

# Emily Whitaker

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

## EDUCATION

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**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 and light conditions
- 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:

- Sam Ahler
- Alaina Eckert, independent project coordinator

Winter 2019-

Winter 2019- Spring 2019

**Dickinson College**, Carlisle, PA

May 2017

Bachelor of Sciences: Physics, Certificate: Social Innovation and Entrepreneurship

Honors:

- Rush Citizen of the Year
- 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
- 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*

Spring 2017

Spring 2016

2016

## PEER-REVIEWED PAPERS

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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

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**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 undergraduate research assistants

**Cabin Counselor** Camp Speers-Eljabar, Dingmans Ferry, PA

Summers, 2012-2014

## SKILLS

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- **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

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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. 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 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

- AGU Chapman Conference (Winter Limnology in a Changing World) 2019, poster: *Phytoplankton Dynamics and Primary Production Under Lake Ice*
- Science in the Northwoods 2019, talk: *Winter Limnology in the Northwoods*
- Society for Freshwater Sciences 2019, poster: High Chlorophyll Concentrations & Phytoplankton Composition Under Lake Ice
- 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

- Integrative Biology Graduate Student Organization, *Community Dynamics Under Lake Ice*
- NTL LTER Science Meeting, *Productivity Under Ice in Northern Temperate Lakes*
- NCAS Fellowship, *SnowMan(ipulation)*

### 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

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*Panelist Student Hearing Panelist*

2014-2017

*Vice-President of Brotherhood Alpha Phi Omega National Service Fraternity*

2014-2017

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*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

## **SELECTED COMMITTEE WORK**

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*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 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