MARISSA LEE

Motivated researcher and data scientist, well-versed in problem-solving and project management with domain knowledge in plant-microbe biology and statistical applications. Ready to apply over 10 years of experience in computational, lab, and field research to promote data-driven solutions to global challenges.

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EXPERIENCE

North Carolina State University, Raleigh, NC   Sept 2018 to Present
Postdoctoral Researcher, PI: Christine V. Hawkes
- Led state-wide survey of switchgrass microbiomes to improve biofuel production, generating two peer-reviewed publications and counting
- Developed and improved computational and lab protocols, e.g., phylogenetic analysis, PCR amplification clamps, seedling assays

The George Washington University, Washington, DC   Sept 2016 to Aug 2018
Postdoctoral Researcher, PI: Amy E. Zanne
- Designed bioinformatic analyses for complementary microbiome field studies in St. Louis, MO, USA and Hawkesbury, NSW, Australia
- Applied and adapted bioinformatic and statistical tools for microbiome analysis
- Translated cutting-edge statistical tools for ecologists interested in microbial interactions

Duke University, Durham, NC   Jun 2010 to May 2016
Environmental Protection Agency-STAR Fellow, Advisor: Justin P. Wright
- Designed, funded, and ran research on the role of invasive plants in soil fertility
- Spear-headed a published meta-analysis with researchers at more than 8 universities

Teaching Assistant   Jan 2011 to May 2014
- Graded, facilitated in-class activities, and led discussion or lab sections for 5 courses

Indiana University, Bloomington, IN   May 2009 to May 2010
Research Technician, PI: Richard P. Phillips, Keith Clay, S. Luke Flory

EDUCATION

PhD   Duke University, University Program in Ecology   May 2016
Dissertation: "Leaf traits, neighbors, and abiotic factors: Ways that context can mediate the impact of invasive species on nitrogen cycling"

BA   Swarthmore College, Biology   May 2009
Graduated with High Honors
Minored in Religion

PROGRAMING LANGUAGES & TOOLS

R Programing Language, Expert (10 yrs): tidyr, dplyr, ggplot2, lme4, dada2, phyloseq, & others
Python, Beginner (<1 yr)
High Performance Computing (5 yrs)
Git version control (5 yrs)

SKILLS

Creative problem-solver	Use and re-purpose computational tools; engineer field and greenhouse supplies for study purposes
Enthusiastic collaborator	Enjoy working hard with friends to achieve a goal; synthesize views using meta-analysis and cross-disciplinary work
Data "whisperer"	Detect features in big, messy ecological datasets
Statistical "translator"	Translate statistical result to biological meaning
Data communicator & science writer	Publish compelling figures and data-driven narratives

HONORS AND AWARDS

National Science Foundation Doctoral Improvement Grant (2014)
>Awarded funding to extend dissertation research; ~100 awardees per year across US

EPA Science to Achieve Results (STAR) Graduate Fellowship (2013)
>Awarded funding and tuition for EPA-relevant projects; ~100 awardees per year across US

Garden Club of America Wetlands Scholarship (2011)
>Awarded funding for wetland research; one of three recipients across the US

Duke University W.D. Billings Fellowship (2011)
>Awarded graduate tuition and stipend; one awardee per class

SELECTED PUBLICATIONS

Lee, M.R. & Hawkes, C.V. 2021. Widespread co-occurrence of Sebacinales and arbuscular mycorrhizal fungi in switchgrass roots and soils has limited dependence on soil carbon or nutrients. *Plants, People, Planet,* 00: 1-13. DOI: 10.1002/ppp3.10181

Lee, M.R. & Hawkes, C.V. 2020. Plant and soil drivers of whole-plant microbiomes: variation in switchgrass fungi from coastal to mountain sites. *Phytobiomes*, 00: 1-11. DOI: 10.1094/PBIOMES-07-20-0056-FI

Hestrin, R., **Lee, M.R.**, Whitaker, B.K., & Pett-Ridge, J. 2020. The switchgrass microbiome: A review of the structure, function, and taxonomic distribution. *Phytobiomes,* 00: 1-62. DOI: 10.1094/PBIOMES-04-20-0029-FI

Lee, M.R., Oberle, B., Olivias, W., Young, D., & Zanne, A.E. 2019. Wood construction more strongly shapes deadwood microbial communities than spatial location over five years of decay. *Environmental Microbiology,* 22(11): 4702–17. DOI: 10.1111/1462-2920.15212

Lee, M.R., Bernhardt, E.S., van Bodegom, P.M., Cornelissen, J.H.C., Kattge, J., Laughlin, D.C., Niinemets, U., Penuelas, J., Reich, P.B., Yguel, B., & Wright, J.P. 2016. Invasive species' leaf traits and dissimilarity from natives shape their impact on nitrogen cycling: a meta-analysis. *New Phytologist*, 213(1): 128–139. DOI: 10.1111/nph.14115

SELECTED GUEST LECTURES

Lee, M.R. and C. Nell. Version control, tidyR, and R markdown. 17 Sept 2020. Guest lecture for the class "Graduate Seminar – Analyses in R" at George Washington University.

Lee, M.R. Roots: Structure and Function. 5 Mar 2018. Guest lecture for the class "Plant Comparative Structure and Function" at George Washington University.

Lee, M.R. A fresh look at wood-decay fungi: Experimental rot plots and emerging community statistics. 29 Sept 2017. Invited presentation for the Forest GEO Seminar at the Smithsonian Institute