Hildegard Tollefsen

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EDUCATION

University of South Carolina — **Columbia, SC**
B.S. in Environmental Science, advisor Dean Alexa — 2021-2025

- GPA: 3.748/4.0

RESEARCH & FIELDWORK

Macroecology & Disease: Dallas Lab

Undergraduate Research Assistant

University of South Carolina — Columbia, SC
September 2022 – May 2025

- Collaborated in a lab specializing in population ecology, community ecology, and disease ecology, focusing on the red flour beetle (Tribolium castaneum) system.
- Assisted with various lab tasks including counting beetle stocks, prepping materials, maintaining the lab, and conducting data entry for ongoing experiments.
- Contributed to experiments on habitat quality and beetle dispersion, helping collect and analyze data on environmental influences on beetle behavior and survival.
- Designed and implemented an independent research project on **disease ecology**, using fungal pathogens to study their impact on beetle populations under varying habitat conditions.
- Developed research protocols, formulated hypotheses, and conducted experiments examining variables such as time to infection, time to death, density prevalence, fungal growth, and dose-response effects.
- Secured a **Magellan Research Fund grant** to support the independent project, demonstrating initiative and proficiency in grant writing and project design.
- Analyzed experimental data, contributing to a deeper understanding of pathogen-host interactions and the role of environmental factors in disease transmission among insect populations.

PUBLICATIONS & PRESENTATIONS

- Dallas, T., & Tollefsen, H. *Age-dependent effects of pathogen exposure and infection in a fungal pathogen*. Manuscript in preparation.
- Presented our sustainable design proposal with my team for the international SWANA sustainable design competition
- Presented independent lab research on disease ecology at USC, in April 2025.

OUTREACH

Volunteer | Carolina Wildlife Shelter
May 2018 - Aug 2019 | Columbia SC

- Assisted in caring for and rehabilitating injured wildlife, providing hands-on support and public education about local species and conservation efforts.

Eric LoPresti Lab | University of South Carolina
Artistic Collaborator | Aug 2024 - Present

- Creating detailed illustrations of native moth species for research and outreach purposes.

SWANA Sustainable Design Competition | Sustainable Design Project
University of South Carolina | March-2025

- Participated in a team-based sustainability project for the National SWANA Sustainable Design competition through coursework with Thomas Syfert and Larry Cook, Director of the Sustainability Program at UofSC.

- Researched and proposed practical solutions to real-world solid waste and environmental management challenges; team awarded third place nationally.

Campus Orchestra | University of South Carolina
Member | Aug 2021 - Dec 2022

- Played cello in ensemble performances, contributing to teamwork and public concerts.

Moksha Bollywood Fusion Dance Team | University of South Carolina
Competitive Dancer | Aug 2023 - Present

- Represented the university in competitions, showcasing choreography and teamwork.

RELATED COURSEWORK & CERTIFICATIONS

- **Entomology & Ecology**
  Insect Ecology (BIOL 599) – insect-plant interactions, sampling, lab and fieldwork
  Parasitology (BIOL 531) – host-parasite life cycles, specimen ID, microscopy

Introduction to Entomology – Alison Certificate
Pest and Disease Management – Coursera Certificate (University of Illinois)

- **Quantitative & Technical Skills**
  Statistical Methods (SATS 515) – regression, ANOVA, experimental design
  Scientific Application Programming (CSCE 206) – Python/C for simulations, data analysis

- **Environmental Applications**
  Intro to Environmental Engineering (ECIV 350) – water treatment, risk assessment, pollution dynamics

HONORS & AWARDS

Presidents List - Fall 2021
Dean's List - Spring 2021 - Fall 2024.
LIFE Scholarship -2021-2025
Magellan Scholar Award - 2023-2024
3rd Place National SWANA Sustainable Design Competition - 2025

SKILLS & MISCELLANEOUS

Laboratory & Field Techniques

- Insect handling and behavioral observation (e.g., *Tribolium castaneum*)
- Pathogen exposure protocols using fungal agents
- Dissection, microscopy, and specimen preparation
- Field sampling methods for insects and ecological data
- Habitat manipulation experiments and population surveys

Research & Experimental Design

- Hypothesis formulation and experimental setup

- Independent research project design and execution
- Grant writing (Magellan Scholar Award recipient)
- Data collection, cleaning, and management protocols
- Dose-response modeling and host-pathogen interaction studies

Data Analysis & Programming

- **R** – statistical modeling, data visualization, regression, ANOVA
- **Excel** – data entry, descriptive statistics, figures
- **Python / C** – basic simulations and scientific computing (via CSCE 206)
- Familiar with statistical packages and reproducible research workflows

Environmental Science & Engineering

- Knowledge of water treatment processes and pollution dynamics (ECIV 350)
- Environmental risk assessment and sustainability design practices
- Applied knowledge of parasitology and pest/disease management systems

Communication & Collaboration

- Scientific illustration for outreach and publications (LoPresti Lab)
- Public speaking and academic presentations (e.g., SWANA competition, USC research symposium)
- Team collaboration on interdisciplinary sustainability and design projects
- Experience in science communication to public audiences (Carolina Wildlife Shelter)

Languages

- English – Native

- Latin – Advanced reading proficiency
- Spanish – Beginner