

**KEITH CLAY**

Department of Biology Program Affiliation: EEB

Research Areas: Species interactions, community ecology, biodiversity, disease, symbiosis

Web of Science Researcher ID: C-8730-2012

Google Scholar Index: <http://scholar.google.com/citations?user=8v1PvG1CERwC&hl=en>  
(3/31/2017: 13,657 citations; h-index=62; i-10 index = 165)

**DEGREES**

- 1977 B.S., Botany, Rutgers College  
1982 Ph.D., Botany, Duke University

**APPOINTMENTS**

- 1977-78 Teaching Assistant, Duke University  
1981 Teaching Assistant, Duke University  
1982-83 Postdoctoral Associate, University of Texas  
1983-86 Assistant Professor, Louisiana State University  
1986-91 Assistant Professor, Department of Biology  
1991-96 Associate Professor, Department of Biology  
**1993-** Adjunct Faculty, SPEA  
1996-13 Professor, Department of Biology  
2002-14 Director, IU Research and Teaching Preserve  
2007-13 Director, IU Center for Research in Environmental Science  
**2013-** Distinguished Professor of Biology

**HONORS AND AWARDS**

- 1977 Highest Honors in Botany, Rutgers College  
1977 Phi Beta Kappa, Rutgers College  
1978-81 NSF Graduate Fellowship  
1981-82 NIH Genetics Program Training Fellowship, Duke University  
1983 Sigma Xi  
1989 Inaugural Article for Journal *Mycological Research*  
1989 Outstanding Young Faculty Award, IU

- 1994-97 Associate Editor, *International Journal of Plant Science*
- 1998-01 Associate Editor, *Ecology and Ecological Monographs*
- 1999 Indiana University Teaching Excellence Recognition Award (TERA)
- 1999 Invited Nominator, MacArthur Fellows Program (nominee was 2003 recipient)
- 2001-04 Associate Editor, *Plant Biology*
- 2003 A. R. Wallace – R. E. Franklin Medal, Dept. of Biology, IU
- 2004-** Editorial Advisory Board, *New Phytologist*
- 2005-** Fellow, American Association for the Advancement of Science
- 2005-12 Associate Editor, *Fungal Biology Reviews*
- 2012-13 Visiting Professor, Royal Netherlands Academy of Arts and Sciences
- 2013-** Distinguished Professor of Biology
- 2016 Guest Professor, ETH-Zurich, Switzerland
- 2016 Invited Nominator, Kyoto Prize

## PRIMARY RESEARCH PUBLICATIONS

### A. PEER-REVIEWED PRIMARY RESEARCH ARTICLES

165. Flory, S. F., Alba, C., Clay, K., Holt, R. and E. Goss. **2017**. Emerging pathogens can suppress invaders and promote native species recovery. *Biological Invasions* (in press).
164. Shearin, Z. R. C., Filipek, M., Desai, R., Bickford, W., Kowalski, K. and K. Clay. **2017**. Fungal endophytes from seeds of invasive, non-native *Phragmites australis* and their potential role in germination and seedling growth. *Plant and Soil* (in press).
163. Christian, N. C., C. Sullivan, N. D. Visser and K. Clay. **2016**. Plant host and geographic location drive endophyte community composition in the face of perturbation. *Microbial Ecology* (DOI: 10.1007/s00248-016-0804-y).
162. Clay, K., Z. R. C. Shearin, K. A. Bourke, W. A. Bickford and K. P. Kowalski. **2016**. Diversity of fungal endophytes in non-native *Phragmites australis* in the Great Lakes. *Biological Invasions* 18: 2703-2716.
161. Stricker, K. B., P. F. Harmon, E. M. Goss, K. Clay and S. L. Flory. **2016**. Emergence and accumulation of novel pathogens suppress an invasive species. *Ecology Letters* 19: 469-477.

160. Christian, N., B. K. Whitaker and K. Clay. 2015. Microbiomes: unifying animal and plant systems through the lens of community ecology theory. *Frontiers in Microbiology* 6:869. <http://dx.doi.org/10.3389/fmicb.2015.00869>
159. Beaulieu, W., D. Panaccione, K. Ryan, W. Kaonongbua and K. Clay. 2015. Phylogenetic and chemotypic diversity of *Periglandula* species in eight new morning glory hosts (Convolvulaceae). *Mycologia* 107: 667-678.
158. Kowalski, K. P., C. Bacon, W. Bickford, H. Braun, K. Clay, M. Leduc-Lapierre, E. Lillard, M. McCormick, E. Nelson, M. Torres, J. White and D. A. Wilcox. 2015. Advancing the science of microbial symbiosis to support invasive species management: a case study on *Phragmites* in the Great Lakes. *Frontiers in Microbiology* 6: 95. doi: [10.3389/fmicb.2015.00095](https://doi.org/10.3389/fmicb.2015.00095)
157. Rynkiewicz, E. C., C. Hemmerich, C. Fuqua and K. Clay. 2015. Bacterial communities of two tick species and blood of their shared rodent host. *Molecular Ecology* 24: 2566-2579.
156. Flory, S. L., K. Clay, S. Emery, J. Robb and B. Winters. 2015. Fire and non-native grass invasion interact to suppress tree regeneration in eastern deciduous forests. *Journal of Applied Ecology* 52: 992-1000.
155. Johnson, D. J., S. L. Flory, A. Shelton, C. Huebner and K. Clay. 2015. Interactive effects of a non-native invasive grass *Microstegium vimineum* and herbivore exclusion on experimental tree regeneration under differing forest management. *Journal of Applied Ecology* 52: 210-219.
154. Anderson-Teixeira, K. *et al.* (K. Clay is one of 80 authors). 2014. CTFS-ForestGEO: A worldwide network monitoring forests in an era of global change. *Global Change Biology* (2014), doi: [10.1111/gcb.12712](https://doi.org/10.1111/gcb.12712)
153. Gavish, Y., H. Kedem, I. Messika, C. Cohen, E. Toh, D. Munro, Q. Dong, C. Fuqua, K. Clay and H. Hawlena. 2014. Association of host and microbial species diversity across spatial scales in desert rodent communities. *PloS one* 9(10), e109677.
152. Réjou-Méchain, M., H. C. Muller-Landau, M. Detto, S. C. Thomas, T. Le Toan, S. S. Saatchi, J.S. Barreto-Silva, N. A. Bourg, S. Bunyavejchewin, N. Butt, W. Y. Brockelman, M. Cao, D. Cárdenas, J.-M. Chiang, G. B. Chuyong, K. Clay, R. Condit, H. S. Dattaraja, S. J. Davies, A. Duque, S. Esufali, C. Ewango, R.H.S. Fernando, C. D. Fletcher, I. A. U. N Gunatilleke, Z. Hao, K. E. Harms, T. B. Hart, B. Hérault, R. W. Howe, S. P. Hubbell, D. J. Johnson, D. Kenfack, A. J. Larson, L. Lin, Y. Lin, J. A. Lutz, J. -R. Makana, Y. Malhi, T. R. Marthews, R. W. McEwan, S. M. McMahon, W. J. McShea, R. Muscarella, A. Nathalang, N. S. M. Noor, C. J. Nytch, A. A. Oliveira, R. P. Phillips, N. Pongpattananurak, R. PUNCHI-MANAGE, R. Salim, J. Schurman, R. Sukumar, H. S. Suresh, U. Suwanvecho, D. W. Thomas, J. Thompson, M. Uriarte, R. Valencia, A. Vicentini, A. T. Wolf, S. Yap, Z. Yuan, C. E. Zartman, J. K. Zimmerman, and J. Chave. 2014. Local spatial structure of forest biomass and its consequences for remote sensing of carbon stocks. *Biogeosciences* 11: 5711-5742.

151. Rynkiewicz, E. and K. Clay. 2014. Tick community composition in Midwestern US habitats in relation to sampling method and environmental conditions. *Experimental and Applied Acarology* 64: 109-119.
150. Johnson, D. J., N. A. Bourg, R. Howe, W. J. McShea, A. Wolf and K. Clay. 2014. Conspecific negative density-dependent mortality and the structure of temperate forests. *Ecology* 95: 2493-2503.
149. Clay, K. 2014. Defensive symbiosis: A microbial perspective. *Functional Ecology* 28: 293-298.
148. Shelton, A.L., J.A. Henning, P. Schultz and K. Clay. 2014. Effects of abundant white-tailed deer on vegetation, animal communities, mycorrhizal fungi, and soils. *Forest Ecology and Management* 320: 39-49.
147. Larimer, A., K. Clay and J. Bever. 2014. Synergism and context dependency of interactions between arbuscular mycorrhizal fungi and rhizobia with a prairie legume. *Ecology* 95: 1045-1054.
146. Schweitzer, J., Juric, I., van de Voorde, T., Clay, K., van der Putten, W., Bailey, J. 2014. Evolutionary consequences of plant-soil feedback: from adaptation to maladaptation. *Functional Ecology* 28: 55-64.
145. Emery, S.M., S. L. Flory, K. Clay, J. Robb and B. Winters. 2013. Demographic responses of the invasive annual grass *Microstegium vimineum* to prescribed fires and herbicide. *Forest Ecology and Management* 308: 207-213.
144. Crous, P.W., K. Clay, *et al.* 2013. Fungal Plant description sheets: *Bipolaris drechsleri*. *Persoonia* 31:188-296.
143. Beaulieu, W. T., D. G. Panaccione, C. S. Hazekamp, M. C. McKee, K. L. Ryan and K. Clay. 2013. Differential allocation of seed-loaded ergot alkaloids during early ontogeny of morning glories (Convolvulaceae). *Journal of Chemical Ecology* 39: 919-930.
142. Cook D., W. T. Beaulieu, I. W. Mott, F. Riet-Correa, D. R. Gardner, D. Grum, J. A. Pfister, K. Clay and C. Marcolongo-Pereira. 2013. *Ipomoea carnea* is host to an endophytic fungus in the ascomycete order Chaetothyriales that produces the alkaloid swainsonine. *Journal of Agricultural and Food Chemistry* 61: 3797-3803.
141. Gibson, A. K., Z. Smith, C. Fuqua, K. Clay and J. K. Colbourne. 2013. Why so many unknown genes? Partitioning orphans from a representative transcriptome of the lone star tick *Amblyomma americanum*. *BMC Genomics* 14: 135.
140. Rynkiewicz, E. C., H. Hawlena, L. A. Durden, M. W. Hastriter, G. E. Demas and K. Clay. 2013. Associations between innate immune function and ectoparasites in wild rodent hosts. *Parasitology Research* 112: 1763-1770.

139. Kageman, J. and K. Clay. 2013. Effects of *Arsenophonus* and *Rickettsia* bacteria on the locomotive ability of the ticks *Amblyomma americanum*, *Ixodes scapularis* and *Dermacentor variabilis*. *Journal of Medical Entomology* 50: 155-162.
138. Flory, S. L. and K. Clay. 2013. Pathogen accumulation and long-term dynamics of plant invasions. *Journal of Ecology* 101: 607-613.
137. Hawlena H., E. Rynkiewicz, E. Toh, A. Alfred, L. A. Durden, M.W. Hastriter, D.E. Nelson, R. Rong, D. Munro, Q. Dong, C. Fuqua, and K. Clay. 2013. Arthropod traits dictate bacterial community composition of fleas and ticks. *ISME Journal* 7: 221-223
136. Reinhart, K. O., D. Johnson and K. Clay. 2012. Conspecific plant-soil feedbacks of temperate tree species in the southern Appalachians, USA. *PLoS ONE* 7: 1-7 (e40680). doi:10.1371/journal.pone.0040680).
135. Johnson, D., Beaulieu, W. B., Bever, J. and K. Clay. 2012. Conspecific negative density dependence and forest diversity. *Science* 336: 904-907.
134. Bauer, J. T., Kleczewski, N. M., Bever, J. D., Clay, K. and H. L. Reynolds. 2012. Nitrogen-fixing bacteria, arbuscular mycorrhizal fungi and the productivity and structure of prairie grassland communities. *Oecologia* 170: 1089-1098.
133. Larimer, A., J. Bever and K. Clay. 2012. Consequences of simultaneous interactions of fungal endophytes and arbuscular mycorrhizal fungi with a shared host grass. *Oikos* 121: 2090-2096.
132. Kleczewski, N., Flory, S. and K. Clay. 2012. Variation in pathogenicity and host range of *Bipolaris* sp. causing leaf blight disease on the invasive grass *Microstegium vimineum*. *Weed Science* 60: 486-493.
131. Kleczewski, N., J. T. Bauer, J. D. Bever, K. Clay, and H. L. Reynolds. 2012. A survey of endophytic fungi of switchgrass (*Panicum virgatum*) in the Midwest, and their putative roles in plant growth. *Fungal Ecology* 5: 521-529.
130. Padilla, P., Mattingly, W., Swedo, B., Clay, K. and H. L. Reynolds. 2012. Negative plant-soil feedbacks dominate seedling competitive interactions of North American successional grassland species. *Journal of Vegetation Science* 23: 667-676.
129. Reinhart, K. O., D. Johnson and K. Clay. 2012. Effects of trees on their recruits in the southern Appalachians, USA. *Forest Ecology and Management* 263: 268-274.
128. Reinhart, K. O., W. H. Van der Putten, T. Tytgat and K. Clay. 2011. Variation in specificity of soil-borne pathogens from a plant's native range versus its non-native range. *International Journal of Ecology* (doi:10.1155/2011/737298).
127. Flory, S., Kleczewski, N. and K. Clay. 2011. Ecological consequences of emerging pathogens on an invasive grass. *Ecosphere* 2: 1-12.
126. Reynolds, H. L. and K. Clay. 2011. Migratory species and ecological processes. *Environmental Law* 41: 371-391.

125. Flory, S., Long, F. and K. Clay. 2011. Invasive *Microstegium* populations consistently outperform native range populations across diverse environments. *Ecology* 92: 2248-2257.
124. Flory, S., Long, F. and K. Clay. 2011. Greater performance of introduced vs. native range populations of *Microstegium vimineum* across variable light environments. *Basic and Applied Ecology* 12: 350-359.
123. Reinhart, K. O., Royo, A. A, Kageyama, S. and K. Clay. 2010. Canopy gaps decrease microbial densities and disease risk for a shade-intolerant tree species. *Acta Oecologica* 36: 530-536.
122. Larimer, A.L., Bever, J. B. and K. Clay. 2010. Meta-analysis of the interactive effects of plant microbial symbionts. *Symbiosis* 51: 139-148.
121. Flory, S. and K. Clay. 2010. Non-native grass invasion suppresses forest succession. *Oecologia* 164: 1029-1038.
120. Civitello, D. J., Rynkiewicz, E. and K. Clay. 2010. Meta-analysis of co-infections in ticks. *Israel Journal of Ecology and Evolution* 56: 417-431.
119. Koslow, J. M. and K. Clay. 2010. Spatial and temporal dynamics of rust infection on jewelweed (*Impatiens capensis*). *International Journal of Plant Sciences* 171: 529-537.
118. Rudgers, J. A., Fischer, S, and K. Clay. 2010. Managing plant symbiosis: Fungal endophyte genotype alters plant community composition. *Journal of Applied Ecology* 47: 468-477.
117. Reinhart, K. O., T. Tytgat, W. H. Van der Putten and K. Clay. 2010. Plant invasions and the virulence of soil pathogens. *New Phytologist* 186: 484-495.
116. Speer, J. H., K. Clay, G. Bishop and M. Creech. 2010. The effect of periodical cicadas on growth of five tree species in midwestern deciduous forests. *American Midland Naturalist* 164: 173-186.
115. Droste, T., Flory, S. L. and K. Clay. 2010. Variation for phenotypic plasticity among populations of an invasive exotic grass. *Plant Ecology* 207: 297-306.
114. Flory, S. and K. Clay. 2010. Non-native grass invasion alters native plant composition in experimental communities. *Biological Invasions* 12: 1285-1294.
113. Flory, S. and K. Clay. 2009. Effects of roads and forest successional age on experimental plant invasions. *Journal of Biological Conservation* 142: 2531-2537.
112. Seddighzadeh, A., R. R. Pinger, R. R., Zercher, A., Steiner, F. E. Klyachko, O., Vann, C. N., Clay, K. and C. Fuqua. 2009. Strains of *Ehrlichia chaffeensis* in Southern Indiana, Kentucky, Mississippi and North Carolina. *Journal of Medical Entomology* 46: 1468-1473.
111. Clay, K., Shelton, A. L. and C. Winkle. 2009. Effects of oviposition by periodical cicadas on tree growth. *Canadian Journal of Forest Research* 39: 1688-1697.

110. Reinhart, K. and K. Clay. 2009. Spatial variation in soil-borne disease dynamics of a temperate tree, *Prunus serotina*. *Ecology* 90: 2984-2993.
109. Flory, S. and K. Clay. 2009. Invasive plant removal method determines native plant community responses. *Journal of Applied Ecology* 46: 434-442.
108. Ren, A. and K. Clay. 2008. Impact of a horizontally transmitted endophyte, *Balansia henningsiana*, on growth and drought tolerance of *Panicum rigidulum*. *International Journal of Plant Science* 599-608.
107. Clay, K., A. Shelton and C. Winkle. 2008. Differential susceptibility of tree species to oviposition by periodical cicadas. *Ecological Entomology* 34: 277-286.
106. Clay, K., O. Klyachko, N. Grindle, D. Civitello, D. Oleske and C. Fuqua. 2008. Microbial community ecology of ticks: prokaryotic diversity, distribution and interactions in the lone star tick, *Amblyomma americanum*. *Molecular Ecology* 17: 4371-4381.
105. Civitello, D., S. L. Flory and K. Clay. 2008. Exotic grass invasion reduces tick-borne disease risk. *Journal of Medical Entomology* 45: 867-872.
104. Rudgers, J. and K. Clay. 2008. An invasive plant-fungal mutualism reduces arthropod diversity. *Ecology Letters* 11: 831-840.
103. Tintjer, T., A. Leuchtman and K. Clay. 2008. Variation in horizontal and vertical transmission of the endophyte *Epichloë elymi* infecting the grass *Elymus hystrix*. *New Phytologist* 179:236-246.
102. Steiner, F. E., R. R. Pinger, C. N. Vann, N. Grindle, K. Clay and C. Fuqua 2008. Infection Rates of *Anaplasma phagocytophilum* variants, *Babesia* spp., *Borrelia burgdorferi* and the *Ixodes scapularis* endosymbiont in *Ixodes scapularis* ticks from Indiana, Maine, Pennsylvania and Wisconsin. *Journal of Medical Entomology* 45: 289-297.
101. Klyachko, O. B. Stein, N. Grindle, K. Clay and C. Fuqua. 2007. Localization and visualization of a *Coxiella*-type symbiont within the Lone Star Tick *Amblyomma americanum*. *Applied and Environmental Microbiology* 73: 6584-6594.
100. Koslow, J. M. and K. Clay. 2007. The mixed mating system of *Impatiens capensis* and infection by a foliar rust pathogen: Resistance, local adaptation, and fitness consequences. *Evolution* 61: 2643-2654.
99. Marks, S. and K. Clay. 2007. Low resource availability affects the interaction between fungal endophytes and two host grasses. *International Journal of Plant Science* 168: 1269-1277.
98. Flory, S.L., J.A. Rudgers, and K. Clay. 2007. Experimental light treatments affect invasion success and the impact of *Microstegium vimineum* on the resident community. *Natural Areas Journal* 27: 124-132.

97. Rudgers, J. A., Holah, J., Orr, S. P. and K. Clay. 2007. Forest succession suppressed by an introduced plant-fungal symbiosis. *Ecology* 88: 18-25.
96. Rieseberg, L. H., Kim, S-C, Randell, R. A., Whitney, K. D., Gross, B. L., Lexer, C. and K. Clay. 2007. Hybridization and the colonization of novel habitats by annual sunflowers. *Genetica* 129: 149-165.
95. Steiner, F. E., Pinger, R. R., Vann, C. N, Abley, M. J., Sullivan, B., Grindle, N., Clay, K. and C. Fuqua. 2006. Detection of *Anaplasma phagocytophilum* and *Babesia odocoilei* in *Ixodes scapularis* Say (Acari: Ixodidae) collected in Indiana. *Journal of Medical Entomology* 43: 437-442.
94. Finkes, L. K., Rudgers, J. A., Cady, A. B., Clay, K. and J. C. Mulroy. 2006. A fungal mutualist affects the composition of spiders in an old field. *Ecology Letters* 9: 347-356.
93. Flory, S. L. and K. Clay. 2006. Distance to road and forest age affect invasive exotic shrub distribution in eastern deciduous forests. *Plant Ecology* 184: 131-141.
92. Orr, S. P., Rudgers, J. A. and K. Clay. 2005. Invasive plants can inhibit native tree seedlings: Testing mechanisms of allelopathy. *Plant Ecology* 181: 153-165.
91. Lively, C. M., Clay, K. Wade, M. J. and C. Fuqua. 2005. Competitive coexistence of vertically and horizontally transmitted parasites. *Evolutionary Ecology Research* 7: 1183-1190.
90. Lemons, A., Clay, K. and J. A. Rudgers. 2005. Connecting plant-microbial interactions above- and belowground: a fungal endophyte affects decomposition. *Oecologia* 145:595-604.
89. Clay, K., Holah, J. and J. A. Rudgers. 2005. Herbivores cause a rapid increase in hereditary symbiosis and alter plant community composition. *Proceedings of the National Academy of Science USA* 102:12465-12470.
88. Reinhart, K. O., Royo, A. A., Van der Putten, W. H. and K. Clay. 2005. Soil feedback and pathogen activity in *Prunus serotina* throughout its native range. *Journal of Ecology* 93:890-898.
87. Packer, A. and K. Clay. 2004. Development of negative feedback during successive growth cycles of black cherry. *Proceedings of the Royal Society of London B* 271: 317-324.
86. Rudgers, J. A., Koslow, J.M. and K. Clay. 2004. Endophytic fungi alter relationships between diversity and ecosystem processes. *Ecology Letters* 7: 42-51.
85. Pan, J. J. and K. Clay. 2004. *Epichloë glyceriae* infection and carbon translocation in the clonal grass *Glyceria striata*. *New Phytologist* 164: 467-475.
84. Price, J., J. Bever and K. Clay. 2004. Genotype, environment, and genotype by environment interactions determine quantitative resistance to leaf rust (*Coleosporium asterum*) in *Euthamia graminifolia* (Asteraceae). *New Phytologist* 162: 729-743.



83. Reinhart, K. O., Packer, A., van der Putten, W. and K. Clay. 2003. Plant-soil biota interactions and spatial distribution of black cherry in its native and invasive ranges. *Ecology Letters* 6: 1046-1050.
82. Pan, J. J. and K. Clay. 2003. Infection by the systemic fungus, *Epichloë glyceriae*, alters clonal growth of its grass host, *Glyceria striata*. *Proceedings of the Royal Society of London B* 270: 1585-1591.
81. Grindle, N., Tyner, J. J., Clay, K. and C. Fuqua. 2003. Identification of *Arsenophonus*-type bacteria from the dog tick *Dermacentor variabilis*. *Journal of Invertebrate Pathology* 83: 264-266.
80. Reynolds, H. L., Packer, A., Bever, J. D. and K. Clay. 2003. Grassroots ecology: Plant-microbe-soil interactions as drivers of plant community structure and dynamics. *Ecology* 84: 2281-2291.
79. Packer, A. and K. Clay. 2003. Soil pathogens and *Prunus serotina* seedling and sapling growth near conspecific trees. *Ecology* 84: 108-119.
78. Clay, K. and C. L. Schardl. 2002. Evolutionary origins and ecological consequences of endophyte symbiosis with grasses. *American Naturalist* 160:S99-S127.
77. Pan, J. J. and K. Clay. 2002. Infection by the systemic fungus *Epichloe glyceriae* and clonal growth of its host grass *Glyceria striata*. *Oikos* 98:37-46.
76. Clay, K. 2001. Symbiosis and the regulation of communities. *American Zoologist* 41:810-824.
75. Fortier, G. M., M. A. Osman, M. Roach and K. Clay. 2001. Are female voles food limited? Effects of endophyte-infected tall fescue on home range size in female prairie voles (*Microtus ochrogaster*). *American Midland Naturalist* 146:63-71.
74. Richardson, C. R. and K. Clay. 2001. Sex ratio variation among *Arisaema* species with different patterns of gender-diphasy. *Plant Species Biology* 16:1-12.
73. Matthews, J. and K. Clay. 2001. Influence of fungal endophyte infection on plant-soil feedback and community interactions. *Ecology* 82: 500-509.
72. Packer, A. and K. Clay. 2000. Soil pathogens and spatial patterns of seedling mortality in a temperate tree. *Nature* 404:278-281.
71. Fortier, G., Bard, N., Jansen, M. and K. Clay. 2000. Effects of tall fescue infection and vole population density on the growth and reproduction of the prairie vole. *Journal of Wildlife Management* 64:122-128.
70. Clay, K. and J. Holah. 1999. Fungal endophyte symbiosis and plant diversity in successional fields. *Science* 285: 1742-1744.

69. Kover, P.X. and K. Clay. 1998. Trade-off between virulence and vertical transmission and the maintenance of a virulent plant pathogen. *American Naturalist* 152:165-175.
68. Kover, P. X., T. E. Dolan, and K. Clay. 1997. Potential versus realized transmission rates of a vertically and horizontally transmitted plant pathogen. *Proceedings of the Royal Society of London B* 264:903-909.
67. Clay, K. and V. K. Brown. 1997. Infection of *Holcus lanatus* and *H. mollis* by *Epichloe* in experimental grasslands. *Oikos* 79:363-370.
66. Clay, K. and P. Kover. 1996. Evolution and stasis in plant-pathogen interactions. *Ecology* 77: 997-1003.
65. Leuchtman, A. and K. Clay. 1996. Isozyme evidence for host races of the fungus *Atkinsonella hypoxylon* (Clavicipitaceae) infecting the *Danthonia* (Poaceae) complex in the southern Appalachians. *American Journal of Botany* 83:1144-1152.
64. Marks, S. and K. Clay. 1996. Physiological responses of *Festuca arundinacea* (Poaceae) to fungal endophyte infection. *New Phytologist* 133:727-733.
63. Lively, C. M., S. G. Johnson, L. F. Delph and K. Clay. 1995. Thinning reduces the effect of rust infection on jewelweed. *Ecology* 76:1859-1862.
62. Clay, K. 1995. Correlates of pathogen species richness in the grass family. *Canadian Journal of Botany* 73:542-549.
61. Fowler, N. F. and K. Clay. 1995. Environmental heterogeneity, fungal parasitism and the demography of the grass *Stipa leucotricha*. *Oecologia* 103:55-62.
60. Clay, K. 1995. *Holcus mollis*. *Castanea* 60:84-85.
59. Van Horn, R. and K. Clay. 1995. mtDNA variation in the fungus *Atkinsonella hypoxylon* infecting sympatric *Danthonia* grasses. *Evolution* 49:360-371.
58. Lu, M. and K. Clay. 1994. Differential growth of *Atkinsonella* species on host grass calli. *Mycologia* 86:667-673.
57. Clay, K. 1994. Hereditary symbiosis in the grass genus *Danthonia*. *New Phytologist* 126:223-231.
56. Clay, K. and I. Frenzt. 1993. *Balansia pilulaeformis*, another epiphytic "endophyte." *Mycologia* 85:527-534.
55. Clay, K. 1993. Size-dependent gender change in Green Dragon (*Arisaema dracontium*). *American Journal of Botany* 80:769-777.
54. Leuchtman, A. and K. Clay. 1993. Nonreciprocal compatibility between *Epichloe typhina* and four host grasses. *Mycologia* 85:157-63.

53. Clay, K., S. Marks and G.P. Cheplick. 1993. Effects of insect herbivory and fungal endophyte infection on competitive interactions among grasses. *Ecology* 74:1767-1777.
52. Petroski, R. J., R. G. Powell and K. Clay. 1992. Alkaloids of *Stipa robusta* (Sleepygrass) infected with an *Acremonium* endophyte. *Natural Toxins* 1:84-88.
51. Stovall, M. E. and K. Clay. 1991. Adverse effects on fall armyworm feeding on fungus-free leaves of fungus-infected plants. *Ecological Entomology* 16:519-23.
50. Madej, C.W. and K. Clay. 1991. Avian seed preference and weight loss experiments: the effect of fungal endophyte-infected tall fescue seeds. *Oecologia* 88:296-302.
49. Stovall, M. E. and K. Clay. 1991. Fungitoxic effects of *Balansia cyperi* (Clavicipitaceae). *Mycologia* 83:288-295.
48. Marks, S., K. Clay and G. P. Cheplick. 1991. Effects of fungal endophytes on interspecific and intraspecific competition in the grasses *Festuca arundinacea* and *Lolium perenne*. *Journal of Applied Ecology* 28:194-204.
47. Clay, K. 1991. Parasitic castration of plants by fungi. *Trends in Ecology and Evolution* 6:162-166.
46. Powell, R. G., R. D. Plattner, S. G. Yates, K. Clay and A. Leuchtman. 1990. Ergobalansine, a new ergot-type peptide alkaloid from *Cenchrus echinatus* (sandbur grass) infected with *Balansia obtecta*, and produced in liquid culture of *B. obtecta* and *B. cyperi*. *Journal of Natural Products* 53:1272-1279.
45. Plowman, T. C., A. Leuchtman, C. Blaney and K. Clay. 1990. Significance of the fungus *Balansia cyperi* infecting medicinal species of *Cyperus* from Amazonia. *Economic Botany* 44: 452-462.
44. Marks, S. and K. Clay. 1990. Effects of fungal endophyte infection, CO<sub>2</sub> and nutrients on the growth of two grasses. *Oecologia* 84:207-214.
43. Leuchtman, A. and K. Clay. 1990. Isozyme variation in the *Acremonium/Epichloe* fungal endophyte complex. *Phytopathology* 80:1133-1139.
42. Clay, K. 1990. Comparative demography of three graminoids infected by systemic, clavicipitaceous fungi. *Ecology* 71:558-570.
41. Langevin, S., K. Clay, and J. B. Grace. 1990. Incidence and effects of hybridization between cultivated rice and red rice (*Oryza sativa* L.). *Evolution* 44:1000-1008.
40. Cheplick, G. P. and K. Clay. 1989. Convergent evolution of cleistogamy and seed heteromorphism in two perennial grasses. *Evolutionary Trends in Plants* 3:127-136.
39. Leuchtman, A. and K. Clay. 1989. Morphological, cultural and mating studies on *Atkinsonella*, including *A. texensis*. *Mycologia* 81:692-701.

38. Clay, K. and A. Leuchtman. 1989. Infection of woodland grasses by fungal endophytes. *Mycologia* 81:805-811.
37. Leuchtman, A. and K. Clay. 1989. Isozyme variation in the fungus *Atkinsonella hypoxylon* within and among populations of its host grasses. *Canadian Journal of Botany* 67:2600-2607.
36. Clay, K., G. P. Cheplick, and S. M. Wray. 1989. Impact of the fungus *Balansia henningsiana* on the grass *Panicum agrostoides*: frequency of infection, plant growth, and reproduction, and resistance to pests. *Oecologia* 80:374-380.
35. Clay, K. and D. A. Levin. 1989. Quantitative variation in *Phlox*: comparison of selfing and outcrossing species. *American Journal of Botany* 76:577-589.
34. Leuchtman, A. and K. Clay. 1989. Experimental evidence for genetic variability for compatibility between the fungus *Atkinsonella hypoxylon* and its three host grasses. *Evolution* 43:825-834.
33. Cheplick, G. P., K. Clay and S. Wray. 1989. Interactions between fungal endophyte infection and nutrient limitation in the grasses *Lolium perenne* and *Festuca arundinacea*. *New Phytologist* 111:89-97.
32. Clay, K. 1989. Clavicipitaceous endophytes of grasses: Their potential as biocontrol agents. *Mycological Research* 92:1-12.
31. Clay, K. and G. P. Cheplick. 1989. Effect of ergot alkaloids from fungal endophyte-infected grasses on the fall armyworm (*Spodoptera frugiperda*). *J. Chem. Ecol.* 15:169-182.
30. Stovall, M. E. and K. Clay. 1988. The effect of the fungus *Balansia cyperi* on growth and reproduction of purple nutsedge, *Cyperus rotundus*. *New Phytologist* 109:351-359.
29. Cheplick, G. P. and K. Clay. 1988. Acquired chemical defenses of grasses: the role of fungal endophytes. *Oikos* 52:309-318.
28. Leuchtman, A. and K. Clay. 1988. Experimental infection of host grasses and sedges with *Atkinsonella hypoxylon* and *Balansia cyperi* (Balansiae, Clavicipitaceae). *Mycologia* 80:291-297.
27. Leuchtman, A. and K. Clay. 1988. *Atkinsonella hypoxylon* and *Balansia cyperi*, epiphytic members of the Balansiae. *Mycologia* 80:192-199.
26. Clay, K. 1988. Fungal endophytes of grasses: a defensive mutualism between plants and fungi. *Ecology* 69:10-16.
25. Clay, K. 1987. Effects of fungal endophytes on the seed and seedling biology of *Lolium perenne* and *Festuca arundinacea*. *Oecologia* 73: 358-362.
24. Jones, J. P. and K. Clay. 1987. Ascus and crozier development in the Balansiae. *Can. J. Bot.* 65: 1027-1030.

23. Antonovics, J., K. Clay and J. Schmitt. 1987. The measurement of small-scale environmental heterogeneity using clonal transplants of *Anthoxanthum odoratum* and *Danthonia spicata*. *Oecologia* 71: 601-607.
22. Kelley, S. E. and K. Clay. 1987. Interspecific competitive interactions and the maintenance of genotype variation within the populations of two perennial grasses. *Evolution* 41: 92-103.
21. Clay, K. 1986. Induced vivipary in *Cyperus virens* and the transmission of the fungus *Balansia cyperi*. *Can. J. Bot.* 64:2984-2988.
20. Hardy, T. N., K. Clay and A. M. Hammond, Jr. 1986. The effect of leaf age and related factors on endophyte-mediated resistance to fall armyworm (Lepidoptera: Noctuidae) in tall fescue. *Env. Entom.* 15:1083-1089.
19. Clay, K. 1986. A new disease (*Balansia cyperi*) of purple nutsedge (*Cyperus rotundus*). *Plant Disease* 70:597-599.
18. Clay, K. and D. A. Levin. 1986. Environment-dependent intraspecific competition in *Phlox drummondii*. *Ecology* 67:37-45.
17. Clay, K., T. N. Hardy and A. M. Hammond, Jr. 1985. Fungal endophytes of *Cyperus* and their effect on an insect herbivore. *Amer. J. Bot.* 72:1284-1289.
16. Clay, K., D. Dement and M. Rejmanek. 1985. Experimental evidence for host races in mistletoe (*Phoradendron tomentosum* (DC.) Gray.). *Amer. J. Bot.* 72:1225-1231.
15. Levin, D. A. and K. Clay. 1985. Extraneous pollen advantage in *Phlox cuspidata*. *Heredity* 54:145-148.
14. Hardy, T. N., K. Clay and A. M. Hammond, Jr. 1985. Fall armyworm (Lepidoptera: Noctuidae): A bioassay for fungal endophytes of grasses. *J. Econ. Entom.* 78:571-575.
13. Clay, K., T. N. Hardy and A. M. Hammond, Jr. 1985. Fungal endophytes of grasses and their effects on an insect herbivore. *Oecologia* 66:1-6.
12. Clay, K. and J. Antonovics. 1985. Quantitative variation of progeny from chasmogamous and cleistogamous flowers in the grass *Danthonia spicata*. *Evolution* 39:335-348.
11. Clay, K. and J. Antonovics. 1985. Demographic genetics of *Danthonia spicata*: Success of progeny from chasmogamous and cleistogamous flowers. *Evolution* 39:205-210.
10. Clay, K. and J. P. Jones. 1984. Transmission of the fungus *Atkinsonella hypoxylon* (Clavicipitaceae) by cleistogamous seed of *Danthonia spicata* (Graminieae). *Can. J. Bot.* 62:2893-2898.
9. Clay, K. 1984. The effect of the fungus *Atkinsonella hypoxylon* (Clavicipitaceae) on the reproductive system and demography of the grass *Danthonia spicata*. *New Phytologist* 98:165-175.

8. Levin, D. A. and K. Clay. 1984. Dynamics of synthetic *Phlox drummondii* populations at the species margin. *Amer. J. Bot.* 71:1040-1050.
7. Clay, K. 1983. Myrmechochory in the trailing arbutus (*Epigaea repens* L.). *Bull. Torr. Bot. Club* 110:166-169.
6. Clay, K. 1983. Variation in the degree of cleistogamy within and among species of the grass *Danthonia*. *Amer. J. Bot.* 70:835-843.
5. Clay, K. 1983. The differential establishment of seedlings from chasmogamous and cleistogamous flowers in *Danthonia spicata*. *Oecologia* 57:183-188.
4. Clay, K. 1982. Environmental and genetic determinants of cleistogamy in a natural population of the grass *Danthonia spicata*. *Evolution* 36:734-741.
3. Clay, K. and R. Shaw. 1981. An experimental demonstration of density-dependent reproduction in a natural population of *Diamorpha smallii*, a rare annual. *Oecologia* 51:1-6.
2. Clay, K. and N. C. Ellstrand. 1981. Styler polymorphism in *Epigaea repens*, a dioecious species. *Bull. Torr. Bot. Club* 108:305-310.
1. Clay, K. and J. Quinn. 1978. Density of stomata and their responses to a moisture gradient in *Danthonia sericea* populations from wet and dry habitats. *Bull. Torr. Bot. Club* 105:45-49.

#### B. RESEARCH MANUSCRIPTS SUBMITTED, IN REVIEW OR IN REVISION

Messika, I., Garrido, M., Kedem, H., China, V., Dong, Q., Fuqua, C., Clay, K. and H. Hawlena. **2017**. From endosymbionts to rodent communities: factors determining the reproductive success of fleas. *Oecologia* (in review).

Whitaker, B. K., Bauer, J. T., Bever, J. D. and K. Clay. **2017**. Phyllosphere microbiota induce stronger negative feedback than soil microbiota in native Asteraceae. *Ecology Letters* (revision requested).

Christian, N., Herre, E. A., Mejia, L. C. and K. Clay. **2017**. Exposure to the leaf litter microbiome of healthy adults protects seedlings from pathogen damage. *Proceedings of the Royal Society of London B* (in review).

LaManna, J. A. et al. **2017**. Negative density dependence contributes to global patterns of plant biodiversity. *Science* (in review). (Please note that Keith Clay is one of 49 co-authors of the manuscript).

Beaulieu, W. T., D. G. Panaccione, K. L. Ryan and K. Clay. **2016**. Life-history and geographical patterns of fungal symbiosis and ergot alkaloid accumulation in morning glories. (in revision).

Ramage, B., Johnson, D., Gonzalez-Akre, E. McShea, W., Anderson-Teixeira, K, Bourg, N and K. Clay. **2016**. Sapling growth rates reveal conspecific negative density dependence in a temperate forest. *Journal of Ecology* (in review).

### C. PUBLISHED REVIEWS AND BOOK CHAPTERS

36. Christian, N. S., Whitaker, B. K. and K. Clay. **2016**. A novel framework for decoding fungal endophyte diversity. *The Fungal Community*. (J. F. White and J. Dighton, Eds). Kluwer, Dordrecht (in press).
35. Clay, K., J. A. Rudgers and A. Shelton. 2012. Tall fescue, endophyte infection and vegetation change: A 10-year experiment. *Proceedings of the 7<sup>th</sup> International Symposium on Fungal Endophytes of Grasses*. (C. A. Young, G. E. Aiken, R. L. McCulley, J. R. Strickland and C. L. Schardl, Eds). Noble Foundation, Ardmore, OK. Pp. 89-93.
34. Clay, K., J. A. Rudgers and A. Shelton. 2012. Tall fescue, endophyte infection and vegetation change: A 10-year experiment. *Proceedings of the 7<sup>th</sup> International Symposium on Fungal Endophytes of Grasses*. (C. A. Young, G. E. Aiken, R. L. McCulley, J. R. Strickland and C. L. Schardl, Eds). Noble Foundation, Ardmore, OK. Pp. 89-93.
33. Rudgers, J. A. and K. Clay. 2012. Microbial mutualists and biodiversity in ecosystems. In press. In *Ecology and Evolution of Trait-Mediated Indirect Interactions*. (T. Ohgushi, O. Schmitz and R. Holt, Eds.), Cambridge University Press, Cambridge. Pp. 391-413.
32. Clay, K. and C. Fuqua. 2010. The tick microbiome: diversity, distribution and influence of the internal microbial community for a blood-feeding disease vector. Institute of Medicine, National Academies of Sciences Workshop Report: Prevention, Amelioration, and Resolution of Lyme and Other Tick-Borne Diseases. Pp. 435-458.
31. Craven, K.D., Clay, K. and C. L. Schardl. 2009. Systematics and Morphology. Pp. 11 – 30, In *Tall Fescue for the Twenty-first Century*. ( H.A. Fribourg, D.B. Hannaway, and C.P. West, Eds.). Agronomy Monograph 53, ASA, CSSA, and SSSA, Madison, WI.
30. Clay, K. 2009. A natural environmental for environmental literacy. Pp. 150 - 157, In *Environmental Literacy: A Basic Competency for 21st Century University Education*. (HL Reynolds, ES Brondizio, DM Karpa-Wilson, and BL Gross, Eds.), IU Press Bloomington.
29. Clay, K. 2008. Defensive Mutualism and Grass Endophytes: Still Valid After All These Years? Pp. 9-20, In *Defensive Mutualism in Microbial Symbiosis* (J. White and M. Torres, Eds.), Taylor & Francis Group Publishers, Boca Raton.
28. S. E. Perkins, Altizer, S., Bjornstad, O., Burdon, J. J., Clay, K., Gómez- Aparicio, L., Jeschke, J. M., Johnson, P. T. J., Lafferty, K. D., Malmstrom, C. M., Martin, P., Power, A., Strayer, D. L., Thrall, P. H. and M. Uriarte. 2008. Invasion Biology and Parasitic Infections. Pp. 179-204, In *Ecology of Infectious Diseases: Interactions between diseases and ecosystems*. (V. Eviner, F. Keesing and R. Ostfeld, Eds.). Princeton University Press, Princeton.

27. Clay, K., Reinhart, K., Rudgers, J., Tintjer, T., Koslow, J. and S. L. Flory. 2008. Red queen communities. Pp. 145-178, In *Ecology of Infectious Diseases: Interactions between diseases and ecosystems*. (V. Eviner, F. Keesing and R. Ostfeld, Eds.). Princeton University Press, Princeton.
26. Rudgers, J. A. and K. Clay. 2007. Endophyte symbiosis with tall fescue: how strong are the impacts on communities and ecosystems? *Fungal Biology Reviews* 21: 107-124.
25. Finlay, R. D. and K. Clay. 2007. Fungal endophytes in forests, woody plants and grassland ecosystems: diversity, functional ecology and evolution. *Fungal Biology Reviews* 21: 49-50.
24. Clay, K., Fuqua, C., Lively, C. and M. J. Wade. 2006. Microbial community ecology of tick-borne human pathogens. Pp. 41 – 57, In *Disease Ecology: Community Structure and Pathogen Dynamics* (S. K. Collinge and C. Ray, Eds). Oxford University Press, Oxford.
23. Rudgers, J. A. and K. Clay. 2005. Fungal endophytes in terrestrial communities and ecosystems. Pp. 423-442. In *The Fungal Community*, Vol. 3 (J. Deighton and J. White, Eds). Kluwer, Dordrecht.
22. Clay, K. and W. van der Putten. 1999. Pathogens and plant life histories. In *Life History Evolution in Plants* (T. Vuorisalo and P. Mutikainen, Eds.). Kluwer, Dordrecht, pp. 275-301).
21. Clay, K. 1998. Fungal endophytes and the dynamics of grass populations. In *The Population Biology of Grasses* (G. Cheplick, Ed.). Chapman & Hall, New York pp. 255-285.
20. Clay, K. 1997. Consequences of endophyte-infected grasses on plant biodiversity. In *Acremonium/Grass Interactions* (C. Bacon and N. Hill, eds.). Plenum Press, New York, pp. 109-124.
19. Leuchtman, A. and K. Clay. 1997. The population biology of grass endophytes. In *The Mycota Vol VI: Plant Relationships* (G. Carroll and P. Tudzynski, eds.). Springer-Verlag, Berlin, pp. 185-202.
18. Schardl, C.L. and K. Clay. 1997. Evolution of mutualistic endophytes from plant pathogens. In *The Mycota Vol. VI: Plant Relationships* (G. Carroll and P. Tudzynski, eds.). Springer-Verlag, Berlin, pp. 221-238.
17. Clay, K. 1997. Fungal endophytes, herbivores and the structure of grassland communities. In *Multitrophic Interactions in Terrestrial System* (A.C. Gange, V.K. Brown, eds.). Blackwell Scientific Publishers, Oxford, pp. 151-169.
16. Clay, K. and P. Kover. 1996. The Red Queen hypothesis and plant/pathogen interactions. *Annual Review of Phytopathology* 34: 29-50.
15. Clay, K. 1996. Interactions between fungal endophytes, grasses and herbivores. *Researches on Population Ecology* 38:191-201.



14. Clay, K. 1994. The potential role of endophytes in ecosystems. In *Biotechnology of Endophytic fungi of grasses* (C.W. Bacon and J. White, eds.). CRC Press, Boca Raton, FL, pp. 73-86.
13. Clay, K. 1993. Recent advances in the ecology of endophytes. In *Proceedings of the Second International Symposium on Acremonium/Grass Interactions* (D.E. Hume, G.C.M. Latch and H.S. Easton, eds.). AgResearch, Palmerston North, pp. 11-30.
12. Clay, K. 1993. The ecology and evolution of endophytes. *Agriculture, Ecosystems, and Environment* 44:39-64.
11. Clay, K. 1992. Fungal endophytes of plants: biological and chemical diversity. *Natural Toxins* 1:147-149.
10. Clay, K. 1992. Mycophyllas and mycorrhizas: comparisons and contrasts. In *Mycorrhizas in Ecosystems* (I.J. Alexander, A.H. Fitter, D.H. Lewis and D.J. Read, eds.). CAB International, London, pp. 13-25.
9. Clay, K. 1991. Endophytes as antagonists of plant pests. In *Microbial Ecology of Leaves* (J. Andrews and S. Hirano, eds.). Springer-Verlag, NY, pp. 331-357.
8. Clay, K. 1991. Fungal endophytes, grasses, and herbivores. In *Microbial Mediation of Plant-Herbivore Interactions* (C. Jones, V. Krischik and P. Barbosa, Eds.), John Wiley and Sons, NY, pp. 199-226.
7. Clay, K. 1990. Fungal endophytes of grasses. *Annual Review of Ecology and Systematics* 21:275-297.
6. Clay, K. 1990. Insects, endophytic fungi and plants. In *Pests, Pathogens, and Plant Communities* (J. Burdon and S. Leather, eds.). Blackwell Scientific Publications, pp. 111-130.
5. Clay, K. 1990. Use of fungal compounds by plants for defenses against herbivores. In *Animal Nutrition and Transport Processes. 1. Nutrition in Wild and Domesticated Animals*. pp. 133-145 (J. Mellinger, ed.) Karger, Basel.
4. Clay, K. 1990. The impact of mutualistic and pathogenic fungi on competitive relationships among plants. In *Perspectives on Plant Competition*. pp. 391-412. (D. Tilman and J. Grace, eds.) Academic Press, NY.
3. Clay, K. 1988. Clavicipitaceous fungal endophytes of grasses: Coevolution and the change from parasitism to mutualism. In *Co-evolution of Fungi with Plants and Animals*. pp. 79-105. (K. Pirozynski and D.L. Hawksworth, Eds.). Academic Press.
2. Clay, K. 1987. The effect of fungi on the interaction between host plants and their herbivores. *Can. J. Plant Path.* 9:380-388.
1. Clay, K. 1986. Grass Endophytes. In *Microbiology of the Phyllosphere* (N.J. Fokkema and J. van den Heuvel, Eds.), Cambridge University Press, pp. 188-204.

## D. COMMENTARIES

8. Clay, K. 2014. A mouthful of maggots (invited book review, *The Infested Mind*). *BioScience*, October, 2014.
7. Johnson, D., Beaulieu, W. B., Bever, J. and K. Clay. 2012. Response to comment on "Conspecific negative density dependence and forest diversity". *Science* 338: 469.
6. Rudgers, J. A., Davitt, A. J., Clay, K., Gundel, P. and M. Omacini. 2010. Searching for evidence against the mutualistic nature of hereditary symbiosis: A comment on Faeth. *The American Naturalist* 176: 99-103.
5. Clay, K. 2004. Fungi and the food of the gods. *Nature* 427: 401-402 (invited News and Views article).
4. Clay, K. 2003. Parasites lost. *Nature* 421: 585-586 (invited News and Views article).
3. Clay, K. and J. Holah. 2000. Response to Saikonen, (Technical Comment). *Science* 287:1887a.
2. Clay, K. 1998. The Nature of Disease in Plants (invited book review). *Trends in Ecology and Evolution* 13:38-39.
1. Clay, K. 1990. Plant Population Biology (invited book review). *The Quarterly Review of Biology* 65:105.

## E. OTHER MISCELLANEOUS PUBLICATIONS

6. Goodrich-Blair, H. Ané, J-M., Bever, J. B., Bordenstein, S., Bright, M., Chaston, J. M., Clay, K., Currie, C. R., Douglas, A. E., Gerardo, N., Harrison, M. J., Ley, R. E., McFall-Ngai, M., Mukherjee, A., Rader, B., Raffa, K. F., Ruby, E. G., Saffo, M. B., Selosse, M-A., Sonnenburg, J. L., Stock, S. P., Suen, G., Turnau, K., Udvardi, M., Visick, K. L. and V. M. Weis. 2010. Symbiosis research, technology, and education: Proceedings 5 of the 6th International Symbiosis Society Congress held 6 in Madison Wisconsin, USA, August 2009. *Symbiosis* 51: 1-12.
5. Clay, K. and P. Poole. 2009. Synthesizing symbiosis, if possible with multiple partners. *New Phytologist* 185: 10-13. (meeting review).
4. Clay, K. 2002. The fescue, the fungus and the prairie vole. *Natural History Magazine*, May, 2002.
3. Clay, K. 1995. Endophyte. In *Dictionary of the Fungi, Eighth Edition*. (D.L. Hawksworth, P. M. Kirk, B. C. Sutton and D. N. Pegler, eds.). CAB International, Egham. pp. 150.
2. Clay, K. 1989. Trespassers will be poisoned. *Natural History Magazine*, September, 1989.

1. Clay, K. 1982. Ecological and genetic consequences of cleistogamy in the grass *Danthonia spicata*. PhD Dissertation, Department of Botany, Duke University, 1982.

INDEPENDENT PUBLICATIONS FROM LAB MEMBERS (since 2000)

- Hobbs, F. C., D. J. Johnson,** and K. D. Kearns. 2013. A deliberate practice approach to teaching phylogenetic analysis. *CBE-Life Sciences Education* 12: 676-686.
- Shelton, A. L.** 2012. Mowing any time after midsummer can manage Japanese stiltgrass. *Invasive Plant Science and Management* 5: 209-216.
- Lee, M., **S.L. Flory,** and R. Phillips. 2012. Positive feedbacks to growth of an invasive grass through alteration of nitrogen cycling. *Oecologia* 170: 457-465.
- Mattingly, W.B. and **S.L. Flory.** 2011. Host plant architecture affects oviposition site selection of periodical cicadas. *Oikos* 120:1083-1091.
- Bauer, J. and **Flory, S.L.** 2011. Suppression of the woodland herb *Senna hebecarpa* by the invasive grass *Microstegium vimineum*. *American Midland Naturalist* 165:105-115.
- Simao, M.C., **S.L. Flory,** and J.A. Rudgers. 2010. Experimental plant invasion reduces arthropod abundance and richness across multiple trophic levels. *Oikos* 119:1553-1562.
- Kleczewski, N. and S.L. Flory.** 2010. Leaf blight disease on the invasive grass *Microstegium vimineum* (Japanese stiltgrass) caused by a *Bipolaris* sp. *Plant Disease* 94:807-811.
- Flory, S.L.** 2010. Management of *Microstegium vimineum* invasions and recovery of resident plant communities. *Restoration Ecology*. 18:103-112.
- Flory, S.L.** and J. Lewis. 2009. Non-chemical methods for managing Japanese stiltgrass (*Microstegium vimineum*). *Invasive Plant Science and Management*. 2:301-309.
- Rudgers, J. A. and S. Orr.** 2009. Non-native grass alters growth of native tree species via leaf and soil microbes. *Journal of Ecology* 97: 247-255.
- Flory, S.L.** 2008. Management of *Microstegium vimineum* invasions and recovery of resident plant communities. *Restoration Ecology* 18: 103-112.
- Flory, S.L.** and W. B. Mattingly. 2008. Effects of periodical cicada oviposition damage on native and exotic host plants. *Oecologia* 156: 649-656.
- T. Tintjer and J. A. Rudgers.** 2006. Grass–herbivore interactions altered by strains of a native endophyte. *New Phytologist* 170: 513-521.
- Flory, S. L., E. L. Ingram, B. J. Heidinger, and T. Tintjer.** 2005. Hands–On in the Non-Laboratory Classroom: Reconstructing Plant Phylogenies Using Morphological Characters. *The American Biology Teacher* 67:542-549.

- Cianciolo, J., **S. L. Flory**, and J. Atwell. 2006. Evaluating the use of Inquiry-based activities: Does student and teacher behavior really change? *Journal of College Science Teaching* 36:50-55.
- Rudgers, J. A.**, W. B. Mattingly, and **J. M. Koslow**. 2005. Mutualistic fungus promotes plant invasion into diverse communities. *Oecologia* 144: 463-471.
- Busch, J. W., M. Neiman, and **J. M. Koslow**. 2004. Evidence for maintenance of sex by pathogens in plants. *Evolution* 58:2584-2590.
- Pan, J. J.**, and **J. S. Price**. 2001. Fitness and evolution in clonal plants: the impact of clonal growth. *Evolutionary Ecology* 15:583-600.
- Kover, P. X.** 2000. Effects of parasitic castration on plant resource allocation. *Oecologia* 123:48-56.

## RESEARCH GRANTS

### A. PAST GRANTS

- 1984-87 NSF Ecology Program “Symbiotic Interactions between Grasses and Fungi in the Balansiae (Clavicipitaceae)” (K. Clay PI, \$105,640 (total)).
- 1986-88 US Public Health Service “Research Support Funds” (K. Clay PI, \$9,725 (total)).
- 1987-90 NSF Ecology Program “Symbiosis between Grasses and Fungi: Interactions among Mutualism, Competition and Herbivory” (K. Clay PI, \$241,917 (total)).
- 1990-94 NSF Population Biology and Physiological Ecology Program “Host Range Expansion of the Fungus *Atkinsonella hypoxylon* Infecting *Danthonia* Grasses” (K. Clay PI, \$225,000 (total)).
- 1991-94 O.M. Scott & Sons, Inc. “Improvement of Grasses by Infection with Fungal Endophytes” (K. Clay PI, \$24,000 plus \$12,000 (50% match) (total) from the Indiana Corporation for Science & Technology
- 1993-94 NSF Research Opportunity Award (ROA) “Population Structure and Reproductive Mechanism in the Plant Parasitic Fungus *Atkinsonella hypoxylon*” (K. Clay PI, T. Dolan co-PI, \$14,774 (total)).
- 1993-96 Pioneer Hi-Bred International “Fungal Endophytes from Monocotyledenous Plants” (K. Clay PI, \$34,500 (total)).
- 1995-97 NSF Ecology Program Doctoral Dissertation Improvement Grant “The Importance of Mixed Reproductive Strategies on Plant/Pathogen Interactions” (K. Clay PI, P. Kover co-PI, \$7,000 (total)).
- 1995-99 NSF Population Biology and Physiological Ecology Program “Parasitic Castration and the Population Biology of the Fungus *Atkinsonella hypoxylon*” (K. Clay PI, \$200,000 (total)).

- 1998-01 NSF Ecology Program, "Effect of Fungal Endophyte Infection on the Structure of Experimental Grasslands" (K. Clay PI, \$160,000 (total)).
- 2000-02 NSF Ecology Program Doctoral Dissertation Improvement Grant "Symbiosis and the Spatial Spread of Clonal Plant Populations" (K. Clay PI, J. Pan Co-PI, \$8,120 (total)).
- 2002-03 NSF Geography and Spatial Sciences Program SGER Grant, "An Opportunity to Study Unpredictable Events of Catastrophic Proportions in Temperate Forest Ecosystems: Developing a Baseline to Assess Cascading Effects and Coupled Interactions" (K. Clay co-PI, \$20,562 (total)).
- 2002-04 NIH/NSF Ecology of Infectious Disease Program, "Microbial Community Ecology of Tick-Borne Human Pathogens" (K. Clay PI, \$150,000 (total)).
- 2001-05 NSF Ecology Program "Soil-Borne Pathogens and Tree Recruitment in Temperate Forests" (K. Clay PI; Co-PI: Alissa Packer, \$299,662 (total)).
- 2001-05 USDA NRICGP Program "Introgression and the Evolution of Weedy Sunflowers" (L. Rieseberg PI, K. Clay co-PI, \$290,000 (total)).
- 2002-05 NSF Field Stations & Marine Lab Program Planning Grant, "Planning Activities for the Indiana University Research and Teaching Preserve" (K. Clay PI, \$23,030 (total)).
- 2003-06 NSF Multi-User Equipment Program "Improved Plant Growth Facilities for Indiana University" (K. Clay PI, J. Bever, L. Delph, R. Hangarter, J. Palmer, L. Rieseberg Co-PIs, \$237,500 (total)).
- 2003-05 NSF Ecology Program Doctoral Dissertation Improvement Grant "Vertical and Horizontal Transmission and Parasite Virulence in a Plant/Fungus Interaction" (K. Clay PI, T. Johnston co-PI, \$4,000 (total)).
- 2004-06 Indiana 21<sup>st</sup> Century Grants Program "The Indiana Center for Insect Genomics: An International Center of Centers" (P. Cherbas PI, K. Clay and C. Fuqua, co-PIs, \$395,861 of \$771,242 to IU (total), \$2,000,000 total).
- 2004-07 NSF Ecology Program "Collaborative Research: Periodical Cicadas and Forest Community Dynamics" (K. Clay PI, J. Speer co-PI, \$305,969 (total) plus \$6,205 REU Supplement to IU, \$403,341 total).
- 2005-08 NSF Informal Science Education Program "Cicadas and Forests Education" (K. Clay PI, \$74,994 (total)).
- 2003-09 NIH/NSF Ecology of Infectious Disease Program "Microbial Community Ecology of Tick-Borne Human Pathogens" (K. Clay PI, C. Fuqua, C. Lively, M. Wade, R. Pinger, co-PIs, \$1,911,691 (total) plus \$11,490 REU Supplement 2004, \$2,995 REU Supplement 2004, \$6,205 REU Supplement 2005, \$7,000 REU Supplement 2008).

- 2003-08 Indiana University Chancellor's Commitment to Excellence Program "Interdisciplinary Environmental Sciences" (K. Clay and R. Hites PIs, \$1,880,000 (total)).
- 2006-11 Indiana University METACyt Program "Genomic, Proteomic and Metabolomic Responses of Human Pathogen-Vectoring Ticks to Polymicrobial Infections" (K. Clay PI, J. Colbourne, C. Fuqua, X. F. Yang co-PIs, \$110,000 (total)).
- 2007-12 USDA US Forest Service "Dynamics, Impacts and Predictive Modeling of *Microstegium vimineum* (Japanese Stiltgrass) Invasions in Eastern Deciduous Forests" (K. Clay PI, B. Fischer, S. L. Flory, D. Johnson, A. Shelton co-PIs, \$76,785 (total)).
- 2008-12 Joint Fire Science Program, United States Forest Service "Fire and the Invasive Annual Grass *Microstegium vimineum* in Eastern Deciduous Forests" (S. L. Flory PI, K. Clay co-PI, \$239,866 (total)).
- 2008-10 NSF Biological Field Stations & Marine Labs Program "High Speed Data Line for the Indiana University Research and Teaching Preserve Field Lab" (K. Clay PI, \$105,000 (total)).
- 2008-09 Indiana University METACyt Program "Evolutionary Genomics of Compositae Weeds" (J. Bever PI, L. Reiseberg, Z. Lai, K. Clay co-PIs, \$150,000 (total)).
- 2009-12 Indiana University Center for Research in Environmental Sciences "Red Queen Communities: Is the Escape from Enemies by Invasive Species Only Temporary?" (K. Clay PI, S. L. Flory and N. Kleczewski co-PIs, \$20,000 (total)).
- 2010-12 NSF Ecology Program Doctoral Dissertation Improvement Grant "The Biotic Environment and the Context-Dependent Nature of Plant-Microbial Symbiosis" (J. D. Bever PI, K. Clay and A. Larimer co-PIs, \$12,666 (total)).
- 2011-13 Indiana University Collaborative Research Grant "Microbial Interactions Within Pathogen Vectors and Human Disease Risk" (K. Clay PI, C. Fuqua and X. F. Yang co-PIs, \$65,480 (total)).
- 2012-13 Smithsonian Institution SIGEO Program "Large Mapped Forest Plots at Lilly-Dickey Woods" (K. Clay and R. Phillips, PIs, D. Johnson co-PI, \$30,500 (total)).
- 2012 Netherlands Royal Academy of Sciences. Sabbatical visit to Netherlands Institute of Ecology (NIOO), 04/01/2012 – 10/31/2012. 15,000 Euros towards travel, rent and living expenses.
- 2011-14 NSF Ecology Program Doctoral Dissertation Improvement Grant "Influences of Host Variation on Pathogen Prevalence and Disease Dynamics in Free-Living Communities" (K. Clay PI, E. Rynkiewicz co-PI, \$14,952 (total)).
- 2011-14 NSF Ecology Program Doctoral Dissertation Improvement Grant "Assessing Geographic Patterns of Negative Density Dependence in Temperate Tree Species" (K. Clay PI, D. Johnson co-PI, \$13,386 (total)).

- 2013-15 U.S.-Israel Binational Science Foundation “Determinants of microbial community composition in nature: the effects of host species composition on the microbial community associated with an arthropod vector” (H. Hawlena PI, K. Clay and C. Fuqua co-PIs, \$75,000 (total)).
- 2016 ETH-Zurich. Sabbatical visit to ETH-Zurich, Institute of Integrative Biology, Switzerland, 05/01/2016 – 07/31/2016. 9,000 Swiss Francs towards travel, rent and living expenses.
- 2014-17 NSF Ecology Program “OPUS: Synthesizing Defensive Symbiosis from a Microbial Perspective” (K. Clay PI, \$145,278 (total)).

#### B. CURRENT GRANTS

- 2013-16** U.S. Geological Survey “Endophytic fungi of *Phragmites* and their potential effect on invasibility” (K. Clay PI, \$14,817 year one, \$62,750 year two, \$47,068 year three, \$176,680 (\$301,315 total, plus USGS directly pays for a full-time research technician based in Clay lab).
- 2014-17** NSF Ecology Program “OPUS: Synthesizing Defensive Symbiosis from a Microbial Perspective” (K. Clay PI, \$145,278 (total)).
- 2016-18** NSF Ecology Program Doctoral Dissertation Improvement Grant “Dissertation Research: Assembly, maintenance, and function of the plant-endophyte symbiosis” (K. Clay PI, N. Christian co-PI, \$19,551 (total)).
- 2017-19** NSF Ecology Program Doctoral Dissertation Improvement Grant “Dissertation Research: The role of phyllosphere microbiomes in plant species coexistence and plant-pathogen interactions” (K. Clay PI, B. Whitaker co-PI, \$20,142 (total)).

#### C. GRANT PROPOSALS SUBMITTED

- 2016** NSF Ecology and Evolution of Infectious Disease (EEID) Program “Multi-host, multi-pathogen interactions in invaded communities: The consequences of emerging infectious disease of a rapidly expanding grass”. E. M. Goss PI, K. Clay, S. L. Flory, P. F. Harmon and R. D. Holt, co-PIs (submitted 11/16/16).
- 2017** IOS Preliminary Proposal: Collaborative Research “RUI: Interactions of vertically and horizontally transmitted components of the tick microbiome and pathogen transmission”. A. Swei PI, K. Clay, E. Connor and F. Yang co-PIs (submitted 1/17).
- 2017** NSF Preliminary Proposal: Collaborative Research “**RUI**: Disturbance-driven variation in conspecific negative density dependence and the resulting effects on forest diversity”. B. Ramage PI, K. Clay co-PI (submitted 1/17).

#### STUDENTS AND POSTDOCS TRAINED

Past Ph.D. Students (Degree Year):

Stovall, Mary (LSU)	1995
Bier, James	1995
Schmidt, John	1996
Kover, Paula	1997
Richardson, Charles	1999
Packer, Alissa	2000
Pan, Jean	2002
Price, Jason	2002
Tintjer, Tammy	2005
Koslow, Jennifer	2006
Flory, Luke	2008
Larimer, Anna (co-advised with Jim Bever)	2012
Johnson, Daniel	2013
Rynkiewicz, Evelyn	2013
Hobbs, F. Collin	2013
Beaulieu, Wesley	2014

Past Master's Students:

Waite, Damon (LSU)	1986
Langevin, Sue (LSU)	1986
Van Horn, R.	1993
Lu, M.	1993
Rollo, D.	1996
White, M.	1996
Matthews, J.	1999
Floyd, A.	1999

Past Postdoctorals:

Cheplick, Gregory  
 Leuchtman, Adrian  
 Marks, Susan  
 Fone, Allan  
 Zachariah, Simon  
 Kover, Paula  
 Wagner, Richard  
 Holah, Jenny  
 Packer, Alissa  
 Rudgers, Jennifer  
 Nijjer, Summer  
 Reinhart, Kurt  
 Hawlena, Hadas  
 Flory, Luke  
 Shelton, Angie

Current Ph.D. Students:

Christian, Natalie



Whitaker, Briana  
 Durden, Lekeah

Current Ph.D. Committees:

Austin, Zoe  
 Bhattacharya, Amrita  
 Craig, Matt  
 Miller, Kayla  
 Oschrin, Emma  
 Shoemaker, Will  
 Snyder, Amy

Past Ph.D. Committees:

>60

External Examiner, Ph.D. theses:

University of Guelph (2000)  
 Umea University (2006)

**UNDERGRADUATE RESEARCH MENTORED (since 2000)**

Walker, Jamie	2000
Williams, Kyle	2000
Traub, Shannon	2000
Boger, Michael	2001
Schoonmaker, Daria	2001
McCall, Kendra	2001
Kitch, Kana	2002
Angstmann, Julia	2002
Summerton, Juna	2003
Gumbiner, Brandon	2003
Beckwith, Ming	2003
Alexander, Patrick	2003
Rahil, Neelima	2003
Utley, Rebecca	2003
Nguyen, Long	2003
*Lemons, Alisha	2003
Stuaan, Jessica	2004
Krulik, Stephanie	2004
Stephens, Bradley	2004
Hedge, Kimberley	2004
Fishman, Brian	2004
*Orr, Samuel	2004
Derrick, Benjamin	2004
*Creech, Michelle	2004
*Finkes, Laura	2004
Zheng, Dai	2005
Gonzalez, Veronica	2005

Jaeger, Melissa	2005
Allen, Peter	2005
*Droste, Tyler	2006, 2007
Eddy, Benjamin	2006
Covey, Paula	2007
Knapp, Melanie	2007
*Fischer, Susan	2007
Tawadros, Amanda	2008
Slinkard, Erin	2008
*Kagemann, Jonathan	2008, 2009
Brown, Zachary	2010
Swafford, Jessica	2011
Bechtel, Alisha	2011
*McKee, Michelle	2011
Alfred, Andrew	2011
Kromalic, Emily	2012
Smith, Cheyenne	2012
Doxey, Farah	2012
Smith, Heather	2013
Milano, Hannah	2013
*Sullivan, Courtney	2013, 2014
Ader, Kristine	2014
Ciresi, Colette	2014
*Visser, Noelle	2014, 2015, 2016
Woehnike, Erin	2014
Wooten, Savannah	2014
Hoban, Kathleen	2016
Zaret, Max	2016
Dixon, Megan	2016
Gress, Trevor	2016

\*student coauthor on scientific publication

#### OTHER TRAINING

Tom Dolan, Butler University	1995-1996	sabbatical visitor
Ann Antlfinger, University of Nebraska	1996-1997	sabbatical visitor
Furong Long, Xiping Forestry Bureau	2011	sabbatical visitor
Anzhi Ren, Nankai University	2011-2012	sabbatical visitor
Jing Huang, Chinese Academy of Sciences	2012-2013	visiting PhD student
Chai Qing, Lanzhou University	2014-current	visiting PhD student
Yuanzhang Zhao, Shendong University	2015-current	visiting PhD student
Dong Wang, Shendong University	2015-current	visiting postdoctoral student

#### CLASSROOM TEACHING

<u>Course</u>	<u>Enrollment</u>	<u>Semester</u>	<u>Year</u>
---------------	-------------------	-----------------	-------------

Louisiana State University:

BOTY 1002 General Botany	100	II	1983-84
BOTY 2055 Flora of Louisiana	20	I	1984-85
BOTY 1002 General Botany	85	II	
BOTY 2055 Flora of Louisiana	16	I	1985-86
BOTY/ZOOL 4299 Genetics of the Evolutionary Process	20	I	

Indiana University:

L111 Diversity and Function (co-taught with R. Raff)	600	I	1986-87
L111 Diversity and Function (co-taught with F. Zeller)	230	II	1987-88
Z540 Genetics of Populations (co-taught with S. Skinner and R. Richmond)	25	II	
L570 Seminar (co-taught with C. Nelson)	7	I	1988-89
L579 Community Ecology	20	I	
L111 Diversity and Function (co-taught with F. Zeller)	225	II	
L591 Plant Population Biology	11	I	1989-90
L570 Seminar (co-taught with S. Skinner)	15	I	1990-91
L579 Community Ecology	18	I	
L111 Evolution and Diversity	340	I	1991-92
Z620 Community Ecology	26	I	1992-93
L111 Evolution and Diversity	350	I	1993-94
L450 Brown Bag Seminar	40	II	
L433 Tropical Biology	15	Intersession	
L579 Community Ecology	35	II	1994-95
L111 Evolution and Diversity	325	I	1995-96
L433 Tropical Biology	15	Intersession	
L579 Community Ecology	8	I	1996-97
L472 Microbial Ecology (co-taught with A. Koch)	9	II	
L111 Evolution and Diversity	300	I	1997-98
L433 Tropical Biology	15	Intersession	
L474 Field & Laboratory Ecology	18	I	1998-99
L433 Tropical Biology	16	Intersession	

L579 Community Ecology	12	II	1998-99
L473 Ecology	32	I	1999-00
L474 Field & Laboratory Ecology	15	I	
L433 Tropical Biology in Grand Cayman Island	12	Summer Intersession	
L473 Ecology	52	I	2000-01
L474 Field & Laboratory Ecology	16	I	2000-01
L433 Tropical Biology in Costa Rica	16	Winter Intersession	
L474 Field & Laboratory Ecology	18	I	2001-02
L509 Field Exercises in Biology	1	I	2003-4
L509 Field Exercises in Biology	1	I	2004-5
L570 Brown Bag Seminar	20	I	2005-6
L579 Community Ecology	10	I	2006-7
L579 Community Ecology	17	I	2008-9
Ecology of Rock Outcrop Communities (UNC)	6	Summer 2009	
Z620 Ecology of Symbiosis	9	I	2009-10
Ecology of Rock Outcrop Communities (UNC)	7	Summer 2011	
L579 Community Ecology	16	I	2011-12
L433 Tropical Biology in Costa Rica	16	Winter Intersession	
L579 Community Ecology	15	I	2013-14
L307 Biodiversity	23	I	2014-15
(on sabbatical for 2015-2016 academic year)			
L307 Biodiversity	22	I	2016-17

### UNIVERSITY SERVICE

<u>University Committees:</u>	<u>Year</u>
Committee on B.S. in Environmental Science	1999-2009
Wells Scholars Evaluation Committee	2001-2010
Director, IU Research and Teaching Preserve	2001-2014
Director, Center for Research in Environmental Science	2007-12
Chair, Investigative Committee, Research Compliance	2005-06
Bloomington Faculty Council	2006-07
OVRP Center and Institute Advisory Committee	2006-07
Task Force on Sustainability	2007
Hilltop Garden Director Search Committee (HPER)	2007

ACT Executive Committee	2006-
Executive Committee, Task Force on Sustainability	2009-11
CIPEC Executive Committee	2010-
IUCRG Review Committee	2011, 2015
CREE Executive Committee	2009-2013
IPE Advisory Committee	2016-
<u>Departmental Committees:</u>	<u>Year</u>
Curriculum Committee	1986-87
Plant Science Search Committee	1987-88
Plant Sciences Admissions Committee	1987-90
Chair, Program in Ecology and Evolutionary Biology	1987-91
Committee of Graduate Program Directors	1987-91
Head of ad-hoc committee for disbursement of Eigenmann research funds to EEOB grad students.	1987-91
EEOB Admissions Committee	1987-92
Greenhouse Committee (chair)	1987-01
Curriculum Committee	1988
Population Biology Search Committee	1988-89
Plant/Other Organism Interaction Search Committee	1989-90
Plant Evolutionary Biology Search Committee	1990-91
Curt Lively Advisory Committee	1990-92
Lynda Delph Advisory Committee	1990-95
Institutional Representative, Organization for Tropical Studies (OTS)	1990-00
Evolutionary Biology Search Committee Chairman	1991-92
Salary Committee	1991-92, 98
Plant Sciences Steering Committee	1991-97
Lynda Delph Tenure Committee (Chair)	1994-95
Evolutionary Biology Search Committee	1996-97
EEB Admissions Committee	1996-99
Undergraduate Research Committee	1997-98
Wetlands Ecosystem Ecologist Search Committee	1998-99
Committee for Environmental Stewardship	1998-00
Biology Long-Range Planning Committee	1999
Community Ecology Search Committee, Chair	1999-00
Advisory Committee – Society for Study of Evolution Annual Meeting	1999-00
Acting Chair, EEB Program	2000
David Starr Jordan Award Committee	2000-01
Chair, Plant Sciences Program	2000-4
Microbial Ecology Search Committee	2003
Interdisciplinary Environmental Sciences Search Committee	2003
Ecology Search Committee	2004
Interdisciplinary Environmental Sciences Search Committee	2004-07
Chair, CTE Field Laboratory Building Committee	2004-8
Chair, Heather Reynolds Tenure Committee	2005-06
Chair, EEB Admissions Committee	2005-06
Chair, Greenhouse Committee	<b>2008-</b>
Spencer Hall Advisory Committee	2006-10
Greg Velicer Tenure Committee	2009

Spencer Hall Tenure Committee	2010
Rich Phillips Tenure Committee	2013
Eric Knox Research Scientist Promotion Committee	2014
David Starr Jordan Selection Committee	2014
Herbarium Curator Search Committee	2016

### INVITED SYMPOSIA AND CONFERENCE TALKS

- 1983 Symposium - "Cleistogamy: It's Ecology and Evolution," Botanical and Ecological Societies of America. Grand Forks, ND
- 1984 Symposium - "Ecology of Fungi in Field Crops with an Emphasis in Mycotoxins," Mycological Society of America. Fort Collins, CO
- 1985 Fourth International Symposium – "Microbiology of the Phyllosphere," Wageningen, The Netherlands
- 1986 Symposium-"Microbial Toxins in Nature," Ottawa Biological and Biochemical Society, Ottawa, Ontario, Canada  
Symposium, Ecology of Plant/Fungal Interactions, Ohio State University  
Symposium-"Interactions among micro-organisms, plants, and herbivores," Entomological Society of America, Boston, MA  
Symposium-"Ascomycete Biology," British Mycological Society, Oxford University, England
- 1987 Symposium-"Evolutionary and Ecological Significance of Fungal-Fungal and Fungal-Plant Interactions," Mycological Society of America and Canadian Phytopathological Society, Carleton University, Ottawa, Canada  
Symposium-"Ecology of Plant/Fungal Interactions", Botanical Society of America, Ohio State University, Columbus, OH  
Midwestern Population Biology Conference, Kellogg Biological Station, Michigan State Univ., Hickory Corners, MI
- 1988 Symposium-"Perspectives on Plant Competition," Botanical Society of America, Davis, CA
- 1989 Gordon Conference, "Chemistry of Plant-Insect Interactions," Oxnard, CA  
Symposium, "Nutrition in Wild and Domestic Animals," European Society for Comparative Physiology and Biochemistry, Reims, France
- 1990 Society for the Study of Evolution Symposium, College Park, MD  
Fourth International Mycological Congress Symposium, Regensburg, West Germany  
Symposium, USDA Cooperative States Research Service and the LSU Agricultural Experiment Station, New Orleans, LA  
Symposium, Entomological Society of America, New Orleans, LA  
International Short Course, Nordic Council for Ecology, Umea University, Umea, Sweden
- 1991 Symposium, Mycological Society of America, University of Wisconsin, Madison  
Symposium - "The Role of Fungi in Plant Evolution," Mycological Society of America, San Antonio, TX  
Third European Symposium on Mycorrhizas - "The role of mycorrhizas in ecosystems," University of Sheffield, Sheffield, U.K.
- 1993 "Second International Symposium of *Acremonium*/Grass Interactions," Massey University, New Zealand

- "Role of Disease in Ecological Communities," Ecology Society of America, Madison, WI
- 1994 "Third Annual Rutgers Turfgrass Symposium," The Center for Interdisciplinary Studies in Turfgrass Science, Rutgers University  
"Assessment of Fungal Biodiversity," Fifth International Mycological Congress, Vancouver, BC, Canada
- 1995 "Population Biology of Grasses," Botanical Society of America, San Diego, CA  
"Multitrophic Interactions in Terrestrial Systems," British Ecological Society, Univ. of London, Egham, Surrey, UK  
"Interaction between microorganisms and animals and plants, its ecological and evolutionary consequences," Society of Population Biology, Mie Prefecture, Japan  
"Plant-microbe interactions," Center for Ecological Research, Kyoto University, Kyoto, Japan
- "Fungal Endophytes," Novo Nordisk, Copenhagen, Denmark
- 1996 "Plant-Microbe Interactions," Canadian Society of Plant Physiology, Wilfred Laurier University, Waterloo, Ontario, Canada
- 1997 "International *Neotyphodium*/Grass Interactions Symposium," University of Georgia, Athens, Georgia  
"Biodiversity and Ecosystem Processes," Ecological Society of America, Albuquerque, New Mexico  
Workshop - "Rapid Evolution of Interspecific Interactions," organized by John Thompson and the National Center for Ecological Analysis and Synthesis, Santa Barbara, CA  
Graduate School, Functional Ecology - "Sex and Sexual Selection," Baarn, The Netherlands
- 1998 "Plant-Pathogen Interactions in Native Vegetation," Intl. Congress of Plant Pathology 1998, Edinburgh, Scotland  
Invited lecturer for one week for graduate course "Mutualism", Dept. of Biology, Univ. Puerto Rico, San Juan, Puerto Rico
- 1999 "Biology of Endophytes", International Botanical Congress, St. Louis, Missouri
- 2000 "Multitrophic Level Interactions in Terrestrial Systems," Society for Integrative and Comparative Biology, Atlanta, Georgia  
"Influence of *Neotyphodium* on Ecological Diversity," 4<sup>th</sup> International *Neotyphodium*/Grass Interactions" Symposium, University of Paderborn, Germany
- 2001 "Microbial Infections and the Ecology and Evolution of Hosts", Society for the Study of Evolution, Knoxville, Tennessee  
"Plant-Herbivore Interactions", Gordon Research Conference, Ventura, California
- 2003 "Plant Pathogens in Nature: Rethinking Vegetation Dynamics", Ecological Society of America, Savannah, Georgia.
- 2004 "Graduate School in Evolutionary Ecology", Nordic Graduate Course, Joulumae, Estonia (a series of four lectures).
- 2005 "Infectious Disease Ecology: Effects of Disease on Ecosystems and of Ecosystems on Disease", 11<sup>th</sup> Cary Conference, Inst. Ecosystem Studies, Millbrook, NY.  
"Microbial Communities of *Amblyomma americanum*, the lone star tick", NIH/NSF "Ecology of Infectious Disease" principal investigator meeting.
- 2006 "Chronic Lyme Disease Workshop", Cold Spring Harbor, NY.  
"Lyme Disease Association" Annual Meeting, Philadelphia, PA.  
"Grass Breeders Conference" Ames, IA.  
"Tick-borne disease: ecology and prevention" NCB-Entomological Society of America,

- Bloomington, IL.  
 “Current Advances in Tick Genomic/Proteomic Research” Acharology Society of America, Indianapolis, IN.
- 2007 “6<sup>th</sup> International Symposium on Fungal Endophytes of Grasses” Christchurch, New Zealand.  
 “Population and Evolutionary Biology of Fungal Symbionts” Ascona, Switzerland.  
 “80<sup>th</sup> Anniversary Research Symposium”, Highlands NC.
- 2008 “Lone Star Rising, Parts I & II: New work to define the role of the tick *Amblyomma americanum* in the transmission of *Bartonella*, *Borrelia*, *Ehrlichia* and *Rickettsia* species”, American Society of Tropical Medicine and Hygiene, New Orleans LA.
- 2008 “Host Defense Symbiosis”, International Symbiosis Society. Madison, WI
- 2009 “International Symposium on Fungal Endophytes of Grasses”, Mycological Society of America. University of Kentucky.
- 2010 “Unseen alliances: microbial symbioses that affect biological control”, Entomology Society of America Annual Meeting. San Diego, CA.
- 2011 “Center for Ecology, Evolution and Behavior 2011 Spring Research Symposium”, University of Kentucky (keynote speaker).
- 2012 “International Symposium on Fungal Endophyte-Grass Interactions”, Lanzhou University, Lanzhou, China
- 2013 “American Society of Rickettsiology Annual Meeting, Invited Symposium” Portland, ME
- 2015 “Ecological Society of America Annual Meeting, Invited Symposium” Baltimore, MD  
 “Botany 2015, Invited Symposium” Edmonton, Canada
- 2017 “Ecological Society of America Annual Meeting, Invited Symposium” Portland, OR (upcoming)

### INVITED SEMINARS

- 1982 Department of Botany and Microbiology, University of Arkansas
- 1983 Biology Department, McGill University, Canada  
 Department of Botany, Louisiana State University
- 1984 Department of Plant Pathology and Crop Physiology, Louisiana State University
- 1985 Department of Biology, University of Oregon  
 Department of Botany and Plant Pathology, Oregon State University
- 1986 Department of Botany, University of Washington  
 Department of Biology, Indiana University  
 Department of Biology, University of California-San Diego  
 Department of Biology, West Virginia University  
 Department of Biology, University of Utah  
 Department of Biological Sciences, Rutgers University
- 1987 Department of Botany, Ohio University  
 Department of Botany, Ohio State University  
 Department of Biological Sciences, Purdue University  
 Department of Ecology and Evolutionary Biology, Northwestern University  
 Holcolmb Research Institute and Environmental Studies Program, Butler University
- 1988 Department of Biology, DePauw University



- Department of Entomology, University of Illinois  
 Department of Botany, Miami University
- 1989 Departments of Agronomy and Botany, University of Georgia  
 Department of Organismal and Evolutionary Biology, Harvard University  
 Department of Biological Sciences, Eastern Connecticut State University
- 1991 Entomology Department and the Program in Ecology and Evolutionary Biology,  
 Michigan State University  
 Department of Botany, Washington State University  
 Department of Biology, Syracuse University
- 1992 Department of Plant Pathology and Microbiology, Texas A&M University  
 Department of Plant Pathology, University of Missouri  
 Department of Biological Sciences, Illinois State University  
 Department of Botany, University of Guelph, Canada  
 Department of Plant Pathology, Escuela Superior Politecnica de Chimborazo, Ecuador  
 Department of Ecology, Ethology and Evolution, University of Illinois
- 1993 Department of Biology, Imperial College, University of London at Silwood Park, UK  
 Department of Biological Sciences, University of Cincinnati  
 Field Museum of Natural History, Chicago
- 1994 Department of Biology, Andrews University  
 Dept. of Ecology and Evolution, SUNY-Stony Brook  
 Dept. of Plant Pathology, Michigan State University
- 1995 Dept. of Ecology, Evolution, and Behavior, University of Minnesota  
 Dept. of Plant Biology, Southern Illinois University  
 Dept. of Botany, Kyoto University, Japan
- 1996 Department of Plant Pathology, University of Kentucky  
 Department of Biology, Humboldt State University  
 Kellogg Biol. Station, Michigan State University  
 Botanical Institute, University of Basel, Switzerland  
 Department of Geobotany, ETH-Zurich, Switzerland
- 1997 Highlands Biological Station, University of North Carolina  
 Department of Biology, Indiana State University
- 1998 Dept. of Biology, Western Carolina University  
 Dept. of Biology, Univ. of Puerto Rico
- 1999 Dept. of Biology, DePauw University  
 Section of Ecology & Systematics, Cornell University
- 2000 Dept. of Plant Pathology, University of Wisconsin  
 Thermal Biology Institute, Montana State University  
 Dept. of Plant Sciences, University of Georgia  
 Division of Biology, Kansas State University
- 2001 Biological Sciences, Virginia Tech University  
 Dept. of Biology, University of Toronto, Canada  
 Dept. of Biology, University of Missouri-St. Louis  
 Dept. of Biology, Indiana University
- 2002 Dept. of Biology, Georgia Tech University
- 2003 Div. of Biol. Sciences, University of Montana
- 2004 Dept. of Plant Pathology, North Carolina State University  
 Dept. of Plant Biology, University of Illinois  
 Dept. of Geography, Geology and Anthropology, Indiana State University  
 Dept. Multitrophic Interactions, NIOO Dept. of Terrestrial Ecology, Netherlands

- 2005 Dept. of Ecology and Evolution, Rice University  
 Dept. of Biology, University of Louisville  
 Dept. of Biology, University of Virginia  
 Dept. of Biology, Washington University  
 Dept. of Biology, Western Carolina University
- 2006 Dept. of Biology, University of Mississippi  
 Dept. of Ecological Botany, Umea University, Sweden
- 2007 Department of Biology, Eastern Illinois University  
 Department of Biology, SUNY-Albany  
 Department of Biology, Duke University  
 Department of Biological Sciences, Clemson University
- 2008 Department of Biology, University of Akron  
 Department of Plant Biology, Michigan State University  
 Kellogg Biological Station, Michigan State University  
 Department of Ecology and Evolution, University of Chicago
- 2009 Department of Zoology, Miami University of Ohio  
 Department of Biological Sciences, University of Pennsylvania  
 Highlands Biological Station, University of North Carolina
- 2010 Department of Plant Sciences, Nankai University, China
- 2011 Department of Entomology, Purdue University  
 Department of Biological Sciences, Bowling Green University
- 2012 Department of Terrestrial Ecology, Royal Institute of Ecology, Netherlands  
 Institute for Water and Wetland Research, Radboud University, Netherlands  
 Department of Soil Quality, Wageningen University, Netherlands  
 Institute of Integrative Biology, University of Liverpool, UK.  
 Laboratoire d'Ecologie, Systématique et Evolution, University of Paris-Sud, France
- 2013 Plant Biology Department, University of Georgia  
 School of Biological Sciences, Washington State University
- 2014 Department of Ecology and Evolution, University of Tennessee
- 2015 Department of Microbiology, Nanjing University, China  
 Department of Biology, University of Rochester  
 Department of Biology, Rhodes College
- 2016 Marie Selby Botanical Gardens, Sarasota, Florida  
 Institute of Integrative Biology, ETH-Zurich, Switzerland  
 Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland  
 Department of Integrative Biology, University of South Florida  
 Department of Entomology, University of Illinois  
 Smithsonian Tropical Research Institute, Panama  
 Crown Gall Conference, Indiana University

#### **CONFERENCE AND CONFERENCE SESSION ORGANIZER**

- 1987 Symposia organizer, Botanical Society of America meeting, Ohio State University,  
 "Ecology of Plant/Fungal Interactions"
- 1990 Symposia organizer, Society for the Study of Evolution, meeting, University of  
 Maryland, "Host-Parasite Interactions and the Evolution of Reproductive  
 Characteristics"
- 2003 Symposia organizer, IU Research and Teaching Preserve, "Ecology of Forest Systems"

- 2007 Workshop organizer. IU Research and Teaching Preserve, "Invasive Plants"  
 2009 Symposia Organizer, "Host Defense Symbiosis", International Symbiosis Society.  
 Madison, WI

## PROFESSIONAL SERVICE

### A. PROFESSIONAL OFFICES

- 1985-86 Vice-chairman, Ecological Section, Botanical Society of America  
 1986-88 Chairman, Ecological Section, Botanical Society of America  
 Member, Council, Botanical Society of America  
 Chairman, Ad hoc Committee on Fungal Ecology, Mycological Society of America  
 1996 Chairman, Ad-hoc Committee on Fungal Ecology, Mycological Society of America,  
 1988  
 Chairman, Nominating Committee, Organization of Tropical Studies (OTS)

### B. GRANT REVIEWING\*

(\*information on reviews of grants, manuscripts, etc. was not consistently recorded until 1994)

- 1990 Reviewer of grants submitted to National Research Council-Canada, National Science Foundation: Ecology Program, Population Biology and Physiological Ecology Program, Long Term Visitors Program, Regulatory Biology Program, Small Business Innovation Grants Program, USDA, Organization for Tropical Studies  
 1991 Reviewer of grants submitted to NSF - Ecology Program (1 proposal), Population Biology and Physiological Ecology Program (5 proposals), Systematic Biology Program (1 proposal), Division of International Programs (1 proposal), Special Projects Program (1 proposal), USDA (2 proposals), DOE - Energy Biosciences Program (1 proposal)  
 1992 Reviewer of grants submitted to NSF - Multiple proposals  
 1993 Reviewer of grants submitted to NSF - 20 proposals  
 1994 Reviewer of grants submitted to NSF (Integrative Plant Biology, International Programs, Ecology, Systematics), USDA (NRICGP), Biotechnology and Biological Sciences Research Council (UK), and National Environment Research Council (UK)  
 1995 Reviewer of grants submitted to National Environmental Research Council (UK), NSF (Ecology Program), USDA (NRICGP), NCI  
 1996 Reviewer of grants submitted to NSF (Population Biology Program, Systematics Program), USDA/NRICGP (Biological Control Program, Entomology and Nematology Program, Plant Pathology Program).  
 1997 Reviewer of Proposals submitted to The MacArthur Foundation, NERC (UK), NSF Ecology Program, NSF Systematics Program, USDA, Forest/Range/Crop/ Aquatic Ecosystems Program, USDA Entomology/Nematology Program  
 1998 Reviewer of Proposals submitted to NSF Ecology Program, USDA Plant Pathology Program  
 1999 Reviewer of Grants submitted to the National Science Foundation (Ecology Program, Population Biology Program) and the Nature Conservancy (Ecosystem Research Program)  
 2000 Reviewer of Grants submitted to Natural Environment Research Council (NERC, UK), NSF Ecology Program, NIH/NSF Ecology of Infectious Disease Program

- 2001 Reviewer of Grants submitted to Natural Environmental Research Council (NERC, UK),  
USDA Plant-Microbe Associations Program.
- 2002 Reviewer of Grants submitted to National Science Foundation (Ecology Program,  
Population Biology Program), USDA NRICGP Soils and Soil Biology Program.
- 2003 Reviewer of Grants submitted to National Science Foundation (Ecology Program, Plant  
Genome Program, Microbial Observatory Program), Natural Environmental  
Research Council (UK), M. J. Murdoch Charitable Trust.
- 2004 Reviewer of Grants submitted to National Science Foundation (Ecosystems Program,  
Ecology Program, Biodiversity Surveys and Inventories Program, Plant Genome  
Program, Microbial Observatory Program), Natural Environmental Research  
Council (UK), M. J. Murdoch Charitable Trust.
- 2005 Reviewer of Grants submitted to Natural Environmental Research Council (UK),  
National Science Foundation (Population Biology Program, Ecology Program,  
Ecosystems Program), USDA NRICGP Plant-Microbe Program.
- 2006 Reviewer of Grants submitted to Research Council of Norway, National Science  
Foundation (Biodiversity and Inventories Program, Ecosystems Program,  
Functional and Regulatory Systems Program, Microbial Observatories and  
Microbial Interactions and Processes Program, Ecology of Infectious Disease  
Program), Marsden Fund (New Zealand), Austrian Science Fund, ETH Zurich  
Research Commission.
- 2007 Reviewer of Grants submitted to the Army Research Office
- 2008 Reviewer of Grants submitted to the Army Research Office, Department of  
Defense, National Science Foundation (Microbial Observatories Program,  
Ecology of Infectious Disease Program).
- 2009 Reviewer of Grants submitted to the National Science Foundation (Ecology  
Program, Microbial Interactions and Processes Program)
- 2010 Reviewer of Grants submitted to the National Science Foundation (Ecology  
Program, Ecosystems Program, Systematics Program), Israel Science  
Foundation
- 2011 Reviewer of Grants submitted to the National Science Foundation (Ecology  
Program), Netherlands Organization for Scientific Research (NOW)
- 2012 Reviewer of Grants submitted to the National Science Foundation (Ecology  
Program)
- 2013 Reviewer of Grants submitted to the National Science Foundation (Ecology  
Program)
- 2014 Reviewer of Grants submitted to the Israel Science Foundation (Ecology  
Program), University of Kentucky KSEF program, National Science Foundation  
(Ecology Program, IOS Program).
- 2015 Reviewer of Grants submitted to the Israel Science Foundation, National Science  
Foundation (Ecology Program), National Geographic Society, USDA
- 2016 Reviewer of Grants submitted to the National Science Foundation (LTER Program)

### C. OTHER REVIEW ACTIVITY

- 1993 Reviewer of Tenure dossier, University of Illinois
- 1995 Reviewer of Tenure dossiers - University of Missouri, University of Waterloo, Canada
- 1997 Reviewer of Promotion dossier from: Cornell University, University of Georgia,  
University of Kentucky

- 1998 Reviewer of Tenure Dossier from Rutgers University  
 1998 Reviewer of Tenure Dossier from Emory University  
 1999 Invited Nominator, MacArthur Fellowships, MacArthur Foundation  
 2000 Reviewer of Tenure Dossier from ETH-Zurich, Switzerland, Oregon State University  
 2001 Reviewer of Tenure Dossier from Vassar College  
 2001 Reviewer of Promotion Dossier from Rutgers University  
 2002 Reviewer of Tenure Dossier from Indiana State University  
 2002 Outside Reviewer of Biology Department, DePauw University  
 2003 Reviewer of Promotion Dossier from University of Virginia  
 2003 Reviewer of Tenure Dossier from University of Oregon  
 2003 Reviewer of Promotion Dossier from Binghamton University  
 2005 Reviewer of Promotion Dossier from University of Lancaster, UK, Rutgers University,  
 Smithsonian Institution, UC-Santa Cruz  
 2006 Reviewer of Tenure Dossier from Michigan State University  
 2006 Reviewer of Promotion Dossier from University of Oregon, Oregon State University  
 2007 Reviewer of Promotion Dossier from University of Illinois, Rice University  
 2007 Reviewer of Tenure Dossier from the University of Wisconsin  
 2007 Outside Examiner, PhD candidate, Umea University, Sweden  
 2008 Reviewer of Promotion Dossier from University of Idaho  
 2008 Reviewer of Book Proposal, University of Chicago Press  
 2010 Nominator for H. I. Romnes Faculty Fellowship, University Wisconsin  
 2010 Reviewer of Tenure Dossier from Rice University  
 2010 Reviewer of Promotion Dossier from University of Colorado  
 2010 Outside Examiner, PhD Dissertation, University of Toronto  
 2011 Nominator for H. I. Romnes Faculty Fellowship, University Wisconsin  
 2011 Reviewer of Tenure Dossier from Rice University, University of North Carolina  
 2011 Outside Examiner, PhD Dissertation, University of British Columbia  
 2011 Reviewer for MacArthur Foundation Fellows Program  
 2012 Reviewer of Tenure Dossier from University of Mississippi  
 2012 Reviewer of Dossier for Endowed Professorship, Rice University  
 2012 Reviewer of Dossier for Named Professorship, West Virginia University  
 2013 Reviewer of Tenure Dossier from University of Tennessee  
 2014 Reviewer of Tenure Dossier from University of Georgia, Georgia State University  
 2014 Reviewer of Promotion Dossier from University of Arizona  
 2015 Reviewer of Tenure Dossier from University of Illinois  
 2016 Reviewer of Tenure Dossier from Columbia University

#### D. REVIEW PANELS AND OTHER EXTERNAL REVIEWS

- 1991 Grant Review Panel, DOE - Biofuels Program, Atlanta, GA  
 1993 National Science Foundation Graduate Fellowship Panel (invited for 1994 but declined)  
 1993 National Science Foundation Population Biology Panel  
 1995 Panel, NSF Graduate Research Fellowships  
 2000 Panel, NIH/NSF, Ecology of Infectious Disease  
 2001 Panel, NSF, Ecology Program  
 2004 Panel, NSF, Ecology Program (invited for 2004 but declined)  
 2004 Panel, USDA, Weedy and Invasive Plants Program (invited for 2004 but declined)  
 2004 Panel, EPA, STAR Fellowship Program (invited for 2004 but declined)

- 2005 Panel, NIH/NSF, Ecology of Infectious Disease Program (invited for 2004 but declined)  
 2005 Panel, NIH/NSF, Ecology of Infectious Disease  
 2006 Panel, NIH/NSF, Ecology of Infectious Disease  
 2006 Panel, EPA Star Fellowship Panel

#### E. EDITORIAL BOARDS

- 1994-97 Editorial Board, International Journal of Plant Science  
 1998-01 Editorial Board of Ecology and Ecological Monographs  
 2001-04 Editorial Board of Plant Biology  
 2004-12 Editorial Board of Fungal Biology Reviews  
 2004- Editorial Advisory Board of New Phytologist

#### F. MANUSCRIPT REVIEWER

- 1993 Reviewer of manuscripts submitted to: American Journal of Botany, Applied and Environmental Microbiology, Canadian Journal of Botany, Ecography, Ecology, Journal of Ecology, Mycologia, Oecologia, Oikos, South African Journal of Botany  
 1994 Reviewer of manuscripts submitted to: Mycologia, Symbiosis, Phytopathology, Mycological Research, Ecology, Oikos  
 1995 Reviewer of manuscripts submitted to: Mycologia, Journal of Wildlife Management, The Auk, Ecoscience, Ecology, Applied & Environmental Microbiology, Evolution, Ecological Entomology, Journal of Ecology  
 1996 Reviewer of manuscripts submitted to: American Journal of Botany, Applied and Environmental Microbiology, Biotropica, Condor, Ecography, Ecology, International Journal of Plant Sciences, Molecular Biology and Evolution, Molecular Ecology, Mycologia, Oikos, Southwestern Naturalist, USDA internal review  
 1997 Reviewer of Manuscripts for American Journal of Botany, American Midland Naturalist, Applied and Environmental Microbiology, Canadian Journal of Botany, Ecological Applications, Evolution, Molecular Ecology, Mycological Research, Proceedings of the Royal Society of London B, Oikos, Plant and Soil  
 1998 Reviewer of Manuscripts for American Midland Naturalist, American Journal of Botany, Journal of Ecology, Ecography, Ecology, Evolution, Mycologia, Trends in Ecology and Evolution, Proceedings of the National Academy of Sciences  
 1999 Reviewer of Manuscripts for Symbiosis, Ecography, Science, Ecoscience, Proceedings of the National Academy of Sciences, Journal of Ecology, Ecology  
 2000 Reviewer of Manuscripts for Nature, Journal of Ecology, Journal of the Torrey Botanical Society, Oikos, Science, Proceedings of the Royal Society of London B, Ecology  
 2001 Reviewer of Manuscripts for Symbiosis, International Journal of Pest Management, Oikos, Ecology, Ecological Monographs, American Naturalist  
 2002 Reviewer of Manuscripts for Symbiosis, Oikos, Nature, Ecology, Proceedings of the Royal Society of London B, Ecology Letters, Proceedings of the National Academy of Sciences USA  
 2003 Reviewer of Manuscripts for Oikos, Nature, Ecological Applications, Ecology Letters, Proceedings of the National Academy of Sciences USA, Ecography, New Phytologist, Indiana Academy of Science

- 2004 Reviewer of Manuscripts for Science, Nature, Ecography, Annals of Botany, Canadian Journal of Botany, New Phytologist, American Naturalist, Oecologia, Molecular Ecology
- 2004 Reviewer of Manuscripts for Proceedings of the Royal Society of London B, Planta, Ecology, PLOS Biology, New Phytologist, Nature, Plant Physiology, Plant Ecology, Proceedings of Indiana Academy of Science
- 2006 Reviewer of Manuscripts for Applied Soil Ecology, Biology Letters, Botanical Bulletin of Academia Sinica, Ecology, Ecology Letters, Evolution, Journal of Ecology, Molecular Ecology, Nature, New Phytologist, Oikos, PNAS, Science
- 2007 Reviewer of Manuscripts for Ecology, Evolution, Journal of Experimental Botany, Nature Protocols, New Phytologist, Proceedings of the Royal Society of London B
- 2008 Reviewer of Manuscripts for American Naturalist, Ecology, Ecology Letters, Evolution, Evolutionary Ecology, Journal of Applied Ecology, Journal of Vegetation Science, Microbial Ecology, Molecular Ecology, New Phytologist, Vector Borne and Zoonotic Disease
- 2009 Reviewer of Manuscripts for Ecological Entomology, Journal of Chemical Ecology, Journal of Medical Entomology, Molecular Ecology, Molecular Plant Pathology, New Phytologist, Oecologia, Proceedings of the Royal Society of London B, TIMI
- 2010 Reviewer of Manuscripts for American Midland Naturalist, Basic and Applied Ecology, Ecology Letters, Evolution, Fungal Ecology, Journal of Chemical Ecology, Microbial Ecology, Molecular Ecology, Mycologia, Phytoremediation, Oecologia, PNAS, Weed Research
- 2011 Reviewer of Manuscripts for American Journal of Botany, Applied and Environmental Microbiology, Emerging Infectious Diseases, Evolutionary Applications, Fungal Ecology, Oikos, New Phytologist, Vector-Borne and Zoonotic Disease
- 2012 Reviewer of Manuscripts for Applied Microbiology, Folia Microbiologica, Molecular Ecology, New Phytologist, PLOS One, Proceedings of the Royal Society of London B, Symbiosis
- 2013 Reviewer of Manuscripts for American Naturalist, Applied and Environmental Microbiology, Applied Microbiology, Biological Invasions, Ecosphere, Emerging Infectious Diseases, Journal of Applied Ecology, Journal of Chemical Ecology, Natural Products, Nature, Plant Disease, PLoS One, PNAS, Proceedings of the Royal Society of London B, TREE
- 2014 Reviewer of Manuscripts for AoB Plants, Applied and Environmental Microbiology, Biological Invasions, Ecology, Ecology Letters, Food and Agricultural Chemistry, Journal of Ecology, Molecular Ecology, New Phytologist
- 2015 Reviewer of Manuscripts for Agronomy, AoB Plants, Applied and Environmental Microbiology, American Naturalist, Biological Invasions, Ecology Letters, Environmental Microbiology, Journal of Ecology, mBio, New Phytologist, PLOS Pathogens, Plant and Soil, Science
- 2016** Reviewer of Manuscripts for AoB Plants, Functional Ecology, Journal of Applied Ecology, Journal of Medical Entomology, Nature Communications, Nature Ecology and Evolution, New Phytologist, Plant Disease, Plant and Soil, Rhodora, Science, Trends in Parasitology

#### G. OTHER PROFESSIONAL ACTIVITIES

- 1993 Sabbatical, 5/93-8/93, Centre for Population Biology and Department of Biology,  
Imperial College, University of London at Silwood Park, Ascot, UK
- 2007 Sabbatical, 8/07-12/07, Highlands Biological Station, University of North Carolina,  
Highlands, North Carolina.
- 2012 Sabbatical, 3/12-11/12, Institute of Ecology, Royal Academy of Arts and Sciences,  
Wageningen, Netherlands.
- 2016 Sabbatical, 5/16 – 7/16, Institute of Integrative Biology, ETH-Zurich, Switzerland
- 2017 Smithsonian Tropical Research Institute, advisory committee for microbial ecology

**\*\*\*NOTE:** I have not included the many invitations for seminars, reviews, symposia, etc. that I declined.