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PROFESSIONAL APPOINTMENTS

Virginia Tech – Blacksburg, VA
Department of Civil and Environmental Engineering
Assistant Professor/Associate Professor/Professor, 2009-present

Bonneville Power Administration – Portland, OR
Detail/Rotation from US DOE, 2023-present

U.S. Dept of Energy, Water Power Technologies Office – Washington, DC
AAAS Science & Technology Policy Fellow, 2022-present

National Taiwan University – Taipei, Taiwan
Fulbright Senior Scholar, 2017-2018

Herrera Environmental Consultants – Seattle, WA
Hydraulic Engineer, 2002-2003

Philip Williams and Associates – San Francisco, CA
Water Resources Engineer, 2001-2002

LFR – Emeryville, CA
Project Engineer, 1998-2001

Ecology and Environment – San Francisco, CA
Staff Scientist, 1993-1995

EDUCATION

Ph.D. University of North Carolina – Chapel Hill
Ecology, 2008

M.S. Stanford University
Civil and Environmental Engineering, 1998

A.B. Dartmouth College
Biology, 1992

HONORS AND AWARDS

Alumni Teaching Excellence Award, Virginia Tech Department of Civil and Environmental Engineering Alumni Board, 2023

U.S. EPA STAR Graduate Fellowship, 2006-2008

UNC Kenan Fellowship, 2004-2008

PROFESSIONAL REGISTRATION

Professional Engineer, Civil Engineering
Washington State**,** 2003
Virginia, 2009

PEER REVIEWED PUBLICATIONS

Underline = student from Hester Lab

Monterroso, H., M. A. Widdowson, W. S. Lotts, K. B. Strom, and E. T. Hester. 2024. Effects of boundary hydraulics, dissolved oxygen, and dissolved organic carbon on growth and death dynamics of aerobic microbes in riverbed dune-induced hyporheic zones. *Science of the Total Environment* 906:167401

Federman, C.E., D.T. Scott, and E.T. Hester. 2023. Impact of floodplain and Stage 0 stream restoration on flood attenuation and floodplain exchange during small frequent storms. *Journal of the American Water Resources Association* 59:29–48.

Lotts, W.S., and E.T. Hester. 2023. Take it to the bank: A numerical examination of the effects of soil pipes on bypass of riparian buffer nitrate removal capacity. *Journal of Hydrology* 616:128821.

Santizo, K.Y., M.W. Widdowson, and E.T. Hester. 2022. Numerical modeling of an abiotic hyporheic mixing-dependent reaction: Chemical evolution of mixing and reactant production zones. *Journal of Contaminant Hydrology*, 251:104066.

Amaya, M., F. Duchin, E.T. Hester, and J.C. Little. 2022. Applying a coupled hydrologic-economic modeling framework: Evaluating conjunctive use strategies for alleviating seasonal watershed impacts caused by agricultural intensification. *Frontiers in Water* 4:913501.

Amaya, M., F. Duchin, E.T. Hester, and J.C. Little. 2022. Applying a coupled hydrologic-economic modeling framework: Evaluating alternative options for reducing impacts for downstream locations in response to upstream development. *Sustainability*, 14:6630.

Lotts, W. S., and E.T. Hester. 2022. Pipe dreams: The effects of stream bank soil pipes on hyporheic denitrification caused by a peak flow event. *Water Resources Research*, 58, e2021WR030312.

Calfe, M.L., D.T. Scott, Hester, E.T. 2022. Nitrate removal by watershed-scale hyporheic stream restoration: Modeling approach to estimate effects and patterns at the stream network scale. *Ecological Engineering*, 175: 106498.

Hester, E.T., K.Y. Santizo, A.A. Nida, and M.A. Widdowson. 2021. Hyporheic transverse mixing zones and dispersivity: Laboratory and numerical experiments of hydraulic controls. *Journal of Contaminant Hydrology*, 243: 103885.

Hester, E.T., and G.A. Fox. 2020. Preferential flow in riparian groundwater: Gateways for watershed solute transport and implications for water quality management. *Water Resources Research*, 56, e2020WR028186.

Santizo, K.Y., M.A. Widdowson, and E.T. Hester. 2020. Abiotic mixing-dependent reaction in a laboratory simulated hyporheic zone. *Water Resources Research* 56, e2020WR027090.

Hester, E.T., A.M. McEwen, B. Kim, and E. Rost. 2020. Abundance, distribution, and geometry of naturally occurring streambank soil pipes. *Freshwater Science* 39(4):735–751.

Hester, E.T., A.Y.-C. Lin, and C.W. Tsai. 2020. Effect of floodplain restoration on photolytic removal of pharmaceuticals. *Environmental Science & Technology* 54, 3278−3287.

Lotts, W.S., and E.T. Hester. 2020. Filling the void: the effect of streambank soil pipes on transient hyporheic exchange during a peak flow event. *Water Resources Research* 56(2), e2019WR025959.

Rana, SM.M., D.L. Boccelli, D.T. Scott, and E.T. Hester. 2019. Parameter uncertainty with flow variation of the one-dimensional solute transport model for small streams using Markov chain Monte Carlo. *Journal of Hydrology* 575:1145-1154.

Hester, E.T., L.A. Eastes, and M.A. Widdowson. 2019. Effect of surface water stage fluctuation on mixing-dependent hyporheic denitrification in riverbed dunes. *Water Resources Research* 55(6):4668-4687.

Little, J.C., E.T. Hester, S. Elsawah, G.M. Filz, A. Sandu, C.C. Carey, T. Iwanaga, and A.J. Jakeman. 2019. A tiered, system-of-systems modeling framework for resolving complex socio-environmental policy issues. *Environmental Modelling and Software* 112:82-94.

Hester, E.T., K.L. Little, J.D. Buckwalter, C.E. Zipper, and T.J. Burbey. 2019. Variability of subsurface structure and infiltration hydrology among surface coal mine valley fills. *Science of the Total Environment* 651:2648–2661.

Wade, C.M., K.M. Cobourn, G.S. Amacher, and E.T. Hester. 2018. Policy targeting to reduce economic damages from land subsidence. *Water Resources Research* 54:4401–4416.

Keys, T.A., H. Govenor, C.N. Jones, W.C. Hession, E.T. Hester, and D.T. Scott. 2018. Effects of large wood on floodplain connectivity in a headwater Mid-Atlantic stream. *Ecological Engineering* 118:134-142.

Hester, E.T., K.E. Brooks and D.T. Scott. 2018. Comparing reach scale hyporheic exchange and denitrification induced by instream restoration structures and natural streambed morphology. *Ecological Engineering* 115:105-121.

Greer, B.M., T.J. Burbey, C.E. Zipper, and E.T. Hester. 2017. Electrical resistivity imaging of preferential flow through surface coal mine valley fills with comparison to other land forms. *Hydrological Processes* 31(12):2244-2260.

Hester, E.T., M.B. Cardenas, R. Haggerty, and S.V. Apte. 2017. The importance and challenge of hyporheic mixing. *Water Resources Research* 53(5):3565-3575.

Rana, SM.M., D.T. Scott, and E.T. Hester. 2017. Effects of in-stream structures and channel flow rate variation on transient storage. *Journal of Hydrology* 548:157-169.

Hester, E.T., B. Hammond, and D.T. Scott. 2016. Effects of inset floodplains and hyporheic exchange induced by in-stream structures on nitrate removal in a headwater stream. *Ecological Engineering* 97:452-464.

Clark, E.V., B.M. Greer, C.E. Zipper, and E.T. Hester. 2016. Specific conductance-stage relationships in Appalachian valley fill streams. *Environmental Earth Sciences* 75:1222.

Hester, E.T., C.R. Guth, D.T. Scott, and C.N. Jones. 2016. Vertical surface water-groundwater exchange processes within a short residence time floodplain induced by experimental floods along a headwater stream. *Hydrological Processes* 30(21):3770–3787.

Julian, J., C. Podolak, K. Meitzen, M. Doyle, R. Manners, E. Hester, S. Ensign, and N. Wilgruber. Bio-hydro-geomorphic connections in stream channels. 2016. Chapter in *Streams in a Changing Environment* (J. Jones and E. Stanley, eds.).

Little, J. C., E.T. Hester, and C.C. Carey. 2016. Assessing and enhancing environmental sustainability - A conceptual review. *Environmental Science & Technology* 50:6830-6845.

Jones, C.N., D.T. Scott, C.R. Guth, E.T. Hester, and W.C. Hession. 2015. Seasonal variation in floodplain biogeochemical processing in a restored headwater stream. *Environmental Science & Technology* 49:13190-13198.

Evans, D., C. Zipper, E.T. Hester, and S. Schoenholtz. 2015. Hydrologic effects of surface coal mining in Appalachia (USA). *Journal of the American Water Resources Association* 51(5):1436-1452.

Menichino, G.T., and E.T. Hester. 2015. The effect of macropores on bi-directional exchange between a stream channel and riparian groundwater. *Journal of Hydrology* 529(3):830-842.

Menichino, G.T., D.T. Scott, and E.T. Hester. 2015. Abundance and dimensions of naturally occurring macropores along stream channels and the effects of artificially constructed large macropores on transient storage. *Freshwater Science* 34(1):125-138.

Hester, E.T., K.I. Young, and M.A. Widdowson. 2014. Controls on mixing-dependent denitrification in hyporheic zones induced by riverbed dunes: a steady-state modeling study. *Water Resources Research* 50(11):9048-9066.

Azinheira, D.L., D.T. Scott, W.C. Hession, and E.T. Hester. 2014. Comparison of effects of inset floodplains and hyporheic exchange induced by in-stream structures on solute retention. *Water Resources Research* 50(7):6168-6190.

Menichino, G.T., and E.T. Hester. 2014. Hydraulic and thermal effects of in-stream structure-induced hyporheic exchange across a range of hydraulic conductivities. *Water Resources Research* 50(6):4643-4661.

Hester, E.T., and E.N. Cranmer. 2014. Variation of hyporheic exchange potential among urban streams and implications for stream restoration. *Environmental & Engineering Geoscience* 20(3):287-304.

Menichino, G.T., A.S. Ward, and E.T. Hester. 2014. Macropores as preferential flow paths in meander bends. *Hydrological Processes* 28(3):482-495.

Hester, E.T., K.I. Young, and M.A. Widdowson. 2013. Mixing of surface and groundwater induced by riverbed dunes: implications for hyporheic zone definitions and pollutant reactions. *Water Resources Research* 49:5221–5237.

Hester, E.T., and J.C. Little. 2013. Measuring environmental sustainability of water in watersheds. *Environmental Science & Technology* 47(15):8083-8090. Article featured on the cover of August 6, 2013, issue.

Hester, E.T., and K.S. Bauman. 2013. Stream and retention pond thermal response to heated summer runoff from urban impervious surfaces. *Journal of the American Water Resources Association* 49(2):328-342.

Hester, E.T. and M.W. Doyle. 2011. Human impacts to river temperature and their effects on biological processes: a quantitative synthesis. *Journal of the American Water Resources Association* 47(3):571-587.

Hester, E.T. and M.N. Gooseff. 2011. Hyporheic restoration of streams and rivers. Chapter in AGU Geophysical Monograph entitled *Stream Restoration in Dynamic Fluvial Systems: Scientific Approaches, Analyses, and Tools* (Simon, A., S.J. Bennett, and J.M. Castro, Eds.).

Hester, E.T. and M.N. Gooseff. 2010. Moving Beyond the banks: Hyporheic restoration is fundamental to restoring ecological services and functions of streams. *Environmental Science & Technology* 44(5):1521-1525. Article featured on the cover of March 1, 2010, issue.

Hester, E.T., M.W. Doyle, and G.C. Poole. 2009. The influence of in-stream structures on summer water temperatures via induced hyporheic exchange. *Limnology and Oceanography* 54:355-367.

Hester, E.T. and M.W. Doyle. 2008. In-stream geomorphic structures as drivers of hyporheic exchange. *Water Resources Research* 44:W03417.

Chervitz S.A., Hester E.T., Ball C.A., Dolinski K., Dwight S.S., Harris M.A., Juvik G., Malekian A., Roberts S., Roe T., Scafe C., Schroeder M., Sherlock G., Weng S., Zhu Y., Cherry J.M., Botstein D. 1999. Using the Saccharomyces Genome Database (SGD) for analysis of protein similarities and structure. *Nucleic Acids Research* 27(1):74-78.

Cherry J.M., Adler C., Ball C., Chervitz S.A., Dwight S.S., Hester E.T., Jia Y.K., Juvik G., Roe T., Schroeder M., Weng S.A., Botstein D. 1998. Saccharomyces Genome Database. *Nucleic Acids Research* 26(1):73-79.

SPONSORED RESEARCH

Chesapeake Bay Trust, $213,857 (PI). "Watershed effects on success of stream restoration for excess nitrogen mitigation". 2020-2024.

U.S. Department of Energy, Subsurface Biogeochemical Research, $200,000 (PI). "Effects of surface water fluctuations and sediment movement on hyporheic zone biogeochemistry and microbial communities." 2020-2023.

Fulbright Core Scholar Program in Taiwan (PI). "Effect of floodplain inundation on river pollution in Taiwan's strong monsoonal climate." 2017-2018.

Office of Surface Mining Reclamation and Enforcement, $200,000 (PI). "Using novel geophysical techniques to relate surface coal mining fill characteristics to effluent stream water quality." 2017-2019.

NSF-GEO-Hydrologic Sciences, $252,411 (PI). "Impact of macropores and soil pipes on hyporheic exchange in streams." 2015-2019.

NSF-ENG-Environmental Engineering, $330,000 (PI). "Natural attenuation of groundwater contaminant plumes in riverbeds: Control by hyporheic mixing." 2014-2019.

Virginia Tech College of Engineering, $32,245 (PI). "Stream Restoration to Clean Up Chesapeake Bay." 2014-2015.

Institute for Critical Technology and Applied Science (ICTAS) at Virginia Tech, $45,000 (co-PI, PI=Durelle Scott). "Floodplain restoration: Balance between nutrient retention and greenhouse gas production." 2014-2015.

Wells Fargo Innovation Grant, $100,000 (PI). "Subsurface imaging: A technology application to aid water management by Appalachian coal mines." 2013-2015.

Jeffress Memorial Trust, $10,000 (PI). "Importance of macropores for hyporheic exchange and function in stream and river ecosystems." Follow-on grant. 2013.

NSF-ENG-Environmental Sustainability, $300,998 (PI). "Helping stream help themselves: Restoring sustainable and distributed water pollution mitigation." 2011-2017.

ICTAS at Virginia Tech, $75,063 (PI). "Helping streams help themselves: Developing a sustainable water pollution mitigation technique." 2011-2013.

Jeffress Memorial Trust, $20,000 (PI). "Importance of macropores for hyporheic exchange and function in stream and river ecosystems." 2011.

Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI) HydroGeoPhysics travel grant, $2,000 (PI). "Use of electrical resistivity imaging to characterize hyporheic flow through macropores." 2011.

NSF-REU Site, $382,000 (research mentor, PI=Vinod Lohani). "Interdisciplinary Water Sciences and Engineering." 2014-2016.

NSF-REU Site, $314, 289 (research mentor, PI=Cully Hession). "Dynamics of Water and Societal Systems – An Interdisciplinary Research Program at the Virginia Tech StREAM Lab." 2012-2014.
NSF-REU Site, $379,519 (research mentor, PI=Vinod Lohani). "Interdisciplinary Water Sciences and Engineering." 2011-2013.

STUDENT RESEARCH ADVISED

PhD: Garrett Menichino (2013), Katherine Santizo (2021), William S. Lotts (2022)

MS: Kalen Bauman (2010), Elizabeth Cranmer (2011), David Azinheira (2013), Katie Young (2013), Christopher Guth (2014), Abenezer Nida (2015), Breeyn Greer (2015), Benjamin Hammond (2015), Masud Rana (2015), Kristen Brooks (2017), Katie Little (2018), Amiana McEwen (2018), Lauren Eastes (2018), Michael Calfe (2019), Carly Federman (2021), Hector Monterroso (2021), Morgan Oehler (current)

Undergraduate Research: Amanda Donaldson (2017 NSF-REU), Dylan Honardoust (2017), Aubrey McCutchan (2016 NSF-REU), Jacob Schlotterer (2016), Alejandra Revilla Cisneros (2014), Kenneth Sears (2013 NSF-REU), Jingjie Chen (2012), Kate Aulenbach (2012 NSF-REU), Victoria Sicking (2011 NSF REU), Katie Young (2011-12), Lei Jiang (2010, 2009), Taylor Priest (2009), Jason Johnson (2007), Myles Killar (2005-7), Meredith Harvill (2006)

PROFESSIONAL SERVICE

Associate Editor, *Water Resources Research*, 2014-2022

Board of Directors, Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI), 2016-2018

Professional Committees:
CUAHSI Standing Committee for Instrumentation (committee chair 2014-2016, committee member 2010-2016), also University Representative for Virginia Tech, 2011-2021

American Society of Civil Engineers (ASCE) Environmental and Water Resources Institute (EWRI) River Restoration Committee (committee member 2014-present)

Short Course: Hydrology Fundamentals, Virginia Department of Environmental Quality, Richmond VA, May 23, 2017

Proposal Review: EPA-USDA, NSF-ENG-Environmental Sustainability, NSF-ENG-Environmental Engineering, NSF-EAR-Hydrologic Sciences, NSF-EAR-Geobiology and Low Temperature Geochemistry, DOE-Office of Science-Subsurface Biogeochemical Research, DOE-EERE-Water Power Technologies Office

Manuscript Review: Advances in Water Resources, Environmental Science & Technology, EOS, Hydrological Processes, Hydrogeology Journal, Hydrology and Earth System Science, Journal of Hydrology, Limnology and Oceanography, Limnology and Oceanography – Fluids and Environments, Nature Water, Reviews of Geophysics, River Research and Applications, Water Resources Research,

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INVITED SEMINARS

Watershed-Scale Effects of Floodplain Restoration on Hydrologic Attenuation and Excess Nitrogen Removal. Washington University, Department of Energy, Environmental & Chemical Engineering, St. Louis, MO, February 23, 2024.

Effects of Floodplain Restoration on Hydrologic Attenuation, Connecting Theory and Practice in the Upper Grande Ronde. Grande Ronde River State of the Science Meeting, La Grande, OR, November 16, 2023.

Watershed Effects on Success of Stream Restoration for Excess Nitrogen Mitigation. Invited panelist to Pooled Monitoring Forum for the Chesapeake Bay. Environment Virginia Symposium, Lexington, VA, March 29, 2023.

River Restoration to Improve Water Quality: Restoring Hyporheic and Floodplain Exchange. University of Connecticut, Department of Natural Resources and the Environment, Storrs, CT, October 5, 2018.

River Restoration to Improve Water Quality: Restoring Hyporheic and Floodplain Exchange. National Taiwan University, Graduate Institute of Environmental Engineering, Taipei, Taiwan, March 26, 2018.

River Restoration to Improve Water Quality: Restoring Hyporheic and Floodplain Exchange. National Taiwan University, Bioenvironmental Systems Engineering, Taipei, Taiwan, March 22, 2018.

River Restoration to Improve Water Quality: Restoring Hyporheic and Floodplain Exchange. University of Hong Kong, Civil Engineering, Hong Kong, China, November 13, 2017.

River Restoration to Improve Water Quality: Restoring Hyporheic and Floodplain Exchange. National Taiwan University, Civil Engineering, Taipei, Taiwan, November 8, 2017.

River Restoration to Improve Water Quality: Restoring Hyporheic and Floodplain Exchange. National Cheng Kung University, Civil Engineering, Tainan, Taiwan, October 24, 2017.

Hydrology fundamentals (short course). Virginia Department of Environmental Quality, Richmond, VA, May 23, 2017.

Urban waterways: Helping urban watersheds help themselves. University of Washington, Department of Civil and Environmental Engineering, Seattle, WA, May 9, 2014.

Urban waterways: Helping urban watersheds help themselves. University of Washington, Center for Urban Waters, Tacoma, WA, May 8, 2014.

Recent research at Virginia Tech: natural attenuation of contaminants upwelling from aquifers to rivers. Virginia Department of Environmental Quality, Richmond, VA, March 11, 2014.

Temperature surges in urban streams from heated storm runoff and bioretention as a possible solution. Appalachian State University, Department of Geology, Boone, NC. May 3, 2013.

Ecohydraulics of streams and rivers in an urbanizing world. University of North Carolina at Charlotte, Department of Engineering Technology, Charlotte, NC. July 12, 2010.

Ecohydraulics of streams and rivers in an urbanizing world. Oregon State University, School of Civil and Construction Engineering, Corvallis, OR. March 11, 2010.

Ecologists and engineers: bridging the divide to solve ecological and environmental issues in streams and rivers. Virginia Commonwealth University, Department of Biology, Richmond, VA. January 25, 2010.

Impact of in-stream structures on hyporheic exchange, temperature, and ecological processes in fluvial systems. Virginia Tech, Department of Civil and Environmental Engineering, Blacksburg, VA. March 10, 2008.

Impact of in-stream structures on surface-subsurface water exchange, temperature, and ecological processes in fluvial systems. Michigan State University, Department of Biological and Agricultural Engineering, East Lansing, MI. February 8, 2008.

NEWSLETTERS, TRADE PUBLICATIONS, AND REPORTS

Hester, E.T., and Welch, S.P. 2023. Research Prospectus: River floodplain restoration effects on channel hydrology with implications for hydropower and hydropower mitigation in the context of climate change. December.

Grant, S.B., H. Zhang, S.V. Bhide, T. Birkland, E. Berglund, A. Dietrich, J.L. Druhan, M. Edwards, S. Entrekin, J. Gomez-Velez, E. Hester, E.M. V. Hoek, E.R. Hotchkiss, D. Jassby, S.S. Kaushal, P. Kumar, K. Lopez, A. Maile-Moskowitz, K. McGuire, S. Mohanty, E.A. Parker, G. Prelewicz, M.A. Rippy, E.J. Rosenfeldt, T. Schenk, K. Schwabe, and P. Vikesland. 2021. Reversing freshwater salinization: A holistic approach. *Advances in Water Research* July-September: 24-28.

Hester, E.T., K.L. Little, J.D. Buckwalter, C.E. Zipper, and T.J. Burbey. 2019. How infiltration hydrology varies among Appalachian coal-mine valley fills. *Reclamation Matters* Spring:37-39.

Hester, E.T., B.M. Greer, C.E. Zipper, and T.J. Burbey. 2016. Using geophysical imaging to track water movement through surface coal mine valley fills. *Reclamation Matters* Spring:36-39.

Science Wednesday: Going with the Flow - Does Stream Restoration Work? *Greenversations*: Official blog of the U.S. Environmental Protection Agency. November 5, 2008. blog.epa.gov/blog/2008/11/05/sw-stream-restoration/

CONFERENCE PRESENTATIONS (selected, last 5 years)

Underline = student from Hester Lab

Bold = student presenter from Hester Lab

Oehler, M., D. Scott, and E.T. Hester. 2024. Watershed-scale effects of floodplain and Stage 0 restoration on nitrate removal. National Stream Restoration Conference, New Orleans, LA. June 25, 2024.

Hester, E.T., S. Welch, C. Federman, L. Goodman, M. Oehler, and D.T. Scott. 2024. Watershed-scale effects of floodplain and Stage 0 restoration on hydrologic attenuation. National Stream Restoration Conference, New Orleans, LA. June 25, 2024.

Hester, E.T., S. Welch, C. Federman, L. Goodman, M. Oehler, and D.T. Scott. 2024. Watershed-scale effects of floodplain and Stage 0 restoration on hydrologic attenuation. River Restoration Northwest, Skamania, WA. February 7, 2024.

Hester, E.T., C. Federman, L. Goodman, and D.T. Scott. 2023. Watershed-scale effects of floodplain and stage 0 restoration on flood attenuation and floodplain exchange. River Restoration Northwest, Skamania, WA. February 8, 2023.

Lotts, W.S., K. Strom, M. Widdowson, and E.T. Hester. 2022. Lost in dune translation: the effects of microbial growth dynamics on hyporheic biogeochemistry beneath moving riverbed dunes. American Geophysical Union Fall Meeting. December 15, 2022.

Hester, E.T., M. Calfe, C. Federman , L. Goodman, and D.T. Scott. 2022. Cumulative impacts of watershed-scale hyporheic stream restoration on nitrate loading to downstream waterbodies. National Stream Restoration Conference, Nashville, TN. August 1, 2022.

Hester, E.T., D.T. Scott, L. Goodman, C. Federman, and N. Kruse Daniels. Translation by David Hisrchman. 2022. Watershed effects on success of stream restoration for excess nitrogen mitigation. Chesapeake Bay Trust Pooled Monitoring Form, June 16, 2022.

Goodman, L., C. Federman, D.T. Scott, and E.T. Hester. 2022. Cumulative effects of stream restoration and watershed characteristics on watershed-scale nitrate removal. World Environmental and Water Resources Congress (American Society of Civil Engineers, Environmental and Water Resources Institute), Atlanta, GA. June 7, 2022.

Hester, E.T., W.S. Lotts, H. Monterroso, K.Strom, and M.W. Widdowson. Effects of microbial growth and death and sediment movement on hyporheic zone biogeochemistry. U.S. Department of Energy Environmental System Science PI Meeting, May 25, 2022.

Hester, E.T., M. Calfe, C. Federman, L. Goodman, and D.T. Scott. 2022. Cumulative effects of multiple stream restoration projects on nitrate removal at the watershed scale. River Restoration Northwest, Skamania, WA. February 9, 2022.

Hester, E.T., W.S. Lotts, H. Monterroso, K. Strom, and M.W. Widdowson. Effects of microbial growth and death and sediment movement on hyporheic zone biogeochemistry. U.S. Department of Energy Environmental System Science PI Meeting, August 18, 2021.

Lotts, W.S., H. Monterroso, K. Strom, M. Widdowson, and E.T. Hester. 2021. Interacting effects of microbial growth and dune translation on hyporheic reactions. American Geophysical Union Fall Meeting. December 15, 2021.

Hester, E.T., M. Calfe, C. Federman, L. Goodman, and D. T. Scott. 2021. Cumulative effects of stream restoration on nitrate removal at the watershed scale: data synthesis and numerical modeling (**invited**). American Geophysical Union Fall Meeting. December 14, 2021.

Lotts, W.S., and E.T. Hester. 2020. Effect of soil pipes on riverbank denitrification during transient hyporheic exchange caused by a peak flow event. American Geophysical Union Fall Meeting. December 11, 2020.

Santizo, K.Y., M.A. Widdowson, and E.T. Hester. 2020. Numerical modeling of an abiotic hyporheic mixing-dependent reaction: Chemical evolution of mixing and reactant production zones. American Geophysical Union Fall Meeting. December 16, 2020.

Lotts, W.S., and E.T. Hester. 2020. Effect of soil pipes on hydrologic exchange between river channels and riparian zone groundwater with implications for nitrate transport. American Society of Agriculture and Biological Engineering Annual International Meeting, Omaha, NE. July 14, 2020.

Hester, E.T., D.T. Scott, D.L. Azinheira, K.E. Brooks, M. Calfe, C. Guth, B. Hammond, A.Y. Lin, and C.W. Tsai. 2020. Can stream and river restoration solve the excess nitrogen problem? River Flow 2020, Delft, Netherlands. July 8, 2020.

PUBLISHED DATA ARCHIVES

Santizo, K. Y., M. A. Widdowson, and E. T. Hester. 2020. Abiotic mixing-dependent reaction in a laboratory simulated hyporheic zone, HydroShare, https://doi.org/10.4211/hs.2fcd4f8978734d0fb0843ff0604929a7.

Lotts, W. S., and E. Hester. 2020. Filling the void: the effect of riverbank streambank soil pipes on transient hyporheic exchange during a peak flow event, HydroShare, https://doi.org/10.4211/hs.fbf812c4d72d4a89b941645ffb69df75.

McEwen, A. M., and E. Hester. 2019. Abundance, distribution, and geometry of naturally occurring streambank soil pipes, HydroShare, https://doi.org/10.4211/hs.deeacf38f730458d87957b8aeeb6f52f.

Hester, E., L. A. Eastes, and M. A. Widdowson. 2019. Effect of surface water stage fluctuation on mixing-dependent hyporheic denitrification in riverbed dunes, HydroShare, https://doi.org/10.4211/hs.4a46c1445fb144a8a03b00d2e338bcfd.

Hester, E., K. L. Little, J. D. Buckwalter, C. E. Zipper, and T. J. Burbey. 2018. Variability of subsurface structure and infiltration hydrology among surface coal mine valley fills, HydroShare, https://doi.org/10.4211/hs.b1d5fd2c2d3e49878d86cb7c2d483d2a.

TEACHING

CEE 2804: Introduction to Civil Engineering
CEE 3314: Water Resources Engineering
CEE 4334: Design of Hydraulic Structures
CEE 5344: Surface Water-Groundwater Interaction