

# Devin R. Leopold

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## EDUCATION

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2017	Stanford University	Biology – Ecology and Evolution	PhD
2002	Hampshire College	Natural Sciences, Botany	BA

## PROFESSIONAL CERTIFICATIONS

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2022	Amazon Web Services	Certified Cloud Practitioner
2011	Pennsylvania State University	Geographic Information Systems

## PROFESSIONAL APPOINTMENTS

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2020-present	Bioinformatician & Data Scientist	Jonah Ventures – Boulder, CO
2017-2020	Postdoctoral Researcher	Oregon State University – Corvallis, OR
2019	Lecturer	Oregon State University – Corvallis, OR
2011-2012	Research Assistant	University of Hawaii – Manoa, HI
2009-2011	Research Assistant	Stanford University – Palo Alto, CA
2008	Biological Science Technician	US Fish & Wildlife Service – Honolulu, HI
2007-2008	Biological Science Technician	US Forest Service – Hilo, HI
2005-2007	Invasive Species Technician	US Fish & Wildlife Service – Hilo, HI
2003	Natural Science Fellow	Hampshire College – Amherst, MA

## GRANTS AND AWARDS

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USDA, NIFA, Agricultural Microbiomes (co-PI, \$749,888)	2020-2023
DOE, Plant Feedstock Genomics (co-PI, \$593,452)	2018-2022
NSF, Doctoral Dissertation Improvement Grant (\$16,900)	2016-2017
Mycological Society of America, Graduate Fellowship (\$2,000)	2016
American Society of Naturalists, Student Research Award (\$2,000)	2015

## PUBLICATIONS

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Barge, EG, **Leopold, DR**, Rojas A, Vilgalys, R, Busby, PE (2022). Phylogenetic conservatism of mycoparasitism and its contribution to pathogen antagonism. *Molecular Ecology* 31(10):3018-3030.

Barney, SK, **Leopold, DR**, Francisco, K, Flaspohler, DJ, Fukami, T, Giardina, CP, Gruner, DS, Knowlton, JL, Pitt, WC, Wilson-Rankin, EE (2021). Successful management of invasive rats across a fragmented landscape. *Environmental Conservation* 48(3): 200-207.

**Leopold, DR** & Fukami, T (2021). Greater local diversity under older species pools may arise from enhanced competitive equivalence. *Ecology Letters* 24(2): 310–318.

**Leopold, DR**, Peay, KG, Vitousek, PM, Fukami, T (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* 97(3): fiab016.

Barney, SA, **Leopold, DR**, Kainana F, Flaspohler, DJ, Fukami, T, Giardina, CP, Gruner, DS,

- Knowlton, JL, Pitt, WC, Rankin Wilson, EW (2021). Successful management of invasive rats across a fragmented landscape. *Environmental Conservation* 48(3): 200–207.
- Leopold, DR** & Busby, PE (2020). Host genotype and colonist arrival order jointly govern plant microbiome composition and function. *Current Biology* 30: 3260–3266..
- Barge, EG, **Leopold, DR**, Peay, KG, Newcomb, G, & Busby, PE (2019). Differentiating spatial from environmental effects on foliar fungal communities of *Populus trichocarpa*. *Journal of Biogeography* 46: 2001–2011.
- Tielens, EK, Neel, MN, **Leopold, DR**, Giardina, CP, & Gruner, DS (2019). Multiscale analysis of canopy arthropod diversity in a volcanically fragmented landscape. *Ecosphere*: e02653.
- Rankin, EE, Knowlton, JL, Gruner, DS, Flaspohler, DJ, Giardina, CP, **Leopold, DR**, Buckardt, A, Pitt, WC, & Fukami, T (2018). Vertical foraging shifts in Hawaiian forest birds in response to invasive rat removal. *PloS ONE* 13: e0202869.
- Brown, SP, **Leopold, DR**, & Busby, PE (2018). Protocols for investigating the leaf mycobiome using high-throughput DNA sequencing. In, *Methods in Molecular Biology* (vol. 1848), *Plant Pathogenic Fungi and Oomycetes*.
- Leopold, DR**, Wilkie, JP, Dickie, IA, Allen, RB, Buchanan, PK, & Fukami, T (2017). Priority effects are interactively regulated by top-down and bottom-up forces: evidence from wood decomposer communities. *Ecology Letters* 20: 1054–1063.
- Leopold, DR** (2016). Ericoid fungal diversity: challenges and opportunities for mycorrhizal research. *Fungal Ecology* 24: 114–123.
- Brandt, AJ, Tanentzap, AJ, **Leopold, DR**, Heenan, PB, Fukami, T, & Lee, WG (2016). Precipitation alters the strength of evolutionary priority effects in forest community assembly of pteridophytes and angiosperms. *Journal of Ecology* 104: 1673–1681.
- Vanette, RL, **Leopold, DR**, & Fukami, T (2016). Forest area and connectivity influence root-associated fungal communities in a fragmented landscape. *Ecology* 97: 2374–2383.
- Leopold, DR**, Tanentzap, AJ, Lee, WG, Heenan, PB, & Fukami, T (2015). Evolutionary priority effects in New Zealand alpine plants across environmental gradients. *Journal of Biogeography* 42: 729–737.

#### **INVITED\* OR CONTRIBUTED PRESENTATIONS**

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- \*Leopold, DR**, Brown, S, Jacobson, D & Busby, PE. Polygenic heritability of the *Populus trichocarpa* foliar microbiome. Ecological Society of America, August 2021.
- Leopold, DR** & Busby, PE. Priority effects in the *Populus trichocarpa* leaf microbiome are modulated by genotypic variation in the host. Ecological Society of America, August 2019.
- \*Leopold, DR** & Busby, PE. Differentiating plant genetic from environmental drivers of agricultural microbiome structure and function. Microbiology Society Annual Conference, April, 2019.
- Leopold, DR**, Jacobson, D, & Busby, PE. Identifying plant genes associated with pathogen antagonism in *Populus trichocarpa*. Department of Energy, Feedstock Genomics Principle Investigators meeting, February, 2019.
- \*Leopold, DR**, Busby, PE & Jacobson, D. Distinguishing environmental from host genetic impacts on the *Populus* leaf microbiome. Ecological Society of America, August 2018, and International Symbiosis Society, July 2018.
- \*Leopold, DR**. Temporal determinants of fungal community assembly. Oregon State University,

Department of Botany and Plant Pathology, April 2018.

**Leopold, DR** & Fukami, T. Species pool influences on the assembly of fungal symbiont communities. Ecological Society of America, August 2017.

**Leopold, DR**, Vannette, RL & Fukami, T. Forest area and connectivity influence root-associated fungal communities in a fragmented landscape on Hawaii Island. Mycological Society of America, August 2016.

**Leopold, DR**, Peay, KG, Vitousek, PM & Fukami, T. Fungi associated with *Vaccinium calycinum* throughout long-term ecosystem development. Hawaii Ecosystems Meeting, July 2016.

**\*Leopold, DR**, Peay, KG, Vitousek, PM & Fukami, T. Fungi associated with *Vaccinium calycinum* throughout long-term ecosystem development. 8<sup>th</sup> International Conference on Mycorrhizas, August 2015.

**Leopold, DR**, Vannette, RL & Fukami, T. Forest area and connectivity influence root-associated fungal communities in a fragmented landscape on Hawaii Island. Association for Tropical Biology and Conservation, July 2015 and Hawaii Ecosystems Meeting, July 2015.

**Leopold, DR**, Tanentzap, AJ, Lee, WG, Heenan, PB & Fukami, T. Evolutionary priority effects in New Zealand alpine plants across elevation gradients. Island Biology, July, 2014.

**Leopold, DR**. Local adaptation in an ericoid mycorrhizal symbiosis. Hawaii Ecosystems Meeting, July 2014.

**Leopold, DR**, Tanentzap, AJ, Lee, WG, Heenan, PB & Fukami, T. Chasing the ghost of competition past; interactions between immigration history and environmental gradients influence modern plant community assembly. Ecological Society of America, July 2013.

**Leopold, DR**, Hwang, B, Giardina, CP & Fukami, T. Effect of forest area on litter dynamics and net primary productivity (poster). Hawaii Conservation Conference, July 2011.

**Leopold, DR**, Fukami, T, Giardina, CP, Gruner, DS, Flaspohler, DJ. Forest kīpuka on Mauna Loa: a model system for studying interactive effects of habitat size and introduced rodents on arthropod food webs (poster). Hawaii Conservation Conference, July 2010.

## **TEACHING / MENTORING**

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### **Oregon State University:**

Instructor (teacher of record), Plant Community Ecology 2019

Graduate student mentor (3 Ph.D. & 2 Masters) 2018-2020

Guest instructor, Field Ecology Methods: Quantifying biodiversity 2018

### **Stanford University:**

Co-instructor, Wrigley Field Program in Hawaii: Community Ecology Module 2010-ongoing

Teaching assistant, Global Change Biology 2013

Teaching assistant, Plant Biology 2013

Undergraduate research mentor, VPUE Summer Undergraduate Research Program 2009-2012

### **University of Hawaii:**

Guest instructor, Bioinformatics Tools: Current methods in metabarcoding 2017

Guest instructor, Introduction to Statistics: A gentle introduction to R programming 2017

Guest instructor, Advanced Statistics in R: Multivariate analyses for community ecology 2016

Guest instructor, Tropical Plant Pathology: Ecology of mycorrhizal fungi 2016

Undergraduate research mentor, Pacific Internship Program for Exploring Science 2011

## **OTHER PROFESSIONAL ACTIVITIES**

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Affiliate faculty and graduate advisor, Oregon State University.

Review panelist for the NSF Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) programs.

Discussion moderator: Deciphering the Microbiome—Empowering theory, cross-system analyses, and innovative analytics to propel advances in microbiome science. NSF, 2019.

Manuscript reviewer: *Functional Ecology*, *Fungal Ecology*, *Journal of Biogeography*, *Journal of Ecology*, *Journal of Vegetation Science*, *Molecular Ecology*, *Mycologia*, *Mycorrhiza*, *New Phytologist*, *PeerJ*, *Plant and Soil*, *Proceedings of the Royal Society B*, *Rhizosphere*.

Professional society affiliations: American Society of Naturalists, Ecological Society of America, Mycological Society of America.