

Ember M. Morrissey

Division of Plant and Soil Sciences
West Virginia University
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A.) PROFESSIONAL PREPARATION:

Virginia Commonwealth University, Integrative Life Sciences PhD, 2014

University of Maryland, Biology BS, 2007

B.) APPOINTMENTS:

Assistant Professor (2016-present)

Division of Plant and Soil Sciences, West Virginia University, Morgantown, WV

Postdoctoral Fellow (2014- 2015)

Center for Ecosystem Science and Society, Northern Arizona University, Flagstaff, AZ

Doctoral Student (2009 - 2014)

Integrative Life Sciences PhD Program, Virginia Commonwealth University, Richmond, VA

Research Specialist (2007-2009)

Department of Pharmacology, Virginia Commonwealth University, Richmond, VA

Undergraduate Laboratory Assistant (2003-2005)

Department of Biology, University of Pittsburg, Pittsburg, PA

C.) GRANTS:

- 1) NSF Early-concepts Grants for Exploratory Research (\$150,000), 2016-2017, *Leveraging advances in stable isotope probing to investigate phylogenetic organization in prokaryotic activity*
- 2) NSF Doctoral Dissertation Improvement Grant (\$15,000), 2012-2014, *Evaluating the functional significance of microbial community composition associated with nitrogen cycling in fresh and saltwater wetlands*

D.) AWARDS:

- 1) Mäkelä-Cassell Award (\$5,000) *Prestigious travel award sponsored by the Federation of European Microbiological Societies and the American Society for Microbiology to enable future leaders in the field to travel overseas and present their research.*

- 2) Philanthropic Educational Organization, PEO Scholar Award (\$7,500), 2013
Provides financial support to women pursuing doctoral degrees.
- 3) Sigma Xi Award for best poster presentation, VCU Rice Center Research Symposium (2013)
- 4) VCU Rice Center Graduate Student Research Award (\$2,000), 2013-2014
- 5) Society of Wetland Scientists, South Atlantic Chapter Student Travel Award (\$500), 2012
- 6) VCU Rice Center Graduate Student Research Award (\$2,000), 2012-2013
- 7) Society of Wetland Scientists Student Research Grant (\$1,000), 2011-2012
- 8) VCU Rice Center Graduate Student Research Award (\$1,500), 2011-2012
- 9) Coastal and Estuarine Research Federation (CERF) Student Travel Award (\$235), 2011
- 10) FEMS Young Scientist Meeting Grant (\$500), 2011
- 11) VCU Integrative Life Sciences Student Travel Award (\$500), 2011
- 12) VCU Graduate School Student Travel Award (\$400), 2011
- 13) VCU Rice Center Graduate Student Research Award (\$3,000), 2010-2011

E.) PEER-REVIEWED PUBLICATIONS:

- 1) Coldren GA, Barreto C, Wykoff D, **Morrissey E**, Langley AJ, Feller IC, Chapman SK (2016). Chronic warming stimulates growth of marsh grasses more than mangroves in a coastal wetland ecotone. *Ecology*. doi:10.1002/ecy.1539
- 2) Schwartz E, Hayer M, Hungate BA, Koch B, McHugh TA, Mercurio W, **Morrissey EM**, Soldanova K (2016). Stable isotope probing with ¹⁸O-water to investigate microbial growth and death in environmental samples. *Current Opinions in Biotechnology*.
- 3) **Morrissey EM**, Mau RL, Schwartz E, Caporaso JG, Dijkstra P, van Gestel N, Koch BJ, Liu CM, Hayer M, Mc Hugh TA, Marks JC, Price LB, Hungate BA (2016). Phylogenetic organization of bacterial activity. *The ISME Journal*. doi:10.1038/ismej.2016.28
- 4) **Morrissey EM**, Franklin RB (2015) Evolutionary history influences the salinity preference of bacterial taxa in wetland soils. *Frontiers in Microbiology*,6.
- 5) Hungate BA, Mau RL, Schwartz E, Caporaso JG, Dijkstra P, van Gestel N, Koch BJ, Liu CM, McHugh TA, Marks JC, **Morrissey EM**, Price LB (2015) Quantitative microbial ecology through stable isotope probing. *Applied and Environmental Microbiology*. 81, 7570-7581.
- 6) McHugh TA, **Morrissey EM**, Reed SC, Hungate BA, Schwartz E. (2015) Water from air: an overlooked source of moisture in arid and semiarid regions. *Scientific Reports*.

- 7) **Morrissey EM**, McHugh TA, Preteska L, Hayer M, Dijkstra P, Hungate BA, Schwartz E. (2015) Dynamics of extracellular DNA decomposition and bacterial community structure in relation to soil mineralogy. *Soil Biology and Biochemistry*. 86:42-49.
- 8) **Morrissey EM**, Franklin RB (2015). Resource effects on denitrification activity are mediated by community composition in tidal freshwater wetlands. *Environmental Microbiology*.17:1520-1532.
- 9) **Morrissey EM**, Gillespie JL, Morina JC, Franklin RB (2014) Salinity affects microbial activity and soil organic matter content in tidal wetlands. *Global Change Biology*. 20:1351-1362.
- 10) **Morrissey EM**, Berrier DJ, Neubauer SC, Franklin RB (2014) Using microbial communities and extracellular enzymes to link soil organic matter characteristics to greenhouse gas production in a tidal freshwater wetland. *Biogeochemistry*. 117:473-490.
- 11) **Morrissey EM**, Jenkins AS, Brown BL, Franklin RB (2013) Resource availability effects on nitrate-reducing microbial communities in a freshwater wetland. *Wetlands*. 33:301-310.
- 12) Negus SS, **Morrissey EM**, Folk JE, Rice KC (2012) Interaction between mu and delta opioid receptor agonists in an assay of capsaicin-induced thermal allodynia in rhesus monkeys. *Pain Research and Treatment*. 867067-867067.
- 13) Negus,SS, Connell RO, **Morrissey EM**, Chang K (2012) Effects of peripherally restricted kappa opioid receptor agonists on pain-related stimulation and depression of behavior in rats. *Journal of Pharmacology and Experimental Therapeutics*. 340:501-509.
- 14) Negus SS, **Morrissey EM**, Rosenberg M, Cheng K, Rice KC (2010) Effects of kappa opioids in an assay of pain-depressed intracranial self-stimulation in rats. *Psychopharmacology*. 10:149-59.

F.) SCIENTIFIC PRESENTATIONS:

- 1) **Morrissey EM**, Mau RL, Schwartz E, Dijkstra P, Koch BJ, McHugh TA, Marks JC, Hungate BA, (poster - August 2016) Connecting taxon specific microbial activities with soil carbon cycling dynamics. Ecological Society of America Meeting, Fort Lauderdale, FL
- 2) Franklin RB, **Morrissey EM**, Neubauer SC (oral - August 2016) Linking microbial ecology and soil biogeochemistry in tidal freshwater wetlands. Ecological Society of America Meeting, Fort Lauderdale, FL
- 3) **Morrissey EM**, Franklin RB (poster - August 2015) Salinity preference of wetland microbial communities is phylogenetically clustered. Ecological Society of America Meeting, Baltimore, MD
- 4) **Morrissey EM**, Hungate BA, Mau RL, Schwartz E, Caporaso JG, Dijkstra P, van Gestel N, Koch BJ, Liu CM, McHugh TA, Marks JC, Price LB (oral - June 2015) Taxon-specific

growth rates are related to phylogeny in soil bacterial communities. FEMS Congress, Maastricht, NL

- 5) **Morrissey EM**, Franklin RB (poster - June 2015) Evolutionary history influences the salinity preference of bacterial taxa in wetland soils. FEMS Congress, Maastricht, NL
- 6) **Morrissey EM**, McHugh TA, Preteska L, Hayer M, Dijkstra P, Hungate BA, Schwartz E. (poster - December 2014) Dynamics of extracellular DNA decomposition and bacterial community structure in relation to soil mineralogy. American Geophysical Union Conference, San Francisco, CA
- 7) **Morrissey EM**, Berrier DJ, Neubauer SC, Franklin RB (poster - May 2013) Using microbial communities and extracellular enzymes to link soil organic matter characteristics to greenhouse gas production in a tidal freshwater wetland. VCU Rice Center Research Symposia, Richmond, VA
- 8) **Morrissey EM**, Franklin RB (oral - August 2012) Integrating the ecology, structure, and function of denitrification and DNRA microbes in freshwater wetlands. Ecological Society of America Meeting, Portland, OR
- 9) **Morrissey EM**, Morina JC, Gillespie JL, Franklin RB (oral - June 2012) Community dynamics of denitrification and DNRA microorganisms in tidal wetlands. INTECOL International Wetlands Conference, Orlando, FL
- 10) Morina JC, **Morrissey EM**, Franklin RB (poster - June 2012) Species-specific effects of vegetation on the abundance of denitrifying bacteria in freshwater wetlands. INTECOL International Wetlands Conference, Orlando, FL
- 11) **Morrissey EM**, Morina JC, Gillespie JL, Franklin RB (oral - March 2012) Piecing together how soil organic matter dynamics influence the community structure of denitrification and DNRA organisms in tidal wetlands. Annual Meeting, Mid-Atlantic Chapter of the Ecological Society of America, Virginia Tech, Blacksburg, VA **Also presented at Rice Center Research Symposia (May 2012)*
- 12) **Morrissey EM**, Jenkins AS, Brown BL, Franklin RB (oral - November 2011) Microbial munchies, how carbon lability determines the fate of nitrate in wetlands. Coastal & Estuarine Research Federation Conference, Daytona Beach, FL
- 13) **Morrissey EM**, Jenkins AS, Brown BL, Franklin RB (poster - April 2011) Resource availability drivers on nitrogen cycling functional groups in a freshwater wetland. Ecology of Soil Microorganisms Conference, Prague, Czech Republic
- 14) **Morrissey EM**, Jenkins AS, Brown BL, Franklin RB (oral - March 2011) Linking resource availability to the structure and function of microbial nitrate reducers in freshwater wetlands. Annual Meeting, Mid-Atlantic Chapter of the Ecological Society of America, Montclair State University, Montclair, NJ. **Also presented at Rice Center Research Symposia (May 2011), Virginia Academy of Science (May 2011)*

G.) TEACHING EXPERIENCE:

WVU, Instructor (January 2016 – present)

- *Applied and Environmental Microbiology 341, General Microbiology*

VCU, Graduate Student Instructor (August 2010 - May 2013)

- *Biology 467 Capstone Laboratory, 4 semesters.*
- *Life Sciences 101, Introduction to Life Science, 2 semesters.*

Guest Lecturer

- *NAU, Biology 567 Microbial Ecology, Spring 2015*
- *VCU, Biology 467 Capstone, Fall 2013*

H.) SYNERGISTIC ACTIVITIES:

Virginia School for the Deaf and Blind Outreach Project (May 2012 - November 2012)

- Worked on a graduate-student organized environmental science immersion weekend for high school students from Virginia's school for the Deaf and Blind.

Graduate Organization of Biology Students, Vice President (August 2011- August 2012)

- Worked with other officers to promote the academic and professional development of biology graduate students. This was achieved by organizing workshops and seminar events that connect students with faculty and university resources.

Chesapeake Bay Anadromous Fish Outreach Project (January 2011 - May 2012)

- Worked collaboratively with other graduate students and university staff on a NOAA-funded outreach project to involve Prince George High School students in anadromous fish data analysis.

Society Memberships

- American Society for Microbiology (ASM), American Geophysical Union (AGU), Society of Wetland Scientist (SWS), Society for Anaerobic Microbiology (SAM), Coastal and Estuarine Research Federation (CERF), Ecological Society of America (ESA), Alpha Epsilon Lambda Honor Society (AEL)

Scholarly Service

- Ad Hoc reviewer for *Wetlands, Soil Biology and Biochemistry, Ecology, PLOS one, Pedobiologia, Ecological Engineering, Frontiers in Ecology and the Environment.*
- Judge for undergraduate poster presentation awards, Annual Meeting of the Mid-Atlantic Chapter of the Ecological Society of America, Montclair, NJ (2011)
- Student Volunteer, INTECOL International Wetlands Conference, Orlando, FL (2012)
- Acknowledgement in manuscripts published in *Biogeosciences* and *Wetlands*

I.) COLLABORATORS:

Dr. Egbert Schwartz - Professor, ebgert.schwartz@nau.edu, NAU ECOSS
Dr. Paul Dijkstra - Research Faculty, paul.dijkstra@nau.edu, NAU ECOSS
Dr. George Koch - Professor, george.koch@nau.edu, NAU Biology, ECOSS
Dr. Theresa McHugh - Postdoctoral Fellow, theresa.mchugh@nau.edu, NAU ECOSS
Dr. Scott Neubauer - Assistant Professor, sneubauer@vcu.edu, VCU Biology
Dr. Bonnie Brown - Associate Chair, blbrown@vcu.edu, VCU Biology
Dr. Stevens Negus - Professor, ssnegus@vcu.edu, VCU Pharmacology
Dr. Steve Blazewicz - Researcher, blazewicz@llnl.gov, Lawrence Livermore NL
Dr. Xavier Mayali - Researcher, mayali2@llnl.gov, Lawrence Livermore NL

Dissertation Advisor:

Dr. Rima Franklin - Associate Professor of Biology, rbfranklin@vcu.edu, VCU

Postdoctoral Advisor:

Dr. Bruce Hungate - Professor of Biology, Director of Center for Ecosystem Science and Society, bruce.hungate@nau.edu, NAU

Mentees:

Joseph Morina (morinajc@vcu.edu) - May 2011 - December 2013, Undergraduate researcher
Susan Chong (chongs@vcu.edu) - January 2013- July 2013, Independent study student
Chansotheary Dang (dangc@vcu.edu) - May 2011- April 2013, Undergraduate research assistant
David Berrier (djberrier@vcu.edu) - January 2011 - December 2013, Laboratory Technician