

CHARLENE N. KELLY

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EDUCATION AND TRAINING

Institution	Major/Focus	Degree	Year
University of Dayton	Environmental Biology	B.S.	2001
West Virginia University	Environmental Biology	M.S.	2004
Virginia Tech University	Forestry, Soil science	Ph.D.	2010
Virginia Tech/USFS Coweeta Hydrologic Lab	Climate change and forest management	Post-doctorate	2010-2011
U.S. Geological Survey, Denver, CO	Mendenhall Fellow - Soil Carbon	Post-doctorate	2011-2013

PROFESSIONAL APPOINTMENTS

- **Teaching Associate Professor**, Division of Forestry and Natural Resources and Division of Plant and Soil Sciences (Environmental Soil and Water Science), West Virginia University, 2022 to present.
- **Teaching Assistant Professor**, Division of Forestry and Natural Resources and Division of Plant and Soil Sciences (Environmental Soil and Water Science), West Virginia University, 2018 to 2022. Teach courses, train students, and lead a research group in applied soil science.
- **Visiting Assistant Professor**, College of Forestry and Natural Resources, West Virginia University, 2015 to 2018. Taught courses, trained students, and led a research group in applied soil science.
- **Assistant Professor**, Department of Geosciences and Natural Resources, Western Carolina University, 2013 to 2015. Taught courses and trained undergraduate students to do research in applied soil science.

PUBLICATIONS

- **Kelly CN**, Matejczyk EA, Fox-Fogle EG, Hubbart JA, and TP Driscoll. 2023. Tree species influence nitrate and nitrous oxide production in forested riparian zones. *Nitrogen*. 4(4), 311-330.
- Pavlopoulos, BA, Baltoumas, FA., Liu, S, Selvitopi O, Nayfach S, Azad Ariful, Roux S, ... **Novel Metagenome Protein Families Consortium**, Iliopoulos I, Konstantinidis K, Tiedje JM, ..., and Kyrpidis NC. Discovery, diversity, and distribution of functional dark matter through global metagenomics. 2023. *Nature*.
- Fremin BJ, Bhatt AS, Kyrpidis NC, Senjupta A, Sczyrba A, da Silva AM, and **Members of IMG/M Phage Data Consortium**. 2022. Thousands of small, novel genes predicted in global phage genomes. *Cell Reports*. 39(12):110984.
- **Kelly CN**, Koos JA, Griggs TR, and ZB Freedman. 2022. Prescribed defoliation strategies influence soil carbon dynamics and nitrous oxide emission potential in central Appalachian perennial pastures. *Agronomy Journal*.
- Guillen LA, Adams MB, Elliot E, Hubbart J, **Kelly CN**, McNeil B, Peterjohn W, and N Zegre. 2021. The Fernow Experimental Forest, West Virginia, USA: Insights, datasets, and opportunities. *Hydrological Processes*. 35(4): e14106.
- **Kelly CN**, Cumming JR, Schwaner G, and TD Driscoll. Metagenomic reconstruction of nitrogen and carbon cycling pathways in forest soil: Influence by different hardwood tree species. 2021. *Soil Biology and Biochemistry*. 108226
- Dang C, Kellner E, Martin G, Freedman ZB, Hubbart J, Stephan K, **Kelly CN**, and EM Morrissey. 2021. Land use intensification destabilizes stream microbial diversity and decreases metabolic efficiency. *Science of the Total Environment*. 767: 145440.
- Eastman BE, Adams MB, Brzostek ER, Burnham MB, Carrara JE, **Kelly CN**, McNeil BE, Walter CA, and WT

- Peterjohn. 2021. Altered plant carbon allocation drives enhance carbon storage in forest vegetation and soil after 25 years of nitrogen additions. *New Phytologist*. 230: 1435-1448.
- Kemner JE, Adams MB, McDonald LM, Peterjohn WT, and **CN Kelly**. 2021. Fertilization and tree species influence on stable aggregates in forest soil. *Forests*. 12, 39.
 - Martin G, Dang C, Morrissey E, Hubbart J, Kellner E, **Kelly CN**, Stephan K, and ZB Freedman. 2021. Stream sediment bacterial communities exhibit temporally-consistent and distinct thresholds to land use change in a mixed-use watershed. *FEMS Microbiology Ecology*.
 - Nayfach, S, Roux, S, Seshadri R, Udworthy D, Varghese N, Schulz F, **Members of IMG/M Data Consortium**, ... and EA Elze-Fadrosch. 2021. A genomic catalog of Earth's microbiome. *Nature Biotechnology*. 1-11.
 - Schwaner GW and **CN Kelly**. 2019. American chestnut soil carbon and nitrogen dynamics: Implications for ecosystem response following restoration. *Pedobiologia*. 75:24-33.
 - Kellner E, Hubbart J, Stephan K, Morrissey E, Freedman Z, Kutta E, and **CN Kelly**. 2018. Characterization of sub-watershed-scale stream chemistry regimes in an Appalachian mixed-land-use watershed. *Environmental Monitoring and Assessment*. 190(10): 586.
 - **Kelly CN**, Benjamin J, Calderon FC, and MM Mikha. 2017. The incorporation of biochar carbon into stable soil aggregates: the role of clay mineralogy and other soil characteristics. *Pedosphere*. 27(4): 694-704.
 - **Kelly CN**, McGuire KJ, Ford-Miniat C, and JM Vose. 2016. Streamflow response to increasing precipitation extremes altered by forest management. *Geophysical Research Letters*. 43(8): 3727-3736.
 - **Kelly CN**, Calderon FC, Acosta-Martinez V, Mikha MM, Benjamin J, Rutherford DW, and CE Rostad. 2015. Switchgrass biochar effects on soil microbial dynamics and wheat yield in two soils from different regions. *Pedosphere*. 25(3): 329-342.
 - **Kelly CN**, Rutherford DW, and CE Rostad. 2014. Biochar application to hardrock mine tailings: Soil quality, microbial activity, and toxic element sorption. *Applied Geochemistry*. 43(35-48).
 - Cornelissen G, Arp HP, Rostad CE, **Kelly CN**, and DW Rutherford. 2013. Sorption of pure N₂O to biochars and other organic and inorganic materials under anhydrous conditions. *Environmental Science and Technology*. 47(14): 7704–7712
 - Gurwick N, Moore L, Elias P, **Kelly CN**. 2013. A systematic review of biochar research, with a focus on its stability *in situ* and its promise as a climate mitigation strategy. *PlosOne*. 8(9): e75932.
 - Rutherford DW, Wershaw RL, Rostad CE, **Kelly CN**. 2012. Effect of formation conditions on biochars: Compositional and structural properties of cellulose, lignin, and pine biochars. *Biomass and Bioenergy*, 46: 693-701.
 - **Kelly CN**, Schoenholtz SH, and MB Adams. 2011. Soil properties associated with net nitrification following watershed conversion to Norway spruce from Appalachian hardwoods. *Plant and Soil*. 344(1-2): 361-376.
 - Cumming JR, **Kelly CN**. 2007. *Pinus virginiana* invasion influences soils and arbuscular mycorrhizae of a serpentine grassland. *Journal of the Torrey Botanical Society*. 134(1): 63-73.
 - **Kelly CN**, Morton JB, and JR Cumming. 2004. Variation in aluminum resistance among arbuscular mycorrhizal fungi. *Mycorrhiza*. August 14(3): 193-201.

BOOK CHAPTERS

- Adams MB, **Kelly CN**, Schuler JS, and J Kabrick. 2019. Chapter 6. Temperate Forests and Soils, In: *Developments in Soil Science*. Elsevier. 36: 83 – 108.

PUBLIC DATASETS

- Kelly CN**, Driscoll TP, JR Cumming. 2017. Quantifying ecosystem changes following American chestnut restoration: From microbes to ecosystem function. DOE Joint Genome Institute. The US Department of Energy's Office of Scientific and Technical Information. Issue 503303. DOI: [10.25585/1488292](https://doi.org/10.25585/1488292)
- Adams, MB; **Kelly, CN**; Simpson, B. 2021. Fernow Experimental Forest: Growth and productivity data for a 45-year-old Norway spruce plantation. Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2021-0034>

CONFERENCE PROCEEDINGS ARTICLES

- Adams MB, Rau B, Kemner J, and CN Kelly. 2022. Development of a Norway spruce stand on a gaged watershed in the Fernow Experimental Forest, WV. Central Hardwoods Conference Proceedings, Society of American Foresters.
- Kelly CN, Adams MB, Kemner JE, and B Rau. 2020. Conversion of an Appalachian hardwood forest to a Norway spruce plantation: Effects on hydrologic processes and function. Proceedings of the Seventh Interagency Conference on Research in the Watersheds. Extended Abstract.
- Kelly CN, Schoenholtz SH, and MB Adams. 2011. Contrasts in carbon and nitrogen ecosystem budgets in adjacent Norway spruce and Appalachian^[1] hardwood watersheds in the Fernow Experimental Forest, West Virginia. In: Medley, C.N., Patterson, Glenn, and Parker, M.J., eds. 2011, Observing, studying, and managing for change—Proceedings of the Fourth Interagency Conference on Research in the Watersheds: U.S. Geological Survey Scientific Investigations Report 2011–5169, 202 p.
- Kelly CN, Schoenholtz SH, and MB Adams. 2008. Factors controlling soil nitrogen and carbon transport through riparian areas in Appalachian watersheds; Role of vegetation in nutrient loss and water quality. American Water Resources Association Proceedings of the 2008 Summer Specialty Conference: Riparian Ecosystems and Buffers - Working at the Water's Edge. Virginia Beach, VA.
- Gurwick NP, Kelly CN, and PE Elias. 2012. The scientific basis for biochar as a climate change mitigation strategy: Does it measure up? The Union of Concerned Scientists Report.

RESEARCH NOTES – TECHNICAL REPORTS TO U.S. FOREST SERVICE

- Adams MB, Kelly CN, Simpson B, and J Juracko. Growth and Productivity of a Norway Spruce Plantation on the Fernow Experimental Forest. 2020. Research Note NRS-253. Madison, WI: US Department of Agriculture, Forest Service, Northern Research Station. 11 p. 253:(1-11).
- Adams MB, Simpson B, Juracko J, Kelly CN, and J Schuler. Stand Dynamics of Reference Plots in the West Virginia Long Term Soil Productivity (LTSP) Studies. 2020. Gen. Tech. Rep. NRS-192. Madison, WI: US Department of Agriculture, Forest Service, Northern Research Station. 20 p. 192:(1-20.)

GRANTS - AWARDED AND PENDING

- *Forage Quality, Soil Quality, and Wildlife Responses to Innovative Summer Stockpiling and Native Warm-season grass Plantings in the Greenbrier Valley, West Virginia.* Submitted to USDA NRCS On-Farm Conservation Innovation Grants. November 2023. Total Amount Requested: \$1,551,031. Pending Decision.
- *RaMP: Training in the One Health Framework: Studies in Animals and Environments that Affect Human Health in West Virginia (One Health WV).* NSF Geosciences. Lead PI. 9/1/2023 – 8/30/2027. Total Amount Awarded: \$3,000,000.
- *Forest Carbon Management in Central Appalachia Conference.* USDA-NIFA. Supporting Personnel with lead investigator K. Gazal. July 2023-June 2024. Total Amount Awarded: \$49,700.
- *Leveraging the Long-Term Soil Productivity Infrastructure: How does chronic acidification affect forest productivity and ecosystem carbon storage?* PI. Awarded by USDA McIntire-Stennis 2021-2026.
- *Leveraging the Long-Term Soil Productivity Infrastructure: How does chronic acidification affect forest productivity and ecosystem carbon storage?* PI. Awarded by WVU Davis College Faculty Development Award – Daniel C. and Elizabeth D. Brown Faculty Development Fund 2021 – 2022. Total Amount Awarded: \$4,900.
- *Mid-Atlantic sustainable biomass for value-added products consortium (MAS-Bio).* Supporting Personnel with Lead Investigator Jingxing Wang and consortium. Awarded by USDA-NIFA April 2020 - 2025. Total Amount Awarded: \$10,000,000, Sub-Award: \$106,000.
- *Assessing causes of black cherry decline in the Allegheny National Forest.* Co-PI with Zachary Freedman. Awarded by US Forest Service June 2019 - May 2021. Total Amount Awarded: \$140,000, Sub-Award: \$77,542.
- *Forest biomass for energy: A systems assessment of sustainability of the strip cut forest harvest method.* Lead PI with Jamie Schuler, Kirsten Stephan, and Chris Lituma. Awarded by the Research and Scholarship Advancement at WVU June 2019 - May 2020. Total Amount Awarded: \$18,000

- *Do tree species drive the abundance of microbial genes associated with nitrogen cycling? Implications for management of nitrate and nitrous oxide production.* Grant awarded by WVU Davis College Faculty Development Award – Daniel C. and Elizabeth D. Brown Faculty Development Fund. 2018-2019. Total Amount Awarded: \$2,500.
- *Quantifying ecosystem changes following American chestnut restoration: From microbes to ecosystem function.* Co-PI with Timothy Driscoll (WVU). Contract awarded by Department of Energy DOE Joint Genome Institute 2017 – 2018 for providing metagenomic sequencing analyses. Total Amount Awarded: ~\$15,000 contract for services.
- *Prescribed grazing impacts on grassland rooting and soil microbial population dynamics: Implications for soil organic matter development and nitrous oxide emissions.* Co-PI with Thomas Griggs (WVU). Grant awarded by NRCS 2016-2018. Total Amount Awarded: \$123,539.
- *Quantifying ecosystem changes following American chestnut restoration in mixed hardwood forests.* Principal Investigator. Grant awarded by USDA-NIFA McIntire-Stennis 2016-2020. Total Amount Awarded: \$145,000.
- *Response of the soil microbiome to invasive species management.* Co-PI with Timothy Driscoll and Diane Styers. Grant awarded by Provost's Research Grant, Western Carolina University. 2014-2015. Total Amount Awarded: \$15,000.

COURSES TAUGHT

- Principles of Soil Science (ESWS 202 at WVU)
- Principles of Soil Science Laboratory (ESWS 202L at WVU)
- Forest Soils Ecology and Management – Graduate-level (FNRS 575/ESWS 593 at WVU)
- Tropical Ecosystem Management – Study Abroad course to Belize (ESWS 493 at WVU)
- Forest Management (FNRS 433 at WVU)
- Computing in Natural Resources (FNRS 240 at WVU)
- Capstone Forest Management (co-taught FNRS 434 at WVU)
- Graduate Seminar (co-taught FNRS 796 at WVU)
- Teaching Practicum (ESWS 490 and ESWS 790 at WVU)
- Natural Resources of West Virginia (FNRS 140 at WVU)
- *Online* Natural Resources of West Virginia (FNRS 140 at WVU)
- Soil Conservation and Lab (NRM 320 at WCU)
- Soil Genesis and Classification and Lab (NRM 420 at WCU)
- Watershed Management and Lab (NRM 460 at WCU)
- Natural Resources Conservation and Management (NRM 140 at WCU)
- Natural Resources Conservation and Management – *Honors* (NRM 140H at WCU)

SYNERGISTIC ACTIVITIES

- Chair Elect (2022-2025) for Soil Science Society of America, Forest and Wildland Soils Division.
- Technical Working Group advisory member – National Ecological Observation Network (NEON) Terrestrial Biogeochemistry (began 2022).
- Faculty Advisor for Plant the Moon Challenge team research competition (10 undergraduate students) (Spring 2021).
- Co-Principal Investigator for Long-Term Soil Productivity (LTSP) project in West Virginia, with Mary Beth Adams, USFS
- Peer reviewer for *Nature Geosciences*, *Water*, *Journal of Plant Research*, *Antonie van Leeuwenhoek Journal*, *Applied Microbiology*, *Plant and Soil Science*, *Soil Science Society of America*, *Forests*, *Journal of Environmental Quality*, and *Urban Forestry* and other scientific journals (since 2011)
- Member of Ecological Society of America, Soil Science Society of America, and American Water Resources Association professional societies (since 2006)

- Member of the WVU Science and Technology Policy Initiative for Water Resources Resiliency and Economic Development (since 2020)
- Member of Women’s Leadership Initiative, WVU (since 2020)
- Chair of Diversity, Equity, and Inclusion (DEI) committee in Division of Forestry and Natural Resources, WVU (since 2020)
- Member of Council for the Advancement of Women in Natural Resources (WINRS), WVU Davis College (since 2018).
- Academic Advisor for undergraduate students in Forest Resource Management and Environmental Soil and Water Science students (~20 students per semester).
- Advise Teaching Assistants through coordinated weekly TA prep and Teaching Practicum for Soil Science labs (4 TAs per semester).

GRADUATE STUDENTS ADVISED

- Jordan Koos, co-advised with WVU Plant and Soil Sciences (2016 – 2018). Completed M.S.
- Geoffrey Schwaner, WVU Forest Resources Management (2016 – 2018). Completed M.S.
- Jacob Kemner, WVU Forest Resources Management (Aug 2018 – present). Completed M.S.
- Emma Fox-Fogle, co-advised with WVU Biology (May 2019 – July 2021). Completed M.S.
- Elizabeth Mateczyk, co-advised with WVU Biology (May 2019 – July 2021). Completed M.S.
- Elisabeth Six, co-advised with WVU Plant and Soil Sciences (August 2019 – present). M.S. candidate
- Mica Keck, WVU Forest Resources Management (January 2022 - present). M.S. candidate

HONORS & RESEARCH APPRENTICE STUDENTS ADVISED

- Joshua Mirabella, Principles of Soil Science (Spring 2018)
- Amelia Bard, Principles of Soil Science (Spring 2020)
- Claire Roth, Principles of Soil Science (Spring 2021)
- Jacob Pennell (Spring 2021)
- JosiLee Scott (First2 Network research project) (August 2021 –May 2022)
- Tristan Walker (First2 Network, RAP project) (August 2022 – present)
- Samuel Brumback (MAS-Bio Summer Scholar (June 2023 – present)

AWARDS and HONORS

- WVU Division of Forestry and Natural Resources 2020 Outstanding Teaching Award
- WVU Davis College 2020 Outstanding Teaching Award
- WVU Foundation 2020 Outstanding Teaching Award Nomination
- WVU Nicholas Evans Excellence in Advising Award (nomination 2020, 2021, 2022)
- Plant the Moon Challenge, Institute of Competition Sciences Best in Show Award 2021

PRESENTATIONS and PUBLISHED ABSTRACTS

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| Nov 2023 | Sustainability of bioenergy crop production with biochar on reclaimed mine and marginal ag lands (oral). Soil Science Society of America Annual Meeting. St. Louis, MO. |
| Oct 2023 | Soils and roots in managed systems (invited oral). Mid-Atlantic Chapter International Society of Arboriculture Annual meeting. Morgantown, WV. |
| Sep 2023 | Effect of biochar on microbial extracellular polymeric substances (EPS) and other soil attributes (undergrad student poster with S. Brumback). MASBio Annual meeting, State College, PA. |
| Sep 2023 | Greenhouse gas production from soil amended with biochar in bioenergy cropping systems (poster, awarded first place student award with M. Keck). MASBio Annual meeting, State College, PA. |
| Aug 2023 | Biochar application effects on soil properties and lettuce yield. (invited poster) WVU Organic Farm Days, Morgantown, WV. |

Dec 2022 Tree species influence nitrous oxide and nitrate production in forested riparian soil (invited oral). WV Woodland Stewards, Morgantown, WV.

Nov 2022 Tree species influence nitrous oxide and nitrate production in forested riparian soil (oral). Soil Science Society of America annual meeting, Baltimore, MD.

Nov 2022 Forest soil productivity and soil health – Understanding the linkages (invited oral with MB Adams). Soil Science Society of America annual meeting, Baltimore, MD.

Aug 2022 Greenhouse gas production from soil amended with biochar in bioenergy cropping systems (poster, co-author with M. Keck). North American Biochar and Bioenergy conference, Morgantown, WV.

Aug 2022 Sustainability of bioenergy crop production with biochar on reclaimed mine and marginal agricultural lands. (oral). North American Biochar and Bioenergy conference, Morgantown, WV.

July 2022 Biochar as a soil amendment: Applications and caveats. (invited oral). West Virginia Conservation Districts quarterly meeting. Parkersburg, WV.

Apr 2022 Greenhouse gas production from soil amended with biochar in bioenergy cropping systems (poster, co-author with M. Keck). WVU Women in Natural Resources Annual Symposium Morgantown, WV.

Dec 2021 Conversion of an Appalachian Hardwood Forest to a Norway Spruce Plantation (abstract, co-author with MB Adams). Central Hardwoods Conference, Morgantown, WV.

Nov 2021 West Virginia Woodland Stewards Seminar Series. Riparian forests and buffers for water quality protection (invited oral). Morgantown, WV.

Apr 2021 Women in Natural Resources Symposium. Investigating the recent decline in black cherry in the Allegheny National Forest (oral, co-author with E Six). Morgantown, WV.

Apr 2021 Women in Natural Resources Symposium. Nitrogen cycling gene abundance associated with tree species and fertilization within Appalachian watersheds (oral, co-author with E. Fox-Fogle). Morgantown, WV.

Apr 2021 Women in Natural Resources Symposium. Tree species influence on microbial functional gene abundance and N cycling in soil (oral, co-author with E. Matejczyk). Morgantown, WV.

Mar 2021 Indiana University of Pennsylvania Forest Restoration (invited oral). Riparian zone restoration and water quality. Virtual.

Nov 2020 Interagency Conference on Research in the Watersheds. Virtual. Hydrologic history in watersheds at the Fernow Experimental Forest, West Virginia. (oral, co-author with Mary Beth Adams and Benjamin Rau).

Nov 2019 Soil Science Society of America conference (oral). San Antonio, TX. Tree species and nitrogen deposition influence stable aggregate carbon dynamics in forest soils.

Nov 2019 Soil Science Society of America conference (poster, co-author with J Kemner). San Antonio, TX. Stable aggregate dynamics and carbon storage in acidified forest soils: Influence by conifer conversion and atmospheric deposition at the Fernow Experimental Forest.

Oct 2019 What is a Resilient Forest? Conference (invited oral). Flatwoods, WV. Climate change impacts on forest soils: Challenges of complex interactions.

Aug 2019 Ecological Society of America conference (oral). Louisville, KY. Metagenomic reconstruction of soil carbon and nitrogen cycling pathways beneath American chestnut, black cherry, and Northern red oak.

Aug 2019 Ecological Society of America (oral). Louisville, KY. Co-author with Brooke Eastman, Mary Beth Adams, William Peterjohn, et al. Costs and benefits of nitrogen deposition in a temperate deciduous forest: Implications for the land-atmosphere exchange of carbon.

May 2019 Central Hardwoods Forest Conference (abstract submitted for May 2020 conference, co-author with MB Adams). Charleston, WV. Conversion of an Appalachian Hardwood Forest to a Norway Spruce Plantation: Effects on Ecosystem Processes and Function

Mar 2019 Women in Natural Resources Symposium (poster, co-author with B Eastman). Morgantown, WV. Carbon footprints in the forest: Long-term impacts of acid rain on forest carbon cycling in West Virginia

Feb 2019 Society of American Foresters Mid-Atlantic regional conference (invited oral). Morgantown, WV. Forest soils in a changing climate.

Jan 2019 Soil Science Society of America conference (poster, co-author with MB Adams). San Diego, CA. Lessons learned from long-term fertilization additions to forest soils on the Fernow Experimental Forest.

Aug 2018 Ecological Society of America conference (oral). New Orleans, LA. American chestnut soil carbon and nitrogen dynamics: Implications for ecosystem response following restoration.

Jul 2018 North American Biological Engineering conference NABEC (poster). Morgantown, WV. Prescribed grazing impacts on grassland rooting and soil microbial population dynamics: Implications for soil organic matter development and nitrous oxide emissions.

Jun 2018 Universities Council on Water Resources conference (oral, co-author with C. Dang). Land-use and water quality impacts on stream sediment microbial community in the West Run Watershed, WV.

- Oct 2017 Soil Science Society of America conference (poster, co-author with GW Schwaner). Tampa, FL. American chestnut soil carbon and nitrogen dynamics: Implications for ecosystem response following restoration.
- Oct 2016 Soil Science Society of America conference (poster). Phoenix, AZ. American chestnut soil carbon and nitrogen dynamics: Implications for ecosystem response following restoration.
- Sep 2015 VA WV Water Institutes Water of the Virginias conference (poster). Roanoke, WV. The fate of applied biochar: The role of soil mineralogy and aggregation.
- Apr 2015 Molecules in the Mountains Symposium (poster). Cullowhee, NC. Invasive species and the soil microbiome II: Assessment of soil properties, nitrogen mineralization and microbial biomass.
- Apr 2015 Molecules in the Mountains Symposium (poster). Cullowhee, NC. Dissolved organic carbon (DOC) transport in a headwater stream.
- Oct 2012 Soil Science Society of America Conference (oral). Cincinnati, OH. Biochar application to abandoned mine tailings: Implications for succession, plant growth, and water quality.
- Oct 2012 23rd Rocky Mountain Regional Meeting of American Chemical Society, Environmental Chemistry Symposium. (poster, co-author with CE Rostad et al.). Water soluble components from biochar. Environmental implications. Westminster, CO.
- Jul 2012 United States Biochar Initiative Conference (oral). Rohnert Park, CA. Biochar and the remediation of abandoned mine tailings.
- Apr 2012 San Juan Hardrock Mining and Water Quality Conference (poster). Silverton, CO. Biochar and the remediation of abandoned mine tailings.
- Jun 2011 North American Forest Ecology Workshop (poster). Roanoke, VA. Forest management, climate change, and water resources: Interactive effects on water yield across the flow regime.
- Dec 2010 American Geophysical Union Conference (poster; co-author with Noel Gurwick et al.). San Francisco, CA. Biochar stability in field conditions: What do we know?
- Jan 2010 Fernow Experimental Forest Cooperators Meeting (oral). Elkins, WV. Vegetation controls on carbon and nitrogen cycling and retention: Contrasts in spruce and hardwood watershed budgets.
- Nov 2009 Soil Science Society of America Conference (oral). Pittsburg, PA. Linking nitrate production to chemical and biotic controls in soils beneath hardwood and conifers
- Jul 2009 Gordon Research Conference on Catchment Science: Interactions of Hydrology, Biology and Geochemistry (invited oral). Andover, NH. Contrasts in adjacent spruce and hardwood nutrient budgets: Vegetation controls on carbon and nitrogen cycling and retention.
- May 2009 USFS Conference on the Ecology and Management of High-Elevation Forests of the Appalachian Mountains (oral). Slatyfork, WV. Vegetation controls on carbon and nitrogen cycling and retention: contrasts in spruce and hardwood watershed budgets.
- Apr 2009 1st Annual Forestry Symposium at Virginia Tech (poster). Blacksburg, VA. Contrasts in adjacent spruce and hardwood nutrient budgets: Vegetation controls on carbon and nitrogen cycling and retention.
- Oct 2008 Soil Science Society of America Conference (oral). Houston, TX. Vegetation controls on nitrogen cycling and retention: Soil and water characteristics of “tight” and “leaky” watersheds.
- Jul 2008 1st International Hydrogeology Conference (poster). State College, PA. Vegetation controls on nitrogen cycling and retention: Soil and water characteristics of “tight” and “leaky” watersheds.
- Jul 2008 American Water Resources Association Conference (oral). Virginia Beach, VA. Differential nitrate retention in two watersheds in the Fernow Experimental Forest: Implications for nutrient loss and water quality.
- Jun 2008 North American Forest Soils Conference (poster). Blacksburg, VA. Factors controlling dissolved soil carbon and nitrogen transport in Appalachian watersheds: Implications for nutrient loss and water quality.
- Nov 2007 VA/WV Water Resources and Research Conference (oral). Blacksburg, VA. Differential nitrate retention in two watersheds in the Fernow Experimental Forest: A research approach.
- Aug 2005 Ecological Society of America Conference (poster: co-author with Jonathan Cumming) Montreal, Canada. *Pinus virginiana* succession influences soils and arbuscular mycorrhizae of serpentine grassland.
- Aug 2003 Ecological Society of America Conference (poster). Savannah, GA. Intra- and inter-specific variation of infectivity of isolates of several species of mycorrhizal fungi in response to aluminum exposure.