

Matthew K. Lau

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Education

Ph.D. Biology, Northern Arizona University, NSF IGERT Fellow

Advisor: Dr. Thomas G. Whitham

M.S. Biology, Northern Arizona University, 2008

Thesis: Host species and site contribute to variation in foliar endophyte abundance, diversity and community composition.

Advisor: Dr. Nancy C. Johnson

B.S. Biology, Humboldt State University, 2004

Emphasis: Fungal Ecology

Advisors: Dr. Nathan J. Sanders and Dr. Terry W. Henkel

Advanced Study: Harvard Forest Summer Research Program in Ecology, Summer 2003

Mentor: Dr. Aaron M. Ellison

Research Experience

Research Associate, Systems Ecology and Ecoinformatics Lab (Dr. Stuart Borrett), Summer 2011

Research Assistant, Cottonwood Ecology Group (Dr. Thomas G. Whitham), 2010-2011

Research Assistant, The Soil Ecology Lab (Dr. Nancy C. Johnson), 2005-2008

Research Assistant, Humboldt State University Ant Ecology Lab (Dr. Nathan J. Sanders), 2003

Teaching Experience

Introduction to Programming in R (University of North Carolina Wilmington), Summer 2010

BIO181 Introductory Biology: The Unity of Life (Northern Arizona University), Fall 2010

BIO680 Introduction to Ecological Analyses in R (Northern Arizona University), Fall 2008

Awards and Fellowships

Chateaubriand Fellowship (French Embassy), 2011-2012

NSF IGERT Fellowship (Northern Arizona University), 2008-2010

ARCS Foundation Scholarship (Phoenix Chapter), 2007-2008

ARCS Foundation Scholarship (Phoenix Chapter), 2006-2007

Northern Arizona University Minority Student Development Fellowship, 2005-2008

Publications

Bowker MA, Muñoz A, Martinez T & Lau MK (In Press) Rare drought-induced mortality of juniper is enhanced by edaphic stressors and influenced by stand density. *Journal of Arid Environments*.

Lau MK, Whitham TG, Lamit LJ & Johnson NC (2010) Ecological & Evolutionary Interaction Network Exploration: Addressing the Complexity of Biological Interactions in Natural Systems with Community Genetics and Statistics. *JIFS* 7:17-25

Price LB, Johnson KE, Aziz M, Lau MK, Bowers J, Ravel J, Keim PS, Serwadda D, Wawer MJ & Gray RH (2010) The effects of circumcision on the penis microbiome. *PLoS One* 5(1):e8422.

Chaudhary VC, Lau MK & Johnson NC (2008) Macroecology of microbes – biogeography of the Glomeromycota. In V. Ajit, editor, *Mycorrhiza* (3rd Edition), Springer-Verlag, Germany

Ellison AM, Chen J, Diaz D, Kammerer-Burnham C & Lau M (2005) Changes in ant community structure and composition associated with hemlock decline in New England. Pages 280-289 in B. Onkenand and R. Reardon, editors. *Proceedings of the 3rd Symposium on Hemlock Woolly Adelgid in the Eastern United States*. U.S. Department of Agriculture – U.S. Forest Service – Forest Health Technology Enterprise Team, Morgantown, West Virginia.

In Prep and Submitted Manuscripts

Stone AC, Gehring CA, Lau MK, Cobb NS & Whitham TG (Submitted) Plant mediated indirect effects on communities reduce diversity and Plant mediated indirect genetic effects of scale herbivory alter arthropod community networks on a foundation tree.

Lau MK & Borrett SR (In Prep) An open-source package for ecological network analysis in R.

Smith DS, Lamit LJ, Lau MK, Gehring CA & Whitham TG (In Prep) Change of plant traits by introduced elk negatively affects associated arthropod communities and network structure.

Lau MK, Arnold EA & Johnson NC (In Prep) Host species and site contribute to variation in foliar endophyte abundance, diversity and community composition.

Presentations

Whitham TG, Lau MK, Lamit LJ, Smith DS, Busby PE, Schweitzer JA, Gehring CA, Allan GJ, Shuster SM and Newcombe G *A Community Genetics Approach for Understanding Microbial Community Structure and Feedbacks on a Foundation Tree Species*. Ecological Society of America Meeting (ESA), Pittsburgh, PA, August 2010

Lau MK, Keith AR and Whitham TG *Network structure is linked to the community stability of canopy arthropods associated with Populus angustifolia*. Ecological Society of America Meeting (ESA), Pittsburgh, PA, August 2010

Lau MK, Johnson NC, Whitham TG, Hagenauer LE, Lamit LJ and Lonsdorf EV *A Community Genetics Approach for Understanding Complex Biological Interactions*. 7th International Symposium on Integrated Field Science, Tohoku University, Sendai, Japan, October 2009

Lau MK, Hagenauer LE and Whitham TG *Assemblage-structuring force of species interactions varies spatially and temporally: Co-occurrence analysis of canopy arthropod distributions*. Ecological Society of America Meeting (ESA), Albuquerque, NM, August 2009

Lau MK, Johnson NC *Fungal foliar endophyte communities exhibit host species fidelity in woody plants of Arizona riparian forests*. Ecological Society of America Meeting (ESA), Milwaukee, WI, August 2008

Lau MK *Unusual absence of asymptomatic fungal leaf endophytes of Populus fremontii: a potential phytochemical mechanism*. (poster) Ecological Society of America Meeting (ESA), San Jose, CA, August 2007

Lau MK, Johnson NC *Do AMF cultivate their favorite bacteria? A hypothesis for a potential mechanism of AMF adaptation*. (poster) 5th International Conference on Mycorrhiza (ICOM5), Granada, Spain, July 2006

Professional Activities

Article Reviewer

Botany (formerly *The Canadian Journal of Botany*) (2011)

Acta Oecologia (2011)

Nature (2009)

Professional Memberships

British Ecological Society (BES), 2008

American Association for the Advancement of Science (AAAS), 2008

Ecological Society of America (ESA), 2005-present

Meeting and Workshop Organization

Workshop Coordinator, EU Sponsored White Paper Workshop on Foundation Species Genetics Research Directions, Flagstaff, AZ Spring 2011

Meeting Organizer, Western Mycorrhiza Gathering, Flagstaff, AZ, 2008

Workshop Organizer, IGERT Workshop: Bayesian Statistics in Ecology, Flagstaff, AZ, 2007

Meeting Organizer, Soil Ecology Society Conference, Moab, UT, 2007

Student Services

President, Biology Graduate Student Association (Northern Arizona University), 2009-2011

Email List Curator, Biology Graduate Student Association (Northern Arizona University), 2008

Social Coordinator, Biology Graduate Student Association (Northern Arizona University), 2006

Contributed Software

Matthew K. Lau and Raj Whitlock (2009) DiversitySampler: Functions for re-sampling a community matrix to compute diversity indices at different sampling levels.. R package version 2.0.

Matthew K. Lau (2009) DTK: Dunnett-Tukey-Kramer Pairwise Multiple Comparison Test Adjusted for Unequal Variances and Unequal Sample Sizes. R package version 3.0.

Language Proficiencies

Programming: R, L^AT_EX, Emacs, Unix, HTML and Octave/Matlab

References

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Nathan J. Sanders
Associate Professor
University of Tennessee
(865) 974-5231
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Terry W. Henkel
Associate Professor
Humboldt State University
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Aaron M. Ellison
Senior Research Fellow
Harvard Forest, Harvard University
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