

# Nina Millicent Whitney

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## EDUCATION

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- PhD**, *Iowa State University*; Ames, Iowa 2020  
Geology and Environmental Science; Supervisor: Dr. Alan Wanamaker  
Dissertation: *Using Modern and Paleoceanographic Isotopic Systems to Reconstruct Late Holocene Temporal Oceanographic Variability in the Rapidly Warming Gulf of Maine*
- Master of Science**, *University of Maine*; Orono, Maine 2015  
Quaternary and Climate Studies; Supervisor: Dr. Karl Kreutz  
Thesis: *Reconstructing Late Holocene hydrographic variability in the Gulf of Maine using oxygen isotopes from a continuous, high-resolution, *Arctica islandica* shell-based record*
- Bachelor of Arts**, *Carleton College*; Northfield, Minnesota 2012  
Geology, *Magna cum laude*; Supervisors: Dr. Brennan Jordan and Dr. Cameron Davidson  
Thesis: *Geochemical analysis of Tertiary dikes emplaced in the Hrafnarfjörður central volcano, northwest Iceland: Implications for dike origin*

## PROFESSIONAL APPOINTMENTS

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- Student Engagement Lead, Research Assistant Professor  
*Marine and Coastal Science Program, Western Washington University* March 2022 - present
- NOAA Climate and Global Change Postdoctoral Fellow  
*Woods Hole Oceanographic Institution* August 2020 - present
- Visiting Assistant Professor  
*Geology, Carleton College* March 2020 – June 2020
- Graduate Teaching/Research Assistant  
*Geology, Iowa State University* May 2016 – May 2020
- Environmental Science Fellow  
*Environmental Science, Iowa State University* August 2015 – May 2016
- Climate Change Institute Research Assistant  
*Climate Change Institute, University of Maine* September 2013 – May 2015

## PUBLICATIONS

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### *Refereed Publications*

- (7) Kilbourne, KH, Wanamaker, AD, Moffa-Sanchez, P, Reynolds, DJ, Amrhein, DE, Butler, PG, Gebbie, G, Goes, M, Jansen, MF, Little, CM, Moreno-Chamarro, E, Ortego, P, Otto-Bliesner, BL, Rossby, T, Scourse, J, **Whitney, NM**, (2022). Atlantic circulation change still uncertain. *Nature Geoscience*, 15, 165–167, doi.org/10.1038/s41561-022-00896-4.
- (6) Lower-Spies, EE, **Whitney, NM**, Wanamaker, AD, Introne, DS, Kreutz, KJ, (2020). A 250-year, decadal-resolved, radiocarbon time history in the GoM: Implications for ocean circulation in the Northwestern Atlantic. *Journal of Geophysical Research: Oceans*, 125, e2020JC016579, doi: 10.1029/2020JC016579.
- (5) **Whitney, NM**, Wanamaker, AD, Switzer, ME, Pettigrew, NR, (2020). Using stable isotopes as tracers of water masses and nutrient cycling processes in the Gulf of Maine. *Continental Shelf Research*, 206, 104210, doi: 10.1016/j.csr.2020.104210.
- (4) **Whitney, NM**, Johnson, BJ, Dostie, PT, Luzier, K, Wanamaker, AD, (2019). Paired bulk organic and individual amino acid  $\delta^{15}\text{N}$  analyses of bivalve shell periostracum: A paleoceanographic proxy for water source variability and nitrogen cycling processes. *Geochimica et Cosmochimica Acta*, 254, 67-85, doi:10.1016/j.gca.2019.03.019.
- (3) Wanamaker, AD, Griffin, SM, Ummenhofer, CC, **Whitney, NM**, Black, B, Parfitt, R, Lower-Spies, EE, Introne, DS, Kreutz, KJK, (2019). Pacific climate influences on ocean conditions and extreme shell growth events in the Northwestern Atlantic (Gulf of Maine). *Climate Dynamics*, 52, 6339–6356, doi:10.1007/s00382-018-4513-8.
- (2) Mette, MJ, **Whitney, NM**, Ballew, J, and Wanamaker, AD, (2018). Unexpected isotopic variability in biogenic aragonite: A user issue or proxy problem? *Chemical Geology*, 483, 286 – 294, doi:10.1016/j.chemgeo.2018.02.027.
- (1) **Whitney, NM**, Wanamaker, AD, Kreutz, KJ, and Introne, DS, (2017). Spatial and temporal variability in the  $\delta^{18}\text{O}_w$  and salinity compositions of Gulf of Maine coastal surface waters, *Continental Shelf Research*, 137, 163-171, doi10.1016/j.csr.2017.02.006.

### *Non-refereed Publications*

- (1) Wanamaker, AD, Mette, MJ, and **Whitney, NM**, (2016) The potential for the long-lived bivalve *Arctica islandica* to contribute to our understanding of past AMOC dynamics, *US CLIVAR Variations*, 14(3), 13-19.

## TEACHING

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### *Carleton College*

#### **Instructor of Record**

*Introduction to Geology with Lab* (GEOL 110; 6 credits, 37 students); 2020Sp

Designed the online course (moved online due to COVID-19); designed and administered the online laboratories; taught the course through synchronous meetings and asynchronous lecture videos; designed and assigned formative and summative assessments; sole individual with student contact hours.

### *Iowa State University*

#### **Instructor of Record**

*Introduction to Oceanography* (GEOL/ENVSC 108; 3 credits, 73 students); 2019F

Designed the course; chose the textbook; taught the course, including through giving lectures, assigning think-pair share activities, and leading group discussions; Designed full-class activities; designed and assigned formative and summative assessments; sole individual with student contact hours

*Environmental Geology: Earth in Crisis* (GEOL/ENVS 101 XW; online; 3 credits; 56 students) 2018Su

Administered the course; sole individual with student contact hours for laboratories

*Introduction to Oceanography* (GEOL/ENVSC 108; 3 credits; 85 students) 2017F

Designed the course; chose the textbook; taught the course, including through giving lectures, assigning think-pair share activities, and leading group discussions; Designed full-class activities; designed and assigned formative and summative assessments; sole individual with student contact hours

*Introduction to Oceanography* (GEOL/ENVSC 108; 3 credits; 75 students) 2016F

Designed the course; chose the textbook; taught the course, including through giving lectures, assigning think-pair share activities, and leading group discussions; designed and assigned formative and summative assessments; sole individual with student contact hours

#### **Teaching Assistant**

*Earth and Space Science for Elementary Education Majors: Laboratory* (GEOL 106L; 1 credit; 2 sections; 36 students); 2019S

Adapted and coordinated laboratories, taught the laboratories, which included labs on interpreting mapped data on plate tectonics and seismic events, labs using stream tables and an augmented reality sand box, labs on solar and infrared radiation; sole individual with student contact hours for laboratories.

*Earth and Space Science for Elementary Education Majors: Laboratory* (GEOL 106L; 1 credit); 2018F

Taught the laboratories, which included labs on interpreting mapped data on plate tectonics and seismic events, labs using stream tables and an augmented reality sand box, labs on solar and infrared radiation; sole individual with student contact hours for laboratories.

## TEACHING (continued)

*History of the Earth: Laboratory* (GEOL 102L; 3 credits; 2 sections; 25 students) 2018S

Taught the laboratories, which included labs on fossil identification, labs on microfossil biostratigraphy and assemblage dating, labs on Pleistocene migration; sole individual with student contact hours for laboratories

*Glacial and Quaternary Geology* (GEOL 474/574; 3 credits; ~15 students) 2017S

Assisted in lectures and laboratories; designed and graded formative assessment quizzes; sole instructor for three laboratories

### **Lecture Assistant**

*The Earth* (GEOL 100; 3 credits; 114 students) 2018F

Graded lecture assignments and exams

### **Guest Lecturer**

*Introduction to Oceanography* (GEOL/ENVSC 108; 3 credits; 93 students); 2018F

Instructed 3 of the class periods on plastics in the oceans, and the origins of earth and oceans

## MENTORING AND SUPERVISING

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### *Woods Hole Oceanographic Institution*

#### **Undergraduates**

Supervisor for Maya Feldberg-Bannatyne, WHOI guest student (summer) 2021

Mentor for Carson Wiggins, WHOI guest student (summer) 2021

### *Iowa State University*

#### **Undergraduates**

Supervisor for Dana Mineart, lecture assistant 2019

Mentor for Ian Searles, independent research project 2019

Co-supervisor for Karine Holmes, laboratory assistant 2018

Co-supervisor for Daniel Fullick, laboratory assistant 2018

Supervisor for Ian Searles, laboratory assistant 2018-2019

Supervisor for Gabrielle Heidrich, laboratory assistant 2018-2019

Supervisor for Owen Tazelaar, laboratory assistant 2018

Co-Supervisor for Alexis Gruber, laboratory assistant 2017-2018

Supervisor for Bailey Nash, lecture assistant 2017

Co-Supervisor for Jesse Matt, laboratory assistant 2016-2017

Mentor for Katie Luzier, independent research project 2016-2017

Supervisor for Aubrey Foulk, lecture assistant 2016

## HONORS AND AWARDS

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### *Unaffiliated*

- Gretchen L. Blechschmidt Award, Geological Society of America, April, 2016.
- “Best Student Talk” (out of 20 presentations), 4th International Sclerochronology Conference, Portland, Maine, June, 2016.

### *Iowa State University*

- Student Marshal, Graduate College Commencement, Spring 2020
- “Pick of the Year” award, Geological and Atmospheric Sciences, Spring 2020
- “Top paper” (talk; out of 20 presentations), Geology Graduate Student Seminar, Iowa State University, Ames, Iowa, March 2019.
- The Honor Society of Phi Kappa Phi invitee (top 10% ISU seniors, professional and graduate students), Spring 2019.
- “Pick of the Year” award, Geological and Atmospheric Sciences, Spring 2018
- “Top paper” (talk; out of 26 presentations), Geology Graduate Student Seminar, Iowa State University, Ames, Iowa, March 2018.
- John Lemish Award for outstanding research excellence, Spring 2017
- “Outstanding Contributions” award, Geological and Atmospheric Sciences, Spring 2017.
- “Top paper” (talk; out of 19 presentations), Geology Graduate Student Seminar, Iowa State University, Ames, Iowa, March 2016.

### *University of Maine*

- Golden Key International Honour Society nominee (top 15% of class), Spring 2015.

## FELLOWSHIPS, SCHOLARSHIPS, AND GRANTS

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- NOAA/UCAR Climate and Global Change Postdoctoral Fellowship, August 2020-July 2022
- Many Voices Scholarship, Union of Concerned Scientists, to attend the Gulf of Maine 2050 International Symposium, Portland, Maine, November 4-8, 2019 (\$910)
- Bruce Bowen Fellowship recipient, Department of Geological and Atmospheric Sciences, Iowa State University, January 2017 (\$5,000)
- Geological Society of America Graduate Student Research Grant, Principal Investigator, 2016 (\$2,500)
- Brown Graduate Fellowship recipient, Iowa State University, Fall 2015-Spring 2016 (\$10,000)
- Environmental Science Fellowship, August 2015-August 2016
- F. Wendell Miller Scholarship nominee, Spring 2015 (\$15,000, declined)

## RESEARCH EXPERIENCE

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### *Woods Hole Oceanographic Institution*

2020-present

- Analyzed Last Millennium Ensemble (LME) simulations of the Community Earth System Model from the National Center for Atmospheric Research using Python coding language.
- Used LME simulations to interpret geochemical proxy records from the Gulf of Maine in the context of larger spatial and longer temporal scales.
- Working to develop an *Arctica islandica* chronology and high-resolution oxygen isotope record from the Mid-Atlantic Bight Region.
- Participated as cruise scientist, Particulate Carbon Gulf of Maine Biogeochemistry Cruise. UNOLS URI *R/V Endeavor*. Gulf of Maine. April 7<sup>th</sup> – 12<sup>th</sup>, 2021.
- Participated as cruise scientist, *F/V ESS Pursuit*. Mid-Atlantic Bight. September 4<sup>th</sup> – 9<sup>th</sup>, 2021.

### *Iowa State University*

2014-2020

- Collected and analyzed *Arctica islandica* carbonate and periostracum samples for bulk nitrogen isotope analysis using an Elemental Analyzer interfaced with a Thermo Delta Plus XL Isotope Ratio Mass Spectrometer.
- Prepared and collected *Arctica islandica* samples for radiocarbon analyses using a Dremel hand drill.
- Collected and analyzed oxygen isotopes in *Arctica islandica* shells using a Merchantek Micromill and a gas bench interfaced with a Thermo Delta Plus XL Isotope Ratio Mass Spectrometer.
- Designed an experiment testing the reproducibility of oxygen isotope measurements in *Arctica islandica* shells.
- Constructed *Arctica islandica* master growth chronology using SHELLCORR, ARSTAN, and COFECHA.
- Prepared *Arctica islandica* shells for dating and isotopic analysis
- Collected, prepared, and analyzed water samples for oxygen isotopes of water using Niskin bottles attached to a CTD device and a Picarro L1102-i Cavity Ring-Down Spectroscopy analyzer.
- Participated as cruise scientist, University of Maine Physical Oceanography Group Research Cruise. NOAA *R/V Pisces*. Gulf of Maine. October 4<sup>th</sup> – 13<sup>th</sup>, 2016.

### *Bates College (visited for PhD research)*

Summer 2017, November 2018

- Collected, prepared, ran, and analyzed compound specific nitrogen isotopes of amino acids in *Arctica islandica* carbonate, periostracum, and tissue samples using a Trace Gas Chromatograph Ultra coupled to a Thermo Delta V Advantage Isotope Ratio Mass Spectrometer.
- Collected, prepared, ran, and analyzed amino acid concentrations in *Arctica islandica* carbonate, periostracum and tissue using gas chromatography flame ionization detection (GC-FID) using an Agilent 6890 N equipped with a HP-ULTRA 1 column.
- Designed methods for compound specific nitrogen isotope analyses of amino acids of *Arctica islandica* carbonate, periostracum, and tissue.

### *University of Maine*

2013-2015

- Collected coastal water samples using hand samples and analyzed using a Picarro L1102-i Cavity Ring-Down Spectroscopy analyzer and a YSI salinity meter.
- Collected and analyzed oxygen isotopes in *Arctica islandica* shells using a Merchantek Micromill and a gas bench interfaced with a Thermo Delta Plus XL Isotope Ratio Mass Spectrometer.
- Participated as cruise scientist, ARAMACC Research Cruise. *R/V G.O. Sars*. North Sea and subpolar North Atlantic. November 9<sup>th</sup>-16<sup>th</sup>, 2014.

## PRESENTATIONS *(first authors are presenting authors for poster and oral presentations)*

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- (22) Wiggins, CC, Ummenhofer, CC, Denniston, RF, Wanamaker Jr., AD, Asmerom, Y, Polyak, VJ, **Whitney, NM**, Basnet, K, Poudel, K, Baral, S. A Coupled Climate Model and Stalagmite Analysis of Last Millennium Shifts in Indian Summer Monsoon Rainfall in Central Nepal. Oral presentation (give virtually), Ocean Sciences Meeting (virtual), February 24 - March 4, 2022.
- (21) **Whitney, NM**, Feldberg-Bannatyne, M, Hughen, K, Ummenhofer, C, Mann, R, Powell, E, Martin, T. Investigating Mid-Atlantic Bight Cold Pool Bottom Temperature Changes Over the Last Two Centuries. Oral presentation (give virtually), Ocean Sciences Meeting (virtual), February 24 - March 4, 2022.
- (20) **Whitney, NM**, Wanamaker, AD, Ummenhofer, CC, Johnson, BJ, Cresswell-Clay, N, Kreutz, KJ. Combining shell-based isotope records with numerical model simulations to investigate the time of emergence of widespread warming of the western North Atlantic shelf. Oral Presentation (given virtually), AGU Fall Meeting (New Orleans, LA and online), December 13-17, 2021.
- (19) Goes, M, Mette, M, **Whitney, NM**, Liu, W, Kilbourne, KH, Wanamaker, AD, Goes, LM. Reconstruction of the main modes of variability of the North Atlantic in the past 600 years using a collection of paleoproxy data. Poster Presentation, AGU Fall Meeting (New Orleans, LA and online), December 13-17, 2021.
- (18) **Whitney, NM**. Using Isotopes Measured in Clam Shells to Reconstruct Late Holocene Temporal Oceanographic Variability on the Rapidly Warming Northwest Atlantic Shelf. Invited presentation. Climate and Paleo Seminar Series, Woods Hole Oceanographic Institution (Woods Hole, Massachusetts; delivered remotely), October 2020.
- (17) Williams, B, Stewart, J, Wanamaker, AD, **Whitney, NM**, Jellison, B, Hernandez, B, Strong, AL, Lavigne, M. Extending northwest Atlantic pH records using the boron isotope-pH proxy in two marine calcifiers in the Gulf of Maine. Poster presentation, Ocean Sciences Meeting (San Diego, California). February 16-21, 2020.
- (16) **Whitney, NM**, Wanamaker, AD, Johnson, BJ, Ummenhofer, CC, Griffin, SM, Lower, EE, Kreutz, KJ, Dostie, PT, Luzier, K, and Introne, DS. Reconstructing components of the Atlantic Meridional Overturning Circulation over the last 300 years using multiple high-resolution geochemical proxies measured in *Arctica islandica* shells. Oral presentation, Ocean Sciences Meeting (San Diego, California). February 16-21, 2020.
- (15) Lavigne, M, Strong, AL, Williams, B, Wanamaker, A, Stewart, J, Jellison, B, Bacall, K, Hernandez, B, Carlon, D, **Whitney, N**. Informing ocean acidification management through paleoceanographic proxy reconstruction of historical Gulf of Maine pH baselines. Oral presentation, AGU Fall Meeting (San Francisco, CA). December 9-13, 2019.
- (14) **Whitney, NM**, Wanamaker, AD, Johnson, BJ, Ummenhofer, CC, Griffin, SM, Lower, EE, Kreutz, KJ, Dostie, PT, Luzier, K, and Introne, DS. Putting recent Gulf of Maine changes into context using a 300-year reconstruction of water properties from *Arctica islandica* shells. Poster presentation, Gulf of Maine 2050 International Symposium (Portland, Maine). November 4-8, 2019.
- (13) **Whitney, NM**, Wanamaker, AD, Johnson, BJ, Ummenhofer, CC, Griffin, SM, Lower, EE, Kreutz, KJ, Dostie, PT, Luzier, K, and Introne, DS. Insights on Atlantic meridional overturning circulation dynamics over the last 300 years using multiple geochemical proxies from an *Arctica islandica* record in the western North Atlantic. Oral presentation, 5<sup>th</sup> International Sclerochronology Conference (Split, Croatia). June 16-20, 2019.

## PRESENTATIONS (continued)

- (12) **Whitney, NM**, Wanamaker, AD, Johnson, BJ, Ummenhofer, CC, Griffin, SM, Lower, EE, Kreutz, KJ, Dostie, PT, Luzier, K, and Introne, DS. A multi-proxy approach to reconstructing surface Atlantic Meridional Overturning Circulation dynamics in the last 250 years. Oral presentation, American Geophysical Union Fall Meeting (Washington, D.C.). December 10-14, 2018.
- (11) Kreutz, KJ, Wanamaker, AD, Griffin, SM, Ummenhofer, CC, Whitney, NM, Black, B, Parfitt, R, Lower-Spies, EE, Introne, DS. A role for Pacific climate variability on extreme events in the Gulf of Maine. Poster presentation, Regional Association of Research on the Gulf of Maine annual meeting (Portland, ME). October 26, 2018.
- (10) **Whitney, NM**, Johnson, BJ, Dostie, PT, Griffin, SM, Lower, EE, Luzier, K, Kreutz, KJ, Introne, DS and Wanamaker, AD. Using bulk and compound specific stable isotopes in *Arctica islandica* shells to reconstruct western North Atlantic ocean dynamics. Oral presentation, 52<sup>nd</sup> Annual Meeting of the North-Central Section of the Geological Society of America (Ames, IA). April 16-17, 2018.
- (9) Wanamaker, AD, Ummenhofer, CC, Griffin, SM, **Whitney, NM**, Black, B, Introne, DS, and Kreutz, KJ. Pacific climate influences on the Gulf of Maine (Northwestern Atlantic). Oral Presentation, Ocean Sciences Meeting (Portland, OR). February 11-16, 2018.
- (8) **Whitney, NM**, Johnson, BJ, Dostie, PT, Luzier, K, and Wanamaker, AD Jr.. Investigating the utility of compound specific stable nitrogen isotopes measured in the periostracum of *Arctica islandica* shells as a proxy for hydrographic dynamics during the Late Holocene in the Gulf of Maine. Poster Presentation, Ocean Sciences Meeting (Portland, OR). February 11-16, 2018.
- (7) **Whitney, NM**, Wanamaker, AD, Griffin, SM, Kreutz, KJ, and Introne, DS. An annually resolved, shell-derived oxygen isotopic record since the late Little Ice Age from the Gulf of Maine: Implications for ocean circulation changes in the western North Atlantic. Oral Presentation, 4<sup>th</sup> International Sclerochronology Conference (Portland, ME). June 5-9, 2016. (**received Best Student Talk award**).
- (6) Wanamaker, AD, Lower, EE, **Whitney, NM**, Griffin, SM, Introne, DS, and Kreutz, KJ. Highly dynamic marine radiocarbon reservoir effect in the Gulf of Maine since AD 1685. Poster Presentation, 4th International Sclerochronology Conference (Portland, ME). June 5-9, 2016.
- (5) **Whitney, NM**, Wanamaker, AD, Kreutz, KJ, Griffin, SM, and Introne, DS. Reconstructing Late Holocene AMOC strength using oxygen isotopes from an annually resolved *Arctica islandica* shell-based record. Poster Presentation, Connecting Paleo and Modern Oceanographic Data to Understand AMOC Over Decades to Centuries (Boulder, CO). May 23-25 2016.
- (4) **Whitney, NM**, Wanamaker, AD, Kreutz, KJ, Griffin, SM, and Introne, DS. An annually resolved, shell-derived oxygen isotopic record since the late Little Ice Age from the Gulf of Maine: Implications for ocean circulation changes in the northwestern North Atlantic. Poster Presentation, Ocean Sciences Meeting (New Orleans, LA). February 21-26, 2016.
- (3) Wanamaker, AD, Griffin, SM, **Whitney, NM**, Kreutz, KJ, Black, B, Lower, EE, and Introne, DS, Challenges and opportunities for developing robust annually resolved paleoenvironmental reconstructions from the oceans. Poster Presentation. Ocean Sciences Meeting (New Orleans, LA). February 21-26, 2016.
- (2) **Whitney, NM**, Wanamaker, AD, Kreutz, KJ, Introne, DS and Griffin, SM. Reconstructing hydrographic variability in the North Atlantic using oxygen isotopes from an annually resolved *Arctica islandica* shell-based record. Oral Presentation, 50<sup>th</sup> Annual Meeting of the Northeastern Section of the Geological Society of America (Bretton Woods, NH). March 23-25, 2015.
- (1) **Whitney, NM**, Wanamaker, AD, Kreutz, KJ, Introne, DS and Griffin, SM. Reconstructing hydrographic variability in the Gulf of Maine using oxygen isotopes from an annually resolved *Arctica islandica* shell-based record. Oral Presentation, Regional Association of Research on the Gulf of Maine annual meeting (Boston, MA). September, 2014.



## INVITED PRESENTATIONS AND LECTURES

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- (5) **Whitney, NM.** Dr. Nina Whitney prepares shell samples from the Mid-Atlantic Bight. Research Show-and-Tell, PAGES Early Career Network North America (delivered remotely), May 2021.
- (4) **Whitney, NM.** Using Modern and Paleoceanographic Isotopic Systems to Reconstruct Late Holocene Temporal Oceanographic Variability in the Rapidly warming Gulf of Maine. Invited lecture, Dr. Bereket Haileab's Geochemistry of Natural Waters course, Carleton College (Northfield, MN; delivered remotely), October 2020.
- (3) Gassett, P, Gordon, Z, Potter, A, Train, H, and **Whitney, NM.** Emerging leaders session: Innovation and change for a climate-ready Gulf of Maine. Panel presentation, Gulf of Maine 2050 International Symposium (Portland, Maine). November 4-8, 2019.
- (2) **Whitney, NM,** and Thatcher, D. Introduction to Climate Change; Invited Lecture in *Energy, Environmental and Resource Economics* (ECOM/ENV). Iowa State University (Ames, Iowa), April 2018.
- (1) **Whitney, NM,** Reconstructing hydrographic variability in the Gulf of Maine using oxygen isotopes from an annually resolved *Arctica islandica* shell-based record. Invited Lecture. Unity College (Unity, Maine), October 2014.

## PROFESSIONAL SERVICE

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### *External*

**Session Co-chair**, Session OC01: “High-Resolution, Geochemical Proxies of Global Change: Progress, Problems and Utility”. Ocean Sciences Meeting, Virtual, February/March 2022.

**Proposal Reviewer**, *National Science Foundation: Arctic Natural Science Program* (1)

**Proposal Panel Reviewer**, Geological Survey of Ireland Geoscience Research Programme Short Call, Fall 2020.

**Journal Reviewer:** *Chemical Geology* (3); *Continental Shelf Research* (1); *Frontiers in Marine Science* (3); *Geochemistry, Geophysics, Geosystems* (1); *Journal of Geophysical Research – Oceans* (1); *Journal of Marine Systems* (1); *Marine Chemistry* (1); *Palaeogeography, Palaeoclimatology, Palaeoecology* (4); *Proceedings of the Royal Society B* (1); *Science of the Total Environment* (1); *Scientific Reports* (1); *The Holocene* (1).

**Session Co-chair**, Session PC006: “High-Resolution, Geochemical Proxies of Global Change: Progress, Problems and Utility”. Ocean Sciences Meeting, San Diego, CA, February, 2020.

**Session Co-chair**, Session T4: “Landlocked but Not Left Out: Contributions to Oceanography by Mid-Continent Scientists”. 52nd Annual Meeting of the North-Central Section of the Geological Society of America. Ames, Iowa. April, 2018.

**Volunteer**, Annual Meeting of the North-Central Section of the Geological Society of America. Ames, Iowa. April, 2018.

**Session Co-chair**, Session PC54A: “High-Resolution Geochemical Proxies of Global Change: Progress, Problems and Utility”. Ocean Sciences Meeting, New Orleans, LA, April, 2018.

**Volunteer**, Annual Meeting of the Northeastern Section of the Geological Society of America. Bretton Woods, NH. March, 2015.

## PROFESSIONAL SERVICE (continued)

### *Internal*

**Committee Member**, WHOI's Education Assembly, Spring 2021 – present.

**Committee Member**, WHOI's Women's Committee, Fall 2021 – present.

**Committee Member**, WHOI Physical Oceanography Department Website Committee, January 2020-present.

**Vice President and Physical Oceanography Representative**, Postdoctoral Association, Woods Hole Oceanographic Institution. Fall 2020 – Fall 2021. Amongst other contributions, was a co-organizer for several panel discussions on components of academic and non-academic careers, including careers outside of academia and negotiating an academic job offer, offered to PhD students and postdocs in the WHOI community.

**Co-organizer**, Geology Graduate Student Seminar, Iowa State University, March 2018.

**Volunteer**, Department of Geological and Atmospheric Sciences website editor, August 2017-present.

**President**, Environmental Science Graduate Student Organization. Iowa State University. May 2017-May 2018. As president, was in charge of organizing the Environmental Science 6<sup>th</sup> Annual Graduate Research Symposium.

**Co-organizer**, Department of Geological and Atmospheric Sciences Brown Bag Seminar Series, Iowa State University, August 2016 – December 2019.

**President**, Geology Graduate Student Organization. Iowa State University. May 2016- May 2017.

**Secretary**, Environmental Science Graduate Student Organization. Iowa State University. May 2016-May 2017.

**Vice President**, Geology Graduate Student Organization. Iowa State University. September 2015-May 2016.

## PROFESSIONAL DEVELOPMENT

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**Participant**, *Mentoring Physical Oceanography Women to Increase Retention (MPOWIR)* mentoring group

**Participant**, *LinkedEarth PaleoHackathon*, February, 2021 (virtual).

**Participant**, *URGE: Unlearning Racism in Geoscience*, Spring 2021 (virtual). Participated in the curriculum, including listening to interviews and reading assigned reading. Participated in discussions and deliverables as part of the WHOI Physical Oceanography Pod, including co-leading one of the sessions.

**Participant**, *URI Society for Women in Marine Science Symposium*, Fall 2020 (virtual).

**Participant**, *Data Carpentry for Oceanographers: Using Python to accelerate research and increase reproducibility*, online workshop, Woods Hole Oceanographic Institution, Fall 2020.

**Participant**, *Diversity in the College Classroom*, Center for the Integration of Research, Teaching and Learning, online course, Fall 2019.

**Participant**, *Preparing Future Faculty* (GR 585), Iowa State University, Fall 2019.

**Participant**, *Advancing Learning Through Evidence-Based Teaching*, Center for the Integration of Research, Teaching and Learning, Network Massive Teaching Open Online Course, Spring 2019.

**Participant**, *COACHing Strong Women in the Art of Persuasion*. Workshop. Ocean Sciences Meeting. February, 2018 (sponsored by the NSF, U.S. DOE, NIH).

**Participant**, 24<sup>th</sup> Annual Dendroecological Fieldweek (NADEF), Cody, Wyoming. July, 2014.

## OUTREACH AND VOLUNTEERING

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- Mentor**, *Falmouth High School College Mentoring Program*, Falmouth High School, Falmouth, MA, Spring 2021-present. Mentoring a low-income student throughout the college and scholarship application process.
- Guest Lecturer**, *Woods Hole Science & Technology Education Program (WHSTEP) Lab Date Live Series*, Woods Hole, MA, April 2021. Delivered a lecture on paleoclimate, open to the general Woods Hole and Falmouth, MA community, including classrooms (delivered remotely).
- Volunteer**, *Tutoring program*, Falmouth Public Schools, Falmouth, MA, Spring 2021. Tutored elementary, middle, and high school students in math.
- Judge**, *Falmouth Academy Middle School Science Fair*, Falmouth Academy, Falmouth, MA, February 2021 (virtual).
- Mentor and Judge**, *MMHS Science Fair*, Mashpee Middle-High School, Mashpee, MA, Fall 2020. Talked with high school students about their research plans for the science fair project. Judged finished science projects (virtual).
- Participant**, *Ask-a-Scientist*, New Heights Charter School, Fall 2020-present. Help to answer questions about the ocean periodically posted by 10<sup>th</sup> grade Earth Science students from New Heights Charter School, which serves primarily BIPOC students.
- Volunteer**, *Academic Coaching Program*, Falmouth High School, Falmouth, MA, Fall 2020-present. Mentoring a high school student on a 504-accommodation plan to assist and support them with remote learning.
- Volunteer**, *Woods Hole Science & Technology Education Program (WHSTEP)*, Mashpee High School, Mashpee, MA, Fall 2020. Presented a lesson on dendrochronology and paleoclimate to an AP Environmental Science class (delivered remotely).
- Participant**, *Project Synergy II*, Art League of Rhode Island, Fall 2020 – present. Working with a local artist to help convey research in a visual way to the general public.
- Guest Lecturer**, *High School Biology*, Berkeley High School, Berkeley, CA, Spring 2020 and Spring 2021. Presented a reoccurring lecture on climate change, paleoclimate, and my research (delivered remotely).
- Panel member**, “Behind the Science of Climate Change”. Ames public library lecture series. May, 2016.
- Geology Secondary Education Outreach Volunteer**, Fall 2015-Fall 2019. Participated in numerous outreach events for elementary, middle, and high school students during my PhD with the primary goal of introducing secondary education students, particularly underrepresented students, to geology and the educational and career opportunities available. Examples of outreach events include the Meeker elementary school science night, visiting preschoolers at the United Community School District, and facilitating workshops for Science Bound and Taking the Road Less Traveled high school and middle school students.
- Judge**, *State Science and Technology Fair of Iowa*. March, 2016.