JESSE RADOLINSKI, Ph.D.

Vadose zone hydrologist
Email: **jradolin33@gmail.com**
Phone: +1(757) 840-0315
Email: **jradolin33@gmail.com;** Twitter/X**:** @JesseRadolinski

EDUCATION

PhD **2019**
Virginia Polytechnic Institute and State University, Blacksburg, VA
Thesis/Dissertation: Illuminating Controls on Solute and Water Transport in the Critical Zone

B.S. (Major: Environmental Science-Natural Track—with honors, Minor: Biology) **2015**
University of Mary Washington, Fredericksburg, VA
Honors Thesis: Comparative Analysis of Mitigated Non-Tidal Forested Wetlands in Virginia Piedmont and Inner Coastal Plain

RESEARCH INTERESTS

- Infer how soil physics-level solute and water fluxes scale to watershed observations in an attempt to thwart water resource degradation
- Contaminant transport, especially in the context of soil physical processes and biogeochemical cycling
- Understanding the plant's role in mixing and cycling of vadose zone water
- Determining how climate change and climatic extremes alter ecohydrological processes in the soil-plant-atmosphere continuum.

PAPERS AND PUBLICATIONS

Peer Reviewed Publications

Radolinski, J., M. Vremec, H. Wachter, S. Birk, N. Brüggemann, M. Herndl, A. Kahmen, D. Nelson, A. Kübert, A. Schaumberger, C. Stumpp, M. Tissink, C. Werner, and M. Bahn (2025), "*Drought in a warmer, CO_2-rich climate restricts plant water use and soil water mixing*" Science. doi: 10.1126/science.ado0734.

Tissink, M., **J. Radolinski**, D. Reinthaler, S. Venier, E.M. Pötsch, A. Schaumberger, and M. Bahn (2024), "*Individual versus combined effects of warming, elevated CO_2 and drought on grassland water uptake and fine root traits"* Plant, Cell & Environment. doi: 10.1111/pce.15274.

Vremec, M., P. Burek, L. Guillaumot, **J. Radolinski**, V. Forstner, M. Herndl, C. Stumpp, M. Bahn, and S. Birk (2024), "*From local to catchment scale: Sensitivity of montane grassland water fluxes to warming and elevated CO_2,"* Journal of Hydrology. doi: 10.1016/j.ejrh.2024.101970

Ceperley, N., T. Gimeno, S. Jacobs, M. Beyer, M. Dubbert, B. Fischer, J. Geris, A. Kübert, M. M. Lehmann, P. Llorens, C. Millar, D. Penna, I. Prieto-Aguilar, **J. Radolinski**, M. Stockinger, C. Stumpp, D. Tetzlaff, I. van Meerveld, C. Werner, O. Yildiz, G. Zuecco, A. Barbeta, N. Orlowski, and Y Rothfuss (2024), "*From the sample to the vial: Towards a common methodological framework for the sampling, extraction, and isotopic analysis of critical zone water to study patterns and dynamics in vegetation water use*," WIREs Water. doi: doi.org/10.1002/wat2.1727

Hilaire, S., C. Chen, Z. Pan, **J. Radolinski,** R. Stewart, R. A. Maguire**,** and K. Xia (2022), "*Subsurface manure injection reduces surface transport of antibiotic resistance genes but may create antibiotic resistance hotzones in soils,"* Environmental Science and Technology. doi: 10.1021/acs.est.2c00981.

Xuan, Du., C. Du, **J. Radolinski**, Q. Wang, and J. Jian, (2022), "*Metropolis-Hastings Markov Chain Monte Carlo*

approach to simulate van Genuchten model parameters for soil water retention curve," Water. 10.3390/w14121968

Radolinski, J., H. Le, S. Hillaire, K. Xia, D. Scott, and R. Stewart (2022), "*A spectrum of preferential flow alters solute mobility in soils,*" Scientific Reports. doi: 10.1038/s41598-022-08241-w.

Hilaire, S., C. Chen, **J. Radolinski**, T. Leventhal**,** H. Preisendanz**,** P. J. A. Kleinman**,** R. A. Maguire**,** R. Stewart, L. S. Saporito, and K. Xia (2022), "*Occurrence and Fate of Culturable Antimicrobial Resistant Fecal Coliform Bacteria in Manure-Surface Applied and Subsurface Injected Fields in Virginia and Pennsylvania,"* Journal of Environmental Quality. doi: 10.1002/jeq2.20332.

Radolinski, J., L. Pangle, J. Klaus, and R. Stewart (2021), "*Testing the "Two Water Worlds" hypothesis under variable preferential flow conditions,*" Hydrological Processes. doi: 10.1002/hyp.14252.

Radolinski, J., J. Wu, K. Xia, W. Hession and R. Stewart (2019), *"Plants mediate precipitation-driven transport of a neonicotinoid pesticide"* Chemosphere. doi: 10.1016/j.chemosphere.2019.01.150.

Radolinski, J., J. Wu, K. Xia, and R. Stewart (2018), "*Transport of a neonicotinoid pesticide from artificial seed coatings*," Science of the Total Environment, doi: 10.1016/j.scitotenv.2017.11.031

Papers under Review

Stewart, R. D., M. Flury, T. R. Green, Y. Yang, M. Naseri, O. Wendroth, R. G. Anderson, T. Kelleners, E. Babaeian, M. Tuller, J. Heitman, T. Oschner, J. Giovando, J. Wu, R. Heinse, B. Wyatt, M. R. Abou Najm, M. Berli, R. Shillito, Y. Jin, A. Daigh, E.N. J. Brookshire, J. Huang, **J. Radolinski**, A. Patrignani, B. M. Wyatt, T. E. Ochsner, Y. Yu, W. Zhang, A. L.M. Daigh, S. Sasidharan, M. K. Shukla, Hoori Ajami, M. Sadeghi, and F. Zhang, "*Emerging issues and research opportunities in vadose zone processes"* (under Review in Vadose Zone Journal).

Papers in Preparation

Radolinski, J., J. Kirchner, M. Herndl, and M. Bahn, "*Hydrological disconnection from surface to deeper soil layers is amplified under a warmer, more CO_2-rich climate,*" (Manuscript in preparation).

Radolinski, J., C. Kelley, C.K. Keller, R.D. Evans, E. Brooks, C.H. Orr, and D. Huggins J, "*Hydrologically distinct nitrogen domains found in agricultural watershed,*" (Manuscript in preparation).

Caldararu, S., **J. Radolinski**, S. Zaehle, A. Ali, Y. Huang, D. Kraus, A. Krause, R. Kiese, B. Medlyn, D. Medvigy, V. Myrgiotis, A. Rammig, J. Seitz, T. L. Smallman, N. Vuichard, A. Walker, Y. Wang, K. Williams, J. Yang, X. Yang, L. You, and M. Bahn, "*Impacts of drought on grassland productivity under elevated CO_2 and warming from a manipulative experiment and 12 terrestrial biosphere models*"(Manuscript in preparation).

Bahn, M., D. Reinthaler, H. Piepho, E. Pötsch, A. Schaumberger, M. Herndl, K. Meeran, R. Kaufmann, **J. Radolinski**, and M. Tissink, *"Individual versus combined effects of elevated CO_2, warming and drought on grassland productivity and stoichiometry"* (Manuscript in preparation).

Vremec, M., **J**. **Radolinski**, G. Brunetti, V. Forstner, M. Herndl, C. Stumpp, M. Bahn, and S. Birk, "*Post-drought recovery of water resources in a montane grassland"* (Manuscript in preparation).

Radolinski, J., M. Vremec, M. Herndl, G. Brunetti, C. Stumpp, E. Harris, A. Schaumberger, A. Kahmen, S. Birk, and M. Bahn, "*Assessing soil nitrogen transport under a warmer, more CO_2 rich, and drought prone climate"* (Manuscript in preparation).

Radolinski, J., J. Wu, K. Xia, and R. Stewart, "*New model for environmental transport potential of mobile contaminants,*"

(Manuscript in preparation).

Toor, G. S., **J**. **Radolinski**, C. R. Burgis, T. Rosen, B. Kennedy, S. Duan, F. Sun, E. Lucas, and S. Steinhilber "*High-Resolution in-situ measurement of nitrogen and phosphorus in tile-drained agricultural catchments in the Chesapeake Bay watershed"* (Manuscript in preparation).

Theses and Other Papers

Bahn, M., S. Birk, S., **J. Radolinski**, M. Vremec, C. Stumpp, C. Werner, A. Kahmen, N. Brüggemann, S. Caldararu, S. Zähle, M. Tissink, D. Reinthaler, A. Kübert, V. Forstner, B. Bednar-Friedl, M. Stangl, M. Herndl, A. Klinger, A. Schaumberger, and E. Pötsch (2023),"*ClimGrassHydro – Ecohydrology of mountain grasslands under global change: mechanisms and consequences*" link: epub.oeaw.ac.at

Radolinski, J (2019), "*Illuminating controls on solute and water transport in the critical zone,*" Dissertation. doi: 10.13140/RG.2.2.12129.94567.

Radolinski, J. and M. Bass (2015), *"Comparative analysis of mitigated non-tidal forested wetlands in Virginia piedmont and inner coastal plain,"* Honors Thesis. doi: 10.13140/RG.2.2.19732.12164.

Radolinski, J. and C. Moulton (2013), *"Health and geomorphic assessment of Horsepen Run,"* EESC-313-01, undergraduate research paper.

RESEARCH EXPERIENCE

United States Department of Agriculture Agricultural Research Service (USDA-ARS), Northwest Sustainable Agroecosystems Research, Pullman, WA, USA

Research Scientist **January 2025 – Present**

Research scientist for the USDA-ARS tasked with developing a research program addressing the influence of changing climatic conditions of soil hydrology and crop water use in the Palouse Region of Washington State, USA. This position is also designated with a supervisory role—leading a team of scientists and technicians. I was illegally removed from my position along with most of the probationary employees of the USDA-ARS and thousands of others across the federal government, but also reinstated following an order by Office of the Special Council and multiple cases reviewed in federal circuit court.

Environmental Science and Technology, University of Maryland, College Park, USA

Postdoctoral Researcher with Dr. Gurpal Toor **April 2023 – present**

Research faculty under Department advisor. Research focused on revising phosphorus transport mechanics for an extension management tool. This incorporates new science that includes improved site characterization and source factors as well as how different management decisions impact phosphorus loss to water bodies.

Department of Ecology, University of Innsbruck, Austria

Postdoctoral Researcher with Dr. Michael Bahn **October 2019 – April 2023**

Research faculty under Department advisor. Research included managing all experimentation for an international climate manipulation experiment four countries and eleven academic institutions, ClimGrassHydro, and exploring how various trajectories of climate change could alter the storage and movement of water through grasslands. I additionally served as Principal Investigator and secured external funding to use novel numerical techniques and state-of-the-art tracer methodology to determine how various trajectories of climate change could alter the hydrological source and magnitude of nitrate transport from agricultural soils. Some of the most interesting work from this unique position is detailed in an upcoming first author paper in *Science* (in press; Jan 17, 2025 publication date)

Project Collaborator **June 2019 – October 2019**

Associate member on the ClimGrassHydro project.

School of Plant and Environmental Sciences, Virginia Tech, Blacksburg, VA

Graduate Research Assistant with Dr. Ryan Stewart **Aug 2015 – June 2019**

Conducted dissertation research focused on organic contaminant transport and solute and water partitioning in soils.

Earth and Environmental Sciences Department, Univ. of Mary Washington, Fredericksburg, VA

Undergraduate Researcher with Dr. Michael Bass **May 2014 – July 2014**

Monitored stream water quality in two local third order Rappahannock River tributaries and urban storm water management ponds using macroinvertebrate sampling and nutrient detection colorimetry and compiled a monitoring report for a local mitigated wetland site

Undergraduate Researcher with Dr. Michael Bass **Aug 2014 – May 2015**

Developing an Honors Thesis derived from previous and original research involving constructed wetlands in Virginia based on soil physiochemical characteristics and vegetative proliferation

Undergraduate Researcher with Dr. Ben Kisila **Aug 2013 – Dec 2013**

Provided health assessment for local Rappahannock tributary based on GIS modeling (sediment removal via RUSLE), Rosgen classification, macroinvertebrate analysis, and nutrient colorimetry

TEACHING EXPERIENCE

Department of Ecology, University of Innsbruck, Innsbruck, Austria

Lecturer **2021 – 2023**

-Instructed master's students in a scientific presentation course (2022-2023)
-Co-instructed Data Analysis for Environmental Science— a course to develop programming and analytical skills for PhD students in the environmental sciences (2021-2023)
-Instructed master's students in a discussion-based, science literature course (2022)
-Co-instructed field methods within ecohydrology for Masters (2021) and undergraduate students(2022)
-Co-instructed Soil Physical and Hydrological Properties aimed to help graduate students develop quantitative skills and hydrological techniques (2021 and 2022).

School of Plant and Environmental Sciences, Virginia Tech, Blacksburg, VA

Graduate Research Assistant with Dr. Ryan Stewart **Jan 2016 – June 2016**
Graduate Teaching Assistant with Dr. Meredith Steele and Dr. Tony Timpano **Aug 2018 – Dec 2018**

Physics of Pollution, Fundamentals of Environmental Science, and contributed lectures +field instruction for Wetland Soils and Soil Physics and Hydrology

MENTORSHIP

Graduate Level Mentorship **Jan 2020 – present**

Co-advised 5 Master's level students from 2 academic institutions in writing, scientific analysis, and professional development throughout the course of their degrees.

Graduate Theses and Reports

Cunow, J. "*Individual and combined effects of elevated CO_2, warming, and drought on water-use efficiency and productivity in a montane grassland.*" Master's Thesis. University of Innsbruck, Department of Ecology. **June 2022**

Halais, C. "*Climate change effects on water use efficiency and water partitioning in mountain grasslands.*" Master's Practical Engineering Report. ENGEES École Nationale du Génie et de l'Eau et de l'Environnement de Strasbourg (French National School for Water and Environmental Engineering) and University of Innsbruck

Department of Ecology **August 2021**

Mempiot, J. **"***Ecohydrological processes in mountain grasslands under global change.*" Master's Practical Engineering Report. ENGEES École Nationale du Génie et de l'Eau et de l'Environnement de Strasbourg (French National School for Water and Environmental Engineering) and University of Innsbruck Department of Ecology **July 2021**

Tissink, M. **"***Effects of warming, elevated CO_2, and drought on root water uptake and its relation to root traits.*" Master's Thesis. University of Bolzano and University of Innsbruck, Department of Ecology. **Dec 2020**

Guyard, S. **"***The effects of climate change on grassland ecohydrology.*" Master's Practical Engineering Report. ENGEES École Nationale du Génie et de l'Eau et de l'Environnement de Strasbourg (French National School for Water and Environmental Engineering) and University of Innsbruck Department of Ecology **August 2020**

Undergraduate Level Mentorship **Nov 2015 – present**

Advised 5 undergraduate researchers from 3 academic institutions in writing, scientific analysis, and professional development throughout the course of their degrees. I have also mentored through programs which intentionally provide scientific opportunities to students from underrepresented demographics at both VT (Multicultural Academic Opportunities Program; MAOP) and UMD (Summer Opportunities in Agricultural Research and the Environment; SOARE: and Strategic Work in Applied Geosciences; SWAG).

Undergraduate Theses and Reports

Putz, G. "The effects of a future climate and drought on a managed alpine meadow." Bachelor's Research Thesis. University of Innsbruck, Department of Ecology. **March 2022**

AWARDS

Sigma Xi Ph.D. Research Award ($1,000)	**2017**
2nd Place in Poster Competition - Soil Science Society of America Annual Meeting	**2016**
Departmental Honors: Earth and Environmental Sciences, UMW	**2015**
Magna Cum Laude, UMW	**2015**
UMW Undergraduate Research Grant	**2014**
Farm Bureau Academic Scholarship, King George County Farm Bureau	**2010**

INVITED TALKS

"Deep thoughts, shallow water: novel insights into solute and water transport in the vadose zone"

Talk given to faculty at Arkansas State University in Jonesboro, Arkansas. May 2025.

"A deeper look at shallow water: novel insights into solute and water transport in the vadose zone"

Talk given to faculty at Washington State University in Pullman Washington, September 2024.

"Nutrient cycles in agricultural soils: potassium and sulfur"

Extension lecture given at the Maryland Department of Agriculture's Fundamentals of Nutrient Management Training in Annapolis, MD in June 2024.

"Better characterizing nutrient transport from Maryland agricultural soils"

Extension presentation given at the Denton Ruritan Club in Denton, MD in September 2023.

"A deeper look at shallow water: novel insights into solute and water transport in the vadose zone"

Talk given at Oak Ridge National Laboratory in January 2023.

"Assessing soil nitrogen transport under a warmer, more CO_2-rich, and drought-prone climate"
Invited presentation given at the annual AGU conference in Chicago in December 2022.

"Global change in the vadose zone: what we know and where to go"
Talk given to students and Faculty of Luxemburg Institute of Science and Technology, Luxemburg in Fall 2020.

"Illuminating controls on solute and water transport in the critical zone"
Talk given to the Lamonte Doherty Earth Observatory, Columbia University, New York City, NY in Spring 2019.

CONFERENCE PROCEEDINGS

"Gauging the impact of future climatic conditions on soil water transport and mixing" Talk given at the virtual stable isotope conference European Cooperation in Science and Technology (COST) action WATSON stable isotope conference, September 2024.

"Advancing Non-Point Source Water Quality Monitoring at the Catchment Scale: Exploring the Potential Expanded Capabilities of In-Situ UV-Vis Spectrometer Sensors with Machine Learning" **Contributed** to this talk given at AGU 2024 annual conference in Washington, DC, December 2024.

"Evapotranspiration and groundwater recharge in montane grassland ecosystems under warming and elevated atmospheric carbon dioxide concentration" **Contributed** to this talk to be given at the International Association of Hydrogeologists in Davos, Switzerland, September 2024.

"Divergent responses of plant, soil and ecosystem processes to recurrent drought events" **Contributed** to this talk to be given at the German Ecological Society meeting in Freising, Germany, September 2024.

"Evapotranspiration and groundwater recharge in montane grassland ecosystems under warming and elevated atmospheric carbon dioxide concentration" **Contributed** to this talk to-be-presented at the 2024 International Association of Hydrogeologists in Davos, Switzerland.

"Phosphorus cycling and transport in phosphorus saturated soils of the Chesapeake Bay watershed, USA"
Contributed to this presented at EGU 2024 annual conference.

"Pairing traditional approaches with high-resolution in-situ sensors to advance the science of nutrient fluxes from agricultural catchments" **Contributed** to this talk presented at EGU 2024 annual conference.

"Individual versus combined effects of drought, warming and eCO_2 on grassland water uptake and fine roots"
Contributed to this talk presented at EGU 2024 annual conference.

"Impacts of drought on grassland productivity under elevated CO_2 and warming from a manipulative experiment and 12 terrestrial biosphere models" **Contributed** to this talk presented at AGU 2023 annual conference.

"High-resolution in-situ measurement of nitrogen and phosphorus in tile-drained agricultural catchments in the Chesapeake Bay watershed" **Contributed** to this abstract presented at 2023 SSSA annual conference.

"Individual versus combined effects of elevated CO_2, warming and drought on grassland productivity and stoichiometry"
Contributed to this abstract to be presented at EGU 2023 General Assembly.
doi: https://doi.org/10.5194/egusphere-egu23-15918.

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"Assessing soil nitrogen transport under a warmer, more CO_2-rich, and drought-prone climate"
Presented this poster at AGU 2022 General Assembly.
https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1166514.

"Impact of elevated CO_2, temperature, and drought on summer ecohydrological moisture cycling and water transit times in montane grassland"
Presented this presentation given at EGU 2022 General Assembly.
doi: https://doi.org/10.5194/egusphere-egu22-9888.

"Assessing interactions between preferential flow and antibiotic transport in soils"
Contributed to this presentation given at EGU 2022 General Assembly.
doi: https://doi.org/10.5194/egusphere-egu22-1301.

"Understanding soil N2O emissions and production pathways in a changing climate by coupling automated chambers with isotope measurements" **Contributed** to this presentation given at EGU 2022 General Assembly.
doi: https://doi.org/10.5194/egusphere-egu22-50.

"ClimGrassHydro: Ecohydrology of mountain grassland under multiple global change"
Contributed to this presentation given at the International Association of Hydrogeologists in Brussels, Belgium, September 2021.

"Evapotranspiration flux dynamics in a changing climate"
Presentation given at EGU 2021 General Assembly in Spring 2021. doi: 10.5194/egusphere-egu21-14393.

"Effects of warming, elevated CO_2, and drought on root water uptake and its relation to root traits"
Contributed to this presentation given at EGU 2021 General Assembly in Spring 2020.
doi: 10.5194/egusphere-egu21-13555

"A simple numerical tool describing subsurface transport potential of mobile contaminants"
Poster presented at the 2020 SSSA annual conference. doi: 10.13140/RG.2.2.28451.07207.

"Simulating preferential flow in a two water worlds framework"
Poster presented at Black Forest Autumn School (Water Ages in the Hydrological Cycle), Stable Isotope Network Austria (SINA) meeting in Fall 2019, and EGU 2020 General Assembly in Spring 2020. doi: https://doi.org/10.5194/egusphere-egu2020-646.

"It's a macroporous world; we just model in it"
Contributed to abstract and presentation at EGU 2020 General Assembly in Spring 2020. doi: 10.5194/egusphere-egu2020-21112.

"Global change in the root zone: lessons from soil moisture dynamics in a multifactor climate manipulation experiment"
Presentation given at EGU 2020 General Assembly in Spring 2020. doi: 10.5194/egusphere-egu2020-18589.

"Preferential Flow in the Vadose Zone: Identifying Solute vs. Media Controls on Contaminant Transport"
Poster presented at the 2018 American Geophysical Union Annual Conference in Washington DC. doi: 10.13140/RG.2.2.23821.56801.

"Transport of Neonicotinoid Pesticide Thiamethoxam under Field Conditions"
Poster presented at the 2018 CSES Symposium at Virginia Tech, and talk presented at the 2017 SSSA

annual conference in Tampa, FL.

Transport of a Neonicotinoid Pesticide from Artificial Seed Coatings"
Poster and talk presented at the 1) 2016 CSES Symposium at Virginia Tech, 2) 2016 SSSA annual conference in Phoenix, AZ, and 3) 2017 Scientific Research Society Poster Session at Virginia Tech.

"Comparative Analysis of Mitigated Non-Tidal Forested Wetlands in Virginia Piedmont and Inner Coastal Plain"
Honors Thesis and Poster presentation to the Department of Earth and Environmental Sciences Department completed in May 2015. This work has also been presented at 1) the Virginia Academy of Science, 2) James Madison University, 3) Virginia Association of Wetland Professionals (2014 and 2015), and 4) 2015 Water Resources Conference of the Virginias.

"Monitoring of Central Park Stormwater Management Ponds and an Off-Site Wetland Mitigation Project"
Poster Presented at the 2014 UMW Summer Science Institute Research Symposium, Fredericksburg, VA and Virginia Association of Wetland Professionals (VAWP) Fall Convention, Wakefield, VA.

"Comparative Health Assessment of Ni River and Massaponax Creek in Spotsylvania County, Virginia"
Contributed research to this poster presented at the 2014 UMW Summer Science Institute Research Symposium, Fredericksburg, VA (Presented by Rebecca Conway under Dr. Michael Bass).

PROPOSALS WRITTEN

Tiroler Wissenschaftsförderung— Tyrolean Science Fund Program ($30,000)	**2022**
Rice University Weiss and Pan Postdoctoral Research Fellowship ($60,000; not funded)	**2019**
Sigma Xi Grants-in-Aid of Research ($1,000; not funded)	**2019**
American Geophysical Union Horton Hydrology Research Grant ($10,000; not funded)	**2018**
University of Mary Washington Student Research Grant ($1,000)	**2014**

COMMUNITY SERVICE AND LEADERSHIP EXPERIENCE

Session Convener
European Geosciences Union, Stable isotopes to study water and nutrient dynamics in the soil-plant-atmosphere continuum session in the Hydrology Division **2022-present**

Student Mentor **2016-present**
Mentored undergraduate research projects and currently co-advise one master's student

Award Subcommittee Member **2018-present**
Sigma Xi Research Society, Virginia Tech

Strategic Visioning Committee Member **2018-present**
Leadership Committee for the new School of Plant and Environmental Sciences, Virginia Tech

Peer Reviewer **2017-present**
Nature Communications, Hydrology and Earth Systems Sciences, Environmental Science and Technology, Journal of Hydrology, Science of the Total Environment, Hydrological Processes, Water Resources Research, Journal of Environmental Quality, Soil Science Society of America Journal, Vadose Zone Journal, Journal of Environmental Science and Health, Journal of Advances in Modeling Earth Systems, and PLOS Water.

Session Moderator
Soil Science Society of America, Soil Physics and Hydrology Division **2017**

Orientation Coordinator **2013-2014**

Organized orientation events at the UMW New Student Orientation
Department of Student Affairs, University of Mary Washington, Fredericksburg, VA

Community Service Coordinator **2012-2014**

Promoted community outreach by cooking and preparing meals for residents of the Thurman Brisben Homeless shelter and created team building activities with younger residents and fraternity members of Psi Upsilon Fraternity, Fredericksburg, VA

APPLICABLE SKILLS

Technical skills: Numerical modeling for hydraulic and chemical transport processes, model development, conducting column experiments, design/construction of vadose zone monitoring probes, stable isotope analysis and tracer techniques, and field methods in hydrology, stream and plant ecological sampling and assessment skills, wetland delineation and design, water quality assessment and colorimetry, soil physiochemical measurement analyses.

Numerical models: HYDRUS, *tran*-SAS, ATS, and TOPMODEL
Programming languages: R (expert level), with applications in Python, MATLAB, Fortran, and C
Software platforms: ArcGIS, RStudio, Spyder, Jupyter Notebook, Ubuntu, SPSS, JMP/SAS, Illustrator, Acrobat, Google Earth, and Microsoft Office Suite

Languages

English-native language
Spanish- competent in conversation and reading/writing
German-competent in conversation

MEMBERSHIPS

Psi Upsilon Fraternity	2011-present
Soil Science Society of America (SSSA)	2015-present
Sigma Xi, Scientific Research Society	2017-present
American Geophysical Union (AGU)	2018-present
European Geophysical Union (EGU)	2019-present
American Association for the Advancement of Science (AAAS)	2019-present
European Cooperation in Space and Science Technology (COST)	2020-present