YVETTE D. HASTINGS

PERSONAL STATEMENT

Self-motivated, dedicated, passionate Ph.D. student with knowledge and skills in computer science, analytical chemistry, land management, and water resource protection. Highly skilled in R programming and ESRI ArcGIS software, with basic to intermediate knowledge of MATLAB, Python, Java, SQL database management, HTML, CSS, JavaScript, and Typescript to perform statistical analysis and data visualization. Advanced troubleshooting techniques with proven applications in analytical laboratory instrumentation and software repair.

EDUCATION

PhD Computer Science
Montana State University, Bozeman, MT, Anticipated Completion Spring 2028
Dissertation Title:
NSF Grant: "SitS: Coupling High Frequency Soil Solute Signals and Scalable Simulations to Quantify Biogeochemical Mechanisms Governing Water Quality." (NSF DEB 2034430)
Advisor: Dr. Ann Marie Reinhold

MS Geography
University of Utah, Salt Lake City, UT, August 2022
Thesis Title: "Green Infrastructure Microbial Community Response to Simulated Pulse Precipitation Events in the Semi-Arid Western U.S."
NSF Grant: "Can green infrastructure maximize ecosystem processes related to nitrogen?" (NSF DEB 2006308)
Advisor: Dr. Jennifer Follstad Shah
Graduate Certificate in Hydrology and Water Resources

BS Environmental and Sustainability Studies
University of Utah, Salt Lake City, UT, July 2020
Certificate in Geographic Information Systems (GIS)

BA General Science
North Central College, Naperville, IL, May 2007
Minored in History

HONORS AND AWARDS

Montana State University Graduate School University Fellowship, Spring 2023 – Present
Fellowship award based on academic and scholarship achievements to assist in the cost of living during graduate school.

Weber State University Intermountain Sustainability Summit Student Poster Competition, Spring 2022
Student poster, graduate student category, winner for the 2022 Intermountain Sustainability Summit. Poster submission titled: "Green Infrastructure Microbial Community Response to Simulated Storm Events in Semi-Arid Environments".

Global Change and Sustainability Center Student Travel Award, Spring 2022
Student travel funding to the Consortium of Aquatic Science Societies Joint Aquatic Science Meeting in Grand Rapids, MI, in May 2022.

Teaching Assistantship and Research Assistantship, 2021 & 2022 Academic Year
Student tuition, teaching, and research assistantship during Master of Science studies provided by the University of Utah Environmental and Sustainability Program and Department of Geography.

Undergraduate Summer Research Assistantship, Summer 2004
Assist the Department of Chemistry junior faculty conduct summer research.

RESEARCH EXPERIENCE

Dissertation, Montana State University, Bozeman, MT 2023 – Present
Graduate Research Assistant, Dr. Ann Marie Reinhold
- Mentor 4-5 undergraduate students in cybersecurity.
- Co-develop a soil contamination simulation model.
- Design and develop a web visualizer for PIQUE software quality model output.

Thesis, University of Utah, Salt Lake City, UT, 2020 – 2022
Graduate Research Assistant, Dr. Jennifer Follstad Shah
- Provide project management expertise to monitor research progress.
- Assist in project database management.
- Assist in protocol development, laboratory setup, and chemical hygiene monitoring.
- Utilize laboratory equipment to complete protocol extractions and assays.
- Perform statistical analysis on research results.

North Central College, Naperville, IL, 2004
Undergraduate Research Assistant, Dr. Jeffery Jankowski
- Investigate non-corrosive fuel additives for methanol fuel.
- Establish lab protocol and safety parameters for flammable materials used during research applications.

PUBLICATIONS

Munro, M.H., Gore, R.J., Lynch, C.J., **Hastings, Y.D.**, & Reinhold, A.M. Enhancing Risk and Crisis Communication with Computational Methods: A Systematic Literature Review. *Risk Analysis* **2024**, 1-15. http://doi.org/10.1111/risa.17690

Hastings, Y.D., Smith, R.M., Mann, K.A., Brewer, S., Goel, R., Hinners, S.J., & Follstad Shah, J. Green Infrastructure Microbial Community Response to Simulated Pulse Precipitation Events in the Semi-Arid Western United States. *Water* **2024**, 16, 1931. https://doi.org/10.3390/w16131931

Hastings, Y. D., & Reinhold, A. M. (2023). Applying Software Quality in Use Standards to Improve Scientific Software Selection. *WiPiEC Journal-Works in Progress in Embedded Computing Journal*, *9*(2), 6-8.

PRESENTATIONS

Hastings, Y.D. (2025, May 21). *Hands-on demo: Digital Forensics* [Invited Presentation]. 2025 Cybersecurity Education and Research Summer Workshop, Washington State University, Pullman, WA.

Hastings, Y.D. (2024, March 15). *Environmental Software Engineering* [Invited Presentation]. Spatial Utah Data Science, University of Utah, Salt Lake City, Utah.

Izurieta, C., Woods, N., Reinhold, A.M., & **Hastings, Y.D.** (2023, September 8). *A Brief of Distributed Data Processing* [Oral Presentation]. DSD-SEAA 2023 MicroEuropean Conference, Works in Progress Session, Durres, Albania.

Hastings, Y.D., & Reinhold, A.M. (2023, September 8). *Applying Software Quality in Use Standards to Improve Scientific Software Selection* [Oral Presentation]. DSD-SEAA 2023 MicroEuropean Conference, Works in Progress Session, Durres, Albania.

Hastings, Y.D., Mann, K.A., Smith, R.M., & Follstad Shah, J (2022, November 16). *Green Infrastructure Microbial Response to Storm* [Poster Presentation]. Salt Lake County Watershed Symposium. https://watershedsymposium2022.sched.com/artist/u1105374

Hastings, Y.D. (2022, June 13). *Green Infrastructure Microbial Community Response to Simulated Pulse Precipitation Events in the Semi-Arid Western U.S.* [Thesis Defense]. University of Utah.

Hastings, Y.D., Mann, K.A., Smith, R.M., & Follstad Shah, J. (2022, May). *Green Infrastructure Microbial Community Response to Simulated Storm Events in Semi-Arid Environments* [Poster Presentation]. Consortium of Aquatic Science Societies Joint Aquatic Science Meeting.

Hastings, Y.D., Follstad Shah, J., Mann, K.A., & Smith, R.M. (2022, February). *Green Infrastructure Microbial Community Response to Simulated Storm Events in Semi-Arid Environments* [Poster Presentation]. University of Utah Environment and Sustainability Research Symposium. https://www.environment.utah.edu/students/student-project/yvette-hastings/

PROFESSIONAL DEVELOPMENT TRAINING

Reactive Transport with Sophisticated Reaction Networks
Pacific Northwest National Laboratory, Richland, WA, 2023
Description: CUAHSI training on reactive transport with hands-on experience using PFLOTRAN to solve environmental problems.

Reactive Transport Modeling Summer Institute
Colorado School of Mines, Golden, CO, 2023
Description: Training on reactive transport modeling with hands-on experience using CRUNCHTOPE to solve environmental problems.

Research Education
University of Utah, Salt Lake City, UT, 2020 – 20021
Mentor Training: Introduction to Research Mentoring; Assessing Understanding and Fostering Independence; Establishing Expectations and Maintaining Effective Communication
Research Courses: Annual Teaching Symposium; Getting Published: Responsible Authorship and Peer Review; Introduction to Responsible Conduct of Research; Rigor, Transparency, and Reproducibility in Research

PFC for Professionals
Bureau of Land Management, National Resources Conservation Service, U.S. Fish and Wildlife Service, Salt Lake City, UT, Summer 2021
Description: Classroom and field training on Proper Functioning Condition (PFC) assessments for federally managed lentic and lotic systems.

Meadow Restoration
Bureau of Land Management, National Resources Conservation Service, U.S. Fish and Wildlife Service, Cedar City, UT, Summer 2021
Description: Classroom training for meadow condition assessments. Identify impaired meadows and learn techniques to improve meadow conditions.

PROFESSIONAL WORK EXPERIENCE

Graduate Research Assistant
Montana State University, Bozeman, MT, January 2023 – Present

- Design and develop web-based visualizer for PIQUE model output.
- Mentor 4-5 undergraduate students in cybersecurity.
- Co-develop System for Environmental Reaction and Simulation (systERS), an R software library to simulate the transport and reaction of contaminants in streams and soil pore spaces.

Teaching and Research Assistant
University of Utah, Salt Lake City, UT, August 2020 – December 2022

- Assist 200+ undergraduate students in achieving academic success in course objectives and final project deliverables.
- Perform ecology and hydrology research to understand surface water impacts on urban stream systems.

Hydrology Technician – Student Intern, Volunteer
Bureau of Land Management, Volunteer, Salt Lake City, UT, May 2019 – April 2022
Bureau of Land Management, GIS Internship, Salt Lake City, UT, Summer 2020
Bureau of Land Management, University of Utah Hinckley Internship, Salt Lake City, UT, Summer 2019

- Collect samples and perform field assessments of federal rangeland and riparian areas with team members to compile data for rangeland management programs.
- Perform riparian restoration projects with team members to revegetate fire-devastated rangeland.
- Generate, compile, interpret, and transfer GIS and field assessment data into National Proper Functioning Condition Database to prioritize riparian restoration projects.
- Beta test new GIS and digital assessment software to streamline field assessments.

Chemist, Inorganic Department Rover/Assistant Supervisor
American West Analytical Labs, Salt Lake City, UT, July 2016 – July 2020

- Train 30+ new and current employees on EPA and laboratory methods to enhance performance and efficiency.
- Operate and maintain 6+ analytical instrumentation to ensure proper instrument functionality.
- Research and apply EPA methods to create and update laboratory SOPs.
- Review department analytical data for final client reports ensuring compliance with EPA and other accrediting agency requirements.
- Set up new analytical instrumentation to further enhance laboratory testing methods.
- Research and test scientific methods to improve current SOPs.
- Maintain a working knowledge of all testing procedures in the Inorganic Department to assist laboratory personnel complete daily tasks.

Chemist
Genysis Nutrition Labs, Salt Lake City, UT, April 2014 – July 2016

- Operate and maintain Perkin Elmer NexION 300X ICP-MS instrumentation to provide clients with timely and accurate analytical results.
- Prepare and analyze client samples daily by ICP-MS digestion methods to ensure accuracy in client results.
- Train 6+ laboratory technicians in analytical methods and instrumentation.
- Peer-review analytical data to ensure data is reported in compliance with SOPs.
- Generate laboratory reports and enter client data in laboratory reporting software.
- Ensure cleanliness of lab and lab equipment.

Chemical Analyst
American West Analytical Labs, Salt Lake City, UT, April 2012 – April 2014

- Operate and maintain Agilent 7700 series and Perkin Elmer 6100 DRC ICP-MS instrumentation.
- Prepare and analyze client samples daily by ICP-MS in accordance with EPA methods.
- Review and update SOPs to meet EPA requirements.
- Perform yearly and quarterly certifications for laboratory instrumentation EPA testing requirements.
- Generate laboratory reports and enter client data in laboratory reporting software.
- Ensure all glassware is clean and stored correctly.

PROFESSIONAL MEMBERSHIP

Institute of Electrical and Electronics Engineers, 2024 – Present

Spatial Utah Data Science, 2022 – Present; Webmaster

Society for Freshwater Science, 2021 – Present

Association for Computing Machinery, 2021 – Present

COMMUNITY SERVICE

Impact Trainings, Salt Lake City, UT, 2010 – 2025
Staff for adult and youth trainings
Belay at a ropes course

Exchange Club of Naperville, Naperville, IL, 2000 – 2006
Ribfest Steering Committee Member

LANGUAGES

English: Native Language

Dutch: Novice Listener, Novice Speaker, Novice Reading and Writing

REFERENCES

Dr. Jennifer Follstad Shah, Associate Professor
Environmental and Sustainability Studies
University of Utah
260 Central Campus Dr.
Salt Lake City, UT 84112
Phone: (801) 633-2003
Email: jennifer.shah@envst.utah.edu

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