Louis Graup

ljgraup@gmail.com

Riedstrasse 8 | 8908 Hedingen, Zürich, Switzerland

+1 (570) 691-6722

louisgraup.com

EDUCATION

University of California Santa Barbara, Santa Barbara, CA
Bren School of Environmental Science & Management
Doctor of Philosophy, *Environmental Science & Management*
September 2018 – June 2024

Temple University College of Science & Technology, Philadelphia, PA
Bachelor of Science, *Applied Mathematics*
Minor: *Computer Science*
GPA: 3.74 - *cum laude*
September 2012 – May 2016

Temple University Japan, Tokyo, Japan

- Full-length summer semester, 2014
- Completed course work in Japanese language and culture
- Greatly improved Japanese language proficiency
- Experienced total cultural immersion through a host family stay
- Worked part-time at an internship for multi-national financial corporation

Reykjavik University, Reykjavik, Iceland

- Participated in the GREEN Program, the experiential education program for future renewable energy and sustainability leaders
- Completed course work in renewable energy systems and sustainable development as well as exposure to renewable energy plants
- Presented capstone project with research group on developing methods for obtaining clean water through the use of geothermal energy

HONORS & AWARDS

- NSF INTERN Fellow 2023
- HydroLearn Fellow 2021
- NCALM Fellowship 2020
- NSF Graduate Research Fellowship Honorable Mention 2019
- Temple University Honors Scholar
- Phi Beta Kappa Honors Society
- Benjamin A. Gilman International Scholarship
- Francis James & Helen C. Sholomskas Scholarship for Outstanding Students
- Freeman East Asia Internship Scholarship
- Excellence in Service for an Undergraduate Mathematics Student 2015

RESEARCH EXPERIENCE

Graduate Research Intern May 2023 – September 2023

Pacific Southwest Research Station, United States Forest Service

Host Mentor: Dr. Patricia Manley, Director, Institute of Forest Genetics

- Awarded $50,000 NSF Non-Academic Research Internship for Graduate Students (INTERN) Supplemental Funding
- Designed virtual, watershed-scale forest treatments for RHESSys-FIRE
- Contributed model results to Tahoe-Central Sierra Initiative and Tahoe Environmental Observatory Network collaborations

Graduate Student Researcher September 2018 – June 2024

Earth Research Institute, University of California Santa Barbara

Faculty Mentor: Dr. Naomi Tague

- Designed modelling experiments to understand vegetative response to drought in mountain environments using ecohydrologic model, RHESSys
- Interpreted data using statistical and mathematical techniques to refine model calibration, data assimilation and interpret results in RStudio
- Awarded Best Talk at Bren PhD Symposium 2023

Undergraduate Researcher May 2013 – May 2015

College of Science & Technology, Temple University

Faculty Mentor: Dr. Benjamin Seibold

- Conducted 800 hours of research in the area of microscopic vehicular traffic flow using mathematical modeling
- Interpreted data using calculus, differential equations and linear algebra techniques and implemented results using MATLAB
- Presented results via posters and presentations at three research conferences
- Awarded first place poster presentation at College of Science & Technology Undergraduate Research Symposium 2013

Research Intern May 2015 – July 2015

Center for Computational Engineering Science, RWTH Aachen University

Faculty Mentor: Prof. Dr. Martin Frank

- Conducted research in the area of radiative transfer using mathematical modeling
- Modified existing code to include calculated data from derived equations
- Presented results via poster presentation at research symposium

WORK EXPERIENCE

Teaching Assistant September 2019 – April 2024

Bren School, UCSB, Santa Barbara, CA

- Taught one full quarter of Introduction to Environmental Computing to 15 graduate students as lead teacher
- Implemented strategic use of optimization toolkit in Excel to enhance lab modules in Sustainable Watershed Management
- Directed 30 graduate students through laboratory assignments

Quantitative Strategies Analyst November 2016 – June 2018

Public Financial Management, Inc., Philadelphia, PA

- Structured new bond issuances and optimize restructured debt using industry standard DBC Finance software and What's Best linear optimization software
- Developed data-driven financial models using Microsoft Excel and VBA for internal and client use
- Educated 40 incoming analysts on technical skills and industry knowledge

Intern May 2014 – August 2014

GE Capital Japan, Structured Finance Department, Tokyo, Japan

- Assisted senior level sales staff with underwriting loans, creating presentations, conducting customer segmentation and strategy execution
- Researched specific Structured Finance Products, such as Asset Based Lending (ABL), Cash Flow loans, and Debtor-In-Possession financing

Tutor September 2013 – May 2016

Center for Learning and Student Success, Temple University, Philadelphia, PA

- Instructed 12-15 students per week who need assistance with math assignments in the areas of algebra and calculus
- Conducted group review sessions for over 50 students in calculus

VOLUNTEER EXPERIENCE

Graduate Mentor June 2023 – August 2023

Earth Research Institute, University of California Santa Barbara

- Advised three undergraduate students for a summer research project
- Met weekly to discuss research direction, GIS tasks, and R spatial analysis

Teaching Assistant February 2016 – May 2016

Nationalities Service Center, Philadelphia, PA

- Taught English as a Second Language to 15 adult students
- Assisted the teacher in lesson planning and implementation in the classroom

Percussion Instructor April 2015 – May 2016

Interboro High School, Norwood, PA

- Instructed 16 high school students on proper playing technique and rhythm
- Assisted band director with marching band practice

SKILLS

- Communication: Public speaking, teaching, poetry, music, art
- Languages: French (spoken and written proficiency), German (novice), Japanese (novice), Chinese (novice)
- Computer: R, C, C++, GIS, MATLAB, SQL, VBA, HTML, Python

PUBLICATIONS

Graup, L. J., Tague, C.L., Harpold, A. A., Manley, P., Wolf, S., & Kirchner, J.W. Modeling the co-benefits of thinning on forest structure and hydrological refugia. *In preparation.*

Graup, L. J., Tague, C. L., Harpold, A. A., & Krogh, S. A. (2022). Subsurface lateral flows buffer riparian water stress against snow drought. *Journal of Geophysical Research: Biogeosciences*, 127, e2022JG006980. https://doi.org/10.1029/2022JG006980

Graup, L., Lightbody, A., Tamaddun, K. (2021) Modelling Watershed Sensitivity to Drought. *HydroLearn*. https://edx.hydrolearn.org/courses/course-v1:UCSB_UNH_UV+HM101+2021_T1/about

Graup, L. (2020) Preserving Mountains with Forest Management, CA 2020. *National Center for Airborne Laser Mapping*. https://doi.org/10.5069/G96H4FMX

Hwang, K., Harpold, A. A., Tague, C. L., Lowman, L., Boisramé, G. F. S., Lininger, K. B., et al. (2023). Seeing the disturbed forest for the trees: Remote sensing is underutilized to quantify critical zone response to unprecedented disturbance. *Earth's Future*, 11, e2022EF003314. https://doi.org/10.1029/2022EF003314

Warix, S., Johnson, K., Adamchak, C., et al. Early career perspectives to broaden the scope of Critical Zone Science. *In review*. *Earth's Future*.

ORCID: 0000-0002-4833-8161

Personal blog featuring posts raising public environmental awareness ecophile.blog

PRESENTATIONS

Graup, L., Tague, C., Harpold, A., Manley, P., Wolf, S., Kirchner, J. Modeling the Co-Benefits of Mechanical Thinning on Forest Structure, Fire Effects, Biodiversity, and Hydrological Refugia. AGU Fall Meeting 2023.

Graup, L. and Tague, N. The Signature of Snow Drought: A Spatially-Connected Approach to Understanding Forest Water Stress, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-9151, https://doi.org/10.5194/egusphere-egu23-9151, 2023.

Graup, L. and Tague, C., "Ecohydrological Impacts of Riparian and Upslope Fuel Treatments", AGU Fall Meeting 2022.

Graup, L., Tague, C. N., Harpold, A., and Krogh, S., "Will Riparian Refugia be Destabilized by Snow Drought?", AGU Fall Meeting 2021.

Graup, L. and Tague, C., "Spatial and temporal patterns of summer vegetative water stress resulting from snow drought", AGU Fall Meeting 2019.

Krogh, S. A., Graup, L., Broxton, P. D., Tague, C., and Harpold, A. A., "Coevolution of Snowpack and Tree Growth in a Mediterranean Montane Forest", AGU Fall Meeting 2020.

Tague, C., Brandt, T., Graup, L., Krogh, S. A., and Harpold, A. A., "Snow and Forest in the Western US - Does ecophysiology matter? 1089369", vol. 2022, 2022.

REFERENCES

Dr. Naomi Tague, Ph.D. Advisor
tague@ucsb.edu

Dr. Adrian Harpold, Ph.D. Co-Advisor
aharpold@unr.edu

Prof. Dr. James Kirchner, Collaborator
kirchner@env.ethz.ch