

JOSEPH DETEMPLE

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EDUCATION

Iowa State University Ph.D., Interdepartmental Genetics and Genomics.	<i>August 2022 - now</i> GPA: 3.88
Brigham Young University Bachelor of Science, Biology.	<i>August 2018 - April 2022</i> GPA: 3.85

RESEARCH EXPERIENCE

Iowa State University *August 2022 - present*
Advisor: Jianming Yu
My research focuses on the incorporation of genetic information within ecophysiological crop models. This has particular application in understanding the dynamics of the flowering time gene network in maize, and how natural genetic variation can be used to understand and predict growth and development.

Brigham Young University *March 2019 - April 2022*
Advisor: Clinton J. Whipple
Grew and maintained an interspecies F2 population between *G. capitata* and *G. yorkii*. Collected tissue samples, developmental timepoints, and floral trait measurements from F2 population. Performed QTL analysis of floral traits. Conducted PCA and LDA analyses from landmark data to quantify differences in overall floral shape between *G. capitata* and *G. yorkii*.

Michigan State University *Summer 2021*
Advisor: Dan Chitwood
Worked on project to identify domatia growing on leaves of various *Vitis* species. Contributed to training dataset for a machine-learning algorithm to automatically identify domatia from leaf images.

PUBLICATIONS

JM DeTemple, DH Chitwood, V Mosquera, CJ Whipple, QTL analysis of divergent floral morphology traits between *Gilia yorkii* and *G. capitata*. *G3 Genes | Genomes | Genetics*, 2024, jkae106, <https://doi.org/10.1093/g3journal/jkae106>

DE Jarvis, PJ Maughan, J DeTemple, V Mosquera, Z Li, MS Barker, LA Johnson, CJ Whipple, Chromosome-Scale Genome Assembly of *Gilia yorkii* Enables Genetic Mapping of Floral Traits in an Interspecies Cross. *Genome Biology and Evolution*, Volume 14, Issue 3, March 2022, evac017, <https://doi.org/10.1093/gbe/evac017>

TECHNICAL SKILLS

Computational R, Python, SQL, HPC systems
Laboratory DNA/RNA extraction, Bacterial transformation, Plant tissue dissection

AWARDS/GRANTS

FFAR Fellowship **Spring 2024 - Spring 2027**
\$48,750/year fellowship for three years, with PepsiCo Agriculture as a non-academic sponsor.

AG2PI Student Conference Travel Award **Jan 2024**
\$1500 award towards travel in order to present research findings at Corn Breeding Research and Maize Meeting 2024.

Undergraduate Research Fellowship **May 2020**
\$1500 grant towards optimizing a novel EMS mutagenesis screen in *Gilia yorkii*.

College Undergraduate Research Award **Dec 2019**
\$1500 scholarship + \$1500 grant for running and interpreting a QTL analysis on an interspecies F2 population from *Gilia yorkii* and *G. capitata*.

PRESENTATIONS

Incorporating gene network information into the prediction of maize flowering time. Maize Meeting 2024. J DeTemple, D Li, M Muszynski, X Li, and J Yu. (Poster)

CERIS-JGRA analysis of flowering time in CML277 and Tzi8. Maize Meeting 2023. J DeTemple, L Tibbs-Cortes, J Wei, X Li, and J Yu. (Poster)

QTL Analysis of Floral Traits in a Novel Interspecies Cross in Gilia. Utah Conference of Undergraduate Research 2022. J DeTemple and CJ Whipple. (Poster)

Floral Trait Differences between Gilia yorkii and G. capitata. Botany 2020 Virtual Conference. J DeTemple, V Mosquera, CJ Whipple (Poster)

Floral Traits Underlying Evolution in Gilia yorkii. Life Sciences Undergraduate Poster Competition 2020. J DeTemple, V Mosquera, CJ Whipple. (Poster)

LEADERSHIP AND SERVICE

Co-Chair, R.F. Baker Plant Breeding Symposium (2024-2025)

Field Day Co-Chair, R.F. Baker Plant Breeding Symposium (2023-2024)

Fundraising Committee Chair, Interdisciplinary Biological Sciences Symposium (2023-present)

Fundraising Committee Member, Interdisciplinary Biological Sciences Symposium (2022-2023)

Poster Judge, 2023 State Science Technology Fair of Iowa (2023)

Financial and membership clerk for religious organization (2019-2021)

Elementary school tutor at Wasatch Elementary (2018-2019)

REFERENCES

Jianming Yu—jmyu@iastate.edu

Clinton Whipple—whipple@byu.edu

Adam Vanous—adam.vanous@usda.gov

Leigh Johnson—leigh_johnson@byu.edu

Dan Chitwood—dhchitwood@gmail.com