

**Shuyu Liu**

Small Grain Genetics and Genomics  
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**Education**

Ph.D., Plant Breeding and Genetics, University of Missouri-Columbia, Columbia, MO, USA. 2003.  
 M.S., Plant Breeding and Genetics, Colorado State University, Fort Collins, CO, USA. 1998.  
 B.S., Crop Science, Shandong Agricultural University, Taian, Shandong, China. 1988.  
 M.S. Candidate, Bioinformatics, completed courses, University of Missouri-Columbia, MO, USA. 2003.

**Professional Experience**

**Associate Professor (Sep. 2016 – Present), Assistant Professor (Aug. 2010 – Aug. 2016), Small Grain Genetics and Genomics, Texas A&M AgriLife Research, Texas A & M University System, Amarillo, TX, USA**

Genetic and genomic studies of important traits of wheat in the US Great Plains. Traits include drought and heat tolerance, resistance to diseases (leaf, stem and stripe rust, wheat streak mosaic virus), and arthropods (greenbug, Russian wheat aphid, hessian fly, and wheat curl mite) as well as good end-use quality. Both traditional and molecular breeding techniques are used to develop germplasm lines with one or more target traits. Genomic techniques include gene/QTL mapping, molecular marker identification, validation and utilization, high throughput KASP SNP screening, and gene cloning. Gene functional analysis will be used to understand and improve those target traits.

1. Genetic mapping and genomics studies of QTL for yield, yield components under dry and irrigated conditions, and other traits in adapted cultivars; Study drought tolerance through transcriptomics of water stressed wheat plants.
2. Developing germplasm lines with multiple favorable alleles with drought tolerance, insect and wheat streak mosaic virus resistances using high throughput and diagnostic KASP SNP.
3. Cloning of greenbug resistance gene, identification of candidate genes through molecular techniques.

**Adjunct Professor, Dept. of Agricultural Sciences, West Texas A&M University, Dec. 1, 2012 – Present.** Supervise grad and intern students, give guest lectures in plant breeding and genetics.

**Research Scientist, Small Grain Breeding and Genomics**

**Department of Crop and Soil Environmental Sciences, Virginia Tech, Blacksburg, VA, USA. (Aug. 2007 – Jul. 2010)**

Breeding and genetic studies for resistance to Fusarium head blight (FHB, also called scab), powdery mildew, rust, and net blotch using conventional and genomics technologies in wheat and barley.

1. Developed wheat varieties with high yield, multiple disease resistances and good end use quality with traditional and molecular techniques.

2. Transferred disease resistances for FHB, powdery mildew, and rusts into regionally adapted varieties.
3. Mapped FHB resistance in native sources and saturate FHB resistance quantitative trait loci (QTL) in U.S. wheat cultivar Ernie and Massey.
4. Arranged field plots and design field planting maps of FHB nursery tests for wheat and barley.
5. Supervised and trained technicians and students on project required techniques.
6. Collaborated with pathologists, molecular geneticists, extension specialist, and breeders at Virginia Tech and other universities to conduct projects funded by USDA and Virginia Small Grain Board in variety tests, fungicide management and toxin evaluation studies.
7. Analyzed association mapping of important traits of barley using barley SNPs from barley coordinated agricultural projects.
8. Applied funding from USDA, Virginia Small Grain Board and Virginia Tech.
9. Presented the cultivar performance combined with fungicide management to reduce yield loss from scab in the field day.

**Biologist (Jan. – Aug. 2007) and Visiting Fellow (Jan. 2004 – Dec. 2006)**

**Greenhouse Processing Crops Research Center, Agriculture and Agri-Food Canada (AAFC), Harrow, ON, Canada**

Saturation mapping and map-based cloning of a major QTL for common bacterial blight (CBB) resistance. Marker-assisted selection (MAS) to breed bean varieties resistant to CBB, bean common mosaic virus and anthracnose simultaneously (AAFC projects, Collaborated with scientists at two other AAFC research stations, Morden, MB and Lethbridge, AB).

1. Developed sequence tagged site (STS) markers from tightly linked amplified fragment length polymorphic (AFLP) markers and saturately mapped a major CBB resistance QTL using AFLP, simple sequence repeat (SSR), sequence characterized amplified region (SCAR) and STS markers.
2. Identified positive bacterial artificial chromosome (BAC) clones and assembled contigs.
3. Studied candidate gene using complementary DNA (cDNA) and BAC clones by northern and southern blots.
4. Improved the efficiency of MAS by new markers from BAC ends and cDNA sequences.
5. Used adapted varieties from different market classes as recurrent parents to transfer all three disease resistances through backcrossing.
6. Conducted target markers screening for MAS in each generation for all three AAFC collaborators.
7. Planted advanced lines in the field to test both disease resistance and agronomic traits. Selected lines or bulked plants with at least two disease resistances for further breeding evaluations.
8. Worked with soybean breeding and molecular study group for genetic mapping and QTL analyses for cadmium uptake, soybean root rot, and white mold.

**Research Assistant**

**Plant Science Unit, University of Missouri-Columbia, Columbia, MO. USA (Aug. 1998 – Dec. 2003)**

Conducted research in wheat Fusarium Head Blight (FHB) resistance using conventional and molecular genetics.

1. Estimated genetic effects of FHB resistance in wheat cultivar 'Ernie' using generation means analyses.
2. Developed recombinant inbred lines (RILs) using single seed decent (SSD) from the cross Ernie/MO94-317. Tested RIL plants for FHB in a randomized complete block design in the

greenhouse.

3. Genotyped RILs using AFLP and SSR markers. Mapped four QTL on chromosomes associated with resistance to FHB in Ernie.
4. Worked with breeder to make crosses to incorporate different types of FHB resistances. Screened breeding materials using spray and single floret inoculation in the greenhouse and field.

### **Research Assistant**

**Soil and Crop Science, Colorado State University, Fort Collins, CO, USA (Sep. 1996 – Aug. 1998)**

Genetic studies and breeding for Russian wheat aphid (RWA) resistance in wheat.

1. Located the resistance genes of three major resistance sources on chromosomes using Chinese spring monosomics.
2. Applied immature embryo culture and Gamma ray irradiation to accelerate the breeding of pure lines for RWA resistance.
3. Collaborated with entomologist for RWA resistance screening.

### **Research Projects (Total \$14.1 M and \$2.01 M to genetic program since 2011)**

“Exploiting Wheat Relatives as a Source of Superior Traits to Improve Wheat Cultivars” by

**Texas A&M AgriLife Research Crop Improvement Program**, 2017-2019. \$140,000. PI: Shuyu Liu, Co-PI: Jackie Rudd, Amir Ibrahim, Chenggen Chu, Shichen Wang, Qingwu Xue, Charlie Johnson.

“Validation, characterization and deployment of QTL for grain yield components in wheat” Coordinated Agricultural Project (WheatCAP), “PD Jorge Dubcovsky. Total fund \$9.7 M. USDA-NIFA-IWYP. Co-PI, \$432,685. 2016-2021.

“Speed Wheat Breeding via a Doubled Haploid System and a High Throughput Sequencing Platform”.

**Liu, S.Y.**, J.C. Rudd, A. Ibrahim, C.-T., Tan, Q. Xue, D.B. Hays, J. Awika. **Texas A&M AgriLife Research Monocot Improvement Program**. PI. Total: \$80,000. 2015-2017.

“Application of Next Generation Sequencing to Identify Expressed Genes for Drought Tolerance and to Develop New Germplasm Lines in Wheat”. **Liu, S.Y.**, A.M. Ibrahim, J.C. Rudd, Q. Xue. **Monsanto Beachell-Borlaug International Scholarship Program** for Ph. D. Student, Yan Yang. PI, Total: \$99,368. 2015 – 2017.

“Identification of Single Nucleotide Polymorphic Markers Linked to Drought Tolerance QTL in Texas Wheat and Introgression of the QTL into Spring Wheat adapted to Africa”. **The Norman E.**

**Borlaug Leadership Enhancement in Agriculture Program (LEAP)** of the US government’s Feed the Future Borlaug 21<sup>st</sup> Century Leadership Initiative, USAID, For Ocheya’s thesis research, PI, \$19,512. Sep. 1, 2014 – Aug. 31, 2015.

“Identification of SNP Markers for Drought Tolerance and Developing Drought Tolerant Spring Wheat Germplasm Using Marker-Assisted Breeding”. **Liu, S.Y.**, A.M. Ibrahim, J.C. Rudd, Q. Xue, C. Johnson, P. Njau. **Monsanto Beachell-Borlaug International Scholarship Program** for Ph. D. Student, Silvano Assanga Ocheya. PI, Total: \$180,000. 2013 – 2016.

“Mapping QTL for Yield and Its Components in Hard Red Winter Wheat TAM 111”. **The Borlaug International Scholars programs** from College of Agriculture and Life Sciences, Texas A&M University System. **Liu, S.Y.** and A. Ibrahim. PI, \$60,000. 2012-2015.

“Marker-assisted Pre-breeding to Improve Wheat Germplasm Lines with Multiple Stress Tolerances and Good End-use Quality in TX” funded by **Texas Wheat Producer Board**, PI, US\$175,000. Sep. 2010 – Aug. 2018.

“Development of Wheat Germplasm lines for Texas and High Plains”. **Texas A&M AgriLife Research**, PI, \$87,000. 2010-2013.

- “Developing Winter Small Grain – Cool-Season Perennial Grass Forage Cropping Systems for Texas”. Rudd, J.C., D. Malinowski, C. Neely, A. Ibrahim, **S.Y. Liu**, Q. Xue, D. Drake. 2013-2015. **Texas AgriLife Research Cropping System Program**. Co-PI, \$300,000. Funded. Liu portion: \$33,000. 2013 – 2015.
- “Developing Hybrid Wheat for Texas and the Broader US Great Plains”. Ibrahim, A., J.C. Rudd, C. Johnson, **S.Y. Liu**, D. Hays. 2013. **Texas A&M AgriLife Research Monocot Program**. US\$ \$80,000. Co-PI. 2013 – 2015.
- “Impact of Deficit Irrigation on Host Resistance, Disease Incidence and Water Use Efficiency of Wheat”. Charles M. Rush, S. O’Shaughnessy, **S.Y. Liu**. Ogallala Aquifer – **USDA-ARS Research Initiative**. Collaborator, US\$96,000. Sep. 2012 – Aug. 2013, Liu portion: \$10,000.
- “Identification of Molecular Markers Linked to Water Use Efficiency in A Drought Tolerant Wheat Cultivar”. **USDA-NIFA-CSREES funded Triticeae Coordinated Agricultural Project**, University of Minnesota. PI, US\$20,000. Jul. 2011 – Jun. 2013.

### Skills

1. Analyze genotype data from 90k SNP array using GenomeStudio and genotyping-by-sequencing as well as association analyses using TASSEL, GAPIT etc.
2. Construct genetic maps of important traits using JoinMap 4.0. Map QTL using QTL Cartographer 2.5 or MapQTL for traits from single environment, and QTLnetwork, GeneStat, IciMapping for traits from multiple environments to analyses epistasis and QTL by environmental interactions.
3. Association mapping to verify known QTL and identify new genes or QTL using STRUCTURE and TASSEL.
4. Develop crop varieties and elite lines by traditional and molecular techniques such as gamma ray irradiation and interspecific hybridization, immature embryo, spike, or pollen culture, marker – assisted selection.
5. Optimize PCR conditions and analyze AFLP, SSR, STS, SCAR and SNP markers.
6. Design primers to amplify specific target bands using Primer 3 and GENERUNER 3.0.
7. Target band cloning and DNA sequencing. Compare sequences using BLAST, Vector NTI or other software.
8. Screen positive clones using BAC pooling and PCR. Physical mapping of target QTL. Analyze restriction enzyme digestion patterns of BAC clones using Image 3.10b and assemble contigs using FPC 4.7.
9. Extract and purify RNA and study gene expression. Northern and southern blot analyses of target band or cDNA clones.
10. Set up and work with software under DOS, Windows, Unix (linux).
11. Supervise personnel working on projects to ensure the progress.
12. Organize and participate regional field day trips to present data on agronomic performance of crop varieties with farmers and researchers.
13. Design experiments in the greenhouse and field to test breeding lines and statistically analyze data using SAS and Excel.
14. Manage experiments in the field, greenhouse, growth chamber, and laboratory.
15. Write proposals to apply extramural funding and conduct collaborative projects with scientists in other expertise.

**Awards (5)**

1. 2015 TAMU College of Agriculture and Life Science Dean's Outstanding Research Achievement Award for Interdisciplinary Research Team, Wheat Improvement Team.
2. Visiting Fellowship from Agriculture and Agri-Food Canada awarded by Natural Sciences and Engineering Research Council of Canada from 2004 to 2006.
3. Tak Tsuchiya Graduate Student Achievement Award from 1997 to 1998 at Colorado State University.

**Awards and recognitions of supervised students and team members (22)**

1. Ph.D. student, Smit Dhakal, Tom B. Slick Fellowship, \$33,010. Jan. 2018 – Dec. 2018
2. Ph.D. student, Yan Yang, Excellent Student Award from Association of Chinese Soil and Plant Scientists of North America, Tampa, FL, Oct 23, 2017.
3. Ph.D. student, Yan Yang, Tom B. Slick Fellowship, \$32,696. Sep. 2017 – Aug. 2018.
4. Ph. D. student, Yan Yang, 3rd place in poster presentation, DuPond Pioneer Plant Breeding Symposium on Feb. 15, 2017.
5. Ph. D. students, Silvano Assanga, Smit Dhakal, and Yan Yang got the McFaddenn Conference Scholarship to participate the Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
6. Ph. D. student, Silvano Ocheya Assanga, First place in poster presentation, DuPond Pioneer Plant Breeding Symposium on Feb 18, 2016.
7. Research Scientist, Chor Tee Tan got the Research Collaboration award from the Dept. of Soil and Crop Sci. in TAMUS in 2015.
8. Ph.D. student, Silvano Ocheya Assanga, got the graduate research award from the Dept. of Soil and Crop Sci. in TAMUS in 2015
9. Yan Yang, Dudley Smith Travel Award from Dept of soil and crop science, Texas A&M University. \$1,800. Travel to USDA-ARS at Manhattan, KS to learn genotyping-by-sequencing and data analyses. May 2015.
10. Yan Yang, 2015 Student Operation Connection for the 132nd Convention, American Seed Trade Association, Washington, DC, June 17-20, 2015.
11. Yan Yang, Monsanto Beachell Borlaug International Scholarship. 2015-2017.
12. Smit Dhakal, Feb 2015, Plant Breeding Symposium at College Station, First place on poster competition
13. Silvano Assanga Ocheya, Feb. 2015, Plant Breeding Symposium at College Station, Selected speaker award on research
14. Yan Yang, Feb. 2015, Plant Breeding Symposium at College Station sponsored by DuPond-Pioneer, Selected speaker award on research
15. Silvano Assanga Ocheya, 2014 Texas Plant Protection Association, outstanding graduate student award.
16. Silvano Assanga Ocheya, The Norman E. Borlaug Leadership Enhancement in Agriculture Program (LEAP) of the US government's Feed the Future Borlaug 21<sup>st</sup> Century Leadership Initiative, USAID, Sep. 2014-Aug. 2015.
17. Silvano Assanga Ocheya, International Travel Bursary award as an invited international participant on Tomorrow's Leaders Forum on Food, Feed, Fiber, and Fuel security as climate changes at the Agricultural Biosciences International Center, Oct. 5-9, 2014, Saskatoon, SK, Canada.
18. Silvano Assanga Ocheya, Ph. D. Candidate, Borlaug Next Generation Delegate by Chicago Council,

May 2014.

19. Silvano Assanga Ocheya, Monsanto Beachell Borlaug International Scholarship, 2013-2016.
20. Smit Dhakal, Ph. D. candidate, Excellence Fellowship from College of Agriculture and Life Science, TAMU, 2014-2015.
21. Smit Dhakal, M.S. candidate, Texas A&M AgriLife Research Amarillo Fund for Excellence for graduate student, 2012-2014.
22. Srirama Krishna Reddy, Assistant Research Scientist, Research Collaboration Award from Soil and Crop Science, TAMU, 2012.

### **Cultivar and Germplasm Release at TAMU (2)**

1. Rudd, J. C., R.N. Devkota, A.M.H. Ibrahim, J. A. Baker, S. Baker, R. Sutton, B. Simoneaux, G. Opeña, L.W. Rooney, J.M. Awika, **S.-Y. Liu**, Q. Xue, B. Bean, C.B. Neely, R.W. Duncan, Y. Jin, B.W. Seabourn, R.L. Bowden, Y. Jin, M.-S. Chen, and R.A. Graybosch. 2018. TAM 204' Wheat, Adapted to Grazing, Grain, and Graze-out Production Systems in the Southern High Plains. J. Plant Reg.
2. Devkota, R.N., J.C. Rudd, A. M. Ibrahim, J.A. Baker, S. Baker, M.D. Lazar, R. Sutton, B. Simoneaux, G. Opeña, L.W. Rooney, J. M. Awika, S.-Y. Liu, Q. Xue, B. Bean, R.W. Duncan, R.L. Bowden, B.W. Seabourn, Y. Jin, M.-S. Chen, and R.A. Graybosch. 2018. TAM 114 wheat, excellent bread making-quality hard red winter wheat cultivar adapted to the Southern High Plain. J. Plant Reg.

### **Cultivar and Germplasm Release before TAMU (12 cultivars, 3 germplasm lines and 2 populations)**

Participated the release of 10 wheat cultivars (7 soft red, two hard red, and one durum), two wheat germplasm lines, two barley cultivars, one dry bean line, and two wheat mapping populations since 2009.

**[In the following sections, underlined names are post-doctoral scientists, visiting scientists, research staff and co-chaired graduate students under Liu's supervision; italic names are graduate students with Liu in committee; (\*) indicates the research conducted at the Texas A&M AgriLife Research and Liu is the corresponding author or supervisor]**

### **Publications in Refereed Journals (68)**

1. Yang, Y., B.R. Basnet, A.M.H. Ibrahim, J.C. Rudd, X. Chen, R.L. Bowden, Q. Xue, R.D. Devkota, S. Wang, C.D. Johnson, R. Metz, R.E. Mason, D.B. Hays and **S.-Y. Liu**. 2017. Developing KASP markers on a major stripe rust resistance QTL in a popular wheat TAM 111 using 90K array and genotyping-by-sequencing SNPs. Crop Science. In press. \*Corresponding author.
2. Nyine, M., S. Wang, K. Kiani, K. Jordan, **S.Y. Liu**, P. Byrne, S. Haley, S. Baenziger, S. Chao, R. Bowden, E. Akhunov. 2016. Genotype imputation in winter wheat using first-generation haplotype map SNPs improves genomewide association mapping and genomic predictions of traits. G3. In press. G3/2018/200664
3. J.C. Rudd, Devkota, R.N., A. M. Ibrahim, J.A. Baker, S. Baker, M.D. Lazar, R. Sutton, B. Simoneaux, G. Opeña, L.W. Rooney, J. M. Awika, **S.-Y. Liu**, Q. Xue, B. Bean, R.W. Duncan, R.L. Bowden, B.W. Seabourn, Y. Jin, M.-S. Chen, and R.A. Graybosch. 2018. TAM 114 wheat, excellent bread making-quality hard red winter wheat cultivar adapted to the Southern High Plain. J. Plant Reg. 12:367-372.

4. Dhakal, S., C.-T. Tan, V. Anderson, H. Yu, M.P. Fuentelba, J.C. Rudd, S.D. Haley, Q. Xue, A.M.H. Ibrahim, L. Garza, R. Devkota, **S.Y. Liu\***. 2018. Mapping and KASP Marker Development for Wheat Curl Mite Resistance in 'TAM 112' Wheat Using Linkage and Association Analysis. *Mol. Breed.* 38:119. \*Corresponding author.
5. Thapa, S., S.K. Reddy, M.P. Fuentelba, Q. Xue\*, J.C. Rudd, **S.-Y. Liu\***. 2018. Physiological Responses to Water Stress and Yield of Winter Wheat Cultivars Differing in Drought Tolerance. *J. of Agron. and Crop Sci.* 204:247-358. \*Corresponding author
6. Assanga, S.O., M. Fuentelba, G. Zhang, C. Tan, S. Dhakal, J.C. Rudd, A.M.H. Ibrahim, Q. Xue, S.D. Haley, J. Chen, S. Chao, J. Baker, K. Jessup, S.Y. Liu\*. 2017. Mapping of quantitative trait loci for grain yield and its components in a US popular winter wheat TAM 111 using 90K SNPs. *PLOS ONE* 12: e0189669. doi:10.1371/journal.pone.0189669. \*Corresponding author.
7. Thapa, S., K.E. Jessup, G.P. Pradhan, J.C. Rudd, S. Liu, J.R. Mahan, R.N. Devkota, J.A. Baker, Q. Xue. 2018. Canopy temperature depression at grain filling correlates to winter wheat yield in the US Southern High Plains. *Field Crops Research* 217: 11-19.
8. Thapa, S., Q. Xue, K.E. Jessup, J.C. Rudd, S. Liu, G.P. Pradhan, et al. 2017. More Recent Wheat Cultivars Extract More Water from Greater Soil Profile Depths to Increase Yield in the Texas High Plains. *Agronomy Journal* 109: 2771-2780. doi:10.2134/agronj2017.02.0064
9. Tan, C.-T., H. Yu, Y. Yang, X. Xu, M. Chen, J.C. Rudd, Q. Xue, A. Ibrahim, L. Garza, S. Wang, M.E. Sorrells, **S.Y. Liu\***. 2017. Development and validation of KASP markers for the greenbug resistance gene *Gb7* and the Hessian fly resistance gene *H32* in wheat. *Theor Appl Genet* 130:1867-1884. doi:10.1007/s00122-017-2930-4. \*Corresponding author.
10. Tan, C.-T., S.O. Assanga, G. Zhang, J.C. Rudd, S. Haley, Q. Xue, A. Ibrahim, G. Bai, X. Zhang, P. Byrne, M.P. Fuentelba, **S.Y. Liu\***. 2017. Development and validation of KASP SNP markers for wheat streak mosaic virus resistance gene *Wsm2*. *Crop Sci.* 57:340-349. doi: 10.2135/cropsci2016.04.0234. \*Corresponding author.
11. Assanga, S.O., G. Zhang, C.-T. Tan, J.C. Rudd, A. Ibrahim, Q. Xue, S. Chao, M.P. Fuentelba, **S.Y. Liu\***. 2017. Saturated genetic map of wheat streak mosaic virus resistance gene *wsm2* in wheat. *Crop Sci.* 57:332-339. doi: 10.2135/cropsci2016.04.0233. \*Corresponding author.
12. Dhakal, S., C.-T. Tan, L. Paezold, M.P. Fuentelba, J.C. Rudd, B.C. Blaser, Q. Xue, C.M. Rush, R.N. Devkota, **S.Y. Liu\***. 2017. Wheat curl mite resistance in hard winter wheat in the U.S. Great Plains. *Crop Sci.* 57:53-61. doi: 10.2135/cropsci2016.02.0121 \*Corresponding author.
13. Thapa, S., K. Jessup, G. Pradhan, J.C. Rudd, S.-Y. Liu, J. Mahan, R.N. Devkota, J. Baker, Q. Xue. 2017. More Recent Wheat Cultivars Extract More Water from Greater Soil Profile Depths to Increase Yield in the Texas High Plains. *Agron. J.* 109:2771–2780 doi:10.2134/agronj2017.02.0064
14. Grogan, S.M., J. Anderson, P.S. Baenziger, K. Frels, M.J. Guttieri, S.D. Haley, K-S. Kim, **S.Y. Liu**, G.S. McMaster, M. Newell, P.V. Vara Prasad, S.D. Reid, K.J. Shroyer, G. Zhang, E. Akhunov, and P.F. Byrne\*. 2016. Phenotypic plasticity of winter wheat heading date and grain yield across the U.S. Great Plains. *Crop Sci.* 2223-2336.
15. **Liu, S.Y.\***, S. Ocheya, S. Dhakal, X. Gu, C.-T. Tan, Y. Yang J.C. Rudd, D.B. Hays, A.M. Ibrahim, Q. Xue, S. Chao, R. Devkota, C. Shachter, T. Huggins, S. Mohammed, M.P. Fuentelba. 2016. Validation of chromosomal locations of 90K array SNP in US wheat. *Crop Sci.* 56:364-373. doi: 10.2135/cropsci2015.03.0194
16. Ajayi, S., S.K. Reddy, P.H. Gowda, Q. Xue, J.C. Rudd, G. Pradhan, **S. Liu**, B.A. Stewart, C. Biradar, and K.E. Jessup. 2016. Spectral reflectance models for characterizing winter wheat genotypes. *J. of Crop Improv.* 30:176-195.

17. **Liu, S.Y.\***, J.C. Rudd, G. Bai, S.D. Haley, A.M.H. Ibrahim, Q. Xue, D.B. Hays, R.A. Graybosch, R.A. Devokota, P.S. Amand. 2014. Molecular markers linked to important genes in hard winter wheat. *Crop Sci.* 54:1304–1321. doi: 10.2135/cropsci2013.08.0564. \*Corresponding author.
18. **Reddy, S.K., S.Y. Liu\***, J.C. Rudd, Q. Xue, P. Payton, S.A. Finlayson, J. Mahan, A. Akhunova, S.V. Holalu, N. Lu. 2014. Physiology and transcriptomics of water-deficit stress responses in wheat cultivars, TAM 111 and TAM 112. *J. Plant Physiol.* 171:1289–1298. \*Corresponding authors. DOI: 10.1016/j.jplph.2014.05.005.
19. O’Boyle, P.D., W.S. Brooks, M. D. Barnett, G.L. Berger, B.J. Steffenson, E.L. Stromberg, M.A. Saghai Maroof, **S.Y. Liu**, C.A. Griffey. 2014. Mapping net blotch resistance in ‘Nomini’ and Clho 2291 barley. *Crop Sci.* 54:2596–2602. doi:10.2135/cropsci2013.08.0514.
20. Pradhan, G., Q. Xue, **S.Y. Liu**, J. C. Rudd, and K. E. Jessup. 2014. Effective use of soil water contributed to high yield in wheat in the U.S. Southern High Plains. *J. Arid Land Studies.* 24:153–156.
21. Pradhan, G., Q. Xue, J. C. Rudd, K. E. Jessup, **S.Y. Liu**, R. N. Devkota, and J. R. Mahan. 2014. Cooler Canopy Contributes to Higher Yield and Drought Tolerance in New Wheat Cultivars. *Crop Sci.* 54:2275–2284. doi:10.2135/cropsci2013.11.0788
22. Basnet, B.R., A.M.H. Ibrahim, X. Chen, R.P. Singh, E.R. Mason, **S.Y. Liu**, R.N. Devkota, N.K. Subramanian, and J.C. Rudd. 2014. Molecular mapping of stripe rust resistance in hard red winter wheat TAM 111 adapted to the U.S. High Plains. *Crop Sci.* 54:1361–1373. doi: 10.2135/cropsci2013.09.0625
23. Berger, G., A. Green, P. Khatibi, W.S. Brooks, L. Rosso, **S.Y. Liu**, C.A. Griffey, D. Schmale III. 2014. Characterization of Fusarium Head Blight (FHB) resistance and deoxynivalenol accumulation in hulled and hullless winter barley. *Plant Dis.* 98:599–606. 2048/10.1094/PDIS-05-13-0479-RE.
24. Xue, Q., J.C. Rudd, **S.Y. Liu**, K.E. Jessup, R.N. Devkota, and J.R. Mahan. 2014. Yield determination and water use efficiency of wheat under water-limited conditions in the U.S. Southern High Plains. **Crop Sci.** 54:34–47. doi: 10.2135/cropsci2013.02.0108.
25. **Reddy, S.K.**, Y. Weng\*, J.C. Rudd, A. Akhunova, **S.Y. Liu\***. 2013. Transcriptomics of induced defense responses to greenbug aphid feeding in near isogenic wheat lines. *Plant Sci.* 212:26–36. \*Corresponding authors. DOI: 10.1016/j.plantsci.2013.08.002
26. **Liu, S.Y.#**, C.A. Griffey#, M.D. Hall, A.L. McKendry, J. Chen, W.S. Brooks, G. Brown-Guedira, D. Van Sanford, and D.G. Schmale. 2013. Molecular characterization of field resistance to Fusarium head blight in two U.S. soft red winter wheat cultivars. **Theor. Appl. Genet.** 126:2485–2498. #Corresponding authors. doi: 10.1007/s00122-013-2149-y
27. Brooks, W.S., M.E. Vaughn, G.L. Berger, C.A. Griffey, W.E. Thomason, J.J. Paling, R.M. Pitman, D.W. Dunaway, R.A. Corbin, J.C. Kenner, E.G. Hokanson, H.D. Behl, B.R. Beahm, **S.Y. Liu** et al. 2013. Registration of ‘Eve’ winter hullless barley. 2013. **J. Plant Reg.** 7:5–11.
28. Christopher, M.D., **S.Y. Liu**, M.D. Hall, D.S. Marshall, M.O. Fountain, J.W. Johnson, E.A. Milus, K.A. Garland-Campbell, X. Chen, and C.A. Griffey. 2013. Identification and mapping of adult plant stripe rust resistance in soft red winter wheat VA00W-38. **Crop Sci.** 53:871–879. doi: 10.2135/cropsci2012.02.0086.
29. Christopher, M.D., **S.Y. Liu**, M.D. Hall, D.S. Marshall, M.O. Fountain, J.W. Johnson, E.A. Milus, K.A. Garland-Campbell, X. Chen, and C.A. Griffey. 2013. Identification and mapping of adult-plant stripe rust resistance in soft red winter wheat cultivar USG 3555. **Plant Breed.** 132:53–60. Doi:10.1111/pbr.12015.

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53. Banik, M., **S.Y. Liu**, K. Yu, V. Poysa, S.J. Park. 2007. Molecular TILLING and EcoTILLING: Effect tools for mutant gene detection in plants. **In Genes, Genomes and Genomics**, 1:123–132.
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### Book Chapter (3)

- Banik M, **Liu S**, Yu K, Poysa V, Park SJ. Molecular TILLING and EcoTILLING: effective tools for mutant gene detection in plants. *Genes Genomes Genomics*. Global Science Books. 2007 1(2):123-32.
- Liu S.**, K. Yu, S. J. Park. 2009. Marker-assisted breeding for resistance to common bacterial blight of common bean. In: Chapter 6 of *Plant Breeding*. Ed. By N. Huttunen and T. Sinisalo. ISBN: 978-1-60741-624-1. **Nova Science Publishers, Inc.**
- Xue, Q., J.C. Rudd, J. Bell, T. Marek, **S.Y. Liu**. 2017. Improving water management in winter wheat. Ed. by P. Langridge, *Achieving sustainable wheat cultivation*. Vol. 2: Cultivation techniques. July 2017. ISBN: 978-1-78676-020-3. Burleigh Dodds Science Publishing.

### Manuscripts in Review or Preparation (5)

1. Assanga, S.O., M.P. Fuentealba, S. Vader, J. Awika, A. Ibrahim, J.C. Rudd, Q. Xue, G. Zhang, C.-T. Tan, J. Baker, K. Jessup, H. Yu, L. Garza, and S.Y. Liu\*. Genetic Mapping of End-Use Quality Quantitative Trait Loci in Hard Red Winter Wheat. In preparation.
2. Yang et al. Mapping QTL for yield and yield components in Texas popular cultivars.
3. Yang et al. Mapping QTL for yield and yield components in synthetic derived winter wheat lines.
4. Dhakal et al. Mapping loci for end-use quality in Texas popular cultivars.
5. Dhakal et al. Mapping loci for end use quality in synthetic derived winter wheat lines.

### Publications in Magazines (4)

1. **Liu. S.**, C. A. Griffey, and A.L. McKendry. 2009. Diagnostic markers for scab resistance in soft red winter wheat cultivar Ernie. **Fusarium Focus**. U.S. Wheat and Barley Scab Initiative. Spring, 2009. Volume 9, Issue 1, pp5.

2. Balasubramanian P., F.A. Kiehn, R.L. Conner, H.H. Mündel, H.C. Huang, S.J. Park, K. Yu and **S. Liu**. Dry Bean Breeding Program at AAFC Morden – Research Update. **Pulse Beat**, Winter, 2007.
3. **Liu S.**, S.J. Park, K. Yu, R.L. Corner, P. Balasubramanian, H.H. Mundel, and F.A. Kiehn. Application of molecular markers to breed disease resistant cultivars in Dry bean. **Pulse Beat**, Winter, 2005 page 26-27.
4. Yu K., S.J. Park and **S. Liu**. Pyramiding disease resistance genes into white bean cultivar through multiple molecular markers: an efficient and economic approach. **The Emerging bean**, Spring 2004 page 6-7.

#### Oral Presentations (74)

1. **Liu S.-Y.**, C. Chu, J.C. Rudd, A. Ibrahim, Q. Xue, X. Xu, M.-S. Chen, S. Wang, R. Metz, C. Johnson, Y. Yang, S. Dhakal, J. Baker, R. Devkota, L. Garza, X. Liu. 2018. Utilization of primary synthetics in winter wheat genomic breeding. **ASA-CSSA International Annual Meeting**. Baltimore, MD. Nov. 4-7, 2018.
2. **Liu S.-Y.**, C. Chu, Y. Yang, S. Dhakal, J. Antelo, L. Garza, and X. Liu. 2018. Update on wheat genetic research in Amarillo. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
3. Chu C., S. Wang, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, and S.-Y. Liu. 2018. RNASeq analysis to identify genes responsible to drought tolerance in wheat cultivars TAM 111 and TAM 112. **ASA-CSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018. Also in **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
4. Dhakal S., Y. Yang, C. Chu, S. Wang, J. Baker, R. Devkota, S. Baker, G. Opena, J. Awika, J. C. Rudd, A.M.H. Ibrahim, Q. Xue, and **S.-Y. Liu**. 2018. Association analysis of end-use quality in synthetic derived winter wheat. **ASA-CSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
5. Yang Y., S. Dhakal, C. Chu, S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, J. Baker, K. Jessup, L. Garza, R. Devkota, S. Baker, G. Opena, C. Johnson, R. Metz, and **S.-Y. Liu**. 2018. Association analyses for yield and yield components in synthetic derived winter wheat lines. **ASA-CSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
6. Xue Q., S. Thapa, K. Jessup, S.-Y. Liu, J.C. Rudd, J. Baker, S. Baker, and R. Devkota. 2018. Improving Wheat Drought Tolerance and Water Use Efficiency in the Texas High Plains. **ASA-CSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
7. Thapa S., J.C. Rudd, Q. Xue, K. Jessup, S.-Y. Liu, J. Baker. 2018. Use of NDVI for Characterizing Winter Wheat Genotypes in the Texas High Plains. **ASA-CSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
8. Chu C., X. Liu, L. Garza, S. Dhakal, J.C. Rudd, A.M.H. Ibrahim, R. Devkota, G. Opena, and S.-Y. Liu. 2018. Wheat doubled haploid (DH) production and its application in genetics and breeding. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
9. Valenzuela-Antelo J., Amir M.H. Ibrahim, **S.-Y. Liu**, J.C. Rudd and M. Thomson. 2018. Genetic mapping of QTL linked to Green bug resistance and gene editing in Wheat. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
10. Dhakal S., Y. Yang, C. Chu, S. Wang, J. Baker, R. Devkota, S. Baker, G. Opena, J. Awika, J. C. Rudd, A.M.H. Ibrahim, Q. Xue, and **S.-Y. Liu**. 2018. Association analysis of end-use quality in synthetic derived winter wheat. **Texas Small Grain Workers Meeting**, College Station, Texas.

- Aug. 1-2, 2018. Orally presented in ASA-CSSA 2018 Annual International Meeting, Baltimore, MD. Nov. 4-7, 2018.
11. Yang Y., S. Dhakal, C. Chu, S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, J. Baker, K. Jessup, L. Garza, R. Devkota, S. Baker, G. Opena, C. Johnson, R. Metz, and **S.-Y. Liu**. 2018. Association analyses for yield and yield components in synthetic derived winter wheat lines. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018. Orally presented in ASA-CSSA 2018 Annual International Meeting, Baltimore, MD. Nov. 4-7, 2018.
  12. Sade F.B., A.M.H. Ibrahim, J.C. Rudd, and **S.-Y. Liu**. 2018. Genotype-by-floral traits interaction for hybrid wheat production in Texas. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
  13. Ibrahim AMH., J.C. Rudd, **S.-Y. Liu**, et al. Cutting-edge tools in wheat genomics, phenomics, and biotechnology at Texas A&M University. 2018. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
  14. Xue Q., S. Thapa, K. Jessup, J.C. Rudd, **S.-Y. Liu**, S. Baker, J. Baker, and R. Devkota. 2018. Evaluation of Physiological Traits Wheat Drought Tolerance – What We Learned from Two Extreme Drought Years? **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
  15. Thapa S., Q. Xue, K. Jessup, J.C. Rudd, **S.-Y. Liu**, S. Baker, J. Baker, and R. Devkota. 2018. Stem Reserve Remobilization in Winter Wheat Genotypes in the Texas High Plains. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
  16. Pierson E., L. Pierson, and **S.-Y. Liu**. 2018. Approach to Improve Wheat Productivity in Texas Using Microbes that Confer Water Stress Tolerance. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
  17. **Liu S.Y.** Application of array and GBS SNPS in Texas wheat Genetics and breeding. 2017. **Plant Breeding and Genetics Circle**. Nov. 17, 2017. College Station, TX.
  18. **Liu S.Y.**, J.C. Rudd, A.M.H. Ibrahim, Q. Xue, X. Xu, M-S. Chen, S. Wang, R. Metz, C. Johnson, Y. Yang, S. Dhakal, J. Baker, R.N. Devkota, H. Yu, X. Yang and L. Garza. 2017. Discovering pest resistances in primary synthetics using genotyping-by-sequencing and their application in winter wheat breeding. **ASA-CSSA-SSSA International Annual Meeting**. Oct. 22-25, Tampa, FL USA.
  19. Thapa S., G.P. Pradhan, K.E. Jessup, J.C. Rudd, **S.-Y. Liu**, J.R. Mahan, R.N. Devkota, J. Baker, J. Zhao and Q Xue. 2017. Winter Wheat Canopy Temperature at Grain Filling Correlates to Yield in the Texas High Plains. **ASA-CSSA-SSSA International Annual Meeting**. Oct. 22-25, Tampa, FL USA.
  20. Xue Q., K.E. Jessup, G.P. Pradhan, S. Ajayi-Olanrewaju, X. Hou, J.C. Rudd, **S.-Y. Liu**, A. Ibrahim, R.N. Devkota. 2017. Evaluation of Physiological Traits Associated with Wheat Yield in the Southern High Plains. **ASA-CSSA-SSSA International Annual Meeting**. Oct. 22-25, Tampa, FL USA.
  21. Ajayi-Olanrewaju S., N. Rajan, A. Ibrahim, J.C. Rudd, **S.-Y. Liu**, R. Sui, and Q. Xue. 2017. Ground-based and aerial manned systems to monitor the performance of wheat genotypes. **Texas Small Grain Workers Meeting**. Aug. 10-11, Amarillo, TX USA.
  22. Ding M., S. Thapa, K.E. Jessup, **S.-Y. Liu**, J.C. Rudd, and Q. Xue. 2017. Remobilization of stem carbon reserve in winter wheat under dryland and irrigated condition. **Texas Small Grain Workers Meeting**. Aug. 10-11, Amarillo, TX USA.
  23. **Liu S.-Y.**, J. C. Rudd, A.M.H. Ibrahim, Q. Xue, Y. Yang, S. Dhakal, S. Assanga, K. Jessup, S. Wang, R. Metz, C. Johnson, J. Baker, R.N. Devkota, H. Yu, X. Yang and L. Garza. 2017. Wheat Genic and

- genomic research using array and GBS SNPs. **Texas Small Grain Workers Meeting**. Aug. 10-11, Amarillo, TX USA.
24. Dhakal S., C-T. Tan, H. Yu, L. Garza, J.C. Rudd, Q. Xue, A.M.H. Ibrahim, and **S-Y. Liu**. 2017. Genetic mapping and KASP markers development for wheat curl mite resistance in TAM 112. **Texas Small Grain Workers Meeting**. Aug. 10-11, Amarillo, TX USA.
  25. Yang Y., S. Dhakal, J. C. Rudd, Q. Xue, A.M.H. Ibrahim, Y. Yang, J. Baker, K. Jessup, L. Garza, S. Wang, R. Metz, C. Johnson, S. Baker, R.N. Devkota, H. Yu, X. Yang, and **S-Y. Liu**. 2017. Genome-wide association mapping for yield and yield components in synthetic derived wheat. **Texas Small Grain Workers Meeting**. Aug. 10-11, Amarillo, TX USA.
  26. **Liu S.Y.**, Tan, C.T., S. Assanga, S. Dhakal, Y. Yang, J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Xu, G. Bai, M. Chen, R. Devkota, M.P. Fuentealba, H. Yu, L. Garza. 2017. Application of Array SNP and GBS in Genetics and Breeding of Hard Red Winter Wheat. **Plant and Animal Genome Conference XXV**. Jan. 14-18, San Diego, CA USA. Same presentation was done at College Station in Soil and Crop Science and Amarillo Research Center in Jan 2017.
  27. **Liu S.Y.** Breeding approaches to disease control in small grains. 2016. **Texas A & M AgriLife Mini-Symposium: Grand networks for Grand Challenges**. May 18-19, College Station, Texas.
  28. Tan, C.T., S. Assanga, S. Dhakal, Y. Yang, J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Zhang, G. Bai, M. Chen, R. Devkota, M.P. Fuentealba, H. Yu, L. Garza, and **S. Liu**. 2016. Developing KASP markers for biotic stress tolerances in wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 6-9, Phoenix, AZ USA.
  29. Xue, Q., J. Zhao, X. Lin, T.H Marek, **S. Liu**, and J.C. Rudd. 2016. Crop Yield and Water-Use Efficiency Responses to Climatic Variability in the U.S. Southern Great Plains. **ASA-CSSA-SSSA, 2016 International Annual Meetings**, November 6-9, 2016, Phoenix, AZ.
  30. Tan C.T., H. Yu, Y. Yang, L. Garza, J.C. Rudd, A. Ibrahim, Q. Xue, M. Chen, X. Xu, **S.-Y. Liu**. 2016. Double haploids production and genetic mapping of *Gb7* for greenbug resistance and *H32* for hessian fly resistance in wheat. **Texas Small Grain Workers Meeting**, August 4, College Station, Texas.
  31. Ajayi, S., Q. Xue, N. Rajan, S. K. Reddy, J. C. Rudd, A. Ibrahim, **S. Liu**, R. Sui, and K. Jessup. 2016. Normalized Difference Vegetation Index as a selection tool for drought tolerant winter wheat genotypes. Texas Small Grain Workers Meeting, College Station, Texas, August 4, 2016.
  32. Bhandari, M., S.K. Reddy, Q. Xue, J.C. Rudd, **S. Liu**, and Amir Ibrahim. 2016. Use of remote sensing for field phenotyping in wheat breeding program. Texas Small Grain Workers Meeting, College Station, Texas, August 4, 2016.
  33. Xue, Q., S. Thapa, K. Jessup, G. Pradhan, X. Hou, J. C. Rudd, **S. Liu**, T. Marek. 2016. Physiological Responses of Wheat to Different Irrigation Levels in the Texas High Plains. **Texas Small Grain Workers Meeting**, College Station, Texas, August 4, 2016.
  34. Ibrahim, A., J.C. Rudd, **S.Y. Liu**, S. Assanga, B.R. Baset, R. Singh. 2016. Breeding for durable disease resistance in wheat. **Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop**. April 17-20, San Antonio, Texas.
  35. **Liu S.-Y.**, S.O. Assanga, S. Dhakal, Y. Yang, P. Fuentealba. 2015. Wheat disease and insect management through host plant resistance. Global agronomy for Innovative approaches and Technologies in Soil and Crop Management. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 15-18, Minneapolis, MN USA. (Invited).
  36. Assanga, S.O., S. Dhakal, C-T. Tan, J.C. Rudd, G. Zhang, A. Ibrahim, Q. Xue, R. Devkota, S. Haley, J. Chen, M. P. Fuentealba, S. Baker, J. Baker. **S.-Y. Liu\***. 2015. Identification of QTL for

- yield and yield components and SNP development. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 15-18, Minneapolis, MN USA.
37. Reddy, B., A.M.H. Ibrahim, J.C. Rudd, **S.-Y. Liu**. 2015. Synthetic derived wheat: a hope for breaking the yield barrier in the U.S. Great Plains. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 15-18, Minneapolis, MN USA.
  38. Ocheya, S., M. P. Fuentealba, C. T. Tan, S. Dhakal, J. C. Rudd, G. Zhang, Q. Xue, A. M. H. Ibrahim, R. N. Devkota, S. D. Haley, J. Chen, S. Baker, J. Baker, and **S. Liu**. 2015. Genetic mapping for drought tolerance in TAM 111 and Wsm2 in CO960293-2 using 90K SNP array. **Texas Small Grain Workers Meeting**, Aug.12, Amarillo TX.
  39. Dhakal, S., R. N. Devkota, J. Baker, S. Baker, Y. Yang, Q. Xue, A. M. H. Ibrahim, **S. Liu**, and J. C. Rudd. 2015. QTL associated with yield in TAM 111 and TAM 112 and their interactions with environment. **Texas Small Grain Workers Meeting**, Aug.12, Amarillo TX.
  40. Yang, Y., K. Joseph, M. P. Fuentealba, S. Dhakal, Q. Xue, J. C. Rudd, A. Ibrahim, R. N. Devkota, J. Baker, and **S. Liu**. 2015. QTL associated with yield components in TAM 111 and TAM 112 and their interactions with environments. **Texas Small Grain Workers Meeting**, Aug.12, Amarillo TX.
  41. Tan, C. T., M. P. Fuentealba, S. Ocheya, S. Dhakal, J. C. Rudd, Q. Xue, G. Zhang, G. Bai, X. Zhang, S. D. Haley, and **S. Liu**. 2015. Validation and application of single nucleotide polymorphism in marker-assisted breeding for host plant resistance in wheat. **Texas Small Grain Workers Meeting**, Aug.12, Amarillo TX.
  42. Gu, X.K., Y.L. Li, T. Huggins, S.Y. Liu, D.B. Hays. 2015. Dissection of quantitative trait loci underlying wax biosynthesis in hexaploid wheat. **Texas Small Grain Workers Meeting**. Aug.12. Amarillo, Texas, USA.
  43. Ajayi, S.O., Q. Xue, N. Rajan, A. M. H. Ibrahim, S. K. Reddy, J. C. Rudd, S. Liu, R. Sui, and K. E. Jessup. 2015. Remote sensing techniques for assessing growth and performance of wheat genotypes: preliminary results. **Texas Small Grain Workers Meeting**, Aug,12, Amarillo TX.
  44. **Liu S.-Y.** et al. 2015. Genetic and genomic studies on important traits of Texas wheat. **Texas Small Grains Workers Meeting**. Aug. 12. Amarillo, Texas.
  45. **Liu, S.Y.** 2015. Wheat genetic research in Texas High Plains. Scientific research seminar presented to more than 40 biology students at Amarillo College. Apr. 9. **(Invited)**
  46. Ocheya, S.A., C.-T. Tan, S. Liu\*, G. Zhang, J. Rudd, A. Ibrahim, Q. Xue, R. Devkota, J. Chen, H. Scott, G. Bai, S. Chao, J. Baker, S. Baker, S. Dhakal, M.P. Fuentealba. 2015. Identification of SNP markers linked to *Wsm2* and QTL for yield and yield components. **Texas A&M Breeding Symposium**. Feb. 19. College Station, TX. **(Invited)**
  47. Yang, Y., B. Basnet, S.Y. Liu\*, A.M.H. Ibrahim, J.C. Rudd, Q. Xue, C. Johnson. 2015. Analysis of QTL by environment interactions for stripe rust resistance in TAM 111 using saturated genetic maps with SNP and RADseq markers. **Texas A&M Breeding Symposium**. Feb. 19. College Station, TX. **(Invited)**
  48. **Liu, S.Y.** 2014. Wheat genetic research on important traits in the High Plains. Soil and Crop Science departmental seminar, Oct. 8. College Station, TX. **(Invited)**
  49. Yan Yang. 2014. QTL by environment interactions for stripe rust resistance in TAM 111 using saturated genetic maps from SNP markers. **Texas Small Grain Workers Meeting**, Aug. 12-13. College Station (Ph D student).
  50. Smit Dhakal. 2014. Resistance to wheat curl mite in hard red winter wheat lines. **Texas Small Grain Workers Meeting**, Aug. 12-13. College Station (Ph D student).
  51. Silvano Ocheya. 2014. Identification of SNP markers for drought tolerance in wheat and mapping of *Wsm2*. **Texas Small Grain Workers Meeting**, Aug. 12-13. College Station (Ph D student).

52. Chor-Tee Tan. 2014. Validation and application of SNP markers for host resistance in wheat. **Texas Small Grain Workers Meeting**, Aug. 12-13. College Station (Postdoc Research Associate).
53. **Liu, S.Y.** 2014. The wheat research update at Amarillo. **Texas Small Grain Workers Meeting**. Aug. 12-13. College Station. **(Invited)**
54. **Liu, S.Y.** Wheat research for important traits in the U.S. High Plains. **University of North Texas**, Denton, TX. Aug. 11, 2014. **(Invited)**
55. **Liu, S.Y.** Detection of epistasis and QTL by environmental interactions using QTLNetwork 2.0. 2013. Triticeae Coordinated Agricultural Project-webinar recorded. **Plant Breeding Training Network**. Sep. 25, 2013 **(Invited)**
56. **Liu, S.Y.** The wheat research progress at Amarillo Center. 2013. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX. **(Invited)**
57. Ocheya, S.A. 2013. Identification of SNP Markers for Drought Tolerance in Wheat. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX (Ph D student).
58. Dhakai, S. 2013. Study of mite resistance in TAM112. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX (MS student).
59. **Liu, S.Y.** The wheat research progress at Amarillo Center. 2012. **Texas Small Grain Workers Meeting**. Aug. 1-2. College Station, TX. **(Invited)**
60. **Liu, S.Y.** The U.S. wheat production and research progress. 2011. Presented at Shandong Agricultural University on Nov. 2, Tanan, Shandong, and Shandong Academy of Agricultural Sciences on Nov. 4, Jinan, Shandong. **(Invited)**
61. **Liu, S.Y.** 2011. The research progress in wheat genetics at Amarillo Center. **Texas Small Grain Workers Meeting**. Aug. 2-3. Vernon, TX. **(Invited)**
62. **Liu, S.Y.**, C.A. Griffey, M.D. Hall, A.L. McKendry, J. Chen, W.S. Brooks, G. Brown-Guedira, D. Van Sanford. 2010. Linkage between scab resistance and morphological traits in soft red winter cultivar in the U.S. **ASA-CSSA-SSA International Annual Meeting**. Oct. 31-Nov. 3, Long Beach, CA.
63. **Liu, S.Y.** 2010. Research plan of wheat genetics at Amarillo Research Center. **Texas Small Grain Workers Meeting**. Aug. 2-3. Commerce, TX.
64. **Liu S.**, M.D. Hall, C.A. Griffey, A.L. McKendry, J. Chen, G. Brown-Guedira, J.P. Murphy and D. Van Sanford. 2009. Identification of diagnostic markers for scab resistance in US wheat cultivars. **ASA-CSSA-SSA International Annual Meeting**. Nov. 1-5. Pittsburg, PA.
65. **Liu S.**, C.A. Griffey, A.L. McKendry, J. Chen, M.D. Hall, G. Brown-Gudeara, D. Van Sanford. 2009. Marker saturation of QTL for scab resistance in native sources and its application in marker-assisted breeding. **The International Plant and Animal Genome Conference**. Jan. 10-14. San Diego, CA.
66. **Liu S.** Molecular characterization of a major QTL for common bacterial blight resistance in common bean. 2008. Plant breeding faculty and students in **Virginia Tech**, Apr. 5. Blacksburg, VA.
67. **Liu S.** Update on marker-assisted breeding for multiple resistances in bean. **Agriculture Agri-Food Canada**, Harrow, ON CA. May, 2007. Plant breeding scientists, postdocs, and students at **Agriculture Agri-Food Canada**, May 10. Harrow, ON CA.
68. **Liu S.**, K. Yu, M. Haffner, and S.J. Park. Physical mapping of a major QTL for common bacterial blight resistance in common bean. 2006. **ASA-CSSA-SSA International Annual Meeting**, Nov. 12-16. Indianapolis, IN.
69. **Liu S.**, K. Yu, S.J. Park, R.L. Conner, P. Balasubramanian, H-H. Mündel and F.A. Kiehn. 2006. Development of common bean varieties with multiple disease resistances using MAS. **ASA-CSSA-SSA International Annual Meeting**, Nov. 12-16. Indianapolis, IN.

70. **Liu S.**, K. Yu, M. Haffner, and S.J. Park. Toward the cloning of a major QTL conditioning common bacterial blight resistance in common bean. **The International Plant and Animal Genome Conference**. San Diego, CA USA. Jan. 14-16, 2006.
71. **Liu S.**, K. Yu, S.J. Park, R.L. Conner, P. Balasubramanian, H-H. Mündel and F.A. Kiehn. 2006. Breed multiple disease resistant common beans by marker assisted selection and backcrossing. **The International Plant and Animal Genome Conference**. Jan. 14-16. San Diego, CA.
72. **Liu S.**, K. Yu, S.J. Park, R.L. Conner, P. Balasubramanian, H-H Mündel and F.A. Kiehn. 'Pyramiding three disease resistance into common bean cultivars by marker assisted selection' and 'Fine mapping of a major QTL for common bacterial blight resistance' (by Liu, Yu and Park). Reported to **Ontario White Bean Producers' Marketing Board and Colored Bean Growers' Association**. Feb. of 2005, 2006, 2007. London, Ontario, Canada.
73. **Liu S.**, K. Yu, S.J. Park, R.L. Conner, P. Balasubramanian, H-H Mündel and F.A. Kiehn. 2004. Pyramiding three disease resistances into common bean cultivars by marker-assisted selection. **5<sup>th</sup> Canadian Pulse Research Workshop**. Nov. 28 – 31. London, Ontario, Canada.
74. **Liu S.**, H. Lu, T. Musket, A.L. McKendry, G.L. Davis. 2003. QTL associated with scab resistance in soft red winter wheat Ernie. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 2-6. Denver, CO.

#### **Proceedings and Poster Abstracts (110)**

1. Dhakal S., Y. Yang, C. Chu, S. Wang, J. Baker, R. Devkota, S. Baker, G. Opena, J. Awika, J. C. Rudd, A.M.H. Ibrahim, Q. Xue, and S.-Y. Liu. 2018. Association analysis of end-use quality in synthetic derived winter wheat. **ASA-CSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
2. Yang Y., S. Dhakal, C. Chu, S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, J. Baker, K. Jessup, L. Garza, R. Devkota, S. Baker, G. Opena, C. Johnson, R. Metz, and S.-Y. Liu. 2018. Association analyses for yield and yield components in synthetic derived winter wheat lines. **ASA-CSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
3. Yang Y., B.R. Basnet, A.M.H. Ibrahim, J.C. Rudd, Q. Xue, S. Wang, C. Johnson, R. Metz, X. Chen, R.L. Bowden, R.E. Mason, D.B. Hays and S-Y. Liu. 2017. Study of QTL by environment interactions for stripe rust resistance in TAM 111 using saturated genetic maps with 90K and GBS SNPs. **ASA-CSSA-SSSA International Annual Meeting**. Oct. 22-25, Tampa, FL USA. Also presented in Texas Plant Protection Association Annual Meeting. Dec 5, 2017. Bryan/College Station, TX.
4. Dhakal S., C-T. Tan, H. Yu, M.P. Fuentealba, J.C. Rudd, A.M.H. Ibrahim, Q. Xue and S-Y. Liu. 2017. Genetic mapping and KASP markers development for wheat curl mite resistance in TAM 112. **ASA-CSSA-SSSA International Annual Meeting**. Oct. 22-25, Tampa, FL USA. Also presented in Texas Plant Protection Association Annual Meeting. Dec 5, 2017. Bryan/College Station, TX.
5. Tan, C.-T., S-Y. Liu, S. Assanga, S. Dhakal, Y. Yang, J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Xu, G. Bai, M. Chen, R.N. Devkota, H. Yu, L. Garza. 2017. Developing KASP markers for wheat pest resistance in the US High Plains. **Plant and Animal Genome Conference XXV**. Jan. 14-18, San Diego, CA USA.
6. Guttieri, M.J., K. Frels, P. S. Baenziger, S.M. Grogan, P. Byrne, S.Y. Liu and B. F. Carver. 2017. Genome-wide association analysis of kernel weight in hard winter wheat. **Plant and Animal Genome Conference XXV**. Jan. 14-18, San Diego, CA USA.

7. Liu S.Y., J.C. Rudd, A. Ibrahim, Q. Xue, Y. Weng, S. Xu, J. Baker, R. Devkota, C.-T. Tan, H. Yu, X. Yang, L. Garza. 2016. Utilization of primary synthetics in winter wheat breeding. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 6-9, Phoenix, AZ USA.
8. Tan, C.-T., M. Chen, L. Garza, H. Yu, **S.Y. Liu**. 2016. Genetic mapping and development of KASP markers for Hessian fly resistance gene *H32* in wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 6-9, Phoenix, AZ USA.
9. Ajayi, S. O., Q. Xue, A.M.H. Ibrahim, N. Rajan, S.K. Reddy, J.C. Rudd, **S. Liu**, R. Sui, and K.E. Jessup. 2016. Non-Destructive Sampling for Monitoring the Growth and Performance of Winter Wheat Genotypes. **ASA-CSSA-SSSA International Annual Meetings**, November 6-9, 2016, Phoenix, AZ.
10. Bhandari, M., S.K. Reddy, Q. Xue, J.C. Rudd, **S. Liu**, and A.M.H. Ibrahim. 2016. Assessing Physiological Characteristics and Genotypic Variability of Wheat Genotypes Using Remote Sensing. **ASA-CSSA-SSSA International Annual Meetings**, November 6-9, 2016, Phoenix, AZ.
11. Tan, C.-T., S. Assanga, S. Dhakal, Y. Yang, J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Xu, G. Bai, M. Chen, R.N. Devkota, H. Yu, L. Garza, S-Y. Liu. Developing high throughput KASP markers for wheat pest and disease resistance in the US High Plains. **Workshop from Wheat Initiative for Achieving Durable Resistance to Wheat Diseases and Pests**, Nov 2-4, Minneapolis, MN.
12. Ries, T. S.Y. Liu, L.S. Pierson III, and E.A. Pierson. 2016. Understanding selection of beneficial bacteria by drought tolerant winter wheat cultivars TAM 111 and TAM 112. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
13. Assanga, S.O., M.P. Fuentealba, S. Vader, J.M. Awika, A. Ibrahim, J.C. Rudd, Q.Xue, R. Devkota, J. Baker, S-Y. Liu. 2016. Genetic mapping and QTL analysis for end-use quality in wheat. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
14. Dhakal, S., C-T. Tan, M.P. Fuentealba, J.C. Rudd, Q. Xue, B. Blaser, R. Devkota, C. Rush, S-Y. Liu. 2016. Development of high-throughput KASP SNP markers for wheat curl mite resistance and their application in marker-assisted breeding. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
15. Gu, X., D. Hays, S-Y. Liu, T. Huggins, Y. Li. 2016. Dissection of quantitative trait loci underlying wax biosynthesis in hexaploid wheat. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
16. Bhandari, M., S-Y. Liu, Q. Xue, J.C. Rudd, B.A. Stewart. 2016. Infrared thermal imaging for estimating crop canopy temperature. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
17. Ajayi, S., Q. Xue, N. Rajan, S. K. Reddy, J. C. Rudd, A. Ibrahim, S. Liu, R. Sui, K. Jessup. 2016. Remote sensing techniques for monitoring growth of winter wheat genotypes. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
18. **Liu, S.Y.**, S. Ocheya, S. Dhakal, X. Gu, C.-T. Tan, Y. Yang J.C. Rudd, D.B. Hays, A.M. Ibrahim, Q. Xue, S. Chao, R. Devkota, C. Shachter, T. Huggins, S. Mohammed, M.P. Fuentealba. 2016. Validation of chromosomal locations of 90K array SNP in US wheat. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
19. Tan, C.-T., S. Assanga, S. Dhakal, J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, G. Bai, S. Haley, L. Garza, H. Yu, **S-Y. Liu**. 2016. Development of high throughput SNPs for host plant resistance in wheat. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.

20. Yang, Y., C.-T. Tan, X.Y Xu, J.C. Rudd, Q. Xue, A.M. Ibrahim, S.Y. Liu. 2016. Genetic mapping and Kaspar SNP markers validation of greenbug resistance gene *Gb7* in wheat. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas.
21. Assanga, S., M.P. Fuentealba, S. Vader, J.M. Awika, A. Ibrahim, J. Rudd, Q. Xue, R.N. Devkota, J. Baker, S. Liu. 2016. Genetic Mapping and QTL Analysis for End-use Quality in Wheat. Texas A&M Plant Breeding Symposium, College Station, TX, February 18, 2016.
22. Ajayi, S., Q. Xue, N. Rajan, S. K. Reddy, J. C. Rudd, A. Ibrahim, S. Liu, R. Sui, K. Jessup. 2016. Spectral vegetation indices for estimating growth of winter wheat genotypes. Texas A&M Plant Breeding Symposium, College Station, TX, February 18, 2016.
23. Dhakai, S., C.-T. Tan, S.Y. Liu\*, J.C. Rudd, Q. Xue, B. Blaser, R. Devkota, C.M. Rush, M.P. Fuentealba. 2015. Mapping wheat curl mite resistance gene in TAM 112 and KASP SNP development. **ASA-CSSA-SSSA International Annual Meeting.** Nov. 15-18, Minneapolis, MN USA.
24. Tan, C.-T., S. Ocheya, G. Zhang, S. Haley, J.C. Rudd, Q. Xue, G. Bai, X. Zhang, P. Byrne, M.P. Fuentealba, S.Y. Liu\*. 2015. Development and Validation of KASP markers for marker-assisted selection of *Wsm2* in wheat. **ASA-CSSA-SSSA International Annual Meeting.** Nov. 15-18, Minneapolis, MN USA.
25. Tan, C.-T., S. Ocheya, S. Dhakai, J.C. Rudd, Q. Xue, G. Zhang, G. Bai, X. Zhang, R. Devkota, M.P. Fuentealba, S.Y. Liu\*. 2015. Development of high throughput SNPs for host plant resistance. **9<sup>th</sup> International Wheat Conference.** Sep. 20-25. Sydney, AUS.
26. Ocheya, S.A., J.C. Rudd, A. Ibrahim, Q. Xue, G. Zhang, R. Devkota, J. Chen, H. Scott, J. Baker, S. Baker, C.-T. Tan, S. Dhakai, M.P. Fuentealba, S.Y. Liu\*. 2015. Identification of SNP Markers Linked to QTL for Yield and Yield Components. **ASA-CSSA-SSSA International Annual Meeting.** Nov. 15-18. Minneapolis, MN, USA.
27. Ajayi, S. O., Q. Xue, N. Rajan, A. M. H. Ibrahim, S. K. Reddy, J. C. Rudd, S. Liu, R. Sui, and K. E. Jessup. 2015. Evaluating physiological traits of winter wheat genotypes using remote sensing techniques. **ASA-CSSA-SSSA International Annual Meeting.** Nov. 15-18, 2015, Minneapolis, MN.
28. Ajayi, S. O., Q. Xue, N. Rajan, A. M. H. Ibrahim, S. K. Reddy, J. C. Rudd, S. Liu, R. Sui, and K. E. Jessup. 2015. Spectral vegetation indices for estimating growth of winter wheat genotypes. **ASA-CSSA-SSSA International Annual Meeting.** Nov. 15-18, 2015, Minneapolis, MN.
29. Bhandari, M., S. Liu, Q. Xue, J. C. Rudd, and B. A. Stewart. 2015. Infrared thermal imaging for estimating crop canopy temperature. **ASA-CSSA-SSSA International Annual Meeting.** Nov. 15-18, 2015, Minneapolis, MN.
30. Gu, X.K., Y.L. Li, T. Huggins, S.Y. Liu, D.B. Hays. 2015. Dissection of genes underlying wax biosynthesis in hexaploid wheat. Plant Biology American Society of Plant Biologists Meeting. July 25-30. Minneapolis, Minnesota, USA.
31. Bhandari, M., S. Liu, Q. Xue, J. C. Rudd, and B. A. Stewart. 2015. Infrared Thermal Imaging Crop Canopies for Estimating Canopy Temperature. West Texas A&M University Student Research Conference, April 16, 2015, Canyon, TX. **(First Prize Winner).**
32. Gu, X.K., Y.L. Li, T. Huggins, S.Y. Liu, D.B. Hays. Identification of high-resolution genetic markers linked to wax for wheat breeding using RNA-seq. 2015. **Texas A&M Breeding Symposium.** Feb. 19. College Station, TX, USA.
33. Dhakai, S., C.-T. Tan, S.Y. Liu\*, J.C. Rudd, Q. Xue, B. Blaser, R. Devkota, C.M. Rush, M.P. Fuentealba. 2015. Development of high throughput KASP SNP markers for wheat curl mite resistance and their application in marker-assisted breeding. **Texas A&M Breeding Symposium.** Feb. 19. College Station, TX, USA. **(1<sup>st</sup> place in poster competition)**

34. Ocheya, S.A., S.Y. Liu\*, J.C. Rudd, A. Ibrahim, G. Zhang, Q. Xue, D. Hays, R. Devkota, S. Chao, G Bai, S. Haley, J. Chen, C-T., Tan, M. P. Fuentealba, S. Baker, J. Baker. 2015. Identification of high throughput SNP markers linked to QTL for drought tolerance and *Wsm2* gene in US hard red winter wheat and applications in breeding. **International Plant and Animal Genome Conference XXIII**, Jan. 10-14, San Diego, CA, USA.
35. Tan, C.-T., S.Y. Liu\*, S. Ocheya, S. Dhakal, J.C. Rudd, Q. Xue, G. Zhang, G. Bai, X. Zhang, R. Devkota, M.P. Fuentealba. 2015. Development of KASPar SNP markers for host plant resistance to biotic stress in wheat. **International Plant and Animal Genome Conference XXIII**, Jan. 10-14, San Diego, CA, USA.
36. Wang S., K. Jordan, S.P. Kiani, M. J. Hayden, **S.Y. Liu**, P. S. Baenziger, R.L. Bowden, E. Akhunov. 2014. Genetic architecture of quantitative disease resistance revealed by genome-wide association scan in wheat (W377). **International Plant and Animal Genome Conference XXII**, Jan. 10-14, San Diego, CA, USA.
37. Yang Y., B. Basnet, **S.Y. Liu\***, A.M.H. Ibrahim, J.C. Rudd, Q. Xue, C. Johnson. 2014. Analysis of QTL by environment interactions for stripe rust resistance in TAM 111 using saturated genetic maps with SNP and Genotyping-by-Sequencing markers. **Texas Plant Protection Conference**, Dec. 10-11, Bryan, Texas, USA.
38. Dhakal S., **S.Y. Liu\***, J.C. Rudd, Q. Xue, B. Blaser. 2014. Genetic Mapping of the Wheat Curl Mite Resistance in TAM 112. **Texas Plant Protection Conference**, Dec. 10-11, Bryan, Texas, USA.
39. Ocheya, S.A., S.Y. Liu\*, J.C. Rudd, A. Ibrahim, Q. Xue, R. Devkota, S. Chao, G. Zhang, S. Haley, C-T., Tan, M. P. Fuentealba. 2014. Identifying high throughput SNP markers linked to QTL for drought tolerance and *Wsm2* gene in US hard red winter wheat and their applications in breeding. **Texas Plant Protection Conference**, Dec. 10-11, Bryan, Texas, USA.
40. Ocheya, S.A., S.Y. Liu\*, J.C. Rudd, A. Ibrahim, Q. Xue, R. Devkota, S. Chao, G. Zhang, S. Haley, J. Chen, C-T., Tan, M. P. Fuentealba. Validating diagnostic SNP markers for *Wsm2* and mapping and introgression of QTL for drought tolerance from hard red winter wheat into Ug99 resistant spring wheat cultivars for African countries. **The First International Conference on Genomics, Traits and Business**, Sep. 21-24, Charlotte, NC USA.
41. Tan C-T., S.A. Ocheya, **S.Y. Liu\***, J.C. Rudd, Q. Xue, G. Zhang, G. Bai, X. Zhang, M.P. Fuentealba. 2014. Validation and application of diagnostic KASP SNP markers for host plant resistance in wheat. **The First International Conference on Genomics, Traits and Business**, Sep. 21-24, Charlotte, NC USA.
42. Ocheya, S.A., S.Y. Liu\*, J.C. Rudd, A. Ibrahim, Q. Xue, R. Devkota, S. Chao, G. Zhang, S. Haley, J. Chen, C-T., Tan, M. P. Fuentealba. Genetic mapping and introgression of QTLs for drought tolerance and *Wsm2* from hard red winter wheat into Ug99 resistant spring wheat cultivars for African Countries. An invited international participant on Tomorrow's Leaders Forum on Food, Feed, Fiber, and Fuel security as climate changes. **The Agricultural Biotechnology International Conference**, Oct. 5-9, 2014, Saskatoon, SK, Canada. **(Invited)**
43. **Liu, S.Y.\***, S.A. Ocheya, S. Dhakal, D. B. Hays, J.C. Rudd, A.M.H. Ibrahim, Q. Xue, S. Chao, R. Devkota, P. Sengodan, T. Huggins, and S. Mohammed. 2014. Validation of SNP chromosome locations via diverse molecular markers in three wheat mapping populations. **Borlaug Global Rust Initiative**. Mar. 23-25, Cd. Obregon, Sonora, Mexico.
44. **Liu, S.Y.\***, J.C. Rudd, G. Bai, S. Haley, A. Ibrahim, Q. Xue, D. Hays, R. Devkota, R. Graybosch, P.S. Amand. 2014. Molecular markers for important traits of hard winter wheat production and marketing in the US. **Borlaug Summit on Wheat for Food Security**. Mar. 23-25, Cd. Obregon, Sonora, Mexico.

45. Ocheya, S.A., **S.Y. Liu\***, J.C. Rudd, A. Ibrahim, Q. Xue, D. Hays, R. Devkota, G. Zhang, J. Chen. 2014. Identifying SNP markers for drought tolerance in wheat. **Borlaug Summit on Wheat for Food Security**, Book of Abstracts. Mexico, Mar. 25-28, 2014. Cd. Obregon, Sonora, Mexico.
46. Reddy, S.K., J. Baker, S. Baker, D. Malinowski, C. Neely, A. Ibrahim, **S. Liu**, Q. Xue, D. Drake, G. Pradhan, Y. Emendack, R. Devkota, and J. C. Rudd. Phenotyping for biomass and ground cover estimation in wheat and other winter small grains. **Borlaug Summit on Wheat for Food Security**, Book of Abstracts. Mexico, Mar. 25-28, 2014. Cd. Obregon, Sonora, Mexico.
47. Dhakal, S., J. C. Rudd, Q. Xue, R. Devkota, M. P. Fuentealba, B. Blaser, C.M. Rush, **S.Y. Liu\***. 2013. Screening wheat curl mite resistance in Texas and Great Plains hard winter wheat. **Texas Plant Protection Association Conference**. Bryan, TX. Dec. 10-11.
48. **Liu, S.Y.\***, J.C. Rudd, G. Bai, S. Haley, A. Ibrahim, Q. Xue, D. Hays, R. Devkota, R. Graybosch, P.S. Amand. 2014. Validation and application of molecular markers linked to genes important for hard winter wheat production and marketing in the U.S. Great Plains. **ASA-CSSA-SSSA International Annual Meetings**. Nov. 3-6, Tampa, FL, USA. Also presented on **Borlaug Summit on Wheat for Food Security**, Book of Abstracts. Mexico, Mar. 25-28. Cd. Obregon, Sonora, Mexico.
49. Dhakal, S., J. C. Rudd, Q. Xue, R. Devkota, M. P. Fuentealba, B. Blaser, C.M. Rush, **S.Y. Liu\***. 2013. Screening wheat curl mite resistance in Texas and Great Plains hard winter wheat. **USDA-ARS Ogallala Aquifer Program Workshop**, Mar. 25-26, 2014, Lubbock, TX.
50. Pradhan, G.P., Q. Xue, **S.Y. Liu**, J.C. Rudd and K.E. Jessup. 2013. Effective use of soil water contributed to high yield in wheat in the U.S. Southern High Plains. *J. of Arid Land Studies*. **Proceed. of the Desert Technology XI**. Nov. 19-22. San Antonio, TX, USA.
51. **Liu, S.Y.**, C.A. Griffey, G. Brown-Guedira. 2013. Molecular characterization of Fusarium head blight resistance in U.S. soft red winter wheat germplasm and cultivars. **ASA-CSSA-SSSA International Annual Meetings**. Nov. 3-6, Tampa, FL, USA.
52. Ocheya, S.A., **S.Y. Liu\***, J.C. Rudd, A. Ibrahim, Q. Xue, D. Hays, R. Devkota, G. Zhang, J. Chen. 2013. Identification of SNP markers for drought tolerance in wheat. **ASA-CSSA-SSSA International Annual Meetings**. Nov. 3-6, Tampa, FL, USA; also presented on **Monsanto Beachell Borlaug International Scholar Leadership Training and World Food Prize Activities**, Oct. 11-19, Des Moines, IW, USA; also presented on T-CAP meeting on Jan. 11, 2014 at San Diego, CA, USA.
53. Pradhan, G.P., Q. Xue, K.E. Jessup, **S.Y. Liu**, J.C. Rudd and J.R. Mahan. 2013. Identifying drought tolerant wheat genotypes using wireless infrared thermometers in the US Southern High Plains. **ASA-CSSA-SSSA International Annual Meetings**. Nov. 3-6, Tampa, FL, USA.
54. Reddy, B., A. Ibrahim, J.C. Rudd, **S.Y. Liu**. 2013. Breeding for durable rust resistant in Texas hard red winter wheat using synthetic derived wheat lines and Ug99 resistant genes. **Borlaug Global Rust Initiative Workshop**, Aug. 19-22, New Delhi, India
55. Reddy, S.K., **S.Y. Liu\***, A. Akhunova, J. Mahan, Y. Weng, Q. Xue, J.C. Rudd, P. Payton. 2013. Comparative transcriptomics involving greenbug and water-deficit stress responses in hard-red winter wheat. **Plant and Animal Genome XXI**. Jan. 12-16, San Diego, CA, USA.
56. **Liu, S.Y.\***, Q. Xue, A.M. Ibrahim, S. K. Reddy and J.C. Rudd. 2012. Genetic and physiological evaluation of yield and other important traits of hard red winter wheat in the Texas High Plains. **ASA-CSSA-SSSA International Annual Meetings**. Oct. 21-24, Cincinnati, OH, USA.
57. Reddy, S.K., **S.Y. Liu\***, Q. Xue, J.C. Rudd, M. Fuentealba, K. Jessup, P. Payton and J. Mahan. 2012. Mechanisms of adaptation to water-stress conditions in widely planted TAM wheat cultivars. **ASA-CSSA-SSSA International Annual Meetings**. Oct. 21-24, Cincinnati, OH, USA.

58. Reddy, B. A.M. Ibrahim, J.C. Rudd and **S.Y. Liu**. 2012. Enhancing yield potential of hard red winter wheat via use of synthetic backcrosses. **ASA-CSSA-SSSA International Annual Meetings**. Oct. 21-24, Cincinnati, OH, USA.
59. Ajayi S., S. Krishnareddy, **S.Y. Liu**, P. Gowda, Q. Xue, T. Marek, J.C. Rudd. 2012. Reflectance based characterization of wheat cultivars for identifying drought tolerance. **ASA-CSSA-SSSA International Annual Meetings**. Oct. 21-24, Cincinnati, OH, USA.
60. Reddy, **S.K.**, S.Y. Liu\*, J.C. Rudd., R. Devkota., Q. Xue., P. Payton., J. Mahan., A. Akhunova. 2012. Gene expression profiling of water deficit stress responses in widely adapted wheat cultivars TAM 111 and TAM 112. **American Society of Plant Biologist**. Jul. 20-24. Austin, TX, USA.
61. Reddy, **S.K.**, Y. Weng, J. C. Rudd, A. Akhunova, **S.Y. Liu\***. 2012. Transcriptome profiling of defense responses to greenbug feeding in wheat. **Plant and Animal Genome XX**. Jan. 14-18, San Diego, CA, USA.
62. **Liu, S.Y.**, C.A. Griffey, M.D. Hall, A.L. McKendry, J. Chen, G. Brown-Guedira, D. Van Sanford and D. Schmale. 2011. Mapping Fusarium head blight resistance in wheat cultivars Ernie and Massey. **2011 National Fusarium Head Blight Forum**. Dec. 4 – 6, St. Louis, MO, USA.
63. **Liu, S.Y.**, M.D. Christopher, C.A. Griffey, M.D. Hall, P.G. Gundrum, and W.S. Brooks. 2011. Characterization of Fusarium head blight resistance in soft red winter wheat line VA00w-38. **2011 National Fusarium Head Blight Forum**. Dec. 4 – 6, St. Louis, MO, USA.
64. Berger, G., P. Khatibi, W. Brooks, **S.Y. Liu**, M.D. Hall, A. Green, C.A. Griffey, and D. Schmale III. 2011. Fusarium Head Blight Resistance and Deoxynivalenol Accumulation in Hulled and Hulless Winter Barley and Dried Distiller's Grain. **2011 National Fusarium Head Blight Forum**. Dec. 4 – 6, St. Louis, MO, USA.
65. **Liu, S.Y.**, C.A. Griffey, M. Hall, A. McKendry, J. Chen, G. Brown-Guedira, D. Van Sanford and D. Schmale. 2011. Are there common QTL for scab resistance in soft red winter wheat cultivars. **ASA-CSSA-SSSA International Annual Meetings**. Oct. 16-19, San Antonio, TX, USA.
66. Berger, G., **S.Y. Liu**, M.D. Hall, W. Brooks, S. Chao, C.A. Griffey and G. Muehlbauer. 2011. Identification of marker-trait associations in the Virginia Tech winter barley program using genome-wide mapping. **ASA-CSSA-SSSA International Annual Meetings**. Oct. 16-19, San Antonio, TX, USA.
67. Xue, Q., K. Jessup, J.C. Rudd, **S.Y. Liu**, S. Baker, R. Devkota and J. Mahan. 2011. Different mechanisms of adaptation to drought stress in two wheat cultivars? **ASA-CSSA-SSSA International Annual Meetings**. Oct. 16-19, San Antonio, TX, USA.
68. Azhaugvel, P., Y. Weng, Y. Ma, M.-C. Luo, H. Simkova, J. Safar, J. Dolezel, T. Wicker, M. Saha, H. Rammna, R. Nelson, C. Zhou, T. Ray, Y. Tang, **S.Y. Liu**, J.C. Rudd. 2011. Cloning and function validation of a NB-ARC-LRR-type candidate gene for the greenbug aphid resistance locus Gb3 in wheat. **Plant and Animal Genome XIX Conference**. Jan. 15-19, San Diego, CA, USA.
69. **Liu, S.Y.\***, J. C. Rudd, A.M. Ibrahim, S.D. Haley, G. Bai, C.A. Griffey, and G. Brown-Guedira. 2011. Development and validation of diagnostic markers for wheat stress traits in the Great Plains of North America. **Plant and Animal Genome XIX Conference**. Jan. 15-19, San Diego, CA, USA.
70. Berger, G.L., **S.Y. Liu**, M.D. Hall, W.S. Brooks, S. Chao, C.A. Griffey, G. L. Muehlbauer. 2010. Association mapping of molecular markers linked to key traits in the Virginia winter barley. **The 4th Annual Meeting of National association of Plant Breeders**. Aug. 15, Johnston, IA, USA.
71. Green, A.J., G.L. Berger, R.M. Pitman, M. Balota, C.A. Griffey, M. Dm. Hall, S.Y. Liu, W. E. Thomason, W. S. Brooks. 2010. Yield components, agronomic, and morphological traits associated with soft red winter wheat yield. **The 4th Annual Meeting of National association of Plant Breeders**. Aug. 15, Johnston, IA, USA.

72. Christopher, M.D., C.A. Griffey, S.Y. Liu. 2010. Identification and molecular mapping of adult plant stripe rust resistance in soft red winter wheat. **The 4th Annual Meeting of National association of Plant Breeders**. Johnston, Iowa, USA. (Poster and abstracts).
73. Berger, G.L., **S. Liu**, M.D. Hall, W.S. Brooks, S. Chao, C.A. Griffey, G.J. Muehlbauer. 2010. Identification of molecular markers for important traits in winter barley using association mapping. **The International Plant and Animal XVIII Conference**. Jan. 9-13. San Diego, CA USA.
74. **36** poster abstracts or papers in proceedings in international, national and regional conferences before 2010 (7 in 2009).

#### **Instruction of Students and Outreach (40)**

1. Plant Breeding and Genetics Circle. Nov 17, 2017. College Station, TX. Present oral “Application of array and GBS SNPs in Texas wheat genetics and breeding”.
2. ASA-CSSA-SSSA International Annual Meeting. Oct 22-25, 2017. Tampa, FL, USA. Presented oral and poster for Utilization of Primary synthetics in winter wheat breeding and genetics.
3. Texas A&M AgriLife Research Center at Dallas, July 13, 2017. Dallas, TX. Presented wheat genetic and breeding research in Amarillo.
4. Texas A&M AgriLife Research Wheat Field Day. May 17, 2017. Bushland, TX. Presented research application of markers and genomics in wheat genetics and breeding.
5. Annual Hard Winter Wheat Breeder’s Field Day. May 16, 2017, Bushland, TX. Presented wheat curl mite resistance.
6. WheatCAP PI meeting from USDA-NIFA-IWYP. Jan 15, San Diego, CA. Town and County Hotel.
7. Organized a workshop for “Association analyses of Genotypes and phenotypes using GAPIT and TASSEL 5.0” with Dr. Shichen Wang at the AgriLife Conference. Jan. 12, 2017. More than 40 graduate students, postdocs, and faculty joined.
8. ASA-CSSA-SSSA International Annual Meeting. Nov. 6-9, 2016. Phoenix, AZ USA.
9. Texas A &M AgriLife Mini-Symposium: Grand networks for Grand Challenges. May 18-19, College Station, Texas.
10. Poster and scholarship chair for graduate presentation in Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, 2016. San Antonio, Texas.
11. Invited to join the discussion for gene/genome editing in Soil and Crop Science in College Station, May 17, 2016.
12. Ogallala Aquifer Annual Meeting at Amarillo, TX, Mar. 9-10, 2016.
13. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas. Poster presentation program Chair.
14. Poland AG company visitors, invited to College Station to present the research progress in wheat genetics and production. Feb. 2016. College Station.
15. Texas Small Grains Workers meeting, Aug, 2010-2015.
16. The Annual Hard Winter Wheat Workers’ Field Day. OSU North Central Agronomy Research Station at Lahoma, OK. May 7, 2015.
17. Texas A&M AgriLife Research Wheat Field Day, May 21, 2015, Bushland, Texas.
18. Worked with Jackie Rudd to discuss with the 17 Turkey visitors regarding of wheat breeding and genetic research and collaboration etc. Apr. 14-15, 2015.
19. Prepared agenda for the visit of Dr. Wuletaw Tadesse, Senior Bread Wheat Breeder, International Center for Agricultural Research in the Dry Areas (ICARDA) at Texas A&M AgriLife Research at Amarillo. Jul 10-12, 2014
20. Regional hard red winter wheat field day, May 13, 2014, Vernon, Texas.

21. Texas A&M AgriLife Research wheat field day, May 14, 2014, Vernon, Texas.
22. Syngenta wheat field day, May 15, 2014, Vernon, Texas
23. Wheat drought/insect/disease interactions. 2013. Wheat Field day, by Texas AgriLife Research, May 22, Etter, TX
24. Wheat regional field day. 2013. June 3-6, Lincoln, NE. Toured with Jackie Rudd on Southern regional performance nursery at several locations in OK and KS.
25. USDA-ARS Ogallala Aquifer Workshop at Amarillo, TX. March 5-7, 2013
26. 75<sup>th</sup> Anniversary for USDA-ARS CPRL at Bushland, TX on Aug 29, 2013.
27. Liu et al. Jan 29-30. Discuss with Bayer Crop Science about the cooperative projects.
28. Liu et al. July 10-11, Discussed with IBM data analyses group.
29. Provide marker information for low PPO for Jackie Rudd to discuss with ConAgra about wheat quality for Nov 18, 2013 at College Station.
30. Wheat Field Day, 2011 Chillicothe, 2012 Bushland, TX.
31. Grant review panel for a state wheat commission to select better proposals for funding 2011-2013
32. Presented wheat genetics research progress in various wheat fields at Bushland, Etter, Chillicothe since 2011.
33. Present research progress in meetings with producers and seed companies organized by Virginia Crop Improvement Association on Feb. 18, 2010.
34. Participated and presented in annual field days in Agriculture Agri-Food Canada from 2004 to 2007 and in Eastern Virginia Agricultural Research and Extension Center since 2008.
35. Co-instructed interdisciplinary graduate student course “Topics in Molecular Cell Biology and Biotechnology” in the fall of 2008 (ALS6024).
36. Guest lectures in Plant Breeding and Genetics for both graduate and undergraduate students in Virginia Tech (CECS5414, 4414).
37. Supervised 14 Intern undergraduate students in Agriculture Agri-Food Canada in plant breeding and molecular genetics related research work.
38. Supervised 6 part-time undergraduate students working in scab resistance related research projects including disease inoculation and molecular marker screening at Virginia Tech.

### **Reviewer of Journal Articles (90)**

Crop Science, The Crop Journal, and International Journal of Plant Biology and Research Associate Editors, Editor/Chair of Book and Multimedia Publishing and 25 other journals, reviewed in 90 journal articles since 2013.

### Scientific Proposals reviewed (2)

1. Reviewed the proposal for potato molecular breeding from Chinese National Science Foundation in 2017 (C060503-3173000276).
2. NP 301 – Plant Genetic Resources, Genomics, and Genetic Improvement Panel Review. A five-year project plan of Sugarcane breeding, molecular and agronomy for sustainable production from USDA-ARS scientists (PI: Duli Zhao) from Canal Point, FL USA in July of 2017.
3. Reviewed proposal for BIRD, US-Israel Binational R &D.

### **Professional Association Members and Activities (13)**

1. C302: Associate Editor of Crop Science, Jan. 2017 – Dec. 2019.
2. ACS320: Book and Multimedia Publishing Committee, Chair (2017-2019), member (2013-2016).

3. C655.2: National Small Grain Variety Review Board, Member (Jan. 2016 – Dec. 2017) and Alternate (Jan. 2014 – Dec. 2015).
4. Secretary/president-elect/president -The Association of Chinese Soil & Plant Scientists in North America (ACSPSNA), 2015-2018.
5. CSSA-C454: Young Scientist Award Committee (Jan. 2014 – Dec. 2015)
6. ASA-A45: Tengtou Ag Sci Award Committee Jan. 1, 2012 – Dec. 31, 2013
7. CSSA-C451: Crop Science Research Award Committee, CSSA, 2008-2010.
8. Crop Science Society of America – member since 2003
9. American Society of Agronomy – Member since 2009
10. Joined Expert working groups in Wheat Initiative for Breeding methods and strategies, wheat phenotyping, control of pathogen and pest (Executive Committee) since Sep. of 2014.
11. Chinese-English translation quality check for scientific research in agriculture since 2015.
12. Editorial Board: International Journal of Plant Biology & Research Since Sep., 2013:  
<http://www.jscimedcentral.com/PlantBiology/editors.php>
13. Associate Editor, The Crop Journal, since Sep. 2014: <http://www.journals.elsevier.com/the-crop-journal/editorial-board/>

### **Students/professional training since 2010**

1. Next Generation Sequencing analyses workshop. June 2016. College Station.
2. Joined the Workshop organized by the College of Agriculture and Life Science during September 1-4, 2015. QTL Mapping and Genomic Selection using R and MAGIC.
3. Joined Texas A&M AgriLife Emerging Leaders Conference, College Station, Oct. 29-30, 2014.
4. **Post-doctoral/Research Associate or Scientists (4):**  
Dr. Chenggen Chu, Aug 2017 – present. Associate Research Scientist. Amarillo, TX.  
Dr. Xiaoxiao Liu, Jun 1 – present. Research Associate, Amarillo, TX.  
Dr. Silvano Assanga, Sep 2016 – Nov 2016. Research Associate to finish his thesis manuscripts on QTL mapping for yield and end-use quality.  
Dr. Chor Tee Tan, Aug. 2013-Feb 2017 (Post-doc, Assistant Research Scientist, Associate Research Scientist), Texas A&M AgriLife Research and Extension Center at Amarillo  
Dr. Srirama Krishna Reddy, Jun. 2011-Aug. 2014 (Post-doc, Assistant Research Scientist), Texas A&M AgriLife Research and Extension Center at Amarillo
5. **Research Technician/Assistant (3):**  
Kele Hui, Sep 2017 – Present, Amarillo, TX.  
Lisa Garza, Feb. 2015 – Present, Texas A&M AgriLife Research and Extension Center at Amarillo  
Hangjin Yu, Jul. 2015 – May 2017, Texas A&M AgriLife Research and Extension Center at Amarillo  
Maria Pilar Fuentealba, Sep. 2011 – Aug. 2015, Texas A&M AgriLife Research and Extension Center at Amarillo
6. **Graduate Committee (Chair 2 Ph.D., Co-chair 1 Ph.D. and 1 MS):**  
Smit Dhakal, Jun. 2014-Dec 2018; Yan Yang, Jun. 2014-Aug 2018; Dept. of Soil and Crop Sciences, College Station; Jorge Luis Valenzuela Antelo, Jun. 2017 – Present; Mehmet Dogan, Jan 2018-present.
7. **Graduate Committee Member (1Ph.D., 1MS):**  
Anil Adhikari, Aug. 2016 – present; Fatma Betul Sade, Jan. 2017-Present.
8. **Graduated (Chair: 1Ph.D, 1MS; Committee: 5Ph.D., 5MS):**  
Silvano Assanga Ocheya, Ph.D. Soil and Crop Science, Texas A&M University, Aug. 2012-Aug.

2016.

Smit Dhakal, MS. Aug. 2012-May 2014, Dept. of Agricultural Sciences, West Texas A&M University, Canyon, Texas.

Xiangkun Gu, Ph.D. Soil and Crop Science, Texas A&M University, Jun. 2013-Aug. 2017.

Xi Chen, MS. Soil and Crop Science, Texas A&M University Aug. 2012-Dec. 2017.

Tessa Rose Ries, MS. Hort. 2015 – Dec. 2017.

Sara Ajayi, Ph.D. Soil and Crop Science, Texas A&M University Jan. 2014-May 2018.

Yuanyuan Chen, Ph.D. Molecular Environmental Plant Sciences, Texas A&M University. Aug. 2014-Dec. 2016.

Bharath Reddy, Ph.D. Soil and Crop Science, Texas A&M University, Aug. 2010-Dec. 2015.

Padmarathi Sengodan, Ph.D. Soil and Crop Science, Texas A&M University, Jan. 2010-May 2015

Sabahat Zahra, MS. Molecular Environmental Plant Sciences, Jan. 2015 – Aug. 2017.

Brandon J. Gerrish, MS. Dept. of Soil and Crop Sciences/Molecular Environment Plant Sciences, Texas A&M University. Jun. 2014-Dec. 2015.

Mahendra Bhandari, MS. West Texas A&M University, canyon, TX. Aug. 2014-Aug. 2016.

**9. Graduate/Undergraduate student interns supervised (2 MS, 10BS):**

Rabia Maswood, Ph.D., Hazara University, Manshera, Pakistan. 2016-2017.

Kila Andrews, Amarillo College, May 2017 – Present.

Jackie Avila, Amarillo College, May 2016 – Present;

Cameron Skees, Amarillo College, June 2016 – Dec 2016;

Julio Rocha, Amarillo College, June 2016 – July 2017;

Lisa Garza (WTAMU, Feb. 2015-present), Theresa Albrecht (May-Aug. 2015), Ashley Holms (Texas Tech, Jun 2014 – Aug 2014, 2015);

Cody Shachter (Amarillo College, Mar 2011 – Apr

2014); Jay Martin (West Texas A&M, Sep 2012 – Jun 2013); Serina Nelson (WTAMU, Jul 2011 –

Jun 2012); Benjamin Brooks (WTAMU MS student, May 2011 – Aug 2011); Zac Badrow

(WTAMU MS student, Nov 2010 – Feb 2011); Jared Suhr (WTAMU graduate in Agriculture, Oct

2010 – Jun 2011)

**News Articles for research related with wheat genetic program (43)**

1. Luedeker, Beth Ann. 2018. Small grains workers meet. Highlight for Ph. D. student Smit Dhakal presenting wheat end-use quality study using synthetic derived wheat. Aggie Agenda. Aug. 2018.
2. Ledbetter Kay and Shuyu Liu. Genetic discovery another tool in battle against wheat pests. AgriLife Today. Nov 2, 2017. <https://today.agrilife.org/2017/11/02/genetic-discovery-another-tool-battle-wheat-pests/>
3. Chris Lusvardi. WSMV article. SeedToday. 4<sup>th</sup> quarter bulletin. Page 69. <http://www.seedtoday.com/digital-editions>
4. Ledbetter Kay. Managing wheat streak mosaic virus across the Great Plains. August 23, 2017. <https://dl.sciencesocieties.org/story/2017/aug/fri/managing-wheat-streak-mosaic-virus-across-the-great-plains>
5. CSA News Magazine, 2017 Editors, Jan 16, 2017. doi:10.2134/csa2017.62.0107. Shuyu Liu, Texas Agrilife Research, Amarillo, TX will begin his first term as Chair of Book and Multimedia Publishing Committee. <https://dl.sciencesocieties.org/publications/csa/articles/62/1/18/?highlight=&search-result=1>
6. Ledbetter, Kay, Shuyu Liu, and Chor Tee Tan. New wheat streak mosaic virus resistance genetic markers developed. AgriLife Today. Feb.5, 2017. <http://today.agrilife.org/2017/02/05/new-wheat->

- streak-mosaic-virus-resistance-genetic-markers-developed/
7. Ledbetter, K and Shuyu Liu. Public wheat breeder consortium to be developed by USDA grant – Goal to make dramatic improvements to wheat yield. AgriLife Today. Dec. 17, 2016. <http://today.agrilife.org/2016/12/17/public-wheat-breeder-consortium-developed-usda-grant/>
  8. Ledbetter, K and Shuyu Liu. Enhanced wheat curl mite control found in genes. AgriLife Today. Oct. 27, 2016. <http://today.agrilife.org/2016/10/27/enhanced-wheat-curl-mite-control-found-genes/>
  9. Wayne Smith, Aggie Agenda, March 2016. Ph. D student, Silvano Ocheya Assanga got the first place in student poster at the DuPond Pioneer Plant Breeding Symposium on Feb 18. 2016.
  10. Ledbetter, K and Shuyu Liu. New wheat genetic advancements aimed at yield enhancement. AgriLife Today. Feb. 21, 2016. <http://today.agrilife.org/2016/02/21/new-wheat-genetic-advancements-aimed-at-yield-enhancement/>
  11. Zhang Li, 2015 Soil and Crop Science Departmental Awards. <http://soilcrop.tamu.edu/2015-soilcrop-sciences-departmental-awards/>. Chor Tee Tan won the award for Research Collaboration and Silvano Assanga won the graduate research award.
  12. Ledbetter, K and J.C. Rudd. Texas A&M Wheat Improvement Team recognized. October 2, 2015. <http://today.agrilife.org/2015/10/02/texas-am-wheat-improvement-team-recognized/>
  13. Ledbetter, K. Annual wheat field day set for May 21 at Bushland research facilities. AgriLife Today. April 29, 2015. <http://today.agrilife.org/2015/04/29/annual-wheat-field-day-set-for-may-21-at-bushland-research-facilities/>
  14. Mollie Bryant, Wheat work: Researchers seek drought-resistant grain. Amarillo Global-News. Apr. 13, 2015. (S.Y. Liu's genetic research with other collaborations).
  15. “Genetic mapping of resistance gene to wheat streak mosaic virus and tolerance to drought” Silvano Ocheya's research with Texas A&M, T-CAP Transmission, Mar. 2015.
  16. Ledbetter, K. and B. Pfeiffer. Inaugural Texas A&M Plant Breeding Symposium set Feb. 19. Feb. 19, 2015. <http://today.agrilife.org/2015/02/12/inaugural-texas-am-plant-breeding-symposium-set-feb-19/> (Yan Yang and Silvano Ocheya were chosen as student speakers).
  17. Aggie Agenda. Feb. – Mar. 2015. Three Ph. D. students from Wheat breeding and Genetics got top awards in the presentations of Texas A&M Plant Breeding Symposium.
  18. Ledbetter, K., S.Y. Liu, A. Ibrahim, J.C. Rudd, S. Ocheya. 2014. Texas-bred wheat traits headed to Africa-AgriLife Research study develops international collaboration to fight drought. AgriLife Today. <http://today.agrilife.org/2014/12/02/texas-bred-wheat-traits-headed-to-africa/> (**Selected to be presented in Update from the Vice Chancellor and Dean in December of 2014: Improving global food availability; Texas A&M AgriLife Research e-NEWS, Dec. 2014 and the Soil and Crop Science Departmental Aggie Agenda**)
  19. Silvano Ocheya was selected as the 2014-2015 fellow of Norman E. Borlaug Leadership enhancement in Agriculture Program. <http://borlaugleap.org/fellow/silvano-ocheya>
  20. Ledbetter, K., Q. Xue, S. Liu, J.C. Rudd, S.K. Reddy. 2014. Multiple studies provide insight into drought tolerance of TAM wheat varieties. 2014. AgriLife Today. <http://today.agrilife.org/2014/09/12/multiple-studies-provide-insight-into-drought-tolerance-of-tam-wheat-varieties/>
  21. Amarillo local TV News, KFDA NewsChannel 10, U.S. education enhances agricultural advancement in developing countries. Jul. 29. about Ocheya, S.A. <http://www.newschannel10.com/story/26145222/us-education-enhances-agricultural-advancement-in-developing-countries>.
  22. Ledbetter, K., S.Y. Liu\*, A. Ibrahim, S. Ocheya. 2014. U.S. education provides stepping stone to agricultural advancement in developing Countries. AgriLife Today, Jul. 17.

- <http://today.agrilife.org/2014/07/17/u-s-education-provides-stepping-stone-to-agricultural-advancement-in-developing-countries/>
23. Colin Saunders. Ph. D. student carrying on Borlaug Legacy. About Ocheya, S.A. The Battalion. Jun. 5, 2014.
  24. Wayne Smith, Texas A&M Plant Breeding Bulletin, May 2014. Silvano Ocheya was selected as the Borlaug Next Generation Delegate.
  25. Ledbetter, K., S.Y. Liu\*, and S. Dhakal. AgriLife Research maps wheat curl mite resistance genes in TAM 112. AgriLife Today, May 5, 2014. <http://today.agrilife.org/2014/05/05/agrilife-research-maps-wheat-curl-mite-resistance-genes-in-tam-112/> (**Selected in Texas A&M AgriLife Research e-NEWS, Jun. 2014**)
  26. Jennifer M. Latzke, High Plains Journal (Front Page), “Stopping a little guy in his tracks”. May 26, 2014. <http://soilcrop.tamu.edu/stopping-the-little-guy-in-his-tracks/>
  27. Amarillo local TV News, KFDA NewsChannel 10, Area researchers claim to find resistant to wheat virus. Apr. 30, 2014. about Ocheya, S.A. <http://www.newschannel10.com/story/25396113/area-researchers-claim-to-find-resistant-to-wheat-virus>
  28. Kay Ledbetter and Shuyu Liu\*. Better genetic markers developed for a wheat streak mosaic virus resistance. AgriLife Today, Apr. 28, 2014. <http://today.agrilife.org/2014/04/28/better-genetic-markers-developed-for-wheat-streak-mosaic-virus-resistance/>
  29. KGNC Radio, by James Hunt, Shuyu Liu\*. Talked about wheat curl mite resistance in TAM 112. Apr. 23, 2014.
  30. Ledbetter, K. and Q. Xue. High yield, water efficiency of drought tolerant wheat due to higher biomass. AgriLife Today. Dec. 13, 2013. <http://today.Agrilife.org/2013/12/13/high-yield-water-efficiency-of-drought-tolerant-wheat-due-to-higher-biomass/>
  31. Ledbetter, K., S.Y. Liu\*, J. C. Rudd, S.K. Reddy. AgriLife Research study narrows the search for greenbug resistance gene in wheat. AgriLife Today, Nov. 26, 2013. <http://today.agrilife.org/2013/11/26/agrilife-research-study-narrows-the-search-for-greenbug-resistance-gene-in-wheat/>
  32. “Bushland researchers looking for perfect wheat” by Larry Lemmons from KVII and Connect Amarillo. Shuyu Liu. Talked about wheat curl mite resistance study for the TV program. May 16, 2013. Weblink: <http://www.connectamarillo.com/news/story.aspx?id=898501#.UouOPCfu7wW>. Video link: <http://www.youtube.com/watch?v=GV28FbNHunI&feature=youtube.be>
  33. Ledbetter, K. Texas A&M students recognized as Monsanto’s Beachell-Borlaug International Scholars. AgriLife Today. April 11, 2013. <http://today.agrilife.org/2013/04/11/texas-am-students-recognized-as-monsantos-beachell-borlaug-international-scholars/>
  34. Ledbetter, K., S.Y. Liu\*, S. K. Reddy. AgriLife Research seeks to pinpoint drought tolerance mechanisms in wheat. AgriLife Today. Apr 20, 2012. <http://today.agrilife.org/2012/04/20/agrilife-research-study-seeks-to-pinpoint-wheat-drought-tolerance-mechanisms/>
  35. Ledbetter, K. AgriLife Today. December 14, 2011. AgriLife Research study aimed at reducing drought-stress losses to wheat. (The news was reported later by WATR News, EBSCO Host Connection, Southwest Farm Press, e! Science News and Local Newspapers). <http://today.agrilife.org/2011/12/14/agrilife-research-study-aimed-at-reducing-drought-stress-losses-to-wheat/>
  36. Ledbetter, K. and S.Y. Liu. AgriLife Research-Amarillo hires grain geneticist. AgriLife Today. Aug. 17, 2010. <http://today.agrilife.org/2010/08/17/agrilife-research-amarillo-hires-grain-geneticist/>
  37. Meet MSI student and faculty – Dr. Shuyu Liu\* and Serina England. TCAP Transmission, Spring

2012.

38. James Hunt Show, J.C. Rudd, Q. Xue, S.Y. Liu, Jan. 26, 2012. Wheat production in Texas Panhandle. KGNC Talk Radio 710AM.
39. James Hunt Show, **S.Y. Liu\***, Sep.12, 2012. Wheat genetic research at Amarillo center. KGNC Talk Radio 710AM.
40. **Liu. S.**, C. A. Griffey, and A.L. McKendry. 2009. Diagnostic markers for scab resistance in soft red winter wheat cultivar Ernie. **Fusarium Focus**. U.S. Wheat and Barley Scab Initiative. Spring, 2009. Volume 9, Issue 1, pp5.
41. Balasubramanian P., F.A. Kiehn, R.L. Conner, H.H. Mündel, H.C. Huang, S.J. Park, K. Yu and **S. Liu**. Dry Bean Breeding Program at AAFC Morden – Research Update. **Pulse Beat**, Winter, 2007.
42. **Liu S.**, S.J. Park, K. Yu, R.L. Corner, P. Balasubramanian, H.H. Mundel, and F.A. Kiehn. Application of molecular markers to breed disease resistant cultivars in Dry bean. **Pulse Beat**, Winter 2005 page 26-27.
43. Yu K., S.J. Park and **S. Liu**. Pyramiding disease resistance genes into white bean cultivar through multiple molecular markers: an efficient and economic approach. **The Emerging bean**, Spring 2004 page 6-7.