

**ALISON BENNETT**  
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## RESEARCH INTERESTS

Maintenance of mutualisms, multi-species interactions, arbuscular mycorrhizal fungi, invasive species, community structure, restoration, theoretical ecology and evolution

## PROFESSIONAL PREPARATION

University of Chicago, Chicago	Biology	A.B.	1998
Indiana University, Bloomington	Evolution	Ph.D.	2001-2005

## APPOINTMENTS

Faculty, Scottish Crop Research Institute, Dundee, Scotland	2010
Post-Doctoral Researcher, Entomology, U of Wisconsin-Madison	2008-2009
Adjunct Faculty, School of Natural Resources & Environment, U of Michigan	2007-2008
Post-Doctoral Researcher, Evolution & Ecology, UC-Davis	2005-2007
Assistant Instructor, Department of Biology, Indiana University	2001-2005
Research Associate, Department of Biology, Indiana University	2000-2001
Peace Corps Volunteer, Agroforestry, Cameroon West Africa	1998-2000

## PUBLICATIONS

**Bennett, A.E.**, J. Alers-Garcia, J.D. Bever. 2006. Effects of mutualistic mycorrhizal fungi on plant enemies: Hypotheses and Predictions. *American Naturalist* 167(2): 141-152.

**Bennett, A.E.** and J.D. Bever. 2007. Mycorrhizal species differentially alter plant growth and response to herbivory. *Ecology* 88(1):210-218.

Gehring, C. and **A.E. Bennett**. 2009. Invited Paper. Mycorrhizal fungal-plant-insect interactions: the importance of a community approach. *Environmental Entomology* 38(1): 93-102.

**Bennett, A.E.** and J.D. Bever. 2009. Effects of herbivory and fungal competition on mycorrhizal colonization in *Plantago lanceolata*. *Oecologia* 160(4): 807-816.

**Bennett, A.E.**, J.D. Bever, and M.D. Bowers. 2009. Arbuscular mycorrhizal fungal species suppress inducible plant responses and alter defensive strategies following herbivory. *Oecologia* 160(4): 771-779.

Garrido, E., **A.E. Bennett**, J. Fornoni, S.Y. Strauss. Variation in arbuscular mycorrhizal colonization modifies the expression of tolerance to above-ground defoliation. *Journal of Ecology* (Published online, awaiting print)

**Bennett, A.E.** In Press. The role of soil community biodiversity in maintaining insect biodiversity. *Insect Conservation and Diversity*.

Lankau, R., E. Wheeler, **A.E. Bennett**, and S.Y. Strauss. Manuscript complete, Submitted to Proceedings of the National Academy of Sciences B. Plant-soil feedbacks contribute to an intransitive competitive network that promotes both genetic and species diversity.

**Bennett, A.E.** and S.R. Borrett. Manuscript complete, Submitted to Ecology Letters. Network analysis predicts evolutionary patterns within the plant-arbuscular mycorrhizal fungal mutualism.

**Bennett, A.E.** and S.Y. Strauss. Manuscript complete. Variation in plant response to soil communities varies with introduced status.

**Bennett, A.E.** and S.Y. Strauss. In preparation. Invasive species influences germination, establishment and growth of native competitor via alteration of soil biota.

**Bennett, A.E.**, J. Umbanhowe, K. Abbot, K. Apostol, J. Bever, L. Biederman, S. Borrett, L. Byrne, A. Classen, K. Cuddington, K. Garrett, T. Golubski, M. de Graaff, L. Gross, A. Hastings, E. Hobbie, J. Hoeksema, V. Hryniv, J. Karst, M. Kummel, C. Lee, K. Leng, C. Liang, K. Mack, L. Miller, B. Ownley, S. Richardson, C. Rojas, J. Rose, E. Simms, V. Walsh, M. Warren, J. Zhu. In preparation. New Strategies for the Black Box: Identifying mathematical tools for elucidating plant-soil interactions.

## GRANTS AND AWARDS

Bennett, Alison and James Umbanhowe. 2009. Investigative Workshop: New Strategies for the Black Box: Identifying mathematical tools for elucidating plant-soil interactions. National Institute for Mathematical and Biological Synthesis (NIMBioS) (34 participants)

Bennett, Alison. 2005. Mechanisms underlying complex interactions between plants, herbivores, and arbuscular mycorrhizal fungi. Floyd-Ogg Final Year Fellowship. \$3000

Bennett, Alison. 2005. Outstanding Student Presentation Award (2<sup>nd</sup> Place). "A test of tri-trophic interaction hypotheses involving mycorrhizae, plants, and herbivores." Soil Ecology Society Meeting

Bennett, Alison and James D. Bever. 2004. Examining Species Interactions: How mycorrhizal mutualist species diversity impacts a plant-herbivore relationship. NSF DDIG. \$11,960

Bennett, Alison. 2004. Mechanisms underlying complex interactions between plants, herbivores, and arbuscular mycorrhizal fungi. McCormick Science Grant, Indiana University. \$2500

Bennett, Alison. 2004. Mechanisms underlying complex interactions between plants, herbivores, and arbuscular mycorrhizal fungi. Sigma Xi Grant in Aid of Research. \$800

## SYMPOSIUM AND INVITED PRESENTATIONS

**Bennett, A.E.** 2005. "Mechanisms underlying complex interactions between plants, herbivores, and arbuscular mycorrhizal fungi." Department of Biology, Indiana University.

**Bennett, A.E.** 2006. "Mycorrhizal fungi alter above-ground plant interactions." Center for Population Biology, University of California, Davis.

**Bennett, A.E.** 2007. "Mycorrhizal fungi alter the ecology and evolution of plant herbivore interactions." Young Scientists Symposium, University of Michigan, Ann Arbor.

**Bennett, A.E.** and S.Y. Strauss. 2007. Organized Oral Session. "Mycorrhizal fungal mediation of herbivory and competition." Ecological Society of America Meetings.

**Bennett, A.E.** 2008. "The role of arbuscular mycorrhizal fungi in structuring plant-herbivore interactions." Scottish Crop Research Institute, Dundee, Scotland.

**Bennett, A.E.** and S.Y. Strauss. 2008. Organized Oral Session. "Variation in response by grasses to soil communities varies with introduced status: a mycorrhizal perspective." Ecological Society of America Meetings.

**Bennett, A.E.** 2008. "Do encounters with novel soil communities select for invasive potential in plants?" University of Wisconsin, Madison.

**Bennett, A.E.** 2008. "Evolution in the mycorrhizal mutualism." Northern Arizona University.

**Bennett, A.E.** 2009. "Invasive plants and evolution in the AM fungal mutualism." University of Tennessee, Knoxville.

## **CURRENT COLLABORATIONS**

Stuart Borrett (University of North Carolina-Wilmington). How does the network structure of the AM fungal-plant mutualism influence the evolution and maintenance of the mutualism?

Sharon Ferrier (Northern Arizona University), Tom Whitham (NAU), Kitty Gehring (NAU), Baoming Ji (NAU), Rick Lindroth (University of Wisconsin), Jen Schweitzer (University of Tennessee-Knoxville), and Gery Allan (NAU). Do cottonwood genotypes influence their fungal and bacterial soil microbial communities?

Mike Madritch (Appalachian State University) and Rick Lindroth (University of Wisconsin). What factors influence the structure of aspen rhizosphere communities?

Cameron Currie (University of Wisconsin) and Luis Amaral (Northwestern University). Can network structure explain the maintenance of the leaf cutter ant mutualism?

Chris Habeck (University of Wisconsin), Aimee Classen (University of Tennessee-Knoxville), Rick Lindroth (University of Wisconsin). How do rodents and global change influence soil biota community structure?

James Umbanhower (University of North Carolina). New Strategies for the Black Box: Identifying mathematical tools for elucidating plant-soil interactions (NIMBioS)

## **TEACHING EXPERIENCE**

### *Primary Instructor*

Ecology. 2008. Instructor. Upper Level Undergraduate Course. University of Michigan, Ann Arbor.

Soil Biology. 2007. Instructor. Graduate Course. University of Michigan, Ann Arbor.

### *Assistant Instructor*

General Entomology. 2008. Guest Lecturer. Upper Level Undergraduate & Graduate Course. University of Wisconsin, Madison.

Plant Biology. 2002-5. Assistant Instructor. Upper Level Undergraduate Course. Indiana University.

Fungal Biology. 2003-5. Assistant Instructor. Upper Level Undergraduate Course. Indiana University.

Introductory Biology Laboratory. 2002. Assistant Instructor. Undergraduate Course. Indiana University.

Introduction to Ecology & Evolution. 2001. Assistant Instructor. Undergraduate Course. Indiana University.

Curriculum Development. 1998-2000. High School Environmental Education Program. Cameroon, West Africa.

## MENTORING EXPERIENCE

Indiana University. Mentored 5 Undergraduate Independent Projects (Jason Steliga, David McNutt, Sarah Shuck, Christie Helton, Michael Soshnik), 7 Non-Project Students (Kristin Armstrong, Julie Gummow, Dacia Montemayor, Alex Nugyen, Tommy Zajac, Patrick Alexander, Amanda Allen), 2 minority High School Students, and 1 High School Teacher.

University of California, Davis. Mentored 2 Undergraduate Research Projects (Anna Deck, Zacharia Costa). Mentored 6 Graduate students on soil ecology research (Rick Lankau, Adrianna Muir, Jon Haloin, Patrick McIntyre, Etzel Garrido-Espinosa, and Renate Eberl).

University of Michigan/Argonne National Lab. Mentor of DOE Summer Project Undergraduate (Marlene Tyner).

University of Wisconsin. Mentored 4 Undergraduate Research Scholars (Kevin Karl, Jason Lawniczak, Pamela Fife, Daniel Ruhland) and two independent scholars (Cecilia Welch, Caralee Corcoran).

## PROFESSIONAL SERVICE & DEVELOPMENT

Women Evolving Biological Sciences. 2008. Professional development for future women academic leaders in the fields of Ecology and Evolution.

Organizer. 2007. Organized Oral Session. Belowground organisms modify above-ground plant interactions. Ecological Society of America Meetings.

Microbial Ecology Search Committee. 2002. Department of Biology, Indiana University.

Microbial Ecology Search Committee. 2003. Department of Biology, Indiana University.

Ecology Search Committee. 2004. Department of Biology, Indiana University.

Environmental Science Interdepartmental Search Committee. 2004. Indiana University.

Reviewer. NSF Ecology Panel, Ecology Letters, Oecologia, Ecology, Biological Invasions, Functional Ecology, Ecological Entomology, Global Change Biology, and Journal of Ecology

## OUTREACH

Syndicated Newspaper Columnist. 2001-present. Wonderlab Wonderpages. (Science articles for children.)

## PROFESSIONAL AFFILIATIONS

Ecological Society of America	2004-present
International Symbiosis Society	2009-present
Sigma Xi Scientific Society	1998-present

## PUBLISHED ABSTRACTS

**Bennett, A.E.** and J.D. Bever. 2003. "Heritable variation in growth response of *Plantago lanceolata* to the soil community." International Conference on Mycorrhizae 4

**Bennett, A.E.** and J.D. Bever. 2004. "Plant-herbivore interactions in a community context: Hypotheses and predictions." Gordon Research Conference on Plant-Herbivore Interactions

**Bennett, A.E.** and J.D. Bever. 2004. "Underlying mechanisms and theoretical predictions of mycorrhizal-plant-herbivore interactions." Ecological Society of America Meetings

**Bennett, A.E.** 2005. "A test of tri-trophic interaction hypotheses involving mycorrhizae, plants, and herbivores." Soil Ecology Society Meeting

**Bennett, A.E.** 2005. "A Test of Multi-trophic interaction hypotheses involving mycorrhizae, plants, and herbivores." *Evolution*.

**Bennett, A.E.** and J.D. Bever. 2006. "Mycorrhizal fungal species identity alters trade-offs in plant allocation." International Conference on Mycorrhizae 5

**Bennett, A.E.,** J.D. Bever, and M.D. Bowers. 2007. "Mycorrhizal fungi can suppress plant inducible responses to herbivory." Gordon Research Conference on Plant-Herbivore Interactions

**Bennett, A.E.** and S.Y. Strauss. 2007. Organized Oral Session. "Mycorrhizal fungal mediation of herbivory and competition." Ecological Society of America Meetings.

**Bennett, A.E.** and S.Y. Strauss. 2008. Organized Oral Session. "Variation in response by grasses to soil communities varies with introduced status: a mycorrhizal perspective." Ecological Society of America Meetings.

**Bennett, A.E.** 2009. Using network modeling to examine evolutionary stability in multi-partner mutualisms. International Symbiosis Society Meetings.