

Jordyn M. Wolfand, Ph.D., P.E.

Assistant Professor
University of Portland

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EDUCATION

- PhD **Stanford University, Stanford, CA** (2018)
Civil and Environmental Engineering – Environmental Engineering
- MS **Stanford University, Stanford, CA** (2015)
Civil and Environmental Engineering – Environmental Fluid Mechanics and Hydrology
- BS **Tufts University, Medford, MA** (2011)
Civil and Environmental Engineering – *summa cum laude* with Highest Thesis Honors

ACADEMIC AND RESEARCH POSITIONS

- 2020– **Assistant Professor**, Shiley School of Engineering, University of Portland, Portland, OR
- 2019 **Postdoctoral Research Fellow**, Colorado School of Mines, Golden, CO
Civil & Environmental Engineering – Supervisor Dr. Terri Hogue
- Modeled and evaluated potential water management scenarios in the Los Angeles River Basin
 - Research mentor to undergraduate and graduate students
- 2014–2018 **Graduate Research Assistant**, Stanford University, Stanford, CA
Re-inventing the Nation's Urban Water Infrastructure (ReNUWIt), Civil & Environmental Engineering – Advisor Dr. Richard Luthy
- Created computational models for occurrence and management of bacteria and urban-use pesticides at the watershed scale in Los Angeles and San Diego, CA
 - Led field efforts to collect and process water quality samples for model calibration
 - Gained technical proficiencies in EPA SWMM, EPA SUSTAIN, ArcGIS, R and Matlab
 - Investigated ability of wood-decay fungi to degrade stormwater pollutants
- 2010–2011 **Undergraduate Research Assistant**, Tufts University, Medford, MA
Integrated Multiphase Environmental Systems Lab, Civil & Environmental Engineering
- Examined the link between polychlorinated biphenyl (PCB) exposure and Parkinson's disease
 - Investigated the fate and transport of nanoscale carbon for senior honors thesis
- 2007 **Research Intern**, University of Maryland, College Park, MD
Aquatic Pathobiology Center, Department of Veterinary Medicine
- Investigated the behavioral and toxicological effects of a synthetic estrogen on fathead minnows

REFEREED JOURNAL ARTICLES

* Denotes undergraduate author.

- In Review* **Wolfand, J.M**, Taniguchi-Quan, K.T., Abdi, R., Gallo, E., Irving, K., Philippus, D., Rogers, J.B., Stein, E.D., Hogue, T.S. Balancing water reuse and ecological support goals in an effluent dominated river.

- Wolfand, J.M.**, Bieryla, K., Ivler, C., Symons, J. Exploring an Engineer's Role in Society: Service Learning in a First-Year Computing Course.
- Philippus, D.*, **Wolfand, J.M.**, Abdi, R., Hogue, T.S. Raspy-Cal: A Genetic Algorithm-Based Automatic Calibration Tool for HEC-RAS Hydraulic Models.
- Abdi, R., Rogers, J.B., Rust, A., **Wolfand, J.M.**, Philippus, D., Taniguchi-Quan, K., Irving, K., Stein, E.D., Hogue, T.S., Evaluating the thermal impact of substrate temperature on ecological restoration in shallow urban rivers.
- 2021 Helinski, O. *, **Wolfand, J. M.** Ridding Our Rivers of Plastic: A Framework for Plastic Pollution Reduction Device Selection.
- Panos, C.L., **Wolfand, J.**, Hogue, T.S. Assessing resilience of a dual drainage urban system to redevelopment and climate change. *Journal of Hydrology*.
- 2020 Blount, W.K., **Wolfand, J.**, Bell, C.D., Ajami, N., Hogue, T.S. Satellites to sprinklers: Assessing the role of climate and land cover change on patterns of urban outdoor water use. *Water Resources Research*. DOI:10.1029/2020WR027587
- Bell, C.D., **Wolfand, J.**, Hogue, T.S. Regionalization of default parameters for urban stormwater quality models. *Journal of the American Water Resources Association*. DOI: 10.1111/1752-1688.12878
- Panos, C.L., **Wolfand, J.**, Hogue, T.S. SWMM Sensitivity to LID Siting and Routing Parameters: Implications for Stormwater Regulatory Compliance. *Journal of the American Water Resources Association*. DOI: 10.1111/1752-1688.12867
- Bell, C.D., **Wolfand, J.**, Panos, C., Bhaskar, A., Gilliom, R., Hogue, T., Hopkins, K., Jefferson, A. Stormwater control impacts on runoff volume and peak flow: a meta-analysis. *Hydrological Processes*. DOI: 10.1002/hyp.13784
- Luthy, R.G., **Wolfand, J.**, Bradshaw, J.L. The Urban Water Revolution: Sustainable Water Futures for California Cities. *Journal of Environmental Engineering*. DOI: 10.1061/(ASCE)EE.1943-7870.0001715
- Boehm, A.B., Bell, C.D., Fitzgerald, N.J.M, Gallo, E, Higgins, C.P., Hogue, T.S., Luthy, R.G., Portmann, A.C., Ulrich, B.A., **Wolfand, J.M.** Biochar-augmented biofilters to improve pollutant removal from stormwater - can they improve receiving water quality? *Environmental Science: Water Research & Technology*. DOI: 10.1039/D0EW00027B
- 2019 **Wolfand, J.**, Seller, C., Bell, C.D., Cho, Y.M, Oetjen, K., Hogue, T.S., Luthy, R.G. Occurrence of urban-use pesticides and management with enhanced stormwater control measures at the watershed scale. *Environmental Science & Technology*. 53(7), 3634–3644, DOI: 10.1021/acs.est.8b05833
- 2018 Pritchard, J.C., Cho, Y.M., Ashoori, N., **Wolfand, J.**, Sutton, J.D., Carolan M.E., Gamez, E., Doan, K., Wiley, J.S., Luthy, R.G. Benzotriazole Uptake and Removal in Vegetated Biofilter Mesocosms Planted with *Carex praegracilis*. *Water*. 10(11), 1605, DOI: 10.3390/w10111605
- Wolfand, J.**, Bell, C.D., Boehm, A.B., Hogue, T.S., Luthy, R.G., Multiple pathways to bacterial load reduction by stormwater best management practices: tradeoffs in performance, volume, and treated area. *Environmental Science & Technology*. 52, 6370–6379, DOI: 10.1021/acs.est.8b00408.
- 2016 **Wolfand, J.**, LeFevre, G., and Luthy, R. Metabolization and Degradation Kinetics of the Urban-use Pesticide Fipronil by White Rot Fungi *Trametes versicolor*. *Environmental Science: Processes & Impacts*. 18(10) 1249–1362, DOI: 10.1039/c6em00344c.

TEACHING

- 2020– **Assistant Professor**, Shiley School of Engineering, Civil Engineering, University of Portland, Portland, OR
Courses taught: Hydraulic Engineering (CE362), Water Resources Engineering (CE464/564), Engineering Computing with Applications (EGR111), Introduction to Engineering (EGR110), Civil Engineering Seminar (CE200)
- Fall 2019 **Instructor**, Hydrology and Water Resources Laboratory (CEEN 482), Colorado School of Mines, Golden, CO
- 2017–2018 **Instructor**, Stormwater Seminar, Stanford, CA
- Taught hydrology and stormwater design concepts to first-year undergraduates
 - Lead students through the design of a stormwater treatment system for a new development on campus
- Spring 2017 **Project Mentor & Guest Lecturer**, San Jose State University, San Jose, CA
- Delivered guest lectures and supported student independent projects in *Field Studies in Water Resource Management* through Stanford's *Preparing Future Professors* program
- Fall 2016 **Teaching Assistant**, Physical and Chemical Treatment Processes, Stanford, CA
- Led office hours and exam review sessions for over 40 graduate students
 - Delivered guest lectures; Graded term papers and exams
- 2008–2012 **Outdoor Educator and Section Head**, North Country Camps, Keeseville, NY
- Lead wilderness trips and taught outdoor leadership and survival skills
 - Managed six staff members and oversaw 40 campers ages 13–15

MENTORSHIP

- 2020– **Undergraduate Research Mentor**, University of Portland, Portland, OR
- A. Radke, Civil Engineering, 2021–
 - D. Battaglino, Civil Engineering, 2021–
 - E. Diaz-Gunning, Civil Engineering, 2021–
 - M. Stone, Mechanical Engineering, 2021–
 - P. Mohammadi, Computer Science, 2021–
 - S. Sok, Civil Engineering, 2021–
 - A. Tinoco, Civil Engineering, 2020–
 - K. Bermani, Environmental Studies, 2021
 - O. Helinski, Civil Engineering, 2020–2021
- 2020– **Senior Capstone Advisor**, University of Portland, Portland, OR
- Civil engineering team, EPA Rainworks Competition (2021–2022)
 - Civil engineering team, stormwater improvements to International Way, partner City of Milwaukie, OR (2020–2021)
 - Interdisciplinary team, marine debris capture device (2020–2021)
- 2019–2020 **Research Mentor**, Colorado School of Mines, CO
- C. Panos, PhD student
 - K. Blount, PhD student
 - V. Hennon, MS student
 - D. Philippus, Undergraduate student
- 2014–2018 **Volunteer Tutor**, East Palo Alto Tennis and Tutoring, Stanford, CA
- Provide individual academic instruction to students during weekly sessions

- Encourage long-term academic achievement and accountability
- Mentored three students in total, all first-generation college-degree seekers

2015–2018 **Research Mentor**, Stanford University, Stanford, CA

- P. Brown (2016–2018), undergraduate at Stanford University
- C. Seller (2017), Masters student at University of Stuttgart, now PhD student at Eawag
- C. Stanhke (2015), undergraduate at University of Portland, now Engineering Associate at City of Portland Bureau of Environmental Services

OUTREACH

2019 **Volunteer Instructor**, Research Experience for Teachers, Water-Energy Education for the Next Generation, Colorado School of Mines, CO

- Co-led a week-long experience for K-12 teachers on stormwater modeling and green infrastructure

2014–2019 **Volunteer**, ReNUWIt, Stanford, CA

- Instructed water activity at the Ingenuity Lab at the Lawrence Hall of Science in Berkeley, CA
- Volunteered at Water Bar, an interactive exhibit at the Cantor Arts Center in Stanford, CA
- Led activity and lecture on stormwater quality in Environmental Science class at Woodside High School in Woodside, CA
- Reviewed summer Research Experiences for Undergraduates (REU) applications, assisted with screening over 200 applications

2017 **Rising Environmental Leader**, Rising Environmental Leaders Program, Stanford, CA

- Interacted with decision-makers in Sacramento, CA and Washington, DC, developing science communication skills while learning about state- and federal-level environmental policy making.

2007–2011 **Instructor and Board Member**, Center for Engineering Education Outreach, Medford, MA

- Instructed K–12 students in engineering and simple programming concepts
- Developed Science, Technology, Engineering, and Math (STEM) curricula to meet the Massachusetts Frameworks

OTHER PUBLICATIONS

2019 Gordon, B., Quesnel, K.Q., Hamel, P., **Wolfand, J.** Using Nature to Tackle Water Infrastructure Challenges: Frontiers of Green Infrastructure Research at Stanford. *Water in the West – Insights*.

2015 ReNUWIt. Briefing book from Technology Diffusion Workshop on Open Water Unit Process Wetlands, Berkeley, CA. (**J. Wolfand** as contributor on regulatory framework).

2011 **Wolfand, J.** Fate and Transport of Nanoscale Buckminsterfullerene Aggregated (nC₆₀) in Heterogeneous Porous Media. *Senior Honors Thesis*, Tufts University, Medford, MA.

2007 **Wolfand, J.** Active Ingredient in Oral Contraceptives Alters Male Competitive Courtship Behaviors and Secondary Sexual Characteristics in Fathead Minnows. *Journal of the U.S. Stockholm Junior Water Prize*.

PROFESSIONAL EXPERIENCE

- 2020–2021 **Independent Contractor**, Colorado School of Mines, Golden, CO
- Created hydrologic and hydraulic model of the Los Angeles River Basin to evaluate management decisions
 - Research mentor to undergraduate and graduate students
- 2012–2019 **Senior Staff Engineer** (part time since 2013), Geosyntec Consultants, Brookline, MA
- Review Storm Water Pollution Plans (SWPPPs) for compliance with state general permits for construction. Expertise in requirements for over 35 U.S. states
 - Performed hydrologic stormwater modeling for municipalities and developments
 - Designed, modeled, and optimized dynamically-controlled “smart” stormwater management systems
 - Provided technical support, database management, and data analysis for a remotely controlled river sediment sampler
- 2012 **Engineering Co-op**, Geosyntec Consultants, Columbia, MD
- Assisted in the preparation of construction documents and drawings
 - Assisted with development of soil erosion and sediment control management plans and storm water management plans for remediation sites
- 2009 **Stockholm Junior Water Prize Intern**, Water Environment Federation, Alexandria, VA
- Planned and provided logistical support for the 2009 national U.S. Stockholm Junior Water Prize competition in Anchorage, AK
 - Edited the student journal *For the Future, From the Future: Journal of the U.S. SJWP*

PRESENTATIONS

- 2021 Wolfand, J. Microplastics in Stormwater: State of Knowledge and a Portland Case Study. **Oregon Section of the Environmental Water Resources Group – Sustainable Stormwater Symposium**. Remote. *Invited Keynote Speaker*. September 2021.
- Wolfand, J. Making lemonade out of a lemon: How the 2020 crash course in online teaching and virtual communication may positively impact our profession. **2021 AEESP “Virtual Appetizer,”** Remote. *Panel Discussion*. July 2021.
- Wolfand J., Taniguchi-Quan K., Managing wastewater discharge for environmental flows in the Los Angeles River. **ReNUWit Annual Meeting**. *Invited Talk*. 2021.
- 2020 Abdi, R., Taylor, J., Rust, A.J., Wolfand, J.M., Philippus, D., Taniguchi-Quan, K., Irving, K., Hennon, V., Stein, E.D., Hogue, T.S. Evaluating the impact of substrate temperature on thermal habitat suitability and ecological restoration in shallow urban rivers. **AGU Fall Meeting**, Remote. *Talk*. December 2020.
- Helinski, O., Tinoco, A., Membrere, T., Wolfand, J.M., Poor, C.J. Remote Undergraduate Engineering Research: Pros, Cons, and Tips. **AGU Fall Meeting**, Remote. *Talk*. December 2020.
- Wolfand, J., D. Philippus, R. Abdi, J. Taylor, K. Irving, K. Taniguchi-Quan, E.D. Stein, T.S. Hogue. Wastewater discharges as a management tool to support beneficial uses of urban rivers. **AGU Fall Meeting**, Remote. *Talk*. December 2020.
- 2019 Wolfand, J., Seller, C., Bell, C.D., Cho, Y.M., Oetjen, K., Hogue, T.S., Luthy, R.G. Managing urban-use pesticides with enhanced green infrastructure on the watershed scale. **11th National Monitoring Conference**, Denver, CO. *Talk*. March 2019.

- 2018 Wolfand, J., Seller, C., Bell, C.D., Cho, Y.M., Oetjen, K., Hogue, T.S., Luthy, R.G. Managing urban-use pesticides with enhanced green infrastructure on the watershed scale. **AGU Fall Meeting**, Washington D.C. *Talk*. December 2018.
- Wolfand, J. Managing urban water quality with enhanced stormwater control measures. **Colorado State University**. *Invited Talk*. October 2018.
- Wolfand, J., Seller, C., Cho, Y.M., Hogue, T.S., Luthy, R.G. Modeling reduction of bacteria and pyrethroids by enhanced stormwater best management practices (BMPs) on a watershed scale. **EWRI Congress**, Minneapolis, MN. *Talk*. June 2018.
- Brown, P., Wolfand, J., Luthy R.G., Amirbahman, A., James, C. Optimization and Development of a Biodegradable Scaffold to Remove Nutrients from Stormwater. **EWRI Congress**, Minneapolis, MN. *Talk*. June 2018.
- 2017 Wolfand, J., Bell, C.D., Boehm, A.B., Hogue, T.S., Luthy, R. G. Modeling Removal of Fecal Indicator Bacteria by Enhanced Stormwater Best Management Practices (BMPs) on a Watershed Scale. **Annual AWRA Conference**, Portland, OR. *Talk*. November 2017.
- Wolfand, J., Hogue, T., Boehm, A., Luthy, R. Predicting Fecal Indicator Bacteria Fate and Removal in Urban Stormwater at the Watershed Scale. **EWRI Congress**, Sacramento, CA. *Talk*. May 2017.
- Wolfand, J. Fungi for Filtration and Other Natural Systems for Stormwater Treatment, Department of Environmental Studies Public Seminars, **San Jose State University**, San Jose, CA. *Invited Talk*. March 2017.
- 2016 Wolfand, J., Hogue, T., Boehm, A. Luthy, R. Predicting Fecal Indicator Bacteria Fate and Removal in Urban Stormwater at the Watershed Scale. **AGU Fall Meeting**, San Francisco, CA. *Talk*. December 2016.
- Wolfand, J., LeFevre, G., and Luthy, R. Metabolization and degradation kinetics of the urban-use pesticide fipronil by white rot fungi *Trametes versicolor*. **ACS Fall Meeting**, Philadelphia, PA. *Invited Talk*. August 2016.
- Wolfand, J., LeFevre, G., and Luthy, R. Fungal Degradation of the Urban Use Pesticide Fipronil. **CA-NV Section AWWA Spring Conference**, Sacramento, CA. *Invited Talk*. March 2016.
- Quesnel, K. and Wolfand, J. Water Energy Nexus. **Vail Global Energy Forum**, Beaver Creek, CO. *Video Presentation*. January 2016.

POSTERS

- 2020 Hennon, V., Gallo, E.M., Wolfand, J.M., Tinoco, A., Abdi, R., Hogue, T.S. Assessing the Impact of Water Reuse on Water Quality in the Los Angeles River. **AGU Fall Meeting**, Remote. December 2020.
- Philippus, D., Wolfand, J.M., Abdi, R., Hogue, T.S. Raspy-Cal: A Genetic Algorithm-Based Open-Source Python Program for Automatic Calibration of HEC-RAS Hydraulic Models. **AGU Fall Meeting**, Remote. December 2020.
- 2017 Wolfand, J., Bell, C.D., Boehm, A.B., Hogue, T.S., Luthy, R. G. Predicting Bacteria Removal by Enhanced Stormwater Control Measures (SCMs) at the Watershed Scale. **AGU Fall Meeting**, New Orleans, LA. December 2017.
- 2016 Wolfand, J., Hogue, T., Boehm, A. Luthy, R. Modeling enhanced stormwater treatment technologies for fecal indicator bacteria at the watershed scale. **Symposium on Urban**

Water Infrastructure; Stormwater Capture, Treatment and Reuse, Golden, CO. November 2016.

Wolfand, J., Hogue, T., Luthy, R. Modeling enhanced stormwater treatment technologies for water quality benefit and regulatory compliance. **Statewide Water Reuse Forum**, Sacramento, CA. September 2016.

Wolfand, J., LeFevre, G., and Luthy, R. White rot fungi for enhanced stormwater treatment: degradation of the urban-use pesticide, fipronil. **Gordon Conference: Environmental Sciences – Water**, Holderness, NH. June 2016.

2011 Walker, D.I., Wolfand, J., Wang, Y., Bai, C., Li, Y., Abriola, L.M., Pennell, K.D. Transport and Retention of Fullerene Aggregates in Heterogeneous Two Dimensional (2-D) Aquifer Cells Containing Natural Aquifer Sands. **AGU Fall Meeting**, San Francisco, CA. December 2011.

UNIVERSITY SERVICE

2021 Trained Search Advocate
2020– Computing Committee, Shiley School of Engineering, University of Portland
2021 Shiley Tutoring Working Group, Shiley School of Engineering, University of Portland
2020–2021 Graduate School Application Task Force, University of Portland
2014–2017 ReNUWIt Student Leadership Council, Stanford University
2013–2016 Stanford Environmental Engineering Student Committee – Founder, Stanford University
2014–2015 Environmental Engineering Seminar Committee, Stanford University

PROFESSIONAL SERVICE

2021– Stakeholder Advisory Member, Portland State University – Microplastics in Oregon’s water: connecting seafood studies to policy solutions
2020– Science Advisor, Blue Forest Conservation
2020–2021 M.S. Thesis Committee Member, Victoria Hennon, Colorado School of Mines
2020 Expert Reviewer, California Environmental Protection Agency

AWARDS AND HONORS

2016 Association of Environmental Engineering and Science Professors Video Contest – Honorable Mention
2015 Stanford Energy Club Video Competition for the Vail Global Energy Forum – Winner
University of South Florida Reclaim Video Contest – Winner
2011 Tufts Civil and Environmental Engineering Earle F. Littleton Award
2010 Tufts Civil and Environmental Engineering Cataldo Award
Howard Sample Prize in Physics
2007 U.S. Stockholm Junior Water Prize – Maryland State Winner and National Finalist

GRANTS AND FELLOWSHIPS

2021 Shiley SWEO Fellowship - \$15,000
Oregon Sea Grant – SEED Award - \$50,000
Katherine Bisbee II Fund of the Oregon Community Foundation - \$10,000

University of Portland Provost's Initiative for Undergraduate Research - \$1,500
2020 Shiley Grant for Faculty Research and Development - \$3,000
2015 UPS Endowment Fund - \$100,000
2013 Stanford Goldman Graduate Fellowship - \$148,000
Stanford Akiko Yamazaki & Jerry Yang Engineering Fellowship - \$74,000
2010 Tufts Summer Scholar - \$5,500

PROFESSIONAL CREDENTIALS AND MEMBERSHIPS

Professional Engineer, Civil Engineering, Oregon (#96332)
Association of Environmental Engineering and Science Professors
Council on Undergraduate Research
American Society of Civil Engineers
American Geophysical Union
American Water Resources Association