

Alessandra (Ali) York, Ph.D.

amyork@wustl.edu

am.york@yahoo.com

(314) 795-2929

alessandrayork.weebly.com

Education

Ph.D., Genetics. University of Wisconsin-Madison, received August 2018.

Dissertation: Fine-mapping major domestication QTL on chromosome five in *Zea mays*.

Advisor: Dr. John F. Doebley.

Delta Certificate: Exploring the impacts of peer leader mentoring on first-year STEM students. Advisor: Dr. Jerry M. Whitmore.

M.S., Genetics. University of Wisconsin-Madison, received May 2016.

Thesis: The genetic architecture of traits for ear size in maize and its ancestor. Advisor: Dr. John F. Doebley.

B.S., Biological Sciences. University of Missouri-Columbia, received May 2013. (Minor: Religious Studies, Certificate: Multicultural Studies), Cum Laude, University Honors.

Thesis: Testing DirectRepeat Ds Transgenes in Corn for Chromosome Breakage for Use in Generating Minichromosomes". Advisor: Dr. James A. Birchler.

Experience in Academic Development

Education Specialist. *CIRCLE, Washington University in St. Louis, 2018-Present.*

Develop and implement faculty development programs focused around research on diversity, equity, and inclusion in the classroom, including a speaker series that is grant-funded by the American Association of Universities (AAU) Undergraduate STEM Education Initiative. Support and evaluate the implementation of evidence-based pedagogies in STEM courses in coordination with faculty instructors. Design and lead research studies on the implementations conducted in the classroom, specifically looking at inclusion in undergraduate introductory STEM courses.

Research Team Member, *University of Delaware, 2018-present.*

Collaborate with former colleagues at the University of Delaware and Boston University to implement peer training program developed at University of Wisconsin in STEM programs at University of Delaware. Offer support on the implementation and evaluation of the training program.

Research Team Member/Delta Internship, *WISCIENCE, UW-Madison, 2017-2018.*

Conducted research focusing on the benefits and skills students feel they gain from having peer mentors, as well as evaluating the peer mentor's training through IMPACT program as a whole. Implemented research using mixed method surveys and focus groups in the following spring. Devised and implemented the experiment, including our IRB protocol and focus group design using the teaching-as-research process. This work was supported by the HHMI Foundation for Success Program to help fund first year, first generation and underrepresented minority undergraduates succeed.

Involvement in Education Courses, Workshops and Learning Communities, UW-Madison, 2017-2018.

Participated in and contributed to the following courses and workshops focused on evidence-based teaching pedagogies, creating inclusive educational environments, strategies to implement in the classroom and the value of reflection to improve in the future. The following were offered through the Center for the Integration of Research, Teaching and Learning (CIRTL), CIRTL's UW-Madison's branch called the Delta Program for Research Teaching and Learning, and the Wisconsin Institute for Science Education and Community Engagement (WISCIENCE).

- Integrating Effective Teaching and Assessment Practices in Biology Lab Courses (CIRTL)
- Exploring Practices in the Classroom: A Learning Community for TAs (Delta)
- Exploring How Students Learn with Writing Across the Curriculum (Delta)
- Delta Internship and Learning Community (Delta)
- College Science Teaching (WISCIENCE)
- Training on Diversity and Inclusive Teaching (WISCIENCE/Delta)
- Facilitation Workshop (WISCIENCE/Delta)

Observer for Educational Research, WISCIENCE, UW-Madison. 2018.

Assisted Dr. Janet Bradshaw and her research team to try different classroom observation protocols to see which provides the most useful for their educational research project focused on implementing active learning strategies in the classroom. Trained to use and implement the observational protocol software in kinesiology classes, and provided her research team with feedback.

Related Experience in Science Education

Catalyst for Change Volunteer. *Washington University in St. Louis. 2018-Present.*

Catalyst for Change is a STEM outreach program for ninth grade girls in the local St. Louis area. Assisted coordinating and planning the events. Regularly participated in the volunteering activities at a local high school who we had formed a partnership with by leading a scientific demonstration and activity in ninth grade science courses. Analyzed survey data from the participants to help improve the event for future years.

Catalysts for Science Policy (CaSP) Outreach Coordinator. *UW-Madison. 2017-2018.*

Developed outreach events or coordinated with others on events with the greater Madison community. Collaborated with the program director at the Wisconsin Institute for Discovery to bring together a mini Science Policy symposium during the Wisconsin Science Festival, which included advertising to the campus community, developing moderating questions and running the entire event. Regularly ran an outreach booth at Saturday Science, a once-a-month outreach event for kids at the Wisconsin Institute for Discovery, which features an activity for kids to interact with.

HHMI Biointeractive "Popped Secret". *2014-Present.*

HHMI Biointeractive developed a film based on our lab's work called "Popped Secret: The Mysterious Origin of Corn". Served as a reviewer for various educational materials created for the film. Volunteered as a speaker for a question-and-answer session after HHMI showed the film at a local event called Wisconsin Science Expeditions, and also provided biological samples to view.

Expand Your Horizons Presenter. *UW-Madison. 2013, 2016, 2017.*

Developed and led three interactive lab sessions for middle school students interested in genetics. Expand Your Horizons (EYH) is a program at the University of Wisconsin-Madison that hosts over 400 middle school girls every November to learn about a variety of careers in STEM, and provides girls an opportunity to experience science in a hands-on environment and exposure to role models.

Madison Middle School Science Symposium Mentor. *WISCIENCE, UW-Madison, 2013-2016.*

Mentored three group of students from a local middle school that was interested in participating in the Middle School Science Symposium. Volunteered weekly for a semester at their school to develop and executing a science fair project with the student from start to finish. The project culminated in a presentation at the Middle School Science Symposium. This was in partner with an organization at UW-Madison called Adult Role Models in Science (ARMS), who works with the Madison Metropolitan School District.

Teaching Experience

Courses

University of Wisconsin-Madison

Co-Instructor, Int Sciences 100, Exploring Biology. 2017.

Instructor for Teaching Assistants. 2017.

Teaching assistant, Genetics 466. Fall 2014.

Other teaching appointments

University of Wisconsin-Madison

Guest Lecturer, Exploring Discipline-Based Leadership and Mentoring. Spring 2018.

Grader, Genetics 133. Spring 2018.

Grader, Genetics 467. Fall 2017.

Tutor, Genetics 466. Fall 2015.

College of Agriculture and Life Sciences Tutor, Genetics 466. Spring 2015.

Mentoring

Undergraduate Research Advisor and Mentor, CIRCLE, Washington University, 2018-Present.

Advised and mentored three undergraduates over the course of three years for credit-based courses and paid research experiences. Guided students on independent projects exploring the effects of social belonging or inclusion on students in undergraduate STEM classes. Provided support for presenting research in local symposiums, writing for publication, and applying to graduate programs.

Undergraduate Research Advisor and Mentor, Genetics Department, UW-Madison, 2014-2018.

Advised and mentored nine undergraduates over the course of four years for credit-based courses. Guided multiple students on independent projects investigating the genetic architecture or fine-mapping of maize domestication traits. Trained students in wet and dry lab approaches, as well as field work. Provided guidance to mentees on writing and presentations for lab meetings, local symposiums and international conferences.

Other Research Experience

Research Associate. *WISCENTE, UW-Madison. 2017-2018.*

Advisor: Dr. Jerry Whitmore, Jr.

Developed and managed a collaborative project examining the effect of peer leader mentorship in STEM courses. Established the IRB protocol for the project and necessary consent forms. Created project materials such as recruitment and focus groups scripts, and survey materials, and implemented them. Conducted analyses, both qualitative and quantitative, on data.

Dissertation work on maize domestication. *UW-Madison Laboratory of Genetics, 2013-2018.*

Advisor: Dr. John Doebley.

Managed thesis investigating the following work: Fine-map a domestication QTL for ear size on chromosome 5 of maize and fine-map a domestication QTL for shattering on chromosome 5 of maize. Mentored and supervised sixteen undergrads over four years, both as research technicians and student researchers.

Undergraduate thesis work examining artificial chromosomes in maize. *University of Missouri-Columbia Department of Biological Sciences. 2010-2013. Advisor: Dr. James Birchler.*

Managed a project in collaboration with other lab members studying double DS transgenes and chromosome breakage to create minichromosomes. Managed my own lab project studying translocation of BA chromosomes on maize. Assisted other graduate students and post docs on their current projects.

Research in quantitative genetics. *Washington University in St. Louis Department of Genetics. Summers 2010, 2011. Advisor: Dr. Barak Cohen.*

Developed a project with a grad student that dealt with her thesis on natural variation in yeast by studying the phenotypic effects of sporulation efficiency. Created a culminating presentation of my research and presented it in lab meetings. Assisted other graduate students and post docs on their current projects.

Publications

Journal Articles (peer-reviewed)

Chen Q, Yang CJ, **York AM**, Xue W, Daskalska LL, DeValk CA, Krueger KW, Lawton SB, Spiegelberg BG, Schnell JM, Neumeyer MA, Perry JS, Peterson AC, Bergstrom L, Yang L, Barber IC, Tian F, and JF Doebley. 2019. "TeoNAM: A Nested Association Mapping Population for Domestication and Agronomic Trait Analysis in Maize". *Genetics*. 213(3): 1065-1078.

Yang CJ, Samayoa LF, Bradbury PJ, Olukolu BA, Xue W, **York AM**, Tuholski MR, Wang W, Daskalska LL, Neumeyer MA, Sanchez-Gonzalez JJ, Romay MC, Glaubitz JC, Sun Q, Buckler ES, Holland JB, and JF Doebley. 2019. "The genetic architecture of teosinte catalyzed and constrained maize domestication". *Proceedings of the National Academy of Science*. 116(12): 5643-5652.

Guo L, Wang X, Zhao M, Huang C, Li C, Li, D, Yang, CJ, **York AM**, Xue W, Xu G, Liang Y, Chen Q, Doebley JF and F Tian. 2018. "Stepwise cis-Regulatory Changes in ZCN8 Contribute to Maize Flowering-Time Adaptation". *Current Biology*. 28(18): 3005-3015.

Wills DM, Fang Z, **York AM**, Holland JB and JF Doebley. 2017. "Defining the Role of the MADS-Box Gene, *Zea Agamous-like1*, a Target of Selection During Maize Domestication". *Journal of Heredity*. 109 (3): 333-338.

Manuscripts in preparation

York AM, Fink AM and RF Frey. “Gender inequity in individual participation within Physics and STEM courses”.

York AM, Crocker KL, Smith CJ, Butz A, Trimby CM, and JM Whitmore. “Exploring the Impacts of Peer Leader Mentoring on Freshman STEM Students”.

Abstracts and Presentations

York AM and Fink AM. “Sense of Belonging in Introductory Undergraduate STEM Courses”. National Conference for Advanced POGIL Practitioners— Washington University in St. Louis. June 24, 2019.

York AM and RF Frey. “Integrating Active Learning into Teaching”. Teaching Scholars Program— Washington University in St. Louis School of Medicine. April 23, 2019.

York AM. “Fine-mapping a major domestication QTL on chromosome five in *Zea mays*”. CIRT Network Exchange—Washington University in St. Louis. July 31, 2018.

York AM. “Exploring the Impact of Peer Mentoring on First-Year STEM Students”. CIRT Network Exchange—Washington University in St. Louis. July 30, 2018.

York AM. “Fine-mapping major domestication QTL on chromosome five in *Zea mays*”. Thesis Defense. July 23, 2018.

York AM, Crocker KL, and JM Whitmore. “Opportunities to utilize peer mentoring to address student psychosocial well-being”. Session. UW-Madison Teaching and Learning Symposium. May 17, 2018.

York AM, Crocker KL, Theisen CL, Butz A, Trimby CM and JM Whitmore. “Exploring the Impacts of Peer Leader Mentoring on the Psychosocial Well-Being of Freshman STEM Students”. Poster. UW-Madison Teaching and Learning Symposium. May 17, 2018.

York AM. “Fine-mapping a major domestication QTL on chromosome five in *Zea mays*”. UW-Madison Evolution Seminar Series. May 3, 2018.

York AM. “Finemapping a shattering QTL on chromosome 5 in maize and its ancestor”. UW Genetics Department Summer Colloquium Series. June 28, 2017.

York AM, DeValk CA, and JF Doebley. “Fine-mapping a major maize domestication QTL for ear size”. 59th Annual Maize Genetics Conference. St. Louis, MO. March 9-12, 2017.

York AM. “Characterizing the Genetic Architecture of Ear Size in Maize and its Ancestor”. UW Genetics Department Summer Colloquium Series. August 24, 2016.

York AM and JF Doebley “Fine-mapping a major maize domestication QTL for ear diameter”. International Conference for Quantitative Genetics. Madison, WI. June 12-17, 2016.

York AM and JF Doebley “Fine-mapping a major maize domestication QTL for ear diameter”. 58th Annual Maize Genetics Conference. Jacksonville, FL. March 17-20, 2016.

Torno AM, Albert PS, Krishnaswamy L, Zhao C and JA Birchler. "Testing Double Ds Transgenes in Maize for Chromosome Breakage in Use in Generating Minichromosomes". Missouri Life Sciences Week, April 15, 2013.

Torno AM, Albert PS, Krishnaswamy L, Zhao C and JA Birchler. "Testing Double Ds Transgenes in Maize for Chromosome Breakage in Use in Generating Minichromosomes". Spring Undergraduate Research and Creative Achievements Forum. April 23, 2013.

Torno AM. "Testing DirectRepeat Ds Transgenes in Corn for Chromosome Breakage for Use in Generating Minichromosomes". A&S Undergraduate Research Mentorship Program Luncheon. July 27, 2012.

Professional Service

Catalyst for Change Steering Committee. *Washington University in St. Louis. 2018-Present.*

Genetics Department Admissions Committee. *UW-Madison. 2017-2018.*

WISCIENCE Teaching Fellows Admissions Committee. *UW-Madison. 2017.*

Genetics Department Retreat Committee. *UW-Madison. 2015-2016.*

Awards and Honors

- WISCIENCE Scientific Teaching Fellow. 2017.
- International Conference for Quantitative Genetics Fellowship. 2016.
- Stone Travel Award Recipient. 2016.
- NSF Graduate Research Fellowship Program Honorable Mention. 2014.
- Departmental Honors in Biological Sciences. 2013.
- Life Sciences Undergraduate Research Opportunity Program. 2012-2013.
- A&S Undergraduate Research Mentorship Program. 2012.