

CURRICULUM VITAE

CHAD R. ZIRBEL

ECOLOGY, EVOLUTION, & BEHAVIOR DEPARTMENT, UNIVERSITY OF MINNESOTA

ECOLOGY BUILDING

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PROFESSIONAL APPOINTMENTS

Postdoctoral Associate University of Minnesota, Cedar Creek ESR 2018-Present
Advisors: Forest Isbell and David Tilman

EDUCATION

Graduate Michigan State University, East Lansing, MI 2012-2018
Plant Biology Ph.D. Program
Ecology, Evolutionary Biology, and Behavior Program
Committee: Lars Brudvig (Chair), Kay Gross,
Jen Lau, Elena Litchman

Undergraduate University of Wisconsin -Madison, WI 2008-2012
Majors: Conservation Biology;
Honors in Physical Geography; Environmental Studies
Thesis Advisor: Jack Williams

MANUSCRIPTS

Grman, E., **C.R. Zirbel**, T. Bassett, and L.A. Brudvig. (2018). Ecosystem multifunctionality increases with beta diversity in restored prairies. *Oecologia*. [Link](#)

Zirbel, C.R., E. Grman, T. Bassett, and L.A. Brudvig. (2017). Plant functional traits and environmental conditions shape community assembly and ecosystem functioning during restoration. *Journal of Applied Ecology*. [Link](#)

Brudvig, L.A., R.S. Barak, J.T. Bauer, T.T. Caughlin, D.C. Laughlin, L. Larios, J.W. Matthews, K.L. Stuble, N.E. Turley, **C.R. Zirbel**. (2017). Interpreting variation to advance predictive restoration science. *Journal of Applied Ecology*. [Link](#)

Grman, E., Bassett, T., **Zirbel, C.R.**, Brudvig, L.A. (2015), Dispersal and establishment filters influence the assembly of restored prairie plant communities. *Restoration Ecology*. [Link](#)

Larkin, D. J., Steffen, J. F., Gentile, R. M. and **Zirbel, C. R.** (2014), Ecosystem Changes Following Restoration of a Buckthorn-Invaded Woodland. *Restoration Ecology*, 22: 89–97. [Link](#)

Gill, J. L., McLauchlan, K. K., Skibbe, A. M., Goring, S., **Zirbel, C. R.**, Williams, J. W. (2013), Linking abundances of the dung fungus *Sporormiella* to the density of bison: implications for assessing grazing by megaherbivores in palaeorecords. *Journal of Ecology*, 101: 1125–1136. [Link](#)

PUBLISHED DATASETS

Zirbel, C.R., Basset, T., Grman, E. & Brudvig, L.A. (2017). Data from: Plant functional traits and environmental conditions shape community assembly and ecosystem functioning during restoration. Dryad Digital Repository, <https://doi.org/10.5061/dryad.2175q>.

PRESENTATIONS

Zirbel, C.R. Interpreting variation in restoration outcomes: functional traits shape community assembly and ecosystem functioning. *Invited seminar* Plant Biology Department, Michigan State University. 2017.

Zirbel, C.R., E. Grman, and L.A. Brudvig. Can trait similarity and environmental conditions predict community invasibility? *ESA Annual Meeting*. 2017.

Zirbel, C.R. Interpreting variation in restoration outcomes: the role of plant functional traits in shaping community assembly and ecosystem functioning. *Invited seminar* USGS Wetland Aquatic research center. 2016.

Zirbel, C.R., E. Grman, T. Bassett, and L.A. Brudvig. In what ways do taxonomic, functional, and phylogenetic diversity predict ecosystem multi-functionality during restoration? *ESA Annual Meeting*. 2016.

Grman, E., **Zirbel, C.R.**, Bassett, T., Brudvig, L.A. Beta diversity and dominant species each contribute to ecosystem multifunctionality in restored prairies. *ESA Annual Meeting*. 2016.

Zirbel, C.R., E. Grman, T. Bassett, and L.A. Brudvig. Do functional traits predict plant assemblages and ecosystem functioning of restored prairies? *SER MWGL Annual Meeting*. 2016.

Zirbel, C.R., E. Grman, T. Bassett, and L.A. Brudvig. Functional traits as predictors of community assembly and ecosystem function in restored prairies. *Invited presentation. ESA Annual Meeting*. 2015.

Bassett, T., L.A. Brudvig, E. Grman, and **C.R. Zirbel**. Biomass stability lower in diverse restored grasslands. *ESA Annual Meeting*. 2015

Zirbel, C.R. A multi-proxy approach to understanding paleoclimate and its relation to environmental change: Silver Lake, OH, USA. *Senior Honor Thesis presented to the University of Wisconsin-Madison Department of Geography*. 2012.

Larkin, D.J., J.F. Steffen, R.M. Hesselink, and **C.R. Zirbel**. Restoration of a buckthorn-invaded woodland enhances carbon-storage ecosystem services. Forest Preserve District Science and Research Symposium, Chicago, IL. Apr 19, 2012.

Zirbel, C.R., J.L. Gill, J.W. Williams (2011). Playing in the Mud: Climatic and Ecological Lessons from the Past. *Integrated Biological Science – Summer Research Program Symposium*. Madison, WI.

Zirbel, C.R., J.L. Gill, J.W. Williams (2011). XRD and Stable Isotope Analysis of Sediments from Silver Lake, Ohio, USA: A Paleoclimatic Reconstruction. *Integrated Biological Science – Summer Research Program Symposium*. Madison, WI.

Zirbel, C.R., D. Larkin, & J. Steffen (2010). Effects of *Rhamnus cathartica* (common buckthorn) invasion and restoration on woodland carbon sequestration.

- *Chicago Botanic Garden Undergraduate Research Symposium*, Glencoe, IL. 2010.
- *University of Wisconsin-Madison Undergraduate Research Symposium*, 2011.
- *Ecological Society of America Annual Meeting*, Austin, TX, 2011.

OTHER MEDIA

A common currency for connecting the goals of restoration: plant traits can help us understand how plant communities form and help ecosystems function. *The Applied Ecologists Blog*. [Link](#)

FUNDING

National Science Foundation Graduate Research Internship Program (2016-2017) \$5,000

National Science Foundation Graduate Research Fellowship (2014-2017) \$138,000

Kellogg Biological Station Summer Research Fellowship (2013-2016) \$10,000

MSU College of Natural Sciences, Dissertation completion fellowship (Spring 2018) \$7,500

MSU Graduate School writing fellowship (2017-2018) \$2,000

Paul Taylor Travel Grant, *Plant Biology*, MSU (2013-2018) \$3900

AWARDS & ACHIEVEMENTS

Bessey Award for Best Publication, Plant Biology Department, MSU (2018)

Bessey Award, Outstanding Graduate Research, Plant Biology Department, MSU (2017)

Best undergraduate presentation. Ecological Society of America, Student Section (2011)

Highly Commended Presentation, Chicago Botanic Garden Undergraduate Research Symposium (2010)

TEACHING EXPERIENCE

Teaching Assistant, Biological Sciences Department 8/2012-5/2013
Cells and Molecules lecture (BS161) & lab (BS171)
Organisms and Populations lab (BS172)

Zoology Department 8/2013-5/2014
Ecology Lab (ZOL355L)
Fundamental Genetics (ZOL341)

Kellogg Biological Station 5/2014-8/2014 & 5/2016-8/2016
Plant Systematics (PLB418)
Wetland Ecology and Management (FW417)

Plant Biology Department 8/2017-12/2017
Plant Ecology (PLB 441)

Guest lecture

Senior Seminar (PLB499) 2013-2015 "Applying for graduate school"

Ecology Lab (ZOL355L) 2016 "Restoration ecology"

Forest Ecology (FOR406) 2016 "Restoration ecology"

Ecology (ZOL355) 2017 "Ecological selection in community ecology"

Restoration ecology (PLB443) 2017 "Ecosystem function and services"

Workshops

Structural equation modeling. Co-lead. KBS LTER All scientists meeting 9/7/2017

UNDERGRADUATES MENTORED

Madeleine Cleary, 2014. Using community weighted means to understand compositional changes over time in restored southwest Michigan prairies. KBS URA

Lindsey Kemmerling, 2015. The fight for biodiversity: Using functional traits to predict establishment during restoration. KBS URA

- Featured in MSU's Undergraduate Research Showcase: [Link](#)

Alexandria Walus, 2016. Functional trait differences in prairie seed sources. KBS URA

Jessica Brumbaugh & Emei Thompson, 2018. The Effects of environmental conditions on bison movement in oak savanna. Cedar Creek

PROFESSIONAL AFFILIATIONS, ACTIVITIES & SERVICES

Ecological Society of America, Student member

AAAS, Student member

Society of Ecological Restoration, Student member, MWGL chapter

EEBB program, MSU, Quantitate methods curriculum committee (2016-present)

Plant Biology Department, MSU, Graduate Lecture Series co-coordinator (2017-2018)

Plant Biology Department, MSU, Graduate Committee (2012-2014)

Plant Biology Department, MSU, Seminar Committee (2014-2016)

Visiting Graduate Student, Kellogg Biological Station, MSU, *KBS Advisor*: Kay Gross

Journal Referee: Global Change Biology, Global Ecology and Biogeography, Restoration Ecology, Journal of Vegetation Science, Ecological Restoration, Folia Geobotanica, Australian Journal of Botany, Journal of Applied Ecology, Wetlands

Michigan Botanical Club, Annual Foray field trip leader, Sandcreek Preserve (2016)

Letters to a Pre-scientist, Scientist writer (2016)

Student Representative, Nelson Institute for Environmental Studies (2011-2012)

Undergraduate student seat, Nelson Institute Director search & screen committee (2011)

Badger Volunteers: Prairie restoration at the Holy Wisdom Monastery (Madison, WI) (2010 – 2011)

Environmental Studies Club, UW Madison (2010-2012)

BadgerQuest, Everglades and Biscayne National Parks restoration projects (2011)

Sierra Club, Youth Climate Change presentation (2011)