




Christopher O. Hernandez

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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 scripting, SQL, and some markup languages including L^AT_EX, RMarkdown, HTML, and Groff. Proficient in statistics, and with using statistical software such as R, ASReml, BLUPF90, WOMBAT, and Echidna.
- 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.
- DATA
MANAGEMENT | Git for code and small file management. Experience working on cloud-server platforms, and with containerization technologies like Docker. Able to setup and maintain Linux servers, and breeding database systems like Breedbase.
- BREEDING | Field design and management, crossing, phenotypic selection, marker-assisted selection, and genomic selection. Can easily 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

- 2020 | **Genomic Prediction and Selection for Fruit Quality Traits in Winter Squash**
Authors: Christopher O. Hernandez, Lindsay Wyatt, and Michael Mazourek
- IN-PREP | **Multi-Species Metabolite and Transcriptome Analysis in Winter squash**
Authors: Christopher O. Hernandez, Lindsay Wyatt, Li Li, and Michael Mazourek

Awards

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| 2014 | SUNY Graduate Diversity Fellowship
<i>Cornell University</i> |
| 2012 | Sui Tong Chan Fung Fund for the Promotion of Study and Research in Genetics
<i>Iowa State University</i> |
| 2010 | Agronomy Academic Scholarship
<i>Iowa State University</i> |

Non-Academic Interests

I enjoy growing things (especially pumpkins), fishing, cycling, rock climbing, baking, mowing grass, playing with libre-not-gratis software, programming my own games, and probably many other things yet to be discovered.