

Shawn Jenkins

2700 S. 98TH ST. | Lincoln, NE 68520 | (402) 860-1126 | jenkins.shawn.douglas@gmail.com



Education

University of Nebraska-Lincoln

Ph.D., Agronomy and Horticulture - Plant Breeding and Genetics

Dissertation: *"Soybean Response to Water: Trait Identification and Prediction"*

Lincoln, NE

February 2020

South Dakota State University

M.Sc., Plant Science - Plant Breeding and Genetics

Thesis: *"Assessment of Hard Red Spring Wheat Genotypes for Germination in Sub-Optimal Temperatures"*

Brookings, SD

May 2014

South Dakota State University

B.Sc., Plant Science – Agronomy

Brookings, SD

May 2012

Professional Experience

Post-Doctoral Research Associate

March 2020 - Present

University of Nebraska-Lincoln (Lincoln, NE)

- Managed seed laboratory operations and field research activities for the soybean breeding and genetics program with approximately 35,000 yield plots and 75,000 early generation plots over thirteen Nebraska production environments along with winter nurseries in Chile and Puerto Rico
- Researched methods to improve the rate of genetic gain, crop genetic diversity, and response to water for application in soybean breeding and genetics programs
- Supervised and trained research technologists, graduate students, and undergraduate researchers in effective, efficient, and safe field plot research techniques and procedures

Research Technologist II

August 2016 – February 2020

University of Nebraska-Lincoln (Lincoln, NE)

- Planned, executed, and analyzed field trials, breeding nurseries, and disease nurseries for the soybean breeding program in thirteen Nebraska production environments along with winter nurseries in Chile and Puerto Rico
- Coordinated, analyzed, and summarized field trial results for a national soybean cooperative testing program conducted in twenty-two testing environments over seven states jointly evaluated by six public and three private soybean breeding institutions
- Spearheaded high throughput phenotyping efforts for a regional germplasm evaluation project
- Forecasted labor budget along with hiring, supervising, and mentoring over twenty student researchers annually from diverse educational, technical, and cultural backgrounds
- Negotiated land contracts and effectively communicated research needs with Nebraska producers

Graduate Research Assistant (Soybean Breeding and Genetics)

April 2016 – February 2020

University of Nebraska-Lincoln (Lincoln, NE)

- Directed the evaluation of two recombinant inbred line populations for water productivity with cross-functional collaborative contributions from engineering, statistics, and genomic scientists
- Processed, analyzed, and interpreted high dimensional phenomic, genomic, and environmental datasets including digital images, spectrometer readings, and next-generation sequencing outputs
- Identified and interpreted quantitative trait loci relative to soybean water productivity
- Developed predictive analytic models for soybean water productivity using phenomic, environmental, and genotypic information processed through machine learning algorithms
- Implemented novel techniques and algorithms developed within dissertation to advance regional soybean germplasm trials and iron deficiency chlorosis screening efforts
- Effectively communicated research findings to diverse audiences including research professionals, high school science educators, and Nebraska soybean producers

Field Research Associate

May 2014 - April 2016

Monsanto Company (Glyndon, MN)

- Heavily involved in population development, inbred line characterization, and hybrid evaluation procedures for Monsanto's early corn development program in the United States
- Jointly hired and supervised a temporary pollination crew of over forty individuals annually
- Led various breeding and pathology screening functions including pre-commercial inbred line evaluation lead, Goss's bacterial wilt screening lead, and nursery management lead
- Contributed to the Northern Plant Health Strategic Initiative Team which pioneered strategies to bolster Monsanto's disease resistance portfolio for the Northern United States and Canada
- Promoted to be the sole Pipeline Breeding Associate for Monsanto's early corn breeding efforts

Graduate Research Assistant (Spring Wheat Breeding and Genetics)

April 2012 - May 2014

South Dakota State University (Brookings, SD)

- Engaged in all spring wheat breeding program field, greenhouse, and laboratory operations
- Assisted breeder with line advancement decisions in South Dakota and New Zealand nurseries
- Administered the screening of elite hard red spring wheat genotypes for germination and vigor in sub-optimal temperatures using controlled environment growth chambers
- Developed an innovative digital imaging approach to quantify germination rate and seedling vigor

Harvest Technician

January - April 2012

Southern Seed Technology Ltd. (Leeston, Canterbury, New Zealand)

- Immersed in winter nursery plot maintenance, harvest, and shipping operations serving cereal and pulse crop breeding programs from the U.S.A., U.K., France, Germany, Denmark and Japan
- Managed plot maintenance and data collection logistics for SDSU's winter nursery material

Corn Trait Integration Intern

May - August 2011

Monsanto Company (Tea, SD)

- Engaged in planting, plot maintenance, and data collection of EPA regulated corn field trials
- Conducted pre-commercial green snap screening internship project and presented findings

Student Research Technician (Small Grains Pathology)

March 2009 - December 2011

South Dakota State University (Brookings, SD)

- Assisted in planting, inoculation, maintenance, and harvest of small grain field trials
- Isolated fungal and bacterial pathogens, prepared inoculum, and screened cereals for diseases

Plant Variety Releases

Soybean: U13-603120, U14-111010, U14-211226, U14-212231, U14-213255, U14-605217, U14-919098, U16-216354, U16-223333, U16-609052, U16-610243, U16-914101, U18-617265, UX2729-1-2-0094, UX2729-1-2-0102, U17-908039L, and U17-911050L

Skills**Programming / Computer Applications:** R, MATLAB, SAS, PRISM, QGIS, Orange3, R Shiny, Excel**Technical Short Coursework:** MATLAB and Plant Phenomics, Image Analysis with MATLAB, Machine Learning with MATLAB, Deep Learning with MATLAB, and MATLAB for Data Processing and Visualization**Technical Licenses:** Class A CDL, Pesticide Application License, Forklift Certification**Publications**

Yuan, W., Wijewardane, N., **Jenkins, S.**, Bai, G., Ge, Y., & Graef, G. (2019). Early Prediction of Soybean Traits through Color and Texture Features of Canopy RGB Imagery. Scientific reports, 9, 14089.

Bai, G., **Jenkins, S.**, Yuan, W., Graef, G., & Ge, Y. (2018). Field-based scoring of soybean iron deficiency chlorosis using RGB imaging and statistical learning. Frontiers in Plant Science, 9, 1002.