Jane K. Dever
Professor of Cotton Breeding
Dept. of Soil and Crop Sciences, Texas A&M AgriLife Research, Lubbock, Texas

Education/Training
1989 PhD Agronomy, Texas Tech University
1986 MS Crop Science, Texas Tech University
1983 BS Textile Technology and Management, Texas Tech University

Positions and Employment
2014- Professor, Texas A&M AgriLife Research, Lubbock
2008-2014 Associate Professor, Texas A&M AgriLife Research, Lubbock
1998-2008 Product Development Manager/Global Cotton Breeding Manager, Bayer CropScience
1995-1998 Senior Research Scientist, BioTex
1993-1995 Engineer, Plains Cotton Cooperative Association
1992-1993 Head, Materials Evaluation, Fiber and BioPolymer Research Institute, Texas Tech
1983-1992 GRA/Research Associate/Associate Research Scientist, Texas A&M AgriLife Research

Program Overview
Research focus includes developing new and differentiated germplasm with enabling technology, and screening exotic germplasm collections for native traits to be used in breeding cotton. Breeding targets include improved fiber quality, drought tolerance, nematode resistance, disease tolerance to *Verticillium dahliae*, *Theilaviopsis basicola*, and *Xanthamonas* (bacterial blight) and yield component stability in high fiber quality lines. Fiber quality research includes not only improvement of heritable physical fiber properties, but also enhanced utilization facilitated by positive genetic/agronomic/processing interactions. Incorporating native traits into cultivars through classical breeding for organic production and preserving genetic resources in a recombinant DNA environment is a primary goal of the breeding program.

Significant 5 Year Accomplishments
Acquired over $24,000,000 in research funds, of which $6,000,000 went to my research program. Released cotton germplasm lines for Verticillium wilt resistance, fiber quality improvement, and resistance to thrips feeding damage resulting in several material transfer agreements with public and private breeders. Verticillium wilt, *V. dahliae,* continues to be a major yield-limiting factor in High Plains cotton production (as well as globally), and there has been no real improvement in resistance of commercial varieties in decades. The two problems that appear to limit progress in this area are a lack of better resistance germplasm sources, and poor understanding of the genes involved with partial resistance to the fungus. An early maturing germplasm line, partially resistant to Verticillium wilt, CA 4002, was released in 2012. Drs. Libo Shan and Ping He's laboratories have established the virus-induced gene silencing (VIGS) assay for CA 4002 (Gao, et al., 2013, *Journal of Integrative Plant Biology*) and identified a same set of key regulatory genes for resistance in both CA 4002 and Fibermax FM 960B2F. Demonstrated that properly-calibrated cotton fiber extensibility measurements are heritable and selection pressure for improved elongation can result in 50% improvement in cotton yarn strength. Demonstrated that host plant resistance to thrips is moderately heritable and released two thrips-tolerant breeding lines. Discovered novel sources of resistance to salinity and characterized germplasm accessions with improved response to drought stress. Since 2012, authored/co-authored 28 refereed journal articles and three book chapters. Supervised 10 graduate students with three in progress and served on 20 graduate research advisory committees with five in progress.

Publications
Ten most recent publications (35 total)
1. Zeng, L., B. T. Campbell, E. Bechere, **J. K. Dever**, J. Zhang, A. S. Jones, T. B. Raper, S. Hague, C. W. Smith, G. O. Myers, and F. M. Bourland. 2015. Genotypic and environmental effects on cottonseed oil, nitrogen, and gossypol contents in eighteen years Regional High Quality tests. *Euphytica* 206:815-824.
2. Kothari, N., B. T. Campbell, **J. K. Dever**, and L. L. Hinze. 2016. Combining ability and performance of cotton germplasm with diverse seed oil content. *Crop Science* 56(1): 19-29.

3. *Wann, D. Q., J. K. Dever, M. D. Arnold, and *H.D. Elkins. 2017. Genetic analysis and gain from selection of thrips resistance in cotton. *Euphytica*, 213:70 doi:10.1007/s10681-017-1861-0.
4. Kothari, N. S. Hague, L. Hinze, and **J. K. Dever**. 2017. Boll sampling protocols and their impact on measurements of cotton fiber quality. *Industrial Crops and Products*. DOI: 10.1016/j.indcrop.2017.07.045
5. *Wann, D. Q., **J. K. Dever**, M. D. Arnold, M. N. Parajulee, and *H. D. Elkins. 2017. Registration of CA 4005 and CA 4006 cotton germplasm lines with partial resistance to feeding injury from thrips pests. *J. Plant Registrations*. DOI: 10.3198/jpr2017.03.0017crg.
6. Fagjun, L., P. Wang, K. L. Cox, L. Duan, J. K. Dever, L. Shan, Z. Li, and P. He. 2017. Regulation of cotton (*Gossypium hirsutum*) drought responses by mitogen-activated protein (MAP) kinase cascade-mediated phosphorylation of GhWRKY59. *New Phytologist*. DOI: 10.1111/mph.14680.
7. Fiene, J., S. Mallick, A. Mittal, C. Nansen, L. Kalns, **J. K. Dever**, G. Sword and C. Rock. 2017. Characterization of transgenic cotton (*Gossypium hirsutum* L.) over-expressing Arabidopsis thaliana related to ABA-insensitive3(ABI3)/Vivparous1 (AtRAV1) and AtABI5 transcription factors: improved water use efficiency through altered guard cell physiology. *Plant Biotechnology Reports.* DOI 10.1007/s11816-017-0455-6
8. Bourgou, L., B. Koulibaly, O. S. Hema, M. Sawadogo, D. Sanfo, H. S. E. Bamba, *C. M. Kelly, and **J. K. Dever**. 2018. Characterizing primitive cotton accessions (*Gossypium* spp.) collected in Burkina Faso to identify potential sources for fiber quality enhancement in West African cultivars. *Journal of Cotton Science* 22(1):1-11.
9. *Kelly, C. M., * J. Osorio-Marin, N. Kothari, S. Hague, and **J. K. Dever**. 2019. Genetic improvement in cotton fiber elongation can impact yarn quality. *Industrial Crops and Products* 129:1-9.
10. Mauget, S., M. Ulloa, and **J. K. Dever**. 2019. Planting date effects on cotton lint yield and fiber quality in the U. S. southern high plains. *Agriculture*: 9(4) 82; doi:10.3390/agriculture9040082

Awards and Honors

- 2011-2016, Appointed Scientific Member, National Genetics Research Advisory Council
- 2012, "Golden Hoe" award for contribution to organic cotton industry
- 2012, Blue Legacy Award in Agriculture for contribution to the Ogallala Aquifer Program
- 2012, Cotton Genetics Research Award
- 2015, Vice Chancellor Award in Excellence for Team Collaboration
- 2016, Fellow, American Society of Agronomy
- 2017, Institutional Award, West Texas Agricultural Chemical Institute
- 2017, Texas A&M Board of Regents Fellow Service Award

Professional Experience

- Advised/co-advised 4 postdoctoral research associates, 19 PhD students, and 19 MS students.
- Authored/co-authored 35 peer-reviewed journal articles, 3 book chapters, 99 scientific abstracts/proceedings, and 37 technical reports.
- Acquired $23,947,842, of which $6,029,255 went to my research program.
- Presented 43 posters at scientific meetings, 12 invited international presentations, 72 national presentations, 27 invited, 19 invited state-level presentations, and 25 outreach presentations.
- Served as officer in National Association of Plant Breeders Communications Committee, CSSA C549 Seed Science Award Committee, Cotton Database Steering Committee, National Cotton Variety Testing Committee
- Associate Editor – Cotton, Journal of Plant Registrations, 2011-2014
- Technical Advisor to USDA-FAS funded, Catholic Relief Services-administered development project in Burkina Faso, "Revenue through Cotton Livelihoods, Trade, and Equity (RECOLTE)" since 2013.