


CURRICULUM VITAE – 11/05/2023

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Appointments

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

2020 University of Michigan, Ph.D. – Natural Resources and Environment

2012 University of Washington - B.Sc. Biology and Minor in Philosophy

Grants, Awards, and Fellowships

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

Publications (Peer-Reviewed, in Review, or in Prep)

† I am the first and/or corresponding author

§ Coauthored with student mentee

Paper is representative of my proposed research program

H-index: 6 i10 index: 5 Total publications: 14 (3 in review) Total citations: 106

In review † **14)** Lee, B. R., E. F. Alecrim, J. R. K. Forrest, J. M. Heberling, R. B. Primack, and R. D. Sargent. In review 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 †, M. E. Spicer, H. S. Neufeld, and J. M. Heberling. In review at *American Journal of Botany*. Evaluating the definition and distribution of spring ephemeral wildflowers in eastern North America. Preprint: <https://doi.org/10.1101/2023.10.04.560873>.

†§ **12)** Lee, B. R., A. Yancy §, and J. M. Heberling. In review at *International Journal of Plant Sciences*. A primer on spring ephemeral wildflowers and phenological escape.

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>

Publications (continued)

- 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.

Published Code and Datasets

- 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)

Upcoming:

Nov. 2023

Morton Arboretum. Chicago, IL. Invited talk. *Effects of spring canopy close phenology on tree recruitment in the Morton Arboretum.*

Previous:

2023

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 ecology in Great Lakes forests: Lessons and insights from historical collections.*

Cornell University, Ithaca, NY. Guest lecture for Plant Science 2430: Ecology and Evolution of Plants. *Spring ephemeral wildflowers and their vulnerability to climate change*

Ewha Womans University Research Seminar (x2). Seoul, Korea.
- *Spring light and phenological escape in deciduous understories*
- *Impacts of climate change on plant-plant interactions*

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. Pittsburgh, PA. *Plants and climate change: Predicting the future by looking to the past*

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/>

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 II). 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

2022	GRFP proposal writing mentor , Botanical Society of America
2021-2023	Undergraduate Research Mentor , University of Pittsburgh
2021-2022	AP Research Mentor , Taylor Allderdice High School, Pittsburgh, PA
2016-2019	Research Mentor , Doris Duke Conservation Scholars, University of Michigan
2016-2019	Graduate Student Instructor , <i>Forest Ecology</i> (graduate), Univ. of Michigan
2014-2016	Research Mentor , Undergraduate Research Opportunity Program, University of Michigan
2012	Teaching Assistant , <i>Intro to Biology</i> , University of Washington

Classes Taught

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

Students Mentored (& Related Research Awards)

Listed alphabetically by last name

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

Outreach

- 2023 **“Career Connections” panelist**, Earth and Environment SciTech Day at Carnegie Science Center, Pittsburgh, PA
Museum tour leader for visiting homeschool students, Carnegie Museum of Natural History
- 2022 **Botany in Action proposal reviewer**, Phipps Conservatory, Pittsburgh, PA
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>
Volunteer and trainer, Climate Change and Michigan Forests, Ann Arbor, MI
Led 7th-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

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 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=C2b01U5y00o&t=3688s>

Sci-Comm and Non-Peer-Reviewed Publications (continued)

Climate change is threatening North America's wildflowers, Carnegie Museum research shows: Interview with Pittsburgh NPR affiliate WESA about findings from Lee et al. (2022)
<https://www.wesa.fm/environment-energy/2022-12-09/climate-change-is-threatening-north-americas-wildflowers-carnegie-museum-research-shows>

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/

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

Conference Presentations (Presenting Author Only)

Three most recent:

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. 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: 2019-2021; Posters: 2012, 2017, 2018
North American Forest Ecology Workshop - Contributed talk: 2022

Service/Society Membership

Reviewer for (24 total): *American Journal of Botany* (x1), *AoB Plants* (x1), *Ecological Applications* (x1), *Ecological Solutions and Evidence* (x1), *Ecology* (x1), *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 Ecology & Evolution* (x2), *New Phytologist* (x3), *PeerJ* (x1), *PLOS ONE* (x1), *Tree Physiology* (x4)

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