

SONIA M. ALTIZER CURRICULUM VITAE

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FACULTY STATUS

Professor, with tenure
Graduate faculty, Ecology

EDUCATION

1988-1992 Duke University, B.S. in Biology, graduated with honors
1993-1998 University of Minnesota, Ph.D. in Ecology *Thesis: Ecological and evolutionary interactions between monarch butterflies and a protozoan parasite (Advisors: Karen Oberhauser and Don Alstad)*

RESEARCH INTERESTS

Population ecology; ecology and evolution of infectious diseases; evolution of host resistance and parasite virulence; insect ecology and evolution; animal-pathogen responses to anthropogenic change

Professional Employment (reverse chronological order):

8/14 – present **UGA Athletic Association Professor of Ecology**, Odum School of Ecology, University of Georgia, Athens, GA
8/12 – 7/17 **Associate Dean of Academic Affairs**, Odum School of Ecology, University of Georgia, Athens, GA
8/08 – 7/14 **Associate Professor**, Odum School of Ecology, University of Georgia, Athens, GA
9/05 – 8/08 **Assistant Professor**, Institute of Ecology, University of Georgia, Athens, GA
9/01 – 8/05 **Assistant Professor**, Department of Environmental Studies, Emory University, Atlanta, GA.
12/00 – 8/01 **Postdoctoral Research Associate**, Cornell Laboratory of Ornithology, Ithaca, NY (*Mentor: André Dhondt*)
1/99 – 12/00 **Postdoctoral Research Associate**, Department of Ecology and Evolutionary Biology, Princeton University, Princeton, NJ. (*Mentor: Andy Dobson*)
1/99 – 6/00 **Lecturer**, Department of Ecology and Evolutionary Biology, Princeton University, Princeton, NJ (*Teaching mentor: Dan Rubenstein*)

- 6/98 – 11/98 **Instructor**, Science Museum of Minnesota, St. Paul, MN
- 1/95 – 6/98 **Teaching Assistant**, Department of Ecology, Evolution and Behavior,
University of Minnesota, St. Paul, MN
- 9/94 – 12/94 **Administrative Fellow**, Department of Ecology, Evolution and Behavior,
University of Minnesota, St. Paul, MN
- 5/92 – 8/93 **Research Technician and Teaching Assistant**, Duke University, Biology
Department, Durham, NC.

FELLOWSHIPS AND HONORS

- 2016 Lothar Tresp Outstanding Honors Professor Award, UGA Honors Program
- 2015 Finalist, Outstanding Graduate Mentor Award in the Life Sciences, UGA graduate school
- 2014 UGA Athletic Association Professor of Ecology (endowed professorship)
- 2014 Dean's Award, Odum School of Ecology (for outstanding service to the unit)
- 2013 Outstanding Faculty Instructor Award, Odum School of Ecology, University of Georgia
- 2010 Wissenschaftskolleg zu Berlin Fellowship (faculty sabbatical fellowship awarded by the
Institute for Advanced Study in Berlin, declined for family/parental leave)
- 2008 Presidential Early Career Award for Science and Engineering (PECASE); awarded annually
by the White House to ~60 early career scientists and engineers
- 2008 Award for Teaching Excellence, Odum School of Ecology, University of Georgia
- 2003 Teaching Excellence Award, Phi Beta Kappa, Emory University Chapter
- 2001 Royal Entomological Society of London Award - best paper in Society's Journals
- 1999 Council on Science and Technology Postdoctoral Fellowship, Princeton University
- 1997 Louise T. Dossall Graduate Fellowship, University of Minnesota
- 1997 Ecology Program Graduate Fellowship, University of Minnesota
- 1996 Phi Kappa Phi National Honor Society
- 1994 National Science Foundation Graduate Research Fellowship
- 1993 University of Minnesota Graduate School Fellowship

PUBLICATIONS

90 peer-reviewed journal papers and 22 other publications

H-index = 43 based on 86 publications tracked by Google Scholar (7/1/2017)

1. Books

1. Nunn, C.L. and **Altizer, S.** 2006. *Infectious Diseases in Primates: Behavior, Ecology and Evolution*.
Oxford Series in Ecology and Evolution, Oxford University Press.

2. Books edited or co-edited

1. Oberhauser, K., Nail, K., and **Altizer, S.** 2015. Edited volume. *Monarchs in a Changing World: Biology and Conservation of an Iconic Insect*. Cornell University Press. *In press*.

3. Book chapters, popular articles and technical reports

20. De Roode, J.C., Altizer, S., and Hunter, M. 2017. Multi-trophic interactions and migration behaviour determine the ecology and evolution of parasite infection in monarch butterflies. To appear in: *Wildlife Disease Ecology: Linking Theory to Data and Application*. Edited by K. Wilson and A. Fenton. *In revision*.
19. Davis, A. and **Altizer, S.** 2015. New perspectives on monarch migration, evolution and population biology. In: *Monarchs in a Changing World: Biology and Conservation of an Iconic Insect*. Edited by: K. Oberhauser, S. Altizer, K. Nail. Cornell University Press.
18. **Altizer, S.** and DeRoode, J.C. 2015. Monarchs and their debilitating parasites: immunity, migration and medicinal plant use. In: *Monarchs in a Changing World: Biology and Conservation of an Iconic Insect*. Edited by: K. Oberhauser, S. Altizer, K. Nail. Cornell University Press.
17. Pierce, A.A., Chamberlain, N.L., Kronforst, M.R., **Altizer, S.** and J.C. DeRoode. 2015. Unraveling the mysteries of monarch migration and global dispersal through molecular genetic techniques. In: *Monarchs in a Changing World: Biology and Conservation of an Iconic Insect*. Edited by: K. Oberhauser, S. Altizer, K. Nail. Cornell University Press.
16. Han, B. and **Altizer, S.** 2012. Conservation and Infectious Disease. In: Levin, S. (ed) *Encyclopedia of Biodiversity*. 2nd Edition. Academic Press, San Diego, CA.
15. Bartel, R. and **Altizer, S.** 2012. From protozoan infection in monarch butterflies to colony collapse disorder in bees: are emerging infectious diseases proliferating in the insect world? In: *Conservation Medicine: Applied Cases of Ecosystem Health*. Second edition. Edited by: A. Aguirre, P. Daszak and R. Ostfeld. Oxford University Press.
14. Kilpatrick, A.M. and **Altizer, S.** 2010. Disease Ecology. *Nature Education Knowledge*. 1(12):13
13. **Altizer, S.** and DeRoode, J.C. 2010. When butterflies get bugs: the ABCs of Lepidopteran disease. *American Butterflies*. 18(2): 16-26.
12. Davis, A.K., **Altizer, S.**, Oberhauser, S. Ries, L., Frey, D., Crewe, T, Howard, A., Rendon-Salinas, E., Bartel, R., Batalden, R., and Nibbelink, N. 2009. Recommendations for integrating monarch butterfly monitoring data in North America to address conservation and management needs. *Final Report to the Commission for Environmental Cooperation*. July 2009.
11. **Altizer, S.** and Pedersen, A. 2008. Host-pathogen evolution, biodiversity and disease risks for natural populations. Pp. 259-278. In: "*Conservation Biology: Evolution in Action*" edited by Scott Carroll and Charles Fox. Oxford University Press.
10. Perkins, S., **Altizer, S.**, Bjornstad, O., Burdon, J., Clay, K., Gomez-Aparicio, L., Jeschke, J., Johnson, P., Lafferty, K., Malstrom, C., Martin, P., Power, A., Thrall, P., Strayer, D. and M. Uriarte. 2008. Infectious disease in invasion biology. In R. Ostfeld, F. Keesing and V. Eviner (eds.), *Infectious disease ecology: Effects of disease on ecosystems and of ecosystems on disease*. Princeton University Press.
9. Nunn, C.L. and **Altizer, S.M.** 2004. Sexual selection, behavior and sexually transmitted diseases. In: *Sexual Selection in Primates: New and Comparative Perspectives*. P.M. Kappeler and C.P. van Schaik (eds). Cambridge University Press.

8. **Altizer, S.M.**, Oberhauser, K.O., and Geurts, K.A. 2004. Transmission of the protozoan parasite, *Ophryocystis elektroscirrha*, in monarch butterfly populations: implications for prevalence and population-level impacts. In: Oberhauser, K.S. and Solensky, M. (eds). *The Monarch Butterfly: Biology and Conservation*. Cornell University Press.
7. Borland, J., Johnson, C., Crumpton, T., Thomas, M., **Altizer, S.**, and Oberhauser, K. 2004. Characteristics of fall migratory monarch butterflies in Minnesota and Texas. In: Oberhauser, K.S. and Solensky, M. (eds). *The Monarch Butterfly: Biology and Conservation*. Cornell University Press.
6. Fofopoulos, J., **Altizer, S.**, and Dobson, A. 2002. Interactions between wildlife and domestic livestock in the tropics. Pp. 219-244. In: Vandermeer, J. (ed) *Tropical Agroecosystems*. CRC Press.
5. Davis, A. and **Altizer, S.** 2002. Southern exposure. *Birdscope* (a publication of the Cornell Laboratory of Ornithology). Spring 2002 issue.
4. Dhondt, A.A., Hochachka, W.M., **Altizer, S.M.**, and Hartup, B.K. 2001. The house finch hot zone: citizen science on the trail of an epidemic. *Living Bird*. 20(4): 24-30.
3. **Altizer, S. M.** and Dobson, A.D. 2001. Pathogens and the conservation of island biota: Modeling the biological control of invasive brown treesnakes on Guam. *Final report to the USGS Biological Resources Division, National Wildlife Health Center*, June 2001.
2. **Altizer, S.**, Fofopoulos, J., and Gager, A. 2000. Conservation and Disease. In: Levin, S. (ed) *Encyclopedia of Biodiversity*. Academic Press, San Diego, CA.
1. **Altizer, S.M.**, Oberhauser, K.S., and Brower, L.P. 1999. Host migration and prevalence of the protozoan parasite, *Ophryocystis elektroscirrha*, in natural populations of adult monarch butterflies. In: Hoth, J., Merino, L, Oberhauser, K., Pisanty, I., and Price, S. (eds) *Proceedings of the North American Conference on the Monarch Butterfly*. Commission for Environmental Cooperation, Montréal.

4. Papers published in scholarly journals

(Graduate, undergraduate and postdoctoral coauthors underlined)

90. Becker, D.J., Gabor, A.C., Volokhov, D., Bentz, A.B., Carrera, J.E., Camus, M.S., Navara, K.J., Chizhikov, V.E., Fenton, B., Simmons, N.B., Gilbert, A.T., Recuenco, S.E., **Altizer, S.**, and Streicker, D.G. 2018. Livestock expansion predicts vampire bat demography, immune profiles, and bacterial infection risk. *Philosophical Transactions of the Royal Society B: Biological Sciences*. In revision.
89. Majewska, A., Simms, S., Davis, A.K., and **Altizer, S.** 2018. Do characteristics of pollinator-friendly gardens predict the diversity, abundance and reproduction of butterflies? *Ecological Entomology*, In revision.
88. Volokhov, D.V., Becker, D.J., Bergner, L.M., Camu, M.S., Orton, R.J., Chizhikov, V.E., **Altizer, S.M.**, and Streicker, D.G. 2017. Novel hemotropic mycoplasmas are widespread and genetically diverse in vampire bats. *Epidemiology and Infection*. In press.
87. Becker, D., Streicker, D. and **Altizer, S.**, 2017. Using host species traits to understand the consequences of resource provisioning for host–parasite interactions. *Journal of Animal Ecology*. In press.
86. Thogmartin, W.E., Widerholt, R., Oberhauser, K., Drum, R.G., Diffendorfer, J.E., **Altizer, S.**, Taylor, O.R., Pleasants, J., Semmens, D., Semmens, B., Erickson, R., Libby, K., and Lopez-

- Hoffman, L. 2017. Monarch butterfly population decline in North America: identifying the threatening processes. *Royal Society Open Science*. In press.
85. Flockhart, D.T., Fitz-gerald, B., Brower, L.P., Derbyshire, R., **Altizer, S.**, Hobson, K.A., Wassenaar, L.I. and Norris, D.R., 2017. Migration distance as a selective episode for wing morphology in a migratory insect. *Movement Ecology*, 5(1), p.7.
 84. Becker, D.J., Chumchal, M.M., Bentz, A.B., Platt, S.G., Czirják, G.Á., Rainwater, T.R., **Altizer, S.** and Streicker, D.G., 2017. Predictors and immunological correlates of sublethal mercury exposure in vampire bats. *Royal Society Open Science*, 4(4), p.170073.
 83. Satterfield, D.A., **Altizer, S.**, Williams, M.K. and Hall, R.J., 2017. environmental persistence influences infection dynamics for a butterfly pathogen. *PloS One*, 12(1), p.e0169982.
 82. Flockhart, D.T., Brower, L.P., Ramirez, M.I., Hobson, K.A., Wassenaar, L.I., **Altizer, S.** and Norris, D.R., 2017. Regional climate on the breeding grounds predicts variation in the natal origin of monarch butterflies overwintering in Mexico over 38 years. 2017. *Global Change Biology*. 23(7): 2565–2576.
 81. Stephens, P.R., Pappalardo, P., Huang, S., Byers, J.E., Farrell, M.J., Gehman, A., Ghai, R.R., Haas, S.E., Han, B., Park, A.W. Schmidt, J.P., **Altizer, S.**, Ezenwa, V.O., and Nunn, C.L. 2017. Global Mammal Parasite Database version 2.0. *Ecology*. 98(5): 1476-1476.
 80. Hall, R.J., Brown, L.M. and **Altizer, S.**, 2016. Modeling vector-borne disease risk in migratory animals under climate change. *Integrative and Comparative Biology*, p.icw049.
 79. McKay, A.F., Ezenwa, V.O. and **Altizer, S.**, 2016. Unravelling the costs of flight for immune defenses in the migratory monarch butterfly. *Integrative and Comparative Biology*, p.icw056.
 78. Satterfield, D.A., Villablanca, F.X., Maerz, J.C. and **Altizer, S.**, 2016. Migratory monarchs wintering in California experience low infection risk compared to monarchs breeding year-round on non-native milkweed. *Integrative and Comparative Biology*, p.icw030.
 77. McKay, A.F., Ezenwa, V.O. and **Altizer, S.**, 2016. Consequences of food restriction for immune defense, parasite infection, and fitness in monarch butterflies. *Physiological and Biochemical Zoology*, 89(5), pp.389-401.
 76. Barriga, P.A., Sternberg, E.D., Lefèvre, T., de Roode, J.C. and **Altizer, S.**, 2016. Occurrence and host specificity of a neogregarine protozoan in four milkweed butterfly hosts (*Danaus* spp.). *Journal of Invertebrate Pathology*, 140, pp.75-82.
 75. Streicker, D.G., Winternitz, J.C., Satterfield, D.A., Condori-Condori, R.E., Broos, A., Tello, C., Recuenco, S., Velasco-Villa, A., **Altizer, S.** and Valderrama, W., 2016. Host–pathogen evolutionary signatures reveal dynamics and future invasions of vampire bat rabies. *Proceedings of the National Academy of Sciences*, p.201606587.
 74. Stephens, P.R., **Altizer, S.**, Smith, K.F., Alonso Aguirre, A., Brown, J.H., Budischak, S.A., Byers, J.E., Dallas, T.A., Jonathan Davies, T., Drake, J.M. and Ezenwa, V.O., 2016. The macroecology of infectious diseases: a new perspective on global-scale drivers of pathogen distributions and impacts. *Ecology Letters*, 19(9), pp.1159-1171.
 73. **Altizer, S.**, Hobson, K.A., Davis, A.K., De Roode, J.C. and Wassenaar, L.I., 2015. Do Healthy Monarchs Migrate Farther? Tracking Natal Origins of Parasitized vs. Uninfected Monarch Butterflies Overwintering in Mexico. *PloS One*, 10(11).
 72. Rushmore, J., Allison, A.B., Edwards, E.E., Bagal, U., **Altizer, S.**, Cranfield, M.R., Glenn, T.C., Liu,

- H., Mudakikwa, A., Mugisha, L., Muller, M.N., Stumpf, R.M., Thompson, M.E., Wrangham, R. & Yabsley, M.J. 2015. Screening wild and semi-free ranging great apes for putative sexually transmitted diseases: Evidence of Trichomonadidae infections. *American Journal of Primatology*, 77 (10), 1075-1085
71. Han, B., Park, A.W., Jolles, A. and **Altizer, S.** 2015. Behavioral allometry and infectious disease transmission in wild mammals, *Journal of Animal Ecology*, 84.3 (2015): 637-646
70. Huang, S., Drake, J. M., Gittleman, J. L. and **Altizer, S.** 2015. Parasite diversity declines with host evolutionary distinctiveness: a global scale analysis of carnivores. *Evolution*. 69 (3): 621-630
69. Becker, D., Streicker, D., and **Altizer, S.** 2015. Linking anthropogenic resources to wildlife-pathogen dynamics: a review and meta-analysis. *Ecology Letters*. 18.5 (2015): 483-495
68. Satterfield, D., Maerz, J. and **Altizer, S.** 2015. Loss of migratory behavior supports high parasite prevalence in a butterfly host. *Proceedings of the Royal Society Series B*. 1801: 20141734.
67. Zhan, S., Zhang, W., Niitepõld, K., Hsu, J., Fernández Haeger, J., Zalucki, M., **Altizer, S.**, de Roode, J., Reppert, S., and Kronforst, M. 2014. The genetics of monarch butterfly migration and warning coloration. *Nature*. 514 (7522), 317-321
66. Pierce, A., Zalucki, M., Banguara, M., Udawatta, M., Kronforst, M., **Altizer, S.**, Fernandez-Haeger, J., and de Roode, J. 2014. Serial founder effects and genetic differentiation during worldwide range expansion of monarch butterflies. *Proceedings of the Royal Society Series B*. 281 (1797), 20142230
65. Rushmore, J., Caillaud, D., Hall, R.J., Stumpf, R.M., Meyers, L.A. and **Altizer, S.** 2014. Network-based vaccination improves prospects for disease control in wild chimpanzees. *Journal of the Royal Society Interface*. 11(97), 20140349
64. Pierce, A., de Roode, J.C., **Altizer, S.**, and Bartel, R. 2014. Extreme heterogeneity in parasitism despite low population genetic structure among monarch butterflies inhabiting the Hawaiian Islands. *PLoS One*. 9(6), e100061.
63. Cornelius, E., Davis, A.K., and **Altizer, S.** 2014. How important are haemoparasites to migratory songbirds? Evaluating physiological tradeoffs with infection in three neotropical migrants during stopover. *Physiological and Biochemical Zoology* 87(5), 719-728.
62. Winternitz, J.C., Yabsley, M., Wares, J., and **Altizer, S.** 2014. Wild cyclic voles maintain high neutral and MHC diversity independently of parasitism. *Evolutionary Ecology*. 28: 957-975.
61. Hall, R.J., Bartel, R. and **Altizer, S.** 2014. Greater migratory propensity in hosts lowers pathogen transmission and impacts. *Journal of Animal Ecology*. 83: 1068-1077.
60. Huang, S., Bininda-Emonds, O.R.P., Stephens, P.R., Gittleman, J.L., and **Altizer, S.** 2014. Phylogenetically related and ecologically similar carnivores harbor similar parasite assemblages. *Journal of Animal Ecology*. 83(3), 671-680
59. Winternitz, J., Michey, S., Garamszegi, L., Huang, S., Stephens, P., and **Altizer, S.** 2013. Sexual selection explains more functional variation in the mammalian MHC than parasitism. *Proceedings of the Royal Society Series B*. 280(1769), 20131605
58. Blackwood, J.C., Streicker, D.G., **Altizer, S.**, and Rohani, P. 2013. Resolving the roles of immunity, pathogenesis, and immigration for rabies persistence in vampire bats. *PNAS*. 110(51): 20837–20842

57. Sander, S.E., de Roode, J.C., Davis, A.K., and **Altizer, S.** 2013. Genetic factors and host traits predict spore morphology for a butterfly pathogen. **Insects**. 4: 447-462.
56. **Altizer, S.**, Ostfeld, R.S., Harvell, C.D., Johnson, P.T.J., and Kutz, S. 2013. Climate change and infectious disease: from evidence to a predictive framework. **Science**. 341: 514-519.
55. Satterfield, D., Wright, A. and **Altizer, S.** 2013. Lipid reserves trade off against immune defense in healthy and diseased migrating monarchs (*Danaus plexippus*). **Current Zoology**, 59: 393-402.
54. J. Rushmore, D. Caillaud, L. Matamba, R. M. Stumpf, S. P. Borgatti, and **S. Altizer**. 2013. Social network analysis of wild chimpanzees with insights for infectious disease risk. **Journal of Animal Ecology**, 82: 976-986.
53. Streicker, D.G., **Altizer, S.**, Velasco-Villa, A., and Rupprecht, CE. 2012. Variable evolutionary routes to host establishment across repeated rabies virus host shifts among bats. **PNAS**, 109 (48): 19715-20; doi: 10.1073/pnas.1203456109
52. Streicker, D.G., Recuenco, S., Valderrama, W., Gomez-Benavides, J., Vargas, I., Pacheco, V., Condori, R.E, Montgomery, J., Rupprecht, C.E., Rohani, P. and **Altizer, S.** 2012. Ecological and anthropogenic drivers of rabies exposure in vampire bats: implications for transmission and control. **Proceedings of the Royal Society Series B**. 279(1742):3384-92.
51. Davis, A.K., J. Chi, C. Bradley and **S. Altizer**. 2012. The redder the better: wing color predicts flight performance in monarch butterflies. **PLoS One**, 7: e41323.
50. Winternitz, J.C., Yabsley, M. and **Altizer, S.** 2012. Parasite infection and host dynamics in a naturally fluctuating rodent population. **Canadian Journal of Zoology**. 90(9): 1149-1160.
49. Bartel, B., Oberhauser, K., DeRoode, J. and **Altizer, S.** 2011. Monarch butterfly migration and parasite transmission in eastern North America. **Ecology**. 92, 342-351 **Cover article
48. **Altizer, S.**, Bartel, B. and Han, B. 2011. Animal migrations and infectious disease risk. **Science**. 331: 296-302.
47. Hawley, D.M. and **Altizer, S.** 2011. Disease ecology meets ecological immunology: Understanding the links between organismal immunity and infection dynamics in natural populations. **Functional Ecology**, 25: 48-60
46. **Altizer, S.**, and Davis, A.K. 2010. Populations of monarch butterflies with different migratory behaviors show divergence in wing morphology. **Evolution**. 64:1018-1028. Cover article
45. DeRoode, J.C. and **Altizer, S.** 2010. Host-parasite genetic interactions and virulence-transmission relationships in natural populations of monarch butterflies. **Evolution**. 64:502-514.
44. De Roode, J.C., Chi, J., Rarick, R.M., and **Altizer, S.** 2009. Strength in numbers: high parasite burdens increase transmission of a protozoan parasite of monarch butterflies. **Oecologia**. 161:67-75.
43. Lindsey, E., Mehta, M., Dhulipala, V., Oberhauser, K. and **Altizer, S.** 2009. Crowding and disease: effects of host density on parasite infection in monarch butterflies. **Ecological Entomology**. 34:551-561.
42. Harvell, C.D., **Altizer, S.**, Cattadori, I., Harrington, L. and Weil, E. 2009. Climate change and wildlife diseases: when does the host matter the most? **Ecology**. 90: 912-920.
41. Lindsey, E.A. and **Altizer, S.** 2009. Sex differences in immune defenses and response to parasitism in monarch butterflies. **Evolutionary Ecology**. 23: 607-620.

40. De Roode, J.C., Yates, A.J. and **Altizer, S.** 2008. Virulence-transmission trade-offs and population divergence in virulence in a naturally occurring butterfly parasite. *PNAS*. 105: 7489-7494.
39. Bradley, C.A., Gibbs, S.E.J., and **Altizer, S.** 2008. Urban land use predicts West Nile Virus exposure in songbirds. *Ecological Applications*. 18: 1083-1092.
38. De Roode, J.C., Pedersen, A.P., Hunter, M. and **Altizer, S.** 2008. Host plant species affects virulence in monarch butterfly parasites. *Journal of Animal Ecology*. 77: 120-126.
37. Pedersen, A.B., Jones, K., Nunn, C.L. and **Altizer, S.** 2007. Infectious diseases and extinction risk in wild mammals. *Conservation Biology*. 21: 1269-79.
36. De Roode, J.C., Gold, L.R. and **Altizer, S.** 2007. Virulence determinants in a natural butterfly-parasite system. *Parasitology*, 134: 657-68.
35. Bradley, C.A. and **Altizer, S.** 2007. Urbanization and the ecology of wildlife diseases. *Trends in Ecology and Evolution*, 22(2): 95-102.
34. **Altizer, S.**, Nunn, C.L. and Lindenfors, P. 2007. Do threatened hosts have fewer parasites? A comparative study in primates. *Journal of Animal Ecology*, 76: 304-314
33. Ezenwa, V.O., Price, S.A., **Altizer, S.**, Vitone, N.D. and Cook, K.C. 2006. Host traits and parasite species richness: patterns and processes in even and odd-toed hoofed mammals (Artiodactyla and Perissodactyla). *Oikos*. 115: 526-536.
32. **Altizer, S.**, Dobson, A., Hosseini, P., Hudson, P., Pascual, M., and Rohani, P. 2006. Seasonality and the dynamics of infectious diseases. *Ecology Letters*. 9: 467-484.
31. Cherry, J.J., Ley, D.L. and **Altizer, S.M.** 2006. Genotypic analysis of *Mycoplasma gallisepticum* isolates from songbirds by random amplification of polymorphic DNA and amplified fragment length polymorphism. *Journal of Wildlife Diseases*. 42(2): 421-428.
30. Bradley, C. and **Altizer, S.** 2005. Parasites hinder monarch butterfly flight ability: implications for disease spread in migratory hosts. *Ecology Letters*. 8: 290-300.
29. Ladner, D. and **Altizer, S.** and 2005. Oviposition preference and larval performance of North American monarch butterflies on four *Asclepias* species. *Entomologia Experimentalis et Applicata*. 116: 9-20.
28. E.R. Hotchkiss, Davis, A.K., J.J. Cherry and **S. Altizer**. 2005. Mycoplasmal conjunctivitis and the behavior of wild house finches (*Carpodacus mexicanus*) at bird feeders. *Bird Behavior*. 17:1-8.
27. Davis, A.K., Farrey, B., and **Altizer, S.** 2005. Variation in thermally-induced melanism in monarch butterflies (Lepidoptera: Nymphalidae) from three North American populations. *Journal of Thermal Biology*. 30: 410-421.
26. Nunn, C.L., **Altizer, S.**, Sechrest, W. and Cunningham, A. 2005. Latitudinal gradients of parasite species richness in primates. *Diversity and Distributions*. 11: 249-256.
25. Pedersen, A., Poss, M., Nunn, C.L., Cunningham, A. and **Altizer, S.** 2005. Patterns of host specificity and transmission among parasites of free-living primates. *International Journal for Parasitology*. 35: 647-657.
24. Dhondt, A.A., **Altizer, S.**, Cooch, E.G., Davis, A.K., Dobson, A.P., Driscoll, M.J.L., Hartup, B.K., Hawley, D.M., Hochachka, W.M., Hosseini, P.R., Jennelle, C.S., Kollias, G.V., Ley, D.H., Swarthout, E.C.H., and Sydenstricker, K.V. 2005. Dynamics of a novel pathogen in an avian host: mycoplasmal conjunctivitis in house finches. *Acta Tropica*. 94: 77-93.

23. Nunn, C.L. and **Altizer, S.** 2005. The global mammal parasite database: an online resource for infectious disease records in wild primates. *Evolutionary Anthropology*. 14:1-2.
22. Davis, A.K., B. Farrey and **S. Altizer**. 2004. Quantifying monarch butterfly larval pigmentation using digital image analysis. *Entomologia Experimentalis et Applicata*. 113: 145-147.
21. Davis, A.K., K. Cook and **S. Altizer**. 2004. Leukocyte profiles in wild House Finches with and without mycoplasmal conjunctivitis, a recently emerged bacterial disease. *Ecohealth*. 1:362-373.
20. **Altizer, S.**, Davis, A.K., Cook, K.C., and Cherry, J.J. 2004. Age, sex and season affect the risk of mycoplasmal conjunctivitis in a southeastern House Finch population. *Canadian Journal of Zoology*. 82: 755-763.
19. Nunn, C., **Altizer, S.**, Sechrest, W., Barton, R., and Gittleman, J. 2004. Parasites and the evolutionary diversification of primate clades. *American Naturalist*. 164: S90-S103.
18. **Altizer, S.**, Hochachka, W., and Dhondt, A. 2004. Seasonal dynamics of mycoplasmal conjunctivitis in eastern North American House Finches. *Journal of Animal Ecology*. 73:309-322. *Cover article*
17. Davis, A.K., **S. M. Altizer** and E. Friedle. 2004. A non-destructive, automated method of counting spores of *Ophryocystis elektroscirrha* in infected monarch butterflies (Lepidoptera: Nymphalidae). *Florida Entomologist*. 87(2): 231-234.
16. Vitone, N.D., Nunn, C.L. and **Altizer, S.** 2004. Body size, diet and sociality influence the species richness of parasitic worms in anthropoid primates. *Evolutionary Ecology Research*. 6:183-199.
15. **Altizer, S.**, Harvell, C.D., and Friedle, E. 2003. Rapid evolutionary dynamics and disease threats to biodiversity. *Trends in Ecology and Evolution*. 18(11): 589-596.
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11. Harvell, D., Mitchell, C.E., Ward, J.R., **Altizer, S.**, Dobson, A., Ostfeld, R.S., and Samuels, M.D. 2002. Climate warming and disease risks for terrestrial and marine biota. *Science*. 296: 2158-2162.
10. **Altizer, S.M.** 2001. Migratory behaviour and host-parasite co-evolution in natural populations of monarch butterflies infected with a protozoan parasite. *Evolutionary Ecology Research*. 3: 611-632.
9. **Altizer, S.M.**, Oberhauser, K.S. and Brower, L.P. 2000. Associations between host migration and the prevalence of a protozoan parasite in natural populations of monarch butterflies. *Ecological Entomology*. 25: 125-139. *Awarded best paper in Society's Journals for 1999-2001*
8. Packer, C., **Altizer, S.**, Appel, M., Brown, E., Martenson, J., O'Brien, S.J., Roelke-Parker, M., Hofmann-Lehmann, R., and Lutz, H. 1999. Viruses of the Serengeti: Patterns of infection and mortality in African lions. *Journal of Animal Ecology*. 68(6): 1161-78.
7. **Altizer, S.M.** and Oberhauser, K.S. 1999. Effects of the protozoan parasite, *Ophryocystis elektroscirrha*, on the fitness of monarch butterflies (*Danaus plexippus*). *Journal of Invertebrate Pathology*. 74(1): 76-88.

6. **Altizer, S.M.**, Thrall, P.H. and Antonovics, J. 1998. Vector behavior and the transmission of anther-smut infection in *Silene alba*. ***American Midland Naturalist***. 139: 147-163.
5. Oudemans, P., Antonovics, J., Alexander, H.M., **Altizer, S.**, Thrall, P.H., Rose, L. 1998. The distribution of mating-type bias in natural populations of the anther-smut *Ustilago violacea* on *Silene alba* in Virginia. ***Mycologia***. 90(3): 372-381.
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3. **Altizer, S.M.** and Augustine, D.J. 1997. Interactions between frequency-dependent and vertical transmission in host-parasite systems. ***Proceedings of the Royal Society of London Series B***. 264: 807-814.
2. Brower, L.P., Fink, L.S., Brower, A.V.S., Leong, K., Oberhauser, K, **Altizer, S.**, Taylor, O., Vickerman, D., Calvert, W.H., Van Hook, T., Alonso, A., Malcolm, S.B., Owen, D.F., and Zalucki, M.P. 1995. On the dangers of interpopulational transfers of monarch butterflies. ***BioScience***. 45(8): 540-544.
1. **Altizer, S.M.** and Forward, R.B. 1993. Offshore escape response and directional orientation of the striped hermit crab *Clibanarius vittatus* (BOSC). ***Marine Behav and Physiology***. 22: 97-105.

CREATIVE CONTRIBUTIONS OTHER THAN FORMAL PUBLICATIONS

1. Online databases and web resources

The Global Mammal Parasite Database – a comprehensive data set of over 10,000 records of parasites and pathogens reported from wild populations of primates, carnivores and ungulates. Developed by S. Altizer and C. Nunn. www.mammalparasites.org

The Monarch Butterfly Parasites Website – providing detailed information on the biology, transmission and current research on *Ophryocystis elektroscirrha* and other parasites of monarch butterflies. Developed by S. Altizer and A. Davis. www.monarchparasites.org

2. Conferences and symposia organized

2016: Symposium organizer for Annual Meeting of the Ecological Society of America: “Anthropogenic resource provisioning and infectious disease dynamics.” Co-organized with Dr. Richard Hall and Dan Becker. Session included 8 invited speakers.

2015: Conference organizer: 13th Annual International Conference on the Ecology and Evolution of Infectious Diseases, University of Georgia. (Co-organizer: Dr. Andrew Park) Meeting events include 22 invited and contributed talks and 350+ participants from the US and Europe.

2014: Conference steering committee. Impact of Environmental Changes on Infectious Diseases, 23-25 March 2015, Sitges, Spain. (conference sponsored by Elsevier, one of 8 steering committee members responsible for planning the program and reviewing contributed talks. 400+ participants expected.

2010: Symposium organizer for US-IALE (Landscape Ecology) Conference, Athens, GA. (co-organizers: John Drake and Ross Meentemeyer). “Landscape ecology and infectious disease dynamics.” Session included 6 invited speakers

2009: Conference organizer: 7th Annual International Conference on the Ecology and Evolution of Infectious Diseases, University of Georgia. (Co-organizer: Dr. Pej Rohani.) Meeting events include 22 invited and contributed talks and 200 participants from the US and Europe.

2007: Symposium organizer for Annual Meeting of the Ecological Society of America: “Ecological immunity, epidemics and environmental change.” Co-organized with Dr. Johannes Foufopoulos. Session included 10 invited speakers.

2004: Conference organizer: 2nd Annual International Conference on the Ecology and Evolution of Infectious Diseases, Emory University. (Co-organizer: Dr. Leslie Real.) Meeting events included 24 invited talks and over 100 participants from the US and Europe.

2004: Oral session organizer for Annual Meeting of the Ecological Society of America: “Parasites and Host Social Organization: Ecological and Evolutionary Perspectives.” Co-organized with Dr. Charlie Nunn. Session included 10 invited speakers.

3. Collaborative working groups

2013-2018: “Macroecology of Infectious Diseases” Research Coordination Network. Organizers: Patrick Stephens, Sonia Altizer, Kate Smith, Alonso Aguirre, Robert Poulin

2015: “Monarch Butterfly Recovery – A **John Wesley Powell Center for Analysis and Synthesis Working Group**.” Ft. Collins, CO. Organizers: Darius Semmens, Karen Oberhauser.

2013: “Migratory network theory, monarch butterfly declines and response to environmental change” **NimBioS working group**, Knoxville, TN. Organizers: Richard Hall and Caz Taylor

2009-2011: “Monarch butterflies as a model for understanding the spatiotemporal dynamics of migratory species and their response to environmental change,” **NCEAS working group**, Santa Barbara, CA. Organizers: Sonia Altizer, Karen Oberhauser and Leslie Ries.

2009: “Sharing and integrating monarch butterfly monitoring data in North America to address conservation and management needs,” **Working group sponsored by Commission for Environmental Cooperation**, Athens, GA. Organizers: Sonia Altizer, Andy Davis, Karen Oberhauser and Leslie Ries.

2007: “Biodiversity and infectious diseases,” **Diversitas Working Group**, EcoHealth Meeting, Madison, WI. Organizer: Dr. Peter Daszak.

2006: “Parasites and the conservation of biodiversity,” **Conservation International working group**. Washington, D.C. Organizers: Sonia Altizer, Charlie Nunn, Amy Pedersen.

2003-2005: “Seasonality and the dynamics of infectious diseases,” **NCEAS working group**, Santa Barbara, CA. Organizers: Andrew Dobson and Mercedes Pascual.

2004: “Infectious diseases and conservation biology,” **Conservation International working group**, Washington, D.C. Organizers: Charlie Nunn, Andrew Dobson and John Gittleman, 11/02-1/04.

2001-2003: “Understanding the ecology and evolution of infectious diseases in mammalian mating and social systems,” **NCEAS working group**, Santa Barbara, CA. Organizers: Sonia Altizer and Charlie Nunn.

2000-2002: “Conservation and infectious diseases,” **NCEAS working group**, Santa Barbara CA. Organizers: Andrew Dobson and Robert Holt.

4. Media participation

- 2015: Interviewed for New York *Times* article on monarch butterfly recovery and infectious disease: http://www.nytimes.com/2014/11/18/science/monarchs-may-be-loved-to-death.html?_r=0
- 2013: Science advisor for Monarch butterfly migration *Google Earth* tour and Encyclopedia of Life Podcast: <http://www.youtube.com/watch?v=uqDwvuleRYc>
- 2012: Provided interviews and materials for *Science Nation* segment on infectious diseases in butterflies and bats: <http://www.youtube.com/watch?v=a9ktFRX5BVM>
- 2009: Hosted *National Geographic Television* film crew at our lab for 2 weeks and served as science advisor for 2011 series on Great Migrations.
- 2007: Scientific advisor for *NBC Today Show* producer and film crew segment that featured migration and winter sanctuaries of monarch butterflies in Mexico and included interview with Altizer and co-host Meredith Viera)
- 2005: EarthWatch Radio: interviewed for segment entitled *Migratory Immunity*

GRANTS, CONTRACTS AND OTHER FUNDING

- 29. Strategic Environmental Research and Development Program (SERDP) Grant (U.S. Department of Defense).** 5/1/2017-1/31/2022. \$282,000 (Altizer portion only). Will climate-mediated phenological shifts affect population viability? A test with butterflies on Department of Defense lands. PI: Elizabeth Crone. Co-PIs: Cheryl Shultz, Diane Debinski, Sonia Altizer.
- 28. National Science Foundation Dissertation Improvement Award.** \$19,499. Consequences of resource heterogeneity for immune defense, connectivity, and rabies dynamics in vampire bats. 9/01/16-10/01/18. Awarded to graduate student Dan Becker. Co-PI S. Altizer, D. Streicker
- 27. Monarch Joint Venture Partnership Contract.** 9/1/2016-8/1/2017. \$3200. *Empowering commercial nurseries to meet consumer demand for native, insecticide-free milkweed and nectar plants for monarch habitat* PI: Sonia Altizer. Co-investigators: Sarina Jepsen, Ania Majewska and Dara Satterfield.
- 26. National Science Foundation Ecology and Evolution of Infectious Diseases Award.** \$2.1 million. *Consequences of anthropogenic resources for the cross-scale dynamics of an enteric pathogen in an avian host*. 9/1/15-9/1/20. PI: Sonia Hernandez. Co-PIs Sonia Altizer, Richard Hall, Kristen Navara, Jeff Hepinstall.
- 25. National Science Foundation Ecology and Evolution of Infectious Diseases Conference/workshop Award.** \$6,000. *Conference on the Ecology and Evolution of Infectious Diseases*. 5/1/15-10/1/15. PI: Sonia Altizer. Co-PI Andrew Park.
- 24. Georgia Funder Crowdfunding Campaign.** \$12,000. *Project Monarch Health: Tracking Disease in Wild Butterflies at a Continent-Wide Scale*. 6/1/2015-ongoing. PI: Sonia Altizer
- 23. Monarch Joint Venture Partnership Contract.** 6/1/2015-6/1/2016. \$5195. *Tropical milkweed (Asclepias curassavica), monarch migration and parasite transmission in coastal Georgia and southern California* PI: Sonia Altizer. Co-investigators: Ania Majewska and Francis Villablanca.
- 22. National Science Foundation Dissertation Improvement Award.** \$19,237. *Understanding how shifts from migratory to sedentary behavior influence host-pathogen dynamics*. 10/01/14-9/30/16. Awarded to graduate student Dara Satterfield. Co-PIs S. Altizer and J. Maerz.

21. **National Science Foundation Dissertation Improvement Award.** \$16,964. *Migratory trade-offs: Immune defense balanced against reproductive and movement behaviors.* 5/01/14-4/30/16. Awarded to graduate student Alexa Fritzsche. Co-PIs S. Altizer and V. Ezenwa.
20. **National Science Foundation Ecology and Evolution of Infectious Diseases Panel.** \$500,000. 9/1/2013-8/30/18. *RCN Proposal: Macroecology of Infectious Disease.* Lead-PI: Patrick Stephens; Co-PIs: Sonia Altizer, Robert Poulin, Katherine Smith, Alonso Aguirre.
19. **Monarch Joint Venture Partnership Grant.** 10/1/2013-1/1/2015. \$12,000. *Do exotic milkweeds facilitate the spread of disease in monarchs?* PI: Sonia Altizer. Co-investigators: Dara Satterfield and Francis Villablanca.
18. **U.S. Forest Service Contract.** 12/1/12 – 12/31/13. \$8550. *North American Monarch Institute Conservation and Education Workshop.* PI: Karen Oberhauser. Co-PI: Sonia Altizer.
17. **National Science Foundation Research Grant.** 9/01/10-8/30/14. \$579,908. *Demographic and behavioral responses to resource shifts and the transmission of rabies in vampire bats.* PI: Sonia Altizer. Co-PI: Pej Rohani (project designed by PhD Student Daniel Streicker)
16. **National Science Foundation Research Grant.** 2/01/07-1/31/13. \$679,492. *CAREER: Animal migrations and infectious disease dynamics: monarch butterflies as a global case study.* PI: Sonia Altizer
15. **USFW Great Ape Conservation Fund Award.** 8/26/11-9/30/13. \$31,292. Close-contact pathogens, sexually transmitted diseases, and African ape conservation. PI: S. Altizer, co-PI: Rebecca Stumpf. (project designed by PhD Student Julie Rushmore)
14. **National Center for Ecological Synthesis and Analysis, Santa Barbara, CA. Working Group,** 4/10 – 12/11, \$79,000. *Monarch butterflies as a model for understanding the spatiotemporal dynamics of migratory species and their response to environmental change.* PI: Sonia Altizer. Co-PIs: Dr. Karen Oberhauser, Dr. Leslie Ries.
13. **National Science Foundation Workshop Award.** 9/1/07-8/31/12. \$371,751. *Training Workshops on the Ecology and Evolution of Infectious Diseases.* PI: Mike Antolin. Co-PIs: Sonia Altizer, Drew Harvell, Pete Hudson, Mary Poss.
12. **Commission for Environmental Cooperation Grant.** 4/15/09-7/31/09. \$24,000. *Collaborative online approaches to sharing and integrating monarch monitoring data within North America.* Co-PIs: Sonia Altizer, Karen Oberhauser, Leslie Ries, Andy Davis.
11. **USFW Great Ape Conservation Fund Award.** 10/1/09-9/30/10. \$24,828. Close-contact pathogens, sexually transmitted diseases, and African ape conservation. PI: S. Altizer, co-PI: Rebecca Stumpf. (project designed by PhD Student Julie Rushmore)
10. **CDC-UGA Seed Grant Award.** 2/1/09-1/30/11. \$85,000 *Ecological and anthropogenic drivers of vampire bat-transmitted rabies outbreaks.* PI: Sonia Altizer. Co-PIs: Pej Rohani, Charles Rupprecht. (project designed by PhD student Daniel Streicker)
9. **Seed Grant, Biomedical and Health Sciences Institute, University of Georgia.** 3/1/06-6/31/06. \$5,500. *Salmonella Surveillance in Wild Passerine Populations Along an Urban-Rural Gradient.* Co-participants: Cat Bradley, Susan Sanchez, John Maurer, Margie Lee.
8. **Faculty Research Grant, University of Georgia.** 1/1/06-12/31/06. \$7,000. *Tracking continent-wide variation in parasites of monarch butterflies in collaboration with citizen scientists.* PI: Sonia Altizer
7. **Conservation International Working Group Grant.** 1/1/06-4/30/08. *The role of pathogens in mammalian conservation.* \$32,300 (FY 2006) and \$13,000 (FY 2007). Co-PIs: Sonia Altizer, Charlie

Nunn, Andrew Dobson, John Gittleman

6. **Southeastern Center for Emerging Biological Threats.** 5/1/05 – 8/31/06. \$48,815. *Emerging diseases in urban landscapes: the ecology of two zoonotic pathogens in their avian reservoir hosts.* PI: Sonia Altizer. Co-PIs: David Stalknecht, Samantha Gibbs, Robert Tauxe, Susan Parker. (project designed by graduate student Catherine Bradley)
5. **National Science Foundation Research Grant.** 7/15/02 – 7/15/05. \$190,000. *Understanding the diversity of parasites and infectious diseases in three mammalian orders.* PI: Sonia Altizer. Co-PI: Charlie Nunn.
4. **National Science Foundation Research Grant (Subcontract).** 10/15/02 – 8/30/05. \$64,748. *Dynamics of an emerging disease in an introduced host.* PI: Dr. André Dhondt, Cornell Laboratory of Ornithology. Subcontract PI: Sonia Altizer
3. **University Research Committee, Emory University.** 6/15/03 – 6/15/04. \$29,738. *Effects of host behavior and ecology on the spread of an emerging eye disease in wild House Finches.* PI: Sonia Altizer.
2. **National Center for Ecological Synthesis and Analysis, Santa Barbara, CA.** Working Group, 2/01 – 6/03, \$59,780. *Ecology and evolution of infectious diseases in mammalian mating and social systems.* Co-PI: Charlie Nunn.
1. **National Science Foundation Doctoral Dissertation Improvement Award,** 6/97-6/98, \$7,500. *Host movement and disease dynamics: interactions between monarch butterflies and a protozoan parasite.* PI: Karen Oberhauser, co-PI: Sonia Altizer

SUMMARY OF COURSES TAUGHT (in chronological order)

Course	Title	Location	Term	Enrollment
EEB 210	Evolutionary Ecology (co-taught)	Princeton University	Spring 1999; Spring 2000	50, 41
BIOL 461	Ecology of Infectious Diseases (Field course, co-taught)	Mtn Lake Biol Station (Univ. of Virginia)	Summer 2000	5
ENVS 345	Conservation Biology	Emory University	Fall 2001; Fall 2003	17, 25
ENVS 132	Integrative Methods in Environmental Studies	Emory University	Spring 2002; Spring 2004	32, 35
ENVS 385	Population Ecology	Emory University	Fall 2002	14
ENVS 249	Ecology of Invasions	Emory University	Spring 2003, Spring 2005	24, 18
ENVS 385	Insect Ecology & Conservation	Emory University	Spring 2004	12
ENVS 497	Coordinator of Directed Internships	Emory University	Fall 2004	8
IBS 796R	Graduate Seminar in Coevolution (co-taught)	Emory University	Spring 2003	13
BIOL 4510	Ecology of Wildlife Diseases (Field course, co-taught)	Mtn Lake Biol Station (Univ. of Virginia)	Summer 2005, 2008, 2013	12, 8, 8
ECOL 8990	Graduate Seminar in the Ecology of Infectious	University of Georgia	Spring 2006, Spring 2008	14, 11

	Diseases (co-taught)			
ECOL 4000/6000	Population & Community Ecology	University of Georgia	Fall 2006, Fall 2007	14, 22
ECOL 1000	Ecological Basis for Environmental Issues (co-taught)	University of Georgia	Spring 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2012, Fall 2013; Fall 2014, Fall 2015; Fall 2017	289, 422, 320, 300, 325, 327; 326, 320; 280
ECOL/BIOL 4150/6150D	Population Biology of Infectious Diseases	University of Georgia	Spring 2009, Spring 2010	24, 38
FYOS 1101	Behavior & Conservation of Great Apes (co-taught)	University of Georgia	Fall 2011	14
ECOL 8030	Interdisciplinary Ecology (Graduate Seminar, co-taught)	University of Georgia	Spring 2012	22
FYOS 1101	Unraveling the Mysteries of Animal Migration (co-taught)	University of Georgia	Spring 2013; Spring 2015	15, 14
ECOL 4950	Senior Seminar	University of Georgia	Fall 2013; Fall 2016	19, 14
FYOS 1101	Hidden Arms Race: Pathogen Evolution (co-taught)	University of Georgia	Fall 2013	15
ECOL/BIOL 4150/6150L	Population Biology of Infectious Diseases (co-taught)	University of Georgia	Spring 2012, Spring 2014, Spring 2015; Spring 2017	32, 37, 25, 40
FYOS 1101	Exploring the Natural World through Museum Collections	University of Georgia	Spring 2016	15
ECOL 1000H	Environment Honors	University of Georgia	Fall 2016	11

SUPERVISION OF STUDENT RESEARCH

1. Doctoral dissertations directed (12 PhD students, in chronological order)

- a. Elizabeth Lindsey, Emory University. 2002-2008. *Genetic and environmental determinants of parasite resistance in monarch butterflies*. Dissertation completed.
- b. Catherine Bradley, Emory University and University of Georgia. 2003-2009. *Urbanization and infectious disease ecology in wild songbird communities*. Dissertation completed.
- c. Jamie Winternitz, University of Georgia. 2006-2012. *Mechanisms of selection and mhc diversity in the montane vole and other wild mammals*. CTGED NIH graduate fellow. Dissertation completed.
- d. Daniel Streicker, University of Georgia. 2006-2011. Co-chair with Dr. Pejman Rohani. *Viral host shifts: ecological dynamics, cross-species transmission and host adaptation in bat rabies*. Dissertation completed. NSF graduate research fellowship, Robert C. Anderson Memorial Award
- e. Julie Rushmore, University of Georgia. 2007-2013. *Social and ecological drivers of pathogen*

transmission in East African great apes. Dissertation completed. Morris Animal Foundation fellowship, Fullbright fellowship, James L. Carmon Scholarship Award

- g. Shan Huang, University of Georgia. 2007-2012. Co-chair with Dr. John Gittleman. *Evolutionary history explains the distribution and diversity of mammals and their parasites*. Dissertation completed. James L. Carmon Scholarship Award
- h. Alexa Fritzsche McKay, University of Georgia. Co-chair with Dr. Vanessa Ezenwa. 2010-2016. *How do the demands of reproduction and long distance migration alter immunity in monarch butterflies?* Dissertation completed. NSF graduate research fellowship; NSF Dissertation Improvement Grant
- i. Dara Satterfield, University of Georgia. Co-chair with Dr. John Maerz. 2011-2016. *Understanding how shifts from migratory to sedentary behavior influence pathogen dynamics in a butterfly host* Dissertation completed. NSF graduate research fellowship, NSF Dissertation Improvement Grant
- j. Dan Becker, University of Georgia. 2012-present. *Resource provisioning and infectious disease dynamics in wildlife*. Dissertation completed. NSF graduate research fellowship; NSF Dissertation Improvement Award; UGA ARCS Foundation Fellowship
- k. Ania Majewska, University of Georgia. 2013-present. *Effects of pollinator-friendly gardens on butterfly recruitment, abundance and infectious disease dynamics*. Wormsloe Graduate Fellowship.
- l. Cecilia Sanchez, University of Georgia. 2014-present. *Nutrition, immunity and infection in urban bats*. NSF graduate research fellowship; UGA ARCS Foundation Fellowship.
- k. Claire Teitelbaum, University of Georgia. 2016-present. Co-chair with Dr. Richard Hall. *How do nomadic species and their pathogens respond to changing resource distributions?* UGA Presidential Graduate Fellowship; NSF graduate research fellowship.

2. Masters students directed (3 MS students)

- a. John Cherry, Emory University. 2002-2005. *Ecological and genetic approaches to understanding variation in *Mycoplasma gallisepticum* in wild House Finches*.
- b. Christina Faust, University of Georgia. 2007-2009. Joint BS/MS program in Ecology. *Role of freshwater invertebrates in the aquatic cycle of avian influenza virus*. Currently PhD student at Princeton University. Udall, Mitchell, and Truman scholar
- c. Emily Cornelius, MS co-advisor with Andy Davis. 2011-2013. *Parasite infection, immune defense and stress in migrating songbirds*. Wormsloe Fellow. Currently PhD student, University of Wisconsin.

3. Postdoctoral researchers supervised (7)

- a. Amy Pedersen. 2005-2006. Supported at University of Georgia on startup funds. Currently Advanced Research Fellow, School of Biological Sciences, University of Edinburgh
- b. Jacobus de Roode. 2005-2007. Supported at University of Georgia on Marie Curie – European Union Fellowship. Currently Associate Professor, Department of Biology, Emory University.
- c. Rebecca Bartel. 2008-2011. Supported at University of Georgia on NIH/NRSA Ruth Kirschstein Fellowship. Currently Terrestrial Ecologist with the US Fish and Wildlife Service.
- d. Barbara Han. 2008-2011. Supported at University of Georgia on NSF Bioinformatics Fellowship. Currently Disease Ecologist, Cary Institute of Ecosystem Studies.
- e. Daniel Streicker. 2012-2013. Supported at University of Georgia on NSF DEB grant. Currently a Wellcome Trust Fellow at the University of Glasgow.

- f. Leone Brown. 2015-2017. Supported at University of Georgia on NSF Math-Bio Fellowship. Currently a postdoctoral fellow at the University of Connecticut and Tufts University.
- f. Paola Barriga. 2014-present. Visiting Postdoctoral Fellow.

4. Undergraduate student projects (53 undergraduate students since 2001)

University of Georgia

Kendall Alsup, undergraduate research assistant (Fall 2017-)
 Cody Prouty, undergraduate research assistant (Fall 2017-)
 Jovani Raya, REU site program student (Summer 2017)
 Katelyn Adkins, REU site program student (Summer 2017)
 Zabeena Dharani, CURO research assistantship (Summer 2017)
 Cecilia Nachtmann, undergraduate research assistant (Spring 2017-)
 Celine Snedden, Summer REU student (Summer 2016)
 Ian Yaeger, undergraduate research assistant (Summer 2015-2017)
 Stuart Simms, undergraduate research assistant (Summer 2015-2017)
 Anna Schneider, REU site program student (Summer 2015)
 Henry Adams, undergraduate research assistant (Summer 2015)
 John Patrick, undergraduate research assistant (Summer 2015)
 Sherayar Orakzai, undergraduate research credits (Spring 2015-Fall 2015)
 Hayley Schroeder, undergraduate research credits, CURO award (Spring 2015-Fall 2017)
 Julie Gardener, undergraduate research credits (Fall 2014)
 Mary Kate Williams, REU student (Summer 2014)
 Michael Holden, undergraduate research assistant (Spring 2014-Fall 2015)
 Selin Odman, undergraduate research credits (Spring 2014-Fall 2014)
 Emilie Morris, undergraduate research credits (Spring 2014-Fall 2015)
 Kaela Caballero, REU student (Summer 2013)
 Johanna Blakeslee, undergraduate research credits (Fall 2012-Summer 2014)
 Jennifer Kukarchek, undergraduate research assistant (Summer 2012-Fall 2013)
 Han Nguyen, undergraduate assistant and research credits (Summer 2012-Fall 2013)
 Amy Wright, undergraduate research volunteer (Fall 2010-Spring 2012)
 Meagan Weathers, undergraduate assistant (Fall 2010-Spring 2012)
 Malavika Rajeev, undergraduate assistant and CURO fellow (Spring 2010-Spring 2011)
 Ashton Griffin, undergraduate research assistant (Spring 2010-Fall 2010)
 Malvika Dufhare, undergraduate assistant and honors credits (Summer 2010-Fall 2011)
 Adam Haviland, undergraduate research credits (Spring 2009-Fall 2011)
 Cecilia Nix, undergraduate research assistant (Spring 2008-Summer 2010)
 Melissa Brody, undergraduate research assistant (Summer 2009)
 Jeff Shapiro, undergraduate research assistant (Spring-Summer 2009)
 Kristal Richardson, undergraduate LSAMP fellow (Fall 2008)
 Margeaux Maerz, undergraduate research assistant (Fall 2008-Fall 2009)
 Samantha Burton, undergraduate research assistant (Summer 2007-Spring 2010)
 JR McMillan, undergraduate research assistant (Summer 2007-Fall 2008)
 Ernie Osburn, undergraduate research assistant (Summer 2007-Summer 2009)
 Jean Chi, honors research credits (Summer 2006-Spring 2009)
 Margaret Horne, undergraduate research credits (Summer 2006)
 Natalie Kolleda, undergraduate research credits (Spring 2006-Spring 2007)
 Rachel Rarick, undergraduate research assistant (Spring 2006-Spring 2007)

Byron Ledbetter, undergraduate research assistant (Spring 2006-Spring 2007)

Emory University

Varun Dhulipala, undergraduate research volunteer (Fall 2004)
Mudresh Mehta, undergraduate research volunteer (Fall 2004)
Laura Gold, undergraduate directed research (Summer 2004)
Kai Kincheloe, undergraduate directed research (Summer 2004)
Zachary Baumann, undergraduate intern (Summer 2004)
Bethany Farrey, undergraduate and honors research (Fall 2002 - Spring 2004)
Mindy Edelson, undergraduate directed research (Spring 2004)
Alexis Morris, undergraduate directed research (Spring 2004)
Erin Hotchkiss, undergraduate directed research (Fall 2003)
Julia Bowen, undergraduate directed research (Spring 2003)
Emily Markesteyn, undergraduate directed research (Spring 2003)
Deborah Ladner, undergraduate honors research (Spring-Fall 2002)
William Wenke, undergraduate directed research (Fall 2002)
David Toplon, undergraduate senior thesis (Spring 2002)
Jessica Milligan, undergraduate directed research (Fall 2001, Spring 2002)
Molly Cobbs, undergraduate directed research (Spring 2002)

5. Undergraduate honors theses supervised (5 students)

University of Georgia

Hayley Schroeder, undergraduate honors advisor (Ecology, 2017-present)
Jean Chi, undergraduate honors advisor (Ecology, May 2009)
Malavika Rajeev, undergraduate honors advisor (Ecology, May 2012)

Emory University

Bethany Farrey, undergraduate honors advisor (Environmental Studies, May 2004)
Deborah Ladner, undergraduate honors advisor (Environmental Studies, May 2003)

6. Masters advisory committee member (7 committees)

Megan Winzeler, University of Georgia, Ecology, masters committee (in progress)
Malavika Rajeev, University of Georgia, Ecology, masters committee (degree 8/13)
Mindy Edelson, University of Georgia, CESD, masters committee (degree 8/13)
James Moree, University of Georgia, Ecology MS committee (degree 8/12)
Donna Gast, University of Georgia, Science Education, MS committee (degree 5/09)
Hanh Nguyen, University of Georgia, Ecology, masters committee (degree 7/07)
Jennifer Snaman, Emory University, PBEE, masters committee (degree 6/04)

7. Doctoral advisory committee member (16 committees)

Allison Williams, University of Georgia, Ecology, doctoral committee (in progress)
Brett Nolan, University of Georgia, Entomology, doctoral committee (completed 4/16)
Jenna Malek University of Georgia, Ecology, doctoral committee (completed 11/15)
Alyssa Gehman, University of Georgia, Ecology, doctoral committee (completed 4/17)
Carrie Keogh, University of Georgia, Ecology, doctoral committee (completed 4/17)
Kimmy Kellett, University of Georgia, Ecology, doctoral committee (completed 8/15)
Sarah Budishak, University of Georgia, Ecology, doctoral committee (completed 7/14)
Sarah Sander, University of Georgia, Genetics, doctoral committee (in progress)

Angie Maxted, University of Georgia, SCWDS, doctoral committee (completed 11/11)
Jodie Linder, University of Georgia, Genetics, doctoral committee (completed 3/09)
Nicole Gottdenker, University of Georgia, Ecology, doctoral committee (completed 6/09)
Renee Carleton, University of Georgia, WSFNR, doctoral committee (completed 10/07)
Matthew Bonds, University of Georgia, Ecology, doctoral committee (completed 7/06)
Tonya Mixson, Emory University, PBEE, doctoral committee (completed 11/06)
Jeff Smith, Emory University, PBEE, doctoral committee (completed 1/06)
Sarah Brosnan, Emory University, PBEE, doctoral committee (completed 5/04)

8. Honors student advisory committee member (3 committees; Emory University)

Elizabeth Chaitken, undergraduate honors committee (Biology, Spring 2004)
Matthew Biggerstaff, undergraduate honors committee (Biology; Spring 2003)
Joel Boggen, undergraduate honors committee (Biology, Spring 2003)

EDITORSHIP OR EDITORIAL BOARD ACTIVITIES

Board of Reviewing Editors: Science Magazine, 2009-2016. Areas covered: infectious disease ecology, evolutionary ecology, organismal biology. Review 2-6 papers/month.

Associate Editor: Journal of Animal Ecology. 2013-2015. Handled 2-3 papers/month.

Associate Editor: Ecological Applications, 2007-2009. Handled 7-8 papers/year.

Invited ad-hoc reviewer for the following scholarly journals: Proceedings B, Ecology, American Naturalist, PNAS, Ecological Monographs, Animal Conservation, Biological Conservation, Ecological Applications, Ecological Entomology, Evolutionary Ecology Research, EcoHealth, Journal of Applied Ecology, American Journal of Primatology, Conservation Biology, OIKOS, Oecologia, Ecology Letters, Evolutionary Anthropology and more.

CONVENTION PAPERS AND RESEARCH PRESENTATIONS

1. Keynote and Plenary Addresses (6)

2016: Steering committee invited keynote speaker, Annual meeting of the Canadian Society of Zoologists, London, Ontario, Canada.

2015: CURO (Center for Undergraduate Research Opportunities) Symposium Keynote Address, University of Georgia, Athens, GA.

2015: TEDxUGA Presenter (one of 15 presenters from the University of Georgia faculty, students and alumni) Athens, GA.

2014: Keynote invited speaker. North American Butterfly Association Annual Conference. Chattanooga, TN.

2014: Welcome to the Anthropocene UGA lecture series, Fall 2014. Athens, GA.

2012: Keynote invited speaker. European Wildlife Disease Association Meeting. Lyon, France

2012: Keynote invited speaker. Monarch Biology and Conservation Meeting. Minneapolis, MN

2. Invited symposium and conference talks (23)

2016: Symposium speaker, International Congress of Entomology, XXV. Orlando, FL

2016: Symposium speaker, Annual Meeting of the Ecological Society of America. Ft. Lauderdale, FL

2014: Symposium speaker, Annual Meeting of the Ecological Society of America. Sacramento, CA

2014: Symposium speaker, Annual Ecology and Evolution of Infectious Diseases Conference, Ft. Collins, CO.

2013: Invited speaker, Institute of Medicine of the National Academies Workshop, *The Influence of Global Environmental Change on Infectious Disease Dynamics*, Washington, D.C.

2013: Invited speaker, Centre for Animal Movement Research Workshop, Lund, Sweden

2013: Invited speaker and workshop participant. IX. Göttinger Freilandtage. The Sociality-Health-Fitness Link. Göttingen, Germany.

2013: Symposium speaker. Annual Meeting of the Ecological Society of America. Minneapolis, MN

2011: Symposium speaker. Annual Meeting of the Ecological Society of America. Austin, TX

2011: Invited speaker. Jacques Monod Conference, Coevolutionary arms race between parasite virulence and host immune defence. Roscoff, France (withdrew for family/medical reasons)

2010: Invited speaker. Royal Society and the Zoological Society of London, Disease invasion: impacts on biodiversity and human health, London, UK. (withdrew for medical reasons)

2010: Invited speaker: Ecology and Evolution of Infectious Diseases Conference, Cornell, NY (withdrew for medical reasons)

2010: Symposium speaker. US IALE (Landscape Ecology) Conference. Athens, GA

2010: Symposium speaker. International Conference on the Biology of Butterflies. Edmonton, Canada

2007: Symposium speaker. International Conference on the Biology of Butterflies. Rome, Italy.

2007: Symposium speaker. Annual Meeting of the Ecological Society of America. San Jose, CA

2007: Invited speaker. Jacques Monod Conference, Evolutionary Genetics of Host-Parasite Relationships. Roscoff, France

2005: Invited speaker. Monarch Butterfly Population Dynamics Conference. San Luis Obispo, CA

2005: Symposium speaker. Annual Meeting of the Wildlife Society, Madison, WI

2005: Symposium speaker. Annual Meeting of the Pacific Branch of the Entomological Society of America, Pacific Grove, CA

2004: Symposium speaker. Annual Meeting of the Ecological Society of America. Portland, OR.

2003: Symposium speaker. Annual AAAS meeting. Denver, CO.

2003: Invited speaker. Ecology and Evolution of Infectious Diseases Meeting. Penn State University.

2001: Symposium speaker. Annual Meeting of the Ecological Society of America. Madison, WI.

4. Invited talks at universities and institutes (33)

University of Minnesota, Department of Ecology, Evolution and Behavior. 50th Anniversary Celebration keynote speaker. October 2017.

Duke University, Annual Ecology Symposium keynote speaker, March 2015.

Princeton University, Robert May Invited Lecture in Ecology and Modeling, September 2014.

Emory University, Biology Department, March 2014.

University of Georgia, Department of Pathology, February 2014.

Louisiana State University, Biology Department, February 2014.
University of Georgia, One Health Rabies Symposium, November 2013.
University of Minnesota, College of Veterinary Medicine, March 2013.
Penn State University, Center for Infectious Disease Dynamics, December 2012.
University of Georgia, School of Veterinary Medicine. Veterinary Sciences Day. November 2012.
UC Davis, Department of Entomology, seminar speaker, June 2012.
University of Colorado, Department of Ecology and Evolutionary Biology, March 2012.
Indiana University, Department of Ecology, Evolution and Behavior, November 2011.
Georgia Southern University, Biology Department, seminar speaker. October 2011.
Cary Institute for Ecosystems Studies, seminar speaker. February 2010.
University of Georgia, Entomology Dept seminar speaker. November 2009.
University of Georgia, Dept of Infectious Diseases, annual retreat invited speaker, April 2009.
University of Georgia, Dept of Microbiology seminar speaker. April 2009.
College of Wooster, Tri-Beta undergraduate honor society invited speaker. April 2008.
Ohio State University, OARDC, Dept. of Entomology. May 2008.
Colorado State University, Distinguished Ecologist Series. April 2008.
University of North Carolina, Department of Biology. November 2006.
Clemson University, Department of Entomology, October 2006.
University of Georgia, Lecture Series on the Ecology of Infectious Diseases, June 2006.
University of Montana, Department of Biology, March 2006.
Washington State University. Department of Biology, February 2006.
University of British Columbia. Zoology Department, November 2004. (job seminar)
University of Georgia. Institute of Ecology, November 2004. (job seminar)
Emory University, PBEE Graduate Program seminar series. October 2003.
University of Georgia. Institute of Ecology, September 2002.
University of Minnesota. Department of Ecology, Evolution, and Behavior, January 2002.
Panel discussion for Werner Fornos talk: *Population and the urban future: gaining people, losing ground*. Sponsored by Sierra Club and Emory University. November 2001.
Emory University, Department of Environmental Studies seminar series. November 2001.
Emory University, PBEE Graduate Program seminar series. October 2001

SERVICE

A. University of Georgia (University-level service)

2016-present. University of Georgia Research Foundation (UGARF) Board member. (elected

representative from University Council)

2016-present. *Meigs Teaching Professorship Selection Committee*. Appointed by the Provost.

2016-present. *UGA Undergraduate Curriculum Committee*, and Life Sciences and Social Sciences sub-committees.

2016. *UGA Athletic Association Professor section committee*, College of Engineering. Committee appointed by Dean of Engineering.

2015-16. *Science Learning Center Planning and Steering Committee*. Committee appointed by Vice President for Instruction.

2015-16. *Promotion and Tenure Criteria Review Task Force*. Committee appointed by the Provost.

2013-15. *Robert C. Anderson Memorial Award selection committee*. Committee appointed by Vice President for Research.

2013. *Davison Chair search committee*, College of Veterinary Medicine. Committee appointed by Dean of Veterinary Medicine.

2012-2015. *Faculty of Infectious Diseases*, advisory board member.

2009-present. *Biomedical Health Sciences Institute*, member.

2009-2012. *UGA Distinguished Research Professorship selection committee*, appointed by the Vice President for Research.

2009-2010. *University of Georgia Research Advisory Council*, serving the Office of the Vice President for Research (OVPR).

2007-2008. *University Task Force on Research*, serving the Provost and the Vice President for Research.

B. College-level service

Odum School of Ecology, University of Georgia

2017-present. *Academic Coordinator*. Responsible for oversight of two undergraduate and three graduate degree programs and one graduate certificate program. Ensure the development and assessment of student learning outcomes; facilitate the assignment of faculty teaching responsibilities and new course proposals; and other matters related to the operations of degree programs in the Odum School of Ecology.

2012-2017. *Associate Dean of Academic Affairs*. Responsible for oversight of the graduate and undergraduate academic programs; instructional assignments, faculty awards, professional leave, facilitate searches and new appointments; oversight of course offerings including new courses and budgeting and assignments for teaching assistants; liason between Ecology and the Vice President for Instruction; student learning outcomes coordinator; experiential learning coordinator; develop faculty meeting agenda; develop and implement administrative policies on academic matters; aid the Dean in faculty annual reviews; conflict resolution relating to faculty and student matters.

2015-present. *IDEAS Graduate program steering committee member*. Committee responsible for the oversight and development of NSF-NRT graduate training program in infectious disease ecology.

2015-16. *Faculty search committee*, Ecology lecturer hire. Odum School of Ecology.

2015-16. *CURO Research Assistantship Liason*. Odum School of Ecology.

2015-present. *Experiential Learning Representative*. Odum School of Ecology.

2015-16. *Elements Administrative Liason*, Odum School of Ecology.

2014-15. *Ecology A.B. degree planning committee*. Odum School of Ecology.

2013-2016. *Ecology seminar series committee*, Odum School of Ecology.

2012-present. *Undergraduate program committee*. Odum School of Ecology.

2013-2014. *Vector Ecology faculty search committee*, Odum School of Ecology and College of Veterinary Medicine.

2012-present. NSF REU site program in the Population Biology of Infectious Diseases. One of 3 faculty coordinators for a summer undergraduate research program funded by NSF.

2012-2013. *Senior ecologist faculty search committee*, Odum School of Ecology.

2012-2013. *Strategic planning committee*, Odum School of Ecology.

2008-2011. *Tenure and Promotion Committee*, Odum School of Ecology.

2008-2012. *Executive Committee*, Odum School of Ecology.

2006-2007. *Seminar series coordinator*, Odum School of Ecology.

2005-2007. *Space committee*, Odum School of Ecology.

2007-2008. *Population ecologist search committee*, Odum School of Ecology.

2005-2006. *Population ecologist search committee*, Odum School of Ecology.

2005-2006. *Ecological genetics search committee*, Department of Genetics.

2007-2008. *Evolutionary ecologist search committee*, Odum School of Ecology.

Speakers hosted: Charlie Nunn (co-hosted with John Gittleman), Vanessa Ezenwa, Janis Antonovics, Andrew Storfer, Peter Daszak (co-hosted with Pej Rohani), Rosie Woodroffe (co-hosted with Pej Rohani), Ottar Bjornstad (co-hosted with Pej Rohani), Lincoln Brower (co-hosted with Andy Davis), Rick Ostfeld, Dana Hawley (co-hosted with Vanessa Ezenwa), Isabella Cattadori (co-hosted with Andrew Park and Vanessa Ezenwa); Berry Brosi; Shelly Adamo; Elizabeth Borer; Rachael Winfree

Department of Environmental Studies and Population Biology Graduate Program, Emory Univ.

2001-2004. *Graduate Committee co-chair*, Department of Environmental Studies.

2002. *Purchase and installation of major shared equipment*, including ultracold freezer, autoclave, teaching microscopes, water purification system.

2001-2004. *Co-Director of Recruiting and Admissions*, Graduate Program in Population Biology, Ecology, and Evolution.

2002-2004. *Executive Committee*, Graduate Program in Population Biology, Ecology, and Evolution.

2002-2005. *Seminar Committee* (invited speakers), Graduate Program in Population Biology, Ecology, and Evolution.

2003-2004. *Scholarly Inquiry and Research at Emory Committee*, review panel for awards for undergraduate research.

2004. *Faculty Science Council Participant*.

2004. *Strategic Planning Lunch Series with College Dean*.

Seminar Speakers Hosted: Pej Rohani, Janis Antonovics, Peter Daszak, Sara Via, Karen Oberhauser, Kate Jones, Charlie Nunn

C. Granting Agency Reviews and Panels

Grant Review Panelist, National Institutes of Health

2014. Genetic Variation and Evolution study section panelist.

Grant Review Panelist, National Science Foundation.

2013. Population and Community Ecology pre-proposal review panelist.

2012. Population and Community Ecology program panelist.

2009. Final site review team for NCEAS, an NSF-sponsored research center.

2008. Ecology program panelist.

2005. Evolutionary and Population Ecology program panelist.

Ad-hoc grant reviewer for the following funding agencies: National Science Foundation (ad-hoc referee); US Department of Agriculture, U.S. National Institutes of Health, Natural Environment Research Council (UK), Marsden Fund (NZ), Natural Sciences and Engineering Research Council (Canada), National Geographic Society; German Research Foundation

D. Other Professional Service

2012 – 2014. *Mercer Award Panel* (Ecological Society of America). Select recipients of ESA's Mercer Award for best paper from a young investigator.

2013. *External faculty search committee member*, Swiss Federal Institute of Technology, Zurich (ETHZ), Assistant Professor of Disease Ecology.

2010 – 2013. *Science Advisory Board*. NCEAS. Review working group proposals and advise on fundraising and future priorities.

2012-2016. *Promotion and Tenure Evaluation* – external letters provided for 12 faculty candidates at the following institutions: University of Colorado, University of Texas-Arlington, Oregon State University, Michigan State University, Notre Dame University, Colorado State University, Princeton University, Cornell University, University of Oklahoma, University of South Florida, University of Edinburgh

E. Public service and outreach

2017: *Panelist, US Fish and Wildlife Service Expert Elicitation*, to review the proposed status of monarch butterflies as federally listed under the US Endangered Species Act.

2017: *Keynote speaker*, Monarchs Across Georgia Pollinator Symposium. Monastery of the Holy Spirits, Conyers, GA.

2017: *Bobbin Mill Garden Club Lecture*. Gardening for monarchs and other butterflies. Athens, GA.

2016: *Reynolds Plantation Public Lecture*. If you plant it will they come? The scientific case for butterfly gardens.

2016: *Rosalynn Carter Butterfly Trail Discovery Day Keynote speaker*. Carter Center, Atlanta, GA.

2015: *Butterfly Conservation Workshop Lecture*. Wormsloe Historical Site. *Butterfly gardens as tools for pollinator conservation*.

2014: *Reynolds Plantation Public Lecture*. Monarchs in a changing world: Conservation of an iconic insect.

2013-present. *Monarch Joint Venture* partner. This program based at the University of Minnesota joins scientists and outreach groups to help conserve monarch butterfly migration.
www.monarchjointventure.org

2006-present: *MonarchHealth Citizen Science Project*. Launched in March 2006. This project involves volunteer participants from across North America in hands-on monitoring of parasites from wild populations of monarch butterflies. We created an educational website (www.monarchparasites.org), sent sampling kits and educational materials to participants, and analyzed results of observer efforts

2006, 2007, 2010, 2011, 2013, 2014, 2015, 2016, 2017: *Insectival* "Science Outreach" participant (organized a booth on monarch butterfly ecology), State Botanical Gardens, Athens, GA.

2013: Butterfly Special Event participant, Fernbank Museum, Atlanta, GA.

2011: Workshop instructor, Southeastern Science Education Conference (State Botanical Gardens, October 2011)

2010, 2011, 2012: Participant in the Georgia Native Plant Symposium and for the Master Gardener course at Georgia State Botanical Gardens

2006-2010. *Environmental Outreach*, Monarchs Across Georgia Program, Advisory Board and workshop instructor.

2007: *Georgia's First Annual Butterfly Symposium*. Fernbank Science Ctr, Atlanta, GA. Keynote speaker. September 2007.

2006: Dunwoody Butterfly Festival participant (organized a booth on monarch butterfly ecology), Dunwoody Nature Center, Dunwoody, GA.

2006: Program speaker for Oconee River Audubon Society meeting, Athens, GA.

2004: Program speaker for Men's Garden Club of Atlanta, GA.

2004: *Environmental Outreach and Training*. National Wildlife Federation, Earth Tomorrow Summer Institute (for inner city students). Half-day field demonstration on urban wildlife.

2003: Program speaker for Audubon Society's Atlanta Chapter, Atlanta, GA.

2003-2005: Steering Committee to establish a new nature reserve, *Friendship Forest*, in Clarkston, GA.