Jared J. Beck

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EDUCATION

2016 – 2020 **Ph.D. Botany – University of Wisconsin-Madison.** Quantitative Methods minor. Dissertation: *Factors shaping the distribution, abundance, and diversity of temperate forest plants.*

2010 - 2014 **B.A. Biology – Carleton College**. Graduated *magna cum laude* with Distinction in major.

PROFESSIONAL EXPERIENCE

2020 - present **Postdoctoral Research Associate**, Chicago Botanic Garden

2017 – 2020 **National Science Foundation Graduate Research Fellow**, University of Wisconsin-Madison.

2016 - 2017 **Teaching Assistant**, University of Wisconsin-Madison. Laboratory Instructor for Zoology 151.

2016 **Off-campus Studies Instructor**, Carleton College. Evolutionary Ecology in Australia/New Zealand.

2015 - 2016 **Educational Associate,** Carleton College. Lab manager for Hernández/McKone research group.

2014 - 2015 **Research Intern**, Chicago Botanic Garden. Lab manager for Echinacea Project research group.

PUBLICATIONS

1. **Beck, J.** and S. Wagenius. Deer herbivory exacerbates pollen by isolating unconsumed plants from prospective mates. *In review at Conservation Biology.*
2. **Beck, J.**, M. McKone, and S. Wagenius. Masting, fire-stimulated flowering, and the evolutionary ecology of synchronized reproduction. *In review at Ecology.*
3. **Beck, J.**, A. Salvi, R. Henderson, and D. Waller. Scaling from individuals to communities: Functional and demographic differences predict the ecologically nested distribution of herbaceous congeners. *In review at Oecologia*.
4. **Beck, J.,** A. Waananen, and S. Wagenius. 2023. Habitat fragmentation decouples fire-stimulated flowering from plant reproductive fitness. Proceedings of the National Academy of Sciences 120:e2306967120.
5. **Beck, J.** and J. Richards. 2023. Functional traits mediate fine-scale species distributions and shape spatial patterns of herbaceous plant diversity in a heterogeneous bedrock glade. Plant Ecology 224:729–740.
6. Richardson, L., **J. Beck**, D. Eck, R. Shaw, and S. Wagenius. 2023. Fire effects on plant reproductive fitness vary among individuals reflecting pollination-dependent mechanisms. American Journal of Botany 110:e16160.
7. **Beck, J.**, D. Rogers, D. Li, S. Johnson, K. Cameron, K. Sytsma, T. Givnish, and D. Waller. 2022. Functional traits mediate individualistic species-environment distributions across the landscape while fine-scale species' associations remain unpredictable. American Journal of Botany 109:1991-2005.
8. McKone, M., E. Williams, and **J. Beck.** 2021 Changes in a planted prairie community across a chronosequence sampled over 16 years. Journal of Vegetation Science 32:e13065.
9. **Beck, J.** 2021. Variation in plant-soil feedbacks among temperate forest herbs. Plant Ecology 222:1225-1238.
10. **Beck, J.** and T. Givnish. 2021. Fine-scale environmental heterogeneity and spatial niche partitioning among spring-flowering forest herbs. American Journal of Botany 108:63-73.
11. Wagenius, S., **J. Beck** & G. Kiefer. 2020. Fire synchronizes flowering and boosts reproduction in a widespread but declining prairie species. Proceedings of the National Academy of Sciences 117:3000-3005.

PUBLICATIONS (CONTINUED)

12. **Beck, J.**, B. Larget, and D. Waller. 2018. Phantom species: Adjusting colonization and extinction rates for pseudo-turnover. Oikos 127:1605-1618.
13. **Beck, J.**, M. McKone, & O. McMurtrey. 2016. Edge effects and avian community structure in a restored tallgrass prairie. Natural Areas Journal 36:328-333.
14. **Beck, J.**, D. Hernández, J. Pasari, & E. Zavaleta. 2015. Grazing maintains native plant diversity and promotes community stability in an annual grassland. Ecological Applications 25:1259-1270.

Manuscripts in preparation:

15. **Beck, J.**, G. Kiefer, R. Johnson, and S. Wagenius. Divergent long-term effects of haying and prescribed fire on the composition and diversity of wet prairie plant communities. *In preparation for Ecological Applications*.
16. Waananen, A., **J. Beck**, and S. Wagenius. Plant reproductive outcomes vary among individuals reflecting spatial and temporal variation in mating opportunities. *In preparation for Ecology.*
17. Paulson, A., **J. Beck**, J. Richards, R. Toczydlowski, S. Johnson, D. Li, D. Rogers. B. Alverson, K. Camerson, K. Systsma, T. Givnish, and D. Waller. Taxonomic, functional, and phylogenetic metrics provide complementary insights into long-term biodiversity change. *In preparation for Proceedings of the National Academy of Sciences.*
18. Paulson, L., A. Carroll, A. Waananen, **J. Beck**, and S. Wagenius. Does smoke stimulate flowering. *In preparation for American Journal of Botany*.

GRANT FUNDING (Total awarded to date: $945, 272)

International, national, and state awards

Supplement for Demographic drivers of plant community response to fire: Re-evaluating the relative importance of survival vs. reproduction. National Science Foundation. 2022 - 2023. $44,755.00. PI: S. Wagenius. Core team: J. Beck. [*J. Beck co-wrote supplement proposal and was funded as postdoctoral researcher*]

How do prescribed fires affect native prairie bees? Minnesota Environment and Natural Resources Trust Fund. 2022 - 2025. $500,000.00. PI: S. Wagenius. Core team: R. Roy, Z. Portman, and J. Beck. [*J. Beck co-wrote proposal, led experiment design & implementation, and was funded as postdoctoral researcher*]

Demographic drivers of plant community response to fire: Re-evaluating the relative importance of survival vs. reproduction. National Science Foundation. 2020 - 2022. $232,917.00. PI: S. Wagenius. Core team: J. Beck. [*J. Beck co-wrote proposal, led experimental design & implementation, and funded as postdoc*]

John Thomson Research Award. Wisconsin Botanical Club. 2019. $1000.

Graduate Student Research Award. Botanical Society of America. 2018. $500.

Graduate Research Fellowship. National Science Foundation. 2016 - 2020. $144,000.00.

Institutional awards

Graduate Student Research Fellowship. University of Wisconsin-Madison Arboretum. 2019 - 2020. $8000.

Graduate Student Research Award. University of Wisconsin-Madison Graduate School. 2019. $600.

Davis Research Award. UW-Madison Botany Department. 2019. $2000.

Demeter Research Award. UW-Madison Botany Department. 2019. $1500.

Davis Research Award. UW-Madison Botany Department. 2018. $4000.

Demeter Research Award. UW-Madison Botany Department. 2018. $700.

Kenneth Raper Travel Support Grant. UW-Madison Botany Department. 2018. $300.

Graduate Student Support Grant. University of Wisconsin-Madison Graduate School 2016 - 2020. $5000.

AWARDS, HONORS, AND FELLOWSHIPS

Honorary Fellow, University of Wisconsin-Madison Botany Department (2020-present)
Arboretum Research Fellow, University of Wisconsin-Madison Arboretum (2019-2020)
National Science Foundation Graduate Research Fellow (2016-2020)
Scott Tyler Bergner Prize, Carleton College (2014)
William Muir Fellowship, Carleton College (2013)
Exceptional Writing Portfolio, Carleton College (2012)
Dean's List, Carleton College (2012)

POSTERS AND PRESENTATIONS

1. **Beck, J.**, A. Waananen, & S. Wagenius. *Burning for a mate: Density-dependent effects of fire on plant reproduction.* Ecological Society of America Conference, August 10, 2023.
2. **Beck, J.** & S. Wagenius. *Re-kindling old flames: Investigating fire effects on plant reproduction in fragmented tallgrass prairie.* The Prairie Enthusiasts Conference, February 18, 2022.
3. **Beck, J.**, S. Wagenius & G. Kiefer. *Fire synchronizes flowering and boosts reproduction in a widespread but declining prairie species.* The Prairie Enthusiasts Conference, February 25, 2021.
4. **Beck, J.** and D. Waller. *The phantom species problem: Accounting for pseudo-turnover in analyses of long-term ecological change.* Riveredge Nature Center Research Symposium, November 4, 2017. *Awarded Best Graduate Student Presentation.*
5. **Beck, J.**, S. Wagenius & G. Kiefer. *Fire promotes reproduction in the fragmented mating scene of* Echinacea angustifolia. Ecological Society of America Conference, August 14, 2015.
6. **Beck, J.**, S. Wagenius & G. Kiefer. *Turning up the heat: Prescribed fire and the reproduction of* Echinacea angustifolia. Society for Ecological Restoration, Midwest-Great Lakes Conference, March 28, 2015.

INVITED TALKS

1. **Beck, J.** *Density-dependent effects of fire on prairie plant reproduction: Implications for conservation and restoration.* Invited speaker at The Prairie Enthusiasts conference. February 11, 2023.
2. **Beck, J.** *Fire, flowering, and plant conservation in fire-dependent ecosystems.* Illinois State University School of Biological Sciences Seminar. February 7, 2023.
3. **Beck, J.** *Natural classrooms: A cornerstone of scientific research and education.* University of Wisconsin-Milwaukee. January 18, 2023.
4. **Beck, J.** *Environmental factors shaping plant distributions and diversity: Lessons from a bedrock glade.* Plant Biology and Conservation Seminar, Northwestern University and Chicago Botanic Garden. January 29, 2021.
5. **Beck, J.** *Six decades of forest change in Noe Woods.* University of Wisconsin-Madison Arboretum. February 13, 2020.
6. **Beck, J**. *Plant-soil interactions and the diversity of temperate forest herbs.* UW-Madison Department of Plant Pathology Seminar. January 31, 2020.
7. **Beck, J.** *Using functional traits and phylogenetic relationships to explore the scale-dependent processes driving plant community assembly.* Presentation for UW-Madison Department of Botany. December 14, 2018.
8. **Beck, J.** *Plant biodiversity.* Environmental School, Wisconsin Garden Club Federation. September 21, 2018.
9. **Beck, J.** *What grassland birds can teach us about restoring prairie ecosystems.* Hosted by Northfield, MN chapter of The WildOnes and the Carleton College Cowling Arboretum. January 11, 2012.

TEACHING EXPERIENCE

2016 - 2017	Lab Instructor, Introductory Biology, University of Wisconsin-Madison
2016	Off-campus Studies Instructor, Ecology & Evolution in Australia/New Zealand, Carleton College
2015	Lab Instructor, Ecosystems Ecology, Carleton College
2013	Teaching Assistant, Natural History of Minnesota, Carleton College

UNDERGRADUATE MENTORING

2023: J. Davis (College of Wooster); L. Poitra (University of Minnesota-Morris)

2022: W. Mosiman, G. McGary, M. Vigil, K. Ergil, K. Flamer-Caldera, K. Alvarez (Northwestern University); J. Steensma (Skidmore College); E. Reineke (University of Minnesota); G. Zebraski (Gustavus Adolphus College); S. Chen, A. Lekhribat, P. Villanueva, C Myers, B. Valero (Lake Forest College); P. Konidena, C. Loescher (Carleton College)

2021: A. Radin (Binghamton College); W. Mosiman (Northwestern University); M. Barbera, C. Keast, M. Strong, & A. Velazquez (Lake Forest College); C. McWilliams, C. Cunniff, & W. Na (Carleton College)

2020: B. Bowser (UW-Madison)

2019: B. Bowser, C. Kestel, R. Nelson, K. Hobbins (UW-Madison)

2018: B. Bowser, G. Quirk (UW-Madison)

2016: A. Braeidy, R. Faust & G. Schmitt (Carleton College)

2015: D. Vail, J. Pruszenski, C. Shorb, L. Pflughoeft, M. Vought, & J. Krumholz (Carleton College)

2014: I. Lin, T. Kuhn & A. Petersons (Lake Forest College); J. York & E. Velis (Carleton College)