

Matthew Forest Colson

Contact Information

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533 Latham

Work Experience

Research Technician

University of Missouri

Northern Missouri Soybean Breeding Program (April 2016-Aug 2017)

- *Packaged for approximately 30,000 soybean research plots using automatic seed counters.
- *Assisted planting crossing block, research plots, increases and progeny rows using Almaco Sky-trip GPS, Almaco 4 row plot planters and John Deere tractors, as well as using surveyor's sight, flags, marking paint and a measuring wheel with hand tripping.
- *Assisted in maintaining research plots
- *Performed crosses
- *Performed tissue collection and plant labeling for a new Marker Assisted Selection project in Missouri and Puerto Rico
- *Assisted in bilingual communication (English/Spanish) with winter nursery staff
- *Harvested using Almaco Reel harvester, R1 Rotary, SPC40 and hand harvest and threshing for short yield plots, strip plots, progeny rows, increases and MAS early generation plots.
- *Assisted in seed conditioning using seed cleaning spiral for large quantities, as well as visual/manual examination and use of ARS GRIN and pedigree information for achieving very high purity planting seed.
- *Assisted in preparing tissue by lyophilization, grinding, and then subjecting to low-toxicity DNA extraction for approximately 9,000 individual tissue samples as part of the MAS project.
- *Worked with professional, diverse team following environmental, health and safety rules.
- *Actively participated in staff meetings
- *Attended research symposia and workshops
- *Traveled extensively for field work in varied weather conditions
- *Assisted driver in securing heavy farm equipment to trailer following MODOT regulations

Education

Virginia Tech

Ph.D student in CSES in the Bo Zhang Soybean Breeding lab (Aug 2017- present)

Iowa State University

Master's of Science (nonthesis)in Plant Breeding (Fall 2014-May 2016)

Key Courses

*Agronomy & Pathology – Familiarized with various Midwestern tillage, irrigation, pest, pathogen and weed control systems in row crops and research plots.

*Physiology – Explored the genetics of physiology, how it affects performance and the life cycle of cereals and legumes.

*Genetics – Reviewed applications of Mendelian genetics with regard to population sizes for selection goals, as well as effects of recombination and dominance on early generation trait diversity.

*Principles of Cultivar Development 1+2 – Rigorously reviewed variety releases and became familiarized with classical methods of performing plant breeding in pure line, hybrid, synthetic and clonal crops. Heavy focus was on field techniques and optimizing genetic gain with limited resources.

*Quantitative Breeding – Focus on statistical methods which improve genetic gain. Using simulated and publicly available research data, explorations with the RRBLUP and GAPIT packages for genomic selection, in addition to calculating ANOVA tables to extract the most valuable information from multi environment trials

*Molecular Breeding – focused on laboratory techniques for genotyping, Marker Assisted Selection, transformation and hybridization.

*Statistics – Focused on using R for procedures necessary to understand multienvironmental trials, hypothesis testing and analysis of variance, mostly.

*Creative Component- Independently wrote a 30 page research paper concerning breeding objectives and procedures in *Ricinus Communis* (castor bean), a monoecious crop with potentials similar to maize in hybrid crop development.

University of Iowa

Bachelor's of Science Biology May 2013

I entered into research with an undergraduate research experience with maize seedling physiology assisting with specimen dissection and PCR on already prepared CDNA, calling transcriptional status for various life cycle tissues. I also performed greenhouse and laboratory maintenance.

Other Skills

*High-Intermediate and continuing study in Brazilian Portuguese reading, writing and speaking

*I have experienced living 3 years in Brazil and briefly working in Puerto Rico and appreciate international assignments and diverse workplaces.

*Working ability, and continuing study in Latin American Spanish and French

- *Good familiarity with R statistical software and note taking in AGROBASE
- *Excellent familiarity with Microsoft Excel, Microsoft Word
- *Continuing study in working with data using R, Excel and SQL
- *Good working knowledge of Missouri Weed law and pesticide core manual
- *Familiarity with GRIN, soybase and MaizeGDB