MALLORY PAIGE LADD

University of Tennessee · 821 Volunteer Blvd · Greve Hall, 439 · Knoxville, TN 37923 USA
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EDUCATION

The University of Tennessee, Knoxville, TN
Ph.D. track in Energy Science and Engineering, expected completion Spring 2018
Project: Next-Generation Ecosystem Experiment (NGEE-Arctic), Oak Ridge National Laboratory
Adviser: Dr. Robert Hettich

The University of Toledo, Toledo, OH
B.Sc. in Chemistry with Honors, Magna Cum Laude
Undergraduate Thesis: *Sequence Characterization of Otter Hemoglobin Using a Combination of Bottom-Up Approach Mass Spectrometry and X-ray Crystallography*
Adviser: Dr. Wendell Griffith
Minors: Forensic Investigation, Spanish

PUBLICATIONS

Darrouzet-Nardi, A., **Ladd, M.P.**, Weintraub, M.N., (2013) Fluorescent microplate analysis of amino acids and other primary amines in soils. *Soil Biology and Biochemistry*, v. 57, p. 78.

FELLOWSHIPS & GRANTS

2014: Graduate Research Fellowship (GRFP), National Science Foundation
2013: Energy Science and Engineering Fellowship, Bredesen Center for Interdisciplinary Research and Graduate Education, University of Tennessee
2010: Sullivan Honors Fellowship, University of Toledo Honors College
2008: Undergraduate Summer Research & Creative Activity Program (USR-CAP), University of Toledo

RESEARCH EXPERIENCE

2013-*present*: **Arctic biogeochemistry and nitrogen cycling in permafrost soils**, PhD research
Next Generation Ecosystem Experiments (NGEE-Arctic), Oak Ridge National Laboratory

- Elucidate the rates and controls of nitrogen availability, speciation, and transformation in permafrost soils on the coastal plain of the Alaskan Arctic

2010-2012: **Impacts of changing seasonality on plant-soil interactions in the Arctic**, Research Assistant
Ecosystem and Soil Ecology Laboratory, University of Toledo

- Evaluated the functional links between climate change and microbial enzyme activity with respect to decomposition and nitrogen availability
- Assisted in field data collection and processing for a multidisciplinary, collaborative project at a remote field station in the Alaskan Arctic
- Hired, supervised, trained, and mentored five undergraduate laboratory technicians

2009-2011: **Sequence characterization of *Aonyx capensis* hemoglobin**, Honors Thesis
Department of Chemistry, University of Toledo

- Developed project combining bottom-up approach MALDI-TOF/TOF MS and X-ray crystallography to obtain protein sequence information and analyze the evolutionary role of hemoglobin in the underlying mechanisms involved with red blood cell aging
- Became proficient with analytical chemistry techniques, methods, and theory
- Gained familiarity with Mascot protein identification software and NCBI protein database

2008: **Synthesis, purification, & characterization of oxazolidinone analogues**, Independent Research
Department of Chemistry University of Toledo

- Showed that microwave chemistry could be used to bypass the first refluxing step of 3-step synthesis; used IR and NMR spectroscopies to analyze products
- Learned fundamentals of organic synthesis and medicinal chemistry of antibiotics

PROFESSIONAL EXPERIENCE

2015: **Staff intern for the Woodrow Wilson International Center for Scholars**, Washington, D.C
Arctic science policy recommendations and implications, Independent Research Project with the Science and Technology Innovation Division, Supervisors: Dr. Todd Kuiken and David Rejeski

CONFERENCE PROCEEDINGS

Ladd, M.P.; Abraham, P.; Gianonne, R.; Norby, R.; Hettich, R. (2015) Characterizing the range of low molecular weight organic compounds in nitrogen-limited Arctic soils using nano-electrospray mass spectrometry. American Society for Mass Spectrometry.

Ladd, M.P.; Long, H.; Phelps, T.; Graham, D. (2013) Simulating Arctic permafrost seasonal thaw conditions in the laboratory. Oak Ridge National Lab Annual Women in Science Poster Session.

Ladd, M.P.; Rinkes, Z.; Weintraub, M.N. (2012) Effects of elevated nitrogen on the interaction between microbial activity and litter chemistry during decomposition of *Acer saccharum* litter. 97th ESA Meeting.

Ladd, M.P.; Guo, J.; Griffith, W.P. (2011) Sequence characterization of otter hemoglobin using a combination of mass spectrometry and x-ray crystallography. 241st National Meeting and Exposition of the ACS.

Ladd, M.P. (2011) Sequence characterization of otter hemoglobin using a combination of bottom-up approach mass spectrometry and x-ray crystallography. National Conference for Undergraduate Research.

Ladd, M.P. (2010) Sequence characterization of otter hemoglobin using a combination of mass spectrometry and x-ray crystallography. University of Toledo Honors College Seminar.

Crowe, J.; **Ladd, M.**; McCann, S.; Mull, D.; Casarotto, V.; Lind, C.; Sucheck, S. (2008) To nuke or not to nuke: The joys and pitfalls of microwaves. Central Regional Meeting of the American Chemical Society (CERMACS).

AWARDS AND HONORS

2013: Graduate Research Fellowship, Honorable Mention, National Science Foundation
2011: American Chemical Society Undergraduate Analytical Chemistry Award
2008: Chemical and Allied Industries of Northwest Ohio Scholarship
2009-2011: Arthur H. Black Analytical Chemistry Award (University of Toledo)
2007-2010: Dean's List Honoree
2006-2010: National Rocket Award
2006-2010: Tower Prestige Scholarship
2006-2010: NCAA Division I Athletic Scholarship

PROFESSIONAL AFFILIATIONS

American Chemical Society (ACS)
Association for Women in Science (AWIS)
American Society for Mass Spectrometry (ASMS)
Permafrost Young Researchers Network (PYRN)
United States Permafrost Association (USPA)
Alpha Chi Sigma Professional Fraternity (AXΣ)

LEADERSHIP

2014-present: Graduate Student Representative – Oak Ridge National Lab Postdoctoral Association
2014-present: Chair of STEM Committee – Commission for Women, University of Tennessee
2014-present: Representative – Graduate Student Senate, University of Tennessee
2013-present: Secretary – American Chemical Society, East Tennessee Local Section
2010-2013: President, Vice President – American Chemical Society Student Group

OUTREACH, EDUCATION, AND MENTORING

- Tutor – High school and college level math, science, and Spanish (2006-*present*)
- Directed a group of graduate students who designed and organized the first-ever Women in STEM Research Symposium at the University of Tennessee, Knoxville (2015)
- Designed and led an annual 5-week long workshop for graduate students on writing and publishing in the sciences; emphasis on incorporating "storytelling" and other modern & innovative techniques for more effective communication (2014-present)
- Volunteered for "Science Saturdays" sponsored by Oak Ridge National Laboratory to help engage middle school and high school students in hands-on STEM activities (2014)
- Helped Boy Scouts of America obtain chemistry merit badges at Camp Miakonda in Toledo, OH (2013)
- Hosted area high schools for "Math and Science Week" and "Physics Day" at Cedar Point Theme Park (2012)
- Volunteered to run the "Potions Table" for the Toledo Libraries 'Harry Potter World' exhibit (2012)
- Group leader for the "Women in Science Day of Meetings" (WISDOM), University of Toledo (2011)
- Served on committee to establish pre-professional STEM summer camp for high school students (2011)
- Traveled to Evergreen Community Library to share classroom curriculum with early childhood educators, and perform hands-on chemistry demos and activities for K-5 students (2011)

SCIENCE COMMUNICATION

2013-*present*: Research Website – www.malloryladd.com Science Blog – *Think Like a Postdoc*