


## CURRICULUM VITAE – MARCH 27, 2024

### BENJAMIN R. LEE

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Institute for Global Change Biology  
University of Michigan  
440 Church St.  
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### Appointments

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2023-Present Postdoctoral Research Fellow, **Institute for Global Change Biology**,  
University of Michigan

Previous:

2021-2023 **NSF Postdoctoral Research Fellow** in Biology, Carnegie Museum of Natural  
History; University of Pittsburgh; Holden Forest and Gardens  
2021-2023 Research Associate, **Carnegie Museum of Natural History** – Section of  
Botany  
2021 Postdoctoral Researcher, Dept. of Biology, **Boston University**  
2016-2019 Graduate Student Instructor, School for Environment and Sustainability,  
University of Michigan  
2012-2014 STEM Paraprofessional, Islander Middle School, Mercer Island, WA  
2012 Teaching Assistant, Dept. of Biology, University of Washington

### Education

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2020 **University of Michigan** - Ph.D. Natural Resources and Environment  
2012 **University of Washington** - B.Sc. Biology, Minor in Philosophy

### Grants, Awards, and Fellowships

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2023 (\$7,500) Center for Tree Science Research Fellowship; Morton Arboretum  
*Spring light availability effects on understory tree recruitment and spatial distributions*  
2023 (\$2,000) Hesler Visiting Scholar Fellowship, University of Tennessee  
*Phenological mismatch of dioecious North American plant species and their pollinators*  
2022 (\$500) Botanical Society of America Postdoc Travel Award  
2022 (\$800) Carnegie Museum of Natural History Buker Research/Travel Award  
2021-2023 **(\$138,000) NSF Postdoctoral Research Fellowship** - DBI-2108128  
*How spatial and temporal variation in environment and soil fungal diversity shapes plant phenotypes.*  
2019 (\$500) Samuel A. Graham Award - University of Michigan SEAS  
Excellence in graduate research  
2018 (\$50,800) Schrank Family Scholarship, University of Michigan Biol. Station

## Grants, Awards, and Fellowships (continued)

- 2016 (\$1,928) Winifred B. Chase Research Fellowship, Matthaei Botanical Gardens  
*Shedding light on recruitment dynamics: Estimating the effects of microclimate on patterns of seedling establishment in temperate forests.*
- 2012 (\$500) Casey Award for Undergraduate Research, University of Washington

## Research Articles (Peer-Reviewed or in Review)

† I am the first and/or corresponding author

§ Coauthored with student mentee

Paper is representative of my proposed research program

H-index: 7

i10 index: 6

Research publications: 14

Total citations: 144

- 2024 † **14)** Lee, B. R., E. F. Alecrim, T. K. Miller, J. R. K. Forrest, J. M. Heberling, R. B. Primack, and R. D. Sargent. In press at *Journal of Ecology*. Phenological mismatch between trees and wildflowers: Reconciling divergent findings in two recent analyses. Preprint: <https://doi.org/10.1101/2023.08.01.551551>

†§ **13)** Yancy, A. §, B. R. Lee †, S. E. Kuebbing, H. S. Neufeld, M. E. Spicer, and J. M. Heberling. 2024. Evaluating the definition and distribution of spring ephemeral wildflowers in eastern North America. In press at *American Journal of Botany*.

†§ **12)** Lee, B. R., A. Yancy §, and J. M. Heberling. 2024. A primer on spring ephemeral wildflowers and phenological escape. In press at *International Journal of Plant Sciences*. <https://doi.org/10.1086/729439>.

- 2023 **11)** Liu, G., R.-L. Liu, B. R. Lee, X.-J. Song, W.-G. Zhang, X.-Y. Chen, Y.-L. Zhang, J.-B. Zou, Z.-H. Zhu, Y. Shi, Y.-X. An, and J. Wang. 2023. Competition between invasive *Galinsoga quadriradiata* and native competitors is strongly shaped by AMF communities along elevational dispersal routes. *Plants*. <https://doi.org/10.3390/plants12183190>.

**10)** Pearse, W., M. Stemkovski, B. R. Lee, R. B. Primack, and S.-D. Lee. 2023. Consistent, linear phenological shifts across a century of observations in South Korea. *New Phytologist*. DOI: <https://doi.org/10.1111/nph.18938>.

**9)** Liu, R.-L., W.-G. Zhang, B. R. Lee, G. Liu, X.-J. Song, X.-Y. Chen, J.-B. Zou, F. Huang, and Z.-H. Zhu. 2023. Rhizosphere and root fungal community of the invasive plant *Galinsoga quadriradiata* changes along its elevational expansion route. *Journal of Plant Ecology*. DOI: 10.1093/jpe/rtac055

- 2022 † **8)** Lee, B. R., T. K. Miller, C. Rosche, Y. Yang, J. M. Heberling, S. E. Kuebbing, and R. B. Primack. 2022. Wildflower phenological escape differs by continent and spring temperature. *Nature Communications*. <https://doi.org/10.1038/s41467-022-34936-9>

- 2022 † 7) Yang, Y., J. M. Heberling, R. B. Primack, and B. R. Lee†. 2022. Herbarium specimens may provide biased flowering phenology estimates for dioecious species. ***International Journal of Plant Sciences***. DOI: 10.1086/722294
- 2021 † 6) Lee, B. R. and I. Ibáñez. 2021. Spring phenological escape is critical for the survival of temperate tree seedlings. ***Functional Ecology***. DOI: 10.1111/1365-2435.13821.
- † 5) Lee, B. R. and I. Ibáñez. 2021. Improved phenological escape can help temperate tree seedlings maintain demographic performance under climate change conditions. ***Global Change Biology***. DOI: 10.1111/gcb.15678.
- 4) Liu, R.-L., Y.-B. Yang, B. R. Lee, G. Liu, W.-G. Zhang, X.-Y. Chen, X.-J. Song, J.-Q. Kang, and Z.-H. Zhu. 2021. The dispersal-related traits of an invasive plant *Galinsoga quadriradiata* correlate with elevation during range expansion into mountain ranges. ***AoB PLANTS***. DOI: 10.1093/aobpla/plab008.
- 2019 3) Ibáñez, I., K. Acharya, E. Juno, C. Karounos, B. R. Lee, C. McCollum, S. Schaffer-Morrison., and J. Tourville. Forest resilience under global environmental change: Do we have the information we need? A systematic review. 2019. ***PLoS One***. DOI: 10.1371/journal.pone.0222207.
- 2017 2) Ibáñez, I., D. S. W. Katz, and B. R. Lee. 2017. The contrasting effects of short-term climate change on the early recruitment of tree species. ***Oecologia*** 184: 701-713. DOI 10.1007/s00442-017-3889-1.
- 1) Ettinger, A., B. R. Lee, and S. Montgomery. 2017. Seed limitation and lack of downed wood, not invasive species, threaten conifer regeneration in an urban forest. ***Urban Ecosystems***. DOI: 10.1007/s11252-016-0640-3.

### Invited Commentary and Opinion Articles

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- 2024 † 15) Lee, B.R. and S. Schaffer-Morrison. 2024. Forests of the future: The importance of tree seedling research in understanding forest response to anthropogenic climate change. ***Tree Physiology*** invited commentary.

### Published Code and Datasets

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- Ongoing iNaturalist observations: <https://www.inaturalist.org/people/5058666>
- 1,000+ observations of more than 500 species
- 2021 Lee, B. R. and Ibáñez, I. (2021), Data and code from: Spring phenological escape is critical for the survival of temperate tree seedlings, Dryad, Dataset, <https://doi.org/10.5061/dryad.1c59zw3tk>
- Tree seedling individual-level growth and survival data and leaf-level gas exchange data
- Lee, B. R. (2021). Data and model code for "Improved phenological escape can help temperate tree seedlings maintain demographic performance under climate change conditions" [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.4737332>
- Individual tree seedling phenology and understory light phenology data

## Invited Presentations (Scientific and Public Audiences)

- 2024 **Idaho State University and the Idaho Natural History Museum.** Pocatello, ID. Invited talk. *Climate change insights from historical collections*
- University of Michigan.** Ann Arbor, MI. Invited talk for the Ecosystem Science and Management seminar series. *Altered species interactions in a changing climate*
- Eastern Tennessee State University.** Johnson City, TN. Invited talk. *Temperate forests in a changing world.*
- Southern Illinois University.** Carbondale, IL. Invited talk. *Temperate forests in a changing world.*
- 2023 **Morton Arboretum.** Chicago, IL. Invited talk. *Effects of spring canopy close phenology on tree recruitment in the Morton Arboretum.*
- Institute for Global Change Biology.** Ann Arbor, MI. Invited talk for IGCB Open House. *Climate change effects on temperate forest species interactions.*
- University of Tennessee.** Knoxville, TN. Invited talk. *Divergent responses to warming springs in dioecious plant species in North America.*
- Cleveland Museum of Natural History.** Cleveland, OH. Invited talk. *Climate change and Great Lakes forests: Lessons from historical collections.*
- Holden Arboretum,** Scientific Seminar Series. Kirtland, OH. *Spring ephemeral wildflowers and their vulnerability to climate change*
- Carnegie Museum of Natural History.** Carnegie Discoverer's Seminar.
- Ewha Womans University** Research Seminar (x2). Seoul, Korea.  
- *Spring light and phenological escape in deciduous understories*  
- *Impacts of climate change on plant-plant interactions*
- Western Reserve Land Conservancy.** Biodiversity Symposium – Exploring Forest Ecology. Cleveland, OH. *Spring ephemeral wildflowers and their vulnerability to climate change*  
<https://www.wrlandconservancy.org/event/biodiversity-session-3/>
- Pittsburgh, PA. *Plants and climate change: Predicting the future by looking to the past*
- 2022 **Connecticut Agriculture Experiment Station.** Research Seminar. New Haven, CT. *Carbon, forest communities, and climate change: Forecasting the future of Connecticut forests*
- University of Ghent FORNALAB research group.** Research presentation. Ghent, Belgium.
- 2021 **Carnegie Museum of Natural History.** Moriarty Seminar. Pittsburgh, PA.
- 2020 **University of Minnesota.** Pop-Up Global Symposia about Life & Ecology for You (PUGSLEY). Remote talk.
- 2017 **University of Michigan.** Research Education and Activities for Classroom Teachers (REACT) Workshop. Ann Arbor, Michigan.
- 2016 **University of Michigan.** Graduate Research Seminar. Ann Arbor, Michigan

## Teaching and Mentoring

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2016-2023	<b>Guest Lecturer</b> , University of Michigan, Cornell University; Classes taught include statistics, plant identification, ecology, and modeling
2022	<b>GRFP proposal writing mentor</b> , Botanical Society of America
2021-2023	<b>Undergraduate Research Mentor</b> , University of Pittsburgh
2021-2022	<b>AP Research Mentor</b> , Taylor Allderdice High School, Pittsburgh, PA
2016-2019	<b>Research Mentor</b> , Doris Duke Conservation Scholars, University of Michigan
2016-2019	<b>Graduate Student Instructor</b> , <i>Forest Ecology</i> (graduate), Univ. of Michigan
2014-2016	<b>Research Mentor</b> , Undergraduate Research Opportunity Program, University of Michigan
2012	<b>Teaching Assistant</b> , <i>Intro to Biology</i> , University of Washington

## Classes Taught

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2023	<b>EAS 538: <i>Natural Resource Statistics</i></b> , University of Michigan Guest lectures on spatial statistics and modeling
2023	<b>Plant Science 2430: <i>Ecology and Evolution of Plants</i></b> , Cornell University Guest lecture on phenology and ecophysiology
2016-2020	<b>NRE/EAS 549: <i>Analysis and Modeling of Ecological Data</i></b> , U. Michigan Guest lectures each semester on Bayesian modeling in R
2016-2020, 2023	<b>NRE/EAS 436: <i>Woody Plants</i></b> (a woody plant identification course), University of Michigan. Guest lectures on climate change ecology, invasive plants, tree recruitment
2016-2019	<b>NRE/EAS 547: <i>Forest Ecology</i></b> , University of Michigan Graduate student instructor for 20-person primarily graduate student field lab course.
2012	<b>BIOL 180: <i>Intro to Biology</i></b> , University of Washington Teaching assistant for two 20-person undergraduate lab courses.

## Students Mentored (& Related Research Awards)

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Listed alphabetically by last name

<b>Mikaila Davis</b>	(2018 Doris Duke Conservation Scholar)
<b>Trina Dhar</b>	(2016 Doris Duke Conservation Scholar)
<b>Jack Hatajik</b>	(undergraduate at University of Pittsburgh): 2022 Brackenridge Research Fellowship <b>(\$4,000)</b> , 2022 Botanical Society of Western PA research award <b>(\$500)</b> , 2022 Botanical Society of America research award <b>(\$500)</b> , merit-based research scholarship to Yale University for MS program <b>(\$40,000)</b>
<b>Chris Perrone</b>	(undergraduate at University of Pittsburgh): 2023 Brackenridge Research Fellowship <b>(\$4,000)</b>
<b>Brayden Pollvogt</b>	(2019 Doris Duke Conservation Scholar)
<b>Rachel Reeb</b>	(doctorate student at University of Pittsburgh)
<b>Malik Smith</b>	(2017 Doris Duke Conservation Scholar)
<b>Te-Yah Write</b>	(2019 Doris Duke Conservation Scholar)
<b>Abby Yancy</b>	(undergraduate and now doctorate student at University of Pittsburgh)
<b>Hannah Zonneville</b>	(undergraduate at Univ. of Michigan; now PhD student at Cornell)

## Outreach/Service

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- 2024 **PhD grant proposal reviewer**, U. of Michigan IGCB, Ann Arbor, MI
- 2023 **“Career Connections” panelist**, Earth and Environment SciTech Day at Carnegie Science Center, Pittsburgh, PA
- 2023 **Museum tour leader for visiting homeschool students**, Carnegie Museum of Natural History
- 2023 **Botany in Action proposal reviewer**, Phipps Conservatory, Pittsburgh, PA
- 2022 **GRFP mentor for Botanical Society of America**  
Reviewed application material for six undergrads/early grads through BSA; gave advice and edits to build stronger proposals.
- 2021 **CMNH Nature Crawl host**, Pittsburgh, PA  
Presented herbarium-based information and interactive activities at CMNH
- 2017-2018 **Ecology and climate change leader**, R.E.A.C.T. Workshop, Ann Arbor, MI
- 2016-2019 **Research Mentor**, Doris Duke Conservation Scholars, Ann Arbor, MI  
Led five undergraduates in independent, summer-long research projects in their first summer as a Scholar. All scholars came from backgrounds underrepresented in and historically excluded from environmental sciences, in line with the Doris Duke mission.
- 2016-2018 **Student representative**, University of Michigan Tree Advisory Council, Ann Arbor, MI
- 2015-2017 **Collaborator**, Climate Change and Michigan Cherries, Ann Arbor, MI  
<https://sites.google.com/umich.edu/climatechangeandforests/home>
- 2015-2017 **Volunteer and trainer**, Climate Change and Michigan Forests, Ann Arbor, MI  
Led 7<sup>th</sup>-grade Ann Arbor Public Schools students on field trips to local forests as part of a unit teaching them about the impacts of climate change on the environment.
- 2009 **Volunteer**, AmeriCorps Students in Service program (Univ. of Washington)

## Sci-Comm and Non-Peer-Reviewed Publications

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**What climate change means for Pennsylvania’s spring wildflowers:** Article in the *Pittsburgh City Paper*’s spring issue for which I was extensively interviewed for.  
<https://www.pghcitypaper.com/specials-guides/what-climate-change-means-for-pennsylvanias-spring-wildflowers-23518536>

**Climate change effects on wildflower phenological escape** - Interview with Pittsburgh NPR affiliate WESA about Lee et al. (2022). <https://www.wesa.fm/environment-energy/2022-12-09/climate-change-is-threatening-north-americas-wildflowers-carnegie-museum-research-shows>

**Climate change threatens spring wildflowers by speeding up the time when trees leaf out above them:** Article I coauthored for *The Conversation* covering Lee et al. (2022).  
<https://theconversation.com/climate-change-threatens-spring-wildflowers-by-speeding-up-the-time-when-trees-leaf-out-above-them-200975>

**Inviting Biodiversity into Our Gardens:** (2023) Public seminar series hosted by the Western Reserve Land Conservancy. My seminar was presented live to a general audience of 530 people and is available on the Conservancy's YouTube channel:

<https://www.youtube.com/watch?v=C2bO1U5y00o&t=3688s>

**Ma place au soleil [My place in the sun]:** French-language summary of Lee & Ibáñez (2021a,b)

[https://www.liberation.fr/environnement/ma-place-au-soleil-20210621\\_VIY7QE6U7JHLBOCTET7BENKXOI/](https://www.liberation.fr/environnement/ma-place-au-soleil-20210621_VIY7QE6U7JHLBOCTET7BENKXOI/)

**Seedling Identification Guide: For common conifer species occurring at Mt. Rainier National Park.** Undergraduate research project where I developed a field guide for conifer seedlings in the PNW. [https://faculty.washington.edu/jhrl/MtRainier\\_ConiferGerminant\\_Booklet.pdf](https://faculty.washington.edu/jhrl/MtRainier_ConiferGerminant_Booklet.pdf)

### **Conference Presentations (Presenting Author Only)**

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#### **Three most recent/upcoming:**

**Lee, B.R.,** E.F. Alecrim, T.K. Miller, J.R.K. Forrest, J.M. Heberling, R.B. Primack, and R.D. Sargent. 2024. "Different data sources yield different answers to how climate change will affect phenological mismatch". Contributed talk. BSA annual meeting

**Lee, B.R.,** A.J. Yancy, and J.M. Heberling, 2023. "Definition and distribution of spring ephemeral wildflowers in eastern North America." Contributed talk. ESA annual meeting.

**Lee, B.R.,** T.K. Miller, C. Rosche, Y. Yang, J.M. Heberling, S.E. Kuebbing, and R.B. Primack, 2022. "Tree-wildflower phenological mismatch differs across continents in response to spring warming." Contributed Talk. BSA Annual Meeting.

#### Additional conferences and years presented:

**Ecological Society of America** - Contributed talks: 2019-2022; Posters: 2012, 2017, 2018

**North American Forest Ecology Workshop** - Contributed talk: 2022

### **Service/Society Membership**

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**Reviewer for (30 total):** *American Journal of Botany* (x2), *The American Naturalist* (x1), *AoB Plants* (x1), *Botany* (x1), *Ecological Applications* (x1), *Ecological Solutions and Evidence* (x1), *Ecology* (x2), *Ecology and Evolution* (x1), *Ecology Letters* (x1), *Ecoscience* (x1), *Forest Ecology and Management* (x1), *Functional Ecology* (x1), *Journal of Ecology* (x1), *Journal of the Torrey Botanical Society* (x1), *Journal of Vegetation Science* (x1), *Nature Climate Change* (x1), *Nature Ecology & Evolution* (x2), *New Phytologist* (x4), *PeerJ* (x1), *PLOS ONE* (x1), *Tree Physiology* (x4)

**Member of:** Botanical Society of America, Botanical Society of Western Pennsylvania, Ecological Society of America