

WILLIAM L. ROONEY
 Professor of Plant Breeding and Genetics
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 Texas A&M University, College Station, Texas

Education and Training

University of Minnesota	Plant Breeding and Genetics	Ph.D., 1992
Texas A & M University	Plant Breeding	M.S., 1989
Texas A & M University	Agronomy	B.S., 1987

Research and Professional Experience

Professor, Dept. of Soil and Crop Sciences, Texas A & M University, 2005-present
 Associate Professor, Dept. of Soil and Crop Sciences, Texas A & M University, 2000-2005
 Assistant Professor, Dept. of Soil and Crop Sciences, Texas A & M University, 1995-2000
 Assistant Professor, Dept. of Agronomy, Kansas State University, 1993-1995

Program Overview

The long-range goal of my sorghum improvement program is to enhance the productivity and profitability of grain, forage and bioenergy sorghum production systems. The sorghum breeding program is used as a mechanism to develop and release sorghum germplasm to meet this goal. In addition to the release of improved sorghum genotypes, research in the program emphasizes the genetic and molecular genetic inheritance of disease resistance, grain quality and agronomic productivity and adaptability. The research provides opportunities for graduate student training in fundamental and applied aspects of plant improvement. Specific research interests include the development of sorghum germplasm for bioenergy (both sweet and biomass), grain and forage.

Program Overview, 2011-2015

Research: Acquired \$32,337,645 of which \$8,182,045 went to my research program. Conducted research on: i) the genetic control of grain color and quality; ii) the genetic control of disease resistance and its breeding application; iii) the logistics of deployment of energy sorghum hybrids in production systems; and iv) deployment of marker-assisted selection in an applied sorghum breeding program. The breeding program: i) registered four germplasm lines in three separate releases; and ii) wrote 23 licenses with sorghum breeding programs for numerous sorghum lines developed in the program. Combined across the research and breeding programs four patents were awarded. Since 2011, our program and I have authored or co-authored 58 peer-reviewed publications resulting in 4188 citations, an h-index of 35 and an i10-index of 68. **Teaching:** Instruct SCSC 642 annually each fall semester. Supervised 4 postdoctoral research associates, 8 PhD students, and 8 MS students, most of whom are now employed in private industry crop improvement programs. Supervise 1 undergraduate research project.

Ten most recent publications: (Total: 132)

132	Pfeiffer, BK, and WL Rooney. Sunlight induces black color and increases flavonoid levels in the grain of sorghum line Tx3362. <i>Crop Science</i> . 55:1703–1711
131	Prom, Louis K., Ramasamy Perumal , Thomas Isakeit , Ghada Radwan , William L. Rooney and Clint Magill. 2015. The Impact of Weather Conditions on Response of Sorghum Genotypes to Anthracnose (<i>Colletotrichum sublineola</i>) Infection. <i>American Journal of Experimental Agriculture</i> 6(4): 242-250.
130	Appiah-Nkansah, NB., K Saul, WL Rooney, and D Wang. 2015. Adding sweet sorghum juice into current dry-grind ethanol process for improving ethanol yields and water efficiency. <i>International Journal of Agricultural and Biological Engineering</i> . 8: 97-103.
129	Armstrong, JS., WL Rooney, GC Peterson, RT Villanueva, MJ Brewer and D Sekula-Ortiz. 2015. Sugarcane aphid <i>Melanaphis sacchari</i> , (Hemiptera: Aphididae): Host range and sorghum resistance including cross-resistance from greenbug sources. <i>J. Econ. Entomology</i> . 108:576-582.
128	Prom, LK, R Perumal, N Montes-Garcia, T Isakeit, G Odvody, W Rooney, CR Little, and C Magill. 2015. Evaluation of

	Gambian and Malian sorghum germplasm against downy mildew pathogen, <i>Peronosclerospora sorghi</i> in Mexico and USA. <i>J Gen Plant Pathol.</i> 81:24-31. doi 10.1007/s10327-014-0557-8
127	Burrell, AM, A Sharma, NY. Patil, SD Collins, WF. Anderson, WL. Rooney, and PE. Klein. 2015. Sequencing of an Anthracnose-Resistant Sorghum Genotype and Mapping of a Major QTL Reveal Strong Candidate Genes for Anthracnose Resistance. <i>Crop Science</i> 55:1-10. doi: 10.2315/cropsci2014.06.0430
126	Rosenow DT, SD Collins, GN Odvody, K Schaefer, WL Rooney, GC Peterson. 2014. Registration of Tx3364 through Tx3407 Grain Weathering–Resistant Sorghum Germplasm. <i>Journal of Plant Registrations</i> 8:324–328 (2014). doi: 10.3198/jpr2013.09.0053crg
125	Murphy, Rebecca L., Daryl T. Morishige, Jeff A. Brady, William L. Rooney, Shanshan Yang, Patricia E. Klein, and John E. Mullet. 2014. <i>Ghd7 (Ma6)</i> Represses Sorghum Flowering in Long Days: <i>Ghd7</i> Alleles Enhance Biomass Accumulation and Grain Production. <i>Plant Genome</i> . doi: 10.3835/plantgenome2013.11.0040
124	Taleon V, L. Dykes, W.L. Rooney, and L. W. Rooney. 2014. Environment effect on flavonoid concentration and profile of red and lemon-yellow sorghum grains. <i>J Food Comp. Analysis</i> 34:178-185.
123	Rhodes, D, L Hoffmann, L Dykes, W Rooney, P Ramu, G Morris, and S Kresovich. 2014. Genome-wide association study of grain polyphenol concentrations in global sorghum [<i>Sorghum bicolor</i> (L.) Moench] germplasm. <i>J. Agric. Food Chem.</i> 62:10916-10927.

Technology Transfer – Official Sorghum Releases from Texas A&M Agrilife Research

No.	Release	Date	Contributors
13	Release of Tx3408 and Tx3409 Sugarcane Aphid Tolerant Sorghum Germplasm	02.2015	L. Mbulwe, S. Armstrong, G. Peterson and W.L. Rooney
12	Release of Tx3363 Sorghum Germplasm	08.2012	W.L. Rooney, O. Portillo, and C. Hayes
11	Release of Tx3362 Sorghum Germplasm	01.2012	W.L. Rooney, L. Rooney, J. Awika and L. Dykes

Patents

No.	Release	Date	Authors
8513499	Plants and Seeds of Sorghum Line Tx3361	08/20/2013	William Rooney and Leslie C. Kuhlman
8420906 B2	Inbred Sorghum Line 'R07007'	04/16/2013	William Rooney
8362329 B2	Intergeneric Hybrid Plants and Methods For Production Thereof	01/29/2013	Rooney, WL, GL Hodnett, LC Kuhlman, DM Stelly and JH Price
8309793	Discovery and utilization of sorghum genes (<i>Ma5/ma6</i>).	11/13/2012	Mullet, JE, WL Rooney, PG Klein, D Morishige, R Murphy and JA Brady.

Awards and Honors:

Year	Award	Level
2015	Regents Professor	University
2015	Fellow, Crop Science Society of America	Professional Society
2015	B.B. Singh Research Award	Departmental
2012	College of Agriculture, Deans Award for Collaborative Research	College
2011	Faculty Fellow, AgriLife Research	Texas A&M Agrilife Research
2010	Innovation Award, Office of Technology Commercialization	University
2009	Departmental Research Award	Departmental

Professional Experience (Career)

1. Advising: Chair of 22 M.S. degrees and 22 Ph.D degrees; 4 Post-doctoral Research Associates
2. Authored/co-authored 132 peer reviewed journal articles, 10 book chapters and >200 abstracts.
3. Grants: PI/coPI on grants totaling \$37M of which \$10M went to my research program.
4. Breeding: 13 germplasm registrations totaling 72 individual sorghum lines released; 50 licenses to private industry for hundreds of sorghum breeding lines; 1 Plant Variety Protection Patent and 3 Utility Patents.
5. Teaching: SCSC 642, Advanced Plant Breeding, taught annually since 1995.