KARL KUNZE

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CONTACT INFO

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🎓 EDUCATION

2017 | 2023

Cornell University, Gradudate School
PhD, Field of Plant Breeding and Genetics   📍 Ithaca, NY

Dissertation: "Genomic and Phenotypic Characterization of Breeding Barley for New York State"

2013 | 2017

Cornell University, College of Agriculture and Life Sciences
B.S. Plant Sciences Concentration in Plant Breeding and Genetics, minor in Buisness for the Life Sciences
📍 Ithaca, NY

🌾 RESEARCH PROJECTS

2017 | 2020

Measure components of weed competitive ability in organic naked barley variety trials by using field trait phenotypes and aerial imaging to measure barley vigor and growth over 4 trials and 2 years
Genome wide association studies of organic barley diversity panels across 13 location by year field locations throughout the Northern United Sates

Genetic by environmental analysis of winter naked barley variety trials across 8 environments throughout the Northern United States

Evaluation of dormancy and pre-harvest sprouting across a winter malting barley breeding population consisting of 450 lines over two location and two years. A total of 5 timepoint assays were conducted in 2020 and 8 timepoint assays conducted in 2021.

🌾 RESEARCH EXPERIENCE

💼 LEADERSHIP ACTIVITIES AND PROFESSIONAL SERVICES

Crop Science Society of America(CSSA) student member 2019 - present

National Association of Plant Breeders (NAPB) student member 2020- present

New York State Agriculture Society member 2017 - present

Cornell Plant Breeding and Genetics Graduate Student Association, Synapsis

Alumni of Alpha Gamma Rho, Professional and Social Agricultural Fraternity, Zeta Chapter

AWARDS AND GRANTS RECEIVED

2017 | 2023

Graduate student of USDA OREI grants program I and II "Developing Multi-use Naked Barley for Organic Systems"
NA   📍 NA

2020-2022

"Genetic Characterization of Germination Traits and Their Relationship to Preharvest Sprouting in Winter and Spring Barley"
American Malting Barley Association grant award of $11,500 for characterization of seed dormancy and malting quality of winter and spring barley populations
📍 NY & WI, USA

SKILLS

Highly proficient in operating and data collection of a plant breeding program including measurement field phenotypes, characterization of barley seed traits for malting barley selection and integration genomic data to make selection decisions

Highly experienced in processing, analysis, organization, and experimental design of field trials of a barley breeding program since 2017

Highly proficient in R statistical software and Excel. Moderate proficiency in Unix shell scripting and command line. Limited experience with Python

Highly experienced in aerial imaging. Conducted over 100 flights and is FAA part 107 certified since June 2019

Conducted micromalting analysis of 480 barley samples at the USDA cereal crop research unit facility Madison, WI to inform selection decisions for our winter malting barley breeding program.

August 2022

"Cornell Plant Breeding and Genetics Munger-Murphy Award"
An award given to a current cornell plant breeding student showcasing academic excellence and dedicated field research work

📍 Ithaca, NY

SELECTED PUBLICATIONS AND POSTERS

2014

Genetic and epigenetic signals are found predictive to the distribution of intra-individual divergence of alternative splicing.
Poster for 2013 International Conference of Genomics 📍 /Qingdao, China
Yu L, Chen B, Zhang Z.

2016

ESCRT-0 complex modulates Rbf mutant cell survival by regulating Rhomboid endosomal trafficking and EGFR signaling.
J Cell Sci. 2016 May 15;129(10):2075-84.
Sheng Z, **Yu L**, Zhang T, Pei X, Li X, Zhang Z and Du W.