

BRANDI GAERTNER, Ph.D.

Penn State University
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EDUCATION

2019 - *Ph.D. Climate Change Hydrology and GIS*, West Virginia University

- Dissertation: The impact of landcover and climate change on water resources in the central Appalachian region, USA

2020 – *M.S. Online Teaching and Instructional Design*, Lenoir Rhyne University

2017 – *Graduate Certificate in University Teaching*, West Virginia University

2016 – *Graduate Certificate in Geographic Information Systems*, West Virginia University

- Capstone: Delineating watershed boundaries as inputs to analyze the control of changing phenology on hydrologic processes in 38 forested watersheds

2014 - *M.S. Environmental Science*, Clarion University

- Thesis: The Effect of Large Woody Debris on Stream Morphology and Trout Populations in the Allegheny National Forest

2011 - *B.S. Biology*; Minor in Chemistry, Indiana University of Pennsylvania

- Research: Taxonomic Study of *Arrenurus* (Megaluracurus) water mite larvae parasitizing adult mosquitoes in Pennsylvania

2008 - *A.S. Mathematics and Science*, Community College of Allegheny County

RESEARCH AND PROFESSIONAL EXPERIENCE

2021 – present, *Assistant Teaching Professor of Spatial Data Science*, Penn State University

- Upcoming Teaching Experience: GIS database development, Environmental Applications of GIS, Geospatial System Analysis and Design

2020 – present, *Adjunct Faculty*, Unity College, Distance Education

- Teaching and Course Development Experience: The Warming Planet; Hydrology, Wetlands, and Water Policy; Applied Spatial Analysis and GIS Applications

2018 – present, *Assistant Professor of Environmental Science*, Alderson Broaddus University

- Teaching and Course Development Experience: Introduction to GIS; Advanced GIS; Remote Sensing; Environmental Science; Watershed Hydrology; Fluvial Geomorphology; Earth Science; Hydrogeology; Geology

2017 – 2018, *Adjunct Faculty*, Butler County Community College

- Teaching and Course Development Experience: Environmental Science and Principles of Biology

2017- *Graduate Teaching Assistant*, West Virginia University

- Teaching Experience: laboratory component of Introductory Biology

2014 – 2017, *Graduate Research Assistant*, West Virginia University

- Conducted research for Mountain Hydrology Lab at West Virginia University

2012– 2014, *Graduate Teaching Assistant*, Clarion University of Pennsylvania

- Teaching and Experience: Introductory Biology I and II; Cell Biology; Ecology

CERTIFICATES

Quality Matters™ Designing Your Online Course online workshop, Alderson Broaddus University, August 2020

Quality Matters™ Improving Your Online Course online workshop, Alderson Broaddus University, May 2020

Certificate in Effective Instruction, Association of College and University Educators and the American Council on Education faculty, Alderson Broaddus University, 2019

Applying the Quality Matters™ Rubric (APPQMR) Online workshop, Butler County Community College, January 2018.

Master Class: Water Sustainability in a Global Economy. Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI). May 2017. Flagstaff, Arizona.

PUBLICATIONS

Gaertner, B. Zegre, N. Warner, T. Fernandez, R. He, Y. Merriam, E. 2019. Climate, Forest Growing Season, and Evapotranspiration Changes in the central Appalachian Mountains, USA. *Science of the Total Environment (STOTEN)*. 650: 1371-1381.

Gaertner, B. Fernandez, R. Zegre, N. 2020. Twenty-First Century Streamflow and Climate Change in Forest Catchments of the Central Appalachian Mountains Region, US. *Water*. 12(453):1-53.

In Review: Guillen L, Fernandez R, Gaertner B, Zegre N. 2021. Climate and landscape controls on the water balance in temperate forest ecosystems: testing large scale controls on undisturbed catchments in the central Appalachian Mountains of the US. *Water Resources Research*.

RESEARCH SUPPORT

Funded Proposals

Gaertner, Brandi. Agriculture, Forestry, & Consumer Science Carvell Award, West Virginia University, \$5000.

Gaertner, Brandi. STEM Mountains of Excellence Ph.D. Fellowship, West Virginia University, \$75,000.

Gaertner, Brandi. The Effect of Large Woody Debris on Stream Morphology and Trout Populations in the Allegheny National Forest, Clarion University Graduate Grant, \$800.

Gaertner, Brandi. Taxonomic Study of Arrenurus (Megaluracurus) water mite larvae parasitizing adult mosquitoes in Pennsylvania. Indiana University of Pennsylvania Undergraduate Grant, \$300.

Proposals – Not-funded

Gaertner, Brandi. 2017. Outstanding Merit Fellowship for Continuing Doctoral Students, West Virginia University, Davis College. \$17,000.

Gaertner, Brandi. Zegre, N., 2017. Sensitivity of the Appalachian Mountains water tower: Implications of climate & land-use for downstream communities. NASA. \$ 114,537

Gaertner, Brandi. 2017. West Virginia University Foundation for Distinguished Doctoral Scholarships. \$5000.

PRESENTATIONS

Professional Presentations

Gaertner, B. Fortney, N. Annual ACA Summit Conference: A Community of Collaboration. *What we learned from the ACUE modules*. September 2019. Pigeon Forge, Tennessee.

Gaertner, B. Zégre, N., R. Fernandez, Y. He. 2018. *Growing Season Response to Water Cycle Intensification: Implications for Long Term Forest Evapotranspiration*. Institute of Water Security and Science. West Virginia University. February 20-21.

Gaertner, B., Zégre, N., R. Fernandez, Y. He. 2017. *Impacts of climate change on forest phenology and implications for streamflow in the central Appalachian Mountains region, United States*. American Geophysical Union. Fall Meet. Suppl., Abstract GC33C-1258. December 14-18.

Gaertner, Brandi. 2016. *The effect of climate warming on the phenological patterns of the Central Appalachian region, United States*. Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) 2016 Biennial Symposium, Shepherdstown, West Virginia.

Gaertner, B. and N. Zegre. 2016. *Intensification of the hydrologic cycle and impacts on aquatic ecosystems*. 2016 Southern Division American Fisheries Society Annual Meeting, Wheeling, West Virginia.

Gaertner, Brandi. 2015. *Evaluating historical climate and hydrologic trends in the Central Appalachian region*, Allegheny Highlands Climate Change Impacts Initiative, Friends of Backwater, Davis, West Virginia.

Gaertner, Brandi. 2015. *Hydrology and Climate Change: Thinking Critically*, Environmental Literacy Workshop: STEAM innovation and Learning Summer Institute Environmental Literacy as a Catalyst for Embedding Design Thinking, South Fayette, Pennsylvania.

Gaertner, Brandi. 2015. *Aquatic Ecology: Crash Course*, West Virginia Water Workshop, South Fayette, Pennsylvania.

Gaertner, Brandi. 2015. *Aquatic Ecology and GLOBE implementation*, West Virginia Water Workshop, South Fayette, Pennsylvania.

Gaertner, B, Zégre, N. 2015. *Evaluating historical climate and hydrologic trends in the central Appalachian region of the United States*. American Geophysical Union. Fall Meet. Suppl., Abstract H41A-1277. December 14-18.

Gaertner, Brandi. 2015. *A comparison of GCM-generated historical climate trends to observational data in the Central Appalachian region of the eastern United States*. Davis College 19th Annual Student Research and Creative Scholarship Day, West Virginia University.

Gaertner, Brandi. 2013. *The effect of Large Woody Debris on Brook Trout Populations in the Allegheny National Forest, PA*, Pennsylvania Academy of Science.

Gaertner, Brandi. 2013. *The effect of Large Woody Debris on Brook Trout Populations in the Allegheny National Forest, PA*, Pennsylvania Chapter of the American Fisheries Society.

Gaertner, Brandi. 2013. *The effect of Large Woody Debris on Brook Trout Populations in the Allegheny National Forest, PA*, Commonwealth of Pennsylvania University Biologist, Clarion University of Pennsylvania.

Gaertner, Brandi. 2013. *The effect of Large Woody Debris on Brook Trout Populations in the Allegheny National Forest, PA*, Graduate Research Conference, Clarion University of Pennsylvania.

Gaertner, Brandi. 2011. *Taxonomic Study of Arrenurus (Megaluracurus) water mite larvae parasitizing adult mosquitoes in Pennsylvania*. Undergraduate research symposium, Indiana, Pennsylvania.