

Stephanie E. Hurley

Associate Professor, Ecological Landscape Design
Department of Plant & Soil Science
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Curriculum Vitae

Education

- Doctor of Design (DDes), Harvard University, Graduate School of Design** **2009**
Dissertation: *Urban Watershed Redevelopment: Design scenarios for reducing phosphorus pollution from stormwater in Boston's Charles River Basin, USA*. Advisor: Richard T.T. Forman.
- Master of Landscape Architecture (MLA), University of Washington** **2004**
Thesis: *Great (Wet) Streets: Merging street design and stormwater management to improve neighborhood streets*. Co-author: Megan Wilson. Advisor: Richard R. Horner.
- Bachelor of Science (BS), University of California, Berkeley** **1999**
Conservation and Resource Studies major, Forestry minor.

Professional Experience & Design Practice

- Associate Professor of Ecological Landscape Design** **2018-present**
Assistant Professor of Ecological Landscape Design **2011-2018**
Department of Plant & Soil Science, College of Agriculture and Life Sciences, University of Vermont (UVM).
Fellow, Gund Institute for Environment **2018-present**
- Stephanie Hurley Design Consulting, LLC** **2004-present**
Independent Consulting, Seattle, WA; Cambridge, MA; and Montpelier, VT.
Collaborations with: ECHO Lake Aquarium & Science Center, Burlington, VT (2017-19, 2010); Landworks VT, Middlebury, VT. (2011); Charles River Watershed Association, Weston, MA. (2005–2006); Paul Lukez Architecture, Somerville, MA. (2006); Seattle Public Utilities, Seattle, WA (2004-2005)
- Postdoctoral Research Associate & Lecturer** **November 2009-August 2011**
Rubenstein School of Environment and Natural Resources, UVM.
“Emerging Threats to the Lake Champlain Ecosystem,” PI: Mary Watzin.
Taught capstone undergraduate course ENSC 202 “Ecological Risk Assessment;” managed/administrated Lake Champlain Sea Grant research RFP process; facilitator for Greening of Aiken internship course.
- Landscape Designer** **2007**
Charles River Watershed Association. Weston, MA.
Research, analysis, and conceptual design imagery for nonprofit. Production of graphic and written materials on ecological stormwater management in residential, commercial, campus, institutional, and industrial settings.

Transportation Landscape Designer

November 2004 – July 2005

Washington State Department of Transportation. Seattle, WA.

Landscape design, construction inspection, and coordination with environmental permitting staff for wetland mitigation projects, wetland delineation, fish habitat restoration, and roadside restoration for state and federal highway projects.

Teaching Experience & Training

Courses taught at the University of Vermont

2010-present

Plant & Soil Science (PSS) 137: "Landscape Design Fundamentals" (Fall, undergraduate*)

PSS 238: "Ecological Landscape Design" (Spring, mixed undergraduate and graduate*)

PSS 301: Professional Skills Colloquium (Fall 2018 only; 1-credit graduate course for PSS and Food Systems graduate students)

PSS 381B: "Agricultural Runoff Treatment Eco Design" (Fall 2014 only, mixed undergraduate and graduate)

PSS 1XX, 3XX: Supervisor for Independent Studies on the following topics: Computer Drafting for Landscape Design (undergraduate 2014), Landscape Design Drawing (graduate 2016), Landscape Grading & Drainage (graduate 2017), Urban Ecological Design (graduate and undergraduate students, 2018), Urban and Agricultural Runoff Research (undergraduate, 2018 and 2019).

ENSC 202: "Ecological Risk Assessment" (Spring 2010 only, undergraduate capstone)

*cross-listed with CDAE, ENVS, and NR course offerings

Service Learning Partners for Design Studio Courses: Burlington Sustainability Academy, Edmunds Elementary School (Burlington), Fayston School (Fayston), Forest Park Condominium Association, J.J. Flynn Elementary School, Leapfrog Hollow Residences, Red Rocks Park (South Burlington Parks Department), Schmanksa Park and Leddy Park (Burlington Parks, Recreation, and Waterfront Department), Southface Condominiums at Sugarbush Resort, Southwind Condominium Association, Murray Hill Condominium Association, Union Elementary School (Montpelier), UVM Horticulture Research Farm, UVM Miller Research Farm, Vermont Downtowns Program (Village Greens Project), Vermont Fish and Wildlife Services, VT Agency of Agriculture, Capital City Farmers Market, Dee Physical Therapy, Caledonia Spirits, and numerous private residences.

Academic Advising at the University of Vermont

2011-present

Advisor for Undergraduate Major in Sustainable Landscape Horticulture Program

Advisor for "Ecological Landscape Design" Concentration within Plant & Soil Science Graduate Program

Teaching Fellowships at Harvard University Graduate School of Design

2006-2009

Studio: *Reviving the Tajo River in Spain*, Profs. Christian Werthmann & Carl Steinitz. Autumn 2007

Teaching fellow and hydrology consultant for large scale regional planning studio in central Spain.

Designing the American City, Prof. Alex Krieger. Spring 2007

Discussion leader for two undergraduate sections for core lecture course.

Studio: *Planning and Design of Landscapes*, Prof. Scheri Fultineer. Autumn 2006

Teaching and reviewing for graduate landscape architecture core studio course.

Environmental Science Policy and Planning, Prof. Richard Forman. Springs 2006, 2007, 2008, 2009

Teaching assistant for undergraduate field trips to Archbold Biological Station, Florida.

Research Assistant, University of Washington & Seattle Public Utilities

2002-2004

Center for Water and Watershed Studies, Professor Richard Horner.

Built Projects

[See “Portfolio” for details.]

Bioretention and Dry River Bed Stormwater Management Systems for Parking Lot Runoff & Energy Commons, ECHO Lake Aquarium and Science Center, Burlington, VT, 2018/19

UVM Miller Farm Bioretention Research Facility, Spear St. South Burlington, VT, 2016

UVM Miller Farm Wood Chip Bioreactor System for Silage Runoff Treatment, Spear St., South Burlington, VT, 2016

Village Square Bioretention Raingarden, Rt. 100, Waitsfield, VT, 2013

University of Vermont Bioretention Laboratory, Carrigan Drive, Burlington, VT, 2012

“Amphibi-theater” for Willapa Bay Eco-Interpretive Trail, U.S. Fish & Wildlife Service, Willapa, WA, 2003

Grants

(Italics indicate my role)

Principal Investigator (PI): Potential impacts on drinking water from road salt storage facilities in vulnerable communities. U.S.G.S. Vermont Water Center. September 1, 2022-August 31, 2023. \$40,000.

Co-Principal Investigator (Co-PI): Advancing the use of DWTR in stormwater treatment features to enhance phosphorus removal for transportation projects. Vermont Agency of Transportation. E. Roy and S. Hurley. September 1, 2022-August 31, 2024. \$150,000.

Co-PI: Integrating Urban Ecology and Green Stormwater Infrastructure in Vermont” USDA, Vermont Agricultural Experiment Station Hatch Award. S. Hurley and V.E. Mendez. October 1, 2021-September 30, 2024. \$90,000.

Co-PI: “Region-wide Assessment of Availability and Applicability of Drinking Water Treatment Residuals for Enhanced Phosphorus Removal in Green Stormwater Infrastructure.” PI: Eric Roy. U.S. EPA. January 1, 2021-August 31, 2022. \$112,999.

PI: “Efficacy of the 2017 Vermont Stormwater Management Manual Bioretention Soil Specification in Removing Pollutants and Supporting Plant Health,” Subaward to Stone Environmental, Inc, funded by Lake Champlain Basin Program January 2021-September 2023. \$67,608.

PI: “The Role of Design in Promoting Cultural Ecosystem Services and Long-term Sustainability in Urban Agroecological Systems.” Gund Institute for Environment, UVM, Catalyst Award. February 1, 2019–August 31, 2020. \$12,171.

Co-PI: “Performance of Agroecological Principles in Urban/Peri-urban Agriculture in Burlington, VT.” USDA, Vermont Agricultural Experiment Station Hatch Award. V.E. Mendez, and S. Hurley. October 1, 2018-September 30, 2021. \$60,422.

Co-PI: “Evaluating Alternative Runoff Management Practices for Vermont Dairy Farm Production Areas.” USDA, Vermont Agricultural Experiment Station Hatch Award. S.E. Hurley and J. Faulkner. October 1, 2018-September 30, 2021. \$29,775.

PI: “Application of Drinking Water Treatment Residuals (DWTR) in Green Stormwater Infrastructure (GSI) for Enhanced Phosphorus Removal.” With Co-PI E. Roy. U.S. Environmental Protection Agency, Region 1. RARE Program & NOAA-Sea Grant via Lake Champlain Sea Grant September 2018-August 2021. \$155,000.

Co-Investigator (Co-I): “Assessing Climate Perceptions and Developing Adaptation Resources for Small, Medium and Beginning Farms.” USDA-AFRI Foundational Program. PI: M. Niles. May 1, 2018-April 20, 2021. \$499,943.

Co-I: “Lake Champlain Basin Resilience to Extreme Events (BREE).” NSF EPSCoR. PI: A. Bomblies. I am one of many researchers associated with this grant. June 1, 2016- May 31, 2021. \$20,000,000.

PI: “Silage Leachate Treatment Design, Construction, and Monitoring at Miller Farm Research Complex” USDA, Vermont Agricultural Experiment Station, UVM College of Agriculture and Life Sciences. October 1, 2015-September 30, 2017. \$136,138.

PI: “Stormwater Runoff Treatment Design, Construction, and Monitoring at Miller Farm Research Complex” USDA, Vermont Agricultural Experiment Station, UVM College of Agriculture and Life Sciences. October 1, 2015-September 30, 2017. \$85,143.

Co-Investigator: “Increasing Ecosystem Services and Climate Change Resilience in Dominant Agroecosystems of the Northeast.” USDA-NIFA. May 1, 2015-April 30, 2019. PI: Joshua Faulkner. \$499,810.

PI: “An Evaluation of Nutrient Leaching from Six Types of Compost.” Vermont Agency of Natural Resources. June 15, 2014-June 30, 2015. \$20,000.

Co-PI: “Analysis of Sediments, Nutrients, and Greenhouse Gases associated with Green Stormwater Infrastructure.” Lake Champlain Sea Grant (NOAA). S.E. Hurley and E.C. Adair. February 1, 2014-January 31, 2017. \$107,000.

PI: Matching funds for above Lake Champlain Sea Grant project. The Lintilhac Foundation. January 1, 2014-December 31, 2016. \$25,000.

Co-PI: “Climate Change Best Management Practices on Vermont Farms.” USDA, Vermont Agricultural Experiment Station Hatch Award. S.E. Hurley and V.E. Mendez. October 1, 2012-September 30, 2016. \$110,938.

Co-I: “Climate Adaptation and Mitigation in the Lake Champlain Basin of Vermont.” UVM Food Systems Spire Research Grant, PI: V.E. Mendez, plus 7 others. July 1, 2012-June 30, 2015. \$300,000.

Co-PI: “Adapting to Climate Change with Low Impact Development Stormwater Management in the Lake Champlain Basin.” Lake Champlain Sea Grant (NOAA). S.E. Hurley and E.C. Adair. February 1, 2012-January 31, 2014. \$110,872.

PI: “Implementing Low Impact Development in Waitsfield, Vermont.” Vermont Agency of Natural Resources. Ecosystem Restoration Program. March 2012-December 2013. \$68,652.

Co-I: “Research on Adaptation to Climate Change (RACC).” NSF EPSCoR. PI: J. VanHouten. I was one of many researchers associated with this grant. September 2011-August 2016. \$20,000,000.

PI: “Low Impact Development Opportunities in the Mid-Winooski River Basin.” Vermont Agency of Natural Resources. Ecosystem Restoration Program. January-December 2011. \$40,000.

Publications

Peer Reviewed Journal Articles

Impact Factors for journals (for papers up to 2018), are based on Research Gate 2016 Journal Citation Reports from Thomson Reuters

https://www.researchgate.net/publication/317639994_2017_Latest_Impact_Factors_2016_Journal_Citation_Reports_Thomson_Reuters

In preparation, submitted, or in review

Sarazen, J. Hurley, S. and Faulkner, J. “Nitrogen and Phosphorus Removal in a Bioretention Cell Experiment Receiving Agricultural Runoff from a Dairy Farm Production Area During Third and Fourth Years of Operation”

Greenleaf, H., Hurley, S., Bitterman, P., and Koliba, C. “Barriers and Opportunities to Adoption of Municipal Green Stormwater Infrastructure in Vermont”

In press or published

1. Braconnier, M., Morse, C., and **Hurley, S.** 2022. “Using Photovisualizations to Gain Perspectives on River Conservation over Time” *Land* 11,534. <https://doi.org/10.3390/>
2. Ament, M., Roy, E., Yuan, Y., and **Hurley, S.** 2022. “Phosphorus removal, metals dynamics, and hydraulics in stormwater bioretention systems amended with drinking water treatment residuals.” *Journal of Sustainable Water in the Built Environment*. <https://doi.org/10.1061/JSWBAY.0000980>
3. Sparacino, H., Stepenuck, K., Gould, R. and **Hurley, S.** 2021. “Review of Reduced Salt, Snow, and Ice Management Practices for Commercial Businesses.” *Transportation Research Record*. <https://doi.org/10.1177/03611981211052538>
4. Ament, M., **Hurley, S.**, Voorhees, M., Perkins, E., Yuan, Y. Faulkner, J, Roy, E. 2021. “Balancing Hydraulic Control and Phosphorus Removal in Bioretention Media Amended with Drinking Water Treatment Residuals.” *ES&T Water*. <https://doi.org/10.1021/acsestwater.0c00178>
5. Twombly, C., Faulkner, J., and **Hurley, S.** 2021. “The effects of soil aeration prior to dairy manure application on edge-of-field hydrology and nutrient fluxes in cold climate hayland agroecosystems.” *Journal of Soil and Water Conservation*. <https://doi.org/10.2489/jswc.2021.00158>
6. Doran, E., Zia, A., **Hurley, S.**, Tsai, Y., Koliba, C., Adair, E.C., Schattman, R., Mendez, V.E., Rizzo, D. 2020. “Social-Psychological Determinants of Farmer Intention to Adopt Nutrient Best Management Practices: Implications for Resilient Adaptation to Climate Change in the Lake Champlain Basin” *Journal of Environmental Management* 276: December 2020. [10.1016/j.jenvman.2020.111304](https://doi.org/10.1016/j.jenvman.2020.111304)

7. Wilhelm, J., Smith, R., Jolejole-Foreman, M.C., **Hurley, S.** 2020. "Resident and stakeholder perceptions of ecosystem services associated with agricultural landscapes in New Hampshire" *Ecosystem Services* 45: 101153. <https://doi.org/10.1016/j.ecoser.2020.101153>
8. Sarazen, J. C., Faulkner, J. W., and **Hurley, S.E.** 2020. "Evaluation of Nitrogen and Phosphorus Removal from a Denitrifying Woodchip Bioreactor Treatment System Receiving Silage Bunker Runoff." *Applied Sciences* 10 (14): 4789. <https://doi.org/10.3390/app10144789>
9. Shrestha, P., Faulkner, J., Kokkinos, J., and **Hurley, S.** 2020. "Influence of low-phosphorus compost and vegetation in bioretention for nutrient and sediment control in runoff from a dairy farm production area." *Ecological Engineering* 150. <https://doi.org/10.1016/j.ecoleng.2020.105821>
10. Schattman, R., **Hurley, S.**, Greenleaf, H., Niles, M., and Caswell, M. 2020. "Visualizing Climate Change Adaptation: An Effective Tool for Agricultural Land Management?" *Weather Climate and Society*. 10.1175/WCAS-D-19-0049.1
11. Tharp, R., K. Westhelle, and **S. Hurley.** 2019. "Macrophyte performance in floating treatment wetlands on a suburban stormwater pond: Implications for cold climate conditions." *Ecological Engineering* 136: 152-159. <https://doi.org/10.1016/j.ecoleng.2019.06.011>.
12. Schattman, R.E., **S. Hurley,** and M. Caswell. 2019. "Now I see: Photovisualization to support agricultural climate adaption." *Society and Natural Resources*. <https://doi.org/10.1080/08941920.2018.1530819>
13. Coleman, S., **Hurley, S.**, Koliba, C., Rizzo, D. and Zia, A. 2018. "From the Household to Watershed: a cross-scale analysis of residential intent to adopt Green Stormwater Infrastructure." *Landscape and Urban Planning*. <https://doi.org/10.1016/j.landurbplan.2018.09.005>
14. Cording, A., **Hurley, S.**, and Adair, C. 2018. "Influence of critical bioretention design factors and projected increases in precipitation due to climate change on roadside bioretention performance." *Journal of Environmental Engineering* 144(9). 10.1061/(ASCE)EE.1943-7870.0001411.
15. Shrestha, P. **Hurley, S.**, and Adair, C. 2018. "Soil Media CO₂ and N₂O Fluxes Dynamics from Sand-Based Roadside Bioretention Systems." *Water* 10(2): 185. <https://doi.org/10.3390/w10020185>
16. Shrestha, P., **Hurley, S.**, and Wemple, B. 2018. "Effects of different soil media, vegetation, and hydrologic treatments on nutrient and sediment removal in roadside bioretention systems." *Ecological Engineering* 112: 116-131. Impact Factor: 2.914. <https://doi.org/10.1016/j.ecoleng.2017.12.004>
17. Cording, A., **Hurley, S.**, and Whitney, D. 2017. "Monitoring methods and designs for evaluating bioretention performance." *Journal of Environmental Engineering*, 143(12).[10.1061/\(ASCE\)EE.1943-7870.0001276](https://doi.org/10.1061/(ASCE)EE.1943-7870.0001276)
18. Coleman, S., **Hurley, S.**, Koliba, C. and Zia, A. 2017. "Crowdsourced Delphis: Designing solutions to complex environmental problems with broad stakeholder participation." *Global Environmental Change* 25: 111-123. Impact Factor: 6.327. <https://doi.org/10.1016/j.gloenvcha.2017.05.005>
19. **Hurley, S.**, Shrestha, P., Cording, A. 2017. "Nutrient leaching from compost: implications for bioretention and other green stormwater infrastructure." *Journal of Sustainable Water in the Built Environment*, American Society of Civil Engineering, 3(3). 10.1061/JSWBAY.0000821.
20. Harvey, C. Aultman-Hall, L., Troy, A., and **Hurley, S.** 2016. "Streetscape skeleton measurement and classification." *Environment and Planning B: Planning and Design*. January 22, 2016. Impact Factor: 1.527
21. Scheinert, S., Koliba C., **Hurley, S.**, Coleman, S., and Zia, A. 2015. "The shape of watershed governance: Locating the boundaries of multiplex networks." *Complexity, Governance, and Networks*, 1 (2015): 65-82. Impact Factor: N/A. Journal website: <http://ubp.uni-bamberg.de/ojs/index.php/cgn>.
22. Harvey, C. Aultman-Hall, L., **Hurley, S.**, Troy, A. 2015. "Effects of skeletal streetscape design on perceived safety." *Landscape and Urban Planning* 142: 18-28. Impact Factor: 4.563.
23. **Hurley, S.E.** and Forman, R.T.T. 2011. "Stormwater ponds and biofilters for large urban sites: modeled arrangements that achieve the phosphorus reduction target for Boston's Charles River, USA." *Ecological Engineering* 37 (2011) 850–863. [10.1016/j.ecoleng.2011.01.008](https://doi.org/10.1016/j.ecoleng.2011.01.008)

Peer Reviewed Chapters in Edited Books

1. Caswell, M., Mendez, V.E. Juncos-Gautier, M., **Hurley, S.**, Gould, R., Marquez Sanchez, D., Lewis, S. (2021) *Agroecological transformations in urban contexts: transdisciplinary research frameworks and participatory approaches in Burlington, Vermont*. Pp. 299-320. In M. Egerer and H. Cohen (eds) *Urban Agroecology: Interdisciplinary research and future directions*. Boca Raton, FL, CRC Press/Taylor and Francis.
2. Schattman, R., Mendez, V. E., Westdijk, K., Caswell, M., Conner, D., Koliba, C., Zia, A., **Hurley, S.**, Adair, E.C., Berlin, L., & Darby, H. 2015. "Vermont agricultural resilience in a changing climate: A transdisciplinary and participatory action research (PAR) process." In N. Benkeblia (Ed.), *Agroecology, ecosystems, and sustainability* (pp. 325–346). Boca Raton, FL: CRC Press/Taylor & Francis.
3. **Hurley, S.** and Stromberg, M. 2008. Ch.13: "Residential street design with watersheds in mind: toward ecological streets." *Handbook of Regenerative Landscape Design*, Robert L. France (Ed.), CRC Press.
4. Rasmussen, M. and **Hurley, S.** 2008. Ch. 8: "Coastal ecosystem restoration with a stormwater wetland: a decade of success, reviving shellfish beds in Marion, Massachusetts." *Handbook of Regenerative Landscape Design*, Robert L. France (Ed.), CRC Press.

Other Publications

1. A Guide to Solar Envergy in Vermont's Working Landscape. 2021. Gund Institute for Environment, UVM Extension, and VT Agency of Agriculture, Food and Markets.
https://www.uvm.edu/sites/default/files/The-Center-for-Sustainable-Agriculture/resources/solar_energy_vt_working_landscape.pdf
2. Federation of Vermont Lakes and Ponds (FOVLAP) and VT Dept of Environmental Conservation. 2015.
https://dec.vermont.gov/sites/dec/files/wsm/lakes/Lakewise/docs/lp_VTLakescape.pdf
3. **Hurley, S.**, Cording, A. and Shrestha, P. 2015. *Influence of saturation duration on nutrient leaching from compost and compost-amended bioretention soils*. Final Report, Prepared for Vermont Agency of Natural Resources, May 5, 2015.
4. **Hurley, S.** Noel, C. and Kenney, J. 2012. *Low Impact Development opportunities in Waitsfield, VT*. Vermont Department of Environmental Conservation Ecosystem Restoration Program. Grant #2011-CCC-2-01 Final Report. January, 2012. http://www.friendsofthemadriverriver.org/documents/WaitsfieldLID_report.pdf
5. Charles River Watershed Association. 2009. *Blue Cities Guide: Environmentally Sensitive Urban Development*, Contributed images and text. Funding from The Boston Foundation & Cabot Family Charitable Trust.
6. Yocom, K. and **Hurley, S.** 2008. "Innovative approaches for retrofitting drainage infrastructure in the urban landscape." [Bridging the Pacific Series.] *Journal of Landscape Architecture, Construction, and Ecology (LAC)*, South Korea Vol. 46, pp. 32-37. June 2008.
7. *The Rebirth of the Tajo River* (Spain). 2008. Professors Christian Werthmann and Carl Steinitz. Assistant Editor. Funded by Foro Civitas Nova, Fundacion+SUMA, Castilla-La Mancha, and Harvard Graduate School of Design.
8. *Padova and the Landscape: Alternative Futures for the Roncajette Park and the Industrial Zone* (Italy). 2005. Landscape Planning Studio Publication with Prof. Carl Steinitz. Funded by Comune di Padova, and ZIP (Zona Industriale Padova).
9. *Alternative Futures for Homer, Alaska*. 2003. Case Studies Editor. University of Washington.

Graduate Student Advising, Thesis Committees & Other Supervisory Roles

Advisees – Ph.D. Students

Leslie Spencer (PhD student, co-advising with Taylor Ricketts, started fall 2022). Agroecology & Ecological Landscape Design.

Michael Ament (PhD, co-advised with Eric Roy; defended August 2021). Dissertation Title: *Multi-scale assessment of drinking water treatment residuals as a phosphorus sorbing amendment in stormwater bioretention systems.*

Rebecca Tharp (PhD, defended May 2018). Dissertation Title: *Ecological stormwater management: Analysis of design components to improve understanding and performance of stormwater retention ponds.*

Sarah Coleman (PhD, co-advised with Christopher Koliba, defended January 2018) Dissertation Title: *Bottom-up adaptive management and stakeholder participation for clean water and healthy soils in a complex social-ecological system.*

Paliza Shrestha (PhD, defended December 2017) Dissertation Title: *Water quality performance and greenhouse gas flux dynamics from compost-amended bioretention systems & potential trade-offs between phytoremediation and water quality stemming from compost amendments.*

Amanda Cording (PhD, defended March 2016) Dissertation Title: *Evaluating stormwater pollutant removal mechanisms by bioretention in the context of climate change.*

Advisees – M.S. Students

Amir Johnson (MS student, started fall 2022). Green stormwater infrastructure equity among neighborhoods in U.S. cities.

Samantha Brewer (MS student, started summer 2021). Bioretention soil media design for phosphorus reduction and plant health.

Gloria Signorini (Masters of Landscape Architecture, Polytecnico di Milano, Italy, Co-advised with Catherine Dezio). Thesis: *The role of ecological design in promoting agroecological systems in peri-urban farms.*

Jillian Sarazen (MS, co-advised with Joshua Faulkner, defended June 2020). Thesis: *Evaluating Nitrogen and Phosphorus Removal in Alternative Management Practices for Dairy Farm Production Area Runoff: Bioretention Cells and a Denitrifying Woodchip Bioreactor Treatment System.*

Holly Greenleaf (MS, defended October 2018) Thesis: *From Maintenance to Stewardship: Green Stormwater Infrastructure Capacity in Vermont Towns & Design and Participatory Processes to Provide Cultural Ecosystem Services.*

Deborah Kraft (MS, co-advised with Joshua Faulkner, defended August 2018) Thesis: *Nutrient Removal Performance of a Wood Chip Bioreactor Treatment System Receiving Silage Bunker Runoff.*

Jason Kokkinos (MS, defended May 2017). Thesis: *Bioretention in a mixed-use agricultural landscape: lessons learned from the application of low-phosphorus compost and Panicum virgatum.*

Dana Allen (MS, defended December 2015). Thesis: *Evaluating alternative technologies and monitoring methods for water quality in a field setting: research on effects of phosphorus and solids removal from cheese factory wash water and stormwater runoff treatment.*

Students for whom I served on thesis committee (*Denotes committee chair)

Doctoral Students

Madelynn Edwards (PhD Student, Advisor J. Gorres, started 2022)

Jennifer Wilhelm (PhD, *University of New Hampshire*, completed 2017) Public perceptions on land use transition from forest to agriculture for meeting local food goals in New Hampshire.

Annie White (PhD, Advisor L. Perry, completed 2016) Pollinator responses to open-pollinated native plants versus cultivars of native species.

Rachel Schattman (PhD, Advisor E. Mendez, completed 2016) VT agricultural climate change resilience and farmer perceptions.

Margarita Fernandez (PhD, Advisor E. Mendez, completed 2015) Participatory Action Research (PAR) in Latin American coffee growing communities.

Masters Students

Micayla Schambura (MS Student, Advisor E. Roy, started 2022).

Sydney Blume (MS Student in Food Systems, Advisor E. Mendez, started 2021).

Marcos Kubow (MS, Advisor Eric Roy, completed 2022) Water treatment residuals for constructed stormwater wetlands and bioretention applications.

Jessica Cole (MS, Advisors Alison Brody and Sara Cahan, completed 2022) Plant pollinators and pesticides.

Jessica Rubin (MS, Advisor Josef Gorres, completed 2022). Ecodesign and mycoremediation.

*Tori Hellwig (MS, Advisor Clare Ginger, completed 2021) Fostering Urban Habitat for Wild Bumblebees: Applying Foundational Knowledge and Exploring Social-Ecological Systems of Pollinator Advocacy in Burlington, Vermont.”

Cameron Twombly (MS in CEMS, Advisor Joshua Faulkner, completed 2019) Edge-of-field hydrology and nutrient movement associated with conventional and alternative agricultural practices.

*Holden Sparacino (MS, Advisor Kris Stepenuck, completed 2018). Road-salt application in winter maintenance: a social behavior study.

Grace Matiru (MS, Advisor L. Perry, completed 2017) Vermont Master Gardener’s survey

*Andrea Urbano (MS, Advisor W. Keeton, completed 2016) Carbon dynamics in forest stands associated with different management techniques.

*Daniel Curran (MS, Advisor K. Wallin, completed 2015) Eco Machines for wastewater treatment.

*Chester Harvey (MS, Advisor L. Aultman-Hall, completed 2014) Assessing streetscape design for livability using GIS-based quantitative methods.

Holli Howard (MS, Advisor A. Troy, completed 2012) Modeling Baltimore’s Urban-Rural Transition Zone.

Other Advising and Supervisory Roles

Postdoctoral Supervision for Dr. Paliza Shrestha 2021-22 and Postdoctoral Advising for Dr. Matthew Burke 2019-20.

Advisor for Undergraduate Honors College Theses.

- Cyrus Oswald. “Vermont Wildlife Landscape Connectivity: A Case Study Connecting Habitats in the Green Mountains, Spanning Interstate 89.” 2022.

- McKinley Deery. “Estimating the Effects of Village Greens on Localized Air Quality Index and Outdoor Air Temperature in Vermont.” 2021.

Committee Member for Undergraduate Honors College Thesis. Carl Betz, Environ. Science. “Nitrogen Removal Performance of Roadside Bioretention Cells Amended with Aluminum-Based Water Treatment Residuals.” 2021

Committee Member for BS Thesis. Pheobe Paron, Environ. Studies. “Alternatives to lawns on UVM campus.” 2019.

Advisor to Self-Design Major. G. Harrison Myers, *Ecological Engineering Design*. Expected Graduation Spring 2019.

Committee Member for Undergraduate Thesis. Holly Greenleaf, Environmental Studies Major: “The Greenleaf Farm Resiliency Project: An Ecological Landscape Design,” 2014.

Committee Member for Undergraduate Thesis. Henry Webb, Studio Art Major: “Meanings of Landscape and Place,” 2012.

Supervision of Technicians and Research Interns in UVM Ecological Landscape Design Lab (E. Twohig, S. Cording, D. Allen, L. Jackson, R. Freeman, S. Wooster, R. King, A. Levine, N. King, B. Towle, N. Kaminski, C. Betz, K. O’Brien, B. Carleton, J. Goodwin, S. Shaevel).

Supervision of Research Assistants on Landscape Visualization Project for Climate Change BMPs on Farms and Design Computer Lab (K. Odell, C. Gieryic, W. Morris, G. Zeitz, H. Greenleaf, E. Coniglio).

University & Professional Service

University & Departmental Service

UVM Campus Master Planning Committee (CMPC) & Landscape Advisory Subcommittee (LAS), August 2011-present.

Co-Chair of Plant and Soil Science Graduate Affairs Committee (Graduate Student Advising and Admissions), August 2015-present.

UVM Food Systems Faculty Member & Member of Food Systems Projects & Thesis Committee, 2015-2019.

Fellow of the Gund Institute of Environment, 2018-present.

UVM Sustainability Faculty Fellow University of Vermont, 2012.

Undergraduate Advisor for Sustainable Landscape Horticulture Major, 2012-present.

Manager of Jeffords Hall Design Computer Laboratory, May 2012-present.

Chair of Jeffords Hall Educational Garden Committee, 2012-2014.

Community Partner/Advisor for UVM's College of Engineering and Mathematical Sciences (CEMS) Students in CE295B "Runoff Treatment and Design" – 4 teams of students designing stormwater filters for phosphorus removal, Spring 2019.

Community Partner for PSS 269 Students on Miller Research Farm Stormwater Pond Retrofit. Spring 2018

Advisor for CEMS Senior Project Team, Spring 2012.

Community & Professional Service

Review Panel Member for Lake Champlain Basin Program, 2018.

Academic research representative from University of Vermont for Regional Green Stormwater Infrastructure Summit for Land-Grant Institutions, University of Connecticut, Storrs, CT; June 2015 and June 2018.

State of Vermont Green Infrastructure Roundtable. Academic Representative to Advisory Team 2016-present; participant in Roundtable since June 2010.

Reviewer for Scholarly Journals (*Journal of Environmental Quality*, *Environmental Science and Pollution Research*, *PLOS ONE*, *Ecosystems*, *Ecological Engineering*, *Elementa: Science of the Anthropocene*, *Journal of Housing and the Built Environment*, *Landscape and Urban Planning*) and for Book Proposal in 'Earth Science' theme for Wiley Publishers, UK.

Reviewer of Competitive Research Proposals for Northeastern States Research Collaborative & Illinois Water Resources Center. 2010.

Technical Review Panel Member for NetZero Vermont: "Montpelier 2030" Design Competition. 2016.

Design Committee for Union Playground Project, Montpelier, VT. 2015-2019.

Reviewer/Annual Project Awards Jury for "Greenworks," Vermont Nursery and Landscape Association. 2010.

Memberships: American Society of Landscape Architecture (ASLA), American Water Resources Association (AWRA).

Conference Presentations, Seminars, & Speaking Engagements

Academic & Professional Conferences

1. "Putting Green Stormwater Infrastructure to the Test: seven years of research on soil media and vegetation design." Restoring American Estuaries, National Coastal and Estuarine Virtual Summit: September-29-October 2, 2020.

2. "Green Stormwater Infrastructure Research: bioretention, water quality, and nutrient dynamics in urban and agricultural settings." North American Lakes Management Society 39th International Symposium, Burlington, VT. November 13, 2019.
3. "Green Stormwater Infrastructure: Research and Design Implications" *Resilient Vermont Conference*, Center for Global Resiliency and Security, Norwich University, Northfield, VT. June 7, 2019.
4. "Recent research on compost considerations for stormwater management & phytoremediation" *Vermont Organics Recycling Summit*. VT Technical College, Randolph, VT. April 5, 2018.
5. "Lessons learned from 5+ years of stormwater bioretention research in Vermont" *Lake Champlain Research Conference*, Lake Champlain Basin Program, Burlington, VT. January 8, 2018.
6. "Green (and Vegetated) Stormwater Infrastructure: lessons learned from bioretention design research in Vermont." *American Water Resources Association (AWRA) Annual Conference*, Portland, OR. November 9, 2017.
7. "Design for cold-climate, Green (and Vegetated) Stormwater Infrastructure: bioretention opportunities and challenges." *International Low Impact Development Conference*, ASCE, Portland, ME. August 29, 2016.
8. "From concept to construction: parking lot bioretention in Waitsfield, VT." *Raising the Bar for Green Stormwater Infrastructure*, Center for Watershed Protection, So. Burlington, VT. April 22, 2014.
9. "Design scenarios for Low Impact Development: ultra-urban watershed-scale redevelopment case studies from the Charles River watershed in Boston." *American Water Resources Association (AWRA) Annual Conference*, New Orleans, LA. November 20, 2008.
10. "Urban watershed redevelopment: building a blue Allston campus for Harvard University." *Water in the City Conference*, Victoria, British Columbia September 20, 2006.
11. "Building a Blue Allston" with Kate Bowditch and Pallavi Mande. *National River Rally Conference*, Bretton Woods, NH. May 5, 2006.
12. "Great (Wet) Streets: MLA Thesis Research" with Megan Wilson. *Puget Sound Georgia Basin Research Conference*, Seattle, WA. March 2005.

Invited Presentations, Symposia, & Workshops

1. "Managing Phosphorus Pollution with Stormwater Bioretention Systems: A Soil Study" June 8, 2021. EPA Soak Up the Rain New England Webinar.
2. "Photovisualization of Riparian Buffers for landowners, farmers & outreach providers." March 10, 2021. Riparian Buffers Practitioners Meeting, via Webinar.
3. "Bioretention Soil Media, Vegetation, and Maintenance: Lessons learned from Green Stormwater Infrastructure research in Vermont." May 7, 2020. University of Minnesota Water Resources Center, via Webinar.
4. "Solving Water Problem's with Nature's Design" ECHO World Water Day, K-12 schools celebration. Keynote speaker. March 20, 2018.
5. "Green Stormwater Infrastructure Research Results: from Water Quality to Ecological Aesthetics." Gund Tea, UVM. February 16, 2018.
6. "Sustainability, aesthetics, ecology." Invited Speaker for *Visions@UVM: Sustainability in Action*, UVM. April 20, 2017.
7. "Green Stormwater Infrastructure: current research projects for Vermont suburbs, campuses, and farms." Invited speaker for *Green Stormwater Infrastructure Student Symposium*, UVM. March 30, 2016.
8. "Landscape design for water treatment: multiple scales, multiple functions." Invited speaker for *Rubenstein School of Environment & Natural Resources Fall 2015 Seminar*, UVM. October 8, 2015.
9. "Stormwater treatment in the landscape: design for ecological function." Invited speaker for *High Meadows Fund Board Meeting*, Montpelier, VT. June 26, 2015.
10. "Climate change best management practices, green infrastructure, and smart growth." Invited speaker

for *Vermont Legislative Policy Summit on Climate Change*, UVM. November 18, 2014.

11. "Landscape visualizations for climate change best management practices" (Poster Session and Informal Discussion), *USDA Northeast Climate Hub Visit to UVM*. October 22, 2014.
12. "Green Stormwater Infrastructure: implementation and monitoring," Invited speaker for *New England Assoc. of Environmental Biologists and Lake Champlain Basin Program Joint Conference on Climate Change Adaptation: Stormwater Management and Aquatic Ecosystem Impacts*, Burlington, VT. March 25, 2014.
13. "Landscape visualization of climate change best management practices," *Northeast Organic Farming Association of Vermont Annual Conference*, Burlington, VT. February 16, 2014.
14. "UVM Bioretention Laboratory design and construction," Invited speaker for *State of Vermont Watershed Management Division Workshop for Professionals: Green Stormwater Infrastructure: Soils at Work*. Montpelier, VT October 2013.
15. Led site tour of UVM Bioretention Laboratory. Burlington, VT for *New England Interstate Water Pollution Control Commission (NEIWPC) Annual Conference* May 2013.
16. "Stormwater in the landscape," Invited speaker for *Vermont Environmental Consortium Stormwater Conference* Burlington, VT March 14, 2013.
17. "Stormwater in the city: design for ecological function" Invited speaker for *Urban Ecology Symposium*, Massachusetts Institute of Technology (MIT) Cambridge, MA. December 16, 2011.
18. "Green Infrastructure for clean water and healthy people." Expert Testimony for *Vermont House of Representatives Committee on Fish, Wildlife, and Water Resources*, Montpelier, VT. March 2009.
19. Conference coordination and hosting of international speakers. *European Landscape Convention, Conference* Organized by Prof. Carl Steinitz, Harvard University, Cambridge, MA. October 2008.
20. "Streets are the headwaters of urban streams." Invited speaker for Sasaki 'Green Day' at Sasaki Offices, Watertown, MA May 2006.
21. "Going with the flow: water at Harvard." Invited speaker and Session Facilitator for *Harvard Vision 2020: A Bridge to Sustainability*, Cambridge, MA. April 2006.

Guest Lectures for College/University Courses

1. "Green Stormwater Infrastructure: Bioretention Research" in CE 295B *Runoff Treatment and Design for Civil and Environmental Engineering* (Instructor: Bree Mathon), UVM. February 15, 2019.
2. "Recent research on compost considerations for stormwater management & phytoremediation" in PSS 154 *Compost Ecology* (Instructor: Lynn Fang). July 19, 2018.
3. "Ecological landscape design for water treatment" in CDAE 295/395 *Resilient Communities: Designing at the Nexus of Food, Energy and Water Systems* (Instructor: Asim Zia), UVM. Feb. 23, 2017, April 3, 2018.
4. "Stormwater and Green Stormwater Infrastructure" in PSS 269. *Soil/Water Pollution and Bioremediation*. (Instructor: Joshua Faulkner) March 29, 2018.
5. "Landscape visualizations: connecting with decision-makers" in CDAE 295 *Community Participatory Action Research* (Instructor: Kate Elmer), UVM. March 24, 2014.
6. "Ecology & culture in landscape design" in NR 104 *Social Processes and the Environment* (Instructor: Reese Hersey), UVM. October 15, 2013.
7. "Green Stormwater Infrastructure" in NR 205 *Ecosystem Management: Integrating Science, Society, & Policy* (Instructor: Austin Troy), UVM. February 2010, 2011, and October 2011.
8. "Urban Watershed Redevelopment" in ENSC 202 *Ecological Risk Assessment* (Instructor: Breck Bowden), UVM. March 2009.
9. "Urban Watershed Redevelopment: Doctoral Thesis Research." Invited speaker for undergraduate course. College of the Atlantic, Bar Harbor, ME. January 2009.
10. "Green Stormwater Infrastructure." Invited speaker for landscape architecture summer program students in Harvard Graduate School of Design "Career Discovery" Program Cambridge, MA. June 2008.

Publicity & Exhibits

Vermont Magazine & UVM Today (semi-annual print and online magazine), Research featured in story by Josh Brown “Fixing Phosphorus” November 2021.

https://issuu.com/universityofvt/docs/uvmmag_fall2021_issu

Interview for *Popular Science* article: “Make your home greener, and more resilient” by Marlene Cimon, Nexus Media. October 4, 2018. <https://www.popsci.com/green-home-improvements>.

2017 Annual Report of UVM Extension and Vermont Agricultural Experiment Station. “Reducing Runoff in Vermont Watersheds,” January 2018, p. 3. <https://www.uvm.edu/sites/default/files/UVM-Extension-Cultivating-Healthy-Communities/annualreport2017.pdf>

Radio Interview on Water Quality Law: Vermont Public Radio, Story By Peter Hirschfeld; Jan. 17, 2-18.

Radio interview on “Watershed Resilience and Green Infrastructure,” Program: Re-localizing Vermont, WGDR. Host: Carl Etnier; June 19, 2017.

Fleming Art Gallery, University of Vermont Exhibit on “Visualizations in the Sciences,” including three pairs of Landscape Visualizations by Holly Greenleaf and Stephanie Hurley, November 10–December 17 2015, Dudley H. Davis Center, UVM.

Live Television interview regarding current research on “Landscape visualization for agricultural climate change best management practices.” Across the Fence, WCAX September 2015.

UVM University Communications article “When Good Compost Goes Big,” featuring compost research in my lab, by Joshua Brown October 23, 2014

Film Interview “Bloom: The Plight of Lake Champlain, Part III: The Emergence of Ecological Design,” premiered December 2011.

Image publication of “Salmon Spirals” design for Seattle Waterfront Charrette, 2004. Published in *Landscape Architecture Magazine*, August 2004.

Awards & Honors

Graduate Student Senate Nominee for Outstanding Graduate Advisor (one of eight UVM faculty nominated), 2016-2017.

American Society of Landscape Architecture Honor Award in ‘Analysis and Planning’ Category for *The Rebirth of the Tajo River* (Spain). Served as “Faculty Advisor,” Group Project. 2008.

Arthur Lehman Scholarship, Harvard Graduate School of Design, Academic Year 2006-7.

Penny White Student Projects Award, Harvard Graduate School of Design, Spring 2006. Travel and research grant, entitled: “Constructed Wetlands: Good, Clean, Fun?”

Merit Award from Washington Chapter of American Society of Landscape Architecture for *Alternative Futures for Homer Alaska*. Group Project. 2004.

American Planning Association Honor Award for “Learning From Small Towns: Community character, vitality, and large-scale retail.” Group Project. 2003.

Terry Clark Gerrard Memorial Scholarship University of Washington Department of Landscape Architecture, 2002-2003.

Other Training & Experience

Computer Programs: proficiency with MS Office Suite, ArcGIS, Adobe Photoshop, WinSLAMM Stormwater Modeling Program. Working knowledge of Adobe Illustrator, Adobe InDesign.

Alan Alda Communicating Science Workshop, Sponsored by VT EPSCoR, 2018.
Upstream-Downtown Design Charrette facilitator for breakout groups on Building Resiliency
Downtown. Montpelier, VT. March 2013.
Editing assistance for Art Book: *Brave Intuitive Painting: Let go, be bold, unfold!* Flora Bowley, Quarry
Books, 2012.
Charrette facilitator for "THINK TANK!" at ECHO Lake Aquarium and Science Center, Burlington, VT.
July-September, 2010.
Guest reviewer for student presentations on "Planning for Rural Community Development,"
Yestermorrow Design Build School Warren, VT. January 2008.
Volunteer water quality monitoring, Puget Soundkeeper Alliance, Seattle, WA. September 2004-June
2005.
Independent study coordinator of "Green" Materials in Architecture & Landscape Architecture.
University of Washington. October-December 2002.
Permaculture Design Certificate, Bullocks Farm, Orcas Island, WA, July-August. 2001.
Science camp counselor, overnight middle school science camps, Pacific Science Center, Seattle, WA.
February-June, 2001.
Environmental Education Program Assistant, Santa Barbara Botanic Garden, CA. April-August, 2000.
Substitute teacher, Crane School, Santa Barbara, CA.: Science, Math, English. January-June 2000.
Undergraduate Teaching Assistant, UC Berkeley: student facilitator of *Ecosystemology* course. January-May
1999.
Laboratory assistant, Integrative Pest Management (IPM) Lab, UC Berkeley. October 1998-April 1999.
Research assistant, Sierra Nevada Aquatic Research Lab (SNARL), UC Santa Barbara. June-August 1997.
Outdoor education, UC Berkeley: environment & leadership course for teens, Oakland, CA. January-May
1996.