

Sophia M. Wensman

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RESEARCH INTERESTS

• Isotope Geochemistry • Analytical Chemistry • Environmental Chemistry • Trace Metal Geochemistry

EDUCATION

Ph.D., Ocean, Earth and Atmospheric Sciences: Ocean Ecology and Biogeochemistry 2016-Present
 Oregon State University, Corvallis, OR
 Thesis: “Reconstruction of Human Impacts on the Environment: Insights from Uranium and Lead”
 Advisor: Dr. Alyssa Shiel

Graduate Certificate in College and University Teaching 2020
 Oregon State University, Corvallis, OR

B.S.Ed., Chemistry and Earth & Space Science, 2015
 University of Michigan, Ann Arbor, MI

WORK AND RESEARCH EXPERIENCE

Geochemistry Graduate Research Assistant 2016-Present
 College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, Corvallis, OR

- Calibrating U/Ca Proxy in *Crassostrea gigas* (Oregon Sea Grant: R/SAQ-21-Shiel):
 - Oyster research seeks to improve understanding of oysters as bio-monitors of ocean carbonate chemistry and develop mitigation strategies for culturing oysters in the Pacific Northwest’s increasingly corrosive waters.
- Source identification of lead pollution in ice cores:
 - Pb isotope research seeks to develop new applications of high resolution ICP-MS to trace sources natural and anthropogenic sources of lead recorded in ice cores from antiquity through modern day.

Biogeochemistry Research Assistant 2014-2016
 Biogeochemistry & Environmental Isotope Geochemistry Lab University of Michigan, Ann Arbor, MI

- Assisted with research projects focusing on utilizing mercury stable isotope techniques to trace sources, transport, and fate of mercury through the environment.

Ocean Tracer Scientist, CLIVAR/GO-SHIP P16N 2015
 Scripps Institution of Oceanography, University of California San Diego, San Diego, CA

- Collected water samples using a CTD/Rosette at 95 stations along the P16N line between Honolulu and Alaska.
- Analyzed water samples to determine concentrations of trichlorofluoromethane, dichlorofluoromethane, sulfur hexafluoride, and nitrous oxide using an on board Gas Chromatography and Electron Capture Detection system.

Ocean Tracer Intern 2014
 Joint Institute for the Study of the Atmosphere and Ocean, University of Washington, Seattle, WA

- Investigated the source and magnitude of nitrous oxide production from Hood Canal in Washington using nutrient, oxygen and CTD data gathered from a 4-day research cruise to the Canal.
- Analysis of CFC and N₂O samples using custom built tracer analytical system. Including operating and troubleshooting.

Analytical Chemistry Intern 2013
 Dow Corning Hyde Corporation, Midland MI

- Tested the comparability of nuclear magnetic resonance spectroscopy, infrared spectroscopy, and gas chromatography functionality in measuring silicon-vinyl and silicon-hydrogen levels in Dow Corning products.

FIELD EXPERIENCE

Fieldwork and in situ experiments on Pacific Oysters, Netarts Bay (2 years) 2016-2020

- Experimental design and setup organized and implemented Aug 2016.
- Bi-monthly to monthly staining of Pacific Oysters with manganese and calcein until Aug 2018.
- Subsequent staining experiments to determine optimal timeframe for staining oysters between August 2019 and February 2020

Research Cruises

Cruise	Position	Vessel	Year	Days at Sea
JISAO REU Cruise	Scientist	R/V Clifford A. Barnes	2014	4
CLIVAR/GO-SHIP P16N – Leg 2	CFC Watchstander	R/V Ronald H. Brown	2015	34
Graduate Teaching Cruise	Scientist	R/V Elakha	2017	1
Undergraduate Teaching Cruise	Scientist	R/V Pacific Storm	2017	1
OC523, Student Research Cruise	Chief Scientist	R/V Pacific Storm	2017	2
Graduate Teaching Cruise	Scientist	R/V Elakha	2018	1
Undergraduate Teaching Cruise	Scientist	R/V Oceanus	2018	1
Graduate Teaching Cruise	Scientist	R/V Elakha	2019	1
			Total	45

TEACHING & ADVISING EXPERIENCE

Graduate Teaching Assistant 2015-Present College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, Corvallis, OR

Course No.	Title	Credit Hour	No. of Students	Term/Year
GEO 430/530	Geochemistry	4	27	W17
OEAS 500	Cascadia Field Trip	3	24	F17
eOC 103	Exploring the Deep/Geography of World Oceans	4	55	W18
GEOG 102	Physical Geography	4	41	W18
GEO 431/531	Environmental Geochemistry	3	15	Sp18
OEAS 500	Cascadia Field Trip	3	14	F18
eOC 103	Exploring the Deep/Geography of World Oceans	4	45	F18
GEOG 203	Human Environmental Geography	3	70	W19
eOC 103	Exploring the Deep/Geography of World Oceans	4	52	W19
eGEOG 323	Climatology	4	30	Sp19
OEAS 500	Cascadia Field Trip	3	20	F19
eGEOG 323	Climatology	4	29	W20
eGEOG 323	Climatology	4	25	Sp20

Field and Laboratory Advising 2016-Present

- U/Ca Project: (2016-2018)
 - Provided field experience for 10 undergraduate and 21 graduate students. Students assisted in staining and collection of over 500 oysters throughout the two-year project.
 - Mentored and trained an undergraduate chemistry student at Oregon State University, in proper laboratory safety and
- Other Laboratory Advising (2016-Present)
 - Mentored and trained 2 graduate students in operation of MC-ICP-MS

Ocean Acidification Undergraduate Mentor and Facilitator

2019-2020

Leading and Enabling Adolescent Futures in STEM (LEAFS), College of Engineering, Oregon State University, Corvallis, OR

- Mentored 3 undergraduate engineering students over the course of 6 months in the creation camp curriculum for K-12 students with disabilities focusing on the topic of ocean acidification.
- Co-taught students between grades 9 and 11 during the camp session in January 2020. Activities included understanding pH and the difference between acids and basis, dissecting oysters and examining human CO₂ production.

Undergraduate Teaching Assistant

2013-2014

Course	School	Grade	No. of Students	Semester/Year
Earth Science	Slauson Middle School	6	125	W14
Life Science	Saline Middle School	7	90	F13
Chemistry	Canton High School	11	90	W13

PRESENTATIONS

Wensman, S., Shiel, A., McConnell, JM. 2020. Application of HR-ICP-MS techniques to constrain modern lead pollution sources in Greenland ice. Goldschmidt 2020, Virtual Conference. Video presentation.

Wensman, S. 2020. History recorded in ice: Tracing war, plague, and fingerprinting sources of lead pollution. GEO 431/531. Environmental Geochemistry, Oregon State University, Corvallis, OR. Invited lecture.

Wensman, S., Shiel, A., Waldbusser, G. 2019. Efficacy of utilizing shell plantings to mitigate ocean acidification impacts on oyster (*Crassostrea gigas*) health. Coastal and Estuarine Research Federation, Mobile, AL. Poster presentation.

Wensman, S. 2019. Achievement Rewards for College Scientists Orientation. Corvallis, OR. Invited talk.

Wensman, S. 2019. Achievement Rewards for College Scientists Scholar Award Luncheon. Portland, OR. Poster Presentation.

Wensman, S. 2018. Tracing lead pollution in time and space. GEO 431/531. Environmental Geochemistry, Corvallis, OR. Invited lecture.

Wensman, S. 2018. Imitating nature: Improving oyster health utilizing “artificial oyster reefs”. CEOAS Seminar Series, Corvallis OR. Oral presentation.

Wensman, S. 2014. Production of nitrous oxide in Hood Canal, Washington. REU Intern Presentation. Joint Institute for the Study of the Atmosphere and Ocean. University of Washington, Seattle, WA. Poster presentation.

Wensman, S. 2013. Comparison of NMR, IR, and GC functionality for measuring SiVi and SiH Levels in Dow Corning Products. Dow Corning Analytical Chemistry Department, Midland, MI. Oral presentation.

OUTREACH & ENGAGEMENT

CEOAS Academic Mentoring Program – Mentor

2017-Present

Inspiration Dissemination – Radio Interview

2018

- Interview: “Sophie Wensman how can humans help oysters adapt to stresses from Ocean Acidification?”

Da Vinci Days Festival, Taste the Ocean Exhibit – Volunteer 2017, 2018
Salmon Bowl, National Oceanic Sciences Bowl – Volunteer 2017, 2018
Oregon Sea Grant outreach video “Using Oysters to Decrease Acidic Seawater – Scientist 2017

ORGANIZATIONS & COMMITTEES

CEOAS Unpacking Diversity – Member 2019-Present
Coalition of Graduate Students – Professional Development Chair 2019-2020
Ocean Ecology and Biogeochemistry Graduate Student Night – Organizer 2017-2020
CEOAS Science Communications Group – Member 2017-2019
CEOAS Promotion & Tenure Student Evaluation – Committee Member 2018

CONFERENCES

Goldschmidt 2020 Conference – Oral Presentation 2020
 Abstract: Application of HR-ICP-MS Techniques to Constrain Modern Lead Pollution Sources in Greenland Ice
Coastal and Estuarine Research Federation (CERF) – Poster Presentation 2019
 Abstract: Efficacy of utilizing shell plantings to mitigate ocean acidification impacts on oyster (*Crassostrea gigas*) health.
Oregon Women in Higher Education (OWHE) - Attendee 2018

HONORS & AWARDS

CEOAS Association of Graduate Students Travel Reimbursement Award 2019
 Geology and Geophysics Travel Award 2019
 Geological Society of America Graduate Student Research Grant 2018
 Achievement Rewards for College Scientists (ARCS) scholar award recipient 2016-2018
 Dow Corning Hyde Scholarship & Internship recipient 2013-2014
 University of Michigan Honors 2010, 2011, 2013

COMPUTER SKILLS

Expertise in: R, Fiji (ImageJ), Ocean Data Viewer, OSX, Adobe Illustrator, Dragonfly, Windows, Microsoft Office
Skills in: MATLAB, ArcGIS

PROFESSIONAL MEMBERSHIPS

Geochemical Society, Coastal and Estuarine Research Federation, Geological Society of America

PROFESSIONAL CERTIFICATIONS

Provisional Teaching Certificate, State of Michigan 2015