## ANNE PRINGLE

University of Wisconsin, Madison Departments of Botany and Bacteriology anne.pringle@wisc.edu

### Education

Ph.D. Department of Botany and University Program in Genetics, Duke University. 2001. Advised by Drs. Janis Antonovics and Rytas Vilgalys.A.B. Honors Biology, University of Chicago, with General Honors. 1993.

## Employment

Associate Professor, Botany and Bacteriology, University of Wisconsin, Madison. 2015-current. Associate Professor, Organismic and Evolutionary Biology, Harvard University. 2008-2014. Assistant Professor, Organismic and Evolutionary Biology, Harvard University. 2005-2008.

## **Fellowships**

Charles Bullard Fellowship in Forest Research, Harvard Forest. 2014-2015. Radcliffe Institute for Advanced Study Fellowship, Harvard University. 2011-2012. Miller Institute for Basic Research in Science Research Fellowship, U.C. Berkeley. 2001-2004. National Institutes of Health Graduate Fellowship in Genetics, Duke University. 1995-1997.

### **Awards and Honors**

Professeur Invité, Université de Nice Sophia Antipolis. Winter 2015.
Fannie Cox Prize for Excellence in Science Teaching, Harvard University. 2013.
Mendelsohn Excellence in Mentoring Award, Harvard University Graduate Student Council. 2011.
Alexopoulos Prize for a Distinguished Early Career Mycologist, Mycological Society of America. 2010.
Perry Prize for Dissertation of Greatest Distinction, Department of Botany, Duke University. 2001.
Best Student Paper, Soil Ecology Section, Ecological Society of America Annual Meeting. 2000.

## Manuscripts

- Zimmerman K., D. Levitis, A. Pringle. In review. Beyond animals and plants: The discovery of dynamic maternal effects in the fungus and genetic model *Neurospora crassa*. Journal of Evolutionary Biology.
- Levitis D., K. Zimmerman, A. Pringle. In review. Comparing sexual and asexual offspring reveals meiosis as a key driver of inviability. Proceedings of the Royal Society B.
- **Pringle, A.** In review. Establishing new worlds: the lichens of Petersham. For *Arts of Living on a Damaged Planet*, ed. A. Tsing. Island Press: Washington, D.C.
- Fritz J., M.P. Brenner, A. Seminara, A. Pringle. In revision. A universal growth curve for circular lichens. eLife.

## Publications

Zimmerman K., D. Levitis, E. Addicott\*, **A. Pringle**. In press. Maximizing the mean nearest neighbor distance of a trait to choose among potential crosses and design a fully crossed mating experiment. Heredity.

#### \*undergraduate

- van Diepen L.T.A., S.D. Frey, C.M. Sthultz, E.W. Morrison, R. Minocha, **A. Pringle**. In press. Litter quality affects the suppression of litter decay by simulated nitrogen deposition. Ecosphere.
- Bittleston L.S., C.C.M. Baker, L.B. Strominger\*, **A. Pringle**, N.E. Pierce. In press. Metabarcoding as a tool for investigating arthropod diversity in *Nepenthes* pitcher plants. Austral Ecology.
- Barron E.S., C. Sthultz, D. Hurley, **A. Pringle**. In press. Names matter: Interdisciplinary research on taxonomy and nomenclature for ecosystem management. Progress in Physical Geography.
- **Pringle, A.**, E. Vellinga, K. Peay. In press. The shape of fungal ecology: does spore morphology give clues to a species' niche? Fungal Ecology. (Commentary.)
- Kohler, Kuo, Nagy, Morin, Barry, Buscot, Canbäck, Choi, Cichocki, Clum, Colpaert, Copeland, Costa, Doré, Floudas, Gay, Girlanda, Henrissat, Herrmann, Hess, Högberg, Johansson, Khouja, LaButti, Lahrmann, Levasseur, Lindquist, Lipzen, Marmeisse, Martino, Murat, Ngan, Nehls, Plett, Pringle, Ohm, Perotto, Peter, Riley, Rineau, Ruytinx, Salamov, Shah, Sun, Tarkka, Tritt, Veneault-Fourrey, Zuccaro, MGIC, Tunlid, Grigoriev, Hibbett, Martin. 2015. Convergent losses of decay mechanisms and rapid turnover of symbiosis genes in mycorrhizal mutualists. Nature Genetics. doi:10.1038/ng.3223
- Chaib de Mares M., J. Hess, D. Floudas, A. Lipzen, C. Choi, M. Kennedy, I.V. Grigoriev, A. Pringle. 2014. Horizontal transfer of carbohydrate metabolism genes into ectomycorrhizal *Amanita*. New Phytologist. doi: 10.1111/nph.13140
- Hess J., I. Skrede, B.E. Wolfe, K. LaButti, R. Ohm, I. Grigoriev, **A. Pringle**. 2014. Transposable element dynamics among asymbiotic and ectomycorrhizal *Amanita* fungi. Genome Biology and Evolution 6:1564-1578.
- Hess J., A. Pringle. 2014. The natural histories of species and their genomes: Asymbiotic and ectomycorrhizal *Amanita*. Pages 235-257 in *Fungi (Advances in Botanical Research)*, ed. F. Martin. Academic Press: San Diego.
- Alim K., N. Andrew, A. Pringle. 2013. Quick Guide: *Physarum polycephalum*. Current Biology 23:R1082-R1083.
- Alim K., G. Amselem, F. Peaudecerf, M. Brenner, A. Pringle. 2013. Random network peristalsis in *Physarum polycephalum* organizes fluid flows across an individual. Proceedings of the National Academy of Sciences (PNAS) 110:13306-13311.
- Fritz J., A. Seminara, M. Roper, **A. Pringle**, M. Brenner. 2013. A natural O-ring optimizes the dispersal of fungal spores. Journal of the Royal Society Interface 10:20130187.
- Pringle A. 2013. Asthma and the Diversity of Fungal Spores in Air. PloS Pathogens 9(6):e1003371.
- Marmeisse R., U. Nehls, M. Öpik, M.-A. Selosse, **A. Pringle**. 2013. Bridging mycorrhizal genomics, metagenomics and forest ecology. New Phytologist 198:343-346. (Meeting report.)
- Wolfe B.E., R.E. Tulloss, **A. Pringle**. 2012. The irreversible loss of a decomposition pathway marks the single origin of an ectomycorrhizal symbiosis. PLoS ONE 7(7):e39597.
- Richard F., L. Glass, **A. Pringle**. 2012. Cooperation among germinating spores facilitates the growth of the fungus *Neurospora crassa*. Biology Letters 8:419-422.
- Wolfe B.E., M. Kuo, A. Pringle. 2012. *Amanita thiersii* is a saprotrophic fungus expanding its range in the United States. Mycologia 104:22-33.
- Wolfe B.E., **A. Pringle**. 2011. Geographically structured host specificity is caused by the range expansions and host shifts of a symbiotic fungus. The ISME Journal 4:745-755.

- Mushegian A.A.\*, C.N. Peterson, C.C.M. Baker, **A. Pringle**. 2011. Bacterial diversity across individual lichens. Applied and Environmental Microbiology 77:4249-4252.
- Iannone R., D.I. Chernoff, A. Pringle, S.T. Martin, A.K. Bertram. 2011. The ice nucleation ability of one of the most abundant types of fungal spores found in the atmosphere. Atmospheric Chemistry and Physics 11:1191-1201.
- **Pringle A.**, E. Barron, K. Sartor, J. Wares. 2011. Fungi and the Anthropocene: Biodiversity discovery in an epoch of loss. Fungal Ecology 4:121-123. (Introduction to a special issue: "Conservation Underground: Fungi in a Changing World".)
- **Pringle A.**, B.E. Wolfe, E.C. Vellinga. 2011. Mycorrhizae. Entry for the *Encyclopedia of Invasive Species*. University of California Press.

Roper M., A. Seminara, M.M. Bandi, A. Cobb, H.R. Dillard, A. Pringle. 2010. Dispersal of fungal spores on a cooperatively generated wind. Proceedings of the National Academy of Sciences (PNAS) 41:17474-17479.
News & Views: Nature 467:669
-Editors' Choice: Science 330:429

- Wolfe B.E., F. Richard, H.B. Cross, A. Pringle. 2010. Distribution and abundance of the introduced ectomycorrhizal fungus, *Amanita phalloides*, in North America. New Phytologist 185:803-816.
- Shapiro J.\*, **A. Pringle**. 2010. Anthropogenic influences on the diversity of fungi isolated from caves in Kentucky and Tennessee. American Midland Naturalist 163:76-86.
- Hoeksema, J.D., V.B. Chaudhary, C.A. Gehring, N.C. Johnson, J. Karst, R.T. Koide, A. Pringle, C. Zabinski, J.D. Bever, J.C. Moore, G.W.T. Wilson, J.N. Klironomos, J. Umbanhowar. 2010. A meta-analysis of context-dependency in plant response to inoculation with mycorrhizal fungi. Ecology Letters 13:394-407.
- Pringle A., J.D. Bever, M. Gardes, J.L. Parrent, M.C. Rillig, J.N. Klironomos. 2009. Mycorrhizal symbioses and plant invasions. Annual Review of Ecology, Evolution and Systematics 40:699-715.
- Pringle A. 2009. A quick guide to mycorrhizal networks. Current Biology 19:R838-R839.
- Johnson N.C., V.B. Chaudhary, J.D. Hoeksema, J.C. Moore, A. Pringle, J.A. Umbanhower, G.W.T. Wilson. 2009. Mysterious mycorrhizae? A field trip and classroom experiment to demystify the symbioses formed between plants and fungi. American Biology Teacher 71:424-429.
- Pringle A., R.I. Adams, H.B. Cross, T.D. Bruns. 2009. The ectomycorrhizal fungus Amanita phalloides was introduced and is expanding its range on the West Coast of North America. Molecular Ecology 18:817-833.
- Vellinga E.C., B.E. Wolfe, A. Pringle. 2009. Global patterns of ectomycorrhizal introductions. New Phytologist. 181:960-973.
- Roper M., R. Pepper, M.P. Brenner, A. Pringle. 2008. Explosively launched spores of ascomycete fungi have drag minimizing shapes. Proceedings of the National Academy of Sciences (PNAS) 105:20583-20588.
- Pringle A., J.D. Bever. 2008. Analogous effects of arbuscular mycorrhizal fungi in the laboratory and a North Carolina field. New Phytologist 180:162-175. -Subject of lead commentary; New Phytologist 180:1-2

- Wolfe B.E., V.L. Rodgers, K.A. Stinson, A. Pringle. 2008. The invasive plant *Alliaria petiolata* (garlic mustard) inhibits ectomycorrhizal fungi in its introduced range. Journal of Ecology 96:777-783.
- Peterson C., S. Day\*, B.E. Wolfe, A. Ellison, R. Kolter, A. Pringle. 2008. A keystone predator controls bacterial diversity in the pitcher-plant (*Sarracenia purpurea*) microecosystem. Environmental Microbiology 10:2257-2266.
- Taylor J.W., E. Turner, A. Pringle, J. Dettman, H. Johannesson. 2007. Fungal species: thoughts on their recognition, maintenance and selection. Pp. 313-339 in *Fungi in the Environment* (British Mycological Society Symposia No. 25) eds. G.M. Gadd, S.C. Watkinson and P.S. Dyer. Cambridge: Cambridge University Press.
- **Pringle A.**, E.C. Vellinga. 2006. Last chance to know? Using literature to explore the biogeography and invasion biology of the death cap mushroom *Amanita phalloides* (Vaill. Ex Fr. :Fr.) Link. Biological Invasions 8:1131-1144.
- Gilchrist M.A., D.L. Sulsky, **A. Pringle**. 2006. Identifying fitness and optimal life history strategies in an asexual filamentous fungus. Evolution 60:970-979.
- Schwartz M.W., J.D. Hoeksema, C.A. Gehring, N.C. Johnson, J.N. Klironomos, L.K. Abbott, A. Pringle. 2006. The promise and the potential consequences of the global transport of mycorrhizal fungal inoculum. Ecology Letters 9:601-616.
- Adams R.I., H.E. Hallen, A. Pringle. 2006. Using the incomplete genome of the ectomycorrhizal fungus *Amanita bisporigera* to identify molecular polymorphisms in the related *A. phalloides*. Molecular Ecology Primer Notes 6:218-220.
- Pringle A., D.M. Baker, J.L. Platt, J.P. Wares, J.P. Latge, J.W. Taylor. 2005. Cryptic speciation in the cosmopolitan and clonal human pathogenic fungus *Aspergillus fumigatus*. Evolution 59:1886-1899.
- Pringle A., S.N. Patek, M. Fischer, J. Stolze, N.P. Money. 2005. The captured launch of a ballistospore. Mycologia 97:866-871.
- Rowe A.R.\*, **A. Pringle**. 2005. Morphological and molecular evidence of arbuscular mycorrhizal fungal associations in Costa Rican epiphytic bromeliads. Biotropica 37:245-250.
- Pringle A., J.M. Moncalvo, R. Vilgalys. 2003. Revisiting the rDNA sequence diversity of a natural population of the arbuscular mycorrhizal fungus *Acaulospora colossica*. Mycorrhiza 13:227-231.
- Dettman J.R., D.J. Jacobson, E. Turner, **A. Pringle**, J.W. Taylor. 2003. Reproductive isolation and phylogenetic divergence in *Neurospora*: comparing methods of species recognition in a model eukaryote. Evolution 57:2721-2741.
- Pringle A., D. Chen\*, J.W. Taylor. 2003. Sexual fecundity is correlated to size in the lichenized fungus *Xanthoparmelia cumberlandia*. The Bryologist 106:221-225.
- Pringle A., J.W. Taylor. 2002. Understanding the fitness of filamentous fungi. Trends in Microbiology 10:474-481.
- **Pringle A.**, J.D. Bever. 2002. Divergent phenologies may facilitate the coexistence of arbuscular mycorrhizal fungi in a North Carolina grassland. American Journal of Botany 89:1439-1446.

- Bever J.D., A. Pringle, P.A. Schultz. 2002. Dynamics within the plant-arbuscular mycorrhizal fungal mutualism: testing the nature of community feedback. Pages 267-292 in *Mycorrhizal Ecology*, ed. M. van der Heijden and I. Sanders. Springer-Verlag: Heidelberg.
- **Pringle A**. 2001. The ecology and genetics of arbuscular mycorrhizal fungi. Ph.D. Thesis, Duke University.
- Bever J.D., P.A. Schultz, **A. Pringle**, J.B. Morton. 2001. Arbuscular mycorrhizal fungi: more diverse than meets the eye, and the ecological tale of why. BioScience 51:923-931.
- Pringle A., J.M. Moncalvo, R. Vilgalys. 2000. High levels of variation in ribosomal DNA sequences within and among spores of a natural population of the arbuscular mycorrhizal fungus *Acaulospora colossica*. Mycologia 92:259-268.
- Sniegowski P.D., A. Pringle, K. Hughes. 1994. Effects of autosomal inversions on meiotic exchange in distal and proximal regions of the X-chromosomes in a natural population of *D. melanogaster*. Genetical Research 63:57-62.
- Patent: Patent Application No. 2013904424: DNA extraction

#### Forwards, Essays, Book Reviews and Popular Articles, etc.

- Pringle A. 2012. The Christmas Fungus on Christmas Island. In: *Microbes and Evolution: The World Darwin Never Saw*, Eds. S. Maloy and R. Kolter. ASM Press, Washington, D.C.
- **Pringle A.**, D. Hibbett, A. Rossman. 2008. Encyclopedia of Life & the Fungi. White paper published in Inoculum 60:2-3, and Mycological Research 113:402-403.
- **Pringle A.**, R.E. Tulloss, F. Richard, B.E. Wolfe, E.C. Vellinga. 2008. Exemplar page for *Amanita phalloides* (Vaill. ex Fr. :Fr.) Link. Encyclopedia of Life.
- **Pringle A**. 2008. Forward to *The Fungi of Serbia*, written by Branislav Uzelac and members of the Mycologists' Association of Serbia.
- Friesen M.S., A. Pringle, B. Callan, A. Leathem. 2005. *Amanita phalloides* heads north. Conference Proceedings of the North American Congress of Clinical Toxicologists. (Case study of death cap poisoning in British Columbia, Canada.)
- **Pringle A**. 2005. Immortal Fungi. Mycena News 56:01. (A popular science article for the newsletter of the Mycological Society of San Francisco.)
- **Pringle A**, L.C. Moyle, J. MacLachlan, J. HilleRisLambers. 2000. Philosophy and biology: a review of the book <u>Sex and Death</u>. Complexity 5:44-45.

**Grants** (Grants of less than 10K not listed)

- Human Frontier Science Program. \$900,000 (\$300,000 to Pringle). Fluid flows and resource integration across fungal networks (HFSP #RGP0053/2012). 2012-2015. With Mark Fricker (Oxford) and Michael Brenner (SEAS, Harvard).
- National Science Foundation Division of Integrative Organismal Systems. \$485,191. The single origin of mycorrhizas among the *Amanita*: A model for elucidating the genetic architecture of symbiosis (NSF#1021606). 2010-2014.
- Joint Genomes Institute/Department of Energy. Contract to sequence transcriptomes of closely related saprotrophic and ectomycorrhizal *Amanita* species. Ongoing. With Benjamin Wolfe (Pringle Laboratory), and Jason Stajich (U.C. Riverside).

- National Science Foundation Division of Environmental Biology. \$747,005 (\$388,817 to Pringle). The changing diversity and evolution of decomposer fungi in response to anthropogenic change (NSF#1021079). 2010-2014. With Serita Frey (UNH).
- National Science Foundation Division of Social and Economic Sciences. \$120,000. STS postdoctoral fellowship: Metagenomics and its impacts on species-based conservation science and policy (NSF #1127269). 2011-2013. To Elizabeth Barron (Pringle Laboratory).
- Joint Genomes Institute/Department of Energy. Contract to sequence the genome of the basidiomycete fungus *Amanita thiersii*, a cellulose degrading fungus in an ectomycorrhizal genus. Ongoing. With Benjamin Wolfe (Pringle Laboratory).
- National Science Foundation Doctoral Dissertation Improvement Grant. \$15,000. Yeast dispersal among pitcher plants and fungal metacommunity processes (NSF#0808404). 2008-2010. To Primrose Boynton (Pringle Laboratory).
- National Science Foundation Doctoral Dissertation Improvement Grant. \$12,000. The genus *Amanita* as a model for the evolution of symbiosis (NSF#0808404). 2008-2010. To Benjamin Wolfe (Pringle Laboratory).
- **Research Enabling Grant, Office of the Provost, Harvard University.** \$53,997. To support research on *Amanita phalloides*. 2007-2008.
- Anonymous Gift (from an amateur mycologist). \$22,000. For work with Amanita species. 2007.
- William F. Milton Fund of the Harvard Medical School. \$35,000. Aging in lichen species. 2006.
- Miller Institute for Basic Research in Science Research Award. \$45,000. To support basic ecological and evolutionary research. 2001-2004.
- **National Science Foundation Doctoral Dissertation Improvement Grant**. \$10,367. Asexuality and parasitism in arbuscular mycorrhizal fungi. 1998-2000.

#### Grants: Co-PI

- National Science Foundation Doctoral Dissertation Improvement Grant. \$21,970. Exploring convergence within pitcher plant microcosms (NSF#1400982). 2014-2016. To Leonora Bittleston (Pringle and Pierce Laboratories).
- Templeton Foundation Foundational Questions in Evolutionary Biology (FQEB) Research Grant. \$197,692. Cooperative species networks. 2012- 2014. Co-PI with Naomi Pierce (OEB, Harvard) and Megan Frederickson (U. Toronto).
- National Science Foundation Improvement in Facilities, Communications and Equipment at Biological Field Stations and Marine Laboratories (FSML). \$348,259. Infrastructure for molecular and microbial ecology at the Harvard Forest (NSF#0930516). 2009-2011. Co-PI with David Foster and Aaron Ellison (Harvard Forest), and Serita Frey (UNH).

#### **Collaborative International Grants**

- **Portuguese Foundation for Science and Technology (FCT).** EUR 179,508. "What makes *Amanita phalloides* a successful invader? Insights from its native range". 2012-2015. With Susana Gonçalves, Universidade de Coimbra, Portugal.
- Swedish Foundation for International Cooperation in Research and Higher Education. SEK 900,000. Systems Biology of *Neurospora*. 2008-2010. With Hanna Johanneson, Uppsala Universitet, Sweden.

## **Invited Talks (Academic Audiences)**

- 1. 1999 Society for the Study of Evolution "Evolutionary Biology of Host-Parasite Systems"
- 2. 2000 Elon College
- 3. 2000 Carleton College
- 4. 2000 University of California, Berkeley
- 5. 2002 University of California, Davis
- 6. 2002 University of Toulouse (France)
- 7. 2003 Fungal Genetics Conference
- 8. 2003 University of Toronto (Canada)
- 9. 2003 Indiana University
- 10. 2004 Harvard University
- 11. 2004 Max Planck Institute for Demographic Research (Germany)
- 12. 2005 University of Guelph (Canada)
- 13. 2005 University of Maine
- 14. 2005 Uppsala University (Sweden)
- 15. 2006 Harvard Forest
- 16. 2006 University of New Hampshire
- 17. 2006 "Mycorrhiza: systems research from genes to communities" Conference (Switzerland)
- 18. 2006 Harvard University Microbial Sciences Initiative Symposium
- 19. 2007 Duke University
- 20. 2007 University of Toulouse (France)
- 21. 2007 University of Montpellier (France)
- 22. 2007 University of Massachusetts, Boston
- 23. 2007 Brown University
- 24. 2007 University of Virginia
- 25. 2008 University of Texas, Austin
- 26. 2008 Ecological Society of America "Frontiers in Fungal Ecology"
- 27. 2008 Mycological Society of America "Fungal Biodiversity Informatics"
- 28. 2008 China Agricultural University (Beijing)
- 29. 2009 AAAS Annual Meeting "Microbes in a Changing World"
- 30. 2009 Fungal Genetics Conference
- 31. 2009 American Society of Microbiology "Microbes in a Changing World"
- 32. 2009 Max Planck Institute for Demographic Research (Germany)
- 33. 2010 University of Georgia, Department of Ecology
- 34. 2010 University of Georgia, Department of Genetics
- 35. 2010 University of Wisconsin, Madison
- 36. 2010 International Mycological Congress "Invasive and Threatened Fungi" (Scotland)
- 37. 2010 EMBL/EMBO "Experimental Approaches to Evolution and Ecology" (Germany)
- 38. 2010 California Institute of Technology
- 39. 2010 Marine Biological Laboratory, Woods Hole
- 40. 2011 Boston University
- 41. 2011 Joint Genome Institute "Basidiomycetes Jamboree" (via Skype)
- 42. 2011 Oregon State University, Bonnie Templeton Lecture
- 43. 2011 Jacques Monod CNRS, Roscoff (France) "Emerging Fungal Diseases and Global Change"
- 44. 2011 University of Pennsylvania
- 45. 2011 University of Massachusetts, Amherst
- 46. 2011 Cold Spring Harbor "Plant Genomes: From Genes to Networks"
- 47. 2012 Max Planck Institute for Demographic Research (Germany)

- 48. 2012 Ecological Society of America "Universal Senescence?"
- 49. 2013 University of British Columbia
- 50. 2013 Northern Arizona University
- 51. 2013 University of Minnesota
- 52. 2013 Fungal Genetics Conference
- 53. 2013 Swedish Agricultural University (Sweden)
- 54. 2013 University of Georgia
- 55. 2013 Princeton University
- 56. 2013 Pennsylvania State University
- 57. 2013 Rockefeller University
- 58. 2013 Rutgers University
- 59. 2013 University of California, Berkeley
- 60. 2014 National Science Foundation
- 61. 2014 University of Pennsylvania
- 62. 2014 University of California, Los Angeles
- 63. 2014 University of Wisconsin, Madison
- 64. 2014 University of California, Santa Cruz "Anthropocene: Arts of Living on a Damaged Planet"
- 65. 2014 Max Planck Institute for Developmental Biology (Germany)
- 66. 2014 International Mycological Congress, "Diversity of Ectomycorrhizal Systems" (Thailand)
- 67. 2014 Harvard Forest
- 68. 2014 DARPA
- 69. 2014 Universidad de los Andes (Colombia)
- 70. 2015 Université de Nice Sophia Antipolis (lecture series; France)
- 71. 2015 ETH Zurich (Switzerland)
- 72. 2015 The Field Museum
- 73. 2015 EMBL/EMBO "New Model Systems for Linking Evolution and Ecology" (Germany)
- 74. 2015 New Phytologist Workshop "Emerging Science of Plant/Fungal Invasions" (New Zealand)
- 75. 2015 HFSP Annual Meeting (Singapore)
- 76. 2015 Mycological Society of America "Fungal Invasions"

#### Invited Talks (Popular Audiences/Science Outreach)

- 1. 2005 Mycological Society of San Francisco
- 2. 2005 Los Angeles Mycological Society
- 3. 2005 Davis, CA Mycological Society
- 4. 2006 Friends of the Farlow Herbarium (Harvard University)
- 5. 2006 Boston Mycological Club
- 6. 2006 Mycological Association of Washington, D.C.
- 7. 2006 Radcliffe Trust (Harvard University)
- 8. 2006 "Paths of Professorship" Workshop (MIT)
- 9. 2007 Derek Bok Center for Teaching and Learning Career Panel (Harvard University)
- 10. 2007 Harvard Museum of Natural History Family Program
- 11. 2009 New England Mycological Foray
- 12. 2010 New England Botanical Club
- 13. 2010 Harvard Life Sciences High School Teacher Outreach Program
- 14. 2012 Radcliffe Institute Outreach Events "Crossroads of Science and Art", San Francisco
- 15. 2013 Cambridge Science Week
- 16. 2015 NOVA's CafeSci, Boston

## **Contributed Talks**

- 1. 1996 National Association of Biology Teachers National Convention
- 2. 1998 Duke University
- 3. 1998 Society for the Study of Evolution
- 4. 1998 Ecological Society of America
- 5. 2000 Ecological Society of America
- 6. 2004 Society for the Study of Evolution
- 7. 2004 Mycological Society of America
- 8. 2007 Fungal Genetics Conference
- 9. 2007 Ecological Society of America
- 10. 2011 Mycological Society of America
- 11. 2012 Mycological Society of America
- 12. 2014 VII Congreso Latinoamericano de Micología (Colombia)

# Member of the Following Collaborative Groups:

- National Center for Ecological Synthesis Working Group "Narrowing the Gap Between Theory and Practice in Mycorrhizal Management". 2006-2007.
- FESIN/ "Fungal Environmental Sampling and Informatics Network", a National Science Foundation Research Coordination Network. 2008-present.

## **Select Publicity**

Featured on National Public Radio's "You're The Expert" (theexpertshow.com). Aired April 2015. Appalachian Mountain Club magazine, AMC Outdoors. "Wild Wisdom" column. April 2015.

Slate. "The Most Dangerous Mushroom". February 10, 2014.

- New York Times. "In a Place for the Dead, Studying a Seemingly Immortal Species". January 1, 2013.
- Filmed for NOVA's "scienceNOW". "What Are Animals Thinking?" Aired November 2012.
- Research featured in Polish newspaper Gazeta; "Grzyby: jak wykorzystac podziemne imperium". May 2012.
- Research on lichen microbiomes featured on National Public Radio's "Living on Earth". March 2011.
- Mycology class featured in the Harvard, MA town newspaper; "Students find life in the cemetery". October 2010.
- Research on cooperative spore dispersal featured in The Scientist, Wired, Muy Interesante (Mexico), New Scientist (UK), Der Spiegel (Germany), Noorderlicht (Netherlands), among others. October 2010.
- Research on *Amanita phalloides*, lichens, cooperative spore dispersal featured in multiple articles of the Harvard Gazette: news.harvard.edu/gazette/. Various dates.
- Work on invasive fungi featured in Microbe: The News Magazine of the American Society for Microbiology 4: 213-214. May 2009.
- Featured in *Yes Mag, the Science Magazine for Adventurous Minds* article "Fairy Tale" (about fungal fairy rings). July/August 2007.
- Research on *Amanita phalloides* featured on National Public Radio's "All Things Considered". NPR's "Story of the Day"; subsequently picked up by fungal and other blogs. February 2007.

# Teaching

COURSES AT HARVARD Evolution of Aging (Freshman Seminar 230), 2009, 2010, 2011, 2013 Biology of the Fungi (OEB 54), 2006, 2007, 2008, 2009, 2010, 2012 Ecological Genetics (OEB 278), 2007, 2008, 2013 GUEST LECTURES AT HARVARD (PARTIAL LIST)

BIOS S-165 (Study Abroad in Malaysia: The Biodiversity of Borneo), Microbiology 210 (A Microbial World), MCB 205 (Genetics and Genomics), OEB 202 (Individuality and Form in Biology)

SCIENTIFIC ADVISOR: for displays on fungi housed within a new, permanent exhibit on "New England Forests"; Harvard Museum of Natural History. 2010-2012.

ELEMENTARY, MIDDLE AND HIGH SCHOOL SCIENCE TEACHER Introductory Biology, Botany (including Mycology), Chemistry, Physics, Independent Science Research for High School students. Saint Ann's School, Brooklyn NY. 1993-1995.

# **Undergraduate Mentoring and Advising**

UNDERGRADUATE RESEARCH (SINCE 2005)

Rachel Stahr	2005	Harvard Forest REU
K. Fenstermacher	2005-2008	Independent research, PRISE/MSI summer fellow, senior thesis
J. Soon Ok Worl	2006-2008	Paid assistant, HUCE research assistantship
Julie Shapiro	2005-2009	Independent research, MCZ GUR grant
Kate Farley	2008-2009	Independent research, Harvard Forest REU
R. Compton	2008-2009	Independent research, MCZ GUR grant, senior thesis
A. Mushegian	2008-2010	Independent research, senior thesis
Samuel Pérez	2008-2011	Independent research, PRISE summer fellow, Harvard Forest
		REU, HHMI IDEAS fellow
Rachel Hawkins	2010-2011	Paid assistant, independent research, MSI summer fellow
Serena Zhao	2010-2012	Independent research, MSI summer fellow, MCZ GUR grant,
		senior thesis
C. Anderson	2011-2012	Independent research
David Jaramillo	2011-2012	Radcliffe Research Partnership
Lila Strominger	2011-2013	Independent research, senior thesis
Ethan Addicott	2011-2014	Radcliffe Research Partnership, MSI summer fellow, senior
		thesis
Tristan Wang	2012-2014	Paid assistant
Charlie Wolock	2012-2015	Independent research, senior thesis

ACADEMIC ADVISING

Organismic and Evolutionary Biology Concentration Advisor 2005-2014; Board of Freshman Advisors 2006-2009; Environmental Science and Public Policy Concentration Advisor 2007-2014

# **Graduate Student Mentoring and Advising**

PRINGLE LABORATORY GRADUATE STUDENTS: PH.D.

Benjamin Wolfe<sup>1,2</sup> 2005-2010 The evolution of symbiosis within the genus *Amanita* (currently Assistant Professor, Tufts University)

Primrose Boynton<sup>2</sup> 2006-2012 Community assembly of pitcher plant yeasts (currently Postdoctoral Fellow, Max Planck Institute for Evolutionary Biology)

Kolea Zimmerman<sup>1</sup> 2010-present The evolution of life histories among the fungi

Leonora Bittleston<sup>1,2</sup> 2010-present Multi-species interactions, co-advised by N. Pierce <sup>1</sup>These individuals supported by NSF Graduate Research Fellowships.

<sup>2</sup>These individuals awarded NSF Doctoral Dissertation Improvement Grants.

PRINGLE LABORATORY GRADUATE STUDENTS: MASTERS

Catherine Adams <sup>1</sup>	2012-2014	Invasion biology		
Anne Kakouridis	2013-2014	Fungal biodiversity in contexts of global change		
PRINGLE LABORATORY GRADUATE STUDENTS: ROTATION				
Martha H. Elmore	2013-2014	Ecological genetics of mating type loci		
Maryam C. De Mares 2013		Erasmus Mundus Master Programme in Evolution		
Committee Member for 21 Graduate students at Harvard, not listed; particularly				
INVOLVED IN THE COMMITTEES OF:				
Joerg Fritz	(Brenner Group, School of Engineering and Applied Sciences, graduated 2013)			
Austin Booth	(Department of Philosophy, graduated 2014)			
Chris Baker	(Pierce Lab, Organismic and Evolutionary Biology, until 2014)			

EXTERNAL EXAMINER/OPPONENT: Elisabet Ottosson (Stenlid Group, Swedish University of Agricultural Sciences, 2013)

FACULTY ADVISOR: Harvard Graduate Women in Science and Engineering (HGWISE). 2005-2014.

## **Post-Doctoral Associates**

Franck Richard. 2006. Now Maître de Conférences, CNRS, Montpellier, France.

Celeste Peterson. 2006-2007. MSI Fellow. Joint with Roberto Kolter, HMS. Now Assistant Professor, Suffolk University.

Marcus Roper. 2006-2007. Farlow Fellow. Now Associate Professor, UCLA

Gabriel Amselem. 2010-2012. Joint with Michael Brenner, SEAS. Now at LadHyX laboratory, École Polytechnique, Paris.

Agnese Seminara, 2008-2012. Marie Curie Fellow. Joint with Michael Brenner, SEAS. Now Chargé de Recherche de première classe, CNRS, Nice, France.

Christopher Sthultz. 2010-2012. Now Assistant Professor, University of Minnesota, Crookston. Elizabeth Barron. 2010-2013. Now Assistant Professor, University of Wisconsin, Osh Kosh.

Jaqueline Hess. 2011-2014. Now Postdoctoral Fellow, University of Oslo.

Karen Alim. 2010-present. Joint with Michael Brenner, SEAS.

# Sabbatical and Other Visitors

Louise Glass. Sabbatical. From University of California, Berkeley. Spring 2006. Jim Bever. Sabbatical. From Indiana University. Fall 2007. Inger Skrede. Fulbright Scholar. From Universitetet I Oslo. Fall 2011. Erik Hobbie. Sabbatical. From University of New Hampshire. 2011-2012. Gwen Grelet. Marie Curie Fellow. From Landcare Research, New Zealand. 2013. Monique Gardes. Sabbatical. From Université de Toulouse. 2013

# Service

HARVARD COMMITTEES

Life Sciences Evolutionary Biology Strategic Planning Committee (FAS). 2006. Committee to Evaluate the Movement of the Harvard University Herbaria (FAS). 2006. Search Committee for Plant Evolutionary Biologist (OEB). 2006-2007. Search Committee for Plant Ecology and Global Climate Change Biologist (OEB). 2007-2008. Harvard Task Force on Greenhouse Gas Emissions (University Committee). 2008. OEB Undergraduate Curriculum Committee. 2009-2010. University Hearing Committee (University Committee). 2007-2014. Microbial Sciences Initiative Steering Committee (involves multiple schools). 2008-2014.

BOARD OF TUTORS: Environmental Science and Public Policy Concentration. 2007-2014.

#### CONSORTIUM OF DIGITAL MYCOLOGY RESOURCES

Founding board member of a Federal 510(c)3 organized to preserve and develop digital resources about fungi. 2009-present.

ELECTED: Councilor for Ecology/Pathology, Mycological Society of America. 2010-2012.

SOCIETY COMMITTEES

Karling Lecture Committee, Mycological Society of America. 2011-2014

#### EDITORIAL BOARDS

Journal of Experimental Zoology Part B: Molecular and Developmental Evolution (Wiley-Blackwell). 2005-2011.

Fungal Ecology (Elsevier). 2008-present. (Directing Editor for Special Issue on "Conservation Underground: Fungi in a Changing World", 2010-2011.)

#### CONFERENCES & SYMPOSIA, ETC., ORGANIZED

- Radcliffe Institute for Advanced Study/ Harvard University Center for the Environment Symposium "Biodiversity in the Anthropocene". March 2006.
- Radcliffe Institute Advanced Seminar "From Promise to Reality: Appropriate Contexts for the use of Mycorrhizal Fungi as Organic Fertilizers". March 2008.
- Mycological Society of America Symposium "Fungal Biodiversity Informatics". August 2008 Encyclopedia of Life Workshop "Fungi & the Encyclopedia of Life". August 2008.

Harvard Plant Biology Symposium "Interactions". May 2009.

- Mycological Society of America Symposium "The Conservation Biology of Fungi". July 2009.
- American Academy of Microbiology Colloquium on Microbial Evolution. August 2009.
- Association for Tropical Biology and Conservation Symposium "The Underexplored Diversity of Fungi". July 2010.
- International Mycological Congress Symposium "Invasive and Threatened Fungal Species". August 2010.

FESIN Workshop "Metagenomics and More: Teaching Mycology in the 21<sup>st</sup> Century". August 2011.

Radcliffe Institute Advanced Seminar "Mechanisms of Transport Across Adaptive Biological Networks in the Face of Global Change". March 2012.

REVIEWER for African Journal of Agricultural Research, Biological Invasions, Cell Reports, Central European Journal of Biology, Current Biology, Ecology, Ecology Letters, Estonian Science Foundation, Eukaryotic Cell, Evolution, Fungal Genetics and Biology, Genetics, Israel Science Foundation, ISME Journal, Journal of Applied Ecology, Journal of Ecology, FEMS Microbiology Ecology, Functional Ecology, Fungal Ecology, Microbial Ecology, Molecular Biology and Evolution, Molecular Ecology, Mycologia, Mycorrhiza, National Science Foundation, Natural Sciences and Engineering Research Council of Canada, National Environment Research Council (NERC; U.K.), National Geographic Society, Nature, New Phytologist, Oikos, Proceedings of the National Academy of Science USA, Proceedings of the Royal Society B, Sloan Foundation, Springer-Verlag (book proposal), Trends in Ecology and Evolution

## **Professional Affiliations**

Society for the Study of Evolution, Mycological Society of America, Ecological Society of America, International Society for Fungal Conservation (founding member)

## References

Dr. Jim Bever, Indiana University: jbever@indiana.edu

Dr. Michael Brenner, Harvard University: brenner@seas.harvard.edu

Dr. Tom Bruns, University of California, Berkeley: pogon@berkeley.edu

Dr. Dan Hartl, Harvard University: dhartl@oeb.harvard.edu

Dr. Andrew Murray, Harvard University: amurray@mcb.harvard.edu