

Emily Whitaker

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CURRENT WORK

Lab Manager and Researcher, Contextual Dynamics Lab, Dartmouth College (July 2017-Present)

- Researching the functional connectivity of the brain using python and fMRI data sets
- Examining intersubject connectivity with subjects who are presented with similar and dissimilar stimuli
- Write and maintain IRB protocols
- Mentor undergraduate research assistances

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

- Examined the size discrepancy of where particles fall on induced Faraday waves
- Matlab imaging techniques to find nodes/antinodes of waveforms
- 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 and used it to interview service providers, their clients, and local leaders
- Synthesized collected data and previous data to better understand the need of colocation in the region
- Presented work at community presentation

Anthropogenic Beach Manipulation: The Impact of Groins on Sand Distribution, Fall 2016, **Dickinson College**, Carlisle PA, Advisor: 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

Independent Research: *Interfacing a Solar Air Heater with a Methane Producing Biogas Digester*, Spring-Fall 2016, **Dickinson College**, Carlisle PA, Advisor: Dr. Hans Pfister

- Increased biogas production by 25% in the winter and decreased CO₂ emissions of the college farm
- Collaborated with Bucknell University and led a PASA workshop on biogas integration on small farms

National Science Foundation Research Experience for Undergraduates and Long Term Ecological Research *Fellow* Summer 2015 **University of Wisconsin-Madison**, Madison, WI, Advisor: 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

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*
- Central PA Consortium: Symposium on Innovation and Entrepreneurship, Spring 2017, created and led workshop, *"Getting Grit"*

Dickinson College Physics Colloquium Presentations

- *Where do Different Sized Particles Accumulate on Gravity-Capillary Waves*, Spring 2017
- *Passive Thermal Heating of a Biogas Digester*, Fall 2016
- *Exploring the Effects of Frequency on the Dynamics of Gravity-Capillary Waves*, Fall 2016
- *A Holistic Look at a Lake*, Fall 2015

SKILLS

- Computer: Vernier software, Campbell sensors, HOBOWare, LabVIEW, Environmental Chambers, Microsoft Office, ExpressScribe, Python, Jupyter Notebooks
- Other: Research and development, grant writing, writing reports, analyzing scientific articles, sensor development, PID, soldering, qualitative research

EDUCATION

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*

DICKINSON LEADERSHIP EXPERIENCE

Panelist Student Hearing Panelist (Fall 2014-Spring 2017)

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

Member Devil's Advocates Student Philanthropy and Alumni Engagement Group, (Spring 2015-Spring 2017)

- Communicated the importance of giving back to the college to students, alumni, and trustees
- Attended meetings and dinners with the board of trustees and the alumni council to provide a student voice
- Led and organized campus wide events such as Day of Giving and Red and White Day

Member Senior Gift Drive Committee (Fall 2016- Spring 2017)

First Year/Senior Mentor New Student Programs (Fall 2015-Spring 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 who reported up to me
- Gave advice and assistance to first years on issues ranging from forming clubs to mental health

Board Member Neighborhood Community Board (Fall 2013-Spring 2017)

- Personally interviewed the college president, and organized events with speakers and professors
- Worked with dorm members to develop better ways of living in a community environment, developed new protocols for problem resolution, raised funds for dorm events including formals and breakfasts

Triton Admissions (Fall 2014-Spring 2017)

- Sat on panels discussing student life and research opportunities at Dickinson
- Greeted prospective students and family and offered them insights into the Dickinson community

SELECTED COMMITTEE WORK

Board Member Dickinson Sustainable Investment Group (Spring 2016-Spring 2017)

- Standing subcommittee of the President's Commission on Environmental Sustainability
- Created working definition of what sustainable investing means to the college
- Liaison between the Dickinson community and the Board of Trustees' Committee on Investments
- Met with the Board of Trustees to discuss a report on our investment portfolio, provided input and shared policies, practices and goals of other higher education institutions and other relevant sectors

Interviewer, Committee to find New College President Fall 2016

Interviewer, Committee to find Director of New Student Programs Fall 2016

Interviewer, Committee to find Director of Experiential and Outdoor Education Spring 2016