

Samantha Gene Radermacher

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Education

University of Missouri

M.S. in Plant, Insect, and Microbial Sciences

Expected Graduation: 08/2024

GPA: 3.92/4.00

University of Minnesota

B.S. in Environmental Sciences, Policy, and Management

Graduated: 05/2017

GPA: 3.40/4.00

Relevant Experience

Graduate Research Assistant

University of Missouri - USDA: ARS

08/2022 – Present

Columbia, MO

Thesis Topics: quantitative genetics of soybean, seed composition traits, genome-wide association study, nested association population

- Study applied quantitative genetics, gene discovery, and germplasm development of seed composition traits in soybean (*Glycine max*).
- Partake in multi-location field trails; select progeny for advancement, clean and package seed, mechanical planting, and manual harvesting to obtain high-quality data for statistical analysis and population advancement.
- Perform statistical analysis using various software including R, Excel, JMP, SAS and more to interpret results for research and/or publication.
- Isolate and normalize high-quality DNA from leaf tissue and seed samples for subsequent genotyping and analysis of genetic architecture.
- Train and oversee undergraduate students so that they may work independently to package seed and collect phenotypic measurements via Near-Infrared Spectroscopy (NIRS).

Independent Contractor

Missouri Soybean Association

01/2023- Present

Columbia, MO

- Provided subject matter expertise to Missouri Soybean Association to assist with the evaluation of the QSorter Explorer, a high-throughput phenotyping instrument equipped with a 2D/3D camera and NIRS.
- Determined the accuracy of several calibrations available via the QSorter Explorer by designing experiments, sourcing materials, and analyzing data.
- Produced written reports, including accuracy statements, to be used in advertisement materials provided to prospective clients.

Graduate Teaching Assistant

University of Missouri - Introduction to Plant Breeding

09/2023 – 12/2023

Columbia, MO

- Collaborated seamlessly with co-teaching assistant to create slides, teach lectures, and grade coursework, providing students with consistent and prompt feedback.
- Taught lectures as needed on relevant topics such as polyploidy, designing a plant breeding program, germplasm collections, as well as biotic and abiotic stressors.

- Developed slides to complement the course textbook and promoted student understanding by presenting information to cater to a variety of learning styles.

Ornamental Horticulturalist

05/2020 – 06/2022

Countryside Gardens LLC

Delano, MN

- Actively participated in maintaining a large ornamental plant breeding operation by dividing bare-root stock, taking inventory, maintaining field manifests, phenotyping, maintaining website images and descriptions, posting to social media, and making recommendations for seedling stock selection.
- Skilled in greenhouse work, consistently maintained hundreds of healthy and vigorous plants under greenhouse conditions through precise watering, pruning, fertilizing, and pest management, maintaining their value as an asset to the company.
- Audited chemical and hazardous items on the worksite, reviewed safety data sheets (SDS), and ensured all materials were in appropriate secondary containment.
- Catered to individual needs of over 50 private clients by providing highly detailed and skilled gardening services.

Scientist 2

08/2017 – 04/2020

Student Laboratory Technician

09/2014 - 08/2017

University of Minnesota Veterinary Diagnostic Lab - Molecular Diagnostics

St. Paul, MN

- Wrote and reviewed standard operating procedures (SOPs) for technical, multi-step molecular laboratory procedures to maintain integrity of laboratory procedures across all personnel.
- Maintained quality control records of all assays performed in the laboratory to ensure assays were falling within acceptable range, ensuring continued certification and funding of the laboratory.
- Extracted and isolated high-quality DNA, often hundreds of samples daily for subsequent PCR protocol.
- Developed and validated clinical assays and workflows to improve service while conserving resources, resulting in saving tens of thousands of dollars.
- Performed ongoing evaluation of workplace procedures, documents, and results. Documented all non-conforming incidents found during review.
- Provided accurate and timely clinical testing services to clients by reporting results in LIMS.

Undergraduate Teaching Assistant

09/2016 – 05/2017

University of Minnesota - Introduction to Soil Science

St. Paul, MN

- Educated students on topics pertaining to soil science in a laboratory setting, explored foundational concepts using applied experiments.
- Collected and utilized student feedback to improve existing coursework by editing laboratory exercises and creating modern graphics, resulting in improved student engagement.

Undergraduate Research Assistant

08/2015 – 09/2015

University of Minnesota - Dept. Forest Resources

St. Paul, MN

- Surveyed vegetative communities of 20 unique sites located at the SPRUCE (Spruce and Peatland Response Under Changing Environments) experimental research station,

to determine impact of temperature and carbon dioxide on Northern peatland plant communities.

- Collected and analyzed data using Microsoft Excel to identify meaningful patterns and relationships between climatic conditions and ecosystem composition.

Professional Development & Community Outreach

Mentoring with Mizzou

01/2023-Present

University of Missouri - Office of the Provost

Columbia, MO

- Participating in research-based, culturally informed mentorship training to improve my capacity and tools for mentoring young colleagues or student workers by addressing equity and inclusion, ethics, work-life balance, communication skills, and promote independence.

Graduate Student Association Committee Member

01/2023-12/2023

University of Missouri

- Assisted in fostering community among plant science graduate students by hosting bi-annual dinners and creating comprehensive resources for students.

Hiring Committee Graduate Student Representative

10/2022-04/2023

University of Missouri

- Assisted in filling critical position at the Fischer Delta Research Education and Extension Center by reviewing applications, interviewing finalists, and providing recommendations to the division of plant sciences.

Volunteer Judge

03/2023

Columbia Young Scientists Expo

- Judged school-aged students poster presentation for science fair.

Volunteer Equine Handler

03/2023-06/2023

Cedar Creek Therapeutic Riding Center

- Contributed to a safe, healing environment by handling horses and interacting with clients.

Publications, Presentations & Conferences

Poster Presentation - Soybean Breeders Workshop

02/2023

Conference - American Society of Plant Breeders: Midwest Meeting

04/2023

Abstract Talk & Poster Presentation - MU Plant Symposium

03/2024

Honors and Awards

Division of Plant Sciences Graduate Student Travel Grant: \$500

03/2023