

RACHEL M. PENCZYKOWSKI

Assistant Professor, Department of Biology, Washington University in St. Louis,
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RESEARCH INTERESTS AND APPROACHES

I study effects of ecosystem change on infectious diseases, and effects of diseases on ecosystems.

In one of my current lines of research, I study **effects of climate change on pathogen life history traits and patterns of local adaptation**. Specifically, for pathogens that switch from asexual production of transmission spores to sexual reproduction of overwintering spores, how does climate change (through space or time) affect pathogen genetic diversity, population genetic structure, and local adaptation to hosts? Another line of research focuses on **effects of urbanization on plant-microbe and plant-herbivore interactions**, including effects of warming, heavy metal contamination, habitat fragmentation, and other anthropogenic disturbances. In addition, I study the **processes by which pathogens alter flows of energy and nutrients** through food webs. Much of my research combines theoretical and empirical approaches, and many current projects in my lab use common herbaceous plants (*Plantago* spp.) and their fungal (powdery mildew) pathogens as a tractable model system for observing patterns across environmental gradients and testing hypotheses through lab and field experiments.

ACADEMIC APPOINTMENTS

Assistant Professor 9/2017–Present
Department of Biology
Division of Biology & Biomedical Sciences (DBBS) program affiliations: Evolution, Ecology & Population Biology (EEPB), Plant & Microbial Biosciences (PMB)
Washington University in St. Louis (WashU), MO, USA

Postdoctoral Research Associate 4/2016–8/2017
Department of Integrative Biology
University of Wisconsin, Madison (UW-Madison), WI, USA
Advisor: Anthony R. Ives | arives@wisc.edu

Postdoctoral Researcher 10/2013–4/2016
Metapopulation Research Centre
University of Helsinki, Finland
Advisor: Anna-Liisa Laine | anna-liisa.laine@ie.uuzh.ch

EDUCATION

Ph.D. in Biology 2008–2013
Georgia Institute of Technology (Georgia Tech), Atlanta, GA, USA
Advisor: Meghan A. Duffy | duffymeg@umich.edu
Dissertation: “Interactions between ecosystems and disease in the plankton of freshwater lakes”
Minor: Quantitative Ecology

B.S., with Distinction 2003–2007
University of Wisconsin, Madison, WI, USA
Majors: Biology and Music Performance
Research Advisor: Stephen R. Carpenter | steve.carpenter@wisc.edu

GRANTS

- Tyson Faculty Seed Grant for Interdisciplinary Research (\$20,000): Electromechanical Design for Ecological Research. Lead PI: J. J. Potter. **Co-PI: R. M. Penczykowski**. 2020–2021
- Tyson Faculty Seed Grant for Interdisciplinary Research (\$20,000): Effects of a fungal foliar pathogen on nutrient dynamics in a model food web. **Lead PI: R. M. Penczykowski**. Co-PIs: D. A. Fike and A. M. Koltz. 2018–2021
- Living Earth Collaborative (\$22,775; working group): Quantifying effects of parasites on ecosystem nutrient cycling. Lead PI: A. M. Koltz. **Co-PIs: R. M. Penczykowski, V. O. Ezenwa, S. L. Deem**. 2018–2021
- InCEES (\$30,000): Does climate change affect the interplay between soil microbes and aboveground plant enemies? Lead PI: S. A. Mangan. **Co-PIs: R. M. Penczykowski** and C. Stein. 2017–2021

FELLOWSHIPS

- National Science Foundation Graduate Research Fellowship 2010–2013
- Georgia Tech President's Fellowship 2008–2012

HONORS AND AWARDS

- Best Student Talk Award, Georgia Tech School of Biology retreat 2012
- P.E.O. Scholar Award 2012

PEER-REVIEWED PUBLICATIONS (trainees: *graduate student, **undergraduate)

28. Koltz, A. M., D. J. Civitello, D. J. Becker, S. L. Deem, A. T. Classen, B. T. Barton, M. Brenn-White, Z. E. Johnson, S. Kutz, M. Malishev, D. L. Preston, J. T. Vannatta, **R. M. Penczykowski**, and V. O. Ezenwa. 2022. Sublethal effects of parasitism on ruminants can have cascading consequences for ecosystems. *PNAS*, 119:e2117381119. (**co-last authors**)
27. Lembrechts, J. J., J. van den Hoogen, SoilTemp consortium [>400 authors including **R. M. Penczykowski**], et al. 2022. Global maps of soil temperature. *Global Change Biology*, 28:3110–3144.
26. **Penczykowski, R. M.**, S. R. Hall, M. S. Shocket, J. Housley Ochs, B. C. P. Lemanski**, H. Sundar**, and M. A. Duffy. 2022. Virulent disease epidemics can increase host density by depressing foraging of hosts. *American Naturalist*, 199:75–90.
25. Potter, J. J., S. Tan, and **R. M. Penczykowski**. 2021. Robotany: a portable, low-cost platform for precise automated aerial imaging of field plots. *Methods in Ecology & Evolution*, 12:1860–1866.
24. **Penczykowski, R. M.** and R. D. Sieg. 2021. *Plantago* spp. as models for studying the ecology and evolution of species interactions across environmental gradients. *American Naturalist*, 198:158–176.
23. Duffy, M. A., C. Garcia-Robledo, S. Gordon, N. A. Grant, D. A. Green II, A. Kamath, **R. M. Penczykowski**, M. Rebolleda Gómez, N. Wale, and L. Zaman. 2021. Model systems in ecology, evolutionary, and behavior: A call for diversity in our model systems and discipline. *American Naturalist*, 198:53–68.
22. Ezenwa, V. O., D. J. Civitello, A. T. Classen, B. T. Barton, D. J. Becker, M. Brenn-White, S. L. Deem, S. Kutz, M. Malishev, **R. M. Penczykowski**, D. L. Preston, J. T. Vannatta, and A. M. Koltz. 2021. Response to Charlier et al.: Climate-disease feedbacks mediated by livestock methane emissions are plausible. *Trends in Ecology & Evolution*, 36:578–579.

21. Ezenwa, V. O., D. J. Civitello, B. T. Barton, D. J. Becker, M. Brenn-White, A. T. Classen, S. L. Deem, Z. E. Johnson, S. Kutz, M. Malishev, **R. M. Penczykowski**, D. L. Preston, J. T. Vannatta, A. M. Koltz. 2020. Infectious diseases, livestock, and climate: a vicious cycle? *Trends in Ecology & Evolution*, 35:959–962.
20. Halliday, F. W., **R. M. Penczykowski**, B. Barrès, J. L. Eck, E. Numminen, and A.-L. Laine. 2020. Facilitative priority effects drive pathogen community assembly in a wild-plant pathosystem. *Nature Ecology & Evolution*, 4:1510–1521. (co-first/co-corresponding authors)
19. Ives, A. R., B. T. Barton, **R. M. Penczykowski**, J. P. Harmon, K. L. Kim, K. Oliver, and V. C. Radeloff. 2020. Self-perpetuating ecological-evolutionary dynamics in an agricultural host-parasite system. *Nature Ecology & Evolution*, 4:702–711.
18. **Penczykowski, R. M.**, S. R. Parratt, B. Barrès, S. K. Sallinen, and A-L Laine. 2018. Manipulating host resistance structure reveals impact of pathogen dispersal and environmental heterogeneity on epidemics. *Ecology*, 99:2853–2863.
17. Hite, J. L., **R. M. Penczykowski**, M. S. Shocket, K. Griebel, A. T. Strauss, M. A. Duffy, C. E. Cáceres, and S. R. Hall. 2017. Allocation, not male resistance, increases male frequency during epidemics: a case study in facultatively sexual hosts. *Ecology*, 98:2773–2783.
16. **Penczykowski, R. M.**, B. M. Connolly, and B. T. Barton. 2017. Winter is changing: trophic interactions under altered snow regimes. *Food Webs*, 13:80–91.
15. Parratt, S. R., B. Barrés, **R. M. Penczykowski**, and A-L Laine. 2017. Local adaptation at higher trophic levels: Contrasting hyperparasite-pathogen infection dynamics in the field and laboratory. *Molecular Ecology*, 26:1964–1979.
14. Strauss, A. T., M. S. Shocket, D. J. Civitello, J. L. Hite, **R. M. Penczykowski**, M. A. Duffy, C. E. Cáceres, and S. R. Hall. 2016. Habitat, predators, and hosts regulate disease in *Daphnia* through direct and indirect pathways. *Ecological Monographs*, 86:393–411.
13. Hite, J. L., **R. M. Penczykowski**, M. S. Shocket, A. T. Strauss, P. A. Orlando, M. A. Duffy, C. E. Cáceres, and S. R. Hall. 2016. Parasites destabilize host populations by shifting stage-structured interactions. *Ecology*, 97:439–449.
12. **Penczykowski, R. M.**, A-L Laine, and B. Koskella. 2016. Understanding the ecology and evolution of host–parasite interactions across scales. *Evolutionary Applications*, 9:37–52.
11. Civitello, D. J., **R. M. Penczykowski**, A. Smith, M. S. Shocket, M. A. Duffy, and S. R. Hall. 2015. Resources, key traits, and the size of fungal epidemics in *Daphnia* populations. *Journal of Animal Ecology*, 84:1010–1017.
10. **Penczykowski, R. M.**, E. Walker, S. Soubeyrand, and A-L Laine. 2015. Linking winter conditions to regional disease dynamics in a wild plant-pathogen metapopulation. *New Phytologist*, 205:1142–1152.
9. **Penczykowski, R. M.**, B. C. P. Lemanski, R. D. Sieg, S. R. Hall, J. Housley Ochs, J. Kubanek, and M. A. Duffy. 2014. Poor resource quality lowers transmission potential by changing foraging behaviour. *Functional Ecology*, 28:1245–1255.
8. **Penczykowski, R. M.**, S. R. Hall, D. J. Civitello, and M. A. Duffy. 2014. Habitat structure and ecological drivers of disease. *Limnology & Oceanography*, 59:340–348.
7. Auld, S. K. J. R., **R. M. Penczykowski**, J. Housley Ochs, D. C. Grippi, S. R. Hall, and M. A. Duffy. 2013. Variation in costs of parasite resistance among natural host populations. *Journal of Evolutionary Biology*, 26:2479–2486.
6. Civitello, D. J., **R. M. Penczykowski**, J. L. Hite, M. A. Duffy, and S. R. Hall. 2013. Potassium stimulates fungal epidemics in *Daphnia* by increasing host and parasite reproduction. *Ecology*, 94:380–388.

5. Duffy, M. A., J. Housley Ochs, **R. M. Penczykowski**, D. J. Civitello, C. A. Klausmeier, and S. R. Hall. 2012. Ecological context influences epidemic size and parasite-driven evolution. *Science*, 335:1636–1638.
4. Duffy, M. A., J. M. Housley, **R. M. Penczykowski**, C. E. Cáceres, and S. R. Hall. 2011. Unhealthy herds: indirect effects of predators enhance two drivers of disease spread. *Functional Ecology*, 25:945–953.
3. Thomas, S. H., J. M. Housley, A. N. Reynolds, **R. M. Penczykowski**, K. H. Kenline, N. Hardegree, S. Schmidt, and M. A. Duffy. 2011. The ecology and phylogeny of oomycete infections in *Asplanchna* rotifers. *Freshwater Biology*, 56:384–394.
2. **Penczykowski, R. M.**, S. E. Forde, and M. A. Duffy. 2011. Rapid evolution as a possible constraint on emerging infectious diseases. *Freshwater Biology*, 56:689–704.
1. Kamarainen, A. M., **R. M. Penczykowski**, M. C. Van de Bogert, P. C. Hanson, and S. R. Carpenter. 2009. Phosphorus sources and demand during summer in a eutrophic lake. *Aquatic Sciences*, 71:214–227.

MANUSCRIPTS IN REVIEW (*graduate student, **undergraduate)

Fox*, Q. N., M. J. Bugay*, E. Grant**, O. Shaw**, K. Farah**, and **R. M. Penczykowski**. Phenology of plant reproduction, foliar infection, and herbivory change along an urbanization gradient. In review. Pre-print:

<https://www.biorxiv.org/content/10.1101/2022.03.22.485313v1>

Sieg, R. D., J. K. Hubbard, **R. M. Penczykowski**, M. Williard, and Z. Dwyer. A novel ecological course-based experience to promote field skills during the COVID pandemic. In review.

INVITED SEMINARS AND COLLOQUIA

2021: Disease Evolutionary Ecology Group, Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, Germany (Zoom)

2021: Ecology, Evolution, and Behavior Group, Department of Biology, University of Maryland, College Park, MD (Zoom)

2021: Biology Department, University of Missouri - St. Louis, St. Louis, MO (Zoom)

2020: Department of Biology, Washington University in St. Louis, St. Louis, MO (Zoom)

2020: Ecology and Evolution of Infectious Disease Seminar Series, University of California, Berkeley, Berkeley, CA (Zoom)

2019: Department of Biological Sciences, Purdue University, West Lafayette, IN

2019: Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA

2019: Department of Biology, St. Louis University, St. Louis, MO

2018: Donald Danforth Plant Science Center, St. Louis, MO

2018: Department of Biological Sciences, Southern Illinois University Edwardsville, Edwardsville, IL

2018: School of Biological Sciences, University of Nebraska, Lincoln, NE

2017: Departments of Zoology and Botany, University of Wisconsin - Madison, Madison, WI

2016: Department of Biology, Washington University in St. Louis, St. Louis, MO

2015: Department of Biological Sciences, University of Alabama, Tuscaloosa, AL

2015: Biological Sciences Department, Dartmouth University, Hanover, NH

2015: Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN

2014: Department of Plant Pathology, University of Wisconsin-Madison, Madison, WI

2014: Department of Ecology and Evolutionary Biology, University of Helsinki, Finland

INVITED TALKS

2021: American Society of Naturalists Vice Presidential Symposium, Virtual Asilomar (Zoom)

2019: Wild Plant Pathosystems, Frankfurt, Germany

2019: Symposium, Ecological Society of America, Louisville, KY
2014: Experimental Evolution and Community Dynamics Symposium, Helsinki, Finland

TALKS AT MEETINGS

Aug 2022: Microclimate Ecology & Biogeography, Antwerp, Belgium (attending remotely)
2021: Ecological Society of America (pre-recorded talk with live discussion)
2019: St. Louis Plant-Microbe and Microbiome Meetup Event, St. Louis, MO
2018: Ecological Society of America, New Orleans, LA
2018: Bioforum presentation, Washington University, Department of Biology, St. Louis, MO
2017: St. Louis Ecology, Evolution, and Conservation (SLEEC) Annual Retreat, St. Louis, MO
2016: Wild Plant Pathosystems, Helsinki, Finland (poster)
2016: Ecological Society of America, Ft. Lauderdale, FL
2015: Ecological Society of America, Baltimore, MD
2014: Spatial Evolutionary Epidemiology, Montpellier, France (poster)
2014: Nordic Oikos, Stockholm, Sweden
2013: Ecological Society of America, Minneapolis, MN
2013: Ecology and Evolution of Infectious Disease, State College, PA (poster)
2012: Georgia Tech, School of Biology Retreat, Helen, GA
2012: Ecological Society of America, Portland, OR
2011: Ecological Society of America, Austin, TX
2010: American Society of Limnology and Oceanography, Santa Fe, NM (poster)
2009: Ecological Society of America, Albuquerque, NM
2008: University of Wisconsin-Madison, Center for Limnology, Madison, WI

PUBLIC TALKS

2020: WashU Women in STEM, The Leading Women Research Symposium, St. Louis, MO

WORKSHOP PARTICIPATION

2018: British Ecological Society Spatial Statistics workshop, Glasgow, Scotland
2014: Spatial Evolutionary Epidemiology workshop, Montpellier, France
2011: Ecology and Evolution of Infectious Diseases modeling workshop, Santa Barbara, CA
2010: Enhancing Linkages between Math & Ecology workshop, Kellogg Biological Station, MI

WORKING GROUP LEADERSHIP AND PARTICIPATION

Organizer of St. Louis Urban Ecology and Evolution (St. LUEE) Working Group, begun Fall 2021
Member of WashU Geospatial Working Group, begun Fall 2021
Co-organizer of WashU LEC working group, parasites & ecosystem nutrient cycling, St. Louis, MO
Co-organizer of St. Louis Plant-Microbe & Microbiome (PMM) Meet-up Group, Spring 2019

SCIENTIFIC RESEARCH NETWORK INVOLVEMENT

PlantPopNet contributor (2019–Present): Contributed annual census data to globally distributed model system for population ecology, <https://www.plantpopnet.com/>
PlantPopNet steering committee: elected in spring 2022
SoilTemp contributor (2020–Present): Contributed soil and air temperature data to global database of soil and near-surface temperatures, <https://soiltemp.weebly.com/>
SoilTemp steering committee: elected as North American representative in summer 2021
HerbVar contributor (2021): Contributed data to global research network that aims to describe and understand how and why patterns in plant–herbivore interactions vary across the tree of life and around the world, <https://herbvar.org/>

BugNet contributor (2021): Contributed data to global collaborative research network that aims to better understand the impact of invertebrate herbivores and pathogenic fungi on plant communities and ecosystems, <https://bug-net.org/>

SEMESTER-LONG COURSES TAUGHT AT WASHINGTON UNIVERSITY

BIOL 4195, Disease Ecology, 4 credits, 18–24 undergraduate and 1–7 graduate students,
Spring semesters 2019, 2020, 2021, 2022
BIOL 580, Seminar in Ecology & Evolution, 1 credit, 7–15 graduate students,
Fall semesters 2018, 2019, 2020, 2021

GUEST LECTURES TAUGHT WHILE AT WASHINGTON UNIVERSITY

BIOL 181, First-Year Opportunity: Introduction to Cutting-Edge Research in Biology,
48–74 undergraduates, 10/2018, 10/2019, 11/2020, 11/2021
BIOL 598, Topics in Evolution, Ecology & Population Biology, 9 graduate students, 9/2021
Fontbonne University, BIO 325, Disease Ecology, 14 undergraduates, 10/2020
WashU COVID Course, The Pandemic: Science and Society, >1300 students, 8/2020
BIOL 3220, Woody Plants of Missouri, 10 students, 4/2020
BIOL 524, Ecology & Environmental Science for K-12 Science Teachers at Tyson Research
Center, guest lecturer and leader of lab activity for 28 science teachers, 7/2018

TEACHING EXPERIENCE AT UNIVERSITY OF HELSINKI

Course Co-Coordinator, Population Biology in Fragmented Landscapes, Fall 2014

UNDERGRADUATE STUDENTS MENTORED AT WASHINGTON UNIVERSITY

Annika Fischer, Harris-Stowe State University, Tyson Undergraduate Fellow	Summer 2022
Alana Herr, WashU, Tyson Undergraduate Fellow	Summer 2022
Kylee Kest, WashU, Tyson Undergraduate Fellow	Summer 2022
Allison Rea, WashU, Tyson Undergraduate Fellow	Summer 2022
Lily Goldberg, WashU	Spring 2022
Emma Snyder, WashU	Fall 2021–Spring 2022
Emma Glickert, WashU, BIOL 500	Fall 2021–Spring 2022
Avery McCammon, WashU, Tyson Undergraduate Fellow	Summer 2021
Lawton Blanchard, WashU, Tyson Undergraduate Fellow	Summer 2021
Jaimie Lin, WashU	Spring 2021–Spring 2022
Rida Qureshi, WashU	Spring 2021
Aaron Morris, WashU, BIOL 200	Spring 2021
Keiko Farah, WashU, Tyson Undergraduate Fellow	Summer 2020–Fall 2021
Olivia Shaw, WashU, Tyson Undergraduate Fellow	Summer 2020–Fall 2020
Joshua Helle, Lawrence University	Summer 2020
Michelle Pollowitz, WashU, Tyson Undergraduate Fellow, BIOL 500	Spring 2020–Spring 2021
Selaam Dollisso, WashU	Fall 2019–Spring 2020
Taewon Lee, WashU, Tyson Undergraduate Fellow	Summer 2019–Spring 2020
Armando Sanchez-Conde, WashU, BIOL 500	Summer 2019–Spring 2021
Laura Goh, WashU, Tyson Undergraduate Fellow	Summer 2019
Elly Grant, WashU, Tyson Undergraduate Fellow, BIOL 500	Spring 2019–Spring 2020
Emma Waltman, WashU, Tyson Undergraduate Fellow, BIOL 500	Spring 2019–Spring 2020
Akosua Sarfo, WashU, BIOL 500	Spring 2019–Spring 2020
Jack Steffy, WashU	Spring 2019
Imani Jones, WashU	Fall 2018–Spring 2020

Sabrina Talir, Mount Holyoke, Tyson Undergraduate Fellow	Summer 2018/19, Dec–Jan 2020
Arjun Puri, WashU, Tyson Undergraduate Fellow	Summer 2018
Sheena Stevens, Univ. Missouri St. Louis, Tyson Undergraduate Fellow	Summer 2018
Rachel Fan, WashU, BIOL 500	Fall 2017–Spring 2019
Austin Chen, WashU, Tyson Undergraduate Fellow	Fall 2017–Spring 2020

UNDERGRADUATE SENIOR THESES SUPERVISED AT WASHINGTON UNIVERSITY

2021: Michelle Pollowitz, "Microhabitat factors affect plant disease in urban and suburban ecosystems"
 2020: Elly Grant, "Effects of disease and mowing on growth and reproduction of two *Plantago* species"

UNDERGRADUATE STUDENTS MENTORED AT PREVIOUS INSTITUTIONS

University of Wisconsin-Madison

Manika Luhano, UW-Madison, BIO 152 Independent Research	Fall 2016–Spring 2017
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University of Helsinki

Suvi Sallinen, Ecological Training Program & M.Sc. Thesis Research	Summer 2014–Fall 2016
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Georgia Tech

Brian Lemanski, Colgate University, NSF REU Program	Summer 2012
Alison Burger, Georgia Tech	Spring 2011
Hema Sundar, Georgia Tech	Spring 2011–Spring 2012
Abigail Reynolds, Georgia Tech	Spring 2009–Fall 2010
Grace Wilkinson, St. Olaf College, NSF REU Program	Summer 2009

HIGH SCHOOL STUDENTS MENTORED

Hanna Jachna, Tyson Environmental Research Apprenticeship	Summer 2022
Maddie Rhodes, Tyson Environmental Research Apprenticeship	Summer 2022
Fyle Fyle, Tyson Environmental Research Apprenticeship	Summer 2021
Jacob Cummings, Tyson Environmental Research Apprenticeship	Summer 2021
Bernadette Bergman, Tyson Environmental Research Apprenticeship	Summer 2019
Vlada Gladun, Tyson Environmental Research Apprenticeship	Summer 2019
Kate Pogue, Tyson Environmental Research Apprenticeship	Summer 2019

PHD STUDENTS MENTORED

Mahal Bugay, WashU, EEPB	Fall 2020–Present
Quinn Fox, WashU, EEPB	Fall 2020–Present
Rachel Becknell, WashU, EEPB	Spring 2019–Spring 2021
Philippa Tanford, WashU, EEPB	Fall 2019–Present

PHD ROTATION STUDENTS MENTORED

Cheyenne Anderson, WashU, PMB	Spring 2022
Ryan Valdez, WashU, PMB	Spring 2020
Mahal Bugay, WashU, EEPB	Fall 2019
Quinn Fox, WashU, EEPB	Summer–Fall 2019
Philippa Tanford, WashU, EEPB	Spring–Summer 2019
David Henderson, WashU, EEPB	Fall 2018
Rhiannon Vargas, WashU, EEPB	Fall 2018

PHD THESIS ADVISORY COMMITTEES

James Medina	Fall 2022
Kiona Elliott, WashU, PMB	Spring 2022–Present
Marshall Wedger, WashU, EEPB	Fall 2021–Spring 2022
Elizabeth Green, University of North Carolina at Chapel Hill	Fall 2020–Present
Rhiannon Vargas, WashU, EEPB	Fall 2020–Present
David Henderson, WashU, EEPB	Fall 2020–Present
Winston Anthony, WashU, Molecular Cell Biology	Fall 2018–Present
James Lucas, WashU, EEPB	Fall 2018–Present
Rachel Becknell, WashU, EEPB	Fall 2017–Spring 2021
Christopher Catano, WashU, EEPB	Spring 2018–Spring 2019
Dilys Vela, WashU, EEPB	Spring 2018–Spring 2019
Holly Bernardo, WashU, EEPB	Spring 2018–Summer 2018

QUALIFYING EXAM COMMITTEES

Anna Wassel, WashU, EEPB	Spring 2022
Elizabeth Green, University of North Carolina at Chapel Hill	Fall 2021
Emma Frawley, WashU, EEPB	Spring 2021
David Henderson, WashU, EEPB	Spring 2020
Rhiannon Vargas, WashU, EEPB	Spring 2020
P. M. Shreenidhi, WashU, EEPB	Spring 2019
James Medina, WashU, EEPB	Fall 2018
James Lucas, WashU, EEPB	Fall 2018

ADDITIONAL INTERDISCIPLINARY ACTIVITIES AT WASHINGTON UNIVERSITY

Environmental Studies affiliated faculty member
Living Earth Collaborative Biodiversity Fellow
Project mentor for MEMS 411 Mechanical Engineering Design Project, Fall 2018

PROFESSIONAL SERVICE

Reviewer for: *American Naturalist*, *BMC Ecology*, *Conservation Biology*, *Ecology*, *Ecology and Evolution*, *Ecology Letters*, *Environmental Microbiology*, *Evolution*, *Evolutionary Applications*, *Food Webs*, *Freshwater Biology*, *Hydrobiologia*, *Journal of Animal Ecology*, *Journal of Ecology*, *Limnology and Oceanography*, *Molecular Ecology*, *Nature Ecology and Evolution*, *New Phytologist*, *Oecologia*, *Oikos*, *PLOS ONE*, *PNAS*, *Proceedings B*, *Trends in Ecology & Evolution*

External grant reviewer for National Science Foundation and European Research Council

Panelist for NSF DEB program (in-person panel Fall 2019)

Faculty mentor for St. Louis chapter of Ecological Society of America Strategies for Ecology Education, Diversity and Sustainability (ESA SEEDS) program (Fall 2021–Present)

SERVICE AT WASHINGTON UNIVERSITY

Department of Biology

Faculty Search Committee	Fall 2021–Spring 2022
Biology Inclusion Committee	Spring 2019–Present
Organizer/Moderator, "COVID-19 & the WashU Community" panel discussion	03/2020
Organizer, seminar and discussion on "Mental Health Disparities for BIPOC"	12/2020
Spector & Quatrano Award Committee	2019–Present
Biology Major Advisor	Fall 2018–Present

Environmental Biology Major Advisor	Fall 2018–Present
Mentor for undergraduate researchers in BIOL 200/500	Fall 2017–Present
Environmental Biology Curriculum Committee	Fall 2020–Present
Environmental Biology Major Steering Committee	Fall 2017–Present
Judge for BioSURF applications	Spring 2019
Judge for Marian Smith Spector Prize for Undergraduate Senior Honors Thesis	Spring 2018

Evolution, Ecology & Population Biology Program (Div. of Biology & Biomedical Sciences)

EEPB Admissions Committee	Fall 2017–Present
EEPB Steering Committee	Fall 2017–Present
EEPB Spring Symposium Planning Committee	2020–Present
EEPB Graduate Program Improvement Sub-committee	Spring 2018–Present
EEPB Qualifying Exam Committee	2018–2019

Plant & Microbial Biosciences Program (Div. of Biology & Biomedical Sciences)

PMB Breakfast Faculty Presentation	Fall 2018
Interviewer for PMB PhD applicants	Spring 2019, 2020, 2021

Tyson Research Center (College of Arts & Sciences)

Mentor for student presentations at WashU Undergraduate Research Symposium
 Fall 2018 (1 poster), Fall 2019 (4 posters), Fall 2020 (1 poster), Fall 2021 (1 poster)

Mentor for summer undergraduate research fellows ("Plant Disease Team")
 2018 (4 students), 2019 (4 students), 2020 (3 students), 2021 (2 students)

Participant in undergraduate recruitment events (annual; fall semester)	Fall 2017–Present
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Living Earth Collaborative

Living Art Collaborative Design Committee	Spring 2019
Postdoctoral Selection Committee	Fall 2018

SERVICE AT GEORGIA TECH

Judge for Georgia Tech Undergraduate Research Spring Symposium	2013
School of Biology Scientific Retreat Planning Committee	2010
Co-President, Biology Graduate Student Association	2010

OUTREACH ACTIVITIES AT WASHINGTON UNIVERSITY

Urban plant health K-12 activities with School District of University City (UCity):

- Grade-level-specific educational activities implemented through an experiment replicated in gardens of 5 UCity schools (4 elementary schools + 1 middle school) plus 3 additional sites (University City Children's Center pre-K garden, Claver House community garden, and Tyson Research Center garden), begun Spring 2022
- UCity Growing Together Food Garden kick-off event (5/3/2022)

Market Fresh Science at Ferguson Farmers Market (9/7/2019)

Panelist, Tyson Research Ctr. career panel for undergraduate & high school students (7/26/2018)

OUTREACH ACTIVITIES AT PREVIOUS INSTITUTIONS

University of Wisconsin-Madison

Guest Scientist, Junior Science Café, led science career discussions and activities with 5-7th graders (3 x 1.5-hr sessions, Spring 2017)

Workshop Leader, 'College for Kids' limnology workshop for 6th graders (3 wks, Summer 2008)

University of Helsinki

Activity Leader, 'Tiede Tulee Tarhaan' ('Science Goes Kindergarten') biology workshop for kindergarteners (2-3 days each in Fall 2013, 2014, and 2015)

Georgia Tech

Activity Leader, 'Plankton Day' at Piedmont Park Summer Camp. Led urban aquatic ecology activities for children ages 5-11 (1 day, Summer 2009, 2010, 2011)

Guest Scientist, 5th grade class, Warren T. Jackson Elementary School. Led plankton identification activities and discussions about freshwater ecosystems (1 day, Fall 2008)

Guest Scientist, I.B. biology class, Marietta High School. Gave short lectures and guided students in designing urban aquatic ecology group projects (1 day, Spring 2011 and 2013)

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Ecological Society of America

American Phytopathological Society

500 Women Scientists