Dr. Anne J. Jefferson

University of Vermont

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Education and Degrees

2006 **Ph.D., Geology, Oregon State University**
"Hydrology and geomorphic evolution of basaltic landscapes, High Cascades, Oregon"

2002 **M.S., Water Resources Science, University of Minnesota**
"Early Tertiary and modern hydrologic environments of the Stenkul Fiord area, Ellesmere Island, Canada"

2001 **B.A., Earth and Planetary Science, The Johns Hopkins University**
"Pedologic comparison and hydrogen and oxygen isotopic analysis of water extracted from eight soil orders." University and departmental honors.

Professional Experience

2023- **Professor,** Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, Vermont

2023- **Robert F. and Genevieve B. Patrick Endowed Chair,** Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, Vermont

2023- **Director,** Lake Champlain Sea Grant, University of Vermont, Burlington, Vermont

2023- **Director,** Vermont Water Resources and Lake Studies Center, University of Vermont, Burlington, Vermont

2023- **Director,** Northeastern States Research Cooperative, University of Vermont, Burlington, Vermont

2022 **Professor,** Department of Earth Sciences, Kent State University, Kent, Ohio

2021-2022 **Assistant Chair,** Department of Earth Sciences, Kent State University, Kent, Ohio

2016-2022 **Associate Professor**, Department of Geology, Kent State University, Kent, Ohio
(In 2022, the Department of Geology became the Department of Earth Sciences.)

2016-2020 **Graduate Studies Coordinator**, Department of Geology, Kent State University, Kent, Ohio

2012-2016 **Assistant Professor,** Department of Geology, Kent State University, Kent, Ohio

2007-2012 **Assistant Professor,** Department of Geography and Earth Sciences, University of North Carolina at Charlotte, Charlotte, North Carolina

2006-2007 **Post-doctoral Research Associate**, Department of Geosciences, Oregon State University, Corvallis, Oregon

2002-2006 **National Science Foundation Graduate Research Fellow,** Department of Geosciences, Oregon State University, Corvallis, Oregon

2001-2002 **Editorial and Teaching Assistant,** Water Resources Center and Water Resources Science program, University of Minnesota, St. Paul, Minnesota

2001 **Water Resources Planning Assistant**, Scott County, Shakopee, Minnesota

Leadership Experience

Assistant Chair, Department of Earth Sciences, Kent State University, (2021-2022)

- Responsible for course and TA scheduling, coordinating distance learning offerings, and other matters as assigned by the Chair. Represents the Department to the University when the Chair is unable to do so.
- Accomplishments: Led efforts to set actionable goals with achievable outcomes for department DEI plan. Compensated minoritized students and engaged in conflict resolution for junior faculty participating in DEI planning process.

Graduate Studies Coordinator, Department of Geology, Kent State University, (2016-2020)

- Responsible for graduate admissions process, assessing student degree progress, compliance with university policies, and updating curriculum and policies. Chaired graduate studies committee. Managed $500,000 budget.
- Accomplishments: Changed admissions policies to advance diversity and equity, updated and streamlined admissions workflow, instituted spring progress reviews and annual cohort-based meetings, led the restructuring of candidacy exams, established the Writing in the Earth Science course, and increased graduate stipends despite university budget austerity.

Board of Directors, Consortium of Universities for Advancement of Hydrologic Science, Inc. (2020-present)

- Board has fiduciary responsibility for the organization, oversees Executive Director, engages in strategic planning, and launches new initiatives. In the past two years, we have nimbly responded to the covid-19 crisis, expanded our membership to include primarily undergraduate institutions, and devoted significant efforts to diversity, equity, and inclusion.
- I am a member (2021-present) of the Board's executive committee which sets the agenda for board meetings and takes executive action as needed. I currently serve on the search committee for our next Executive Director.
- Accomplishments: In 2021, I chaired the nominating committee which produced a diverse and competitive candidate slate. I was one of the primary authors of the organization's statement on holistic review, now published as a commentary in *Water Resources Research.*

Public Engagement Fellow, Leshner Leadership Institute, American Association for the Advancement of Science, (2016-2017)

- Received intense training and continued mentorship on public engagement practices and creating institutional change. Formed close connections with other scientists leading public engagement and outreach efforts.
- Accomplishments: Increased advocacy for federal funding of science and became a more frequent source for journalists covering science topics. Highlights of this work include >10

major media interviews and an invited Nature article (Jefferson, 2019) during the 2019 US government shutdown. Increased my participatory "citizen" science efforts.

Communications Coordinator, Quaternary Geology and Geomorphology Division, Geological Society of America, (2015-2019)

- Responsible for creation and distribution of semi-annual newsletter and other announcements. Maintained active social media accounts and updated division website. Sat on management board, which was responsible for stewarding division resources, setting strategic goals, and administering awards.
- Accomplishments: Comprehensively updated division website for first time since mid-1990s and moved it to a new content management system.

Research Funding

Career total external funding: $1,911,116

Active External Research Funding

2020-2023 Geomorphic effects and distribution of anthropogenic debris in urban streams, National Science Foundation, Geomorphology and Land Use Dynamics (EAR 2019546), PI: Jefferson, $354,763

2018-2023 Collaborative Research: Connecting local stormwater decision-making to environmental outcomes, National Science Foundation, Environmental Sustainability (CBET 1805319) PI: Jefferson, $252,953

2022-2025 Restore Legacy Mine Sites at Cuyahoga Valley National Park, Department of Interior Great Lakes-Northern Forest Cooperative Ecosystems Study Unit, PI: Blackwood, Co-PIs: Jefferson and Bahlai, $244,635 (approved for funding by Department of Interior in 2022, pending budgetary release)

Completed External Research Funding

2020-2022 Dynamics of plastic pollution in Lake Erie urban tributaries and beaches, Ohio Sea Grant, PI: Jefferson, $10,000

2020-2021 RAPID: Collaborative Research: Increased access to infrastructure for distance education in hydrologic science, National Science Foundation, Hydrologic Sciences and Education and Human Resources (EAR 2028737), PI: Ward, Co-PI: Jefferson and 3 others, $49,611

2014-2020 Hydrology and Water Quality Performance of Green Infrastructure, Watershed Stewardship Center, West Creek Reservation, Cleveland Metroparks, PI: Jefferson, $135,436

2016-2018 Black Swamp Conservancy Forrest Woods Harper Property Stream and Wetland Restoration Monitoring, Black Swamp Conservancy of Ohio, PI: Jefferson, $25,874

2012-2017 Bridging the Conceptual Divide Between Theoretical and Applied Environmental Chemistry, National Science Foundation, Division of Undergraduate Education (DUE 1140980), PI: Jefferson, $189,235

2010-2015 Influence of stormwater management structures on ecological function in urban streams, National Science Foundation, Environmental Engineering (CBET 1034043), PI: McMillan, Co-PI: Jefferson and 2 others, $391,341

2014-2015 Testing the (storm) Waters: Techniques for Surface Reclamation on Urban Brownfields, U.S. Environmental Protection Agency P3: People, Prosperity and the Planet Student Design Competition, PI: Coffman, Co-PI: Jefferson and 2 others, $14,685

2014-2015 Characterizing stream restoration's water quality improvement potential through hyporheic exchange enhancement, Ohio Water Resources Center (USGS funds), PI: Jefferson, $18,878

2014-2015 Assessing the Effects of Green Infrastructure on Metals Concentrations in Stormwater Runoff, Cleveland Metroparks, PI: Jefferson $4,693

2011-2012 Evaluating Restoration Success in the Watershed Context, North Carolina Water Resources Research Institute, PI: Clinton, Co-PI: Jefferson and 1 other, $50,000

2007-2008 Contributions of Glacier Melt to Upper Hood River Streamflow and Implications of Climate Change, Oregon Institute for Water and Watersheds, PI: Nolin, Co-PI: Jefferson and 1 other, $30,000

2005-2006 Influence of climate change on water supply in the McKenzie River Basin: Analysis of long-term and spatial hydrologic data, Oregon Center for Water and Environmental Sustainability, PI: Nolin, Co-PI: Jefferson and 1 other, $41,212

2004-2006 Discharge, source areas, and water ages of spring-fed streams and implications for water management in the McKenzie River Basin, Eugene Water and Electric Board, PI: Grant, Co-PI: Jefferson and 1 other, $95,000

2004-2005 Drainage development on highly-permeable basaltic lavas of the Oregon Cascades, Geological Society of America student research grant, PI: Jefferson, $2,800

Completed Internal Research Funding

2020-2022 Geomorphic and watershed context of plastic pollution and trash in northeast Ohio urban streams, University Research Council, PI: Jefferson, $3500

2018-2020 FoSTERing Restoration Success in Cuyahoga Valley National Park, Environmental Science and Design Research Initiative, PI: Jefferson, $12,000

2017-2018 Riparian land use and urban stream water quality, University Research Council, PI: Jefferson, $3500

2015-2017 Answering the "What If" Questions about Green Infrastructure Through Numerical Modeling of Urban Stormwater Management, Research and Sponsored Programs, PI: Jefferson, ~$60,000 (1 year post-doc salary and benefits)

2013-2014 The Cuyahoga River as a Laboratory for Water Resources Research, College of Arts and Sciences, PI: Blackwood, Co-PI: Jefferson and 2 others, $39,526

2013-2014 Surveyor's Total Station: Vital Resource for Collaborative Research in the Geology Department, College of Arts & Sciences Research Resources Award, PI: Jefferson, $7,990

Publications

Google Scholar citations: 1753 (1213 since 2017); h-index: 19 (as of July 19, 2022)
ORCID ID: 0000-0002-0585-9602
Productivity was impacted 2020-2021 by the covid-19 crisis and associated disruptions to field and laboratory access, teaching responsibilities, and childcare availability

Journal Articles and Monograph Chapters (*italics* denote students, * denote direct advisees)
(Citation counts are from Google Scholar as of June 13, 2022.)

1. Mulvey, B.K., **Jefferson, A.J.**, Ward, A.S., and Bales, J.D. 2022. Editorial: Innovations in Remote and Online Education by Hydrologic Scientists. *Frontiers in Environmental Science.* 10:1074801. doi: 10.3389/fenvs.2022.1074801
2. **Jefferson, A.J.,** Loheide, S.P. II, and McCay, D.H. 2022. Faculty Perspectives on a Collaborative, Multi-Institutional Online Hydrology Graduate Student Training Program. *Frontiers in Water.* 4:958094. doi: 10.3389/frwa.2022.958094.
3. Turner, V.K., Gmoser-Daskalakis, K., Costello, D., **Jefferson, A.J.,** and Bhaskar, A. 2022. Champions and Traditional Technocrats: The Role of Environmental Value Orientation in Stormwater Management. *Journal of the American Water Resources Association,* 58(3): 336-354, doi: 10.1111/1752-1688.13015.
4. CUAHSI Board of Directors and Officers, 2022. COVID-19 Impacts Highlight the Need for Holistic Evaluation of Research and in the Hydrologic Sciences. *Water Resources Research*, e2021WR030930. (Attributed authorship to the CUAHSI Board & Officers; my role as a co-author confirmed is the Appendix)
5. Luce, C., **Jefferson, A.J.**, Pouyat, R.V., Nislow, K., and Carlson, C., *in press.* The effect of climate change and the wildland-urban interface on water, In: Zipperer, W.C., Marsh, A, Rodbell, P, Mockrin, M., Patel-Weynand, T., Riitters, K., eds. *Wildland Urban Interface in the United States: Forests and Rangelands in a Changing Environment*. Cham, Switzerland: Springer.
6. *Fillo, N.F.*., Bhaskar, A.S., and **Jefferson, A.J.**, 2021. Lawn irrigation contributions to semi-arid urban baseflow based on water-stable isotopes. *Water Resources Research.* 57(8): e20202WR028777, doi: 10.1029/2020WR028777. (Citations = 3)
7. Tetzlaff, D., Boyer, E., Doody, T., **Jefferson, A.J.**, Molini, A. 2021. Women Advancing Research on Hydrological Processes: Preface. *Hydrological Processes.* 35(7): e14267, doi: 10.1002/hyp.14267. (Citations = 1)
8. *Ruggles, T.A.*, Gerrath, J.A., *Ruhm, C.T*.*, **Jefferson, A.J.**, Davis, C.A., and Blackwood, C.B. 2021. Reclaimed surface mines show little progress towards native species forest restoration following 35 years of passive management. *Land Degradation and Development.* 32(7): 2351-2359, doi: 10.1002/ldr.3904. (Citations = 4)

9. Avellaneda, P.M. and **Jefferson, A.J.** 2020. Sensitivity of streamflow metrics to infiltration-based stormwater management networks. *Water Resources Research.* 56(7): e2019WR026555, doi: 10.1029/2019WR026555. (Citations = 6)

10. Bell, C.D., Wolfand, J., *Panos, C.*, Bhaskar, A., *Gilliom, R.*, Hogue, T., Hopkins, K.G., **Jefferson, A.J.** 2020. Stormwater control impacts on runoff volume and peak flow: A meta-analysis. *Hydrological Processes.* 34(14): 3134-3152, doi: 10.1002/hyp.13784. (Citations = 10)

11. Costello, D., *Hartung, E.W., Stoll, J.T.,* and **Jefferson, A.J.**, 2020, Bioretention cell age and construction style influence stormwater pollutant dynamics. *Science of the Total Environment,* 712: 135597, doi:10.1016/j.scitotenv.2019.135597. (Citations = 14)

12. *Blauch, G*.* and **Jefferson, A.J.**, 2019., If a tree falls in an urban stream, does it stick around? Mobility, characteristics, and geomorphic influence of large wood in urban streams in northeastern Ohio, USA. *Geomorphology.* 337: 1-14. doi: 10.1016/j.geomorph.2019.03.033. (Citations = 10)

13. *Scarlett, R.*, McMillan, S.K., Bell, C.D., Clinton, S.M., **Jefferson, A.J.**, and Rao, S. 2018. Influence of Stormwater Control Measures on Water Quality at Nested Sites in a Small Suburban Watershed. *Urban Water Journal.* 15(9): 868-879, doi:10.1080/1573062X.2019.1579347. (Citations = 13)

14. **Jefferson, A.J.,** Kenney, M., Hill, T., and Selin, N. 2018. Universities Can Lead the Way Supporting Engaged Geoscientists. *Eos.* 99, doi:10.1029/2018EO111567. (Citations = 7)

15. Singer, D.M., **Jefferson, A.J.**, *Traub, E.L*.,* and Perdrial, N. 2018. Mineralogical and geochemical variation in stream sediments impacted by acid mine drainage is related to hydro-geomorphic setting. *Elementa: Science of the Anthropocene.* 6(1): 31. doi:10.1525/elementa.286 (Citations = 9)

16. **Jefferson, A.J.,** Bhaskar, A., Fanelli, R., Hopkins, K.G., Avellaneda, P.M., and McMillan, S.K. 2017. Stormwater management network effectiveness and implications for urban watershed function: a critical review. *Hydrological Processes.* 31(23): 4056–4080, doi:10.1002/hyp.11347. (Citations = 127)

17. Avellaneda, P.M., **Jefferson, A.J.**, Grieser, J.M., and *Bush, S.A.**, 2017. Simulation of the cumulative hydrological response to green infrastructure. *Water Resources Research.* 53(4): 3087-3101, doi:10.1002/2016WR019836. (Citations = 64)

18. *Bell, C.D.,* McMillan, S.K., Clinton, S.M., and **Jefferson, A.J.**, 2017. Characterizing the Effects of Stormwater Mitigation on Nutrient Export and Stream Concentrations. *Environmental Management.* 59: 604. doi:10.1007/s00267-016-0801-4. (Citations = 21)

19. Thapaliya, D., *Hellwig, E.J., Kadariya, J., Grenier, D.,* **Jefferson, A.J.**, Dalman, M., *Kennedy, K., DiPerna, M., Orihill, A.,* Taha, M., Smith, T.C. 2017. Prevalence and characterization of Staphylococcus aureus and methicillin-resistant Staphylococcus aureus (MRSA) on public recreational beaches in Northeast Ohio. *GeoHealth.* 1(10): 320-332, doi:10.1002/2017GH000106. (Citations = 25)

20. *Bell, C.D.,* McMillan, S.K., Clinton, S.M., and **Jefferson, A.J.** 2016. Hydrologic response to stormwater control measures in urban watersheds. *Journal of Hydrology.* 541: 1488-1500. doi: 10.1016/j.jhydrol.2016.08.049. (Citations = 106)

21. Turner, V.K., *Jarden, K.M.*,* and **Jefferson, A.J.** 2016. Resident perspectives on green infrastructure in an experimental suburban stormwater management program. *Cities and the Environment*, 9(1): art. 4. (Citations = 33)

22. *Jarden, K.M.*,* **Jefferson, A.J.,** and Grieser, J.M. 2016. Assessing the effects of street-scale green infrastructure retrofits on hydrograph characteristics, northeastern Ohio, USA, *Hydrologic Processes*, 30(10):1536-1550. doi: 10.1002/hyp.10736. (Citations = 114)

23. **Jefferson, A.J.,** *Bell, C.D.,* Clinton, S., and McMillan, S. 2015. Application of isotope hydrograph separation to understand urban stormwater dynamics, *Hydrological Processes*, 29(25): 5290-5306. doi: 10.1002/hyp.10680. (Citations = 43)

24. Griffith, E.M., Ortiz, J.D., and **Jefferson, A.J.**, 2015. Mimicking the Rayleigh isotope effect in the oceans, *Oceanography*, 28(4): 96-101. doi: 10.5670/oceanog.2015.89.

25. *Reilly, D.**, Singer, D., **Jefferson, A.J.**, and Eckstein, Y. 2015. Identification of Local Groundwater Pollution in Northeastern Pennsylvania: Marcellus Flow-back or Not?, *Environmental Earth Sciences*, 73(12): 8097-8109. doi:10.1007/s12665-014-3968-0. (Citations = 14)

26. **Jefferson, A.J.**, Ferrier, K., Perron, J.T., and Ramalho, R. 2014. Controls on the hydrological landscape evolution of shield volcanoes and volcanic ocean islands, pp. 185-214 in Harpp, K.S., Mittelstaedt, E., d'Ozouville, N., and Graham, D.W. (eds), *The Galapágos: A Natural Laboratory for the Earth Sciences*, AGU Geophysical Monograph Series. (Citations = 19)

27. **Jefferson, A.J.**, Wegman, K., and Chin, A. 2013. Geomorphology of the Anthropocene: Understanding the surficial legacy of past and present human activities, *Anthropocene*, 2: 1-3, doi:10.1016/j.ancene.2013.10.005. (Citations = 25)

28. *Freyer, J.B.** and **Jefferson, A.J.**, 2013. An exception to island loss in the engineered Upper Mississippi River: history of land growth in Pool 6 and implications for restoration, *Anthropocene*, 2: 65-75, doi:10.1016/j.ancene.2013.10.004. (Citations = 6)

29. **Jefferson, A.J.** and *McGee, R.W.** 2013. Channel network extent in the context of historical land use, flow generation processes, and landscape evolution, *Earth Surface Processes and Landforms*, 38(6): 601-613, doi:10.1002/esp.3308. (Citations = 36)

30. **Jefferson, A.J.** 2011. Seasonal versus transient snow and the elevation dependence of climate sensitivity in maritime mountainous regions*, Geophysical Research Letters*, 38: L16402, doi:10.1029/2011GL048346. (Citations = 54)

31. Nolin, A., *Phillippe, J.*, **Jefferson, A.J.,** and Lewis, S. 2010. Present and future contributions of glacier melt to summer flows in a Pacific Northwest watershed, *Water Resources Research,* 46: W12509, doi:10.1029/2009WR008968. (Citations = 108)

32. O'Driscoll, M., Clinton, S., **Jefferson, A.J.,** Manda, A., and McMillan S. 2010. Urbanization Effects on Watershed Hydrology and In-Stream Processes in the Southern United States, *Water*, 3(2): 605-648. (Citations = 372)

33. **Jefferson, A.J.,** Hannula, K.A., Campbell, P.B., & Franks, S.E., 2010, The Internet as a resource and support network for diverse geoscientists, *GSA Today, 20*(9): 59-61. (Citations = 2)

34. **Jefferson, A.J.**, Grant, G., Lancaster, S., and Lewis, S., 2010, Coevolution of hydrology and topography on a basalt landscape in the Oregon Cascade Range, USA, *Earth Surface Processes and Landforms,* 35(7): 803-816. doi: 10.1002/esp.1976. (Citations = 87)
35. **Jefferson, A.J.**, Nolin, A., Lewis, S., and Tague, C., 2008. Hydrogeologic controls on streamflow sensitivity to climatic variability, *Hydrological Processes.* 22(22): 4371–4385. (Citations = 97)
36. Tague, C., Grant, G., Farrell, M., Choate, J., and **Jefferson, A.J.,** 2008, Deep groundwater mediates streamflow response to climate warming in the Oregon Cascades, *Climatic Change* 86:189-210. (Citations = 213)
37. **Jefferson, A.J.,** Grant, G., and Rose, T., 2006, The influence of volcanic history on groundwater patterns on the west slope of the Oregon High Cascades, *Water Resources Research,* 42: W12411, doi: 10.1029/2005WR004812. (Citations = 70)

Other Peer-Reviewed Publications

1. Keim, R., Kendall, C., and **Jefferson, A.J.**, 2014, The Expanding Utility of Laser Spectroscopy: Laser Specs for Field Hydrology and Biogeochemistry: A USGS-CUAHSI Virtual Workshop; 27 January to 28 February 2014 [meeting report], *Eos*. 95(17): 144. DOI: 10.1002/2014EO170007. (Citations = 6)
2. Clinton, S.M., **Jefferson, A.J.,** Allan, C.J., and Osypian, M., 2014, Evaluating Restoration Success in the Watershed Context, North Carolina Water Resources Research Institute Project Report 11-02-S. 49 pp.
3. **Jefferson, A.J.,** Lees, J.M., McClinton, T. 2011. Synthesizing Knowledge of Ocean Islands Chapman Conference on The Galápagos as a Laboratory for the Earth Sciences; Puerto Ayora, Galapágos, Ecuador, 25-30 July 2011 [meeting report], *Eos*. 92(44): Article number: 2011ES003632R
4. Cashman, K.V., Deligne, N.I., Gannett, M.W., Grant, G.E, and **Jefferson, A.J.**, 2009, Fire and water: Volcanology, geomorphology, and hydrogeology of the Cascade Range, central Oregon, *in* O'Connor, J.E., Dorsey, R.J., and Madin, I.P., eds., *Volcanoes to Vineyards: Geologic Field Trips through the Dynamic Landscape of the Pacific Northwest*: Geological Society of America Field Guide 15, p. 539-582, doi: 10.1130/2009.fld015(26). (Citations = 6)
5. **Jefferson, A.J.**, Grant, G., and Lewis, S., 2007. A river runs underneath it: geological control of spring and channel systems and management implications, Cascade Range, Oregon. In M.J. Furniss, C.F. Clifton, and K.L. Ronnenberg, eds. *Advancing the Fundamental Sciences: Proceedings of the Forest Service National Earth Sciences Conference*. PNW-GTR-689. Portland, OR: U.S.D.A. Forest Service, PNW Research Station. p. 391-400. (Citations = 22)

Other Publications

1. **Jefferson, A.J.,** 2019, Shutdown will cast a long shadow over research. *Nature* 565, 399, doi: 10.1038/d41586-019-00207-9. [invited Worldview column]

2. Selin, N.E., Kenney, M., **Jefferson, A.J.**, Dukes, J.S., Hill, T.M., Olabisi, L.M., and Duffy, M.A. 2018, Call for new AAAS harassment policy. *Science.* 361(6406): 984. DOI: 10.1126/science.aav1680. [letter to the editor]
3. **Jefferson, A.J.** and Kenney, M. 2018. Efforts large and small speed science reform. *Science.* 360(6385): 164. doi:10.1126/science.aat6341. [letter to the editor]

Published Educational Resources

1. Ward, A., S. Herzog, J. Bales, R. Barnes, M. Ross, A. Jefferson, N. Basu, L. Yoder, T. Covino, E. Habib, J. Maertens, 2021. Educational Resources for Hydrology & Water Resources, HydroShare, http://www.hydroshare.org/resource/148b1ce4e308427ebf58379d48a17b91
2. Jefferson, A, 2020. Watershed Hydrology Online Teaching Materials, HydroShare, http://www.hydroshare.org/resource/a6057ef1f76349d48983301d1c2a39d1
3. Jefferson, A., 2016. Isotope Hydrograph Separation. *Data and Model Driven Hydrology Education* collection on the Science Education Resource Center. https://serc.carleton.edu/hydromodules/units/153199.html [This activity was selected for the On the Cutting Edge Exemplary Teaching Collection in 2019.]
4. Jefferson, A. 2008. Take a Hike Assignment. *Teaching Introductory Geoscience Courses in the 21st Century* collection on the Science Education Resource Center. https://serc.carleton.edu/NAGTWorkshops/intro/activities/23574.html This activity was selected for the On the Cutting Edge Exemplary Teaching Collection in 2014.]

Presentations

Invited Seminars (24 in 2016-2022, 46 total)

2022 American Geophysical Union Earth and Planetary Surface Processes webinar, November 16, 2022

Duke Kunshan University, Environmental Science, May 11, 2022

University of Vermont, Rubenstein School of Environment and Natural Resources, May 2, 2022

2021 Wright State University, Department of Earth and Environmental Sciences, November 18, 2021

Marquette University, Department of Civil, Construction, and Environmental Engineering, November 10, 2021

2020 National Association of Geoscience Teachers (NAGT), webinar, November 5, 2020

Kent State University, Department of Geology, September 18, 2020

2019 Colorado School of Mines, Department of Civil and Environmental Engineering, November 1, 2019

Colorado State University, Department of Civil and Environmental Engineering, October 25, 2019

University of Colorado (Boulder), Department of Civil and Environmental Engineering, September 11, 2019

Northeast Ohio Regional Sewer District, Lunch and Learn Series, May 9, 2019

Case Western Reserve University, Earth, Environmental, and Planetary Science Department, April 5, 2019

2018 University of Nevada Reno Hydrology Graduate Program "Water Visions" seminar series, October 9, 2018

Oregon State University Water Resources Seminar Series, April 18, 2018

Portland State University Department of Geology/ U.S. Geological Survey Oregon Water Science Center, April 17, 2018

Cornell University Biogeochemistry, Environmental Science and Sustainability group, March 23, 2018

University of Wisconsin, Madison, Department of Geography, March 12, 2018

Cuyahoga Valley National Park All-Park-Staff meeting, January 16, 2018

2017 University of Pittsburgh, Department of Geology and Environmental Science, November 2017

University of Akron, Integrated Bioscience Ph.D. program, April 2017

2016 Kent State University, Department of Biological Sciences, December 2016

University of Vermont, Department of Plant and Soil Sciences, September 2016

Indiana University of Pennsylvania, Summer Scholar Program, August 2016

University of Buffalo, Department of Environmental Engineering, April 2016

2015 Cleveland Metroparks, Natural Resources Research Symposium, December 2015

Cleveland State University, Department of Biological, Geological, and Environmental Sciences, October 2015

2014 CUAHSI Cyberseminar Series on Sustainable Urban Streams, December 2014

Ohio State University, School of Earth Sciences, Columbus, OH, September 2014

Northeast Section of the Ohio Water Environment Association, Parma, OH, April 2014

2013 Kent State University Water Symposium, Kent, OH, November 2013

Kent State University, Department of Biological Sciences, Kent, OH, March 2013

Denison University, Department of Geosciences, Granville, OH, March 2013

North Dakota State University, Department of Geosciences, Fargo, ND, March 2013

2012 The Johns Hopkins University, Department of Geography & Environmental Engineering, Baltimore, MD, November 2012

Ashland University, Environmental Lecture Series, Ashland, OH, October 2012

2011 University of South Carolina, Department of Geography, Columbia, SC, 2011

University of Iowa, Department of Geological Sciences, Iowa City, IA, February 2011

University of North Carolina at Chapel Hill, Department of Geological Sciences, Chapel Hill, NC, January 2011

2009 Utah State University, Department of Watershed Sciences, Logan, UT, March 2009

University of Montana, Department of Geosciences, Missoula, MT, February 2009

2007 UNC Charlotte Infrastructure and Environmental Systems, Charlotte, NC, October 2007

Climate Change Film Festival and Forum, Bend, OR, April 2007

2006 Association of Power Biologists 47th Annual Workshop, Eugene, OR, May 2006

2005 U.S. Geological Survey Oregon Water Science Center, Portland, OR, February 2005

2004 Oregon Water Resources Department Commissioners, Salem, OR, October 2004

"Spring Fling", workshop for Forest Service and BLM personnel to discuss the management implications of large springs on federal lands, Corvallis, OR, June 2004

1997 US Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS, July 1997

Invited Conference Presentations (7 in 2016-2021, 18 total)
(*italics* denote students, * denote direct advisees)

2021 **Jefferson, A.**, *Blauch, G.*, Blinn, A.*, *Hassan, Z.U.*,* Costello, D. Quantifying substrate disturbance in urban streams. Society for Freshwater Science, virtual, May 2021.

2019 **Jefferson, A.**, *Plauche, M.**, Elliott, E. Streamflow generation is linked to water quality dynamics in urban headwater streams. American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.

Jefferson, A., Kinsman-Costello, L.E., Grieser, J.M., Avellaneda, P.M., *Buzulencia, H.*, Stofan, M., Sugano, L.L**. What We've Really Learned After 5 years of Green Infrastructure Monitoring. American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.

Bell, C.D., Wolfand, J., *Panos, C.*, Bhaskar, A.S., *Gilliom, R.*, **Jefferson, A.**, Hogue, T.S., Hopkins, K.G. Stormwater control impacts on urban hydrology: A meta-analysis. American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.

2017 **Jefferson, A.,** Avellaneda, P.M., Turner, V.K., *Jarden, K.M.**, and Grieser, J.M. Scaling Up Green Infrastructure in Residential Landscapes: Lessons from northeastern Ohio. International Association for Landscape Ecology – US Conference, Baltimore, MD, April 2017.

2016 **Jefferson, A.** Social Media for Community Building Among Geoscientists from Under-represented Groups. American Geophysical Union Fall Meeting, San Francisco, CA, December 2016.

Jefferson, A. The Case for Urban CZOs. Critical Zone Observatory Townhall, American Geophysical Union Fall Meeting, San Francisco, CA, December 2016

2015 **Jefferson, A.,** *Jarden, K.**, and Grieser, J.M. Retrofitting stormwater retention on headwater streets: hydrologic effects of catchment-scale green infrastructure. Geological Society of America Annual Meeting, Baltimore, MD, November 2015.

Jefferson, A., *Bell, C.D.,* McMillan, S. and Clinton S. Quantifying the influences of stormwater control measures on urban headwater streamflow. Geological Society of America Annual Meeting, Baltimore, MD, November 2015.

*Jarden, K.**, **Jefferson, A.**, Turner, V.K., Grieser, J.M., Schaefer, D. Assessing hydrologic impacts of street-scale green infrastructure investments for suburban Parma, Ohio. Association of American Geographers, Chicago, IL, April 2015.

2014 **Jefferson, A.**, McMillan, S., and Clinton, S. Evaluating the success of urban stream restoration on hyporheic exchange and nutrient retention, British Hydrological Society, Birmingham, UK, September 2014.

2013 **Jefferson, A.,** Clinton, S., *Osypian*, *M.*,* McMillan, S., *Tuttle, A.** Evaluating the success of urban stream restoration in an ecosystem services and watershed context, Upper Midwest Stream Restoration Symposium, La Crosse, WI, February 2013 (*keynote speaker*)

2012 **Jefferson, A.** Evaluating the success of urban stream restoration in an ecosystem services context, Kent State University Water Symposium, Kent, OH, October 2012

Jefferson, A. Timescales of drainage network evolution are driven by coupled changes in landscape properties and hydrologic response, Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI) Biennial Meeting, Boulder, CO, July 2012.

2011 **Jefferson, A.** and *McGee, R.W.*,* Understanding channel network extent in the North Carolina Piedmont in the context of legacy land use, flow generation processes, and landscape dissection, American Geophysical Union Fall Meeting, San Francisco, CA, December 2011.

Jefferson A. and d'Ozouville, N. Controls on the hydrologic evolution of Quaternary volcanic landscapes, American Geophysical Union Fall Meeting, San Francisco, CA, December 2011.

Jefferson, A. Top down or bottom up? Volcanic history, climate, and the hydrologic evolution of volcanic landscapes, Chapman Conference on The Galápagos as a Laboratory for the Earth Sciences; Puerto Ayora, Galapágos, Ecuador, July 2011. (*plenary speaker*)

2009 **Jefferson, A.** On a template set by basalt flows, hydrology and erosional topography coevolve in the Oregon Cascade Range, Geological Society of America Annual Meeting, Portland, OR, October 2009.

Conference Abstracts (49 in 2016-2022, 107 total, *italics* denote student co-author)

2022 **Jefferson, A.,** *Kearns, K., Mitchell, A., Snyder, K.,* Beaches as dynamic plastic storage zones: case study of a Lake Erie urban beach, American Geophysical Union meeting, Chicago, IL, December 2022

Hassan, Z.U., **Jefferson, A.,** Bhaskar, A.S., Costello, D., Torres, M.N., Effectiveness of Green Infrastructure on Watershed Scale Flow Regimes of Urban Streams in Cleveland and Denver, American Geophysical Union meeting, Chicago, IL, December 2022

Dudik, A., *Mitchell, A.,* **Jefferson, A.,** Tessin, A., Gallagher, T. Plastic Distribution and Degradation in the Urban Fluvial Environment, American Geophysical Union meeting, Chicago, IL, December 2022

Jefferson, A., *Farooq, N., Greising, C.,* Anthropogenic litter in urban stream channels is unevenly distributed and mostly plastic. Frontiers in Hydrology Meeting, San Juan, PR, June 2022.

Farooq, N., **Jefferson, A.,** Quantifying the effect of anthropogenic debris characteristics on its mobility within urban streams. Frontiers in Hydrology Meeting, San Juan, PR, June 2022.

Hassan, Z.U., **Jefferson, A.,** Bhaskar, A.S., Torres, M.N., Matott, S., Rabideau, A.J., Turner, V.K., Effectiveness of green infrastructure on watershed scale flow regimes of West Creek, Ohio. Frontiers in Hydrology Meeting, San Juan, PR, June 2022.

Jefferson, A., *Greising, C., Farooq, N.,* Determining drivers of trash in urban streams based on watershed and stream characteristics. Joint Aquatic Sciences Meeting, Grand Rapids, MI, May 2022.

Jefferson, A., *Kearns, K., Mitchell, A.*, Tessin, A., Gallagher, T. Distribution and abundance of small plastics on a Lake Erie urban beach. Joint Aquatic Sciences Meeting, Grand Rapids, MI, May 2022.

Farooq, N., **Jefferson, A.,** *Muratori, S.* Quantifying the effect of anthropogenic debris characteristics on its mobility within urban streams. Joint Aquatic Sciences Meeting, Grand Rapids, MI, May 2022.

Kearns, K., **Jefferson, A.,** *Stachew, E.* Patterns of macro-litter on a Lake Erie urban beach and in an adjacent tributary. Joint Aquatic Sciences Meeting, Grand Rapids, MI, May 2022.

Jefferson, A., *Greising, C., Farooq, N., Stachew, E., Brown, E., Kearns, K., Muratori, S., Schroeck, J., Snyder, K., Mitchell, A., Chakraborty, A.* Plastic dynamics in Cleveland streams and beaches, with implications for Lake Erie. State of Lake Erie Conference, Cleveland, OH, March 2022.

Hassan, Z.U., **Jefferson, A.** Assessment of Climate Change Impacts on Cleveland (Ohio) Urban Streamflow. State of Lake Erie Conference, Cleveland, OH, March 2022.

2021 Turner, V.K., Gmoser-Daskalakis, K., Costello, D., **Jefferson, A.,** Bhaskar, A. The Role of Value Orientation in Green Infrastructure Prioritization: A Survey of Stormwater Managers in Cleveland, Ohio and Denver, Colorado. Association of College Schools of Planning Annual Conference, Miami, FL and virtual, October 2021.

*Blinn, A., Hassan, Z.U.**, Bhaskar, A., **Jefferson, A.**, Costello, D. Short- and long-term effects of stormflow on stream metabolism: frequent flooding results in degradation of stream function and response. Society for Freshwater Science, virtual, May 2021.

Pope, T., Kinsman-Costello, L., **Jefferson, A.,** *Sugano, L*., Stofan, M., Buzulencia, H.** Changes in phosphate concentrations in green roof runoff at West Creek Reservation. Society for Freshwater Science, virtual, May 2021.

Stofan, *M.*, **Jefferson, A.**, Kinsman-Costello, L. Wetland salinization: chloride and sulfate dynamics in an urban freshwater wetland and adjacent stream. Society for Freshwater Science, virtual, May 2021.

*Hassan, Z.U.** and **Jefferson, A.** Climate change impacts on urban streamflow: implications for stormwater management. Ohio Stormwater Conference, Sandusky, OH, May 2021.

2020 *Fernsler, A.** and Jefferson, A. Volunteer cleanup efforts reveal differences in anthropogenic litter composition found in shoreline and riverine environments. American Geophysical Union Fall Meeting, virtual, December 2020. *Outstanding Student Presentation Award winner*

*Hassan, Z.U.**, **Jefferson, A.,** Avellaneda, P.M., Rowan, C.J., Bhaskar, A. Climate change impacts on urban streamflow: implications for stormwater management. American Geophysical Union Fall Meeting, virtual, December 2020.

Bhaskar, A., *Fillo, N.*, and **Jefferson, A.** Estimating lawn irrigation contributions to semi-arid, urban baseflow using water-stable isotopes. American Geophysical Union Fall Meeting, virtual, December 2020.

Blinn, A., Bhaskar, A., Costello, D., and Jefferson, A. Long-term stream monitoring identifies discharge thresholds of stream metabolism resistance to storm events. American Geophysical Union Fall Meeting, virtual, December 2020.

Jefferson, A., Grieser, J.M., and Kinsman-Costello, L.E. Green Infrastructure Monitoring through a Cleveland Metroparks - Kent State University Partnership. Ohio Stormwater Conference, Sandusky, OH, August 2020.

2019 **Jefferson, A.** and *Blauch, G.** Highly mobile wood and sediment in northeast Ohio urban streams. 50th Binghamton Geomorphology Symposium, Denver, CO, October 2019.

2018 **Jefferson, A.** and Avellaneda, P.M. Identifying Hydrologic Sensitivity to Infiltration-based Stormwater Management at the Watershed Scale. American Geophysical Union Fall Meeting, Washington, D.C., December 2018.

Jefferson, A., Grieser, J.M., Kinsman-Costello, L.E., Coffman, R., and Lorch, P.D. A Park-University Partnership on Science for Stewardship in Urban Environments. American Geophysical Union Fall Meeting, Washington, D.C., December 2018.

Kenney, M.A, **Jefferson, A.**, Hill, T.M., and Selin, N.E. Supporting Engaged Scientists: How Universities Can Lead the Way. American Geophysical Union Fall Meeting, Washington, D.C., December 2018.

*Plauche, M.** and **Jefferson, A.** Land Cover and Seasonal Influence on Chloride and Nitrate Concentrations along Urban Streams with Similar Impervious Surface Cover. American Geophysical Union Fall Meeting, Washington, D.C., December 2018.

Ruggles, T., Minerovic, A., **Jefferson, A.,** *Ruhm, C.*,* Davis, C., and Blackwood, C. Influence of the invasive, nitrogen fixing shrub, autumn olive on soil chemistry and vegetation in reclaimed surface mines. American Geophysical Union Fall Meeting, Washington, D.C., December 2018.

Jefferson, A. and *Blauch, G.** Wood in Urban Streams is a Function of Watershed Impervious Area and Riparian Buffers. Geological Society of America Annual Meeting, Indianapolis, IN, November 2018

Ruhm, C.,* Davis, C., **Jefferson, A.,** Blackwood, C., Bahlai, C., and *Ruggles, T.* Soil Properties Impede Reforestation of Abandoned Mine Sites in Cuyahoga Valley National Park. Geological Society of America Annual Meeting, Indianapolis, IN, November 2018

*Timmons, J.S.** and **Jefferson, A.** Small Scale (<10,000 km^2) Isoscapes Reveal Spatially Variable Water Sources for Northeastern Ohio Precipitation, Surface Water, and Groundwater. Geological Society of America Annual Meeting, Indianapolis, IN, November 2018

Jefferson, A. and Avellaneda, P.M. Identifying Hydrologic Sensitivity to Infiltration-Based Stormwater Green Infrastructure at the Watershed Scale. University Council on Water Resources Conference, Pittsburgh, PA, June 2018

*Blauch, G.** and **A. Jefferson**, Urban Influence on Large Wood Abundance in Streams. University Council on Water Resources Conference, Pittsburgh, PA, June 2018

*Plauche, M.** and **A. Jefferson**, Spatial and Temporal Variability of Chloride Concentrations in Urban Streams in Northeast Ohio as a Function of Land Cover. University Council on Water Resources Conference, Pittsburgh, PA, June 2018

McMillan, S., Bell, C., **Jefferson, A.**, Clinton, S., Rao, S., *Scarlett, R.* Influence of stormwater control measures on water quality in small, nested suburban watersheds. Society for Freshwater Sciences, Detroit, MI, May 2018

2017 **Jefferson, A.,** *Sugano, L.L.**, *Buzulencia, H.**, P.M. Avellaneda, L. Kinsman-Costello, Storage Dynamics Revealed by Water Isotopes Provide Insight into Water Quality Function of Stormwater Green Infrastructure. Geological Society of America Annual Meeting, Seattle, WA, October 2017.

*Blauch, G.** and **Jefferson, A.** Abundance and Geomorphic Function of Wood in Urban Stream Systems. Geological Society of America Annual Meeting, Seattle, WA, October 2017.

Ruhm, C.,* **Jefferson, A.,** Blackwood, C., Minerovic, A. and Davis, C., Soils and Geomorphology of Five Reclaimed Surface Mine Sites in the Cuyahoga Valley National Park, Ohio. Geological Society of America Annual Meeting, Seattle, WA, October 2017.

Jefferson, A. Water isotopes provide insights into the ecohydrologic functioning of stormwater green infrastructure. HydroEco 2017, Birmingham, UK, June 2017.

Jefferson, A. and Avellaneda, P.M. Runoff reduction with neighborhood-scale green infrastructure: insights from modeling. Ohio Stormwater Conference, Sandusky, OH, May 2017.

Bingham, J. and **Jefferson, A.**. Incorporating Nutrient Reduction Design Into a Maumee Watershed Restoration Project, Ohio Stormwater Conference, Sandusky, OH, May 2017.

*Blauch, G.**, *Ruhm, C.*, Sugano, L.L.**, and **Jefferson, A..** Streambed sediment and hydraulic geometry in the post-glacial landscape of northeastern Ohio. Geological Society of America Northeastern-North Central Meeting, Pittsburgh, PA, March 2017.

Jefferson, A., *Sugano, L.L.**, Avellaneda, P.M., Kinsman-Costello, L. Water isotopes provide insights into the hydrologic functioning of stormwater green infrastructure. Geological Society of America Northeastern-North Central Meeting, Pittsburgh, PA, March 2017.

2016 **Jefferson, A.**, Avellaneda, P.M., *Jarden, K.**, Turner, V.K., Grieser, J.M.. A Neighborhood-Scale Green Infrastructure Retrofit: Experimental Results, Model Simulations, and Resident Perspectives, American Geophysical Union Fall Meeting, San Francisco, CA, December 2016.

Jefferson, A., Ortiz, J., Dees, D., Griffith, E., and Merchant, W. Data-driven Approaches to Teaching Stable Isotopes in Hydrology and Environmental Geochemistry, American Geophysical Union Fall Meeting, San Francisco, CA, December 2016.

McKinnon, M. and **Jefferson, A.** Staying Safe While Doing Science in Public: Emerging Best Practices for Social Media, American Geophysical Union Fall Meeting, San Francisco, CA, December 2016.

Jefferson, A., Avellaneda, P.M., *Jarden, K.**, Turner, V.K., Grieser, J.M.. A Neighborhood-Scale Green Infrastructure Retrofit: Experimental Results, Model Simulations, and Resident Perspectives, Water Management Association of Ohio meeting, Columbus, OH, November 2016.

*Unferdorfer, C.**, **Jefferson, A.**, Kinsman-Costello, L., *Buzulencia, H.**, *Sugano, L.** Surface runoff from a closed landfill and the effects on wetland suspended sediment and water quality. Geological Society of America Annual Meeting, Denver, CO, September 2016.

*Sugano, L.**, **Jefferson, A.**, Kinsman-Costello, L., Avellaneda, P. Evaluating Bioretention Cell and Green Roof Hydrologic Performance in northeastern Ohio, Geological Society of America Annual Meeting, Denver, CO, September 2016.

*Sugano, L.**, **Jefferson, A.**, Kinsman-Costello, L., Avellaneda, P. Evaluating Bioretention Cell and Green Roof Hydrologic Performance in northeastern Ohio, Consortium of Universities for the Advancement of Hydrologic Science, Inc. Biennial Colloquium, Sheperdstown, WV, July 2016.

Avellaneda, P., **Jefferson, A.**, Grieser, J.M., Long-term simulation of green infrastructure effects at a catchment scale, Consortium of Universities for the Advancement of Hydrologic Science, Inc. Biennial Colloquium, Sheperdstown, WV, July 2016.

*Sarazen, J.C.**, Kinsman-Costello, L.E., **Jefferson, A.J.,** Scholl, A. The effect of antecedent soil moisture conditions on green roof runoff water quality and quantity. 59th Annual Conference on Great Lakes Research, Guelph, ON, Canada, May 2016.

1997-2015 58 abstracts for conference presentations [not listed].

Teaching

Courses Taught at Kent State University

Ph.D./M.S. level

Advanced Topics in Hydrology (3 credits)	F2018, F2020, F2021
Fluvial Processes (3 credits)	F2016
Graduate Student Orientation (1 credit)	F2018, F2022

Writing in the Earth Sciences (1 credit)	S2018, S2019, S2020, S2022
College Teaching of Applied Geology (1 credit)	F2012, F2013
Climate Change Impacts on the Water Cycle (1 credit)	S2020, F2022

M.S./Advanced Undergraduate level

Watershed Hydrology (3 credits)	S2014, F2015, S2017, S2018, S2019, S2020, S2022
Urban Hydrology (3 credits)	S2013, S2016
Fluvial Processes (3 credits)	F2013

Core Classes

Environmental Earth Science (3 credits)	F2014 (honors), S2016, F2016, F2018, F2020 (honors), F2021 (honors), F2022

Courses Taught at UNC Charlotte

Ph.D./M.S. level

Analysis and Acquisition of Scientific Data (3 credits)	F2009; F2010

M.S./Advanced Undergraduate level

Fluvial Processes and Laboratory (4 credits)	S2008; S2009; S2010; F2011
Hydrogeology and Laboratory (4 credits)	F2008; S2010; S2012

Advanced Undergraduate level

Earth Sciences Seminar: Climate Change (1 credit)	F2008; F2009(x2); F2010
Earth Sciences Seminar: Natural Disasters (1 credit)	F2011

Introductory Undergraduate level

Earth Sciences – Geography (3 credits)	F2007; S2008; S2009

Courses Taught at Oregon State University

The Earth Surface and Laboratory (4 credits)	Sum2005

Mentoring

Post-doctoral Scholars (1)

Pedro M. Avellaneda, 2016- 2017

- 3 coauthored papers (Avellaneda *et al.*, 2017; Jefferson *et al.*, 2017; Avellaneda and Jefferson, 2020)

Graduate Students and Theses (16)

1. Jeffrey Timmons, M.S. Geology, Kent State University, December 2020

Identifying the Isotopic Signature of Lake Effect Precipitation on the Northeast Ohio Isoscape

2. Hayley Buzulencia, M.S. Geology, Kent State University, October 2019

   The Characterization and Survey of Inorganic Sulfur Redox Associated with Wetland Hydrological Fluctuations (co-advised L. Kinsman-Costello)

3. Mary Plauche, M.S. Geology, Kent State University, June 2019

   Land Cover and Infrastructure Influences on Chloride and Nitrate Concentrations of Urban Streams in Northeast Ohio

   - Geological Society of America Hydrogeology Division Student Research Grant Award winner (2018)

4. Krista Brown, M.S. Geology, Kent State University, April 2019

   Groundwater-stream interactions and water quality of former reservoirs in Northeast Ohio

5. Catherine Ruhm, M.S. Geology, Kent State University, November 2018

   The Effects of Two Types of Reclamation on Abandoned Non-Coal Surface Mines in Cuyahoga Valley National Park, Ohio

   - 1 co-authored publication (Ruggles *et al.*, 2021)
   - Geological Society of America Geology and Society Division Best Student Paper winner (2018)

6. Garrett Blauch, M.S. Geology, Kent State University, June 2018

   Abundance, Mobility, and Geomorphic Effects of Large Wood in Urban Streams

   - 1 co-authored publication (Blauch and Jefferson, 2019)

7. Laura Sugano, M.S. Geology, Kent State University, April 2018

   Comparing Bioretention Cell and Green Roof Performance in Parma, Ohio

8. Eric Traub, M.S. Geology, Kent State University, May 2016

   The Effects of Biogeochemical Sinks on the Mobility of Trace Metals in an Area Affected By Acid Mine Drainage, Huff Run, Ohio (co-advised D. Singer)

   - 1 co-authored publication (Singer *et al.*, 2018)

9. Kimberly Jarden, M.S. Geology, Kent State University, April 2015

   Assessing impacts of green infrastructure at the watershed scale for suburban streets in Parma, Ohio.

   - 2 coauthored publications (Jarden *et al.,* 2016; Turner *et al.,* 2016)
   - Geological Society of America Environmental and Engineering Geology Division student poster session award (2014)

10. Darren Reilly, M.S. Geology, Kent State University, April 2014.
    Identification of Local Ground Water Pollution in Northeastern Pennsylvania: Marcellus Flow-back or Not?

- 1 coauthored publication (Reilly *et al.*, 2015)

11. Mackenzie Osypian, M.S. Civil Engineering, UNC Charlotte, April 2013

    Evaluating restoration effects on transient storage and hyporheic exchange in urban and forested streams (co-advised S. Clinton)

12. Brock Freyer, M.S. Earth Sciences, UNC Charlotte, April 2013

    Fluvial Response to River Management and Sediment Supply: Pool 6 of the Upper Mississippi River System, Southeastern Minnesota

    - 1 coauthored publication (Freyer and Jefferson, 2013)

13. Brandon Blue, M.S. Earth Sciences, UNC Charlotte, August 2012

    Seasonal Urban Stream Temperature Response to Storm Events Within the Piedmont of North Carolina (co-advised S. McMillan)

14. Alea Tuttle, M.S. Earth Sciences, UNC Charlotte, August 2012

    Post-project evaluations of urban stream restoration sites in the southeastern Piedmont: streambed sediment denitrification and geomorphic complexity (co-advised S. McMillan)

    - 2 publications coauthored with co-advisor

15. Ralph W. McGee, M.S. Earth Sciences, UNC Charlotte, May 2011

    Hydrogeomorphic processes influencing ephemeral streams in forested watersheds of the southeastern Piedmont U.S.A.

    - 1 coauthored publication (Jefferson and McGee, 2013)

16. Cameron Moore, M.S. Earth Sciences, UNC Charlotte, May 2011

    Surface/Groundwater Interactions and Sediment Characteristics of Headwater Streams in the Piedmont of North Carolina

Graduate Students In Progress (3)

1. Zia Ul Hassan, Ph.D. Applied Geology, Kent State University, 2019-present (advanced to PhD candidacy August 2021)
2. Nageen Farooq, Ph.D. Applied Geology, Kent State University, 2020-present (advanced to PhD candidacy August 2022)
3. Suffiyan Safdar, Ph.D. Applied Geology, Kent State University, 2022-present

Graduate Committee Membership (8 in progress, 10 PhD completed, 9 MS completed)

Adebayo Sadiq, Ph.D., Applied Geology, Kent State University, in progress
Shahidul Muzemder, Ph.D., Applied Geology, Kent State University, in progress
Andrea Fitzgibbon, Ph.D., Biological Sciences, Kent State University, in progress
Corey Coakley, Ph.D., Geography, Kent State University, in progress
Elena Stachew, Ph.D., Integrated Bioscience, University of Akron, in progress
Gabrielle Russell, Ph.D., Integrated Bioscience, University of Akron, in progress
Jacob Bradley, M.S., Geology, Kent State University, in progress

Erika Hiwiller, M.S., Geology, Kent State University, in progress

Israel Olaoye, Ph.D. Applied Geology, Kent State University, 2020
EmmaLeigh Givens, Ph.D., Biological Sciences, Kent State University, 2020
Jonathon Van Gray, Ph.D., Biological Sciences, Kent State University, 2019
Dulcinea Avouris, Ph.D. Applied Geology, Kent State University, 2018
Johnathon Kirk, Ph.D., Geography, Kent State University, 2017
Nicholas Bonini, Ph.D., Applied Geology, Kent State University, 2016
Chandawimal Siriwardana, Ph.D., Applied Geology, Kent State University, 2014
Suchismita Ghosh, Ph.D., Biological Sciences, Kent State University, 2013
Jason Shiflet, Ph.D., Infrastructure and Environmental Systems, UNC Charlotte, 2016
Vijaya Gagrani, Ph.D., Infrastructure and Environmental Systems, UNC Charlotte, 2012
Courtney Smith, M.S., Geology, Kent State University, 2021
Shahidul Muzemder, M.S., Geology, Kent State University, 2020
Marissa Tomin, M.S., Geology, Kent State University, 2020
Meaghan Shaw, M.S., Geology, Kent State University, 2018
Eric Hartung, M.S. Ecology, Kent State University, 2017
Phil Edwards, M.S. Earth Sciences, UNC Charlotte, 2011
Thomas Barto, M.S. Earth Sciences, UNC Charlotte, 2010
Mary Cauthen, M.S. Earth Sciences, UNC Charlotte, 2010
Anthony Layzell, M.S. Earth Sciences, UNC Charlotte, 2010

Undergraduate Research Projects Supervised (15, all with at least 1 conference presentation)

1. Kylie Snyder, 2022, "Developing engaging activities and videos about plastic pollution for museums and festivals."
2. Annika Dudik and Alexis Mitchell, Kent State University, Geology (Dudik) and Physics (Mitchell) majors, 2022. "Size distribution and polymer type of plastics in an urban stream and floodplain." (NSF REU Supplement)
3. Chloe Heestand and Annika Dudik, Kent State University, Geology majors, 2022, "How does flexible anthropogenic litter move in streams?"
4. Makayla Kearns, Kent State University, Environmental and Conservation Biology major, 2022, "Patterns of macro-litter on a Lake Erie urban beach and in an adjacent tributary"
5. Alexis Mitchell, Kent State University, Physics major, 2022, "Distribution and abundance of Lake Erie urban beach meso-plastics"
6. Sarah Audet, Kent State University, Environmental and Conservation Biology major, and Nicole Cano, University of California Los Angeles Environmental Science major, 2021, "Stormwater framing and content in municipal plans from 25 large US cities." (NSF REU Supplement)
7. Azure Fernsler, Kent State University Environmental Studies major, 2020, "Volunteer cleanup efforts reveal differences in anthropogenic litter composition found in shoreline and riverine environments"
8. Alex Mailhot, Kent State University Anthropology major, 2018-2019, "Dynamics of Urban Stream Water Sources During Storms"

9. Cody Unferdorfer, Kent State University Geology major, 2016, "Controls on Wetland Suspended Sediment Concentrations, West Creek Reservation, Parma, OH"
10. Jillian Sarazen, Oberlin College Biology major, 2015, "The effects of antecedent soil moisture conditions on green roof runoff water quality and quantity", Ecology REU program, summer 2015.
11. Sean Robertson, Kent State University Geology major, 2014. "Soil moisture and hydraulic conductivity of bioretention cells."
12. Allison Reynolds, Kent State University Geology major, 2013-2014. "Sensitivity of precipitation isotope meteoric water lines and seasonal signals to sampling frequency and location"
13. Sidney Bush, University of Virginia Environmental Science major, 2014. "Soil moisture dynamics and their effect on bioretention performance in Northeast Ohio", Ecology REU program, summer 2014.
14. Kayla Holleman, UNC Charlotte Geology major, 2009. "Variability in precipitation isotopes on the Carolina Piedmont"
15. Shawn Majors, Oregon State University Geology major, 2006. "Water chemistry of Cascades springs"

Undergraduate Research Assistants (23)

Makayla Kearns (2021-2022), Alexis Mitchell (2021-2022), Kylie Snyder (2021-2022), Chloe Heestand (2022), Annika Dudik (2022), Sophia Muratori (2021), Justin Schroeck (2021), Sarah Audet (2021), Grace Yupa (2021), Nicole Cano (2021), Azure Fernsler (2020), Alex Mailhot (2018-2019); Andy Molledor (2018); Kyle Tobias (2017-2018); Kyle Sarven (2017); Heather Eaken (2016); Cody Unferdorfer (2015-2016); Jillian Sarazen (2015); Sean Roberts (2014); Sidney Bush (2014); S. Lindsay Poluga (2012-2013); Allison Reynolds (2013-2014); Robert Q. Lewis (2010); Kayla Holleman (2009)

Professional Development for Teaching

- GEODES workshop, November 13-15, 2017, Boulder, Colorado [Workshop focused on bias and social justice issues relevant to the geosciences, bystander intervention training, leadership skills targeting gatekeeping decisions]
- Kent State University Center for Teaching and Learning, Remote Instruction: Course Delivery and Design, June 2020, virtual

Professional Service

Professional Society Leadership

- Board Member, Consortium of Universities for the Advancement of Hydrologic Science, Incorporated (CUAHSI), 2020-present
    - Executive committee at-large member, 2021-present
    - Executive director search committee, 2022

- Nominating committee, 2020 and 2021 (chair)

- Outstanding Student Presentation Award Committee, Hydrology Section, American Geophysical Union, 2019-2021
- Communications Coordinator, Quaternary Geology and Geomorphology Division, Geological Society of America, 2015-2019
- Panelist, Quaternary Geology and Geomorphology Division, Geological Society of America, 2010-2012
- At-large member, Diversity in the Geosciences committee, Geological Society of America, 2010-2013
- Campus Representative, Consortium of Universities for the Advancement of Hydrologic Science, Incorporated (CUAHSI), 2011-present

Editing

- Associate Editor, Hydrological Processes, 2019-present
- Associate Editor, Water Resources Research, 2017-2022
- Associate Editor, Geological Society of America Bulletin, 2012-2014
- Guest Editor, Frontiers in Environmental Science, Special Issue "Innovations in Remote and Online Education by Hydrologic Scientists", 2021-2022 (call for papers closed June 1, 2022)
- Guest Editor, Journal of Hydrology, Special Issue "Urban hydrological processes: implications of non-Hortonian overland flow for runoff management and infrastructure design", 2021-present (call for papers open now)
- Guest Editor, Hydrological Processes, Special Issue "Women Advancing Hydrology Research", 2021
- Guest Editor, Anthropocene, Special Issue "Geomorphology of the Anthropocene", 2013

Reviewing

- National Science Foundation (panel and ad hoc), 2008-present
- Sea Grant (multiple states), 2015-present
- Scientific journals, 2006-present

Journals include Water Resources Research; Hydrological Processes; Advances in Water Resources; Journal of Hydrology; Journal of Geophysical Research – Earth Surface; Hydrology and Earth System Science; Earth Surface Processes and Landforms; Geomorphology; Journal of the American Water Resources Association; Science of the Total Environment; Journal of Cleaner Production; Journal of Hydrologic Engineering.

Conference and Short Course Organizing

- Organizing committee, HydroEco 2017, 6th International Multidisciplinary Conference on Hydrology and Ecology, Birmingham, UK, June 18-23, 2017

- Short Course Convener, "Hands-on Experiences with Stable Isotopes in the Geosciences Curriculum", Geological Society of America Meeting, October 18, 2014
- Organizing committee, Laser Specs for Field Hydrology and Biogeochemistry: A USGS-CUAHSI Virtual Workshop; 27 January to 28 February 2014
- Field trip co-leader, Kirk Bryan Field Trip at Geological Society of America Annual Meeting, November 2012.
- Events Co-chair, Geological Society of America, Southeastern Section meeting, April 2008.

Session Convener

- 6 topical sessions, Geological Society of America annual meeting, 2009-2018
- 4 topical sessions, American Geophysical Union annual meeting, 2014-2022
- 1 session, Frontiers in Hydrology meeting, 2022
- 1 session, ScienceOnline, 2010

Science Policy

- Ad-hoc subcommittee of the Geological Society of America Geology and Public Policy Committee, charged with writing society position statement on US flood risk management, September 2019-May 2020. Position Statement adopted November 2020.
- Nature Worldview article: Jefferson, A.J., 2019, Shutdown will cast a long shadow over research. *Nature* 565, 399, doi: 10.1038/d41586-019-00207-9
- >10 National and international media interviews on the effects of the federal government shutdown on science research and education, January-February 2019
- Op-ed: "Continued federal investment in science is critical for Lake Erie and the region", Cleveland Plain-Dealer and Cleveland.com, May 26, 2017

Department of Earth Sciences Service

- Department of Geology, Assistant Chair, 2021-present
- Department of Geology, Graduate Studies Coordinator, 2016-2020
- Department of Geology, Graduate Studies Committee, 2012-2020
- KSU AAUP Council, Department of Geology representative, 2016-present
- Department of Geology, Hydrogeology Search Committee Chair, 2016-2017
- Department of Geology, Colloquium Coordinator, 2013-2014

Kent State University Service

- Environmental Science and Design Research Institute, faculty steering team, 2021-present

- KSU Quality of Faculty Work/Life Committee, 2018-2022
- KSU Stormwater Advisory Committee (ad hoc), 2014-2021
- Environmental Science and Design Research Symposium, organizing committee, 2018-2019
- Water and Land Symposium, co-chair, 2016
- Water Research Symposium organizing committee, 2014-2015
- KSU Research Council, Research and Creative Activities Awards ad-hoc subcommittee, 2014

Outreach and Community Service

- Twitter account @highlyanne, with 11,900 followers and ~228,000 impressions per month, focused on water and geosciences topics, 2010-present
- Writer for Highly Allochthonous (http://www.all-geo.org/highlyallochthonous), winner of the 2010 Research Blogging award for Conservation or Geosciences, ~30,000 page views per month, 2008-2020
- 11 Local to national media stories featuring my research, 2015-present (for list and links, visit http://all-geo.org/jefferson/outreach-and-media/)
- 5 extended interviews and podcasts, 2013-present (for list and links, visit http://all-geo.org/jefferson/outreach-and-media/)
- Media quotes on water resources and science issues, ~5 times per year, 2007-present
- Pre-K-12 educational engagement and public talks, 2-3 activities per year

External Recognition and Awards

Leshner Leadership Institute Public Engagement Fellow, American Association for the Advancement of Science, 2016-2017

Inclusion in the National Association of Geoscience Teachers' *On the Cutting Edge* Exemplary Teaching Activity collection, based on review of the "Isotope Hydrograph Separation" module, 2019

Inclusion in the National Association of Geoscience Teachers' *On the Cutting Edge* Exemplary Teaching Activity collection, based on review of the "Take A Hike Assignment", 2014

"Strange Quark" (second place) award for Three Quarks Daily Online Science Writing contest for essay on "Levees and the Illusion of Flood Control.", 2011. This essay also appeared on the Scientific American website.

Honorable Mention, Universities Council on Water Resources Dissertation Award, 2006.

John Montagne Fund Student Research Grant Award, Geological Society of America, 2004.

National Science Foundation Graduate Research Fellowship, 2002-2005.

Phi Beta Kappa, 2001.

Internal Recognition and Awards

Kent State University Student Accessibility Services, May 2019

"Mothers, Mentors, and Muses" award, Kent State University Women's Center, April 2019

First prize poster: "Hands-on Experiences with Stable Isotopes in the Geosciences Curriculum", 2014, Kent State University 21st Annual Conference Celebrating Teaching.

Professional Memberships

American Geophysical Union, 2003-present

Geological Society of America, 2003-present

Earth Science Women's Network, 2008-present

American Association for the Advancement of Science, 2015-present

Society for Freshwater Science, 2021-present

Black Environmental Leaders (ally member), 2021-present