CURRICULUM VITAE

NICOLAS P. ZÉGRE, Ph.D.

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EDUCATION:

2008, Ph.D., Forest Engineering (Hydrology), Oregon State University, Corvallis, OR
2003, M.S., Forest Resources, focus in Forest Hydrology, Virginia Tech, Blacksburg, VA
2000. B.S., Forest Resources Management, West Virginia University, Morgantown, WV

RESEARCH INTERESTS:

Watershed, forest, ecological hydrology, water quantity & water quality, water resources management; water governance, water/environmental justice & policy; water security, hydro-social systems, food-energy-water systems; freshwater ecosystem services, sustainability, vulnerability; environmental change, climate change; big data, computational programming, hydrologic modeling, statistics; science communication

ACADEMIC APPOINTMENTS:

2018 Visiting Scholar, The FEWSION Project, School of Informatics, Cyber Systems, & Security, Northern Arizona University.

2015 – Present, Associate Professor of Forest Hydrology, Division of Forestry & Natural Resources, West Virginia University, Morgantown, WV

2015 – Present, Adjunct Associate Professor, Department of Geology & Geography, West Virginia University, Morgantown, WV

2016 – 2017, Program Coordinator, Forest Resources Management, Division of Forestry & Natural Resources, West Virginia University, Morgantown, WV

2012 – 2015, Adjunct Associate Professor, Department of Geology & Geography, West Virginia University, Morgantown, WV

2009 – 2015, Assistant Professor of Forest Hydrology, Division of Forestry & Natural Resources, West Virginia University, Morgantown, WV

PROFESSIONAL, LEGAL, JUDICIAL, POLICY EXPERIENCE:

2018 Expert testimony – community-based geohazard (flood, landslide) vulnerability analysis. Woodsdale United Neighborhood Association, Cassidy, Cogan, Shapell, Voegelin, L.C., WV.

2016 Expert testimony – source water/drinking water protection. WV Division of Environmental Protection, WV Environmental Quality Board, Charleston, WV.

2016 Expert testimony – federal Clean Water Act point source pollution. Are mine spoil and valley fills associated with Mountain-top Removal mining point sources of pollution?

Appalachian Mountain Advocates, Lewisburg, WV.

2014 Hydrology consultant – rural source water protection. McNeer, Highland, McMunn & Varner, L.C., Kingwood, WV.

2010 Hydrology consultant – source water protection planning, Pocahontas County Water Resources Task Force, Marlinton, Pocohontas County, WV.

2003 Hydrology consultant to National Council for Air and Stream Improvement (NCASI), Corvallis, OR

2003 – 2005, Faculty Research Assistant (Hydrology), Department of Forest Engineering, Oregon State University, Corvallis, OR

2000 – 2002, Graduate Research Assistant (Hydrology), Department of Forestry, Virginia Tech, Blacksburg, VA

2000 – 2001, Biological Sciences Technician (Ecology), USDA Forest Service Long-term Ecological Research Network (LTER) Coweeta Hydrologic Laboratory, Otto, NC

1999 – 2000, Physiological Plant Ecology Laboratory Technician, Nicholas School of Environmental Sciences, Duke University Free Air Carbon Dioxide Experiment (FACE), Durham, NC

1999 Research Technician (Ecology), USDA Forest Service Fernow Timber & Watershed Laboratory, Parsons, WV

1999 Environmental Consultant (Forestry & Ecology) Ray Hicks Consulting, Morgantown, WV

1998 – 2000, Research Technician (Ecology/Global Environmental Change), Free Air Carbon Dioxide Experiment (FACE), Duke University, Durham, NC & Department of Biology, West Virginia University, Morgantown, WV

1996 – 1998, Research Technician (Ecology/Global Environmental Change), West Virginia University, Morgantown, WV

MILITARY EXPERIENCE:

1996 – 2001 Enlisted, West Virginia Army National Guard
1993 – 1996 Enlisted, active duty, United States Army

AWARDS:

2019 Outstanding Faculty Award for Excellence in Teaching, Division of Forestry & Natural Resources, West Virginia University
2013 Outstanding Faculty Award for Excellence in Service, Division of Forestry & Natural Resources, West Virginia University
2012 Outstanding Faculty Award for Excellence in Researcher, Division of Forestry & Natural Resources, West Virginia University
2011 Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities

PROFESSIONAL MEMBERSHIPS:

- American Geophysical Union (AGU)
- International Association of Hydrological Sciences (IAHS)
- Society of American Foresters (SAF)

PUBLICATIONS:

Book Chapters

Good, S.P., Mallia, D.V., Denis, E.H., Freeman, K.H., Feng, X., Li, S., **Zégre, N.**, Lin, J.C., Bowen, G.J. (2015) "High Frequency trends in the isotopic composition of superstorm Sandy." In: *Learning from the Impacts of SuperStorm Sandy*. Edited by Bennington, B. and Farmer, E.C. Elsevier, Boston USA.

Journal Articles

Underline indicates that author was a mentored graduate student for some or all of the work reported; † indicates mentored post-doc

Papers in Review

- Luis Andrés Guillén, Mary Beth Adams, Emily Elliott, Jason Hubbart, Charlene Kelly, William Peterjohn, **Nicolas Zegre**. (In Review). The Fernow Experimental Forest, West Virginia, USA: Insights, datasets, and opportunities. Submitted to *Hydrological Processes*

- Luis Andrés Guillén; Edward Brzostek; Brenden McNeil; Nanette Raczka; Brittany Casey; Benjamin Turner†; **Nicolas Zegre**. (In Review) Differences in sap velocities of *Acer saccharum* and *Quercus velutina* in West Virginia: environmental controls and implications for future forest evapotranspiration. Submitted to *Ecohydrology*

- Rushforth, R, **Zégre, N**., Ruddell, B. (In Review). River Basins as Multiplex Networks: How can we leverage the 'Nexus' to inform water policy in the Colorado River Basin. Submitted to *Journal of the American Water Resources Association (JAWRA).*

- Caretta, Martina Angela; Fernandez Reynosa, Rodrigo†; Zegre, Nicolas; Shinn, Jamie. (In Review). Hydrosocial and social-hydro frameworks: Towards an integrative approach for studying flooding vulnerability in Appalachia. Submitted to *Hydrological Sciences Journal*

Papers in Circulation

- Stampoulis, D., L. Marston, T. Troy, B. Ruddell, R. Rushforth, **Zégre, N**., J. Sabo. WUSA1k(1.0), a 1km monthly domestic water-use history for the conterminous United States. Planned submission to *Scientific Data*.

- **Zégre, N**., B. Turner. *†*. Historic and Future Streamflow in West Virginia's. Planned submission to *Journal of the American Water Resources Association (JAWRA).*

- Caretta, MA, J. Sanders; B. Turley; AR Williams; LA Guillen; **Zégre, N**. (In Revision). Barriers to climate change literacy: A pilot study of undergraduate students' perceptions and attitudes in Central Appalachia, USA. Planned re-submission to *Research In Science Education*.

Published or In Press Peer-Review Papers

- Gaertner, B., Rodrigo Fernandez. *†*, Zégre, N. 2020. Twenty-first Century Streamflow and Climate Change in forest catchments of the central Appalachian Mountains region, US. Water. https://doi.org/10.3390/w12020453

- Young, D., **Zégre, N**., P. Edwards, Rodrigo Fernandez*†*. 2019. Assessing streamflow sensitivity of forested headwater catchments to disturbance and climate change in the central Appalachian Mountains region, USA. *Science of the Total Environment.* https://doi.org/10.1016/j.scitotenv.2019.07.188

- Fernandez, R. *†* and **Zégre, N**. (2019). Seasonal changes in water and energy balances over the Appalachian region and beyond throughout the 21st century. *Journal of Applied Meteorology and Climatology*. https://doi.org/10.1175/JAMC-D-18-0093.1

- Yu, Z., Shirong Liu, Jingxin Wang, Xiaohua Wei, Jamie Schuler, Pengsen Sun, Richard Harper, **Nicolas Zegre**. (2018). Natural forests exhibit higher carbon sequestration and water use efficiency than planted forests in China. *Global Change Biology*. https://doi.org/10.1111/gcb.14484

- Gaertner, B. **Zegre, N.** Warner, T. Fernandez, R. He, Y. Merriam, E. (2018). Growing Season Response to Water Cycle Intensification: Implications for Long Term Forest Evapotranspiration. *Science of the Total Environment*. https://doi.org/10.1016/j.scitotenv.2018.09.129.

- Mirus, B. B., Ebel, B. A., Mohr, C. H., & **Zégre**, N. (2017). Disturbance hydrology: Preparing for an increasingly disturbed future. *Water Resources Research*, 53. https://doi.org/10.1002/2017WR021084

- Merriam, E.R, R. Fernandez*†*, T. Petty, N. **Zégre**. 2017. Can brook trout survive climate change in large rivers? If it rains. *Science of the Total Environment*. doi.org/10.1016/j.scitotenv.2017.07.049

- Miller, A., **N. Zégre**. 2016. Landscape-scale disturbance: Insights into the complexity of catchment hydrology in the mountaintop removal mining region of the eastern United States. *Land*. doi:10.3390/land5030022

- Maxwell, A.E., M.P. Strager, T.A. Warner, **N.P. Zégre**, C.B. Yuill. 2014. Comparison of NAIP orthophotography and RapidEye satellite imagery for mapping of mining and mine reclamation. *GIScience & Remote Sensing*. doi:10.1080/15481603.2014.912874.

- **Zégre, N**., A. Miller, A., Maxwell, S. Lamont. 2014. Multi-scale analysis of hydrology in a mountaintop mine-impacted watershed, *Journal of the American Water Resources Association*. doi: 10.1111/jawr.12184.

- Miller, A., **N. Zégre**. 2014. Mountaintop removal mining and catchment hydrology, *Water*. 6 (3), 472-499.

- **Zégre, N**., A. Maxwell, S. Lamont. 2013. Characterizing streamflow response of a mountaintop-mined watershed to changing land use, *Applied Geography*. http:dx.doi.org/10.1016/j.apgeog.2012.11.008.

- Sun, P., Z. Yu, S. Liu, X. Wei, J. Wang, **N. Zégre**. 2012. Climate change, growing season water deficit and vegetation activity along the north-south transect of Eastern China from 1982 through 2006. *Hydrology and Earth Systems Science*. 16, 3835-3850. doi:10.5194/hess-16-3835-2012.

- Som, Nicholas A., **Nicolas P. Zégre**, Lisa M. Ganio Arne E. Skaugset. 2012. Corrected prediction intervals for change detection in paired watershed studies, *Hydrological Sciences Journal*, 57:1, 134-143.

- Pitchford, J.L, C. Wu, L. Lin, J. T. Petty, R. Thomas, W. E. Veselka, D. Welsch, **Zégre, N** and J. T. Anderson. 2012. Climate Change Effects on Hydrology and Ecology of Wetlands in the Mid-Atlantic Highlands. *Wetlands*. doi 10.1007/s13157-011-0259-3.

- **Zégre, N.** 2011. Evaluating the hydrologic effects of forest harvesting and regrowth using a simple rainfall-runoff model. *Journal of Environmental Hydrology.* 19 (11):1-10.

- Johnson, J.B., J.E. Gates, and **N. Zégre**. 2011. Seasonal bat activity on coastal barrier islands in Maryland, USA, *Environmental Monitoring and Assessment.* doi: 10.1007/s10661-010-1415-6.

- **Zégre, N**., A. E. Skaugset, N. A. Som, J. J. McDonnell, L. M. Ganio. 2010. In lieu of the paired catchment approach: Hydrologic model change detection at the catchment scale, *Water Resources Research*, 46, W11544, doi: 10.1029/2009WR008601.

Published Technical Reports & Peer Reviewed Proceedings

- Butler, Patricia R.; Iverson, Louis; Thompson, **Zégre, N.**, and others. 2015. *Central Appalachians forest ecosystem vulnerability assessment and synthesis: a report from the Central Appalachians Climate Change Response Framework.* Gen. Tech. Rep. NRS-146. Newtown Square, PA; U.S. Department of Agriculture, Forest Service, Northern Research Station. 322 p.

- McQueen, A., **N. Zégre**, and D. Welsch. 2013. Factors and processes influencing streambank erosion along Horseshoe Run: Tucker County, West Virginia. 18th Central Hardwood Forest Conference Proceedings. USDA Forest Service General Technical Report NRS-P-117.

- Eishenhauer, P., **N. Zégre**, and S. Lamont. 2013. Assessment of Freshwater Withdrawals and Availability for Marcellus Shale Natural Gas Development: A case study. 18th Central Hardwood Forest Conference Proceedings. USDA Forest Service General Technical Report NRS-P-117.

- **Zégre, N**. and S. Lamont. 2013. Evaluating the relationships between natural resources management, landuse/land cover changes, and flooding in the Appalachian region. 18th Central Hardwood Forest Conference Proceedings. USDA Forest Service General Technical Report NRS-P-117.

- **Zégre, N**. and N. Som. 2011. Detecting the effects of forest harvesting on streamflow using hydrologic model change detection. Proceedings of the 17th Central Hardwoods Forest Conference. USDA Forest Service General Technical Report P-78.

- Skaugset, A. E., **N. Zégre**, K. Kibler, and T. Otis. 2006. The Hinkle Creek Paired Watershed Study: Physical Hydrology Research. Bulletin of the North American Benthological Society, 23(1), Anchorage, AK.

- **Zégre, N**., W.M. Aust, and J.M. Vose. 2004. Subsurface Nitrate Transport: The Influence of a Developing Riparian Area. Proceedings of the American Water Resources Association Special Meeting: Riparian Ecosystems and Buffers: Multi-scale Structure, Function, and Management. Olympic Valley, CA.

- **Zégre, N**., W. M. Aust, and J. M. Vose. 2002. Hillslope Hydrology of a Mountain Pasture: Water Contributions to Cartoogechaye Creek Following Severe Storm Event. Soil Science Society of America Conference Proceedings, Indianapolis, IN.

Edited, Non-Refereed Publications

- **Zégre, N.**, A.E. Skaugset. 2006. Hydrology and water quality calibration of the Hinkle Creek Paired Watershed Study. Watershed Research Cooperative Annual Advisory Committee Report.

- **Zégre, N.**, A.E. Skaugset. 2005. Hydrology and water quality research progress of the Hinkle Creek Paired Watershed Study. Oregon State University Center for Wood Utilization Research Progress Report.

RESEARCH SUPPORT:

Proposals in Review

- Perry, D., L. Bair, R. McManamay, S. Praskievicz, N. Zegre. Integrating Dynamic Interactions and Feedbacks Among Socio-Ecological Diversity, Connectivity, and Resilience to Inform the Future of Riverine Ecosystem Conservation. National Science Foundation DISES program. $1,599,996. Northern Arizona University lead, WVU, University of North Carolina Greensburg, Virginia Tech, and the US Geological Survey. Subaward to WVU - **Zegre** ($139,815).

- Maxwell, A., J. Shinn, B. Wilson, N. Zegre (WVU); A. Riley (UMD). Mid-Atlantic Planning Link for Regional Cooperation on Climate Futures and Resilient Communities (MAPLink). Submitted to NOAA Climate Program Office (CPO), Regional Integrated Sciences and Assessments (RISA) Program FY2021. $3.5 million. Invited to submit full proposal in February 2021.

Funded Proposals

New/Current

- **Zégre, N**., M. Strager. Critical Planning Areas: Quantifying Water Use and Water Stress Across Multiple Scales. WV Department of Environmental Protection. $50,567.

- **Zégre, N**. WV Climate Link: A tool for enhancing personal action and public discourse in West Virginia around climate change. Appalachian Stewardship Foundation. $26,620.

- **Zégre, N**., M. Caretta. Innovative climate change science education and communication for future Appalachian decision makers. Appalachian Stewardship Foundation. $41,074.

- **Zégre, N**. High resolution assessment of economic sector water use, water supply, and water economy – A novel approach for managing West Virginia's water resources. USGS 104b. $14,442.

- King, Fred, **N. Zégre** and many others. Waves of the Future. NSF-EPSCOR. $10,000,000.

Past

- Strager, M., **Zégre, N**.. Modeling Flood Risk Potential in WV. USGS 104b. $ 16,938.

- Ziemkiewicz, Paul, T. Petty, **N. Zégre**, J. Anderson, R. Thomas. Environmental STEM Research Program: WVU/BSA Summit-Bechtel Reserve. US Geological Survey. $271,241.

- Strager, M. & **N. Zégre**. 2014. Updating zones of critical concern for protection of drinking water supply. WV Dept. of Health & Human Resources. $65,432.

- **Zégre, N**. Characterizing mechanisms of runoff generation and stream chemistry within a mountaintop mine / valley fill. WVU Senate Research Grant. $20,344.

- **Zégre, N**. and S. Sharma. Examining methane levels in drinking water wells in areas surrounding natural gas well development in Marcellus Shale. US Forest Service. $102,500.

- **Zégre, N**. Characterizing the hydrologic impacts of mountaintop mining using stable isotopes. Oak Ridge Associated Universities Ralph E. Powe Junior Faculty Enhancement Award. 6/11 – 5/12. $10,000.

- **Zégre, N**. Evaluating streamflow and flood generation processes in surface-mined catchment. WVU Senate Grants for Research & Scholarship. 7/11 – 6/12. $12,745.

- **Zégre, N**. Runoff and Flood Generation Processes in a Mountaintop-mine / Valley Fill Catchment. WVU Research Corp, PSCoR. 1/12 – 12/12. $25,525

- **Zégre, N**. and K. McGuire. 2010. RAPID: Application of isotopic hydrology for detecting process changes in mountaintop-mined catchments. National Science Foundation. 6/10 – 5/11. $36,994.

- McGuire, K, D. Scott, J. Faulkner, **N. Zégre**, E. Boyer, J. Okay, C. Reijo. 2010. Guidelines for siting effective riparian forest buffers. USDA-NIFA. $40,000.

- Deng, J., Jackson, R., F. Boettner, J. Anderson, M., Strager, T. Harris, A. Collins, C. Abadalla, T. Petty, **N. Zégre**, S. Lamont, F. LaFone, E. Hansen, A. Hereford, R. Mcilmoil. 2009. Appalachia Assessment of Natural Assets: Water. Appalachian Regional Institute. 10/09 – 9/11. $200,000.

- Ziemkiewicz, P., A. Collins, M. Strager, and **N. Zégre**. (2009). WRI 111- Kanawha River Basin Nutrient Trading Feasibility Assessment. U.S Environmental Protection Agency. 6/09 – 5/11. $254,720.

- MacDonald, L, **N. Zégre**, D. Vespar. 2009. First-order controls on selenium cycling in surface waters of Highland catchments. WVU Environmental Research Center. 01/10 – 01/11. $23,814.

- **Zégre, N**. 2009-2014. The effects of natural resources management on hydrology and water quality in central Appalachian catchments. Hatch. $240,403.

- Thomas, R., **N. Zégre**, and 17 others. 2009-2012. REU Site: Biological Responses to the Environment from Genes to the Ecosystem. National Science Foundation. $308,962.

INVITED SPEAKER:
Conferences, Lectures, Symposia, & Seminars

Underline indicates that author was a mentored graduate student for some or all of the work reported; † indicates mentored post-doc

- Sjostedt, E., **Zégre, N.**. 2020. Assessment of West Virginia Water Use. December 16. West Virginia Water Research Institute Virtual Seminar Series. https://wvwri.wvu.edu/news/2020/11/13/wri-to-share-research-with-public-through-virtual-seminar-series

- **Zégre, N**.. 2020. Public Health, Water Security, and Climate Change: A West Virginia Perspective. October 29. Mid-Atlantic Regional Public Health Training Center. https://lms.marphtc.pitt.edu/enrol/index.php?id=225

- **Zégre, N**.. 2020 Economic, Community, and Environmental Health & the Appalachian Narrative. July 6. West Virginia University Upward Bound and Climate Change Program.

- **Zégre, N**.. 2020. Water & Water Security, and Climate Change. July 2. West Virginia University Upward Bound and Climate Change Program.

- **Zégre, N**.. 2020. Water Security, Climate Change, & West Virginia. June 5. West Virginia Rivers Coalition West Virginia Climate and Water Webinar Series. https://wvrivers.org/2020/06/drzegre/

- **Zégre, N**.. 2019. High resolution assessment of economic sector water use, water supply, and water economy. December 6. WV Advisory Committee for Water Research Meeting, West Virginia University.

- **Zégre, N**.. 2019. West Virginia Water Security: Implications & Opportunities of a changing climate. November 12. School of Art & Design, West Virginia University.

- **Zégre, N**.. 2019. West Virginia Water Security: Implications & Opportunities of a changing climate. Learn and Preserve: Jefferson County Regional Water Symposium. September 28. Rural Agricultural Defenders, Harpers Ferry, WV. https://www.radwv.org/learn-and-preserve-jefferson-county-wv-water-symposium/symposium-agenda-and-speakers/

- **Zégre, N**.. 2019. Public Health, Water Security, & Climate Change: A West Virginia Perspective. Climate Change & Public Health: Addressing the Growing Crisis Conference. September 21. College of Law Center for Energy and Sustainable Development, West Virginia University. https://energy.law.wvu.edu/events/climate-change-and-public-health

- **Zégre, N**.. 2019. West Virginia Water Security: Implications & Opportunities of a changing climate. July 16. WVU Core Arboretum Nature Connection Series, Department of Biology, West Virginia University. https://arboretum.wvu.edu/nature-connection-series

- **Zégre, N.**. 2019. West Virginia Water Security: Implications & opportunities of a changing climate. Education Eddy, Friends of the Cheat River 2019 Cheat River Festival. May 4, 2019

- **Zégre, N**.. 2019. West Virginia Water Security: Implications & Opportunities of a changing climate. April 16. Department of Geology & Geography, West Virginia University.

- **Zégre, N**.. 2019. West Virginia Water Security: Implications & Opportunities of a changing climate. April 25. WVU Sierra Club Earth Day Celebration, West Virginia University.

- **Zégre, N**.. 2019. West Virginia Water Security: Implications & Opportunities of a changing climate. April 1. WVU Academic Media Day, West Virginia University. https://www.wvnews.com/morgantownnews/news/wvu-s-academic-media-day-focuses-on-climate-change-effects/article_9c26ab1f-1707-5959-9440-b823e8d453c9.html

- **Zégre, N**.. 2018. The Appalachian Water Tower: The role of mountain ecosystems in regional water security. Department of Geology & Environmental Science, University of Pittsburgh.

- **Zégre, N**. 2018. The Appalachian Water Tower: The role of mountain catchments in regional water security. Institute of Water Security & Science Spring Conference. Morgantown, WV. February 1-2.

- **Zégre, N**.. 2016. Intensification of the water cycle: Implications of change for rivers, watersheds, and people of the Mountain State. Center for Environmental, Geotechnical and Applied Sciences, Marshall University, Huntington, WV. 6 December.

- **Zégre, N**.. 2016. The WVU Mountain Hydrology Laboratory, Institute for Water Science & Security, WVU. Morgantown, WV. 22 April.

- **Zégre, N**. 2015. Seeing the water through the valley fill: Emerging hydrologic controls across scales. West Virginia Mine Drainage Task Force. Morgantown, WV. March 31 –April 1, 2015.

- **Zégre, N**. 2015. Why temperature matters: Implications for forested watersheds and services. USFS training workshop for WV Climate Change Adaptation. Morgantown, WV April 2015.

- **Zégre, N**.. 2014. Scale Invariant Impacts of Valley Fills on Local and Downstream Hydrology. Warnell School of Forestry & Natural Resources, University of Georgia, Athens, GA. 6 November.

- **Zégre, N**.. 2014. Intensification of the water cycle: Implications for future water resources. Dept. of Geography, West Virginia University, Morgantown, WV. 17 November.

- **Zégre, N**.. 2014. Intensification of the water cycle: Implications for future water resources. North Carolina State University, Raleigh, NC. 17 March.

- **Zégre, N**. 2014. Intensification of the water cycle: Implications for West Virginia water resources. West Virginia Allegheny Highlands Climate Change Impacts Initiative, Blackwater Falls State Park, WV. 6-7 June.

- **Zégre, N**.. 2013. Intensification of the water cycle: A contrast in humid and arid catchments. Colorado Mesa University, Grand Junction, CO. 26 October.

- **Zégre, N**. 2013. Potential Impacts of Hydraulic Fracturing on Freshwater Resources. Society of American Foresters National Convention, Charleston, SC. 23-27 October.

- **Zégre, N**., A.E. Skaugset, A. Simmons, H. Owens. 2013. Local & downstream impacts of contemporary forest harvesting on watershed hydrology. WRC Paired Watershed Conference – Key Findings on the Environmental Impact of Contemporary Forest Practices. Corvallis, OR. April 18.

- **Zégre, N**. 2012. Seeing the water through the valley fill: Possible hydrologic controls in a MTM/VF catchment. Duke University UPE Seminar Series, Durham, NC.

- **Zégre, N**. 2012. Climate change and mountaintop removal mining- hydrologic change in southern WV watersheds. University of Maryland Center for Environmental Science Appalachian Laboratory, Frostburg, MD.

- **Zégre, N**. 2012. Characterizing the impacts of mountaintop removal mining on catchment hydrology using stable isotopes of water. Spring Lecture Series. College of Natural Resources and Environment, Virginia Tech, Blacksburg, VA.

- **Zégre, N**. 2012. Climate change and mountaintop removal mining- hydrologic change in southern WV watersheds. Biology Graduate Seminar Series, West Virginia University.

- **Zégre, N**. 2011. Flood generation in Appalachian catchments. West Virginia Land & Mineral Owners Association Fall Workshop, Charleston, WV.

- **Zégre, N**. 2011. Isotope hydrology for detecting process changes in catchment hydrology. WV Association of Professional Soil Scientist Annual Meeting, Morgantown, WV.

- **Zégre, N**. 2009. In lieu of the paired catchment approach: hydrologic model change detection at the catchment scale. American Geophysical Union Joint Assembly Meeting, Toronto, Canada.

- **Zégre, N**. 2009. In Lieu of the paired-catchment approach: Hydrologic model change detection at the catchment scale. Virginia Water Resources Research Center Seminar Series.

- **Zégre, N**. 2008. The history of change detection in forest watershed management studies. Society of American Foresters National Convention. Reno, NV.

- **Zégre, N**. 2009. WV Forest Stewardship Best Management Practices Workshop. The Science of Hydrology and Best Management Practices, Flatwoods, WV.

- **Zégre, N**. 2007. Advances in change detection methodologies in hydrology and water quality studies. Division of Forestry, West Virginia University.

- **Zégre, N**. 2004. The Hinkle Creek Paired Watershed Study. Douglas County Private Woodland Owners Meeting, Roseburg, OR.

- **Zégre, N**., A.E. Skaugset. 2004. Hydrology and water quality research at the Hinkle Creek Paired Watershed Study. Inter-Agency Hydrology Technical Advisory Committee (TAC), Roseburg, OR.

PROFESSIONAL PRESENTATIONS: *Underline denotes mentored graduate student*

- Guillen, L.A., B. McNeil, E. Brzostek, B. Turner **Zégre, N**..2019. *The Importance of field-based drought experiments in the setting of a pluvial: Transpiration dynamics of two dominate broadleaf tree species in West Virginia*. American Geophysical Union. Fall Meet. Suppl., Final Paper # H51M-1661. San Francisco, CA December 8-14.

- Guillen, L.A., **Zégre, N**., R. Fernandez. 2018. *Evaluating the Stability of Headwater Reference Catchments from Long-Term Paired Watershed Studies: an Eastern Perspective*. American Geophysical Union. Fall Meet. Suppl., Final Paper # H33L-2236. Washington, D.C. December 10-14.

- Casey, B., B McNeil, E. Brzostek, N. Raczka, **Zégre, N**., L.A. Guillen. 2018. *Improving forest water balance models by quantifying tree species differences in crown architecture and evapotranspiration*. American Geophysical Union. Fall Meet. Suppl., Final Paper #B11B-2133. Washington, D.C. December 10-14.

- **Zégre, N**., R. Fernandez., R. Rushforth, Benjamin Ruddell. The Appalachian Water Tower: The role of mountain water in regional water security. 1st International Conference on Water Security. Toronto, Canada. June 17-20.

- Casey, B., B. McNeil, E. Brzostek, N. Raczka, **Zégre, N**., L.A. Guillen. 2018. *Utilizing a Water Balance Model Approach in Assessment of Forest Response to Drought Conditions.* University Council of Water Resources/National Institutes for Water Resources Annual Water Resources Conference. Pittsburgh, PA. June 26-28.

- Guillen, L.A., **Zégre, N**., R. Fernandez. 2018. *Evaluating the Stability of Headwater Reference Catchments from Long-Term Paired Watershed Studies: an Eastern Perspective*. University Council of Water Resources/National Institutes for Water Resources Annual Water Resources Conference. Pittsburgh, PA. June 26-28.

- Strager, M., **Zégre, N**.. 2018. *A Two-Scaled Approach for Flood Susceptibility Prediction in Appalachia*. University Council of Water Resources/National Institutes for Water Resources Annual Water Resources Conference. Pittsburgh, PA. June 26-28.

- Fernandez, R., **Zégre, N**.. 2018. *Projected Changes in Atmospheric Water Supply and Demand across the Appalachian Region During the 21st Century and their Impacts on Water Supply to Major Cities in Eastern U.S.* University Council of Water Resources/National Institutes for Water Resources Annual Water Resources Conference. Pittsburgh, PA. June 26-28.

- Fernandez, R., J. Shinn, M. Caretta, **Zégre, N**.. 2018. Merging the Hydrosocial and Social-Hydro Frameworks: An Interdisciplinary Approach to the Study of Flooding in Appalachia. University Council of Water Resources/National Institutes for Water Resources Annual Water Resources Conference. Pittsburgh, PA. June 26-28.

- Guillen, L.A., **Zégre, N**., R. Fernandez. 2018. *Evaluating the Stability of Headwater Reference Catchments from Long-Term Paired Watershed Studies: an Eastern Perspective*. Institute of Water Security & Science Spring Conference. Morgantown, WV. Feb. 1-2.

- Gaertner, B., **Zégre, N**., R. Fernandez, Y. He. T. Warner. 2018. *Impacts of climate change on forest phenology and implications for streamflow in the central Appalachian Mountains region, United States.* Institute of Water Security & Science Spring Conference. Morgantown, WV. Feb. 1-2.

- Kearns, M. Fernandez, R., **Zégre, N**.. 2017. *Quantifying the Consumptive Landscape in the Potomac Watershed Upstream From Washington D.C.* American Geophysical Union. Fall Meet. Suppl., Final Paper # GC31F-02. New Orleans, LA. December 11-15.

- Fernandez, R., **Zégre, N**.. 2017. *Assessment of 21st century change of climate drivers to hydrological change across the Appalachian Region*. American Geophysical Union. Fall Meet. Suppl., Final Paper # GC31F-08. New Orleans, LA. December 11-15.

- Burns, R.C., Schuler, J., **Zegre, N.**, and Fernandez, R.. 2017. *45 years of climate data: Results and interpretation from the WVU Research Forest.* The 2017 Society of American Foresters (SAF) Conference. Albuquerque, NM. November 15-19.

- Merriam, E.R., R. Fernandez, T. Petty, **N. Zégre**. 2017. *Can brook trout survive climate change in large rivers? If it rains*. 147th Meeting of the American Fisheries Society. Tampa, FL. August 20-24.

- Gaertner, B., **Zégre, N**., R. Fernandez, Y. He. 2016. *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.

- Strager, M.P., **Zégre, N**., W. Toomey, J. M. Strager. 2015. Hydrological modeling for the delineation of surface water zones of critical concern. American Association of Geographers Annual Meeting. Chicago, IL. April 21-25.

- 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.

- Strager, M., **Zégre, N**. 2015. *The Development of a Real Time Surface Water Flow Model to Protect Public Water Intakes in West Virginia*. American Geophysical Union. Fall Meet. Suppl., Abstract H33H-1707. December 14-18.

- Young, D., **Zegre, N**., Edwards, P., Strager, M. 2014. *Catchment Streamflow Response to Climate Change Conditioned by Historic Alterations of Land-use: Forest Harvest, Succession, and Stand Conversion.* American Geophysical Union. Fall Meet. Suppl., Abstract H51G-0696. December 15-19.

- **Zégre, N**.. 2014. *Are hydrologic impacts of valley fills scale invariant?* American Geophysical Union. Fall Meet. Suppl., Abstract H51G-0696. December 15-19.

- Young, D., **Zegre, N**., Edwards, P., Strager, M. *Catchment Streamflow Response to Climate Change Conditioned by Historic Alterations of Land-use: Forest Harvest, Succession, and Stand Conversion.* Mid-Atlantic Regional Water Conference, USFW National Conservation Training Center, Shepherdstown, WV. September 24-25, 2014.

- **Zégre, N**.. 2014. Intensification of the water cycle - Implications for future water resources management. Mid-Atlantic Regional Water Conference, USFW National Conservation Training Center, Shepherdstown, WV. September 24-25, 2014.

- Young, D., **Zegre, N.**, Edwards, P., Strager, M. *Catchment Streamflow Response to Climate Change Conditioned by Historic Alterations of Land-use: Forest Harvest, Succession, and Stand Conversion.* CUASHI 2014 Biennial: Water Across the Critical Zone, From Local to Global. USFW National Conservation training Center, Shepherdstown, WV. July 27-29, 2014.

- Eggett, Leighia, **Zegre, N.** *Effect of climate change on hydrologic regime of Canaan Valley and the Upper Blackwater River Watershed in West Virginia*. CUASHI 2014 Biennial: Water Across the Critical Zone, From Local to Global. USFW National Conservation training Center, Shepherdstown, WV. July 27-29, 2014.

- **Zégre, N.**, J. Shanmugasundaram, D. Young, C. Wright, E. Lee. 2014. *Are headwater catchments resilient to warming climate? An Ecohydrological Case Study from the central Appalachian Mountains*. 6th International Conference in Climate Change: Impacts & Responses. Reykjavik, Iceland.

- Maxwell, A., M. Strager, T. Warner, C. Yuill, and N. Zegre, 2014. Mapping of mining and mine reclamation: A comparison of NAIP orthophotography and RapidEye satellite imagery, *ASPRS 2014 Annual Conference*, Louisville, KY 23-28 March.

- **Zégre, N**., P. Eisenhauer, P. Edwards. 2013. Conceptualizing the impacts of shale gas development in the mid-Atlantic: A watershed perspective. North American Forest Ecology Workshop, Bloomington, IN. June 16-20.

- Skaugset. A.E., M. Adams, D. Bateman, K. Cromack, L. Ganio, W. Gerth, R. Gresswell, J. Li, W. Meininger, A. Simmons, C. Surfleet, **N. Zégre**. 2013. A synthesis of the impacts of contemporary forest practices on aquatic ecosystems at a watershed scale: A case study from Hinkle Creek. WRC Paired Watershed Conference – Key Findings on the Environmental Impact of Contemporary Forest Practices. Corvallis, OR. April 18.

- Skaugset**,** A.E., **Zégre, N**., A. Simmons, H. Owens. 2013. Local & downstream impacts of contemporary forest harvesting on sediment yield. WRC Paired Watershed Conference – Key Findings on the Environmental Impact of Contemporary Forest Practices. Corvallis, OR. April 18.

- **Zégre, N**., A. Maxwell, S. Lamont. 2012. Characterizing streamflow response of a mountaintop mined watershed to changing landuse and climate. *American Geophysical Union.* Fall Meet. Suppl., Abstract H51E-1410. December 3-7.

- Eisenhauer, P., **Zégre, N**., Edwards, P., Strager, M., Sharma, S. 2012. Baseline groundwater chemistry characterization in an area of future Marcellus shale gas development. *American Geophysical Union.* Fall Meet. Suppl., Abstract H11C-1195. December 3-7.

- Miller, A., **Zégre, N**. 2012. Comparing Hydrologic Response Times Between a Forested and Mountaintop Mined Catchment. *American Geophysical Union.* Fall Meet. Suppl., Abstract H51E-1405. December 3-7.

- **Zégre, N**. A. Maxwell, S. Lamont. 2012. Characterizing streamflow response of a mountaintop-mined watershed: Impacts on annual hydrology at the basin-scale. *2012 West Virginia Water Research Conference*, Waterfront Place Hotel, Morgantown, WV. October 30-31.

- Eisenhauer, P., **Zégre, N**., Edwards, P., Strager, M., Sharma, S. 2012. Baseline groundwater chemistry characterization in an area of future Marcellus shale gas development. *2012 West Virginia Water Research Conference*, Waterfront Place Hotel, Morgantown, WV. October 30-31. 3rd place student paper.

- Miller, A., **Zégre, N**. 2012. Comparing Hydrologic Response Times Between a Forested and Mountaintop Mined Catchment. *2012 West Virginia Water Research Conference*, Waterfront Place Hotel, Morgantown, WV. October 30-31. 1st place student paper.

- Beck, J., Thompson, J., and **Zégre, N**. 2012. Fragipan influence of hydropedological properties of benchmark soilscapes in West Virginia. *Soil Science Society of American Meeting*. Cincinnati, OH. October 21-24.

- **Zégre, N.** and K. McGuire. 2011. Characterizing the Hydrologic Impacts of Mountaintop Mining Using Stable Isotopes, *EOS Trans. American Geophysical Union*. Fall Meet. Suppl., Abstract H31A-1120.

- **Zégre, N.,** A.E. Skaugset. 2010. Headwater and basin-scale forest harvesting effects on sediment yield using near-continuous turbidity measurements and sediment yield modeling, *EOS Trans. American Geophysical Union*. Fall Meet. Suppl., Abstract B42C-04.

- **Zégre, N**. Detecting streamflow changes following forest harvesting: a hydrologic model approach. *Society of American Foresters National Convention.* October 27-31, 2010. Albuquerque, NM.

- Pitchford, J.L., C. Wu, L. Lin, J.T. Petty, R. Thomas, W. E. Veselka IV, D. Welsch, **N. Zégre**, J. T. Anderson. 2010. Climate Change Effects on Hydrology and Ecology of Wetlands in the Mid-Atlantic Highlands. T*hirty-first Annual Conference Society of Wetland Scientists*. June 27-July. Salt Lake City, UT.

- **Zégre, N**. and Som, N.A. 2010. Detecting the effects of forest harvesting on streamflow using hydrologic model change detection. *17th Central Hardwoods Forest Conference*. April 5-7. Lexington, KY.

- **Zégre, N**., A.E. Skaugset, L. Ganio, and R.D. Moore. 2007. First year post-harvest effects on water yield and sediment. *Society of American Foresters National Convention*. Portland, OR.

- **Zégre, N**., A.E. Skaugset, L. Ganio, and R.D. Moore. 2007. The Effects of Contemporary Forest Harvesting Practices on Headwater and Basin Scale Hydrology: First Year Post-harvest Results. *International Mountain Logging and 13th Pacific Northwest Skyline Symposium*. Corvallis, OR.

- **Zégre, N**., A.E. Skaugset, L. Ganio, R.D. Moore. 2006. Watershed Calibration: How much is too much?, *EOS Trans. American Geophysical Union*. Fall Meet. Suppl., Abstract B22E-01.

- **Zégre, N**. and A.E. Skaugset. 2006. Hydrology and water quality calibration of the Hinkle Creek Paired Watershed Study. *Watershed Research Cooperative Annual Advisory Committee*, Corvallis, OR.

- **Zégre, N**., W.M. Aust, and J.M. Vose. 2004. Subsurface Nitrate Transport: The Influence of a Developing Riparian Area. *American Water Resources Association Special Meeting: Riparian Ecosystems and Buffers: Multi-scale Structure, Function, and Management*. Olympic Valley, CA.

- **Zégre, N**. and A.E. Skaugset. 2004. Turbidity Threshold Sampling and sediment transport research at the Hinkle Creek Paired Watershed Study. *Watershed Research Cooperative Annual Advisory Committee*, Corvallis, OR.

- **Zégre, N**., W.M. Aust. 2002. Hillslope hydrology of a mountain pasture: Water Contributions to Cartoogechaye Creek Following Severe Storm Events. *Soil Science Society of America*, Indianapolis, IN.

INSTRUCTION:

Teaching & Curriculum Innovation & Development

- WV Climate Link: A tool for enhancing personal action and public discourse in West Virginia around climate change. (In development)
- Innovative Approaches to Teaching Climate Change – The role of place, community, & socio-economic factors (In development)
- Environmental Justice (Launch Spring 2021)
- Water & Energy Graduate Certificate Program (launch 2018)
- FMAN 434: Forest Resources Management Capstone (launch spring 2020)

Existing Courses

Physical Science Courses

- FHYD 693 – Climate & Watersheds, graduate level, West Virginia University (2016, 2017,2018)
- RESM 545 – Advanced Spatial Hydrology & Watershed Analysis (2016,2017,2018,2019,2020)
- WMAN 693U – Watershed Analysis & Hydrologic Modeling (aka USFWS CSP 7306), graduate level, West Virginia University (2014-2020)
- FHYD 644/493 – Watershed Hydrology, graduate level, West Virginia University (2010-2013)
- FHYD 544– Field Methods in Hydrology, graduate level, West Virginia University (2012)
- FE 536 – Field Hydrology, graduate level, Co-instructor, Oregon State University, (2007)
- FE 434/534 – Forest Watershed Management, Teaching Assistant, Oregon State University (2007)
- FE 532 – Forest Hydrology, Teaching Assistant, Oregon State University (2007)
- University/Community Outreach, Hydrology and water quality research at the Hinkle Creek Paired Watershed Study, Oregon State University Forestry Extension (2003–2007)
- For 4354 – Forest Soils and Hydrology, Lab Instructor, Virginia Tech (2003)

Nexus Courses

- FHYD 493/693 – Environmental Justice, undergraduate/graduate level, West Virginia University (2021)
- FMAM 434 – Forest Resources Management Capstone, undergraduate level, West Virginia University (2019,2020)
- FOR 140 – West Virginia Natural Resources, undergraduate level, West Virginia University (2019)
- FHYD 444 – Watershed Management, undergraduate level, West Virginia University (2009-2019)
- JRL 493W Experimental Journalism, Journalism School, West Virginia University (2015)
- GLOBE Watershed Dynamics Program, Northwestern University Office of STEM Education Partnerships (2011)
- PLACE: APPALACHIA: An outdoor field program for artists. Land Arts of the American West & College of Creative Arts West Virginia University (2011)
- A Gathering of Waters Project: Deckers Creek, WV. Basia Irland, Water and Eco Artist & Erika Osborne College of Creative Arts West Virginia University (2010)

Organized Community Workshops

- Intensification of the Water Cycle: Implications for forests, watersheds, and people. Education Eddy, Cheat River Festival. Kingwood, WV. May 2018
- Do-It-Yourself (DIY) Environmental Sensor Workshop. Introduction to innovative, open-source environmental monitoring systems for communities, educators, and agencies. Institute of Water Security & Science, Morgantown, WV. March 2018.

MENTORSHIP & ADVISING:

Committee Chair – Mentored Dissertation, Thesis, & Undergraduate Projects

Current PhD. students:

- Luis-Andres Guillen – *Water and carbon ecosystem services across scales: Impacts of disturbance and climate change in the Appalachian Mountains region, USA.*

Past PhD. students:

- Brandi Hake-Gaertner – *Ecosystem services in the Appalachian Mountains: Impacts of historic and future environmental change on freshwater sustainability*.

Current MS students:

- Eric Sjostedt – *Water Security and Water Use*.
- Grace Dever – WV Water Link – Visualizing water injustice in the Mountain State.
- Melissa Shafer – Data Driven Assessment of Whitewater Recreation Opportunities in West Virginia
- Justin Earle (2020) – *Fresh water ecosystem services and water stress in West Virginia*.

Past MS students:

- Matthew Kearns (2018)– *The consumptive landscape: Disaggregated water use data for local decision making.*
- Clayton Lilly (2018) – *Streamflow and biogeochemistry in Canaan Valley, WV*.
- Leighia Eggett (2017) – *Effect of land use and climate change on hydrologic regime of Canaan Valley and the Blackwater River Watershed in West Virginia, USA*.
- Arati Umarvadia (2016) – *Spatial variation of shallow ground water geochemistry in the Monongahela National Forest, WV*.
- David Young (2014) – *Streamflow response to climate change conditioned by historic land cover changes: Disturbance hydrology at the USFS Fernow Experimental Forest, WV*.
- Carson Wright (2014) – *The Hydroclimatology of West Virginia: Spatial and Temporal Trends and their Relationship with Climate Variability*.
- Patrick Eisenhauer (2013) – *Baseline water chemistry characterization in an area of developing shale gas activity*.
- Andrew Miller (2013) – *Characterizing runoff responses in a mountaintop mine-impacted and forest catchment in the coalfields of West Virginia*.
- Abigail McQueen (2011) – *Factors and processes influencing streambank erosion along Horseshoe Run, Tucker County, West Virginia*.

Committee Member

Current PhD students:

- Shobha Yadav (Geography)

Past PhD students:

- Yaqian He (Geography)
- Jothi Shanmugasundaram (Geography)
- Madan Maharjan (Geology)
- Jessica DeWitt (Geography)
- Aaron Maxwell (Geography)
- Eric Merriam (Fisheries)
- John Beck (Soil Science)

Current MS students:

- Destiny Forsyth (Forestry)
- Brandon Rothrock (Geography)
- Mark Swift (2020-Geography)
- Amanda Adams (2020-Geography)
- Brian Gordon (2020-Wildlife & Fisheries)
- Brittany Casey (2020-Geography)

Past MS students:

- Emily Bausher (2019-Geology)
- Myles Reed (Geology)
- Habib Bravo-Ruiz (Geology)
- Charles Walburn (Engineering)
- Annie Belingheri (Geology)
- Amanda Laskoskie (Geology)
- Claire Jeran (Landscape Architecture)

Undergraduate Thesis Projects

WVU NSF-REU Biological Responses to the Environment from Genes to the Ecosystem

- Maria Cuevas 2013 (Sweet Briar College, VA) – *Baseflow isotope variability of headwater streams of the USFS Fernow Experimental Forest.*
- James Fellows 2011 (Gettysburg College, PA) – *Cave, seep, and surface water isotope variations at Spruce Knob, WV.*
- Amelia Snyder 2010 (Warren Wilson College, NC) – *Estimating hyporheic zone volume for a 0-order headwaters stream*.

PROFESSIONAL SERVICE:

Standing Committees

- Chair – Catchment Hydrology (previously Surface Water) Technical Committee, American Geophysical Union (2019 – Present)
- Invited member – planning committee for 2018 Universities Council on Water Resources (UCOWR) annual conference in Pittsburgh, PA.
- Deputy-Chair – Catchment Hydrology (previously Surface Water) Technical Committee, American Geophysical Union (2016 – 2019)
- Committee Member, Standing Committee on Education & Outreach, Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI) (2014 –2019)
- Invited member, Board of Directors and Scientific Advisor, Friends of the Cheat Watershed Organization (2013 – 2018)
- Committee Member, Surface Water Technical Committee, American Geophysical Union (2013 – 2015)
- National Track Director, C3 Water and Hydrology Working Group for the Society of American Foresters (2013 – 2015)

Professional Organizations

- Convener & chair: *H11B: Advances in Quantifying Impacts and Extents of Land Use/Land Cover Changes and Other Landscape Disturbances on Hydrology.* American Geophysical Union Fall meeting, San Francisco, CA (2019). (20 oral/38 poster abstracts)
- Convener & chair: *H12H: Disturbance Hydrology: Exploring Immediate and Long-Term Impacts of Abrupt Changes on Hydrological Processes and Earth Systems.* American Geophysical Union Fall meeting, Washington, DC (2018)

- Convener & chair: *Budyko and Beyond: Advances and Applications of a Simple Water and Energy Balance Model.* American Geophysical Union Fall meeting, New Orleans, LA (2017)
- Convener & chair: *Comparative Disturbance Hydrology: Hydrologic and Geomorphic Effects of Wildland Fire and Other Disturbances from Point to Regional Scales.* American Geophysical Union Fall meeting, New Orleans, LA (2017)
- Panel Discussion Moderator, WVU Institute of Water Security & Science Spring Symposium, Morgantown, WV.
- Convener & chair: *Disturbance Hydrology: Exploring Immediate and Long-Term Impacts of Abrupt Changes on Hydrological Processes and Earth Systems.* American Geophysical Union Fall meeting, San Francisco, CA (2016)
- Convener & chair: *Disturbance Hydrology: Assessing the impacts of abrupt landscape changes on watershed hydrology.* American Geophysical Union Fall meeting, San Francisco, CA (2015)
- Convener and co-chair: *Influence of resource development on watersheds: Advances in process science and assessment procedures.* American Geophysical Union Fall Assembly, San Francisco, CA (2014)
- Panel Convener: Natural Gas & Oil Development Impacts on Forest Resources, Society of American Foresters National Convention 2013, Charleston, SC.
- Panel Convener: Forest Water Resources & Implications for Climate Change Mitigation & Adaptation, Society of American Foresters National Convention 2013, Charleston, SC.
- Track director: Forest Soils and Hydrology, 2012 Central Hardwoods Forest Conference, Morgantown, WV (2010-2012)
- Co-convener/organizer: *Analyzing forest watershed data for dummies: An Introduction to the Methods Being Developed and Used to Assess Forest Management Impacts on Watersheds and Water Quality,* Society of American Foresters Annual Convention, Reno, NV (2008)
- Co-convener/organizer: *Critical evaluation of the paired-catchment study design*, American Geophysical Union Fall Assembly, San Francisco, CA (2008)
- Science mentor: Student-scientist forum for the Human Impacts on the Watershed curriculum, Northwestern University (2011)
- Science coordinator: The Kamchatka Project, National Geographic Society-supported expedition (2010 – 2011)
- Expert analysis: Flood damage in Welch, WV, Office of Director, WV Division of Forestry (2010)
- Hydrology facilitator: Gathering of Waters Project, Fiends of Decker's Creek, Morgantown, WV (2010)
- Committee member: Oregon State University Institute for Water and Watersheds Executive Committee for Graduate Studies Curriculum Development (2008)
- Panel speaker: *Sustainability and the Natural Environments*: *Conversations at Shotpouch Creek*, The Spring Creek Project, Department of Philosophy, Oregon State University, Corvallis, OR (2007)

Proposal and Journal Reviews

- Ad Hoc Proposal Review (National/International): 2014-2020 Pathfinder Fellowship Program, Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI); National Science Foundation EAR Hydrological Sciences; Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research & Development Grant program; US Forest Service; Virginia Water Resources Center Small Research Grant Program
- Ad Hoc Proposal Review (State): 2017 Ohio Water Resources Center and the Office of Energy and Environment at OSU 104(b) Grant Program
- Journal Review: Water Resources Research; Geophysical Research Letters, Journal of the American Water Resources Association; Ecohydrology; Western Journal of Applied Forestry; Hydrological Processes; Journal of Hydrology; Journal of Environmental Quality; Hydrological Sciences Journal; Applied Geography; Hydrology & Earth Systems Science; International Journal of Forest Engineering; Southern Journal of Applied Forestry; Hydrology Research.

UNIVERSITY SERVICE:

- Chair, Working Group 2 Implications of climate change for West Virginia's economies, communities, and ecosystems *of The Waters of West Virginia: A Science & Technology Policy Perspective*, WVU Science & Technology Policy, Leadership, and Communications Initiative.
- Faculty Senator Davis College, WVU Faculty Senate (2019 – present)
- Chair, Masters of Forestry Board of Governors 5-year report
- Faculty Advisor, Davis College Veterans Professional Group (2017 – 2019)
- Committee member, West Virginia University Research Office Faculty Advisory Committee (2017 – present)
- Committee member, West Virginia University Research Computing Steering Committee (2017 – present)
- Representative, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) (2011 – Present)
- WVU Representative, Big 12 Water Workshop, University of Kansas, Lawrenceville, KS (11/17-11/18 2014)
- Committee member, School of Natural Resources Promotion & Tenure committee, WVU (2015-2017)
- Committee member, WVU Mountains of Excellence STEM Fellowship Committee (2013 – 2015).
- Committee member of the Davis College Graduate Research Day and the Student Paper and Poster Session Committee, Davis College of Agriculture, Natural Resources, & Design, WVU (2011-2013)
- Presentation judge, Davis College Graduate Research Day (2011-2013)
- Faculty member, Dean's College Graduate Committee for Strategic Planning (2011-2012)
- Division representative to Dabney S. Lancaster Community College Forestry Advisor Board (2011-present)
- Committee member, Department of Geology Groundwater Hydrology position search (2014, 2015, 2016)
- Committee member, Division of Resource Management Industrial Ecology position search (2014)
- Committee member, Department of Biology Ecosystem Modeler position search (2013)
- Committee member, Division of Forestry & Natural Resources seminar series (2011-present)
- Committee member, Division of Forestry & Natural Resources Silviculture position search (2011)
- WV Division of Forestry and Dept. of Environmental Protection outreach about the impacts of forest harvesting, surface mining, and climate change on WV watersheds (2013)
- WV Water Research Institute (WRI) representative to West Virginia Water Gauging Council (2011-present)
- Focus group panel member of the WVU Smoking Task Force committee appointed by President Clements, West Virginia University (2010)
- Committee member, Division of Forestry & Natural Resources Forest Ecologist position search (2010)
- Executive committee member, WVU NSF REU-Biological Responses to the Environment from Genes to the Ecosystem (2009-2012)
- Committee Chair, 1st Annual Forest Engineering Graduate Student Conference, Dept. of Forest Engineering, Oregon State University, Corvallis, OR (2007)
- Vice-president, Hydrophiles, Oregon State University Hydrology Community organization (2006 – 2007)
- Vice-president – seminar organizer, Virginia Tech Student Chapter of the American Water Resources Association, Virginia Tech, (2002-2003)

SYNERGESTIC ACTIVITIES

- Facilitator/developer – Environmental STEM Climate and ecohydrology curriculum for Boy Scouts of America, Summit-Bechtel Reserve
- Science advisor/co-developer JRL 493W Experimental Journalism course, Journalism School, West Virginia University (2015)
- Science facilitator/educator, GLOBE Watershed Dynamics Program, Northwestern University Office of STEM Education Partnerships (2011)
- Science facilitator, PLACE: APPALACHIA: An outdoor field program for artists. Land Arts of the American West & College of Creative Arts West Virginia University (2011)
- Sciences advisor, A Gathering of Waters Project: Deckers Creek, WV. Basia Irland, Water and Eco Artist & Erika Osborne College of Creative Arts West Virginia University (2010)
- Science advisor, The Kamchatka Project, National Geographic Society expedition to inner-Siberia (2010-2011)