



Maria Rottersman

she/they

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OVERVIEW

I am a current graduate student interested in biotechnological and agricultural applications in health, sustainability, and accessibility. My research of the relationships between wheat proteins and celiac disease exemplifies my passion for interdisciplinary problem solving. I love discussing research with other scientists and more general audiences, especially when I can translate scientific applications to those who will benefit from them most. I am interested in a career with a focal point in science communication at the nexus of agricultural and food sciences.

EDUCATION

PhD Candidate in Plant Biology <i>University of California, Davis</i> Dubcovsky Lab, Department of Plant Sciences GPA: 3.91	2022-2027 (expected)
Bachelor of Science, Plant Biology <i>University of Washington</i> Minor in Music GPA: 3.87, Cum Laude	2018-2021

PROFESSIONAL & RESEARCH EXPERIENCE

Graduate Student Researcher <i>Dubcovsky Lab, Department of Plant Sciences, University of California, Davis</i> <ul style="list-style-type: none">♦ I am designing and producing synthetic gluten genes to help understand the effects of wheat genetics on celiac disease pathology.♦ I pioneer and validate novel biotechnological methods of addressing celiac disease with clinical and quality tests.♦ I facilitate and contribute to the progress of my research team's wheat breeding objectives, for which we have publicly released germplasm.♦ I mentor 1 undergraduate student on an independent research project and 2 others on laboratory techniques.♦ I organize biweekly lab meetings where members discuss research progress and next steps.	2022-Present
Teaching Assistant <i>PLS 152, Plant Genetics, University of California, Davis</i> <ul style="list-style-type: none">♦ I prepared and gave a lecture on principles and challenges of polyploid crop species.♦ I graded and provided feedback on 85 students' assignments.♦ I hosted weekly office hours where I offered supplemental information for interested students.	2024
Lab Aide and Associate Scientist <i>Arzeda, Seattle, WA</i> <ul style="list-style-type: none">♦ I piloted a cell-free expression method and coauthored an application paper.♦ I became competent in programming and using liquid handling machines for minipreps, next generation sequencing, cloning, and transformation, processing 384 samples at a time.♦ I trained 4 incoming lab aides.♦ I periodically managed inventory and purchasing.♦ I collaborated on experimental design and troubleshooting within our queue.	2021-2022

Undergraduate and Postbaccalaureate Research Assistant

Strömberg Lab, University of Washington Department of Biology

- ♦ I independently coded and published an app which allows users to visualize much of the data I collected. App available at mgrottersman.shinyapps.io/tropsavgrassdispersal/
- ♦ My primary research investigated dispersal mechanisms of Serengeti and Cerrado grasses.
- ♦ After graduating, I managed specimens and curated reference slides for the lab.
- ♦ I organized social and academic lab events and presented at lab meetings.

POSTERS & PRESENTATIONS

- Rottersman, M. G.** (2025, February 18). *Using Wheat Genetics to Address the Barrier of Celiac Disease*. [Seminar]. Plant Biology Graduate Group Tuesday Seminar Series, Davis, CA, United States.
- Rottersman, M. G.**, Laudencia-Chingcuanco, D., Zhang, W., Zhang, X., Zhang, J., Burguener, G., Dubcovsky, J. (2025, January 11). *A Genetic Toolkit to Reduce Wheat Immunogenicity and the Incidence of Celiac Disease*. [Conference Presentation]. Plant and Animal Genome Conference, San Diego, CA, United States.
- Rottersman, M. G.**, Zhang, W., Vang, T., Carter, C., Hegarty, J., Zhang, X., Geller, M. G., Dubcovsky, J. (2024, September 5). *A deletion of wheat alpha-gliadins from chromosome 6D simultaneously eliminates major immunodominant celiac disease epitopes and improves breadmaking quality*. [Poster]. International Coeliac Disease Symposium, Sheffield, UK.
- Rottersman, M.G.**, Zhang, W., Zhang, J., Burguener, G., Vang, T., Hegarty, J., Zhang, Y., Geller, A., Gabay, G., Zhang, X., Tilly, M., Dubcovsky, J. (2024, January 14). *Alpha-gliadin gene cluster deletions do not compromise bread wheat quality in two genetic backgrounds*. [Poster]. WheatCAP 2024 Annual Meeting, San Diego, CA, United States.
- Rottersman, M.G.** (2023, September 18). *Quality Assessments of Reduced Immunogenicity Wheat*. [Conference Presentation]. Plant Biology Graduate Group Colloquium, Davis, CA, United States.
- Rottersman, M. G.**, Zhang, W., Vang, T., Zhang, J., Dubcovsky, J. (2023 January 15). *Testing Quality of Alpha-Gliadin Deletion Lines for Production of Reduced-Allergenicity Wheat*. [Poster]. WheatCAP 2023 Annual Meeting, San Diego, CA, United States.
- Carlson, M. M., **Rottersman, M. G.**, Bedoya, A. M., Brightly, W. H., Strömberg, C. A. E. (2021 July 21). *Habitat-Driven Evolution of Seed Dispersal Strategies in Onion Grasses*. [Poster]. Botany, Virtual.
- Rottersman, M. G.**, Brightly, W. H., Bianconi, M. E., Strömberg, C. A. E. (2021 June 6). *Variation in Grass Seed Dispersal in Tropical Savannas*. [Lightning talk]. Midcontinent Paleobotanical Colloquium, Virtual.
- Rottersman, M. G.**, Brightly, W. H., Bianconi, M. E., Strömberg, C. A. E. (2021 May 21). *Variation in Grass Seed Dispersal in Tropical Savannas*. [Lightning talk]. University of Washington Undergraduate Research Symposium, Virtual.

PUBLICATIONS

- Rottersman, M. G.**, Zhang, W., Zhang, J., Grigorean, G., Burguener, G., Carter, C., Vang, T., Hegarty, J., Zhang, X., Finnie, S., & Dubcovsky, J. (2025). Deletion of wheat alpha-gliadins from chromosome 6D improves gluten strength and reduces immunodominant celiac disease epitopes. *Theoretical and Applied Genetics*, 138(5), 94. <https://doi.org/10.1007/S00122-025-04882-3>
- Brightly, W. H., Bedoya, A. M., Carlson, M. M., **Rottersman, M. G.**, & Strömberg, C. A. E. (2024). Correlated evolution of dispersal traits and habitat preference in the melicgrasses. *American Journal of Botany*, 111(10), e16406. <https://doi.org/10.1002/AJB2.16406>
- Skyrud, W., Leinas, J., Young, B., Rhea, J., **Rottersman, M.**, Clark, K., Devkota, A., Steil, B. P., Eggstein, E., & Wang, G. (2022). Arzeda's next-generation protein design workflow powered by the myTXTL® cell-free protein expression system enables smarter and faster discovery.

FELLOWSHIPS AND AWARDS

Foundation for Food and Agriculture Research (FFAR) Rockey Fellowship For agricultural research and professional development \$65,000 annually for 3 years, with support from the Celiac Disease Foundation	2024-2027
Department of Plant Sciences Graduate Student Research Award For graduate students whose work improves agriculture or the environment in California \$20,000 annually for 3 years	2024-2027
Jastro Shields Graduate Research Award For outstanding graduate students in recognition of their potential to carry out research projects related to the mission of the College of Agricultural and Environmental Sciences \$3,000	2023
Dean's Distinguished Graduate Fellowship Awarded by Graduate Studies and the Plant Biology Graduate Group in recognition of outstanding academic record and promise of productive scholarship \$27,000	2022

SCIENTIFIC OUTREACH

Talking Biotech Podcast Guest https://share.transistor.fm/s/9419052e	2025
CJAD 800 Montreal Guest	2025
Raising Celiac Podcast Guest celiac.org/gluten-free-living/raising-celiac-podcast/	2025
My Ag Life Daily News Report Guest myaglife.com/podcast/episode-1085	2025
UC Davis Small Grains Field Day Speaker	2024, 2025
Master Gardeners of Placerville Guest Speaker	2025
From AI to Ag Symposium Organizer	2025
California Wheat Commission Newsletter Contributor drive.google.com/file/d/1daKHJLqhTw5k6q2G3IRj-t5kf7h76Hw8/view	2024
WheatCAP Student Workshop Organizer	2024
Wheat2School Nutrition Education Volunteer www.wheat2school.com/cirriculum-and-lesson-plans/lesson-12-wheat-breeding	2023
Midcontinent Paleobotanical Colloquium Organizer	2020, 2021

HONORS

Richard John Bostrom Outstanding Section Leader Award	2022
Awarded by the Husky Marching Band for exemplary work as a section leader	
University of Washington Purple and Gold Scholarship	2018-2021
For achievement and leadership in academics and extracurricular activities	
Kappa Kappa Psi AEA Scholarship	2019
For balancing academics with extra-curriculars and serving as a role model within a band program	

COMMUNITY SERVICE

Community Harvest of Davis Volunteer	2024-Present
United Auto Workers 4811 Orientation Facilitator	2023-Present
Davis Night Market Volunteer	2023-Present
Graduate Student Recruitment Committee Member	2025
Kappa Kappa Psi Honorary Band Service Fraternity	2019-2021
Husky Marching Band Squad & Section Leader	2018-2022
Loaves and Fishes Food Pantry Volunteer	2018-2019

TEAMWORK & CUSTOMER ENGAGEMENT

Drum Major Leadership Academy Instructional Staff	2020-2022
I educated and adjudicated young conductors via in-person clinics and webinars. I built trust with my students while delivering technical musical expertise.	
Joann Team Member	2020-2021
I worked to provide a positive customer experience amid changing management, guidelines, and regulations during the COVID-19 pandemic. I resolved conflicts by professionally handling customer concerns.	
Starbucks Barista	2019-2020
I thrived in a fast-paced work environment, developing my physical and social stamina while producing high-quality beverages for customers in Seattle, WA. My attention to detail and organizational skills made me a reliable “go-to” team member.	
Smith Walbridge Clinics Intern	2018
I oversaw student housing and mentored young drum majors. While prioritizing the demands of my role, I simultaneously achieved certifications in all technical categories.	