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**PROFESSIONAL PREPARATION****Ph.D Student***Yale School of the Environment*Fall 2023  
New Haven, CT**Master's of Environmental Science***Yale School of the Environment*2023  
New Haven, CT

- Focus: soil ecology
- Thesis Title: *The effects of ground beetles on nitrogen cycling in eastern temperate forests*
- Advisors: Dr. Oswald J. Schmitz, Dr. Marlyse C. Duguid
- Relevant Coursework: *Regression Modeling for Environmental Data, Forest Dynamics, Natural Science Research Methods, Data Exploration and Analysis, Soil Science* honors student

**B.S. Environmental Science, Biology Minor***Wheaton College*Aug 2018—Dec 2020  
Wheaton, IL**Student, Sustainability Program***Arizona State University*Aug 2016—July 2018  
Phoenix, AZ

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**AWARDS & GRANTS (\$78,800 total)**

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| • Dean's Scholarship   | \$2,300           |
| • NSF Graduate Research Fellowships Program 2023                       | Honorable Mention |
| • Environmental Professionals Organization of CT (EPOC)                | \$2,500           |
| • Rocky Mountain Biological Laboratory Travel Grant                    | \$2,800           |
| • Yale Master's Student Travel Award                                   | \$500             |
| • Yale Summer Fellowship   | \$1,500           |
| • Yale Institute for Biospheric Studies                                | \$3,000           |
| • David T. Schiff Fund for Wildlife, Habitat and Biodiversity Research | \$6,000           |
| • Yale Forest Funds  | \$5,000           |
| • Big Y Academic Merit Scholarship                                     | \$2,000           |
| • NSF Graduate Research Fellowships Program 2021                       | Honorable Mention |
| • Yale School of the Environment Merit Scholarship                     | \$20,000          |
| • REU Morton Arboretum Program Stipend                                 | \$6,000           |
| • Wheaton College Black Hills Science Station                          | \$3,500           |
| • Wheaton College Presidential Leadership Award                        | \$20,000          |
| • ASU Walton Foundation Sustainability Scholarship                     | \$6,000           |

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**PUBLICATIONS***Functional traits of predators and decomposer prey determine context dependency in trophic control over ecosystems*JR Lienau, OJ Schmitz <https://doi.org/10.1111/1365-2656.14091>*Evergreen gymnosperms tree abundance drives ground beetle density and community composition in US eastern temperate forests*JR Lienau, RW Buchkowski, MG Midgley <https://doi.org/10.1016/j.pedobi.2024.150930>

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**PRESENTATIONS**

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| <b>Presentation:</b> EGU Oral Session, <i>Ground beetle trophic interactions alter available nitrogen in forest soils</i>                | Aug 2023   |
| <b>Presentation:</b> ESA Poster Session, <i>Ground beetle trophic interactions alter available nitrogen in forest soils</i>              | Aug 2023   |
| <b>Presentation:</b> YSE Research Day, <i>Ground beetle trophic interactions alter available nitrogen in forest soils</i>                | April 2023 |
| <b>Presentation:</b> ESA Organized Oral Session, <i>Tree traits predict the diversity of soil organisms across 100 year monocultures</i> | Aug 2022   |
| <b>Presentation:</b> <i>Environmental Science Careers for NSLC youth at Yale</i>   | July 2022  |
| <b>Presentation:</b> <i>Environmental Science Cafe for New Haven high schools</i>  | Apr 2022   |
| <b>Presentation:</b> <i>CT Entomological Society</i>   | Mar 2022   |
| <b>Presentation:</b> ESA Ecology Society of America <i>Poster Presentation</i>   | Aug 2021   |
| <b>Presentation:</b> Wheaton College <i>Talk Networking for Science Careers</i>  | Aug 2021   |
| <b>Presentation:</b> Morton Arboretum Science Symposium <i>Effects of forest type on ground beetle density and diversity</i>             | Aug 2020   |
| <b>Panelist:</b> <i>Environmental Science Careers at Wheaton College</i>   | Dec 2020   |

## TEACHING

### Teaching Fellow

Sept 2021—Present

*Yale College*

- Spring 2024 ENV 709 Soil Science
- Fall 2023 Fall 2021 EVST 234L Field Environment and Sustainability.
- Spring 2023 Yale Analytical and Stable Isotope Center, TF
- Spring 2023 EE&B 125L History of Life
- Fall 2022 EVST 234L Field Environment and Sustainability
- Spring 2022 E&EB 223L Diversity of Life, instructed 66 students in two lab sections
- Fall 2021 EVST 234L Field Environment and Sustainability. Led discussion groups and field exercises, drove the shuttle, and provided feedback on lab reports

### National Leadership Conference

Aug 2019—May 2020

*Yale Myers Forest*

Eastford, CT

- Lectured on key ecological concepts in forest ecology and led field activities for 200+ highschool students

## MENTORING EXPERIENCE

### Undergraduate

- E. Horgen (Yale University)
- C. Twyman (Yale University)
- M. Torres (Yale University)
- L. Flores\* (Elmhurst University)

*\*peer mentor*

## RESEARCH EXPERIENCE

### Master's Thesis

*Yale School of the Environment*

Aug 2021—Present

- Developed a research proposal and fundraised \$17,000 in grants to conduct research on soil food webs in eastern temperate forests. Designed and conducted two experiments at Yale Myers Forest to answer my research questions: *How do ground beetles contribute to nitrogen cycling in eastern temperate forests?*

### Research Education Extension Fellow

Jan 2021—Aug 2022

*Morton Arboretum*

Lisle, IL

- Summer of 2021 ran an experiment at the Morton Arboretum in 18 century old mono-stand plots to assess soil macroinvertebrate communities by tree type and soil properties. Presented research at Ecology Society of America and prepared a manuscript for publication *Tree traits predict the abundance and diversity of soil organisms across century-old monocultures*
- Generated hypotheses & leveraged datasets in R software from National Ecological Observatory Network's data on ground beetles to create a new model for beetle community composition by forest type & prepared a manuscript for publication *Evergreen abundance drives ground beetle diversity and density in eastern temperate forests*

### NSF Research Education for Undergraduates (REU)

June 2020—Aug 2020

*Morton Arboretum*

Lisle, IL & Remote

- NSF Funded research with the Soil Ecology Lab at the Morton Arboretum in Lisle, Illinois. Adapted to a virtual project that explored differences in forest types and inorganic nitrogen effects on ground beetle density and diversity. Utilized the National Ecological Observatory Network's ground beetle data in R. Designed and ran an analogous experiment on my family's small farm in the PNW. Engaged in the scientific community. Developed an R-based project, research questions, experimental design, ground beetle collection, ground beetle processing, and presented research Mentored by Dr. Meghan Midgley and Dr. Robert Buchkowski

### Student Researcher

May 2019—July 2019

*Wheaton College Science Station*

Black Hills, SD

- Red Wing Blackbird study with Dr. Kenneth Peterson from Bethel College collected, analyzed, and interpreted data on the behavior of Red Wing Blackbirds using Excel

## PROFESSIONAL DEVELOPMENT

### Specialized Research Assistant

Oct 2021—Aug 2022

*Schmitz Lab*

New Haven, CT

- Worked in a team of four, conducted literature reviews for models, provided expertise for soil analysis including soil CN Isotope analyzer, soil water holding capacity, soil pH, and bulk density

### Regenerative Agriculture Intern

Oct 2021—Aug 2022

- Develop a soil policy recommendation for the state of Connecticut, demonstrated leadership by organizing a team, meeting with stakeholders, and creating a literature review

#### INTERESTS & SYSTEMS

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|---|---|
| • Statistical Analysis: Advanced RStudio, JMP, ArcGIS, Aloha Hazard Modeling & Data Visualization | • Environmental & Biology Technical Skills <ul style="list-style-type: none"><li>◦ Air &amp; Water Quality Instruments</li><li>◦ Ecology Research &amp; Grant Writing</li></ul> |
| • Microsoft Office 365: Excel, Word, & PowerPoint   | • Permaculture Design & Plant and Insect ID   |