 2018**

Introduction to Jupyter Notebooks and Python Programming

**July 2018**

ACCORD Fire Data Analysis Workshop

**July 2017**

Weather Research and Forecasting (WRF) Model Tutorial

**July 2016**