


JOEL EKLOF

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EDUCATION

- Bachelor of Science in Physics** **2016**
University of Puget Sound, Tacoma, WA
GPA 3.76/4.00 - *cum laude*
- Master of Science in Civil Engineering** **2018**
University of Washington, Seattle, WA
GPA 3.80/4.00
- Ph.D. in Civil and Environmental Engineering** **Expected 2024**
University of Washington, Seattle, WA

RESEARCH EXPERIENCE

- Ph.D. Hydro-Biogeochemistry Group** **2018-Present**
Department of Civil and Environmental Engineering, University of Washington
Advisor: Professor Rebecca Neumann
- Designed and implemented a complex multi-year field campaign as part of a team
 - Conducted diverse field data collection at two sites in Alaska including hydrologic, biogeochemical, and geospatial measurements
 - Designed, built, and deployed specialized field equipment
 - Conducted lab analysis of porewater samples using analytical instruments (GC, ICP-OES, TOC/TDN Analyzer)
 - Presented research at conferences and public outreach/education events
 - Supported research group members through editing and revising research communication
 - Served on committees working to increase equity, diversity, and inclusion
- Undergraduate Thesis in Biophysics** **2015-2016**
Department of Physics, Department of Biology, University of Puget Sound
Advisor: Professor Rachel Pepper
- Designed and executed independent research in the field of biophysics on the fluid dynamics of splash cup plant seed dispersal
 - Applied for and received competitive research funding
 - Collaborated and coordinated with faculty across departments
 - Designed, modeled, and 3-D printed a geometrically accurate splash-cup model
 - Utilized fast camera footage in conjunction with image analysis software to characterize and compare varying splash dynamics
- Undergraduate Ecological Researcher** **2015**
Environmental Policy and Decision-Making Program, University of Puget Sound
Advisor: Professor Rachel DeMotts
- Recorded traditional ecological knowledge of useful and culturally significant plants to local peoples of the Zambezi region of Namibia
 - Recorded traditional weaving practices of local peoples to show the time and effort required to produce each basket
 - The research was used to publish a multi-language plant dictionary shared at local conservancies, schools, and lodges of the Zambezi region

TEACHING EXPERIENCE

Pre-Doctoral Instructor, Analytical Methods in Groundwater Flow

2020,21, 23

Civil and Environmental Engineering Department, University of Washington

- Optimized course content to be offered fully online during the COVID-19 pandemic through technologies such as Zoom, PollEverywhere, and Kahoot
- Added content and infrastructure to make the course more safe and inclusive including new taught content, assignment sections, and anonymous reporting tools
- Presented in-class demonstrations of concepts as part of two 80-minute lectures per week
- Applied course concepts to well-known hydrogeological sites (such as the groundwater contamination in Woburn, MA) to give the course content greater relevance
- Received a median instructor rating of 4.8/5 according to student evaluations, within the top 25% of all evaluated University of Washington instructors

Coordinator and Instructor, Fostering Science Camp

2022-Present

Camp for Foster Youth in Fairbanks, AK

- Co-built camp curriculum incorporating native and western science as part of an experienced team
- Delivered a hands-on hydrology and geomorphology lesson which utilized the narrative of a traditional story told by a Native elder instructor
- Co-developed and will manage a paid field internship for past participants who have aged out of the Fostering Science Camp (upcoming: summer 2023)

Teaching Assistant, Chemical Fate and Transport & Mass and Energy Balance Courses

2020, 2022

Civil and Environmental Engineering Department, University of Washington

- Provided ongoing feedback and problem solving to transition both courses from in-person to fully online during the COVID-19 pandemic
- Constructed homework assignments and solution sets weekly for both courses
- Graded and provided feedback on all homework assignments for both courses
- Held four 60-minute office hours per week to provide additional course content support
- Moderated a discussion board to help progress understanding of the material through both peer-to-peer and TA-to-student learning opportunities

Instructor's Assistant, Introduction to the Environment

2015

Environmental Policy and Decision-Making Program, University of Puget Sound

- Supported instructors and provided one-on-one and small group support and tutoring
- Facilitated multiple overnight course trips to ecologically important watersheds and protected natural areas across western Washington
- Graded and provided detailed feedback for the course and lab assessments

Volunteer, Skype A Scientist

2020-Present

- Communicated scientific research and topics to matched (often underserved) students, classrooms, and families from around the world (K-12) three to five times each quarter
- Answered student questions and used their interests to help demystify science and make pursuing science more tangible and accessible
- Distilled scientific ideas and concepts into easy to understand, entertaining, and educational mini-lessons that include images, demonstrations, and interactive activities
- Provided continued support and resources to students, classrooms, and families after each volunteer session through ongoing communication

GRANTS

- United States Permafrost Association Travel Grant, \$500** 2022
 - Funding to attend and present at American Geological Union (AGU) Conference 2019
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- The National Center for Airborne Laser Mapping (NCALM) Seed Proposal** 2018
 - LIDAR survey from the National Center for Airborne Laser Mapping
- University of Puget Sound, “McCormick Grant,” \$4,500** 2015
 - Highest value scientific research grant at the University of Puget Sound
- University of Puget Sound, “Challenge Grant,” \$5,000** 2015
 - Grant to conduct purpose-driven research beyond one’s primary field of study

CONFERENCE PRESENTATIONS

International Conferences

- Eklof, J.,** Jones, B., Dafflon, B., Devoie, É., Ring, K., English, M., Waldrop, M., Neumann, R. (2023, December). Canopy Cover and Microtopography Control Thaw of Ecosystem-Protected Permafrost. American Geophysical Union, Talk.
- Eklof, J.,** Jones, B., Dafflon, B., Ring, K., Waldrop, M., English, M., Neumann, B. (2023, March). Environmental Controls on Thaw Rates of a Vegetation-Protected Permafrost Plateau. American Geophysical Union, Poster.
- Eklof, J.** Lundquist, J., Waldrop, M., Tao, J., Dafflon, B., Ring, K., Neumann, R. (2022, December). Thermals Regimes Observed at a Discontinuous Permafrost Site in Interior, Alaska. American Geophysical Union, Poster.
- Eklof, J.,** Waldrop, M., Dafflon, B. Jones, B., Jing, T., Neumann, B. (2021, December). Environmental Controls on Thaw Rates of a Degrading Discontinuous Permafrost Plateau. American Geophysical Union, Poster.
- Eklof, J.,** Waldrop, M., Jing, T., Neumann, B. (2020, December). Watershed Effects on Local Carbon Emissions in Subarctic Bogs. American Geophysical Union, Remote, Poster.
- Eklof, J.,** Waldrop, M., Jones, B., Neumann, B. (2019, December). Thaw dynamics of a rapidly degrading isolated permafrost plateau in south-central Alaska. American Geophysical Union, San Francisco, CA, Poster.
- Eklof, J.,** Pepper, R. (2016, November). Seed Characteristics Matter in the Dispersal of Splash Cup Plants. American Physical Society Fluid Dynamics Division, Portland, OR, Oral.
- Eklof, J.,** Pepper, R. (2016, January). Seed Characteristics Matter in the Dispersal of Splash Cup Plants. The Society of Integrative & Comparative Biology, Portland, OR, Poster.

INVITED PRESENTATIONS

- Eklof, J.,** (2023, April). Environmental Factors Controlling Local Thaw at a Vegetation- Protected Permafrost Plateau at the Southern Fringe of the Permafrost Zone. U. of Wash. Program on Climate Change Spring Welcome. Oral Presentation.
- Eklof, J.,** (2020, April). Transport of Thermal Energy by Rain in Permafrost Landscapes. U. of Wash. Program on Climate Change seminar series. Oral presentation.
- Eklof, J.,** Neumann, R. (2020, April). Transport of Thermal Energy by Rain in Permafrost Landscapes. Interagency Arctic Research Policy Committee meeting. Oral presentation.
- Eklof, J.** (2016, November). A Snapshot in Tacoma Urban Forestry, and What is Being Done to Address It. Trees Over Tacoma, Tacoma, WA, Oral Presentation.

- **Eklof, J.** (2016, March). From Syringes to Rock Gardens: How a Local Bike Park is Changing the Face of East Tacoma. Jones Academy, Tacoma, WA, Oral presentation.
- **Eklof, J., Pepper, R.** (2016, April). Seed Characteristics Matter in the Dispersal of Splash Cup Plants. McCormick Research Symposium, Tacoma, WA, Oral presentation.
- **Eklof, J., DeMotts, R.** (2015, October). The Imperfect Eternalization of Traditional Ecological Knowledge Projected to be Lost. One [of a Kind] Celebration, Tacoma, WA, Oral presentation.

WORK EXPERIENCE

Water Quality Outreach Specialist AmeriCorps Intern for Pierce Conservation District	2016-2017
<ul style="list-style-type: none"> • Served as a contributing member of the Lower Watershed Forestry committee, a sub-category of the Puyallup Watershed Initiative • Organized and implemented a \$15,000 subsidized tree sale to increase canopy cover in low-income areas of Pierce County • Facilitated volunteer planting of native vegetation at multiple restoration sites and urban pavement removal efforts with 20-150 volunteers weekly • Conducted and trained volunteers to conduct water quality field testing • Delivered presentations to diverse audiences on environmental topics such as restoration ecology, urban forestry, and stormwater infrastructure 	

HONORS AND AWARDS

UW College of Engineering Student Teaching Award Nominee	2022,2023
<ul style="list-style-type: none"> • Nominated by students and peers 	
Sigma Pi Sigma Physics Honor Society	2016
<ul style="list-style-type: none"> • Awarded to the top 10% of declared physics students 	
Pi Mu Epsilon Math Honor Society	2016
<ul style="list-style-type: none"> • Awarded to math minors/majors with a >3.5 GPA in all math courses 	
Greek Scholar of the Year	2014
<ul style="list-style-type: none"> • Awarded to one student per year at the University of Puget Sound 	
Recognition of Outstanding Leadership	2013-2016
<ul style="list-style-type: none"> • Awarded to 20 students per class at the University of Puget Sound 	
Matelich Scholarship	2012-2016
<ul style="list-style-type: none"> • Four-year scholarship covering all tuition and expenses for academics and leadership 	
Dean's List	2012-2016
<ul style="list-style-type: none"> • Awarded to the top 10% of Undergraduate Class (earned six semesters) 	

COMMUNITY SERVICE

Skype a Scientist	2020-Present
UW CEE DEI Action Planning Committee	2020-Present
Trail work for Evergreen Mountain Bike Alliance	2013-Present
AmeriCorps Year of Service	2016-2017
Fundraiser Preparation with Rainbow Center	2016
Food Packing for Emergency Food Network	2016
Building for Hilltop Urban Gardens	2016
Invasive Species Removal for Metro Parks Tacoma	2012-2016
Tony's Soup Kitchen	2013-2015
Mexico Build Trip	2015
Walk for Water Participant / Organizer	2012-2015
Walk in the Light International Trip to Burkina Faso	2013