

**KARA C. DOBSON**  
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## EDUCATION

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Ph.D.	<b>Michigan State University</b> , East Lansing, MI Integrative Biology & Ecology, Evolution, and Behavior Kellogg Biological Station Visiting Graduate Student	Present
B.S.	<b>Pennsylvania State University</b> , Erie, PA Biology & Ecology, Evolution, and Behavior <i>Summa Cum Laude (GPA: 3.99)</i>	2020

## RESEARCH EXPERIENCE

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<b>Ph.D. Research</b>	Michigan State University & Kellogg Biological Station, MI Dissertation: Experimental climate change effects on plant traits and community properties <i>Advisor: Dr. Phoebe Zarnetske</i> <i>Committee: Drs. Marjorie Weber, William Wetzel, Zsofia Szendrei</i>	Present
<b>Natural Science Collections Intern</b>	Michigan State University Created a data management pipeline for the MSU Herbarium Received training in curation, preservation, and use of natural science collections	May - September 2023
<b>Undergraduate Research Intern</b>	Lake Erie Regional Grape Research and Extension Center, North East, PA Topics: Lake Erie's microclimate and climate change; vineyard and chestnut tree health <i>Advisor: Dr. Michael Campbell</i>	2018 - 2020
<b>Undergraduate Research Assistant</b>	Penn State Behrend, Erie, PA Topic: Potato fungal pathogen suppression <i>Advisor: Dr. Michael Campbell</i>	2017 - 2020

## PUBLICATIONS (\*Joint first authorship, ^Undergraduate mentee)

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9. **Dobson, K. C.** and Zarnetske, P. L. (In Prep) A large-scale meta-analysis of passive experimental warming effects on plant traits and community properties. Submitting by May 6<sup>th</sup> to *Nature* special collection on Experimental Ecology.
8. **Dobson, K. C.** and Zarnetske, P. L. (In Prep) Climate warming and drought effects on volatile organic compound emissions from *Solidago canadensis*. Submitting by August 1<sup>st</sup> to *Plant Physiology*.
7. ^Parker, E. G., Hammond, M., **Dobson, K. C.**, Young, M. L., Zarnetske, P. L. (In Prep) How the overlap of abiotic and biotic stressors impact tall goldenrod (*Solidago altissima*) fitness. Submitting by August 31<sup>st</sup>.

6. \*Young, M. L., \***Dobson, K. C.**, Hammond, M., Zarnetske, P. L. (In Review) Plant community responses to direct and herbivore-mediated indirect effects of climate warming across multiple years. *Ecology*.
5. Palande, S., Arsenault, J., Basurto-Lozada, P., Bleich, A., Brown, B. N. I., Buysse, S. F., Connors, N. A., Das Adhikari, S., **Dobson, K. C.**, Guerra-Castillo, F. X., Guerrero-Carrillo, M. F., Harlow, S., Herrera-Orozco, H., Hightower, A. T., Izquierdo, P., Jacobs, M., Johnson, N. A., Leuenberger, W., Lopez-Hernandez, A., Luckie-Duque, A., Martínez-Avila, C., Mendoza-Galindo, E., Plancarte, D., Schuster, J. M., Shomer, H., Sitar, S. C., Steensma, A. K., Thomson, J. E., Villaseñor-Amador, D., Waterman, R., Webster, B. M., Whyte, M., Zorilla-Azcué, S., Montgomery, B. L., Husbands, A. Y., Krishnan, A., Percival, S., Munch, E., VanBuren, R., Chitwood, D. H., Rougon-Cardoso, A. (In Review) Expression-based machine learning models for predicting plant tissue identity. *Applications in Plant Sciences*. doi: 10.1101/2023.08.20.554029
4. Smith, O. M., Davis, K. L., Waterman, R., Pizza, R. B., Mack, C., Conway, E. E., **Dobson, K. C.**, Foster, B., Hirstova, A. E., Jarvey, J. C., Nourn, N., Davis, C. L. (2024) Journals must expand access to peer review data. *Trends in Ecology & Evolution*, 39(24), pp. 311-314. doi: 10.1016/j.tree.2024.02.003
3. Smith, O. M., Davis, K. L., Pizza, R. B., Waterman, R., **Dobson, K. C.**, Foster, B., Jarvey, J., Jones, L. N., Leuenberger, W., Nourn, N., Conway, E., Fiser, C., Hansen, Z., Hristova, A., Mack, C., Saunders, A. N., Utley, O. J., Young, M. L., Davis, C. L. (2023) Peer review perpetuates barriers for historically excluded groups. *Nature Ecology and Evolution*, 7, pp. 512-523. doi: 10.1038/s41559-023-01999-w
2. **Dobson, K. C.**, Beaty, L., Rutter, M., Hed, B., Campbell, M. (2020) The Influence of Lake Erie on Changes in Temperature and Frost Dates. *International Journal of Climatology*, 40(13), pp. 5590-5598. doi: 10.1002/joc.6537
1. Campbell, M., Adams, R., Dobry, E., **Dobson, K. C.**, Stefanick, V., Till, J. (2019) The Sprout Regulating Compound 1,4-dimethylnaphthalene Exhibits Fungistatic Activity. *Journal of Agronomy Research*, 1(3), pp. 27-34. doi: 10.14302/issn.2639-3166.jar-18-2502

## PRESENTATIONS (\*Award, ^Undergraduate mentee)

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25. ^Parker, E., Hammond, M., **Dobson, K.**, Young, M., Zarnetske, P. (2024) How the overlap of abiotic and biotic stressors impact tall goldenrod (*Solidago altissima*) fitness. Poster presented at the ESA Great Lakes Regional Conference, Kalamazoo, MI
  24. **Dobson, K.** (2023) A large-scale analysis of passive experimental warming effects on plant communities. Talk given at the MSU EEB Student Colloquium, East Lansing, MI
  23. **Dobson, K.** (2023) Plant emissions of volatile organic compounds under stress. Talk given at the Kellogg Biological Station LTER All Scientists' Meeting, Hickory Corners, MI
  22. **Dobson, K.** and Zarnetske, P. (2023) A large-scale analysis of passive experimental warming effects on plant communities. Poster presented at the Ecological Society of America (ESA) Annual Meeting, Portland, OR
  21. **Dobson, K.** and Zarnetske, P. (2023) Warming and drought effects on volatile emissions of *Solidago canadensis*. Poster presented at the EEB Research Symposium, East Lansing, MI

20. **Dobson, K.** and Zarnetske, P. (2022) Warming and drought effects on volatile emissions of *Solidago canadensis*. Poster displayed at the LTER Network All Scientists' Meeting, Asilomar, CA
19. **Dobson, K.** and Zarnetske, P. (2022) Warming and drought effects on volatile emissions of *Solidago canadensis*. Poster presented at the Ecological Society of America (ESA) Annual Meeting, Montréal, Canada
18. Young, M., **Dobson, K.**, Hammond, M. and Zarnetske, P. (2022) Towards linking the soil microbiome with plant responses to climate change in an early successional plant community. Poster presented at the Ecological Society of America (ESA) Annual Meeting, Montréal, Canada
17. ^Zapata, J., **Dobson, K.**, Hammond, M. and Zarnetske, P. (2022) The effects of climate change treatments on the biomass of plant communities. Poster presented at the Kellogg Biological Station Undergraduate Internship and Research Symposium, Hickory Corners, MI
16. **Dobson, K.** (2022) Warming and drought effects on *Solidago canadensis* volatile emissions. Talk given at the Kellogg Biological Station LTER Graduate Fellows Symposium, Hickory Corners, MI
15. ^Parker, E., **Dobson, K.**, Young, M., Hammond, M. and Zarnetske, P. (2022) The impacts of climate change on goldenrod-gall midge interactions. Poster presented at the MSU University Undergraduate Research and Arts Forum, East Lansing, MI
14. **Dobson, K.** and Zarnetske, P. (2021) Warming and drought effects on volatile emissions of *Solidago canadensis*. Poster presented at the Kellogg Biological Station LTER All Scientists Meeting, Hickory Corners, MI
13. **Dobson, K.** (2021) Plant volatile organic compounds and climate change. Talk given at the Kellogg Biological Station LTER All Scientists Meeting, Hickory Corners, MI
12. **Dobson, K.** (2021) The effects of drought and warming on the emission of volatile organic compounds from plants. Virtual talk given at the Kellogg Biological Station LTER Graduate Fellows Symposium
11. ^Wolford, K., ^Parker, E., Young, M., **Dobson, K.**, Hammond, M. and Zarnetske, P. (2021) Leaf Greenness Varies by Climate Stressors and Gall Formation in *Solidago canadensis*. Poster presented at the Kellogg Biological Station Undergraduate Internship and Research Symposium, Hickory Corners, MI
10. ^Parker, E., ^Wolford, K., **Dobson, K.**, Young, M., Hammond, M. and Zarnetske, P. (2021) Evaluating Goldenrod Gall Midge Fitness in Response to Climatic Stressors. Poster presented at the Kellogg Biological Station Undergraduate Internship and Research Symposium, Hickory Corners, MI
9. **Dobson, K.** and Young, M. (2021) The biological relevance of climate stress induced changes in soil microbial communities. Virtual talk given at the Kellogg Biological Station Brownbag Seminar
8. **Dobson, K.** and Young, M. (2021) Long-term responses to warming in an early successional plant community. Virtual talk given at the MSU EEB Student Colloquium
7. **Dobson, K.**, Campbell, M., Beaty, L., Rutter, M. and Hed, B. (2019) The Influence of Lake Erie on the Effects of Climate Change. Poster presented at the 15th Annual Regional Science Consortium at Presque Isle, Erie, PA
6. \*Till, J., Campbell, M., Hed, B. and **Dobson, K.** (2019) Investigation of a Potential Genetic Variant of Grapevine Leafroll-Associated Virus 3 in Northwestern Pennsylvania

- Vineyards. Poster presented at the 15th Annual Regional Science Consortium at Presque Isle, Erie, PA
5. **Dobson, K.**, Campbell, M., Beaty, L. and Hed, B. (2019) How Lake Erie Alters Climate Change in the Lake Erie Grape Belt. Poster presented at the Annual Meeting of the International Association of Great Lakes Research, Brockport, NY
  4. **Dobson, K.**, Campbell, M., Beaty, L. and Hed, B. (2019) How Lake Erie Alters Climate Change in the Lake Erie Grape Belt. Poster presented at the Sigma Xi Undergraduate Research Conference at Penn State Behrend, Erie, PA
  3. Stefanick, V., **Dobson, K.** and Campbell, M. (2019) Fungistatic Effects of 1,4-dimethylnaphthalene on *Pythium ultimum* and *Aspergillus niger*. Poster presented at the Annual meeting of the American Society for Biochemistry and Molecular Biology, Orlando, FL
  2. Till, J., Campbell, M., Adams, R., **Dobson, K.**, Dobry, E. and Stefanick, V. (2019) Growth of *Alternaria alternata* Isolated from Leaves of *Actinidia arguta* is Inhibited by 1,4-dimethylnaphthalene. Poster presented at the Annual meeting of the American Society for Biochemistry and Molecular Biology, Orlando, FL
  1. \***Dobson, K.**, Campbell, M., Beaty, L. and Hed, B. (2018) Climate Change in North East, Pennsylvania. Poster presented at the 14th Annual Regional Science Consortium at Presque Isle, Erie, PA

## OPEN CODE AND DATA REPOSITORIES

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GitHub: <https://github.com/dobsonk2>

<https://github.com/SpaCE-Lab-MSU/warmXtrophic>

<https://github.com/dobsonk2/Herbaria>

<https://github.com/wleuenberger/PhenologyShiny>

Zarnetske, P., **K.C. Dobson**, M. Hammond, and M.L. Young. 2023. warmXtrophic: plant community responses to direct and herbivore-mediated indirect effects of climate warming across multiple years at Kellogg Biological Station Long-Term Ecological Research Sites (KBS LTER), Michigan, USA, and University of Michigan Biological Station (UMBS), Michigan, USA. ver 1. Environmental Data Initiative. doi: 10.6073/pasta/a09100ccd11abc0fb43c3bdb27db93b6

## FELLOWSHIPS, SCHOLARSHIPS, AND GRANTS

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<b>EEB Summer Graduate Fellowship</b>   MSU (\$1,500)	2023
<b>NSF NRT-IMPACTS Travel Award</b>   MSU & National Science Foundation (\$450)	2023
<b>IBIO Travel Grant</b>   MSU (\$500)	2023
<b>EEB Professional Horizons Grant</b>   MSU (\$500)	2023
<b>KBS-LTER Fellowship</b>   KBS (\$6,500)	2022
<b>KBS Summer Graduate Student Fellowship</b>   KBS (\$1,500)	2022
<b>NSF NRT-IMPACTS Fellowship</b>   MSU & National Science Foundation (\$34,000)	2021
<b>KBS-LTER Fellowship</b>   KBS (\$7,220)	2021
<b>KBS Summer Graduate Student Fellowship</b>   KBS & MSU (\$2,501)	2021
<b>Michigan State College of Natural Science Fellowship</b>   MSU (\$38,000)	2020
<b>Academic Excellence in Biology Award</b>   Penn State Behrend (\$2,650)	2020

**Jane Wood Reno Memorial Scholarship** | Penn State Behrend (\$1,400) 2020  
**Council of Fellows Undergraduate Research Award** | Penn State Behrend (\$400) 2019, 2020  
**Aaron Meehl Biology Award, Outstanding Rising Senior** | Penn State Behrend (\$1,402) 2019  
**John K. Henne Endowment for International Study** | Penn State Behrend (\$625) 2018

## HONORS AND AWARDS

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**3<sup>rd</sup> Place - LTER Photo Contest** | LTER Network 2022  
**NSF GRFP Honorable Mention** | National Science Foundation 2020, 2021  
**Writing Award - School of Science** | Penn State Behrend 2020  
**School of Science Student Marshal** | Penn State Behrend 2020  
**Thomas H. Turnbull Award for Outstanding Contributions of Leadership and Service** | Penn State Behrend 2020  
**Penn State Behrend Leadership Scholar** | Penn State Behrend 2020  
**Evan Pugh Scholar Award** | Penn State Behrend 2019  
**1<sup>st</sup> place undergraduate poster presentation** | Regional Science Consortium at Presque Isle 2018  
**Penn State Behrend Honors Program** | Penn State Behrend 2018

## TEACHING EXPERIENCE

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### Teaching Assistantships:

Organismal and Population Biology Lab | MSU August 2022 – Present  
 General Ecology Lab | Penn State Behrend August - December 2018

### Lesson Plans:

**Community science:** Undergraduate project utilizing community science data from iNaturalist to answer student-generated research questions | MSU 2024

Project plan was used in two semesters of the Organismal and Population Biology Lab

**Climate warming and plants:** K-12 lesson plan using Canada goldenrod as a model species for an interactive activity | KBS 2023

Presented at KBS K-12 Partnership Summer Institute

**Tree phenology:** Undergraduate lesson plan with an associated R Shiny application for student use | MSU 2022

### Mentorship:

Undergraduate students mentored:

Jordan Zapata

May 2022 – May 2023

Jacklyn Alsbro

August 2021 – May 2022

Emily Parker

May 2021 – May 2022

Kristin Wolford

May - August 2021

## OUTREACH

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<b>Fridays For Future</b>   Kalamazoo Climate Crisis Coalition	October 2022
Spoke to a public audience about ongoing climate change research at KBS and opportunities for undergraduates to conduct independent research	
<b>Science Storytime</b>   Penn State Behrend	2018 - 2020
Ran experiments with preschool children based on scientific children's books	
<b>Penn State Behrend STEAM Fair</b>   Penn State Behrend	2018 - 2020
Demonstrated and led brief science activities to a K-12 audience of ~1,500 participants	
<b>Spooky Science Night</b>   Penn State Behrend	October 2019
Served as the main organizer for a Halloween science event with activities, food, and demonstrations for ~70 undergraduates	

## NON-TECHNICAL WRITING

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<b>KBS-LTER Blog Post</b>	2021
<a href="#">Studying climate change effects on plant traits: Reflections from an LTER Fellow</a>	

## PROFESSIONAL SERVICE

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<b>EEB Graduate Group</b>   MSU	
Secretary	August 2022 - Present
Social Committee Co-Chair	August 2021 - May 2022
<b>IBIO Department</b>   MSU	
Graduate Student Representative	August 2022 – May 2023
<b>University Undergraduate Research and Arts Forum</b>   MSU	
Poster Session Judge	April 2022
<b>Penn State Alternative Spring Break</b>   Penn State Behrend & San Antonio, TX	
Student Volunteer	March 2020
<b>Biology Club</b>   Penn State Behrend	
President & Treasurer	2018 - 2020
<b>Science Ambassadors</b>   Penn State Behrend	
Treasurer	2018 – 2020

## MEDIA COVERAGE

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<b>Study reveals inequity in journal peer review</b>	2023
<a href="#">MSU Today</a> , <a href="#">EurekAlert!</a> , <a href="#">ScienMag</a> , <a href="#">Phys.org</a> , <a href="#">Lab Manager</a>	
<b>How plants respond to climate change with Kara Dobson</b>	2022
<a href="#">KBS-LTER YouTube – Climate Series</a>	

**Behrend students recognized for outstanding academic achievement**  
[Penn State News](#)

2020

## **OTHER SKILLS AND EXPERIENCE**

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### **Journal Referee**

International Journal of Climatology

### **Memberships**

Ecological Society of America

### **Technical Skills**

R, R Studio, R Markdown, R Shiny, Git, GitHub, Python, Command-line interface