Christopher O. Hernandez

chernandez@agcenter.lsu.edu
github.com/ch728
www.chrishdz.xyz

Basic Info

I'm a post-doctoral researcher working with the Louisiana State University rice breeding program at the intersection of quantitative genetics, data science, and applied plant breeding.

Education

2014–2019	**Ph.D. in Plant Breeding and Genetics** *Cornell University, Ithaca, NY* **Committee Members:** Michael Mazourek, Li Li, Jessica Rutkoski
2010–2014	**B.S. in Agronomy** *Iowa State University, Ames, IA* Summa Cum Laude
2010–2014	**B.S. in Genetics** *Iowa State University, Ames, IA* Summa Cum Laude

Research Experience

2019-Current	**Postdoctoral Researcher–LSU AgCenter** *Louisiana State University, Baton Rouge, LA; Cornell University, Ithaca, NY* Applied Rice Quantitative Genetics **Advisors:** Adam Famoso & Kelly Robbins
2014-2019	**Ph.D. student in Plant Breeding and Genetics** *Cornell University, Ithaca, NY* **Dissertation Title:** Genetics, Genomics, and Prediction of Winter Squash Fruit Quality. **Advisor:** Michael Mazourek
2013	**Plant Genome Research Program—REU Intern** *Boyce Thompson Institute, Ithaca, NY* **Advisor:** Eric Richards
2013	**Iowa State University Plant Transformation Facility—Undergrad Intern** *Iowa State University, Ames, IA* **Advisor:** Kan Wang
2012	**Iowa State University Borlaug Internship—ISU Borlaug Intern** *International Potato Center, Lima, Peru*

Presentations

2020	**A Practical Implementation of Genomic Selection for Louisiana Rice Variety Development** *Oral Presentation* Rice Technical Working Group, Orange Beach, AL
2018	**Towards Understanding and Predicting Fruit Quality in Winter Squash** *Keynote talk* Cucurbitaceae Conference, Davis, CA PDF
2017	**Squashnomics: leveraging genomics for a better butternut** *Oral Presentation* Department Student Presentation, Ithaca, NY
2016	**Building a Better Butternut: Understanding and Improving Fruit Quality Traits in Winter Squash** *Oral Presentation* Vegetable Breeding Institute, Ithaca, NY

Teaching

2018 | **PLBRG 7170 Quantitative Genetics in Plant Breeding—Teaching Assistant**
Cornell University Graded student homework, ran course site, and developed some lecture materials. **Instructor:** Kelly Robbins

2018 | **PLBRG 3250 Plant Genomic Approaches—Co-instructor**
Cornell University I developed curriculum, lectured, and led analysis pertaining to modern genomic approaches using nanopore sequencing as a teaching tool. **Instructor:** Michael Mazourek

2017 | **PLBRG 3250 Plant Genomic Approaches—Co-instructor**
Cornell University I developed a curriculum and taught lectures to teach the basic principles of next generation sequencing data analysis using the Galaxy web-based platform. **Instructor:** Michael Mazourek

2016 | **PLBRG 2252 Introduction to Plant Genetics—Teaching Assistant**
Cornell University Maintained course website and aided in grading. **Instructor:** Michael Mazourek

2014 | **GRASSHOPR Program—Co-instructor**
Cornell University co-taught a course on plant adaptations to elementary school children.

Technical Skills

PROGRAMMING & STATISTICS | R, Python, Shell, SQL, and some markup languages. Proficient in statistics, and with using statistical software (R, ASReml, BLUPF90, Echidna etc.)

DATA MANAGEMENT & WORKFLOWS | Git for code and small file management. Experience working on cloud-server platforms, high performance computing, and with containerization technologies like Docker. Able to setup and maintain servers for breeding database systems and applications.

LAB | Familiar with molecular biology techniques including DNA/RNA extraction, NGS library prep, and nanopore sequencing. Also have experience with HPLC sample preparation, mineral analysis, and carbohydrate analysis.

BREEDING | Field design and management, crossing, phenotypic selection, marker-assisted selection, and genomic selection. Can lift fifty pound sacks/bundles/crates and/or amorphous blobs.

Grants

2017 | **Schmittau-Novak Small Grants Program—Co-PI**
Partitioning transcriptome-wide variation and rootstock by scion interactions in reciprocal polyploid grafts ***$6,000*** **Collaborators**: Dustin Wilkerson (**PI**), Laura Dougherty (**Co-PI**)

Publications

IN-PREP | **Characterization of the USDA *Cucurbita pepo*, *Cucurbita moschata*, and *Cucurbita maxima* Collections**
Authors: Christopher O. Hernandez, Kyle E. LaPlant, Joanne Labate, and Michael Mazourek

2020 | **Genomic Prediction and Selection for Fruit Quality Traits in Winter Squash**
Authors: Christopher O. Hernandez, Lindsay Wyatt, and Michael Mazourek
10.1534/g3.120.401215

2020 | **Reconsidering Approaches to Selection in Winter Squash Improvement.**
Authors: Michael Mazourek, Christopher O. Hernandez, and Jack Fabrizio
10.1002/9781119717003.ch7

Awards

2021 | **G3 2020 Spotlight collection**
Genomic Prediction and Selection for Fruit Quality Traits in Winter Squash 2020 Spotlight collection of research and scholarship excellence published in the GSA journals

2014 | **SUNY Graduate Diversity Fellowship**
Cornell University

2012 | **Sui Tong Chan Fung Fund for the Promotion of Study and Research in Genetics**
Iowa State University

2010 | **Agronomy Academic Scholarship**
Iowa State University