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Education

2005-2012	Ph.D. Ecology	University of Georgia, Athens, GA
2000-2003	M.S. Biology/Ecology	Shippensburg University, Shippensburg, PA
1994-1998	B.S. Biology / Environmental Science	Millersville University, Millersville, PA

Professional appointments

2020-present	Assistant Professor, Department of Biology, University of Louisville
2018-2021	Marie Curie Fellow, Doñana Biological Station, Spanish National Research Council (CSIC)
2018	Project Scientist, Scripps Institution of Oceanography, UCSD (supervisor: Lisa Levin)
2013-2017	Postdoctoral Scholar, Scripps Institution of Oceanography, UCSD (supervisor: Lisa Levin)

Publications

In Review

Naslund, L.C., A.S. Mehring, A.D. Rosemond, S.J. Wenger. (In review) Toward more accurate estimates of greenhouse gas emissions from small reservoirs. *Limnology and Oceanography*

Kurylo, J.S., J. Le, A.S. Mehring, R.F. Ambrose. (In review) Urbanization dampens seasonal variability in soil microclimates and alters its chemical and physical properties in a semi-arid region. *Journal of Urban Ecology*

Published

2023

Robbins, C.J., D.W.P. Manning, H.M. Halvorson, B.C. Norman, R.A. Eckert, A. Pastor, A.K. Dodd, J. Jabiol, E. Bastias, A. Gossiaux, A.S. Mehring. **(2023)** Nutrient and stoichiometry dynamics of decomposing litter in stream ecosystems: A global synthesis. *Ecology* 104(7): e4060.

Robbins, C.J., B.C. Norman, H.M. Halvorson, D.W.P. Manning, E. Bastias, C. Biasi, A.K. Dodd, R.A. Eckert, A. Gossiaux, J. Jabiol, A.S. Mehring, A. Pastor. (**2023**) Nutrient and stoichiometric time series measurements of decomposing coarse detritus in freshwaters. *Ecology* 104(8): e4114.

Feraud, M., S.P. Ahern, E.A. Parker, S. Avasarala, M.B. Rugh, W. Hung, D. Li, L.C. Van De Werfhorst, T. Kefela, A. Hemati, A.S. Mehring, Y. Cao, J.A. Jay, H. Liu, S.B. Grant, P.A. Holden. (**2023**) Stormwater biofilter response to high nitrogen loading under transient flow conditions: ammonium and nitrate fates, and N_2O emissions. *Water Research* 230: 119501

2022

Rippy, M.A., G. Pierce, D. Feldman, B.K. Winfrey, A.S. Mehring, P.A. Holden, R.F. Ambrose & L.A. Levin. (**2022**) Perceived services and disservices of natural treatment systems for urban stormwater: insight from the next generation of designers. *People and Nature* 4: 481-504.

2021

Mehring, A.S., R.M. Martin, C.S. Delavaux, E.B. James, J.J. Quispe, & D. Yaffar. (**2021**) Leaf-cutting ant (*Atta cephalotes*) nests may be hotspots of methane and carbon dioxide emissions in tropical forests. *Pedobiologia* 87-88: 150754.

Herzog, T.L., A.S. Mehring, B.E. Hatt, R.F. Ambrose, L.A. Levin & B.K. Winfrey. (**2021**) Pruning stormwater biofilter vegetation influences water quality improvement differently in *Carex appressa* and *Ficinia nodosa*. *Urban Forestry & Urban Greening* 59: 127004.

Pierce, G., K.S. Gmoser-Daskalakis, K. Jessup, S.B. Grant, A.S. Mehring, B.K.Winfrey, M.A. Rippy, D. Feldman, P. Holden, R.F. Ambrose, & L.A. Levin. (**2021**) University stormwater management within urban environmental regulatory regimes: Barriers to progressivity or opportunities to innovate? *Environmental Management* 67:12-25.

2019

Ge, B., A.S. Mehring & L.A. Levin. (**2019**) Urbanization alters belowground invertebrate community structure in semi-arid regions: a comparison of lawns, biofilters and coastal sage scrub. *Landscape and Urban Planning* 192: 103664

2018

Huang, X., M.A. Rippy, A.S. Mehring, B.K. Winfrey, S.C. Jiang, and S.B. Grant. (**2018**) Shifts in dissolved organic matter and microbial community composition are associated with enhanced removal of fecal pollutants in urban stormwater wetlands. *Water Research* 137:310-323

2017

Welti, N., M. Striebel, A.J. Ulseth, W.F. Cross, S. DeVilbiss, P.M. Glibert, L. Guo, A.G. Hirst, J. Hood, J.S. Kominoski, K.L. MacNeill, A.S. Mehring, J.R. Welter, H. Hillebrand (**2017**) Bridging food webs, ecosystem metabolism, and biogeochemistry using ecological stoichiometry theory. *Frontiers in Microbiology* 8, DOI: 10.3389/fmicb.2017.01298

Mehring A.S., P.L.M. Cook, V. Evrard, S.B. Grant & L.A. Levin (**2017**) Pollution-tolerant invertebrates enhance greenhouse gas flux in urban wetlands. *Ecological Applications* 27:1852-1861.

Parker, E., Rippy, M.A., A.S. Mehring, B. Winfrey, R.F. Ambrose, L.A. Levin, and S.B. Grant (**2017**) The predictive power of clean bed filtration theory for fecal indicator bacteria removal in stormwater biofilters. *Environmental Science & Technology* 51:5703-5712.

2016

Mehring A.S., B.E. Hatt, D. Kraikittikun*, B.D. Orelo, M.A. Rippy, S.B. Grant, J.P. Gonzalez, S.C. Jiang, R.F. Ambrose, & L.A. Levin (**2016**) Soil invertebrates in Australian rain gardens and their potential roles in storage and processing of nitrogen. *Ecological Engineering* 97: 138–143.

2015

Askarizadeh, A., M.A. Rippy, T.D. Fletcher, D. Feldman, J. Peng, P. Bowler, A.S. Mehring, B.K. Winfrey, J.A. Vrugt, A. AghaKouchak, S.C. Jiang, B.F. Sanders, L.A. Levin, S. Taylor and S.B. Grant (**2015**) From rain tanks to catchments: use of low impact development to address hydrologic symptoms of the urban stream syndrome. *Environmental Science & Technology* 49: 11264–11280.

Mehring, A.S. and L.A. Levin (**2015**) Potential roles of soil fauna in improving the efficiency of rain gardens used as natural stormwater treatment systems. *Journal of Applied Ecology* 52: 1445–1454.

Tant, C.J., A.D. Rosemond, A.S. Mehring, K.A. Kuehn and J.M. Davis (**2015**) The role of aquatic fungi in transformations of organic matter mediated by nutrients. *Freshwater Biology* 60: 1354–1363.

Mehring, A.S., K.A. Kuehn, A. Thompson, C.M. Pringle, A.D. Rosemond, M.R. First, and R.R. Lowrance and G. Vellidis (**2015**) Leaf litter nutrient uptake in an intermittent blackwater river: Influence of tree species and associated biotic and abiotic drivers. *Functional Ecology* 29(6): 849–860.

Levin, L.A. and A.S. Mehring (**2015**) Optimization of bioretention systems through application of ecological theory. *WIREs Water* 2: 259-270.

2014

Mehring, A.S., K.A. Kuehn, C.M. Pringle, C.J. Tant, R.R. Lowrance and G. Vellidis (**2014**) Contribution of surface leaf-litter breakdown and forest composition to benthic oxygen demand and ecosystem respiration in a South Georgia blackwater river. *Freshwater Science* 33(2): 377-389.

2013

Mehring, A.S., R.R. Lowrance, A.M. Helton, C.M. Pringle, D.D. Bosch and G. Vellidis (**2013**) Inter-annual drought length governs dissolved organic carbon dynamics in blackwater rivers. *Journal of Geophysical Research: Biogeosciences* 118(4): 1636-1645.

Hopkinson, C.S., A. Covich, C.B. Craft, T.W. Doyle, N. Flanagan, M. Freeman, E. R. Herbert, A. Mehring, J. Mohan, C. Pringle. C. J. Richardson (**2013**) The effects of climate change on natural ecosystems of the Southeast. Pp. 237-270 In K.T. Ingram, K. Dow, L. Carter, and J. Anderson [eds.], Climate of the Southeast United States: Variability, Change, Impacts, and Vulnerability. Island Press, Washington, D.C. ISBN 978-1-61091-509-0.

2011

Mehring, A.S. and T.J. Maret (**2011**) Red maple dominance enhances fungal and shredder growth and litter processing in temporary ponds. *Limnology and Oceanography* 56(3): 1106-1114.

Mehring, A.S. (**2011**) Experimental Design and Statistical Analysis, Pp. 7-35. In G.W. Barrett, T.L. Barrett, S.J. Connelly, A.S. Mehring and J.O. Moree [eds.], Ecology Exercise Book: An Ecosystem Approach. Kendall Hunt Publishing Company, Dubuque, IA. ISBN: 978-0-7575-8718-4.

2010

Allgeier, J.E., A.D. Rosemond, A.S. Mehring and C.A. Layman (**2010**) Synergistic nutrient colimitation across a gradient of ecosystem fragmentation in subtropical mangrove-dominated wetlands. *Limnology and Oceanography* 55(6): 2660-2668.

Grants and Awards

FY2023 USGS 104b Grant Program, award Number: 3200004323-24-059 $37,500
- active 9/1/2023-8/31/2024 (co-PI with Dr. Andrea Gaughan)

Wageningen Institute for Environ. & Climate Research (WIMEK) fellowship €7,900
- Awarded March 15, 2023, project active June-August 2023

FY2022 USGS 104b Grant Program, award Number: 3200004323-23-095 $39,812
- active 9/1/2022-8/31/2023 (co-PI with Dr. Andrea Gaughan)

FY2021 USGS 104b Grant Program, award Number: 3200004323-22-066 $29,436
- active 9/1/2021-8/31/2022 (sole PI)

Marie Sklodowska-Curie Actions Individual Fellowship 799434-FLAMMINGGOS €158,121
- H2020-MSCA-IF-2017. Awarded April 18, 2018, project active 2018-2021

Courses taught

Global Change Ecology (BIOL 440)	-	University of Louisville
Advanced Global Change Ecology (BIOL 644)	-	University of Louisville
Ecosystem Ecology (BIOL 562)	-	University of Louisville
Advanced Ecosystem Ecology (BIOL 662)	-	University of Louisville
Undergraduate Honors Seminar (BIOL 388)	-	University of Louisville
Diversity of Life (BIOL242)	-	University of Louisville
*Tropical Field Ecology	-	Organization for Tropical Studies, Jan. 2017
*Tropical Field Ecology (ECOL 3100)	-	University of Georgia, May-June 2013, 2017
*Tropical Ecology Laboratory (ECOL 3510)	-	University of Georgia, May-June 2013, 2017
*Undergraduate PIRE Program Down Under	-	UCSD, Australia, June-July 2013-2016

* = field course

Students mentored

University of Louisville, Louisville, KY, USA – graduate students

Vincent Cafazo (MS, non-thesis)	– August 2023 – present
Blake Hudson (PhD student)	– January 2023 – present
Nathan Earl (PhD student)	– August 2022 – present
Mark Tierney (PhD student)	– October 2020 – present
Brennan Molique (MS, non-thesis)	– August 2020 – Dec. 2022

University of Louisville, Louisville, KY, USA – undergraduate students

McKenzie Goodwyn	– August 2023 – present
Taylor Cowles	– August 2023 – present
Jacob Webb	– January 2023 – May 2023
John Swartz	– June – August 2022
Danielle Roney	– January 2021 – April 2022

Doñana Biological Station, Seville, Spain (in collaboration with Third Sector International)

Seven Erasmus+ interns mentored for three months each (2018-2019) – Robert Andrew, Lucy Stockton, Noa Ratia, Katey Fisher, Matthew Holroyd, Amy Ferguson, Jaime Carvalho

Scripps Institution of Oceanography, UCSD

Spring 2016, undergraduate student: Jimmy Luong

Fall 2015, undergraduate student: Barbara D. Orelo

Spring 2014, undergraduate student: Diana Kraikittikun

Monash University, Melbourne, Australia

Topic/final paper: "Influence of plant biomass harvest and soil fauna on stormwater biofilter performance", Fall 2015, undergraduate student: Daniel I. Guttman

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Conference presentations

Tierney, M.C., C. Jalink, J.H. Loughrin, S.W. Antle, A.S. Mehring. **2023.** Floating vegetation as a driver of greenhouse gas emissions in small ponds. Kentucky Water Resources Annual Symposium. Lexington, KY, USA, September 15, 2023.

Gaughan, A.E., A.S. Mehring, M. Tierney, M. Cicha, K. Haynes and D. Brown. **2023.** Characterizing Louisville wetlands from above and below to better predict wetland carbon sink-source status. Kentucky Water Resources Annual Symposium. Lexington, KY, USA, September 15, 2023.

Mehring, A.S., and J.J.M. de Klein. **2023**. Synergistic enhancement of sediment methane flux *by Tubifex tubifex* (Annelida: Oligochaeta) and green algae (Chlorella sp.). 9th International Symposium on Non-CO_2 Greenhouse Gases (NCGG9). June 21-23, 2023, Amsterdam, The Netherlands.

M.C. Tierney, J.A. Swartz, J.H. Loughrin, S.W. Antle and A.S. Mehring. **2023**. How does sediment organic matter content mediate the effects of chironomid larvae on benthic greenhouse gas fluxes? 9th International Symposium on Non-CO_2 Greenhouse Gases (NCGG9). June 21-23, 2023, Amsterdam, The Netherlands.

Tierney, M.C., J.A. Swartz, J.H. Loughrin, S.W. Antle and A.S. Mehring. **2022**. How does sediment organic matter content mediate the effects of chironomid larvae on benthic oxygen uptake and nitrous oxide flux? Ohio River Basin Consortium for Research and Education Virtual Symposium, October 6-7, 2022

Tierney, M.C., J.A. Swartz, J.H. Loughrin, S.W. Antle and A.S. Mehring†. **2022**. Does sediment organic matter content mediate the effects of chironomid larvae on benthic nitrous oxide flux? Kentucky Water Resources Annual Symposium. Lexington, KY, USA, September 19, 2022. †=presenter

Tierney, M.C., J.A. Swartz, J.H. Loughrin, S.W. Antle and A.S. Mehring†. **2022**. An assessment of three pathways of greenhouse gas flux in small Kentucky wetlands. Kentucky Water Resources Annual Symposium. Lexington, KY, USA, September 19, 2022.

Mehring, A.S., J.J.M. de Klein, E. Huertas, I. Reche, A.J. Green. **2021**. FLAMMINGGOS: The roles of waterbirds and invertebrates in modulating wetland greenhouse gas emissions. *ASLO 2021 Aquatic Sciences Virtual Meeting*. Palma de Mallorca, Spain, 22–27 June 2021 (virtually).

Mehring, A.S., I. Reche, J.J.M. de Klein, N.A. Ratia, L.E. Stockton, A.J. Green. **2019**. The role of predation by waterbirds in moderating wetland greenhouse gas emissions. *Ecological Society of America 104th Annual Meeting*. Louisville, KY, U.S.A.

Mehring, A.S., B.E. Hatt, M.J. Burns, J. Luong, L.A. Levin. **2017**. Factors influencing heavy metal accumulation in urban Australian biofilters. *4th Symposium on Urbanization and Stream Ecology*. Browns Summit, NC, U.S.A.

Mehring, A.S., P.L.M. Cook, V. Evrard, S.B. Grant, L.A. Levin. **2016**. Enhancement of carbon dioxide, methane, and nitrous oxide flux by oligochaetes and chironomids in urban wetlands. *Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting.* Santa Fe, NM, U.S.A.

Mehring, A.S., L.A. Levin, V. Evrard, S.B. Grant, P.L.M. Cook. **2015**. The contribution of aquatic invertebrates to benthic greenhouse gas flux in urban wetlands. *ASLO Aquatic Sciences Meeting.* Granada, Spain.

Mehring, A.S., R.R. Lowrance, A.M. Helton, G. Vellidis, C.M. Pringle, A. Thompson and D.D. Bosch. **2012**. Effects of drought on dissolved organic carbon (DOC) cycling: Implications of climate change for coastal plain blackwater rivers, USA. *ASLO* Summer Meeting. Otsu, Japan.

Mehring, A.S., D.W. Kemp, D.D. Bosch, R.R. Lowrance, G. Vellidis and C.M. Pringle. **2011**. Another function for cypress knees? Extension of oxic periods in blackwater swamps by bryophytes growing on bald cypress (*Taxodium distichum*). *96th Annual Meeting of the Ecological Society of America*, Austin, TX, U.S.A.

Mehring, A.S., S.R. Davie, G. Vellidis, D.D. Bosch, C.M. Pringle and R.R. Lowrance. **2011**. Modeling dissolved oxygen dynamics in blackwater rivers: The importance of site-specific data and carbon flux parameter complexity. *59th Annual North American Benthological Society Meeting*, Providence, RI, U.S.A.

Mehring, A.S., R.R. Lowrance, A.M. Helton, G. Vellidis, C.M. Pringle and D.D. Bosch. **2010**. Elevated dissolved organic carbon in sub-tropical blackwater rivers may be a result of anoxia rather than an explanation for it. *58th Annual North Benthological Society Meeting*, Santa Fe, NM, U.S.A.

Invited presentations*

Mehring, A.S., A.E. Gaughan, M.C. Tierney, M. Cicha, K. Haynes, D. Brown. **2023.** The carbon balance of ponds and wetlands. Wageningen University and Research Centre - AEW Seminar Series, July 6, 2023, Wageningen, Netherlands.

Mehring, A., A. Gaughan, M. Tierney+, M. Cicha*, K. Haynes*, and D. Brown. **2023.** The carbon balance of ponds and wetlands. Presented at the Salt Water Rivershed Conference, February 23, 2023, Louisville, KY.

Mehring, A.S., **2023.** Zoogeochemistry and the effects of animals on wetland greenhouse gas emissions. Murray State University - Department of Biological Sciences Seminar Series. Murray, Kentucky, USA, April 14th, 2023.

Mehring, A.S., **2022**. Zoogeochemistry and the effects of animals on wetland greenhouse gas emissions. Eastern Kentucky University - Department of Biological Sciences Seminar Series. Richmond, Kentucky, USA, March 25th, 2022.

Mehring, A.S., J.J.M. de Klein, I. Reche, P. Hortas, E. Huertas, J.A. Carbonell, H.C. Liedtke, A.J. Green. **2021**. FLAMMINGGOS: The roles of waterbirds, invertebrates, and carbon and nutrient subsidies in modulating wetland greenhouse gas emissions. LIFE Wetlands4Climate Networking Event (online - hosted by Fundación Global Nature and Universitat de València, December 20, 2021).

Mehring, A.S. **2021**. FLAMMINGGOS: The roles of waterbirds and invertebrates in modulating wetland greenhouse gas emissions. *Winthrop University – Biology Departmental Seminar Series*, Rock Hill, SC, U.S.A. February 3, 2021.

Mehring, A.S. **2020**. FLAMMINGGOS: The roles of waterbirds, invertebrates, plants, and microbes in modulating wetland greenhouse gas emissions. *Missouri Western State University – Aquatic Ecology guest lecture*, St. Joseph, MO, U.S.A. September 23, 2020.

Mehring, A.S., J.J.M. de Klein, I. Reche, N.A. Ratia, L.E. Stockton, A.J. Green. **2019**. FLAMMINGGOS: The roles of waterbirds and invertebrates in modulating wetland greenhouse gas emissions. *Wageningen University and Research Centre Seminar Series*, Wageningen, Netherlands. September 5, 2019.

Mehring, A.S. **2017**. Sources and loads of heavy metals, nitrogen, and phosphorus in urban environments, and the optimization of biofilters to treat them. *Reaching for Resilience: Imagining Regional Stormwater Neutrality*. San Diego Coastkeeper, San Diego, CA, U.S.A. December 11, 2017.

Mehring, A.S. **2016**. Greenhouse gas flux in constructed wetlands. *California Stormwater Quality Association (CASQA) 12th Annual Conference "Stormwater Evolution: Source to Resource"*. Panel member at the Stormwater Management Training Workshop entitled "Stormwater Management Through Natural Treatment Systems". San Diego, CA, USA. Sept. 12, 2016.

Mehring, A.S. **2015**. The ecology of natural stormwater treatment systems. *Southern California Coastal Water Research Project (SCCWRP) – Fall 2015 Seminar Series.* Costa Mesa, CA, USA. November 13, 2015.

Mehring, A.S. **2013**. Carbon, nutrient and oxygen dynamics in blackwater rivers of the western upper Suwannee River basin. *Scripps Institution of Oceanography – Ecology Seminar Series.* La Jolla, CA, USA. December 4, 2013.

Mehring, A.S. **2012**. The World Water Crisis. *ASLO, Aquatic Sciences Meeting – Opening Symposium on climate change.* Otsu, Japan. July 8, 2012.

Service and Outreach*

Reviews for:

Agronomy; Aquatic Ecology; *Diversity*; *Ecological Restoration*; *Entomologia Experimentalis et Applicata*; *Estuarine, Coastal and Shelf Science*; *Freshwater Biology*; *Freshwater Science*; *Journal of Environmental Quality*; *Limnology & Oceanography*; *PloS ONE*; *Scientific Reports*; *Science of the Total Environment*; *Water, Air, & Soil Pollution*; *Water Research*

Special Session Organizer and Chair, *ASLO 2021 Aquatic Sciences Virtual Meeting*. June 2021
"SS79 New perspectives on the functional roles of fauna in wetlands, lakes, and other aquatic ecosystems" 22–27 June 2021

San Diego, CA

Co-led (with Lisa Levin) three workshops at Ocean View Growing Grounds 2014 – 2017
(urban community garden) on invertebrate zoology, the ecology of gardening,
and the importance of stormwater capture

**** With the exception of Education and Professional Appointments, listed activities in all sections are since 2010***