

Emily Whitaker

680 North Park Street, Madison, WI 53706 | (609) 240-1863 | ewhitaker524@gmail.com

EDUCATION

University of Wisconsin-Madison, Wisconsin, Madison

August 2018- Present

Master of Science: Freshwater and Marine Sciences

Advisor: Dr. Hilary Dugan

Dickinson College, Carlisle, PA

May 2017

Bachelor of Sciences: Physics, Certificate: Social Innovation and Entrepreneurship (SINE)

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*

Relevant Course Work *Environmental Physics, Oceanography, Climate Change & Renewable Energies, Environmental Science, Environmental Leadership & Organizing for Sustainable Social Change*

Relevant Dickinson College Physics Colloquium Presentations

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

PEER-REVIEWED PAPERS

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

In Prep:

Reed, D. E., Desai, A.R., **Whitaker, E.C.** Nuckles, H., *Winter Lake Ice Variability Measurements and Modeling*. Limnol. Oceanogr. Methods.

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 Tackacs

- Created a interview protocol which was used to interviewed service providers, clients, and local leaders
- Synthesized collected data and historical data to better understand the need of colocation in the region
- Presented findings to the Carlisle community

Anthropogenic Beach Manipulation: The Impact of Groins on Sand Distribution

Fall 2016

Dickinson College, Carlisle PA, Advisor: Dr. Jorden 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. Dr. Hans Pfister and Mr. Mathew Steiman

- Designed and implemented a solar air heater that heated a biogas digester
- Collaborated with Bucknell University and Bob Hamburg to measure biogas quality and system efficiency

RESEARCH EXPERIENCE (CONT.)

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, presented poster, *Soil Water Content Sensors as a Method of Measuring Lake Ice Depth*

SKILLS

- **Computer:** Vernier software, Campbell sensors, HOBOWare, LabVIEW, Environmental Chambers, Microsoft Office, ExpressScribe, Python, Jupyter Notebooks, GitHub, Docker, Overleaf, bash
- **Other:** Research and development, field work, dry and wet lab experience, grant writing, writing reports, analyzing scientific articles, sensor development, PID, Arduino, soldering, qualitative research

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

- Communicated the importance of giving back to the college to students, alumni, and trustees
- 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

- Organized events, maintained a detailed budget, wrote recommendations, and met regularly with first years
- Assisted with 18 students' transition to college life and residential college living
- Mentored a group of 10 First Year Mentors

SELECTED COMMITTEE WORK

Board Member 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 as to be more environmentally minded.

Interviewer, Committee to find New College President

2016

Interviewer, Committee to find Director of New Student Programs

2016

Interviewer, Committee to find Director of Experiential and Outdoor Education

2016

ADDITIONAL EXPERIENCE

Lab Manager and Researcher, Contextual Dynamics Lab, Dartmouth College

July 2017-July 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