

Emily Whitaker

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EDUCATION

University of Wisconsin-Madison, Madison, Wisconsin August 2018- Present
Master's of Science: Freshwater and Marine Sciences

Advisor: Dr. Hilary Dugan

- Exploring productivity under lake ice in response to changing climate
- Northeast Climate Adaptation Science Center Fellow
- Teaching Assistant: Zoology 316, Limnology

Spring 2019-Present
Fall 2018, head TA fall 2019

Awards:

- Kenneth Malueg Scholarship Award (\$1,000)
- Anna Grant Birge Award (\$1,500)
- John Jefferson Davis Fund Travel Grant (\$800)

Spring 2019
Spring 2019
Spring 2019

Mentees:

- Alaina Eckert
- Sam Ahler

Winter 2019-
Winter 2019-

Dickinson College, Carlisle, PA

May 2017

Bachelor of Sciences: Physics

Certificate: Social Innovation and Entrepreneurship

Honors:

- Rush Citizen of the Year Spring 2017
 - Recognized for active citizenship, leadership, being a leader and a role model, enacting positive changes, positively contributing to the community, peer accountability, and self-governance
- 1902 Award Spring 2016
 - Awarded to a Junior student who has contributed the most to the good of the college
- Poster Honors: *Increasing the Potential of a Biogas Digester through the use of a Solar Air Heater* 2016

PEER-REVIEWED PAPERS

Reed, D.E., Desai, A.R., **Whitaker, E.C.**, and Nuckles, H. (2019), *Evaluation of low-cost, automated lake ice thickness measurements*. Atmospheric and Oceanic Technology. doi : 10.1175/JTECH-D-18-0214.1

Whitaker, E. C., Reed, D. E., and Desai, A. R. (2016), *Lake ice measurements from soil water content reflectometer sensors*. Limnol. Oceanogr. Methods, 14: 224–230. doi:10.1002/lom3.10083

PREVIOUS EMPLOYMENT EXPERIENCE

Lab Manager and Researcher, Contextual Dynamics Lab, Dartmouth College July 2017-June 2018

- Directed research in an adaptive memory experiment
- Updated lab code (Python2 to Python3)
- Wrote and revised grants, lab papers, and IRB protocols
- Trained, coordinated, and mentored 14 undergraduate research assistants

Cabin Counselor Camp Speers-Eljabar, Dingmans Ferry, PA

Summers, 2012-2014

SKILLS

- **Computer:** Vernier software, Campbell sensors, HOBOWare, LabVIEW, Environmental Chambers, ExpressScribe, Python, Jupyter Notebooks, GitHub, Docker, Overleaf, R
- **Other:** Research and development, field work, dry and wet lab experience, sensor development, PID, Arduino, soldering, qualitative research

RESEARCH EXPERIENCE

Thesis: *Where do contaminants accumulate on gravity-capillary waves?* Fall 2016-Spring 2017
Dickinson College, Carlisle, PA, Advisor: Dr. Stephen Strickland

- Examined size discrepancy of where particles fall on induced Faraday waves using Matlab imaging
- Created nanoparticles and small-scale plasma chamber

Thesis: *Exploring the Feasibility of a Colocation Project in Carlisle PA* Spring 2017
Dickinson College, Carlisle, PA, Advisor: Dr. Helen Takacs

- Created an interview protocol which was used to interview service providers, clients, and local leaders
- Synthesized collected data and historical data to better understand the need of colocation in the region

Anthropogenic Beach Manipulation: The Impact of Groins on Sand Distribution Fall 2016
Dickinson College, Carlisle, PA, Advisor: Dr. Jordan Hayes

- Developed and executed experiment including field work and data collection
- Performed wet-lab data analysis using a Laser Scattering Particle Size and Distribution Analyzer

Interfacing a Solar Air Heater with a Methane Producing Biogas Digester Spring-Fall 2016
Dickinson College, Carlisle, PA, Advisors: Dr. Hans Pfister and Mr. Mathew Steiman

- Designed and implemented a solar air heater to sustain a biogas digester during winter months
- Collaborated with Bucknell University to measure biogas quality and system efficiency
- Awarded \$12,000 for supplies and cost of living for the summer

NSF REU LTER *Fellow* Summer 2015
University of Wisconsin-Madison, Madison, WI, Advisors: Dr. Ankur Desai and Dr. David Reed

- Synthesized data from multiple lakes in multiple seasons and years to create a dynamic model of how heat moves through a lake and how lakes freeze and thaw
- Determined that CS616 soil water content sensors could measure ice thickness

Relevant Conferences Attended

- Association for the Advancement of Sustainability in Higher Education 2016, talk: *Small Scale Biogas for Energy Sustainability and Education*
- American Geophysical Union's Fall 2015 Meeting, poster, *Soil Water Content Sensors as a Method of Measuring Lake Ice Depth*

Invited Talks

- NTL LTER Science Meeting Talk *Productivity Under Ice in Northern Temperate Lakes*
- NCAS Fellowship talk, *SnowMan(ipulaton)*

Relevant Dickinson College Physics Colloquium Presentations

- *Where do Different Sized Particles Accumulate on Gravity-Capillary Waves*
- *Exploring the Effects of Frequency on the Dynamics of Gravity-Capillary Waves*
- *A Holistic Look at a Lake*

DICKINSON LEADERSHIP EXPERIENCE

Panelist Student Hearing Panelist 2014-2017

Vice-President of Brotherhood Alpha Phi Omega National Service Fraternity 2014-2017

Member Devil's Advocates Student Philanthropy and Alumni Engagement Group 2015-2017

- Provided a student voice at meetings and dinners with the Board of Trustees and the Alumni Council

Member Senior Gift Drive Committee 2016-2017

First Year/Senior Mentor New Student Programs 2015-2017

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SELECTED COMMITTEE WORK

<i>Board Member</i> Dickinson Sustainable Investment Group	2016-2017
• Met with the Board of Trustees to discuss the college's investment portfolio, provided input, and shared policies, practices and goals to diversify the portfolio and expand environmentally-oriented holdings	
<i>Interviewer</i> , Committee to find New College President	2016
<i>Interviewer</i> , Committee to find Director of New Student Programs	2016
<i>Interviewer</i> , Committee to find Director of Experiential and Outdoor Education	2016