

Curriculum Vitae: JASON D. HOEKSEMA

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ACADEMIC APPOINTMENTS

7/2023-present Associate Chair for Graduate Studies and Graduate Program Coordinator—
University of Mississippi, Department of Biology
7/2020-present Professor—University of Mississippi, Department of Biology
7/2013-6/2020 Associate Professor—University of Mississippi, Department of Biology
7/2007-6/2013 Assistant Professor—University of Mississippi, Department of Biology
7/2006-7/2007 Postdoctoral Fellow—National Evolutionary Synthesis Center / Duke University
/ University of North Carolina (advisor: Joel Kingsolver)
7/2002-6/2006 Postdoctoral Associate—University of California, Santa Cruz (advisor: John
Thompson)
1996-2002 Research & Teaching Assistant—University of California, Davis (advisor: Mark
Schwartz)

EDUCATION

University of California, Davis	Ecology	Ph.D., 2002
University of Michigan	Biology	B.S., 1995

GRANTS, FELLOWSHIPS, & AWARDS

2025-2027 Department of Energy (DOE), "How do plant-associated fungi mediate vegetation and process shifts in response to interactive global change factors in P-limited dry forest-grassland systems?" (PI: J Hoeksema; Co-PIs: N Hynson, J Bhatnagar, E Brzostek; \$999,035)
2024 New Phytologist Trust, "New Phytologist Symposium: Ecological and evolutionary consequences of plant-fungal co-invasions" (PIs: J Hoeksema & L Nagy; ~\$61,000)
2023 Melinda & Ben Yarbrough, M.D., Senior Professor Research Award for the Natural Sciences, University of Mississippi College of Liberal Arts
2021-2025 Environmental Protection Agency (EPA), "Restoring temporary wetland function to agricultural watersheds with innovative farmer-driven offseason water management practices that improve long-term sustainability of farms through improved soil health, water quality, and wildlife habitat" (PI: J Hoeksema; co-PI: M D'Alessio; collaborators: J Taylor, M Moore, N Quintana Ashwell, C Lacy, B Baker; \$999,957)
2020-2024 National Science Foundation (NSF), "IRES Track II: Dynamics, consequences, and management of plant-fungal co-invasions" (PI: J Hoeksema; co-PI: JS Brewer; \$289,054)
2022 Visiting Instructor, TULIP-Graduate School International Guided Tour, Master Program in Functional Biology & Ecology, University of Toulouse Paul Sabatier III, France
2020-2021 National Endowment for the Humanities (NEH), "Environmental Literacy and Engagement in North Mississippi" (PI: A Fisher-Wirth; co-PIs: L Johnson, J Hoeksema, J Watson; \$34,891)
2021 J.W. Tucker Award, Mississippi Ornithological Society
2018-2020 DOE Joint Genome Institute, Community Science Program: "Genetic, community, and ecosystem consequences of co-introduction of mycorrhizal fungi with exotic pines" (PI: H Liao; co-PIs: J Hoeksema & 6 others; funding for genome sequencing services, estimated value >\$500,000)

- 2018-2019 National Geographic, "Rock weathering by alien pines and fungi in dry grasslands: are invasive organisms expanding habitable soil?" (PI: F Teste; co-PIs: J Hoeksema & JS Brewer; \$28,000)
- 2016 Visiting Scientist: TULIP Laboratory of Excellence (LabEx), Toulouse, France
- 2015 Visiting Scientist: Research Federation of Agrosciences, Biodiversity and Interactions (FRAIB), and Laboratoire Evolution et Diversité Biologique (EDB), Toulouse, France
- 2015-2018 NSF, "IRES: U.S.-Poland Student Research Experience to Study Plant Species Interactions in the Unique Ecosystem of the Bialowieza Forest." (PI: J Zjawiony; co-PI: J Hoeksema; \$249,126)
- 2015-2016 NIMBioS (National Institute for Mathematical and Biological Synthesis) short-term visit, "Using demographic data to assess population trends of a native Monterey Pine (*Pinus radiata*) and the potential consequences of ectomycorrhizal succession on forest dynamics" (PI: J Hoeksema, co-PIs: M Rua, D Doak, C Steenbock; \$6000)
- 2013-2015 US Army Corps of Engineers, "Identification of Climate Effects on Microbial Symbionts of Longleaf Pine." (PI: J Hoeksema; Cooperative Agreement #1: \$43,050 in May, 2013; Cooperative Agreement #2: \$54,202 in March, 2014)
- 2011-2016 NSF Population & Community Ecology, "Collaborative Research: Price determination in ectomycorrhizal symbioses." (PI: J Hoeksema; co-PI: M Booth; \$420,000)
- 2012-2014 NESCent (National Evolutionary Synthesis Center), "Working group: Solving problems in model selection and phylogeny in mixed multi-factor meta-analysis." (PI: J Hoeksema; co-PI: J Bever; \$60,000)
- 2012-2017 USDA National Needs Graduate Research Fellowship Grant, "Graduate Training in the Science of Forest and Restoration Ecology," (PI: JS Brewer; co-PIs: J Hoeksema, C Jackson, B Noonan; \$261,000)
- 2013 Faculty winner, National Academic Advising Association's Region IV Excellence in Advising Award
- 2012 Faculty winner, University of Mississippi's Academic Advising Network's Excellence in Advising Award
- 2010 NCEAS (National Center for Ecological Analysis and Synthesis) "A graduate seminar network to facilitate synthetic research on context-dependency in the mycorrhizal symbiosis." (PI: J Hoeksema; co-PI: J Bever; \$60,000)
- 2008-2012 USDA National Needs Graduate Research Fellowship Grant, "Graduate Training in Multi-Scale Approaches to Forest Restoration and Management Science," (PI: J Hoeksema; co-PIs: JS Brewer, D Reed, C Jackson, M Holland, G Stratton, C Ochs, S Threlkeld, P Lago; \$168,000)
- 2006-2008 NSF, "Causes and consequences of succession in mycorrhizal fungus communities" (PI: J Hoeksema; \$50,000)
- 2005-2008 UC MEXUS-CONACYT Collaborative Research Grant, "Diversity and local adaptation in interactions between Monterey Pine (*Pinus radiata*) and key symbiotic mutualists, ectomycorrhizal fungi," (PI: J Hoeksema; co-PIs: JN Thompson, JV Hernandez, and Deborah Rogers; \$25,000)
- 2005-2007 NCEAS (National Center for Ecological Analysis and Synthesis) Working Group: "Narrowing the gap between theory and practice in mycorrhizal management," (PI: J Hoeksema; co-PIs: N Johnson and J Umbanhowar; \$60,000)
- 2002-2004 NSF, Postdoctoral Research Fellowship in Microbial Biology (\$100,000)

PEER-REVIEWED JOURNAL ARTICLES & BOOK CHAPTERS

63. Spalazzi MF, Milani T, Hoeksema JD, Nuñez MA, Teste FP. In press. Can invading *Pinus* species facilitate more invasion in a mountain grassland? *Forest Ecology & Management*.
62. Rúa MA & Hoeksema JD. 2024. Interspecific selection in a diverse mycorrhizal symbiosis. *Scientific Reports* 14:12151.

61. Karst J, Jones MD, Hoeksema JD. 2023. Positive citation bias and overinterpreted results lead to misinformation on common mycorrhizal networks in forests. *Nature Ecology & Evolution* <https://www.nature.com/articles/s41559-023-01986-1>

Selected media coverage and commentary related to Karst et al. 2023 ([Altmetric summary](#)): [Nature \(News Feature, PDF link\)](#), [Nature Plants](#), [The Guardian](#), [Washington Post](#), [New York Times](#), [Scientific American](#), [New Scientist](#), [The Globe and Mail](#), [The Conversation](#), [CBC](#), [Gizmodo](#), [Popular Science](#), [Amaze Lab](#) (1:22 video), [ABC Radio](#) (story begins at 11:18), In Defense of Plants podcast (separate interviews with [Melanie](#), [Jason](#), and [Justine](#)), [Earth to Humans](#) podcast, [Saltwire](#) (Canada), [Revue Forestiere Francaise](#) (scientific review article in French), [La Presse](#) (Canada, French), [Le Monde](#) (French), [Le Figaro](#) (French), [Radio-Canada](#) (French), [PÚBLICO](#) (Portuguese), [IQ-Wissenschaft und Forschung](#) (5:26 radio clip in German), [Deutschlandfunk](#) (6:14 podcast in German), [Radio3 Scienza](#) (Italian), [Science ORF](#) (German), [South American Mycorrhizal Research Network](#) (interview by César Marín and Guillermo Bueno), [Vermont forester Ethan Tapper](#) (4:32 video), [ScienceAlert](#), [Inverse](#), [Gabriel Popkin blog](#), [Plantae](#), [University of Alberta press release](#), [University of Mississippi press release](#).

60. Chatterjee A, Taylor JM, Read QD, Moore M, Locke M, Hoeksema JD. 2023. Shallow water habitat management influences soil CO₂ efflux from agricultural fields in the Lower Mississippi River Basin (LMRB), USA. *Agrosystems, Geosciences, & Environment* 6:e20365.

59. Horning A, Koury S, Meachum M, Kuehn K, Hoeksema JD. 2022. Dirt cheap: An experimental test of controls on resource exchange in an ectomycorrhizal symbiosis. *New Phytologist* 237:987–998.

58. Policelli N, Hoeksema JD, Moyano J, Vilgalys R, Viveló S, Bhatnagar J. 2022. Global pine tree invasions are linked to invasive root symbionts. *New Phytologist* 237:16–21.

57. Milani T, Hoeksema JD, Jobbágy E, Rojas JA, Vilgalys R, Teste F. 2022. Co-invading ectomycorrhizal fungal succession in pine-invaded mountain grasslands. *Fungal Ecology* 60:101176.

56. Barnett ZC, Adams SB, Hoeksema JD, Easson GL, and Ochs CA. 2022. Effects of impoundments on stream crayfish assemblages. *Freshwater Science* 41:125-142.

55. Day LB, Helmhout W, Pano G, Olsson U, Hoeksema JD, Lindsay WR. 2021. Correlated evolution of acrobatic display and both neural and somatic phenotypic traits in manakins (Pipridae). *Integrative and Comparative Biology* 61:1343-1362.

54. Cinar O, Umbanhowar J, Hoeksema JD, & Viechtbauer W. 2021. Using information-theoretic approaches for model selection in meta-analysis. *Research Synthesis Methods* 12:537-556.

53. Barnett ZC, Ochs CA, Hoeksema, JD, & Adams, SB. 2021. Not all methods are created equal: assessment of sampling methods for crayfishes and fishes in southern Appalachian streams. *Hydrobiologia* 848:1491-1515.

52. Hoeksema JD, Averill C, Bhatnagar JM, Brzostek E, Buscardo E, Chen K, Liao H, Nagy L, Policelli N, Ridgeway J, Rojas JA, Vilgalys R. 2020. Ectomycorrhizal plant-fungal co-invasions as natural experiments for connecting plant and fungal traits to their ecosystem consequences. *Frontiers in Forests and Global Change* 3:84

51. Barnett ZC, Ochs CA, Hoeksema JD, Adams SB. 2020. Multi-pass electrofishing sampling efficiency for stream crayfish population estimations. *North American Journal of Fisheries Management* 40:840-851.

50. Lokhandwala A, and Hoeksema JD. 2019. Priming by arbuscular mycorrhizal fungi of plant antioxidant enzyme production: A meta-analysis. *Annual Plant Reviews Online* 2:1069-1084.

49. Bueno G., Aldrich-Wolfe L., Chaudhary B., Gerz M., Helgason T., Hoeksema J.D., Klironomos J., Lekberg Y., Leon D., Maherali H., Öpik M., Zobel M., Moora M. 2019. Misdiagnosis and uncritical use of plant mycorrhizal data are not the only elephants in the room: A response to Brundrett & Tedersoo (2018) 'Misdiagnosis of mycorrhizas and inappropriate recycling of data can lead to false conclusions.' *New Phytologist* 224:1415-1418.
48. Bennett A.E., Preedy K., Golubski A., Umbanhowe J., Borrett S.R., Byrne L., Apostol K., Bever J.D., Biederman L., Classen A.T., Cuddington K., de Graaff M-A., Garrett K., Gross L., Hastings A.M., Hoeksema J.D., Hryniv V., Karst J., Kummel M., Lee C.T., Liang C., Liao W., Mack K., Miller L., Ownley B., Rojas C., Simms E.L., Walsh V.K., Warren M., Zhu J. 2019. Beyond the Black Box: Promoting mathematical collaborations for elucidating interactions in soil ecology. *Ecosphere* 10:e02799.
47. Piculell BJ, Martínez-García PJ, Nelson CD, Hoeksema JD. 2019. Association mapping of ectomycorrhizal traits in loblolly pine (*Pinus taeda* L.). *Molecular Ecology* 28:2088-2099.
46. Epps S, Hoeksema JD. 2018. Establishment and spread of the Scaly-breasted Munia (*Lonchura punctulata*) in Mississippi. *The Mississippi Kite* 48(2):47-55.
45. Piculell BJ, Eckhardt LG, Hoeksema JD. 2018. Genetically determined fungal pathogen tolerance and soil variation influence ectomycorrhizal traits of loblolly pine. *Ecology and Evolution* 8:9646-9656.
44. Rasmussen AL, Brewer JS, Jackson CR, Hoeksema JD. 2018. Tree thinning and fire affect ectomycorrhizal fungal communities and enzyme activities. *Ecosphere* 9:e02471.
43. Hoeksema JD, Bever JD, Chakraborty S, Chaudhary VB, Gardes M, Gehring CA, Hart MM, Housworth EA, Kaonongbua W, Klironomos JN, Lajeunesse MJ, Meadow J, Milligan BG, Piculell B, Pringle A, Rúa MA, Umbanhowe J, Viechtbauer W, Wang Y-W, Wilson GWT, Zee PC. 2018. Evolutionary history of plant hosts and fungal symbionts predicts the strength of mycorrhizal mutualism. *Communications Biology* 1:116.
42. Lionheart G, Vandenbrink JP, Hoeksema JD, Kiss JZ. 2018. The impact of simulated microgravity on the growth of different genotypes of the model plant *Medicago truncatula*. *Microgravity Science and Technology* 30:491-502.
41. Karst J, Burns C, Cale J, Antunes P, Woods M, Lamit L, Hoeksema JD, Zabinski C, Gehring C, La Fleche M, Rúa M. 2018. Tree species with limited geographic ranges show extreme responses to ectomycorrhizas. *Global Ecology and Biogeography* 27:839-848.
40. Hoeksema JD, Roy M, Łaska G, Sienkiewicz A, Horning A, Abbott MJ, Tran C, Mattox J. 2018. *Pulsatilla patens* (Ranunculaceae), a perennial herb, is ectomycorrhizal in northeastern Poland and likely shares ectomycorrhizal fungi with *Pinus sylvestris*. *Acta Societatis Botanicorum Poloniae* 87:1-13.
39. Rasmussen AL, Busby RR, Hoeksema JD. 2018. Host preference of ectomycorrhizal fungi in mixed pine-oak woodlands. *Canadian Journal of Forest Research* 48(2):153-159.
38. Rúa MA, Lamit LJ, Gehring C, Antunes PM, Hoeksema JD, Zabinski C, Karst J, Burns C, Woods M. 2018. Accounting for local adaptation in ectomycorrhizas: A call to track geographical origin of plants, fungi, and soils in experiments. *Mycorrhiza* 28:187-195.
37. Trautwig A, Carter E, Hoeksema JD, Nadel R, Lowenstein N, Eckhardt L. 2017. Cogongrass (*Imperata cylindrica*) affects above and belowground processes in commercial loblolly pine (*Pinus taeda*) stands. *Forest Science* 63:10-16.

36. Yang H, Zhang Q, Koide R, Hoeksema JD, Tang J, Bian X, Hu S, Chen X. 2017. Taxonomic resolution is a determinant of biodiversity effects in arbuscular mycorrhizal fungal communities. *Journal of Ecology* 105:219-228.
35. Craig AJ, Woods S, Hoeksema JD. 2016. Influences of host plant identity and disturbance on spatial structure and community composition of ectomycorrhizal fungi in a northern Mississippi uplands ecosystem. *Fungal Ecology* 24:7-14.
34. Rúa MA, Antonika A, Anunes PM, Chaudhary VB, Gehring C, Lamit LJ, Piculell BJ, Bever JD, Zabinski C, Meadow JF, Lajeunesse MJ, Milligan BG, Karst J, Hoeksema JD. 2016. Home field advantage? Evidence of local adaptation among plants, soil, and arbuscular mycorrhizal fungi through meta-analysis. *BMC Evolutionary Biology* 16:122.
33. Chaudhary VB, Rúa MA, Antoninka A, Bever JD, Cannon J, Craig A, Duchicela J, Frame J, Gardes M, Gehring C, Ha M, Hart M, Hopkins J, Ji B, Johnson NC, Kaonongbua W, Karst J, Koide R, Lamit LJ, Meadow J, Milligan BG, Moore JC, Pendergast TH, Piculell BJ, Ramsby B, Simard S, Shrestha S, Umbanhowar J, Viechtbauer W, Walters L, Wilson G, Zee PC, and Hoeksema JD. 2016. MycoDB, a global database of plant response to mycorrhizal fungi. *Scientific Data* 3:160028.
32. Rúa MA, Wilson EC, Steele S, Munters AR, Hoeksema JD, Frank C. 2016. Associations between ectomycorrhizal fungi and bacterial needle endophytes in *Pinus radiata*: Implications for biotic selection of microbial communities. *Frontiers in Microbiology* 7:399.
31. Hoeksema J.D. 2015. Experimentally testing effects of mycorrhizal networks on plant ecology and distinguishing among mechanisms. In: *Mycorrhizal Networks*, edited by Thomas Horton. Springer.
30. Hoeksema J.D. and E.M. Bruna. 2015. Context-dependent outcomes of mutualistic interactions. In: *Mutualisms*, edited by Judith Bronstein. Oxford University Press.
29. Jones EI, Friesen ML, Afkhami ME, Akcay E, Bronstein JL, Bshary R, Frederickson ME, Heath KD, Hoeksema JD, Ness JH, Pankey S, Porter SS, Sachs JL, Charnagl K. 2015. Cheaters must prosper: reconciling theoretical and empirical perspectives on cheating in mutualism. *Ecology Letters*, 18:1270-1284.
28. Rúa, M.A., Moore, B., Hergott, N., Van, L., Hoeksema, J.D. 2015. Ectomycorrhizal fungal communities and enzymatic activities vary across an ecotone between a forest and field. *Journal of Fungi* 1:185-211.
27. Karst J, Piculell BJ, Brigham CA, Booth MG, and Hoeksema JD. 2013. Fungal communities in soils along a vegetative ecotone. *Mycologia* 105:61-70.
26. Hoeksema JD, Hernandez JV, Rogers DR, Mendoza LL, and Thompson JN. 2012. Geographic divergence in a species-rich symbiosis: Interactions between Monterey pines and ectomycorrhizal fungi. *Ecology* 93:2274–2285
25. Hoeksema JD and Classen AT. 2012. Is plant genetic control of ectomycorrhizal community composition an untapped source of stable soil carbon in managed forests? *Plant and Soil* 359:197-204
24. Hoeksema JD. 2012. Geographic Mosaics of Coevolution. *Nature Education Knowledge* 3(3):19
23. Karst J, Hoeksema JD, Jones MD, and Turkington R. 2011. Parsing the roles of abiotic and biotic factors in Douglas-fir seedling growth. *Pedobiologia* 54:273-280.
22. Booth MG and Hoeksema JD (both authors contributed equally). 2010. Mycorrhizal networks counteract competitive effects of canopy trees on seedling survival. *Ecology* 91(8):2294-2302.

21. Hoeksema JD. 2010. Tansley Review: Ongoing coevolution in mycorrhizal interactions. *New Phytologist* 187:286-300.
20. Hoeksema JD, Chaudhary VB, Gehring CA, Johnson NC, Karst J, Koide RT, Pringle A, Zabinski C, Bever JD, Moore JC, Wilson GWT, Klironomos JN, and Umbanhowar J. 2010. A meta-analysis of context-dependency in plant response to inoculation with mycorrhizal fungi. *Ecology Letters* 13:394-407.
19. Hoeksema JD. 2010. Peering belowground with increasing clarity: Elucidating belowground processes with cutting-edge tools. *Plant and Soil* 331:1-3.
18. Chaudhary B, Walters L, Bever JD, Hoeksema JD, Wilson GWT. 2010. Advancing synthetic ecology: A database system to facilitate complex ecological meta-analyses. *Bulletin of the Ecological Society of America* 91:235-243.
17. Johnson NC, Chaudhary VB, Hoeksema JD, Moore, JN, Pringle, A, Umbanhowar JA, Wilson GT. 2009. Mysterious mycorrhizae? A field trip and classroom experiment to demystify the symbioses formed between plants and fungi. *The American Biology Teacher* 71(7):424-429.
16. Hoeksema JD, Piculell BJ and Thompson JN. 2009. Within-population genetic variability in mycorrhizal interactions. *Communicative and Integrative Biology* 2(2):110-112.
15. Piculell BJ, Hoeksema JD, and Thompson JN. 2008. Interactions of biotic and abiotic environmental factors on an ectomycorrhizal symbiosis, and the potential for selection mosaics. *BMC Biology* 6:23 (11 pages).
14. Hoeksema JD and SE Forde. 2008. A meta-analysis of factors affecting local adaptation between interacting species. *The American Naturalist* 171:275-290. (DOI: 10.1086/527496)
13. Hoeksema JD and JN Thompson. 2007. Evolved geographic structure in a widespread plant-ectomycorrhizal interaction: Pines and false truffles. *Journal of Evolutionary Biology* 20:1148-1163. (DOI: 10.1111/j.1420-9101.2006.01287.x)
12. Johnson NC, Hoeksema JD, Umbanhowar JA, Bever J, Chaudhary VB, Gehring CA, Klironomos JN, Koide R, Moore J, Miller M, Moutoglis P, Schwartz MW, Simard S, Swenson W, Wilson GW, and Zabinski C. 2006. From Lilliput to Brobdingnag: Extending models of mycorrhizal function across scales. *BioScience* 56(11):889-900.
11. Schwartz MW, Hoeksema JD, Gehring CA, Johnson NC, Klironomos JN, Abbott LK, and Pringle, A. 2006. Global movement of mycorrhizal fungus inoculum: promise and possible consequences. *Ecology Letters* 9:501-515. (DOI: 10.1111/j.1461-0248.2006.00910.x)
10. Hoeksema JD. 2005. Plant-plant interactions vary with different mycorrhizal fungi. *Biology Letters* 1:439-442. (DOI: 10.1098/rsbl.2005.0381)
9. Hoeksema JD and M Kummel. 2003. Ecological persistence of the plant-mycorrhizal mutualism: a hypothesis from species coexistence theory. *The American Naturalist* 162:S40-S50.
8. Hoeksema JD and MW Schwartz. 2003. Expanding comparative-advantage biological market models: contingency of mutualism on partners' resource requirements and acquisition trade-offs. *Proceedings of the Royal Society of London, Series B* 270:913-919. (DOI: 10.1098/rspb.2002.2312)
7. Rudgers, JA and JD Hoeksema. 2003. Interannual variation in the relative importance of herbivory for the annual legume, *Lupinus nanus*. *Plant Ecology* 169:105-120.
6. Hoeksema JD and MW Schwartz. 2001. Modeling interspecific mutualisms as biological markets. Pages 173-183 in: R Noe, JARAM Van Hooff, and P Hammerstein (eds.), *Economics in Nature*. Cambridge University Press, Cambridge, UK.

5. Hoeksema JD and EM Bruna. 2000. Pursuing the big questions about interspecific mutualism: a review of theoretical approaches. *Oecologia* 125:321-330. (DOI: 10.1007/s004420000496)
4. Hoeksema JD, J Lussenhop and J Teeri. 2000. Soil nematodes indicate food web responses to elevated atmospheric CO₂. *Pedobiologia* 44:725-735.
3. Schwartz, MW, CA Brigham, JD Hoeksema, KG Lyons, MH Mills and PJ van Mantgem. 2000. Linking biodiversity to ecosystem function: implications for conservation ecology. *Oecologia* 122:297-305.
2. Hoeksema JD. 1999. Investigating the disparity in host-specificity between AM and EM fungi: lessons from theory and better-studied systems. *Oikos* 84:327-332.
1. Schwartz MW and JD Hoeksema. 1998. Specialization and resource trade: biological markets as a model of mutualisms. *Ecology* 79(3):1029-1038.

OTHER PUBLICATIONS

- Jones MD, Hoeksema JD, and Karst J. 2023. Opinion: Where the "Wood-wide Web" narrative went wrong. [Undark magazine 05.25.2023](#).
- Hoeksema JD. 2017. "Wild About Mushrooms," *Mississippi Outdoors* magazine. (<https://www.mdwfp.com/media/news/museum/wild-about-mushrooms/>)
- Hoeksema JD. 2010. Laboratory Manual for Microbiology. Kendall Hunt Publishing Company, Dubuque, Iowa, USA.
- Hoeksema JD. 2010. Context-dependency rules the day in the grass-endophyte symbiosis. *Evolution* 64(3):865-867. A review of "Ecology and Evolution of the Grass-Endophyte Symbiosis" by Gregory P. Cheplick and Stanley H. Faeth (2009, Oxford University Press, hardback, 256 pages, ISBN13: 978-0-19-530808-2, ISBN10: 0-19-530808-5, \$75.00).
- Voelz NJ, JD Hoeksema, and FE Hayes. 2006. *Instructor's Guide/Test Bank to accompany Elements of Ecology, 6th Edition, by RL Smith and TM Smith*. Benjamin Cummings, Menlo Park, CA, USA.
- Hoeksema JD, RL Smith, EE Bedecarrax and EJ Fenster. 2002. *Instructor's Manual and Test Bank to accompany Elements of Ecology, 5th Edition, by RL Smith and TM Smith*. Benjamin Cummings, Menlo Park, CA, USA.
- Brigham CA and JD Hoeksema. 1999. Spatial processes in ecology—a review of *Spatial Ecology*, D Tilman and P Kareiva, editors. *Madroño* 46(4):218-219.

STUDENTS & POST-DOCS MENTORED IN RESEARCH

Post-docs: Justine Karst (2007-2009), Megan Rua (NSF Post-doctoral Fellow, 2012-2015), Ami Lokhandwala (2016-2018), Sobia Ilyas (2023-2024), Abdul Razaq (2023-2024)

PhD students: Bridget Piculell (2016), Ann Rasmussen (2016), Brooke Allen (current), Ian Mounts (current), Savannah Draud (current)

Master's students: Anjel Craig (2010), Kristopher Hennig (2011), Nicole Hergott (2013), Chase Bailey (2015, co-advised with Steve Brewer), Mariah Meachum (2016), Amber Horning (2019), Emma Counce (2023), Victoria Simek (2024), Andrew Rosson (current), Oyenike Oyejide (current)

Undergraduates: 49 since 2007, including 15 honors theses

TEACHING EXPERIENCE

HON 420, Science & Journalism in the Age of Misinformation, Spring 2024, University of Mississippi, with Prof. Vanessa Gregory

BISC 502, Mycology, Fall Semesters 2008, 2010, 2012, 2014, 2016, 2018, 2023, University of Mississippi, Department of Biology

BISC 504, Biometry, Fall 2012, Fall 2014, Spring 2016, Spring 2017, Fall 2017, Fall 2018, Fall 2019, Fall 2020, Fall 2021, Fall 2022, Spring 2024, University of Mississippi Department of Biology

BISC 579, Coevolution and Species Interactions, Spring 2009, Fall 2015, Spring 2019, University of Mississippi, Department of Biology

BISC 677, Advanced Statistics and Meta-analysis, Spring 2008, Fall 2010, Spring 2021, University of Mississippi, Department of Biology

BISC 334, Ornithology, Spring Semesters 2010, 2012, 2016, 2018, 2020, 2023, University of Mississippi, Department of Biology

BISC 380 / ENVS 399 Sky Island Biodiversity (in Chiricahua Mountains of southeastern Arizona), Summer 2015-2019, 2021-2023, University of Mississippi

BISC 579, Careers in Forest Restoration Ecology, Fall 2009 and Spring 2014, University of Mississippi, Department of Biology

BISC 210, Microbiology, Spring Semester 2008-2015, University of Mississippi, Department of Biology

BISC 164 & 165 Honors Recitation, Spring & Fall 2012-2023, University of Mississippi

Bio 100W, Scientific Communication, Spring Semester 2006, San Jose State University, Department of Biology

ESSP 350, Quantitative Field Methods, Spring and Fall Semesters 2005, California State University, Monterey Bay, Department of Earth Systems Science & Policy

STAT 250, Applied Statistics for Science & Technology, Fall Semester 2005 and Spring Semester 2006, California State University, Monterey Bay, Department of Mathematics and Statistics

Bio 1C, Plant Biology and Ecological Principles, Fall 2004 and Spring 2005 semesters, Cabrillo Community College, Aptos, CA

ESP 198, Conservation Biology of Mutualisms, Winter Quarter 2002, UC-Davis Department of Environmental Science and Policy

ESP 10, Introduction to Environmental Studies, Spring Quarter 2001, UC-Davis Department of Environmental Science and Policy

ORAL PRESENTATIONS

Hoeksema JD, Karst J, Jones M, Mounts I, Draud S, Teste F. Are common mycorrhizal networks beneficial for trees in forests? Separating evidence from fantasy in the "wood-wide web." University of Kansas, Department of Ecology & Evolutionary Biology, 2/6/2024. (*Invited*)

Hoeksema JD. Delta Wind Birds: Partnering with farmers to create fall habitat for migratory shorebirds on crop fields. Road to Recovery Workshop: Sustainable Recovery of North American Birds, Shepherdstown, West Virginia, 1/17/24 (virtual). (*Invited*)

Hoeksema JD. Delta Wind Birds: Recruiting farmers to create fall habitat for migratory shorebirds on crop fields. Road to Recovery Social Science Engagement Session, 11/3/23 (virtual). (*Invited*)

Hoeksema JD. Experimental approaches to local adaptation and coevolution in ectomycorrhizal interactions. Symposium on Population and Landscape Genomics of Ectomycorrhizal Fungi, Swiss Federal Institute for Forest, Snow and Landscape Research WSL, 9/6/23 (virtual). (*Invited*)

Hoeksema JD, Karst J, Jones M, Mounts I, Draud S, Teste F. Field Experiments Do Not Support the Hypothesis that Common Mycorrhizal Networks Consistently Benefit Trees in Forests. III International Symposium of the Mycorrhizal Symbiosis in South America, Leticia, Amazonia, Colombia, 8/30/2023. (*Invited keynote*)

Hoeksema JD, Karst J, Jones M, Mounts I, Draud S, Teste F. Field Experiments Do Not Support the Hypothesis that Common Mycorrhizal Networks Consistently Benefit Trees in Forests. Mycological Society of America annual meeting, Flagstaff, Arizona, 8/8/2023.

- Hoeksema JD, Karst J, Jones M. The decay of the wood-wide web? Examining evidence on the function of common mycorrhizal networks in forests. Forestry & Agricultural Biotechnology Institute, University of Pretoria, South Africa, 11/17/22. *(Invited)*
- Hoeksema JD, Karst J, Jones M. The decay of the wood-wide web? Examining evidence on the function of common mycorrhizal networks in forests. INRAE Occitanie-Toulouse Centre, Toulouse, France, 9/5/22. *(Invited)*
- Hoeksema JD. What do we really know about the "wood-wide web"? Lessons from experiments on mycorrhizal networks of trees. L'Institut de Systématique, Évolution, Biodiversité, CNRS, Muséum national d'Histoire naturelle, Sorbonne Université, Paris, France, 2/17/22. *(Invited)*
- Hoeksema JD. Fall Waterbird Habitat Use in the Mississippi Delta. LA-MS Conservation Delivery Network semiannual meeting in Delhi, Louisiana, 12/8/21. *(Invited)*
- Hoeksema JD. The MycoDB database: Approaches to meta-analysis, and opportunities for expansion going forward. Virtual Workshop for Building a South American Fungal Traits Database, 11/8/21 (virtual). *(Invited)*
- Hoeksema JD. Cylinders, bags, and pathways: Importance of experimental design for studies of how common mycorrhizal networks affect plant ecology." University of California-Santa Barbara, 11/1/21 (virtual). *(Invited)*
- Hoeksema JD. Fall waterbird habitat use in the MS Delta: A new EPA Farmer to Farmer project. Arkansas Conservation Delivery Network semiannual meeting in Brinkley, Arkansas, 8/17/21. *(Invited)*
- Hoeksema JD. Introduced symbiotic fungi: Co-invasion with *Pinus* hosts in the Southern Hemisphere, and implications for biogeochemical cycles." University of Campinas (Brazil), 6/9/21 (virtual). *(Invited)*
- Hoeksema JD. How are contemporary outcomes of mycorrhizal interactions shaped by early and ongoing evolution? International Conference on Mycorrhiza, Merida, Mexico, July 2019. *(Invited)*
- Hoeksema JD, Roy M, Laska G, Sienkiewicz A, Horning A, Abbott M, Tran C, Mattox J. Sharing of ectomycorrhizal fungi between a coniferous tree (*Pinus sylvestris*) and an herbaceous perennial (*Pulsatilla patens*). International Conference of the Polish Botanical Society, Bialystok, Poland, July 2017. *(Invited Keynote)*
- Hoeksema JD. What can we learn from phylogenetic meta-analysis? Lessons from analyses of plant response to mycorrhizal fungi. Fédération de Recherche Agrobiosciences, Interactions et Biodiversité, Toulouse, France. November, 2016. *(Invited)*
- Hoeksema JD. How do common mycorrhizal networks affect plant interactions? What we've learned from field experiments. University of Toulouse III, Paul Sabatier, Laboratoire Evolution Diversite Biologique, Toulouse, France, November, 2016. *(Invited)*
- Hoeksema JD. Genetic variation and potential coevolution in pine-mycorrhizal interactions. University of Southern Mississippi, Department of Biology, September, 2016. *(Invited)*
- Hoeksema JD, Bever JD, Chakraborty S, Chaudhary VB, Housworth EA, Kaonongbua W, Lajeunesse MJ, Meadow JF, Milligan B, Piculell BJ, Rua MA, Umbanhowar J, Viechtbauer W, Zee PC. A phylogenetic meta-analysis of biotic and abiotic factors affecting plant response to mycorrhizal fungi. 8th International Conference on Mycorrhiza, Flagstaff, Arizona, USA, August 2015.
- Hoeksema JD. Does coevolution matter in diverse species interactions? Investigations of mycorrhizal coevolution and community genetics in *Pinus*. Fédération de Recherche Agrobiosciences, Interactions et Biodiversité, Toulouse, France. March, 2015. *(Invited)*
- Hoeksema JD. Genetic variation and the potential for coevolution in mycorrhizal interactions. University of Memphis, Department of Biology, September, 2014. *(Invited)*
- Hoeksema JD, Bever JD, Chakraborty S, Chaudhary VB, Housworth EA, Kaonongbua W, Lajeunesse MJ, Meadow JF, Milligan B, Piculell BJ, Rua MA, Umbanhowar J, Viechtbauer W, Zee PC. A phylogenetic meta-analysis of biotic and abiotic factors affecting plant response to mycorrhizal fungi. Ecological Society of America annual meeting, Sacramento, California, USA, August 2014.

- Hoeksema JD. Genetic variation and the potential for coevolution in mycorrhizal interactions. University of New Mexico, Department of Biology, February, 2014. *(Invited)*
- Hoeksema JD. Genetic variation and the potential for coevolution in mycorrhizal interactions. University of South Florida, Department of Integrative Biology, April, 2013. *(Invited)*
- Hoeksema JD and Bever JD. How should we use meta-analysis to answer complex questions in ecology and evolution? Ecological Society of America annual meeting, Portland, Oregon, USA, August, 2012.
- Hoeksema JD. Ecology and evolution of pine interactions with mycorrhizal fungi: Potential implications for genotype selection and soil carbon sequestration. University of Mississippi, Department of Pharmacognosy, April, 2012. *(Invited)*
- Hoeksema JD and Piculell BJ. Genetic variation in pines influencing ectomycorrhizal symbiosis: Potential implications for genotype selection and soil carbon sequestration. Biennial Southern Silvicultural Research Conference, Charleston, South Carolina, 15 February 2011. *(Invited)*
- Hoeksema JD. Is coevolution important in diverse species interactions? Evidence from studies of pines and false truffles. University of Georgia, Department of Plant Biology, 31 January 2011. *(Invited)*
- Hoeksema JD. Genetic variation in pines influencing ectomycorrhizal symbiosis: Potential implications for genotype selection in southern forestry. Annual meeting of the Auburn University Forest Health Cooperative, Auburn, Alabama, 18 November 2010. *(Invited)*
- Hoeksema JD. Is coevolution important in diverse species interactions? Evidence from studies of pines and false truffles. University of Alabama, Tuscaloosa, Department of Biological Sciences, 4 November 2010. *(Invited)*
- Hoeksema JD. Is coevolution important in diverse species interactions? Evidence from studies of pines and false truffles. Auburn University, School of Forestry & Wildlife Sciences, 5 October 2010. *(Invited)*
- Hoeksema JD, Rogers D, Vargas Hernandez J, and Thompson JN. Geographic divergence of specialization in a diverse symbiosis: Pines and spore-bank ectomycorrhizal fungi. Society for the Study of Evolution Annual Meeting, Portland, Oregon, 28 June 2010.
- Hoeksema JD. Patterns and consequences of coevolution in mycorrhizal symbioses. University of Alberta, Department of Biology, 8 January 2010. *(Invited)*
- Hoeksema JD and 12 co-authors. Context-dependency in plant response to mycorrhizal fungi: A meta-analysis of the mutualism-parasitism continuum. Ecological Society of America Annual Meeting, Albuquerque, NM, 5 August 2009.
- Hoeksema JD. Patterns and consequences of geographically variable coevolution in a widespread putative mutualism. University of Tennessee, Department of Ecology & Evolutionary Biology, 24 April 2009. *(Invited)*
- Hoeksema JD. Patterns and consequences of geographically variable coevolution in a widespread putative mutualism. Indiana University, Department of Biology, 6 February 2009. *(Invited)*
- Hoeksema JD. Patterns and consequences of geographically variable coevolution in the mycorrhizal symbiosis. Mississippi State University, Department of Biology, 14 November 2008. *(Invited)*
- Hoeksema JD and MG Booth. Mediation of plant-plant interactions in a forest by common mycorrhizal networks. Ecological Society of America Annual Meeting, Milwaukee, WI, 5 August 2008.
- Hoeksema JD. Graduate workshop: Modeling in ecology. Northern Arizona University, NSF IGERT program in Integrative Bioscience: Genes to Environment, 3 May 2007. *(Invited)*
- Hoeksema JD. Evolved variability at multiple scales in widespread species interactions. Northern Arizona University, Department of Biology, 3 May 2007. *(Invited)*
- Hoeksema JD. Incorporating stoichiometry and economic principles into models of species interactions. University of British Columbia, Department of Zoology, 14 March 2007. *(Invited)*
- Hoeksema JD. Ecological and evolutionary consequences of variability in plant-mycorrhizal interactions. University of British Columbia, Department of Botany, 13 March 2007. *(Invited)*
- Hoeksema JD. Incorporating stoichiometry and economic principles into models of species interactions. University of North Carolina, Chapel Hill, Department of Biology, 11 October 2006. *(Invited)*

- Hoeksema JD, MG Booth, and W Swenson. Using models grounded in stoichiometry to predict plant-mycorrhizal ecology across scales. Symposium: Bridging the gap between theory and practice in mycorrhizal management, International Conference on Mycorrhizas, Granada, Spain, 26 July 2006. *(Invited)*
- Hoeksema JD. Mutualism, antagonism, and evolved geographic structure in interactions between pines and false truffles. University of Alaska, Fairbanks, Institute of Arctic Biology, 23 March 2006. *(Invited)*
- Hoeksema JD. Ecological and evolutionary consequences of species interactions in plant communities. California State University, Chico, Department of Biology, 16 February 2006. *(Invited)*
- Hoeksema JD. Causes and consequences of variation in species interactions among plants and mycorrhizal fungi. University of Mississippi, Department of Biology, 26 January 2006. *(Invited)*
- Hoeksema JD. Species interactions and local adaptation between plants and mycorrhizal fungi: A potential mutualism between ecology and horticulture. Oregon State University Department of Horticulture, 25 May 2005. *(Invited)*
- Hoeksema JD and JN Thompson. Pattern and scale of local adaptation in a widespread plant-mycorrhizal fungus interaction. Ecological Society of America Annual Meeting, Portland, OR, 5 August 2004.
- Hoeksema JD and JN Thompson. Pattern and scale of local adaptation in a widespread plant-mycorrhizal fungus interaction. Society for the Study of Evolution Annual Meeting, Fort Collins, CO, 29 June 2004.
- Hoeksema JD. Species interactions as drivers of diversification: ecology and evolution in plant and mycorrhizal fungus communities. Portland State University, Department of Biological Sciences, 22 January 2004. *(Invited)*
- Hoeksema JD. Species interactions as drivers of diversification: ecology and evolution in plant and mycorrhizal fungus communities. California State University, Chico, Department of Biological Sciences, 26 March 2004. *(Invited)*
- Hoeksema JD. Mycorrhizal fungi: key mutualists of Monterey pines. Quarterly meeting of the Monterey Pine Forest Ecology Cooperative, Cambria, CA, 4 December 2003. *(Invited)*
- Hoeksema JD. Interspecific mutualism: biological market models, plants, & mycorrhizal fungi. UC-Santa Cruz Department of Ecology and Evolutionary Biology, Spring 2003. *(Invited)*
- Hoeksema JD and M Kummel. Understanding interspecific mutualism in diverse plant/soil-microbe systems: the importance of the degree and mechanism of competition among symbionts. Vice-Presidential Symposium, American Society of Naturalists Annual Meeting, Banff, Alberta, Canada, 11-14 July 2002. *(Invited)*
- Hoeksema JD. Competition among conifer seedlings differs with specialist vs. generalist mycorrhizal fungi. Ecological Society of America Annual Meeting, Tucson, AZ, 4-9 August 2002.
- Hoeksema JD. Competition and mutualism in ecological communities: biological market models and experiments with conifers and ectomycorrhizal fungi. University of California, Davis, Department of Ecology and Evolution, Spring 2002. *(Invited—Merton Love Award seminar)*
- Hoeksema JD, MW Schwartz, NC Johnson, and CB Blackwood. Mutualism in biological market models can be facilitated or inhibited by differing resource requirements among species. Ecological Society of America Annual Meeting, Madison, WI, 4-11 August 2001.
- Hoeksema JD and MW Schwartz. Modeling interspecific mutualisms as biological markets. Ecological Society of America Annual Meeting, Spokane, WA, 8-12 August 1999.
- Hoeksema JD, J Lussenhop, PS Curtis, and JA Teeri. Response of soil nematodes under aspen clones to two years of elevated CO₂. Soil Ecology Society International Conference, Kansas State University, Manhattan, KS, 27-30 May 1997.

POSTER PRESENTATIONS

- Hoeksema JD. Investigating the disparity in host-specificity between AM and EM fungi: lessons from theory and other systems. 2nd International Conference on Mycorrhiza, Uppsala, Sweden, 5-10

July 1998.

PROFESSIONAL SERVICE

Topic Editor (Evolution), *Newsletter of the International Mycorrhiza Society*, 2020-present

Journal editorial boards: *Ecology*, 2012-2020; *Plant Ecology & Diversity*, 2024-

Contributing Faculty Member, *Faculty of 1000 (F1000)--Population Ecology Section*, 2012-2016

Manuscripts/grant proposals reviewed for *The American Naturalist*, *American Journal of Botany*, *Biological Conservation*, *Biology Letters*, *BMC Evolutionary Biology*, *Communications Biology*, *Ecological Modelling*, *Ecology*, *Ecology Letters*, *Ecosystems*, *Evolutionary Applications*, *Functional Ecology*, *Fungal Ecology*, *ISMEJ*, *Journal of Animal Ecology*, *Journal of Bioeconomics*, *Journal of Ecology*, *Journal of Theoretical Biology*, *Molecular Ecology*, *Mycorrhiza*, *Mycotaxon*, *New Phytologist*, *Oikos*, *Oecologia*, *Plant & Soil*, *Proceedings of the National Academy of Sciences USA (PNAS)*, *Proceedings of the Royal Society of London B*, *Trends in Ecology and Evolution*, *Trends in Microbiology*, USA National Science Foundation, Natural Environment Research Council (UK), Austrian Science Fund, Netherlands Organization for Scientific Research, Springer Verlag Publishing Company, Benjamin Cummings Publishing Company.

Grant proposal review panels: NSF Population & Community Ecology (2009, 2011, 2012, 2015, 2017, 2019); NSF Doctoral Dissertation Improvement Grant (Population & Evolutionary Processes, 2008 & 2009)

Society memberships: Ecological Society of America, International Mycorrhiza Society, Sigma Xi

UNIVERSITY SERVICE

Tenure and Promotion Review Committee, 2022-present

University Biodiversity Committee, 2021-present

University Assessment Committee, 2016-2019

Green Fund awards committee, University Office of Sustainability, 2015-2020

Faculty advisory committee, Environmental Studies Minor, 2016-present

Advisory Committee for STEM Infrastructure, 2012

Volunteer instructor, Introduction to Programming in SAS, 2009-2011

DEPARTMENTAL SERVICE

Associate Chair for Graduate Studies & Graduate Program Coordinator, 2023-present

Chair, Bylaws Committee, 2022-present

Member, Diversity, Equity, & Inclusion Committee, 2021-present

Member of graduate student advisory committees, >50 total since 2007

Chair, search committee for TTF position in Integrative Plant Biology (successful), 2018-2019

Faculty advisor, Biology Graduate Student Society, 2013-present

Member, search committee for TTF position in Quantitative Ecology (successful), 2016-2017

Member, search committee for Chair of Biology (successful), 2015-2016

Organizer, Biology Seminar Series, 2008-2013

Member, Biology Website Committee, 2008-2013

Member, search committee for TTF position in Population Genetics (successful), 2010-2011

Member, Graduate Studies Committee, 2008-2010

Organizer, Biology weekly Biolunch brownbag series, 2008-2011

COMMUNITY SERVICE & OUTREACH

Public educational talks or workshops on mushrooms or bird conservation: Gaining Ground Sustainability Institute (2011), Memphis Botanical Garden (2012), Strawberry Plains Audubon Center (2009-2020), Hattiesburg Audubon Society (2014), Rotary Club of Oxford (2015), Lafayette County High School (2016), Mississippi Coast Audubon Society (2016), Oxford Garden Club (2016), Marks Garden Club (2017), Cultivate Wild Native Plant Conference in Memphis (2018), Lafayette County Wildlife Seminar (2019), Wolf River Conservancy (2018, 2020, 2022), Burroughs Audubon Society of Kansas City (2021), Creature Comforts radio program on Mississippi Public Broadcasting (2022, 2023), World Catfish Festival in Belzoni (2022), Rotary Club of Indianola (2022), Lower Delta Partnership seminar series in Rolling Fork (2022), Greenville Garden Club (2022), Unitarian Universalist Congregation of Oxford (2022), St. Paul's Episcopal Church of Corinth (2022), Science Café in Oxford (2017, 2022), Boy Scout Merit Badge Workshops (2009-2011, 2023), Lafayette County Master Gardeners (2019 & 2023), Rotary Club of Greenwood (2023), Lee Tartt Nature Preserve (annually since 2021), Overton Park Conservancy Science Café (2023)

Conservation board service: In fall 2013, I co-founded (and have since served as volunteer President of) Delta Wind Birds, a non-profit organization that works with private landowners in the MS Delta to provide habitat for migratory birds, and promotes ecotourism in Mississippi.