

Melissa A. Draves

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Education

University of Missouri: Columbia, MO

August 2022-present

Ph.D. in Plant, Insect, and Microbial Sciences

Advisors: Sherry Flint-Garcia and David Braun

Iowa State University: Ames, IA

May 2022

Bachelor of Science in Genetics- Minors in Agronomy and Biology

Magna Cum Laude

Research Experience

Graduate Research Assistant

August 2022-present

University of Missouri Department of Plant Science and Technology

Advisors: Sherry Flint-Garcia and David Braun

Characterizing maize heirlooms of the United States

Undergraduate Research Assistant

January 2020-May 2022

Iowa State Department of Genetics, Development, and Cell Biology

Advisor: Dior Kelley

Auxin response in maize seedling roots

Freshman Research Mentee

January 2019-May 2019

Iowa State Department of Genetics, Development, and Cell Biology

Advisor: Tom Peterson

Transposon identification in maize

Employment

Laboratory Technician

May 2022-August 2022

Iowa State Department of Genetics, Development, and Cell Biology

Supervisor: Dior Kelley

Wyffels Hybrids: Geneseo, IL

Research and Development Intern

May 2021-August 2021

Supervisor: Shane Meis

Advanced Agrilytics and Ag Ingenuity Partners: Champaign, IL

May 2020-August 2020

Precision Agronomy Intern

Supervisor: AJ Woodyard

University of Wisconsin-Madison: Madison, WI

June 2019-August 2019

Field Corn Breeding Research Assistant

Supervisor: Marina Borsecnik

Mentor: Bridget McFarland

Teaching and Mentorship

Teaching Assistant

August 2023-December 2023

University of Missouri Division of Plant Science and Technology

Plant Breeding and Genetics (PLNT_SCI 3225)

Instructor: Andrew Scaboo

Responsible for all grading including student presentation feedback. Led five lecture sessions including polyploidy in plants, germplasm maintenance, breeding objectives, guest lectures, and student presentations.

Genetics Major Peer Mentor

August 2019-May 2021

Iowa State University Department of Genetics, Development, and Cell Biology

Instructor and Advisor: Lois Girton

Responsible for mentoring a group of ~10 students per year during their first semester in the Genetics program. Assisted in classroom activities and grading for the Genetics major introductory course.

Service

Maize Genetics Meeting Steering Committee

February 2024-present

Maize Genetics Meeting

Currently serving as the graduate student representative for the committee that will plan the 2025 Maize Meeting in St. Louis, MO.

Graduate Student Association

January 2023-present

University of Missouri Division of Plant Science and Technology

Currently serving on the graduate student association to advocate for graduate students within my department and foster a welcoming and supportive environment.

MU Plant Research Symposium Committee

October 2022-March 2023

University of Missouri Division of Plant Science and Technology

Served as co-chair of a 7-person committee that worked to organize a Corteva sponsored symposium with 150 attendees and 5 speakers.

Committee on Diversity, Equity, and Inclusion

October 2021-July 2022

Iowa State University Department of Genetics, Development, and Cell Biology

Provided insight as an undergraduate student on the campaigns and efforts of the GDCB diversity, equity, and inclusion committee.

Science-Bound

October 2021-June 2022

Kelley Lab

Assisted in facilitating science related activities relevant to current research in hormone response in plants for 20 local high school students on a semester basis.

Publications and Preprints

2024

Draves, M.A., Traylor, Z.B., Salazar-Vidal, M.N., Oliver, S.L., Flint-Garcia, S. (2024, in preparation). Field Preparation and Planting Corn (*Zea mays*). Cold Spring Harbor Protocols.

2023

Dash, L., McReynolds, M.R., **Draves, M.A.**, Khangura, R.S., Muench, R.L., Khor, J., Callwood, J.B., Cowling, C.L., Mejia, L., Lang, M.G., Dilkes, B.P., Walley, J.W., Kelley, D.R. (2023, submitted). The Auxin Response Factor ARF27 is required for maize root morphogenesis. PNAS. Biorxiv: <https://doi.org/10.1101/2023.08.15.553439>.

Cowling, C.L., Homayouni, A., Callwood, J.B., McReynolds, M.R., Khor, J., Ke, H., **Draves, M.A.**, Dehesh, K., Walley, J.W., Strader, L.C., Kelley, D.R. (2023, submitted). ZmPILS6 is an auxin efflux carrier required for maize root morphogenesis. Biorxiv: <https://doi.org/10.1101/2023.08.01.551510>.

2022

Draves, M.A. and Muench, R., Lang M.G., Kelley, D.R. (2022). Maize seedling growth and hormone response assays using the rolled towel method. Current Protocols. doi: <https://doi.org/10.1002/cpz1.562>.

McReynolds, M.R., Dash, L., Montes, C., **Draves, M.A.**, Lang., M., Walley, J.W., Kelley, D.R. (2022). Temporal and spatial auxin responsive networks in maize primary roots. Quantitative Plant Biology. 3, E21. <https://doi.org/10.1017/qpb.2022.17>

Presentations

MU Plant Research Symposium: Columbia, MO March 2024
Poster presentation and lightning talk

Maize Genetics Meeting: Raleigh, NC February 2024
Poster presentation

Field Outreach Day: Columbia, MO August 2022, 2023
Demonstration plot outreach presentation

Career Exploration Day: Columbia, MO September 2022, 2023
Outreach presentation

American Society of Plant Biologists-Early Career Plant Scientists Section March 2023
Virtual panel discussion

Interdisciplinary Plant Group Symposium: Columbia, MO May 2023
Poster presentation

Maize Genetics Meeting: St. Louis, MO March 2023
Poster presentation

Iowa State Admitted Students Day: Ames, IA May 2022
Panel discussion

Source Symposium: Ames, IA April 2022
Record and poster presentation

Stupka Symposium: Ames, IA April 2022
Poster presentation

Maize Genetics Meeting: St. Louis, MO March 2022
Poster presentation

Research in the Capitol: Des Moines, IA February 2022
Poster presentation

Honors and Awards

Life Sciences Fellowship August 2022-present
Genetics, Development, and Cell Biology Departmental Award May 2022

- Awarded for outstanding undergraduate research and extraordinary contributions to the GDCB DEI committee.

Award for Competitive Excellence
Iowa State University Dean's List
Jere Wise Scholarship for Agriculture
Kylie and Marie Power Scholarship in the Plant Sciences

August 2018-May 2022
May 2019-May 2020, May 2021-May 2022
August 2020
August 2019