# Terry Felderhoff

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**Major Accomplishments:**

- Delivering patent-pending chilling tolerance trait technology package to Corteva via material transfer agreement, currently testing hybrids between our germplasm and Corteva's lines
- Delivering sugarcane aphid tolerance marker to four different seed companies and two public breeding programs by establishing protocols and successful genotyping experiments
- Oversaw creation and utilization of striga resistance, staygreen, and tannin markers by Fanna Maina and Jacques Faye (graduate students) and Elfadil Bashir (post-doc)
- Managing pre-breeding program from 2017 to present, both summer and winter nursery, with an average of 1000 plots in each nursery
- Contributed to release of five sweet sorghum cultivars with introgressed anthracnose resistance

**Education:**

2016 Doctor of Philosophy in Genetics and Genomics
Advisor: Dr. Wilfred Vermerris, University of Florida, Gainesville, FL
Thesis: Genome-Enabled Improvement of Anthracnose Resistance and Sugar Yield in Sweet Sorghum

2011 Master of Science in Plant Breeding
Advisor: Dr. William Rooney, Texas A&M University, College Station, TX
Thesis: QTLs for Energy Related Traits in a Sweet X Grain RIL Sorghum Population

2009 Bachelor of Science in Horticulture
Texas A&M University, College Station, TX

**Employment:**

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| 2020-present | Sorghum Breeding & Genetics Research Assistant Professor, Kansas State University |
| 2018-2020 | Sorghum Breeding & Genetics Senior Researcher, Kansas State University |
| 2017-2018 | Sorghum Breeding & Genetics Assistant Scientist, Kansas State University |
| 2012-2016 | Sorghum Breeding & Genetics Graduate Student, University of Florida |
| 2004-2011 | Sorghum Breeding & Genetics Student/Graduate Student, Texas A&M University |

**Peer-reviewed Publications:**

Marla S, Felderhoff T, Hayes C, Perumal R, Wang X, Poland J, Morris G. Genomics and Phenomics Enabled Prebreeding Improved Early-Season Chilling Tolerance in Sorghum. In submission. 2022.

Muleta KT, Felderhoff T, Winans N, Walstead R, Charles JR, Armstrong JS, Mamidi S, Plott C, Vogel JP, Lemaux PG, Mockler TC. The recent evolutionary rescue of a staple crop depended on over half a century of global germplasm exchange. Science advances. 2022 Feb 9;8(6):eabj4633.

Marla S, Burow G, Chopra R, Hayes C, Olatoye M, Felderhoff T, Hu Z, Raymundo R, Perumal R, Morris G. Genetic architecture of chilling tolerance in sorghum dissected with a nested association mapping population. G3: Genes, Genomes, Genetics. 2019 Dec 1;9(12):4045-57.

Shukla S, Felderhoff T, Saballos A, Vermerris W. The relationship between plant height and sugar accumulation in the stems of sweet sorghum (*Sorghum bicolor* (L.) Moench). Field Crops Research. 2017 Mar 1;203:181-91.

Lopez J, Erickson J, Munoz P, Saballos A, Felderhoff T, Vermerris W. QTLs associated with crown root angle, stomatal conductance, and maturity in Sorghum. The Plant Genome. 2017 Jul;10(2):1-2.

Felderhoff T, Olmstead J, Vermerris W. A cost-benefit analysis to select the most effective method for positional cloning: genotyping by sequencing versus allele-specific PCR. Euphytica. 2017 Dec 1;213(12):286.

Felderhoff T, McIntyre L, Saballos A, Vermerris W. Using genotyping by sequencing to map two novel anthracnose resistance loci in *Sorghum bicolor*. G3: Genes, Genomes, Genetics. 2016 Jul 1;6(7):1935-46.

Burks P, Felderhoff T, Viator H, Rooney W. The influence of hybrid maturity and planting date on sweet sorghum productivity during a harvest season. Agronomy Journal. 2013 Jan;105(1):263-7.

Felderhoff T, Murray S, Klein P, Sharma A, Hamblin M, Kresovich S, Vermerris W, Rooney W. QTLs for energy-related traits in a sweet × grain sorghum [*Sorghum bicolor* (L.) Moench] mapping population. Crop Science. 2012 Sep;52(5):2040-9.

**Synergistic Activities:**

Primary coordinator for nine public breeding programs for alternative (winter) nursery, 2019-present

A contributing inventor in a KSURF patent for chilling tolerance markers, 2021

Aided in the genotyping of over 15,000 sorghum lines, utilizing 25 different molecular markers, for three external sorghum breeding programs, 2017-present

Transfer of sugarcane aphid tolerance markers to three public and five private breeding programs, 2020-2021

Transfer of striga tolerance markers to four public African breeding programs, 2021-present

Transfer of chilling tolerance markers to two public breeding programs and one private breeding programs, and material transfer agreement of chilling tolerant sorghum germplasm to private breeding company, 2018-2019

Teaching Assistant for Graduate level GMS5905 ‘Big Data for the Biologist’, University of Florida, 2014

**Presentations:**

Poster presentation at Sorghum Improvement Conference of North America 2022
Scientific presentation at Kansas Water Conference 2021
Poster session presentation at K-State Research Connections 2019
Scientific presentation and facilitation of training at Genome2Phenome Research Retreat 2019
Poster presentation at the Plant Breeding and Genetics Symposium 2019
Presentation and discussion for the October Genome2Phenome Scientific Meeting 2019
Poster presentation at Plant and Animal Genome Conference 2018
Seminar and facilitation of discussion for July Sorghum Brown Bag 2017
Poster presentation at Sorghum Improvement Conference of North America 2016
Presentation at the Farm2Fly Conference 2016
Poster session at Florida Genetics Symposium 2015
Poster presentation for Sorghum Improvement Conference of North America 2015
Poster presentation at the SunGrant Conference 2015
Poster session at the Florida Genetics Symposium 2014
Poster session Plant and Animal Genome Conference 2014
Poster session at the Florida Genetics Symposium 2013
Presentation at the National Association of Plant Breeding Conference - 1$^{st}$ place graduate student presentation 2011
Poster session at American Society of Agronomy Conference 2010

**Service Activities:**

Presented research to public via one radio and two video interviews 2021

Mentored Noah Winans on undergraduate research presentation - 1st place undergraduate student presentation at American Society of Agronomy Conference 2019

Scientific reviewer for the 2019 Collaborative Sorghum Investment Program Competitive Call

Training of six sorghum breeding programs in protocols for genotyping breeding populations - plate design, plant tagging, sample collection, interpreting genotyping results for breeding decisions 2018-2020

Lead lab meetings and discussions in the event of Dr. Morris' absence 2018-2019

Presented field research to the community at K-State Field Day 2018-2019

Established working relationships with multiple sorghum seed companies and breeders during Center for Sorghum Improvement Seed Tour 2018

Community outreach and education of grad-school classes during University of Florida's DNA Day 2015

Management of Florida Genetics Symposium - registration of guests, facilitate poster session, creation of distributed materials 2012-2015