

LAUREN H. LOGAN

<http://stillwell.cee.illinois.edu/people/lauren-logan/>

EDUCATION & RESEARCH:

PhD Candidate Civil Engineering, NSF Fellow University of Illinois at Urbana-Champaign (UIUC), Exp May 2018
Energy-Water-Environment Sustainability Program, Qualifying and Preliminary Exams Passed, **3.95/4.0 GPA**

Advisor: Dr. Ashlynn S. Stillwell

Dissertation: Integrating Thermoelectric Power Generation Operations with Aquatic Ecosystem Sustainability

- Quantify the impact of thermal pollution from thermoelectric power plant cooling water effluent on aquatic ecosystem stability within a risk probability space
- Explore implementable policy changes to increase stream ecology stability and water use sustainability in the short and long term
- Develop tradeoff framework between electric power generation and ecologic diversity via economic benefits transfer methodology

M.S. Biological Sciences, Ecology Focus, David M. Knox Fellow Purdue University (PU), May 2013
Ecological Sciences & Engineering Interdisciplinary Graduate Program, **4.0/4.0 GPA**

Advisor: Dr. Nancy Emery

Master's Project: The Science *Not Yet* Behind Wetland Policy: Ecology, Hydrology, Public Perception and Conservation

- Cognized correlation between ecology, hydrology, and public perception; and the impact those connections have on national wetland policy
- Investigated United States environmental policy, linking current wetland policy to the ecology-hydrology drivers of wetland functions
- Suggested implementable policy changes to better delineate and protect wetlands in the United States

B.S. Electrical Engineering, B.S Geological Sciences, Bush-Cutler Scholar Ohio University (OU), June 2010
Summa Cum Laude, Ranked First in Both Programs, **3.95/4.0 GPA**

- Conducted research on novel energy harvesting technologies, technological software-hardware integration, and geologic road cut stability
- Team leader during business study abroad in Thessaloniki, Greece through the Global Competitiveness Program
- Developed leadership ethics as a Robe Scholar while also serving as president of four organizations
- Team leader for technology and entrepreneurship business program through the George Voinovich Center

FELLOWSHIPS, SCHOLARSHIPS & ACADEMIC AWARDS:

Mavis Future Faculty Fellow: College of Engineering, University of Illinois, 2016-17

Chester P. Seiss Award: An Outstanding Graduate Student in CEE, University of Illinois, 2014

NSF Fellow: National Science Foundation Graduate Research Fellowship Program, 2013 (full funding)

Roy J. Carver Fellow: College of Engineering, University of Illinois, 2013 (1-year full funding)

Illinois Distinguished Fellow: Graduate School, University of Illinois, 2013 (full funding)

CEE Distinguished Fellow: Dept of Civil and Environmental Engineering, University of Illinois, 2013

SURGE Fellow: College of Engineering, University of Illinois, 2013 (1-year full funding)

David M. Knox Fellow: Purdue University Competitive Fellowship, Purdue University, 2011 (full funding)

Centennial Fellow: Most Outstanding, Tau Beta Pi Nationally Competitive Award, 2011

Outstanding Senior in Electrical Engineering: Russ College, Ohio University, 2010

Outstanding Senior in Geological Sciences: College of Arts & Sciences, Ohio University, 2010

Tau Beta Pi Record Scholarship: Tau Beta Pi Nationally Competitive Award, 2009

Bush-Cutler Scholarship: Cutler Scholars Program, Ohio University, 2004 (full funding)

LEADERSHIP & LEADERSHIP AWARDS:

Professional Development Co-Chair: International Water Resources Association, UIUC Chapter, University of Illinois, 2016-17

President & Activator: Central Illinois Alumni Chapter, Tau Beta Pi Engineering Honor Society, 2014-15, 2015-16

Participant: Illinois Female Engineers in Academic Training Program (iFEAT), University of Illinois, 2015

Member: Engineering Graduate Student Advisory Committee, University of Illinois, 2016-17 (**Treasurer**, 2015-16, **Chair**, 2014-15)

Member: University Librarian's Student Advisory Council, University of Illinois, 2015-16

Vice-Chair: CEE Graduate Student Advisory Committee, University of Illinois, 2016-17, (Member, 2015-16)

Advisor: National Student Advisory Board, Tau Beta Pi, 2014-15 (**Chair**, 2013)

Senator: Purdue Graduate Student Government, Purdue University, 2012-13

Nominee: Student Activities and Organizations Outstanding Advisor of the Year, Purdue University, 2013

Outstanding Student Leader: Academic Advancement Center, Ohio University, 2010

Finalist: University Senior Leader Award, Annual Leadership Awards Gala, Ohio University, 2010

Tarr Award: Department of Geological Sciences & Sigma Gamma Epsilon, Ohio University, 2009

Robe Scholar: Russ College of Engineering, Ohio University, 2008

OUTREACH:

Mentor: Mentoring Undergraduates in Science and Engineering (MUSE), University of Illinois, 2016-17

Panelist: Academic Research Panel for Hubei General Education Program, University of Illinois, 2016

Instructor: Girls' Adventures in Mathematics, Engineering, and Science (GAMES) Camp, Environmental Engineering and Sustainability, University of Illinois, 2016 [see also teaching experience]

Co-Founder: Diversity Advocates Program, College of Engineering, University of Illinois, 2016

Speaker, Planner, & Funding Coordinator: "Transition from Undergraduate to Graduate Programs Workshop," hosted by EGSAC, University of Illinois, 2016

Mentor: CEE Research Experience for Undergraduates, University of Illinois, 2015-16, 2016-17

Volunteer: Women Exploring Graduate Opportunities in Civil and Environmental Engineering (WE GO CEE), University of Illinois, 2015

Panelist: Road Map to Graduate School Seminar, University of Illinois, 2015

Volunteer: Girl Power! STEM Activity and Power Plant Tour Event, Girl Scouts of Central Illinois, 2015

Exhibitor: Engineering Open House, University of Illinois, 2014

Event Chair: "Choosing Your Path," Graduate Student Appreciation Week, Purdue University, 2013

Mentor: Summer Undergraduate Research Fellowship, Purdue University, 2012

Judge: 4-H Electric State Competition, Ohio State Fair, 2006-16, Electric Nationals 2011, 2012

President: Students Teaching About Racism in Society (S*T*A*R*S), Ohio University, 2006-07, 2007-08, 2009-10 (**Vice President**, 2005-06; **Consultant**, 2010)

Outstanding Program Award: Presented to S*T*A*R*S for the Martin Luther King Jr. Day Event "It Takes a Village," Annual Leadership Awards Gala, Ohio University, 2010

Program of the Year: NAACP Image Awards, Presented to S*T*A*R*S for "We're Bringing Voting Back," 2008

SOCIETY MEMBERSHIPS:

Tau Beta Pi Engineering Honor Society (**Collegiate President** 3 terms, **Advisor** 3 terms, **Alumni President** 2 terms)

Phi Beta Kappa

American Society of Civil Engineers

Eta Kappa Nu Electrical Engineering Honor Society (**President** 2 terms)

Sigma Gamma Epsilon Earth Sciences Honor Society (**President** 1 term)

Alpha Lambda Delta Freshman Honor Society (**Community Service Officer** 1 term)

Order of the Engineer

Phi Kappa Phi

Sigma Alpha Lambda

Golden Key Honor Society

PUBLICATIONS:

- Logan, L.H.,** Stillwell, A.S. “Probabilistic Assessment of Aquatic Species Risk from Thermoelectric Power Plant Effluent: Incorporating Biology into the Energy-Water Nexus.” (in review)
- Logan, L.H.,** Emery, N.C., Stillwell, A.S., “The Science Not Yet Behind Wetland Policy: Ecology, Hydrology, Public Perception and Conservation.” *Environmental & Water Resources Congress, Sustainability Track*, American Society of Civil Engineers, 2014
- Logan, L.H.,** Karlsson, E.M., Gall, H.E., Park, J., Emery, N., Owens, P., Niyogi, D., Rao, P.S.C., “Freshwater Wetlands: Balancing Food and Water Security with Resilience of Ecological and Social Systems.” In D. Niyogi, ed. *Climate Vulnerability*, 2013

CONFERENCE & SEMINAR PRESENTATIONS:

- Logan, L.H.,** Gupta, R.S., Stillwell, A.S., “Quantifying Economic Tradeoffs between Thermoelectric Power Generation and Aquatic Ecosystem Stability,” *Environmental & Water Resources Congress, Planning and Management Track*, ASCE, 2016
- Logan, L.H.,** Stillwell, A.S., “Quantifying Risk to Aquatic Species from Thermoelectric Power Plant Thermal Pollution,” CEE Hydro Systems Seminar Course, University of Illinois, 2016
- Logan, L.H.,** Barker, Z.A., Stillwell, A.S., “Assessing Risk to Aquatic Species from Thermoelectric Power Plant Effluent: A Novel Approach,” *Association of Environmental Engineering and Science Professors Conference*, 2015
- Logan, L.H.,** Barker, Z.A., Stillwell, A.S., “Novel Risk Assessment for Impact of Thermoelectric Power Plant Effluent on Aquatic Species,” *Environmental & Water Resources Congress, Planning and Management Track*, ASCE, 2015
- Logan, L.H.,** Barker, Z.A., Stillwell, A.S., “Assessing Thermal Stress Risk to Aquatic Species near Thermoelectric Power Plant Mixing Zones: A Novel Approach,” *CEE Interdisciplinary Research Summit*, University of Illinois, 2015
- Logan, L.H.,** Stillwell, A.S., “The Energy-Water Nexus: Thermoelectric Power Plants and Aquatic Ecology,” *Illinois Water Conference*, Illinois Water Resources Center, 2014
- Logan, L.H.,** Emery, N., Stillwell, A.S., “The Science *Not Yet* Behind Wetland Policy: Ecology, Hydrology and Conservation,” *Environmental & Water Resources Congress, Sustainability Track*, ASCE, 2014

POSTERS:

- Gupta, R.S., **Logan, L.H.,** Stillwell, A.S., “Thermal Pollution Impacts on Aquatic Ecosystems: A Case Study of Power Generation and Ohio River Fish Species.” *Environmental & Water Resources Congress*, ASCE, 2016
- Logan, L.H.,** Stillwell, A.S., “Using a Probability Space to Quantify the Risk of Exceeding Species' Thermal Preferences from Thermoelectric Power Plant Effluent” (1) Presented at Women Exploring Graduate Opportunities in Civil and Environmental Engineering (WE GO CEE), University of Illinois, 2015 (2) Presented at CEE Recruitment Fair, University of Illinois, 2016
- Logan, L.H.,** Stillwell, A.S., “The Ecologic Cost of Thermoelectric Power: Balancing Electricity Needs with Aquatic Ecosystem Health” Presented at CEE Interdisciplinary Research Summit, University of Illinois, 2014
- Logan, L.H.,** Emery, N., “The Science *Not Yet* Behind Wetland Policy: Ecology, Hydrology and Conservation” (1) Presented at Purdue University Interdisciplinary Graduate Program Reception, 2013, **Interdisciplinary Excellence Award** (2) Presented at 5th Annual Research Symposium, National Organization for Black Chemists & Chemical Engineers, Purdue University, 2013, **Best Poster**
- Logan, L.H.,** Emery, N., “Wetlands *Are* Worth Saving!” Presented at Purdue Graduate Student Government Next Generation Scholars Event for Local Middle School Students, 2013
- Logan, L.H.,** Hoover, F., Gibson, C.D., Karlsson, E.M., He, Y., Park, S.R., “Building a Sustainable City” Presented at Ecological Sciences and Engineering Colloquium Poster Session, Purdue University, 2012
- Logan, L.H.,** Sevcik, J.E., Hollingsworth, T.J., Kodi, A.K., Phillips, B.O., Morris, R., Bambeck, T., Khoury, I., “A Healthy Win: Wellness Integrated Network” Presented at Ohio University Research & Creativity Expo; EE/CS 3 Category, 2009, **First Place** (Conducted as an Electrical Engineering Senior Design Project)
- Logan, L.H.,** Smith, M., Ruggeri, P., Lutz, B., “Correlation of Mass Wasting to Rock Type, Slope Angle and Vegetation: Investigation of Road Cuts in Athens County, OH and Surrounding Area” Presented at Ohio University Research & Creativity Expo, 2009. Conducted within Sigma Gamma Epsilon

OTHER CONFERENCE ROLES:

- Rapporteur:** Institute for Sustainability, Energy, and the Environment Congress, University of Illinois, 2015
Co-Chair: CEE Interdisciplinary Research Summit, University of Illinois, 2014
Presenter: “How to Win a Fellowship or Scholarship,” Tau Beta Pi National Convention, 2012-14
Volunteer: Conference on Great Lakes Research, International Association for Great Lakes Research, 2013
Co-Chair: Ecological Sciences & Engineering Annual Symposium, Purdue University, 2012
Attendee: Ohio River Basin Consortium for Research and Education Annual Symposium, 2012
Attendee: Great Lakes Bioinformatics Symposium, 2011
Delegate: Tau Beta Pi National Convention, 2007-15
Chair: Tau Beta Pi National Convention, Rituals Committee, 2008 (**Vice Chair:** Resolutions Committee, 2007; Constitution & Bylaws Committee, 2009)

TEACHING EXPERIENCE:

- Instructor:** Girls’ Adventures in Mathematics, Engineering, and Science (GAMES) Camp, University of Illinois, 2016
- Created a new energy-water nexus module with materials including handouts, instructor guides, classroom activities, and lectures
 - Encouraged high school girls to pursue engineering while emphasizing encouragement and empowerment
 - Facilitated local power plant tour as part of energy-water nexus module
- Team Member:** Access Engineering, Purdue Women in Engineering, 2013
- Directed engineering related activities at summer camps in Greater Lafayette, Indiana
 - Promoted equality, creative design, and teamwork among K-12 students
- Supplemental Instruction Leader:** Ohio University Academic Advancement Center, 2009-11
- Facilitated study sessions and group learning exercises
 - Created Physical Chemistry Series and Intro to Chemistry Series study guides and lesson plans for 400+ students
- GRE Prep Instructor:** Ohio University College Adjustment Program, 2010-11
- Led GRE study sessions and problem review demonstrations
 - Encouraged minority, FGC and low-income students to pursue graduate school
- Tutor:** Private Arrangements, 2004-Present
- Individualized tutoring in math, science, language arts, and GRE Prep
 - Experience with special needs minor in math, reading and driver’s education

WORK EXPERIENCE:

- Research Assistant:** Ohio University Bioinformatics Department, 2011
- Developed systems engineering strategy for gene annotation project
 - Presented detailed flow charts and plans to bioinformatics research group
- Lab Assistant:** Ohio University Department of Mechanical Engineering, 2010-11
- Researched Differential Scanning Calorimeter (DSC) processes
 - Completed DSC and diffusivity experiments
- Lab Technician:** Ohio University Department of Electrical Engineering, 2008
- Researched PECVD lab process for professor
 - Worked with Environmental Health and Safety to prepare lab space
- Intern:** Ohio Department of Natural Resources, Shawnee State Park Office, 2006
- Aided in fiscal filing and payroll
 - Helped Naturalist with various activities
- Lab Assistant:** Ohio University Department of Geological Sciences, 2005
- Assisted graduate student with thesis lab work
 - Processed soil samples and kept data records
- Camp Assistant and Docent:** Explorium of Lexington, Kentucky, 2005
- Assisted artist with summer art camp for children
 - Developed new science activity for children