Stanford

Kabir Peay

Senior Associate Dean for Education, Director of the Earth Systems Program, Professor of Biology, of Earth System Science and Senior Fellow at the Woods Institute for the Environment

Curriculum Vitae available Online

Bio

BIO

I completed a master's degree at the Yale School of Forestry and Environment Science (F&ES) in 2003 and obtained my PhD in 2008 from UC Berkeley's Dept. of Environmental Science, Policy and Management (ESPM) in Matteo Garbelotto's lab. I did my postdoctoral training at UC Berkeley in the Dept. of Plant & Microbial Biology with Tom Bruns, and at Stanford in the Dept. of Biology with Tadashi Fukami. I was an Assistant Professor in the Dept. of Plant Pathology at the University of Minnesota from 2011-2012 before coming to Stanford in 2012 to join the Dept. of Biology.

ACADEMIC APPOINTMENTS

- Professor, Biology
- Professor, Earth System Science
- Senior Fellow, Stanford Woods Institute for the Environment
- Member, Bio-X
- Senior Fellow, Stanford Woods Institute for the Environment

HONORS AND AWARDS

- Fellow, American Academy of Microbiology (2025-)
- Fellow, California Academy of Sciences (2025-)
- Fellow, Canadian Institute for Advanced Research (2023-2026)
- Leading Interdisciplinary Collaborations (LInC) Fellow, Woods Institute for the Environment (2018-2019)
- Buller Medal for Early Career Research, International Mycological Association (2018)
- Terman Fellow, Stanford University (2017-2020)
- Alexopolous Prize for Early Career Research, Mycological Society of America (2017)
- Early Career Fellow, Ecological Society of America (2016-2021)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Ecological Society of America (2002 - present)
- Member, Mycological Society of American (2004 - present)
- Editorial Board Member, Fungal Ecology (2012 - present)
- Editorial Board Member, FEMS Microbiology Ecology (2012 - present)
- Board of Advisors, New Phytologist (2013 - present)

PROFESSIONAL EDUCATION

- PhD, UC Berkeley (2008)
- MESc, Yale School of Forestry (2003)
- BA, UC Santa Barbara (1997)

COMMUNITY AND INTERNATIONAL WORK

- Characterizing microbial communities across a developmental gradient of tropical peat forest, Brunei

LINKS

- Peay lab site: https://mykophile.stanford.edu/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our lab studies the ecological processes that structure natural communities and the links between community structure and the cycling of nutrients and energy through ecosystems. We focus primarily on fungi, as these organisms are incredibly diverse and are the primary agents of carbon and nutrient cycling in terrestrial ecosystems.

Much of our research focuses on plant-fungal root associations, better known as mycorrhizas, which constitute one of the most pervasive mutualisms in terrestrial ecosystems. We work on questions at three scales of this symbiosis, (1) how does environmental variation and functional variation in mycorrhizal fungi affect the symbiosis at the root tip scale, (2) how does dispersal contribute to the predictability of community assembly patterns at the landscape scale, and (3) how does biogeography affect mycorrhizal community structure and ecosystem function? By integrating these three levels of research we hope to build a 'roots-to-biomes' understanding of plant-microbe symbiosis.

Teaching

COURSES

2025-26

- Introduction to Earth Systems: EARTHSYS 10 (Aut)
- Introduction to Ecology: BIO 81 (Aut)
- The Hidden Kingdom - Evolution, Ecology and Diversity of Fungi: BIO 115, BIO 239 (Win)

2024-25

- Introduction to Ecology: BIO 81 (Aut)

2023-24

- Biology and Global Change: BIO 117, EARTHSYS 111, EARTHSYS 217, ESS 111 (Win)
- The Hidden Kingdom - Evolution, Ecology and Diversity of Fungi: BIO 115, BIO 239 (Win)

2022-23

- Introduction to Ecology: BIO 81 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Peter Allen, Rebecca Salcedo

Postdoctoral Faculty Sponsor

T. Bertie Ansell, Yvonne Boesch, Callie Chappell, Deborah Narh

Doctoral Dissertation Advisor (AC)

Roman Cavallaro, Karrin Tennant, Jay Yeam

Doctoral Dissertation Co-Advisor (AC)

Anna Johnson

Doctoral (Program)

Lauren Ward

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biology (School of Humanities and Sciences) (Phd Program)

Publications

PUBLICATIONS

- **More exceptions than rules: Variable effects of ectomycorrhizal fungi on leaf litter decomposition in temperate pine forests** *JOURNAL OF ECOLOGY*
  DeLancey, L. C., McCarthy, M. J., Peterson, K., Yeam, J. J., Kaminsky, L., Smith, M. E., Peay, K. G., Hobbie, S. E., Kennedy, P. G.
  2025
- **Climate and Land-Use Changes Predicted to Jointly Drive Soil Fungal Diversity Losses in One-Third of North American Coniferous Forests.** *Global change biology*
  Luo, W., Peay, K. G., Gonçalves-Souza, T., Reich, P. B., Zak, D. R., Zhu, K.
  2025; 31 (11): e70598
- **A catalog of metagenome-assembled genomes from Amazonian forest and pasture soils.** *Microbiology resource announcements*
  Venturini, A. M., Gontijo, J. B., Berrios, L., Mazza Rodrigues, J. L., Peay, K. G., Tsai, S. M.
  2025: e0064225
- **A global database of soil microbial phospholipid fatty acids and enzyme activities.** *Scientific data*
  van Galen, L. G., Smith, G. R., Margenot, A. J., Waldrop, M. P., Crowther, T. W., Peay, K. G., Jackson, R. B., Yu, K., Abrahão, A., Ahmed, T. A., Alatalo, J. M., Anslan, S., Anthony, et al
  2025; 12 (1): 1568
- **Global hotspots of mycorrhizal fungal richness are poorly protected.** *Nature*
  Van Nuland, M. E., Averill, C., Stewart, J. D., Prylutskyi, O., Corrales, A., van Galen, L. G., Manley, B. F., Qin, C., Lauber, T., Mikryukov, V., Dulia, O., Furci, G., Marín, et al
  2025
- **Fungal Spore Seasons Advanced Across the US Over Two Decades of Climate Change.** *GeoHealth*
  Wu, R., Song, Y., Head, J. R., Katz, D. S., Peay, K. G., Shedden, K., Zhu, K.
  2025; 9 (7): e2024GH001323
- **Wind Patterns Influence the Dispersal and Assembly of North American Soil Fungal Communities.** *Ecology letters*
  Pellitier, P. T., Kling, M. M., Qin, C., Van Nuland, M. E., Zhu, K., Peay, K. G.
  2025; 28 (5): e70130
- **New species of Thelephora (Thelephorales, Basidiomycota) associated with Dicymbe and Aldina in Guyana.** *Mycologia*
  Alvarez-Manjarrez, J., Henkel, T. W., Duncan, A., Aime, M. C., Peay, K. G., Smith, M. E.
  2025: 1-19
- **Linking soil microbial genomic features to forest-to-pasture conversion in the Amazon.** *Microbiology spectrum*
  Venturini, A. M., Gontijo, J. B., Berrios, L., Rodrigues, J. L., Peay, K. G., Tsai, S. M.

2025: e0156124

- **Cryogenic electron tomography and fluorescence light microscopy of multispecies communities within the soil microbiome**
  Ansell, T., Berrios, L., Peay, K. G., Dahlberg, P. D.
  CELL PRESS.2025

- **Cryogenic electron tomography and fluorescence light microscopy of multispecies communities within the soil microbiome**
  Ansell, T., Berrios, L., Peay, K. G., Dahlberg, P. D.
  CELL PRESS.2025

- **Fungal impacts on Earth's ecosystems.** *Nature*
  Case, N. T., Gurr, S. J., Fisher, M. C., Blehert, D. S., Boone, C., Casadevall, A., Chowdhary, A., Cuomo, C. A., Currie, C. R., Denning, D. W., Ene, I. V., Fritz-Laylin, L. K., Gerstein, et al
  2025; 638 (8049): 49-57

- **Evolutionary Trajectories of Shoots vs. Roots: Plant Volatile Metabolomes Are Richer but Less Structurally Diverse Belowground in the Tropical Tree Genus Protium.** *Plants (Basel, Switzerland)*
  Holmes, K. D., Fine, P. V., Mesones, I., Alvarez-Manjarrez, J., Venturini, A. M., Peay, K. G., Salazar, D.
  2025; 14 (2)

- **Standardizing experimental approaches to investigate interactions between bacteria and ectomycorrhizal fungi.** *FEMS microbiology reviews*
  Berrios, L., Ansell, T. B., Dahlberg, P. D., Peay, K. G.
  2024

- **Field Reduction of Ectomycorrhizal Fungi Has Cascading Effects on Soil Microbial Communities and Reduces the Abundance of Ectomycorrhizal Symbiotic Bacteria.** *Molecular ecology*
  Berrios, L., Peay, K. G.
  2024: e17585

- **Arbuscular mycorrhizal fungi equalize differences in plant fitness and facilitate plant species coexistence through niche differentiation.** *Nature ecology & evolution*
  Willing, C. E., Wan, J., Yeam, J. J., Cessna, A. M., Peay, K. G.
  2024

- **Climate mismatches with ectomycorrhizal fungi contribute to migration lag in North American tree range shifts.** *Proceedings of the National Academy of Sciences of the United States of America*
  Van Nuland, M. E., Qin, C., Pellitier, P. T., Zhu, K., Peay, K. G.
  2024; 121 (23): e2308811121

- **Ectomycorrhizal fungi alter soil food webs and the functional potential of bacterial communities.** *mSystems*
  Berrios, L., Bogar, G. D., Bogar, L. M., Venturini, A. M., Willing, C. E., Del Rio, A., Ansell, T. B., Zemaitis, K., Velickovic, M., Velickovic, D., Pellitier, P. T., Yeam, J., Hutchinson, et al
  2024: e0036924

- **A risk assessment framework for the future of forest microbiomes in a changing climate** *NATURE CLIMATE CHANGE*
  Willing, C. E., Pellitier, P. T., Van Nuland, M. E., Alvarez-Manjarrez, J., Berrios, L., Chin, K. N., Villa, L. M., Yeam, J. J., Bourque, S. D., Tripp, W., Leshyk, V. O., Peay, K. G.
  2024

- **Potential for functional divergence in ectomycorrhizal fungal communities across a precipitation gradient.** *ISME communications*
  Pellitier, P. T., Van Nuland, M., Salamov, A., Grigoriev, I. V., Peay, K. G.
  2024; 4 (1): ycae031

- **Co-inoculations of bacteria and mycorrhizal fungi often drive additive plant growth responses.** *ISME communications*
  Berrios, L., Venturini, A. M., Ansell, T. B., Tok, E., Johnson, W., Willing, C. E., Peay, K. G.
  2024; 4 (1): ycae104

- **Above- and belowground fungal biodiversity of Populus trees on a continental scale.** *Nature microbiology*
  Van Nuland, M. E., Daws, S. C., Bailey, J. K., Schweitzer, J. A., Busby, P. E., Peay, K. G.
  2023

- **Positive interactions between mycorrhizal fungi and bacteria are widespread and benefit plant growth.** *Current biology : CB*
  Berrios, L., Yeam, J., Holm, L., Robinson, W., Pellitier, P. T., Chin, M. L., Henkel, T. W., Peay, K. G.
  2023
- **Woodland wildfire enables fungal colonization of encroaching Douglas-fir** *FUNCTIONAL ECOLOGY*
  Smith, G., Peay, K. G.
  2023
- **Soil microbes under threat in the Amazon Rainforest.** *Trends in ecology & evolution*
  M Venturini, A., B Gontijo, J., A Mandro, J., Berenguer, E., Peay, K. G., M Tsai, S., Bohannan, B. J.
  2023
- **Dispersal changes soil bacterial interactions with fungal wood decomposition.** *ISME communications*
  Wang, C., Smith, G. R., Gao, C., Peay, K. G.
  2023; 3 (1): 44
- **Niche modelling predicts that soil fungi occupy a precarious climate in boreal forests** *GLOBAL ECOLOGY AND BIOGEOGRAPHY*
  Qin, C., Pellitier, P. T., Van Nuland, M. E., Peay, K. G., Zhu, K.
  2023
- **Changing balance between dormancy and mortality determines the trajectory of ectomycorrhizal fungal spore longevity over a 15 year burial experiment.** *The New phytologist*
  Shemesh, H., Bruns, T. D., Peay, K. G., Kennedy, P. G., Nguyen, N. H.
  2022
- **Mycorrhizal nutrient acquisition strategies shape tree competition and coexistence dynamics** *JOURNAL OF ECOLOGY*
  Van Nuland, M. E. E., Ke, P., Wan, J., Peay, K. G. G.
  2022
- **Resilient consumers accelerate the plant decomposition in a naturally acidified seagrass ecosystem.** *Global change biology*
  Lee, J., Gambi, M. C., Kroeker, K. J., Munari, M., Peay, K., Micheli, F.
  2022
- **Interactions with soil fungi alter density dependence and neighborhood effects in a locally abundant dipterocarp species.** *Ecology and evolution*
  Segnitz, R. M., Russo, S. E., Peay, K. G.
  2022; 12 (1): e8478
- **From DNA sequences to microbial ecology: Wrangling NEON soil microbe data with the neonMicrobe R package** *ECOSPHERE*
  Qin, C., Bartelme, R., Chung, Y., Fairbanks, D., Lin, Y., Liptzin, D., Muscarella, C., Naithani, K., Peay, K., Pellitier, P., St Rose, A., Stanish, L., Werbin, et al
  2021; 12 (11)
- **Transcriptional acclimation and spatial differentiation characterize drought response by the ectomycorrhizal fungus Suillus pungens.** *The New phytologist*
  Erlandson, S. R., Margis, R., Ramirez, A., Nguyen, N., Lofgren, L., Liao, H., Vilgalys, R., Kennedy, P. G., Peay, K. G.
  2021
- **Optimal Allocation Ratios: A Square Root Relationship between the Ratios of Symbiotic Costs and Benefits** *AMERICAN NATURALIST*
  Steidinger, B. S., Peay, K. G.
  2021
- **Multiple distinct, scale-dependent links between fungi and decomposition.** *Ecology letters*
  Smith, G. R., Peay, K. G.
  2021
- **Decadal changes in fire frequencies shift tree communities and functional traits.** *Nature ecology & evolution*
  Pellegrini, A. F., Refsland, T., Averill, C., Terrer, C., Staver, A. C., Brockway, D. G., Caprio, A., Clatterbuck, W., Coetsee, C., Haywood, J. D., Hobbie, S. E., Hoffmann, W. A., Kush, et al
  2021

- **Diversity of putative ericoid mycorrhizal fungi increases with soil age and progressive phosphorus limitation across a 4.1 million-year chronosequence.** *FEMS microbiology ecology*
  Leopold, D. R., Peay, K. G., Vitousek, P. M., Fukami, T.
  2021
- **Does resource exchange in ectomycorrhizal symbiosis vary with competitive context and nitrogen addition?** *The New phytologist*
  Bogar, L. M., Tavasieff, O. S., Raab, T. K., Peay, K. G.
  2021
- **Contrasting fungal responses to wildfire across different ecosystem types.** *Molecular ecology*
  Smith, G. R., Edy, L. C., Peay, K. G.
  2020
- **A Landscape of Opportunities for Microbial Ecology Research** *FRONTIERS IN MICROBIOLOGY*
  Mony, C., Vandenkoornhuyse, P., Bohannan, B. J. M., Peay, K., Leibold, M. A.
  2020; 11
- **Symbiotic niche mapping reveals functional specialization by two ectomycorrhizal fungi that expands the host plant niche** *FUNGAL ECOLOGY*
  Van Nuland, M. E., Peay, K. G.
  2020; 46
- **Lithological constraints on resource economies shape the mycorrhizal composition of a Bornean rain forest.** *The New phytologist*
  Weemstra, M., Peay, K. G., Davies, S. J., Mohamad, M., Itoh, A., Tan, S., Russo, S. E.
  2020
- **Ectomycorrhizal fungi drive positive phylogenetic plant-soil feedbacks in a regionally dominant tropical plant family.** *Ecology*
  Segnitz, R. M., Russo, S. E., Davies, S. J., Peay, K. G.
  2020: e03083
- **Fire history and plant community composition outweigh decadal multi-factor global change as drivers of microbial composition in an annual grassland** *JOURNAL OF ECOLOGY*
  Qin, C., Zhu, K., Chiariello, N. R., Field, C. B., Peay, K. G.
  2020; 108 (2): 611–25
- **Ectomycorrhizal fungal diversity predicted to substantially decline due to climate changes in North American Pinaceae forests** *JOURNAL OF BIOGEOGRAPHY*
  Steidinger, B. S., Bhatnagar, J. M., Vilgalys, R., Taylor, J. W., Qin, C., Zhu, K., Bruns, T. D., Peay, K. G.
  2020
- **Warming and disturbance alter soil microbiome diversity and function in a northern forest ecotone.** *FEMS microbiology ecology*
  Van Nuland, M. E., Smith, D. P., Bhatnagar, J. M., Stefanski, A. n., Hobbie, S. E., Reich, P. B., Peay, K. G.
  2020
- **Stepping forward from relevance in mycorrhizal ecology.** *The New phytologist*
  Smith, G. R., Peay, K. G.
  2020
- **A meta-analysis of global fungal distribution reveals climate-driven patterns.** *Nature communications*
  Vetrovsky, T., Kohout, P., Kopecky, M., Machac, A., Man, M., Bahnmann, B. D., Brabcova, V., Choi, J., Meszarosova, L., Human, Z. R., Lepinay, C., Llado, S., Lopez-Mondejar, et al
  2019; 10 (1): 5142
- **Differentiating spatial from environmental effects on foliar fungal communities of Populus trichocarpa** *JOURNAL OF BIOGEOGRAPHY*
  Barge, E. G., Leopold, D. R., Peay, K. G., Newcombe, G., Busby, P. E.
  2019; 46 (9): 2001–11
- **Plant selection initiates alternative successional trajectories in the soil microbial community after disturbance** *ECOLOGICAL MONOGRAPHS*
  Duhamel, M., Wan, J., Bogar, L. M., Segnitz, R., Duncritts, N. C., Peay, K. G.

2019; 89 (3)

- **Structure and function of the bacterial and fungal gut microbiota of Neotropical butterflies** *ECOLOGICAL MONOGRAPHS*
  Ravenscraft, A., Berry, M., Hammer, T., Peay, K., Boggs, C.
  2019; 89 (2)
- **No evidence that gut microbiota impose a net cost on their butterfly host** *MOLECULAR ECOLOGY*
  Ravenscraft, A., Kish, N., Peay, K., Boggs, C.
  2019; 28 (8): 2100–2117
- **Plant-mediated partner discrimination in ectomycorrhizal mutualisms** *MYCORRHIZA*
  Bogar, L., Peay, K., Kornfeld, A., Huggins, J., Hortal, S., Anderson, I., Kennedy, P.
  2019; 29 (2): 97–111
- **No evidence that gut microbiota impose a net cost on their butterfly host.** *Molecular ecology*
  Ravenscraft, A., Kish, N., Peay, K., Boggs, C.
  2019
- **Plant-mediated partner discrimination in ectomycorrhizal mutualisms.** *Mycorrhiza*
  Bogar, L., Peay, K., Kornfeld, A., Huggins, J., Hortal, S., Anderson, I., Kennedy, P.
  2019
- **Trait plasticity is more important than genetic variation in determining species richness of associated communities** *JOURNAL OF ECOLOGY*
  Barbour, M. A., Erlandson, S., Peay, K., Locke, B., Jules, E. S., Crutsinger, G. M.
  2019; 107 (1): 350–60
- **Core microbiomes for sustainable agroecosystems (vol 4, pg 247, 2018)** *NATURE PLANTS*
  Toju, H., Peay, K. G., Yamamichi, M., Narisawa, K., Hiruma, K., Naito, K., Fukuda, S., Ushio, M., Nakaoka, S., Onoda, Y., Yoshida, K., Schlaeppi, K., Bai, et al
  2018; 4 (9): 733
- **Litter chemistry influences decomposition through activity of specific microbial functional guilds** *ECOLOGICAL MONOGRAPHS*
  Bhatnagar, J. M., Peay, K. G., Treseder, K. K.
  2018; 88 (3): 429–44
- **Competition-colonization tradeoffs structure fungal diversity** *ISME JOURNAL*
  Smith, G. R., Steidinger, B. S., Bruns, T. D., Peay, K. G.
  2018; 12 (7): 1758–67
- **Core microbiomes for sustainable agroecosystems** *NATURE PLANTS*
  Toju, H., Peay, K. G., Yamamichi, M., Narisawa, K., Hiruma, K., Naito, K., Fukuda, S., Ushio, M., Nakaoka, S., Onoda, Y., Yoshida, K., Schlaeppi, K., Bai, et al
  2018; 4 (5): 247–57
- **Soil abiotic variables are more important than Salicaceae phylogeny or habitat specialization in determining soil microbial community structure** *MOLECULAR ECOLOGY*
  Erlandson, S., Wei, X., Savage, J., Cavender-Bares, J., Peay, K.
  2018; 27 (8): 2007–24
- **Timing of mutualist arrival has a greater effect on Pinus muricata seedling growth than interspecific competition** *JOURNAL OF ECOLOGY*
  Peay, K. G.
  2018; 106 (2): 514–23
- **Competition-colonization tradeoffs structure fungal diversity.** *The ISME journal*
  Smith, G. R., Steidinger, B. S., Bruns, T. D., Peay, K. G.
  2018
- **Effect of Simulated Climate Warming on the Ectomycorrhizal Fungal Community of Boreal and Temperate Host Species Growing Near Their Shared Ecotonal Range Limits** *MICROBIAL ECOLOGY*
  Mucha, J., Peay, K. G., Smith, D. P., Reich, P. B., Stefanski, A., Hobbie, S. E.

2018; 75 (2): 348–63

- **Soil Type Has a Stronger Role than Dipterocarp Host Species in Shaping the Ectomycorrhizal Fungal Community in a Bornean Lowland Tropical Rain Forest** *FRONTIERS IN PLANT SCIENCE*
  Essene, A. L., Shek, K. L., Lewis, J. D., Peay, K. G., McGuire, K. L.
  2017; 8: 1828
- **Geographical Variation in Community Divergence: Insights from Tropical Forest Monodominance by Ectomycorrhizal Trees** *AMERICAN NATURALIST*
  Fukami, T., Nakajima, M., Fortunel, C., Fine, P. V. A., Baraloto, C., Russo, S. E., Peay, K. G.
  2017; 190: S105–S122
- **Convergence and contrast in the community structure of Bacteria, Fungi and Archaea along a tropical elevation-climate gradient.** *FEMS microbiology ecology*
  Peay, K. G., von Sperber, C., Cardarelli, E., Toju, H., Francis, C. A., Chadwick, O. A., Vitousek, P. M.
  2017; 93 (5)
- **Continental-level population differentiation and environmental adaptation in the mushroom Suillus brevipes** *MOLECULAR ECOLOGY*
  Branco, S., Bi, K., Liao, H., Gladieux, P., Badouin, H., Ellison, C. E., Nguyen, N. H., Vilgalys, R., Peay, K. G., Taylor, J. W., Bruns, T. D.
  2017; 26 (7): 2063-2076
- **Controls of nitrogen cycling evaluated along a well-characterized climate gradient.** *Ecology*
  von Sperber, C., Chadwick, O. A., Casciotti, K. L., Peay, K. G., Francis, C. A., Kim, A. E., Vitousek, P. M.
  2017
- **Survey of corticioid fungi in North American pinaceous forests reveals hyperdiversity, underpopulated sequence databases, and species that are potentially ectomycorrhizal** *MYCOLOGIA*
  Rosenthal, L. M., Larsson, K., Branco, S., Chung, J. A., Glassman, S. I., Liao, H., Peay, K. G., Smith, D. P., Talbot, J. M., Taylor, J. W., Vellinga, E. C., Vilgalys, R., Bruns, et al
  2017; 109 (1): 115-127
- **Continental-level population differentiation and environmental adaptation in the mushroom Suillus brevipes.** *Molecular ecology*
  Branco, S., Bi, K., Liao, H., Gladieux, P., Badouin, H., Ellison, C. E., Nguyen, N. H., Vilgalys, R., Peay, K. G., Taylor, J. W., Bruns, T. D.
  2016
- **Dimensions of biodiversity in the Earth mycobiome** *NATURE REVIEWS MICROBIOLOGY*
  Peay, K. G., Kennedy, P. G., Talbot, J. M.
  2016; 14 (7): 434-447
- **Common foliar fungi of Populus trichocarpa modify Melampsora rust disease severity** *NEW PHYTOLOGIST*
  Busby, P. E., Peay, K. G., Newcombe, G.
  2016; 209 (4): 1681-1692
- **Common foliar fungi of Populus trichocarpa modify Melampsora rust disease severity.** *The New phytologist*
  Busby, P. E., Peay, K. G., Newcombe, G.
  2016; 209 (4): 1681-92
- **Soil moisture and chemistry influence diversity of ectomycorrhizal fungal communities associating with willow along an hydrologic gradient.** *FEMS microbiology ecology*
  Erlandson, S. R., Savage, J. A., Cavender-Bares, J. M., Peay, K. G.
  2016; 92 (1)
- **The Mutualistic Niche: Mycorrhizal Symbiosis and Community Dynamics** *ANNUAL REVIEW OF ECOLOGY, EVOLUTION, AND SYSTEMATICS, VOL 47*
  Peay, K. G.
  2016; 47: 143-164
- **Competition-function tradeoffs in ectomycorrhizal fungi.** *PeerJ*
  Moeller, H. V., Peay, K. G.
  2016; 4

- **Does Microbial Diversity Confound General Predictions?** *Trends in plant science*
  Duhamel, M., Peay, K. G.
  2015; 20 (11): 695-697
- **Functional guild classification predicts the enzymatic role of fungi in litter and soil biogeochemistry** *SOIL BIOLOGY & BIOCHEMISTRY*
  Talbot, J. M., Martin, F., Kohler, A., Henrissat, B., Peay, K. G.
  2015; 88: 441-456
- **Lack of host specificity leads to independent assortment of dipterocarps and ectomycorrhizal fungi across a soil fertility gradient** *ECOLOGY LETTERS*
  Peay, K. G., Russo, S. E., McGuire, K. L., Lim, Z., Chan, J. P., Tan, S., Davies, S. J.
  2015; 18 (8): 807-816
- **Genetic isolation between two recently diverged populations of a symbiotic fungus** *MOLECULAR ECOLOGY*
  Branco, S., Gladieux, P., Ellison, C. E., Kuo, A., LaButti, K., Lipzen, A., Grigoriev, I. V., Liao, H., Vilgalys, R., Peay, K. G., Taylor, J. W., Bruns, T. D.
  2015; 24 (11): 2747-2758
- **A continental view of pine-associated ectomycorrhizal fungal spore banks: a quiescent functional guild with a strong biogeographic pattern** *NEW PHYTOLOGIST*
  Glassman, S. I., Peay, K. G., Talbot, J. M., Smith, D. P., Chung, J. A., Taylor, J. W., Vilgalys, R., Bruns, T. D.
  2015; 205 (4): 1619-1631
- **Parsing ecological signal from noise in next generation amplicon sequencing** *NEW PHYTOLOGIST*
  Nguyen, N. H., Smith, D., Peay, K., Kennedy, P.
  2015; 205 (4): 1389-1393
- **Local-scale biogeography and spatiotemporal variability in communities of mycorrhizal fungi** *NEW PHYTOLOGIST*
  Bahram, M., Peay, K. G., Tedersoo, L.
  2015; 205 (4): 1454-1463
- **Metatranscriptomic analysis of ectomycorrhizal roots reveals genes associated with Piloderma-Pinus symbiosis: improved methodologies for assessing gene expression in situ** *ENVIRONMENTAL MICROBIOLOGY*
  Liao, H., Chen, Y., Bruns, T. D., Peay, K. G., Taylor, J. W., Branco, S., Talbot, J. M., Vilgalys, R.
  2014; 16 (12): 3730-3742
- **Spore dispersal of basidiomycete fungi at the landscape scale is driven by stochastic and deterministic processes and generates variability in plant-fungal interactions.** *New phytologist*
  Peay, K. G., Bruns, T. D.
  2014; 204 (1): 180-191
- **Endemism and functional convergence across the North American soil mycobiome** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Talbot, J. M., Bruns, T. D., Taylor, J. W., Smith, D. P., Branco, S., Glassman, S. I., Erlandson, S., Vilgalys, R., Liao, H., Smith, M. E., Peay, K. G.
  2014; 111 (17): 6341-6346
- **Ectomycorrhizal fungal traits reflect environmental conditions along a coastal California edaphic gradient.** *FEMS microbiology ecology*
  Moeller, H. V., Peay, K. G., Fukami, T.
  2014; 87 (3): 797-806
- **Genetic variation within a dominant shrub structures green and brown community assemblages** *ECOLOGY*
  Crutsinger, G. M., Rodriguez-Cabal, M. A., Roddy, A. B., Peay, K. G., Bastow, J. L., Kidder, A. G., Dawson, T. E., Fine, P. V., Rudgers, J. A.
  2014; 95 (2): 387-398
- **Sequence depth, not PCR replication, improves ecological inference from next generation DNA sequencing.** *PloS one*
  Smith, D. P., Peay, K. G.
  2014; 9 (2)
- **Missing checkerboards? An absence of competitive signal in Alnus-associated ectomycorrhizal fungal communities.** *PeerJ*
  Kennedy, P., Nguyen, N., Cohen, H., Peay, K.
  2014; 2

- **Towards a unified paradigm for sequence-based identification of fungi** *MOLECULAR ECOLOGY*
  Koljalg, U., Nilsson, R. H., Abarenkov, K., Tedersoo, L., Taylor, A. F., Bahram, M., Bates, S. T., Bruns, T. D., Bengtsson-Palme, J., Callaghan, T. M., Douglas, B., Drenkhan, T., Eberhardt, et al
  2013; 22 (21): 5271-5277

- **Strong coupling of plant and fungal community structure across western Amazonian rainforests** *ISME JOURNAL*
  Peay, K. G., Baraloto, C., Fine, P. V.
  2013; 7 (9): 1852-1861

- **Host plant genus-level diversity is the best predictor of ectomycorrhizal fungal diversity in a Chinese subtropical forest** *MOLECULAR ECOLOGY*
  Gao, C., Shi, N., Liu, Y., Peay, K. G., Zheng, Y., Ding, Q., Mi, X., Ma, K., Wubet, T., Buscot, F., Guo, L.
  2013; 22 (12): 3403-3414

- **Independent roles of ectomycorrhizal and saprotrophic communities in soil organic matter decomposition** *SOIL BIOLOGY & BIOCHEMISTRY*
  Talbot, J. M., Bruns, T. D., Smith, D. P., Branco, S., Glassman, S. I., Erlandson, S., Vilgalys, R., Peay, K. G.
  2013; 57: 282-291

- **Rat invasion of islands alters fungal community structure, but not wood decomposition rates** *OIKOS*
  Peay, K. G., Dickie, I. A., Wardle, D. A., Bellingham, P. J., Fukami, T.
  2013; 122 (2): 258-264

- **Towards global patterns in the diversity and community structure of ectomycorrhizal fungi** *MOLECULAR ECOLOGY*
  Tedersoo, L., Bahram, M., Toots, M., Diedhiou, A. G., Henkel, T. W., Kjoller, R., Morris, M. H., Nara, K., Nouhra, E., Peay, K. G., Polme, S., Ryberg, M., Smith, et al
  2012; 21 (17): 4160-4170

- **Measuring ectomycorrhizal fungal dispersal: macroecological patterns driven by microscopic propagules** *MOLECULAR ECOLOGY*
  Peay, K. G., Schubert, M. G., Nguyen, N. H., Bruns, T. D.
  2012; 21 (16): 4122-4136

- **Flowers as Islands: Spatial Distribution of Nectar-Inhabiting Microfungi among Plants of Mimulus aurantiacus, a Hummingbird-Pollinated Shrub** *MICROBIAL ECOLOGY*
  Belisle, M., Peay, K. G., Fukami, T.
  2012; 63 (4): 711-718

- **Phylogenetic relatedness predicts priority effects in nectar yeast communities** *PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
  Peay, K. G., Belisle, M., Fukami, T.
  2012; 279 (1729): 749-758

- **Spongiforma squarepantsii, a new species of gasteroid bolete from Borneo** *MYCOLOGIA*
  Desjardin, D. E., Peay, K. G., Bruns, T. D.
  2011; 103 (5): 1119-1123

- **Rethinking ectomycorrhizal succession: are root density and hyphal exploration types drivers of spatial and temporal zonation?** *FUNGAL ECOLOGY*
  Peay, K. G., Kennedy, P. G., Bruns, T. D.
  2011; 4 (3): 233-240

- **Evidence of dispersal limitation in soil microorganisms: Isolation reduces species richness on mycorrhizal tree islands** *ECOLOGY*
  Peay, K. G., Garbelotto, M., Bruns, T. D.
  2010; 91 (12): 3631-3640

- **Testing the ecological stability of ectomycorrhizal symbiosis: effects of heat, ash and mycorrhizal colonization on Pinus muricata seedling performance** *PLANT AND SOIL*
  Peay, K. G., Bruns, T. D., Garbelotto, M.
  2010; 330 (1-2): 291-302

- **Potential link between plant and fungal distributions in a dipterocarp rainforest: community and phylogenetic structure of tropical ectomycorrhizal fungi across a plant and soil ecotone** *NEW PHYTOLOGIST*
  Peay, K. G., Kennedy, P. G., Davies, S. J., Tan, S., Bruns, T. D.
  2010; 185 (2): 529-542
- **Root tip competition among ectomycorrhizal fungi: Are priority effects a rule or an exception?** *ECOLOGY*
  Kennedy, P. G., Peay, K. G., Bruns, T. D.
  2009; 90 (8): 2098-2107
- **Spore heat resistance plays an important role in disturbance-mediated assemblage shift of ectomycorrhizal fungi colonizing Pinus muricata seedlings** *JOURNAL OF ECOLOGY*
  Peay, K. G., Garbelotto, M., Bruns, T. D.
  2009; 97 (3): 537-547
- **Fungal Community Ecology: A Hybrid Beast with a Molecular Master** *BIOSCIENCE*
  Peay, K. G., Kennedy, P. G., Bruns, T. D.
  2008; 58 (9): 799-810
- **A strong species-area relationship for eukaryotic soil microbes: island size matters for ectomycorrhizal fungi** *ECOLOGY LETTERS*
  Peay, K. G., Bruns, T. D., Kennedy, P. G., Bergemann, S. E., Garbelotto, M.
  2007; 10 (6): 470-480