

## Emily Wedel, Curriculum Vitae

Division of Biology  
 207 Bushnell Hall  
 Kansas State University  
 Manhattan KS, 66506  
 erwedel@ksu.edu

### Research Interests

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grassland and savanna ecology, plant ecophysiology, woody encroachment, plant responses to disturbance

### Education

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- 2020 – Present      **Kansas State University, PhD (ABD)**  
 Advisor: Jesse B. Nippert  
 Committee: Zak Ratajczak, Allison Louthan, and A. Carla Staver  
 Anticipated Graduation: December 2023
- 2017 – 2019      **Kansas State University, MS Biology**  
 Co-Advised: Jesse B. Nippert and David C. Hartnett  
 Committee: Gail Wilson  
 Thesis: “Demography and leaf physiology of *Cornus drummondii* in response to disturbance in tallgrass prairie”
- 2012 – 2016      **Bethel College, BA Biology, Summa Cum Laude**  
 Advisor: Jon K. Piper

### Teaching Experience

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- 2020 – 2023      **Co-Instructor, Kansas State University**
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| BIOL501: Plant Physiology Laboratory  | Fall 2020 – 2022   |
| BIOL495: Savanna Ecology  | Spring 2021, 2023  |
| BIOL495Z: Savanna Ecology Study Abroad<br>Two-week undergraduate field course.                                  | Summer 2022        |
| BIOL632: Ecology Laboratory<br>Online, in-person, and field instructor<br>* Instructor on record in Spring 2021 | Spring 2020, 2021* |
- 2017 – 2019      **Graduate Teaching Assistant, Kansas State University**
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|---|------------------------|
| BIOL201: Organismic Biology<br>Lead T.A. for plant lectures and activities. | Spring 2019            |
| BIOL551: Taxonomy of Flowering Plants                                       | Fall 2018              |
| BIOL198: Principles of Biology  | Fall 2017, Spring 2018 |

2014 – 2016      **Teaching Assistant, Bethel College Summer Science Institute**  
 Advised 30 high school students at a week-long science intensive in environmental and molecular biology. This institute is designed to increase interest and excitement in STEM for 1<sup>st</sup> generation college students.

**Undergraduate Teaching Assistant, Bethel College**  
 BIO130: Botany  
 BIO125: Zoology

## Mentorship Experience

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2020 – 2022      **Ryan Donnelly**, Undergraduate and MS student, Kansas State University  
 Thesis: The amazing diversity of Poaceae: trait variation across space, time, and lineage

2020 – 2022      **Sarah Shaffer**, Undergraduate student, Kansas State University  
 Trained to use field and lab equipment to measure plant leaf-level physiology.

2019 – 2021      **Emmett Tooley**, MS student, Kansas State University  
 Thesis: The unique canopy structure, leaf morphology, and physiology of *Cornus drummondii*

## Peer-Reviewed Publications (published and submitted)

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4. **Wedel ER**, Nippert JB, Swemmer A. Submitted. Repeated tree clearing as a mechanism for savanna recovery following bush encroachment. *Journal of Applied Ecology*.
3. Donnelly RC, **Wedel ER**, Taylor JH, Nippert JB, Hlliker B, Riley W, Still CJ, Griffith DM. 2023. Evolutionary lineage explains trait variation among 75 coexisting grass species. *New Phytologist*.
2. **Wedel ER**, Nippert JB, Hartnett DC. 2021. Fire and browsing interact to alter intra-clonal stem dynamics of an encroaching shrub in tallgrass prairie. *Oecologia*, 1-10.
1. **Wedel ER**, O’Keefe K, Nippert JB, Hoch B, O’Connor RC. 2021. Spatio-temporal differences in leaf physiology are associated with fire, not drought, in a clonally integrated shrub. *AoB Plants*, plab037.

## Book Chapters

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1. Nippert JB, Bachle S, Keen RM, **Wedel ER**. Climate change in grassland ecosystems: current impacts and potential actions for a sustainable future. 2022. In: Groskinsky B (ed) *Climate Action: Local Applications and Practical Solutions*.

## Oral Presentations (first author only)

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2023      **Savanna Science Network Meeting**, Kruger National Park, South Africa  
 “Impacts of the magnitude, timing, and depth of water availability on above and belowground savanna dynamics”

2022      **Ecological Society of America**, Montreal, Canada, organized oral session (invited)  
 “Clonal shrubs: what traits drive encroachment in tallgrass prairie?”

2021      **International Grassland and Rangeland Congress** (virtual)  
 “Lowveld savanna bush cutting alters tree-grass interactions” I  
**Biology Graduate Student Research Forum**, Manhattan, KS

- 2019 “Repeated tree cutting alters tree-grass dynamics in lowveld savannas”  
**Manhattan High School (invited)**  
 “Konza: life on the tallgrass prairie”  
**Biology Graduate Student Research Forum**, Manhattan, KS  
 “Demography of an encroaching shrub in response to fire, browsing and grazing in tallgrass prairie”  
**Kansas State University Graduate School Research Forum**, Manhattan, KS  
 “Effects of fire and herbivory on a shrub expanding into tallgrass prairie”  
**Society for Range Management Annual Meeting**, Minneapolis, MN  
 “Demography of an encroaching shrub in response to fire and herbivory in tallgrass prairie.”  
**Kanas Natural Resource Conference**, Manhattan, KS  
 “Effects of fire and herbivory on the demography of *Cornus drummondii* in tallgrass prairie”
- 2016 **Undergraduate Research, Internships, and Creative Activities Symposium**,  
 North Newton, KS  
 “Allelopathic effects of eastern red cedar on big bluestem and wheat seedlings”

### Poster Presentations (presented by ERW)

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- 2023 **Konza Prairie LTER Annual Meeting and Site Review**, Manhattan, KS  
 “Physiological traits differentiate encroaching shrubs in tallgrass prairie”
- 2022 **Konza Prairie LTER Annual Meeting**, Manhattan, KS  
 “What traits drive encroachment of woody shrubs in tallgrass prairie?”  
**Savanna Science Network Meeting**, Kruger National Park, South Africa  
 “Tree-grass coexistence under altered rainfall regimes”
- 2018 **Long Term Ecological Research All Scientists Meeting**, Pacific Grove, CA  
 “Demography of *Cornus drummondii* in tallgrass prairie”

### Awards

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- 2023 **Michael Scott Watkins Award For Outstanding Graduate Student Teaching**, \$1000
- 2021 **John C. Frazier Award For Outstanding Graduate Student Research In Plant Science**, \$1000

### Grants and Fellowships

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- 2022 **Mary A. Bancroft Memorial Scholarship**, Kansas Native Plant Society, \$1000  
**Rachel Snyder Memorial Scholarship**, Grassland Heritage Foundation, \$1000
- 2018 **Science Communication Fellowship**, Portal to the Public, Manhattan, KS  
 Designed hands on activities related to my graduate research for public audiences and school groups.
- 2015 **Undergraduate Research, Internships, and Creative Activities**, Bethel College, \$1500
- 2013 **Research, Internships, and Careers in Health and the Environment**, Bethel College, \$2000

## Travel Grants

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2017 – 2022    **Institute for Grassland Studies Travel Scholarship**, Kansas State University, \$1435  
**College of Arts and Sciences Travel Scholarship**, Kansas State University, \$1600  
**Biology Graduate Student Travel Grant**, Kansas State University, \$1000  
**Graduate Student Council Travel Grant**, Kansas State University, \$350

## Journal Reviewer

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Oecologia, PeerJ, Journal of Arid Environments

## Professional Societies

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2022 – Present    Ecological Society of America  
2020 – Present    Sigma Xi  
2019 – 2022      Botanical Society of America  
2018 – 2019      Society for Range Management

## Research Experience and Training

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2023              **Co-organizer**, Savanna Science Soils Working Group  
Workshop held in Kruger National Park, South Africa

2017 – Present    **Graduate Research Assistant, KSU – Plant Ecophysiology**  
R Programming, Stable Isotopes, LICOR 6400XT gas analyzer, LICOR 6800 gas analyzer, LICOR 600 porometer, PMS Pressure Chamber

2018, 2021        **Physfest II, III**  
trained in plant ecophysiology sampling techniques including gas exchange and chlorophyll fluorescence.

2013 – 2016      **Prairie Attendant, Kauffman Museum, North Newton, KS**  
Project management and maintaining phenological records.  
**Greenhouse Attendant, Bethel College**  
Managed campus greenhouse.

## Service / Volunteer Work

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2020 – Present    **K-State Chapter Sigma Xi Student Representative**

2018 – Present    **Graduate Student Konza Guide**  
Led educational tours of Konza Prairie Biological Station to K-12 groups and adult groups focusing on the natural history of the site and the ecology of the tallgrass prairie.  
**Konza Prairie Volunteer**, Konza Prairie Biological Station  
Assisted with prescribed burns.

2019 – 2020      **Society for Range Management**, Website Judge  
Judge for SRM chapter website information designed by undergraduate students

2018                    **Treasurer, Biology Graduate Student Association**, Kansas State University  
2016 – 2017        **AmeriCorps**, La Puente Home, Inc.  
                            Full time Emergency Foods and Gleaning Coordinator, Alamosa, CO

### **Community Outreach and Science Communication**

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2019                    **Science Snapshots Writer and Reviewer**, Kansas State University  
                            Written and reviewed blog posts for Science Snapshots, a science communication  
                            blog started by biology graduate students at Kansas State University  
**Science Festival, SciComm Conference, Manhattan, KS**  
                            Participant in the Kansas Science Communication Initiative conference. Led a  
                            community outreach activity explaining water transport in plants.  
**ART(ifact), SciComm Conference, Manhattan, KS**  
                            Participant in alternative poster session. Brought an “artifact” related to my research  
                            to present to the general public.

2018                    **Safari Edventure Day, Sunset Zoo, Manhattan, KS**  
                            Designed and led an activity for over 150 4<sup>th</sup> – 6<sup>th</sup> grade students on clonal growth of  
                            plants and resource sharing.  
**Girls Researching Our World (GROW) Workshop, Manhattan, KS**  
                            Facilitated an activity for over 50 5<sup>th</sup>-7<sup>th</sup> grade girls at the summer workshop.  
                            GROW is a program focused on encouraging female students interested in science.

### **Professional References**

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Dr. Jesse Nippert (PhD advisor)  
University Distinguished Professor, Division of Biology  
Kansas State University  
Manhattan, KS 66506  
nippert@ksu.edu

Dr. John Blair  
University Distinguished Professor, Division of Biology  
Kansas State University  
Manhattan, KS 66506  
jblair@ksu.edu

Dr. Zak Ratajczak  
Assistant Professor, Division of Biology  
Kansas State University  
Manhattan, KS 66506  
zarata@ksu.edu