Emily Whitaker

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EDUCATION

University of Wisconsin-Madison, Wisconsin, Madison — August 2018- Present
Master of Science: Freshwater and Marine Sciences
Advisor: Dr. Hilary Dugan
-Exploring the effects dynamic ice-on and –off times has on lake and surrounding ecologies
-Teaching Assistant: Zoology 316, Limnology, Fall 2018

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 on 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

RESEARCH EXPERINCE

Thesis: *Where do contaminates 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 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. 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 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 diversify the portfolio and expand environmentally-oriented holdings

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-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