Renee H. Petipas

Dept. of Plant Pathology
Johnson Hall, Washington State University, Pullman, WA
email: renee.petipas@gmail.com
website: renee-petipas.weebly.com

Appointments & Education

Postdoctoral Fellowships:

USDA-NIFA Postdoctoral Fellowship 2022-2024
Department of Plant Pathology, Washington State University
Advisor: Maren Friesen

Department of Energy Funded-Postdoctoral Researcher 2020-2022
Department of Plant Pathology, Washington State University
PI: Maren Friesen
*

NSF Postdoctoral Fellowship in Biology 2018-2020
Department of Plant Pathology, Washington State University
Advisor: Maren Friesen

PhD: Cornell University, Ithaca, NY 2011-2018
Advisor: Monica Geber
Committee: Anurag Agrawal, Daniel Buckley, Jenny Kao-Kniffen
*

Masters: University of Vermont, Burlington, VT 2008-2011
Advisor: Alison Brody
Committee: Nicholas Gotelli, Truman Young, Terrence Delaney

Bachelors: University of New Hampshire, Durham NH 2003- 2006

Current Appointment

Lecturer **Aug 2024-Present**
Department of Plant Biology, University of Vermont
Advisor: Maren Friesen

Publications

16. **Petipas, R.H.**, A.A. Antoch, A. Eaker, H. Kehlet-Delgado, M.L. Friesen. 2024. Back to the future: Using herbarium specimens to isolate nodule-associated bacteria. Ecology and Evolution 14: e11719.

15. **Petipas, R.H.**, C. Peru, J.M. Parks, M.L. Friesen, C.N. Jack. Prairie soil affects establishment and flowering in wheat but these effects are not mediated by microbes. Canadian Journal of Microbiology 2024 *in press*.

14. **Petipas, R.H.**, H. Kehlet-Delgado, A.A. Antoch, M.L. Friesen. Genome sequences of two *Microvirga* species isolated from nodules found on herbarium specimens collected in 2004 and 2015. Microbiology Resource Announcements 2024 *in press*.

13. **Petipas, R.H.**, S.A. Higgins, C. Koechli, S.J. Depenport, M.A. Geber, D.H. Buckley. 2024. An exploration of how plant and soil characteristics shape the *Hypericum perforatum* microbiome in two habitats. Plant Ecology 225: 555-568.

12. Li, X., **R.H. Petipas**, A.A Antoch, Y. Liu, H.V. Stel, L. Bell-Dereske, D. N. Smercina, S.E. Evans, L.K. Tiemann, M.L. Friesen. 2022. Switchgrass cropping systems affect soil carbon and nitrogen and microbial diversity and activity on marginal lands. GCB Bioenergy 14: 918-940

11. **Petipas, R.H.**, M.A. Geber, J.A. Lau. 2021. Microbe-mediated adaptation in plants. Ecology Letters 24. 1302-1317.

10. **R.H. Petipas***, Jack, C.H.*, J.L. Rowland, T.E. Cheeke, and M.L. Friesen. 2021. Crop Inoculants: Silver Bullet or Microbial Jurassic Park? Trends in Microbiology 29. 299-308.

9. **Petipas, R.H**., A.C. Wruck, M.A. Geber. 2020. Microbe mediated adaptation to limestone barrens is context dependent. Ecology 101. 1-12.

8. Aguillon, S.M., G.F. Siegmund, **R.H. Petipas**, A.G. Drake, S. Cotner, C.J. Ballen. 2020. Gender differences in student participation in an active learning classroom. CBE—Life Sciences Education 19. 1-10

7. Petipas, R.H*, A.W. Bowsher*, C. Bekkerring, C.N. Jack, E.E. McLachlan, R.A. White, B.S. Younginger, L.K. Tiemann, S.E. Evans, M.L. Friesen. 2020. Interactive effects of microbes and nitrogen on *Panicum virgatum* root functional traits and patterns of phenotypic selection. International Journal of Plant Science 181. 20-32.

6. Ballen, C.J., S.M. Aguillon, A. Awwad, A.E. Bjune, D. Challou, A.G. Drake, M. Driessen, A. Ellozy, V.E. Ferry, E.E. Goldberg, W. Harcombe, C. Jørgensen, Z. Koth, S. McGaugh, C. Mitry, B. Mosher, H. Mostafa, **R.H. Petipas**, P.A.G. Soneral, S. Watters, D. Wassenberg, S.L.Weiss, A. Yonas, K.R. Zamudio, S. Cotner. 2019. Smaller classes promote equitable student participation in STEM. Bioscience 69. 669-680.

5. Gonzalez, J., **R.H. Petipas**, A.K. Brody. 2018. Herbivore removal reduces influence of arbuscular mycorrhizal fungi on plant growth and tolerance in an East African savanna. Oecologia 187. 1-11.

4. **Petipas, R.H**., J. Gonzalez, and A.K. Brody. 2015. Habitat-specific AMF symbioses enhance drought tolerance of a native Kenyan grass. Acta Oecologica 78: 71-78.

3. **Petipas, R.H**. and A.K. Brody. 2014. Termites and ungulates affect arbuscular mycorrhizal richness and infectivity in a semi-arid savanna. Botany 92: 233-240.

2. Fournier-Level, A, A.M. Wilczek, M.D. Cooper, J.L. Roe, J. Anderson, D. Eaton, B.T. Moyers, **R.H. Petipas**, R.N. Schaeffer, B. Pieper, M. Reymond, M. Koornneef, S.M. Welch, D.L. Remington, J. Schmitt. 2013. Paths to selection on life history loci in

different natural environments across the native range of *Arabidopsis thaliana*. Molecular Ecology 22: 3552-3566.

1.Wilczek, A.M., J.L. Roe, M.C. Knapp, M.D. Cooper, C. Lopez-Gallego, L.J. Martin, C.D. Muir, S. Sim, A. Walker, J. Anderson, J.F. Egan, B.T. Moyers, **R. Petipas**, A. Giakountis, E. Charbit, G. Coupland, S.M. Welch, J. Schmitt. 2009. Effects of genetic perturbation on seasonal life history plasticity. Science 323: 930-934.

Book Reviews
Petipas, R.H. and K. Eisen 2016. Roots and shoots of plant evolutionary ecology. Trends in Ecology and Evolution 31: 409-410.

In prep
Kehlet-Delgado, H., **Petipas, R.H.,** Antoch, A.A., Norman, J.S., Li, X., White, R.A., Evans, S.E., Tiemann, L.K., Friesen, M.L. Draft genome sequences of *Burkholderia* and *Paraburkholderia* spp. isolated from switchgrass at Lux Arbor Reserve in Michigan. In prep for Microbiology Resource Announcements 2024.

***indicates co-first authorship**

Teaching Experience

Evolutionary Biology and Diversity, Cornell University, TA, Spring 2018 and Spring 2013
Evolutionary Biology and Diversity, Cornell University, **Head TA,** Fall 2017 and Fall 2014
Evolutionary Biology and Diversity, Cornell University, **Course Coordinator,** Spring 2016
Topics in Ecology and Evolutionary Biology, Cornell University, TA, Fall 2016 and Fall 2015
Field Ecology, Cornell University, TA, Fall 2012
Individualized Instruction in Biology, Cornell University, TA, Spring 2012 and Fall 2011
Introductory Ecology and Evolution, University of Vermont, TA, Fall 2009 and Fall 2008

Professional Development
Doing Double Duty: Student learning outcomes as a tool to inform teaching practices and assess student learning (2hrs), Spring 2019

Re-thinking Mentoring Workshop: How to build communities of inclusion, support, and accountability (7hrs), Spring 2023

Engage Learners, Enhance Voices, and Advance Teaching Excellence (ELEVATE) Teaching Workshop (5hrs), Fall 2023

Guest Lectures
Evolution by Natural Selection in Plant Populations, University of Vermont, 29 Feb 2024
Plant Macroevolution, Evolution (BIOL 105), Clark University, 22 April 2022
Plant Macroevolution, Evolution (BIOL 105), Clark University, 29 Sept 2021

Mentoring Experience

Kaviraj Singh, Graduate student WSU, 2023-present
Janice Parks, Graduate student WSU, 2022-present
Layla Taylor-Spriggs, Undergraduate WSU, 2022-present
Abby Eaker, Graduate student WSU, 2022-present

Amanda Antoch, Graduate student at U. Washington, 2019-2022
Amy Wruck, Walker Basin Conservatory Restorationist, 2015-2018
Shauntle Barley, Head of Marketing MaestroQA, 2014-2015
Jennifer B. González, Faculty at Nazareth College, 2009-2010
Christine San Antonio, Graduate student at UMass Boston, 2008-2009
Angela C. Dunkling, Dentist, 2008-2009

Honors & Awards

External Research Awards

USDA, Agricultural Microbiomes in Plant Systems and Natural Resources ($650,000-**PENDING**)	2024
Washington State Department of Agriculture-SCBG, Phase I-**DECLINED**	2023
USDA-NIFA Postdoctoral Fellowship ($165,000)	2021
Professional Development Program Co-investigator: Western SARE ($100,000)	2021
Postdoctoral Research Fellowship in Biology: National Science Foundation ($138,000)	2018
Lewis and Clark Fund for Field Research: American Philosophical Society ($4,300)	2016
Student Research Award: American Society of Naturalists ($2,000)	2015
Rosemary Grant Award: Society for the Study of Evolution ($2,333)	2014
Graduate Student Research Award: Botanical Society of America ($500)	2014

Internal Research Awards

Provost Diversity Fellowship: Cornell Univ. ($18,000)	2016
Betty Miller Francis Award: Cornell Dept. Ecology and Evol. Biol. ($3,435)	2016
Betty Miller Francis Award: Cornell Dept. Ecology and Evol. Biol. ($2,474)	2015
Kieckhefer Research Award: Cornell Univ. ($5000)	2015
Sigma Xi Research Grant: Sigma Xi Cornell Chapter ($600)	2014
Andrew W. Mellon Student Research Grant: Cornell Univ. ($980)	2014
Betty Miller Francis Award: Cornell Dept. Ecology and Evol. Biol. ($1,500)	2014
Clinton Dewitt Smith Fellowship: Cornell Univ. ($2,500)	2014
Andrew W. Mellon Student Research Grant: Cornell Univ. ($1000)	2012
Sigma Xi Research Grant: Sigma Xi Cornell Chapter ($400)	2012
Sustainable Biodiversity Fund: Atkinson Center Cornell ($5000)	2012
International Research Travel Grant: Einaudi Center Cornell ($1300)	2012
Conference Travel Grant: Cornell Univ. ($600)	2012
Lloyd W. Hawkensen Forestry Scholarship: Univ. of New Hampshire ($400)	2005

Teaching Awards

Ecology and Evolution Teaching Award: Cornell Dept. Ecology and Evol. Biol.	2018

Oral Presentation Awards

Robert H. Whittaker Award: Cornell Dept. Ecology and Evol. Biol.	2013
Book Award: Cornell Dept. Ecology and Evol. Biol.	2012

Presentations

Conference presentations

Petipas, R.H., E.A. McNeil, J.F. Tabima, M.L. Friesen, and C.J. Jack. Prairie soil promotes wheat growth but are the effects caused by soil microbes? American Society of Naturalists Meeting, Virtual Asilomar, Asilomar, CA. January 2023.

Petipas, R.H., A.A. Antoch, M.L. Friesen. Back to the future: Using herbarium specimens to understand coevolution. American Society of Naturalists Meeting, Virtual Asilomar, My Living Room. January 2022.

Petipas, R.H., A.A. Antoch, M.L. Friesen. Back to the future: Using herbarium specimens to understand coevolution. *A poster presented at:* Evolution Meeting, Providence, Rhode Island. June 2019.

Petipas, R.H., Buckley, D.H., Koechli, C.N., A. Wruck, Geber, M.A. Microbe-mediated local adaptation to limestone barrens in northern New York. 102nd Ecological Society of America National Meeting, Portland, Oregon. August 2017

Petipas, R.H., Buckley, D.H., Koechli, C.N., Geber, M.A. Microbe-mediated local adaptation to limestone barrens in northern New York. *A poster presented at:* 100th Ecological Society of America National Meeting, Baltimore, Maryland. August 2015

Petipas, R.H. The impact of arbuscular mycorrhizal fungi on drought tolerance of a native Kenyan grass. 98th Ecological Society of America National Meeting, Minneapolis, Minnesota. August 2013

Petipas, R.H. The influence of arbuscular mycorrhizal fungal communities on drought tolerance of a native Kenyan grass. *A poster presented at*: The 28th New Phytologist Symposium: Functions and Ecology of the Plant Microbiome, Rhodes, Greece. May 2012.

Petipas, R.H., A.M. Wilczek, J. Schmitt, O. Savolainen. Demography of *Arabidopsis thaliana* at its northern range limit in Finland. *A poster presented at*: The 19th International Conference on Arabidopsis Research, Montreal, Canada. July 2008

Outreach talks

Petipas, R.H. 2015. Alvar history, biology, and plant adaptation. Finger Lakes Native Plant Society. Ithaca, New York.

Petipas, R.H. 2015. Alvar history, biology, and plant adaptation. Cornell Field Ecology Course Guest Lecture. Ithaca, New York.

Invited talks

Petipas, R.H. 2022. Microbe-mediated adaptation in plants. SUNY Oswego. Oswego, New York.

Petipas, R.H. 2022. Microbe-mediated adaptation in plants. Lake Forest College. Lake Forest, Illinois.

Professional Service and Leadership

Culturally Responsive Mentoring Working Group-NSF Root and Shoot	2024
Organizer/Leader-NSF Deciphering the Microbiome	2019
Assistant Coordinate/Reviewer-Sustainable Biodiversity Fund	2016
Chapter Organizer-Graduate Women in Science (GWIS)	2015
Founder/Chapter Leader-Cornell Grads Vote	2018

Reviewer: Symbiosis, American Naturalist, Trends in Plant Science, American Journal of Botany, Frontiers in Bioengineering, New Phytologist

Society membership: Society for the Study of Evolution, American Society of Naturalists, Botanical Society of America