

VITA

Glen L. Ritchie, PhD
J.A. Love Endowed Chair
Department of Plant and Soil Science
Texas Tech University Lubbock, TX 79409-2122
806-632-5424 (cell)
806-834-4325 (work)
glen.ritchie@ttu.edu

EDUCATION:

1998 A.A.S. Ricks College (Now BYU-Idaho). Crop Science.
2000 B.S. Utah State University. Crop Science (Research Emphasis).
2003 M.S. Utah State University. Crop Physiology.
2007 Ph.D. University of Georgia. Crop Physiology.

POST-BACHELOR PROFESSIONAL EXPERIENCE:

9/2000 – 3/2003 Graduate Research Assistant, Utah State University, Logan, UT.
9/2001 – 11/2003 Technical Support, Apogee Instruments, Logan, UT.
3/2003 – 8/2007 Research Professional II, University of Georgia, Tifton, GA.
8/2007 – 4/2011 Assistant Professor, Crop Physiology, University of Georgia, Tifton, GA.
4/2011 – 8/2015 Assistant Professor, Crop Physiology, Texas Tech/Texas A&M AgriLife Research, Lubbock, TX.
9/2015 – 8/2019 Associate Professor, Crop Physiology, Texas Tech/Texas A&M AgriLife Research, Lubbock, TX.
9/2019 – Present Chair, Department of Plant and Soil Science, Texas Tech University

LICENSES AND CERTIFICATIONS:

2006-2007. Certified Crop Advisor. American Society of Agronomy.
2012. USDA Radiation Safety Training Certified for CPN AmBe Soil Moisture Probes.
2012. USDA Radiation Safety and Hazardous Materials Transport Training Certified for Radioactive Materials: CPN AmBe Soil Moisture Probes.
2019. Private Pesticide Applicators License

INTERNATIONAL EXPERIENCE:

2013. Hosted Visiting Associate Professor from Turkey, Murat Tekhiner.
2013. Hosted Undergraduate Researcher from Mexico, Paulino Begnino Cruz.
2014. Invited presentation to Industrial Crop Institute of Hubei Academy of Agricultural Sciences. October 22, 2014.
2015. Hosted professors Guoping Wu and Lu Feng for 21 days to collaborate on crop maturity paper and discuss defoliation and harvest techniques.

2016. Invited collaboration tour for 14 days to discuss research opportunities in China and two presentations to Cotton Research Institute. 125 attendees.
2017. Invited speaker, University of Guelph Department of Plant Agriculture. 50 attendees.
2017. Outside Reviewer: PhD Defense, University of Guelph, Department of Plant Agriculture.
2017. Invited forum keynote speaker, Federation of Agriculture, Recife and Petrolina, Brazil. 400 attendees.
2018. Invited speaker, Cotton Research Institute, Anyang, China. 85 attendees.
2018. Invited speaker, Nanjing Agricultural University, Nanjing, China. 125 attendees.
2017-2018. Hosted visiting scientist, Youchang Zhang, from August 2017 to August 2018.
2018. Invited speaker Cotton Research Institute, Anyang, China. 2 presentations, 150 attendees.
2019. Invited speaker, 12th Brazil Cotton Congress, August 21-25, 2019. 2 talks, 250 attendees.

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

American Society of Agronomy (2000 – Present)
Crop Science Society of America (2000 – Present)
Soil Science Society of America (2008 – Present)

HONORS AND AWARDS:

Honors: none

Awards:

2005 ASA Outstanding Extension Publication: *Cotton Growth and Development*.
2011 Outstanding Young Physiologist. Beltwide Cotton Conferences, January, 2012. Sponsored by Dow AgroSciences.
2016 Texas Tech CASNR advising award, August, 2016.

AREAS OF EXPERTISE:

1. Plant water relations.
2. Within-plant cotton spatial yield mapping and distribution.
3. Near-remote sensing and high throughput field phenotyping.
4. Cotton carbon partitioning in response to abiotic stress.

FORMAL COURSES TAUGHT

PSS3323-001 and PSS3323-D01: Crop Physiology – 2011-Present
PSS6323-001 and PSS6323-D01: Plant Water Relations – 2012-Present
PSS5329-001: Precision Agriculture – Even years 2014-2016
PSS4325-001 and PSS4325-D01: Crop Water Management – 2014-2019
PSS5323-001 and PSS5323-D01: Environmental Crop Physiology – Odd years 2017-Present

PUBLICATIONS: (29 since last promotion; all publications are included)

Books: total of 0

Refereed Book Chapters: total of 3

1. Klassen, S.P., **G. Ritchie**, J. Frantz, D. Pinnock and B. Bugbee. 2003. Real-time imaging of ground cover: Relationships with radiation capture, canopy photosynthesis, and daily growth rate. In: Digital Imaging and Spectral Techniques: Applications to Precision Agriculture and Crop Physiology. ASA Special Publication no. 66. 54 citations
2. Loka, D.M., D.M. Oosterhuis, and **G.L. Ritchie**. 2011. Water-Deficit Stress in Cotton. Pp.37-72. Ed. D.M. Oosterhuis Stress Physiology in Cotton. The Cotton Foundation Reference Book Series #7. 159 p. 78 citations
3. **Ritchie, G.**, D. Rowland, and J.L. Snider. 2017. Irrigation timing and application methods for improving water use efficiency. In: Linking Physiology to Management. Ed. J.L. Snider and D.M. Oosterhuis. The Cotton Foundation Reference Book Series #9. 146 p.

Other Book Chapters: total of 1

1. Bauer, P., W. Faircloth, D. Rowland, and **G.L. Ritchie**. 2012. Water-Sensitivity of Cotton Growth Stages. In C. Perry and E. Barnes: Cotton Irrigation Management in Humid Regions. Cary, NC: Cotton, Inc. <http://www.cottoninc.com/fiber/AgriculturalDisciplines/Engineering/Irrigation-Management/cotton-irrigation-web.pdf> 14 citations

Extension Publications: total of 2

1. **Ritchie, G.**, P. Jost, C. Bednarz, and S.M. Brown. 2004. Cotton growth and development. The University of Georgia College of Agricultural and Environmental Sciences Cooperative Extension Service. 25 p. 125 citations
2. Whitaker, J., **Ritchie, G.**, Mills, C., Millings, R. and Bednarz, C., 2006. Vegetative growth management of cotton. University of Georgia Cotton Physiology Extension Service Publication Pix Paper 081805. 1 citation

Books and Book Chapters Edited: total of 0

Refereed Journal Articles: (total published 50^{1,2}, since last promotion 30)

¹**Indicates students I advised as committee chair

*Indicates graduate students I mentored as a committee member

²My name is in bold

Published:

1. Wright, D. L., Rasmussen, V. P., Ramsey, R. D., and **G. L. Ritchie**. 2003. Managing grain protein in wheat using remote sensing. *Online Journal of Space Communication*, 3. *11 citations*
2. Frantz, J.M., **G. Ritchie**, N.N. Cometti, J. Robinson and B. Bugbee. 2004. Exploring the limits of crop productivity: beyond the limits of tipburn in lettuce. *J. Am. Soc. Hort. Sci.* 129: 331-338. [0.980] *69 citations*
3. **Ritchie, G.L.** and C.W. Bednarz. 2005. Estimating defoliation of two distinct cotton types using reflectance data. *J. Cotton Sci.* 9: 182-188. [0.20] *14 citations*
4. Frantz, J.M., D.S. Pitchay, **G. Ritchie** and H. Zhu. 2005. Identifying Common Reflectance Properties in Diverse Ornamental Species to Nondestructively Determine Nitrogen Status. *HortScience* 40: 1060-1061. [0.906] *1 citation*
5. *Whitaker, J.R., *C.I. Mills, C.W. Bednarz and **G.L. Ritchie**. 2008. Cotton Subsurface Drip and Overhead Irrigation Efficiency, Maturity, Yield, and Quality. *Agron. J.* 100: 1763-1768. [1.614] *49 citations*
6. **Ritchie, G.L.**, D.G. Sullivan, C.D. Perry, J.W. Hook, and C.W. Bednarz. 2008. Preparation of a Low-Cost Digital Camera System for Remote Sensing. *App. Eng. Agric.* 24: 885-894. [0.973] *34 citations*
7. *Mills, C.I., C.W. Bednarz, **G.L. Ritchie**, and *J.R. Whitaker. 2008. Yield, quality, and fruit distribution in Bollgard/Roundup Ready and Bollgard II/Roundup Ready Flex Cottons. *Crop Sci.* 100: 35-41. [1.635] *13 citations*
8. **Ritchie, G.L.**, *J.R. Whitaker, C.W. Bednarz, and J.E. Hook. 2009. Subsurface drip and overhead irrigation: A comparison of plant boll distribution in upland cotton. *Agron. J.* 101: 1336-1344. [1.614] *53 citations*
9. **Ritchie, G.L.**, D.K. Sullivan, W.K. Vencill, C.W. Bednarz, and J.E. Hook. 2010. Sensitivities of Normalized Difference Vegetation Index and a green/red ratio index to cotton ground cover fraction. *Crop. Sci.* 50: 1000-1010. [1.635] *32 citations*
10. **Ritchie, G.L.**, *J.R. Whitaker, and G.D. Collins. 2011. Effect of Sample Size on Cotton Plant Mapping Analysis and Results. *J. Cotton Sci.* 15: 224-232 [0.20] *16 citations*
11. Li, C., A. Knowlton, S. Brown, and **G. Ritchie**. (2011). A comparative study of a microgin with a lab gin stand and commercial gins in southeast United States. *App. Eng. Agric.* 27: 167-175. [0.973] *4 citations*
12. *Wettasinghe, R.C., M. Zabet-Hoghaddam, **G.L. Ritchie**, and D.L. Auld. (2013). Relative quantitation of ricin in *Ricinus communis* seeds by image Processing. *Ind. Crop. Prod.* 50: 654-660. [4.45] *3 citations*
13. **Snowden, M.C., **G.L. Ritchie**, and T.L. Thompson. (2013). Water use efficiency and irrigation response of cotton cultivars on subsurface drip in West Texas. *J. Cotton Sci.* 17: 1-9. *Invited Article.* [2] [0.20] *21 citations*
14. **Snowden, C., **G. Ritchie**, *J. Cave, W. Keeling, and N. Rajan. (2013). Multiple Irrigation Levels Affect Boll Distribution, Yield, and Fiber Micronaire in Cotton. *Agron. J.* 105: 1536-1544. doi:10.2134/agronj2013.0084. [1.614] *51 citations*
15. **Simao, F.R., **G.L. Ritchie**, and C.W. Bednarz. (2013). Cotton Physiological Parameters Affected by Episodic Irrigation Interruption. *J. Agric. Sci. Technol. A.* 3: 443-454. [0.37] *6 citations*

16. **Snowden, M.C., **G.L. Ritchie**, **F.R. Simao, and J.P. Bordovsky. (2014). Timing of Episodic Drought Can Be Critical in Cotton. *Agron. J.* 106: 452-458. doi:10.2134/agronj2013.0325. [1.614] 45 citations
17. *Oswalt, J.S., *J.M. Rieff, *L.S. Severino, D.L. Auld, C.W. Bednarz, and **G.L. Ritchie**. (2014). Plant Height and Seed Yield of Castor (*Ricinus communis* L.) sprayed with growth retardants and harvest aid chemicals. *Ind. Crop. Prod.* 61: 272-277. [4.45] 23 citations
18. *Mittal, A., S.S. Gampala, **G.L. Ritchie**, P. Payton, J.J. Burke, and C.D. Rock. (2014). Related to ABA-Insensitive3 (ABI3)/Viviparous1 and AtABI5 transcription factor coexpression in cotton enhances drought stress adaptation. *Plant Biotech. J.* 12: 578-589. [6.305] 56 citations
19. *Feng, L., *G. Mathis, **G. Ritchie**, Y. Han, Y. Li, G. Wang, et al. (2014). Optimizing Irrigation and Plant Density for Improved Cotton Yield and Fiber Quality. *Agron. J.* 101: 1111-1118. [1.614] 20 citations
20. *Muharam, F.M., K. Bronson, S. Maas, and **G.L. Ritchie**. (2014). Inter-relationships of cotton plant height, canopy width, ground cover, and plant nitrogen status indicators. *Field Crop. Res.* 169: 58-69. [4.190] 18 citations

21. Attia, A., N. Rajan, **G. Ritchie**, S. Cui, A. Ibrahim, D. Hays, Q. Xue, and J. Wilborn. (2015). Yield, quality, and spectral reflectance responses of cotton under subsurface drip irrigation. *Agron. J.* 107: 1355-1364. [1.614] 12 citations
22. Bordovsky, J. P., Mustian, J. T., **Ritchie, G. L.**, and Lewis, K. L. (2015). Cotton Irrigation Timing with Variable Seasonal Irrigation Capacities in the Texas South Plains. *App. Eng. Agric.* 31(6), 883-897. [0.973] 16 citations
23. *Mittal, A., Jiang, Y., **Ritchie, G. L.**, Burke, J. J., and Rock, C. D. (2015). AtRAV1 and AtRAV2 overexpression in cotton increases fiber length differentially under drought stress and delays flowering. *Plant Sci.*, 241, 78-95. [3.712] 20 citations
24. **Sharma, B., **Ritchie, G. L.**, and Rajan, N. (2015). Near-Remote Green: Red Perpendicular Vegetation Index Ground Cover Fraction Estimation in Cotton. *Crop Sci.* 55(5), 2252-2261. [1.635] 11 citations
25. **Sharma, B. and **Ritchie, G. L.** (2015). High-Throughput Phenotyping of Cotton in Multiple Irrigation Environments. *Crop Sci.* 55(2), 958-969. [1.635] 26 citations
26. *Pilon, C., Oosterhuis, D.M., **Ritchie, G.L.** and Paiva, E.A. (2015). Photosynthetic efficiency and antioxidant activity of cotton under drought stress during early floral bud development. *J. Exper. Agric. Int.* pp.1-13. 4 citations
27. **Sharma, B., Mills, C. I., Snowden, C., and **Ritchie, G. L.** (2015). Contribution of Boll Mass and Boll Number to Irrigated Cotton Yield. *Agron. J.* 107(5), 1845-1853. [1.614] 25 citations
28. Gitz, D.; Zartman, R.E.; Villarreal, C.J.; Rainwater, K.; Smith, L.M.; **Ritchie, G.** (2015). Sediment accumulation in semi-arid wetlands of the Texas Southern High Plains. *Tex. J. Agric. Nat. Resour.* 28, 70–81. [0.21] 4 citations
29. **Schaefer, C., B. Nichols, G. Collins, J. Whitaker, C. Bednarz, C. Main, and **G.L. Ritchie**. (2017). Cotton maturity determination through vertical mapping. *Crop Sci.* 57:1-9. [1.635] 2 citations
30. **Schaefer, C., J. Bordovsky, K. Lewis, and **G.L. Ritchie**. (2018). Irrigation timing and rate affect cotton boll distribution and fiber quality. *Agron. J.* 110(3):922-931. [1.614] 12 citations
31. Casterad, M., J. Herrero, J. Betrán and **G. Ritchie**. (2018). Sensor-based assessment of soil salinity during the first years of transition from flood to sprinkler irrigation. *Sensors* 18: 616 [3.031] 8 citations

32. **Witt, T., M. Ulloa, M. Pelletier, M.G. Mendu, and **G.L. Ritchie**. (2018). Exploring ethyl methanesulfonate (EMS) treated cotton (*Gossypium hirsutum* L.) to improve drought tolerance. *Euphytica* 214(7): 123 [1.614] 4 citations
33. *Pham, H.M., H. Kebede, **G. Ritchie**, N. Trolinder, and R.J. Wright. (2018). Alternative oxidase (AOX) over-expression improves cell expansion and elongation in cotton seedling exposed to cool temperatures. *Theor. Appl. Gen.* 131:1-12. [3.264] 4 citations
34. Ulloa, M., Pelletier, M. G., Mendu, V., and **Ritchie, G. L.** (2018). Irrigation's effect and applied selection on the fiber quality of Ethyl MethaneSulfonate (EMS) treated upland cotton (*Gossypium hirsutum* L.). *J. Cotton Res.* 1(1), 17. [0.21] 3 citations
35. *Burke, J.A., K.L. Lewis, **G.L. Ritchie**, J. Moore-Kucera, P.B. DeLaune and J.W. Keeling. (2019). Temporal Variability of Soil Carbon and Nitrogen in Cotton Production on the Texas High Plains. *Agron. J.* 111: 2218-2225. doi:10.2134/agronj2019.02.0066. [1.614] 1 citation
36. Dhakal, M., C.P. West, S.K. Deb, G. Kharel and **G.L. Ritchie**. (2019). Field Calibration of PR2 Capacitance Probe in Pullman Clay-Loam Soil of Southern High Plains. *Agrosystems, Geosci. Environ.* 2. doi:10.2134/age2018.10.0043. 6 citations
37. **Dube, N., B. Bryant, H. Sari-Sarraf, B. Kelly, C.F. Martin, S. Deb, and **G.L. Ritchie** (2019). In Situ Cotton Leaf Area Index by Height Using Three-Dimensional Point Clouds. *Agron. J.* 111: 2999-3007. doi:10.2134/agronj2019.01.0018. [1.614]
38. *McDonald, M.D., K.L. Lewis, **G.L. Ritchie**, P.B. DeLaune, K.D. Casey and L.C. Slaughter. (2019). Carbon dioxide mitigation potential of conservation agriculture in a semi-arid agricultural region. *AIMS Agriculture and Food* 4: 206. [0.86] 3 citations
39. **Pabuayon, I.L.B., S. Singh, K.L. Lewis and **G.L. Ritchie**. (2019). Water Extraction and Productivity of Cotton, Sorghum, and Sesame under Deficit Irrigation. *Crop Science* 59: 1692-1700. [1.635] 3 citations
40. **Pabuayon, I.L.B., S. Singh and **G.L. Ritchie**. (2019). Effects of Deficit Irrigation on Yield and Oil Content of Sesame, Safflower, and Sunflower. *Agron. J.* [1.614]
41. **Pabuayon, I.L.B., Y. Sun, W. Guo and **G.L. Ritchie**. (2019). High-throughput phenotyping in cotton: a review. *J. Cotton Res.* 2: 18. [0.20] 2 citations
42. **Thompson, C.N., W. Guo, B. Sharma and **G.L. Ritchie**. (2019). Using Normalized Difference Red Edge Index to Assess Maturity in Cotton. *Crop Sci.* 59: 2167-2177. [1.635] 1 citation
43. *Bhattarai, B., S. Singh, C.P. West, **G.L. Ritchie** and C.L. Trostle. (2020). Water Depletion Pattern and Water Use Efficiency of Forage Sorghum, Pearl millet, and Corn Under Water Limiting Condition. *Agric. Water Manage.* 238: 106206. [4.021]
44. Bechere, E., D.L. Auld, C.W. Smith, R.G. Cantrell, E.F. Hequet, **G.L. Ritchie**, **I.L.B. Pabuayon, D. Mishra, B.R. Hendon, N. Brown, B.R. Kelly. (2020). Registration of six upland cotton germplasm lines with improved fiber quality through ethyl methane sulfonate treatments and selection. *J. Plant Regist.* [0.59]
45. Mitchell-McCallister, D., R.B. Williams, J. Bordovsky, J. Mustian, **G. Ritchie**, and K. Lewis. (2020). Maximizing profits via irrigation timing for capacity-constrained cotton production. *Agric. Water Manage.* 229: 105932. [4.021]
46. **Thompson, C.N., C. Mills, **I.L.B. Pabuayon and **G.L. Ritchie**. (2020). Time-based remote sensing yield estimates of cotton in water-limiting environments. *Agron. J.* 112: 975-984. [1.614]
47. **Witt, T.W., M. Ulloa, R.C. Schwartz and **G.L. Ritchie**. (2020). Response to deficit irrigation of morphological, yield and fiber quality traits of upland (*Gossypium hirsutum* L.) and Pima

- (*G. barbadense* L.) cotton in the Texas High Plains. *Field Crop. Res.* 249: 107759. [4.190] *I citation*
48. *Russell, K.R., P.A. Dotray, **I.L.B. Pabuayon, and **G.L. Ritchie**. (2020). Dicamba effects on fruiting in sensitive cotton. *Weed Tech.*: 1-21. [1.26]
 49. **Pabuayon, I.L.B., K.L. Lewis, and **G.L. Ritchie**. (2020). Dry matter and nutrient partitioning changes for the past 30 years of cotton production. *Agron. J.* 112: 4373-4385. [1.614]
 50. **Dube, N., H. Sari-Sarraf, B. Bryant, and **G.L. Ritchie** (2020). Cotton boll distribution and yield estimation using three-dimensional point cloud data. *Agron. J.* 112: 4976-4989. [1.614]
 51. *Jackson, M., C. Portillo-Quintero, R. Cox, **G. Ritchie**, M. Johnson, K. Humugain, and M.R. Subedi. (2020). Season, classifier, and spatial resolution impact Honey Mesquite and Yellow Bluestem detection using an unmanned aerial system. *Range. Ecol. And Manage.* 73:658-672. [2.10]
 52. Adams, C.B., G.L. Ritchie and N. Rajan. 2021. Cotton phenotyping and physiology monitoring with a proximal remote sensing system. *Crop Science* 61: 1317-1327.
 53. Burke, J.A., K.L. Lewis, G.L. Ritchie, P.B. DeLaune, J.W. Keeling, V. Acosta-Martinez, et al. 2021. Net positive soil water content following cover crops with no tillage in irrigated semi-arid cotton production. *Soil and Tillage Research* 208: 104869.
 54. Esmaili, N., Y. Cai, F. Tang, X. Zhu, J. Smith, N. Mishra, et al. 2021. Towards doubling fibre yield for cotton in the semiarid agricultural area by increasing tolerance to drought, heat and salinity simultaneously. *Plant biotechnology journal* 19: 462.
 55. Kusi, N.Y.O., K.L. Lewis, G.D. Morgan, G.L. Ritchie, S.K. Deb, R.D. Stevens, et al. 2021. Cotton cultivar response to potassium fertilizer application in Texas' southern high plains. *Agronomy Journal*.
 56. Laza, H.E., J.T. Baker, C. Yates, J.R. Mahan, M.D. Burow, N. Puppala, et al. 2021. Effect of elevated CO₂ on peanut performance in a semi-arid production region. *Agricultural and Forest Meteorology* 308: 108599.
 57. Pabuayon, I.L.B., B.R. Kelly, D. Mitchell-McCallister, C.L. Coldren and G.L. Ritchie. 2021. Cotton boll distribution: A review. *Agronomy Journal*.
 58. Pabuayon, I.L.B., D. Mitchell-McCallister, K.L. Lewis and G.L. Ritchie. 2021. Yield and Economic Response of Modern Cotton Cultivars to Nitrogen Fertilizer. *Agronomy* 11: 2149.
 59. Parkash, V., S. Singh, S.K. Deb, G.L. Ritchie and R.W. Wallace. 2021. Effect of deficit irrigation on physiology, plant growth, and fruit yield of cucumber cultivars. *Plant Stress* 1: 100004.
 60. Parkash, V., S. Singh, M. Singh, S.K. Deb, G.L. Ritchie and R.W. Wallace. 2021. Effect of Deficit Irrigation on Root Growth, Soil Water Depletion, and Water Use Efficiency of Cucumber. *HortScience* 56: 1278-1286.
 61. Puppala, N., D.C. Gitz III, Y.Y. Emendack, N. Layland, G.L. Ritchie, J. Chen, et al. 2021. *Agricultural and Forest Meteorology* EI. *Agricultural and Forest Meteorology* 308: 108599.
 62. Russell, K.R., P.A. Dotray, I.L. Pabuayon and G.L. Ritchie. 2021. Dicamba effects on fruiting in sensitive cotton. *Weed Technology* 35: 43-48.

Proceedings:

Refereed (invited): 0

Refereed (volunteered): 1

1. Vellidis, G., B. Ortiz, **G. Ritchie**, A. Peristeropoulos, C. Perry and K. Rucker. 2009. Using GreenSeeker® to drive variable rate application of plant growth regulators and defoliant on cotton. In: van Henten, E.J., D. Goense, and C. Lokhorst (Eds.), Precision Agriculture '09 – Proceedings of the 7th European Conference on Precision Agriculture (7ECPA), Wageningen, the Netherlands, pp. 55-7. *13 citations*

Non-refereed (invited): 2

1. Whitaker, J.R., G.D. Collins, and **G. Ritchie**. 2012. Utilizing Boll Production and Distribution to More Effectively Understand Performance of Cotton Varieties in Georgia. Proceedings Beltwide Cotton Conferences. Orlando, FL. Jan. 5-7.
2. Bauer, P.J., D.L. Rowland, W.H. Faircloth, and **G. Ritchie**. 2012. Most Water-Sensitive Growth Stages for Cotton. Proceedings Beltwide Cotton Conferences. Orlando, FL. Jan. 5-7. p. 12.

Other Conference Proceedings (40; post-tenure: 16):

Abstracts: total of 106 (post-tenure 43)

Invited Abstracts (9; 5 since tenure):

1. **Ritchie, G.L.** 2015. Rate and timing in a declining water environment. Beltwide Cotton Conferences Consultant's Session, San Antonio, TX. 5 Jan.
2. **Ritchie, G.**, **C. Schaefer, and **L. Obenhaus. Yield dynamics in limited water environments. ASA/CSSA/SSA Meetings 16 Nov. 2015.
3. Singh, S., **G. Ritchie**, **C. Thompson, **C. Schaefer, and **N. Dube. 2016. Plants and other soil moisture sensors in cotton. ASA/CSSA/SSSA 2016 Meeting. Nov. 6-9, Phoenix, AZ.
4. **Ritchie, G.L.** 2019. Reducing short fiber content in cotton. 12th Brazilian Cotton Congress. August 27, 2019.
5. **Ritchie, G.L.** 2019. Physiology of Cotton Fibers. 12th Brazilian Cotton Congress. August 28, 2019.

Other publications and media (popular press) total of 5:

1. **Ritchie, G.L.**, C.W. Bednarz, P.H. Jost, S.M. Brown, and A.J. Ciha. 2008. Cotton growth and development. Iowa State University Crop Advisor Institute Module. <http://www.cai.iastate.edu/developerreview/moduleupdates/cotton/index.html>
2. **Ritchie, G.L.**, J.R. Whitaker, C.W. Bednarz, and J.E. Hook. 2010. Comparing the effects of subsurface drip and overhead irrigation on boll distribution in cotton. Continuing education self-study course. *Crops and Soils*. May-June 2010. Pp. 26-30. <https://www.agronomy.org/publications/crops-and-soils/archive>
3. Wireless is Limitless: Climate Adaptive Farming. 2013. CTIA Wireless Association. <https://www.youtube.com/watch?v=pldvLV0xjmg>

4. **Ritchie, G.** 2014. Cotton Response to Stress. APS Crop Protection and Management Collection: Focus on Cotton._
<http://www.plantmanagementnetwork.org/edcenter/seminars/cotton/CottonResponse/>
5. Fundamental Plant Processes. 2014. Ed. CEV Multimedia._
<https://www.youtube.com/watch?v=rXbhlFXEgWw&feature=youtu.be>

PRESENTATIONS AND LECTURES: total of 115 (Lectures since tenure 9 listed below plus those listed in volunteered and invited abstracts above which were presented at national/international scientific meetings). Those listed below were presented for college-level courses, invited seminar presentations, and local or state meetings.

GRADUATE STUDENT COMMITTEES:

Completed as Chair or Co-Chair: 30

M.S. Chaired: 15

PhD Chaired: 7

M.S. Co-Chaired: 8

Completed as Committee Member: 26

M.S.

1. Heath Reeves. Completed in 2012. Irrigation termination timing and effects on cotton yield and fiber quality.
2. M. Chase Snowden. Completed in 2012. Boll distribution and fiber quality of West Texas cotton under four irrigation levels.
3. Tyler Painter. Completed in 2012. A novel method of determining cotton maturity.
4. Curtis Schaefer. Completed in 2013. Cotton maturity over diverse environments.
5. Luke Obenhaus. Completed in 2016. Cotton maturity and irrigation interactions.
6. Sanchez, Jacobo. Completed May, 2017. Selection of elite sorghum germplasm based on physiological characters.
7. Gregory, Ryan. May, 2018. Sub-lethal doses of glyphosate to select for non-traited cotton in organic systems.
8. Pabuayon, Irish. May, 2018. Physiological traits of water stress-tolerant crops.
9. Parson, Hardy. May, 2018. Boll distribution and crop water management in cotton.
10. Macha, Nicholas. May, 2019. Interactions of tillage, irrigation, and maturity in cotton and sorghum yields.

11. Dunlap, Andrew. May, 2019. Water use efficiency interactions with soybean maturity.
12. Young, Shelby. August, 2019. Quantifying *Verticillium dahliae* in the soil profile using two methods in USA and Australian cotton soils.
13. Drake, Tanner. December, 2019. In-season fruit accumulation and retention by cotton cultivar.
14. Pendergrass, Jay. December, 2019. Components of soybean germination.
15. Mayo, Mark. December, 2020. Remote sensing of cotton yield using aerial imagery.

Ph.D.

1. Fulvio R. Simao. Completed in 2013. Irrigation and episodic drought management for West Texas cotton cultivars.
2. Bablu Sharma. Completed in 2014. Measuring and modeling cotton growth using high throughput sensors.
3. Curtis Schaefer. Completed in 2017. Short-term episodic stress and growth factors in cotton and sorghum.
4. Travis Witt. Completed in 2017. EMS-treated cotton mutant selection for drought tolerance.
5. Nothabo Dube. Completed in 2018. 3D Phenotyping of Cotton.
6. Corey Thompson. Completed in 2019. Cotton maturity estimation using vegetation indices.
7. Irish Pabuayon. Completed in 2021. A fresh look at resource assimilation and partitioning in cotton.

Co-Chaired: total of 8

1. Rieff, Jacob. M.S. 2011. Harvest Aids to Optimize Mechanical Harvest of Castor. Plant and Soil Science. Texas Tech University. Co-Chair with Dr. Dick Auld.
2. Meeks, Kevin. M.S. 2012. Developing salt tolerance in Safflower. Plant and Soil Science. Texas Tech University. Co-Chair with Dr. Dick Auld.
3. Kimberly Vining. M.S. 2012. Cotton Mutants with Divergent Fiber Quality Characteristics. Co-Chair with Dr. Dick Auld and Dr. Robert Wright.

4. Hendon, Bralie. 2012. M.S. Stabilization of the Naked Seeded Trait in Cotton (*Gossypium hirsutum* L.). Co-Chair with Dr. Dick Auld.
5. Thompson, Corey. M.S. 2013. Improving Cool Temperature Establishment in Cotton by Modifying the Fatty Acid Composition. Co-Chair with Dr. Dick Auld.
6. Oliver, Cameron. M.S. 2014. Comparison of Cotton Yield Components under Three Irrigation Regimes. Co-Chair with Dr. Dick Auld.
7. Witt, Travis. M.S. 2014. Performance of Five Castor (*Ricinus communis* L.) Genotypes in Geographically Diverse Environments of North America. Co-Chair with Dr. Dick Auld.
8. Culpepper, Travis. M.S. 2019. Gas exchange response of warm-season and cool-season turfgrass to water deficit stress. Co-Chair with Dr. Joseph Young.

Committee member of: total of 22:

1. Zachary Hinds. M.S. 2012. Molecular Marker Analysis of Safflower. Dr. Dick Auld Chair.
2. Justin Cave. M.S. 2012. Water use efficiency under multiple irrigation regimes. Dr. Peter Dotray Chair.
3. Calvin Meeks, M.S. 2013. Water use efficiency and boll distribution of cotton under subsurface drip, surface drip, and overhead irrigation. Drs. John Snider and Guy Collins chairs. University of Georgia.
4. Melissa Muharam. Ph.D. 2012. Nitrogen nutrition estimation of cotton using leaf greenness and ground cover. Dr. Stephan Maas Chair.
5. Sanaz Safian. Ph.D. 2014. Estimation Crop Water Deficit Using ground cover and thermal band of medium-resolution multispectral satellite imagery. Dr. Stephan Maas Chair.
6. Brendan Kelly. Ph.D. 2014. Multivariate analysis of fiber properties and their relation to yarn properties. Eric Hequet Chair.
7. Cassandra Plank. Ph.D. 2014. Effect of light environment on methoxypyrazine content of cabernet sauvignon. Ed Hellman and Thayne Montague co-chairs.
8. Cristiane Pilon. PhD 2015. Effect of water-deficit stress during squaring on the physiology of reproductive development. University of Arkansas. Derrick Oosterhuis chair.
9. Asher, Scott. PhD May, 2016. Vertical Mobility, Soil Adsorption, and Cotton Tolerance to Three Protoporphyrinogen Oxidase (PPO) Inhibiting Herbicides in Three West Texas Soils. Plant and Soil Sciences. Peter Dotray chair.
10. Merchant, Rand. PhD August, 2016. Identification and control of glyphosate-resistant Palmer amaranth in West Texas. Plant and Soil Sciences. Peter Dotray chair.
11. Baxter, Lisa. PhD May, 2017. "Novel Grazing Management Strategies for the Southern High Plains". Plant and Soil Sciences. Chuck West Chair.

12. Liu, Xiaoxiao. MS May, 2017. Plant and Soil Sciences. Jason Woodward Chair.
13. Teveni, Pablo. PhD May, 2017. Characterizing Temporal Ecophysiology for Chemical Management of Huisache (*Acacia farnesiana* [L.] Willd.). Natural Resources. Robert Cox Chair.
14. Roper, Richard, M.S. May, 2017. "Evaluation of Management Options for *Meloidogyne Incognita* on the High Plains of Texas". Plant and Soil Sciences. Jason Woodward Chair.
15. Kusi, Nana. PhD May, 2018. Plant and Soil Sciences. Katie Lewis Chair.
16. Laza, Haydee. PhD May, 2018. Plant and Soil Sciences. Venu Mendu Chair.
17. McDonald, Mark. MS May, 2018. Plant and Soil Sciences. Katie Lewis Chair.
18. Teveni, Pablo. PhD May, 2018. Natural Resources Management. Robert Cox, Chair.
19. Wright, Taylor, M.S. May, 2019. "Interactive response of cotton varieties to Velum® Total in fields infested with *Rotylenchulus reniformis*". Katie Lewis Chair
20. Jackson, Matthew. May, 2019. "Evaluating the effectiveness of UAV-based remote sensing systems to detect rangeland plant species in the Texas panhandle." Carlos Portillo Chair.
21. Bhattarai, Bishwoyog. May, 2019. "Water Depletion Pattern and Water Use Efficiency of Forage Sorghum, Pearl millet, and Corn Under Water Limiting Conditions." Sukhbir Singh Chair.
22. Zolue, Moses Gondah, PhD August, 2020. "Biochar as an Amendment to Improve the Quality of Highly Degraded Soils." Katie Lewis Chair

In progress (Chair): total of 3

M.S.

8. Wright, Robert. Anticipated May, 2022. Plant growth regulators as methods of modifying cotton yield components.

Ph.D.

1. Pabuayon, Irish. Anticipated May 2021. Water and Nutrient Uptake Rates in Cotton, Sorghum, and Sesame.

Current Committee member of 6 students.

Non-Thesis M.S. Students Advised (2):

1. Chris Belt. Spring, 2014.
2. Jon Sherman. Spring, 2014.
3. Adam Durham. Spring, 2015.

Non-Thesis M.S. Students in Progress (1):

1. Payton Martinez (began August, 2020)

TEACHING RESPONSIBILITIES:

1. PSS 3323: Crop Physiology (3 credits; 100% responsibility) Spring, every year (2011-Present)
2. PSS 3323-D: Crop Physiology Distance (3 credits; 100% responsibility) Spring, every year (2011-Present)
3. PSS 4325: Crop Water Management (3 credits; 100% responsibility) Spring, every year 2012-2019
4. PSS 4325-D: Crop Water Management (3 credits; 100% responsibility) Spring, every year 2012-2019
5. PSS 6323: Plant Water Relations (3 credits; 100% responsibility) Spring, every year 2012-2019
6. PSS 6323-D: Plant Water Relations Distance (3 credits; 100% responsibility) Spring, every year 2012-2019
7. PSS 5323: Environmental Crop Physiology (3 credits; 100% responsibility) Fall, odd years 2017-present
8. PSS 1321: Introduction to Agronomy (3 credits; 100% responsibility) Fall 2020-Present
9. PSS 5100: Graduate Seminar (1 credit; 100% responsibility) Fall 2020-Present
10. PSS 4100: Senior Seminar (1 credit; 100% responsibility) Fall 2020-Present

GRANTS AND AWARDS:

Total funded at Texas Tech \$3,217,000 (My portion of total amount is \$2,065,000).

Total funded at Texas A&M AgriLife Research Station \$330,000 (My portion: \$135,000)

Total research contracts and grants-in-aid not budgeted through ORS: \$293,000 (My portion: \$293,000)

SERVICE TO PROFESSIONAL ORGANIZATIONS

National:

1. Crop Science Society of America (member since 2001). 2010-present. C-2/C-4 joint graduate student oral competition coordinator.
2. Beltwide Cotton Conferences Physiology Steering Committee (2013-2017).
3. Technical Editor, Crop Science. 2016-2018.
4. C-2 Crop Physiology Program Co-Chair 2017.
5. C-2 Crop Physiology Program Chair 2018.
6. Associate Editor, Crop Science. 2019-Present.
7. C-2 Crop Physiology Program Committee Member. 2020.

OTHER PROFESSIONAL SERVICE:

1. Reviewer for peer-reviewed journals, including Agronomy Journal, Crop Science, Field Crops Research, European Journal of Agronomy, Applied Engineering in Agriculture, and Journal of Cotton Science.

CONSULTING ACTIVITIES: N/A

SERVICE TO:

UNIVERSITY:

1. Graduate dean representative for three Ph.D. students in 2017.

COLLEGE (college of Agricultural Sciences and Natural Resources; CASNR):

1. 2011-Present. Member of CASNR Marketing Committee.
2. 2012-Present. Texas FFA State Agronomy Competition Superintendent.
3. Member of CASNR Water Center.
4. 2019-2020. CASNR Strategic Planning Committee Co-Chair.

DEPARTMENT (Plant and Soil Sciences, PSS):

1. 2011-2020. Agronomy Club Advisor.
2. 2011-present. Quaker Avenue Research Farm faculty coordinator.
3. 2012-present. ASA/CSSA/SSSA graduate recruitment booth coordinator.
4. 2012. Member of Soil Chemistry search committee.
5. 2012. Member of Turfgrass Physiology search committee.
6. 2019-present. Chair, Department of Plant and Soil Sciences

COMMUNITY:

1. 2012-2018. Volunteer at South Plains Food Bank. Each year, I helped a group of volunteers to bag 50,000 lb. of potatoes, sort food cans, and organize the food for distribution at the food bank. A total of 25 of my graduate students and members of the Tech Agronomy Club have participated with me.
2. 2019-present – Frenship High School business and technical programs steering committee

INDUSTRY:

1. Member of Plains Cotton Growers Advisory Board, which meets twice a month throughout the cotton season and once a month during the winter.
2. Member of West Texas Ag Chemicals Steering Committee in charge of scholarships (2015-2019)
3. West Texas Ag Chemicals Steering Committee advisor (2020)