

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. 1, 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

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.

Visiting Scholar and Research Assistant

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.

Wheat breeder

Shandong Academy of Agricultural Sciences, Jinan, Shandong, China (1988 – 1996)

Conducted wheat genetics and breeding studies on high yield, disease resistance, drought tolerance, and good quality.

1. Applied Gamma ray irradiation on wheat pollen, ovary, head, and whole plant to develop mutant lines with good agronomic traits.
2. Applied immature embryo and spike culture integrated with Gamma ray irradiation and crossing to create genetic variations.
3. Screened breeding lines for powdery mildew, rust resistance and drought tolerance in the field.
4. Used pedigree and bulk selection to breed varieties with superior agronomic traits.
5. Release and extension of varieties beneficial to farmers.

Research Projects (Total \$8.85 M and \$1.02 M to genetic program since 2010)

“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 21st 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\$118,500. Sep. 2010 – Aug. 2016.
- “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 Trticeae Coordinated Agricultural Project**, University of Minnesota. PI, US\$20,000. Jul. 2011 – Jun. 2013.
- “Improving FHB Resistance in SRW Wheat and Barley via Integrated Mapping, Phenotypic and MAS” Griffey C.A. and S.Y. Liu. **USDA through US Wheat and Barley Scab initiative, Co-PI**. US\$515,374. May 2007 – Apr. 2011.
- “Accelerated Breeding for Scab Resistance in Soft Red Winter Wheat”. Griffey C.A. and S.Y. Liu. **Virginia Small Grain Board, Co-PI**. US\$36,000. Jul. 2007 – Jun. 2010.
- “Mapping Fusarium Head Blight Resistance QTL in Virginia Wheat Variety Massey” and “Sequence Analyses of Fusarium Head Blight QTL from Different Resistant Sources”. Funded by **College of Agriculture and Life Science, Virginia Tech**, Mini-Teaching Grant to let undergraduate student join research. \$7,500. **PI**. Jan. – Jun. 2008.
- “Marker-assisted Selection to Breed Multiple Resistant Variety in Common Bean” Funded by **Improving Farming System Practice Initiative for pesticide reduction strategy in Agriculture Agri-food Canada**. Collaborated with AAFC Morden and Lethbridge Research Centers. CA\$200,000 per year for three years. **Majorly involved**. Jan. 2004 – Aug. 2007.
- “Development of Bean Varieties for Disease Resistance Including CBB, Bean Mosaic Virus, Anthracnose, Root Rot and White Mold with Good Cooking Quality and High Yield”. Awarded by **Ontario White Bean Producers’ Marketing Board and Ontario Colored Bean Growers’ Association** with CA\$15,000 per year. **Majorly involved**. Jan. 2004 – Aug. 2007.

Skills

1. Analyze genotype data from 90k SNP array using GenomeStudio and genotyping-by-sequencing using TASSEL under unix.
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 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.
4. Awarded 3rd progress prize by Evaluation Committee for Progress Prize of Science and Technology of Shandong Province as one of the major researchers for "Development and release of late-sowed and super early-maturing wheat variety LuMai 20" in 1997.
5. Awarded the 3rd progress prize by the Chinese Ministry of Agriculture for participation in the study "The Study of Comprehensive Technology and Application of Improving Crops through Radiation" in 1992.

Awards and recognitions of supervised students and team members (17)

1. Ph. D. student, Silvano Ocheya Assanga, First place in poster presentation, DuPond Pioneer Plant Breeding Symposium on Feb 18, 2016.
2. Research Scientist, Chor Tee Tan got the Research Collaboration award from the Dept. of Soil and Crop Sci. in TAMUS in 2015.
3. Ph.D. student, Silvano Ocheya Assanga, got the graduate research award from the Dept. of Soil and Crop Sci. in TAMUS in 2015
4. 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.

5. Yan Yang, 2015 Student Operation Connection for the 132nd Convention, American Seed Trade Association, Washington, DC, June 17-20, 2015.
6. Yan Yang, Monsanto Beachell Borlaug International Scholarship. 2015-2017.
7. Smit Dhakal, Feb 2015, Plant Breeding Symposium at College Station, First place on poster competition
8. Silvano Assanga Ocheya, Feb. 2015, Plant Breeding Symposium at College Station, Selected speaker award on research
9. Yan Yang, Feb. 2015, Plant Breeding Symposium at College Station, Selected speaker award on research
10. Silvano Assanga Ocheya, 2014 Texas Plant protection Association, outstanding graduate student award.
11. Silvano Assanga Ocheya, The Norman E. Borlaug Leadership Enhancement in Agriculture Program (LEAP) of the US government's Feed the Future Borlaug 21st Century Leadership Initiative, USAID, Sep. 2014-Aug. 2015.
12. 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.
13. Silvano Assanga Ocheya, Ph. D. Candidate, Borlaug Next Generation Delegate by Chicago Council, May 2014.
14. Silvano Assanga Ocheya, Monsanto Beachell Borlaug International Scholarship, 2013-2016.
15. Smit Dhakal, Ph. D. candidate, Excellence Fellowship from College of Agriculture and Life Science, TAMU, 2014-2015.
16. Smit Dhakal, M.S. candidate, Texas A&M AgriLife Research Amarillo Fund for Excellence for graduate student, 2012-2014.
17. 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., A. M. Ibrahim, R.N. Devkota, J. A. Baker, S. Baker, R. Sutton, B. Simoneaux, G. Opeña, D. Hathcoat, J. M. Awika, L.R. Nelson, **S.Y. Liu**, B. Bean, C.B. Neely, R.W. Duncan, Y. Jin, R.L. Bowden, B.W. Seabourn, and R.A. Graybosch. 2014. Proposal to Release TX06V7266 as 'TAM 204' Wheat
2. Rudd, J. C., A. M. Ibrahim, R.N. Devkota, J. A. Baker, S. Baker, M.D. Lazar, R. Sutton, B. Simoneaux, G. Opeña, L.W. Rooney, J. M. Awika, **S.Y. Liu**, B. Bean, R.W. Duncan, R.L. Bowden, B.W. Seabourn, Y. Jin, and R.A. Graybosch. 2014. Proposal to Release TX07A001505 as 'TAM 114' Wheat.

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 (57)

1. 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. Fuentealba, **S.Y. Liu***. 2016. Validation of KASP SNP markers for wheat streak mosaic virus resistance gene *Wsm2*. Accepted.
2. Assanga, S.O., G. Zhang, C.-T. Tan, J.C. Rudd, A. Ibrahim, Q. Xue, S. Chao, M.P. Fuentealba, **S.Y. Liu***. 2016. Saturated genetic map of wheat streak mosaic virus resistance gene *wsm2* in wheat. *Crop Sci.* Accepted.
3. Dhakal, S., C.-T. Tan, L. Paezold, M.P. Fuentealba, J.C. Rudd, B.C. Blaser, Q. Xue, C.M. Rush, R.N. Devkota, **S.Y. Liu***. 2016. Wheat curl mite resistance in hard winter wheat in the U.S. Great Plains. *Crop Sci.* Accepted. *Corresponding author.
4. 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. 2015. Spectral reflectance models for characterizing winter wheat genotypes. *J. of Crop Improv.* 30:176-195.
5. 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.
6. **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. *Crop Sci.* 56:364-373. doi: 10.2135/cropsci2015.03.0194
7. **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.
8. 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.
9. 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 CIho 2291 barley. *Crop Sci.* 54:2596–2602. doi:10.2135/cropsci2013.08.0514.
10. 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.
11. 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
12. 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

13. 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.
14. 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.
15. 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
16. **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
17. 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.
18. 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. 2012. Identification and mapping of adult plant stripe rust resistance in soft red winter wheat VA00W-38. **Crop Sci.** 52:871–879. doi: 10.2135/cropsci2012.02.0086.
19. 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.
20. Berger, G.L. **S.Y. Liu**, M.D. Hall, W.S. Brooks, S. Chao, G.J. Muehlbauer, B-K Baik, B. Steffenson, C.A. Griffey. 2013. Marker-trait associations in Virginia Tech winter barley identified using genome-wide mapping. **Theor. Appl. Genet.** 126:693–710.
21. **Liu, S.Y.**, C.A. Griffey, M.D. Hall, J. Chen, S. Liu, D. Tucker, W.S. Brooks. 2012. Registration of Becker/Massey Wheat Recombinant Inbred Line Mapping Population. *J. Plant Reg.* 3:358–362.
22. **Liu S.Y.**, M.D. Christopher, C.A. Griffey, M.D. Hall, P.G. Gundrum, and W.S. Brooks. 2012. Molecular characterization of resistance to Fusarium head blight in U.S. soft red winter wheat breeding line VA00W-38. **Crop Sci.** 52: 2283–2292.
23. Chen, J., C.A. Griffey, **S. Liu**, M. A. Saghai-Marooof. 2012. Release of scab resistance wheat germplasm VA04W-433, VA04W-474. *J. of Plant Reg.* 6:111–116.
24. Khatibi, P.A., G. Berger, **S. Liu**, W.S. Brooks, C.A. Griffey, D.G. Schmale III. 2011. Resistance to Fusarium head blight and deoxynivalenol accumulation in Virginia barley. **Plant Dis.** 96:279–284.
25. Brooks, W.S., M.E. Vaughn, 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. 2011. Registration of 'Dan' Winter Hullless Barley. **J. Plant Reg.** 5:1–4.
26. Griffey, C.A., W.E. Thomason, R.M. Pitman, B.R. Beahm, J.J. Paling, J. Chen, P.G. Gundrum, J.K. Fanelli, D.W. Dunaway, W.S. Brooks, M.E. Vaughn, E.G. Hokanson, H.D. Behl, R.A. Corbin, J.E. Seago, B.C. Will, M.D. Hall, **S.Y. Liu**, et al. 2011a. Registration of 'Merl' Wheat. **J. Plant Reg.** 5: 68–74.
27. Griffey, C.A., W.E. Thomason, R.M. Pitman, B.R. Beahm, P.G. Gundrum, **S.Y. Liu**, et al. 2011b. Registration of 'SW049029104' Wheat. **J. Plant Reg.** 5:91–97.

28. Hall, M.D., C.A. Griffey, A. Green, **S. Liu**, et al. 2011a. Registration of 'Vision 30' Wheat. **J. Plant Reg.** 5:353–359.
29. Hall, M.D., C.A. Griffey, A. Green, **S. Liu**, et al. 2011b. Registration of 'Vision 40' Wheat. **J. Plant Reg.** 5:360–366.
30. Hall, M.D., W. Rohrer-Perkins, C.A. Griffey, **S.Y. Liu**, et al. 2011c. Registration of 'Snowglenn' Winter Durum Wheat. **J. Plant Reg.** 5:81–86.
31. **Liu S.Y.**, K. Yu, M. Haffner, S.J. Park, M. Banik, P.K. Pauls, and W. Crosby. 2010. Construction of a BAC library and a physical map of the major QTL for CBB resistance in common bean. **Genetica** 138:709–716.
32. Hall, M.D., C.A. Griffey, D. Tucker, **S. Liu**, et al. 2010. Registration of USG 3209/Jaypee Wheat Recombinant Inbred Line Mapping Population. **J. of Plant Reg.** 4:159–162.
33. Griffey, C.A., W.E. Thomason, R.M. Pitman, B.R. Beahm, J.J. Paling, J. Chen, J.K. Fanelli, J.C. Kenner, D.W. Dunaway, W.S. Brooks, M.E. Vaughn, E.G. Hokanson, H.D. Behl, R.A. Corbin, M.D. Hall, **S. Liu**, et al. 2010. Registration of 'Jamestown' Wheat. **J. of Plant Reg.** 4:28–33.
34. Griffey, C.A., W. E. Thomason, R. M. Pitman, B. R. Beahm, J. J. Paling, J. Chen, P. G. Gundrum, J. K. Fanelli, J. C. Kenner, D. W. Dunaway, W. S. Brooks, M. E. Vaughn, E. G. Hokanson, H. D. Behl, R. A. Corbin, M. D. Hall, **S. Liu**, et al. 2010. Registration of 'Shirley' Wheat. **J. of Plant Reg.** 4:38–43.
35. Griffey, C.A., W. E. Thomason, R. M. Pitman, B. R. Beahm, J. J. Paling, J. Chen, P. G. Gundrum, J. K. Fanelli, J. C. Kenner, D. W. Dunaway, W. S. Brooks, M. E. Vaughn, E. G. Hokanson, H. D. Behl, R. A. Corbin, M. D. Hall, **S. Liu**, et al. 2010. Registration of '3434' Wheat. **J. of Plant Reg.** 4:44–49.
36. Griffey, C.A., W.E. Thomason, R.M. Pitman, B.R. Beahm, J.J. Paling, J. Chen, J.K. Fanelli, J.C. Kenner, D.W. Dunaway, W.S. Brooks, M.E. Vaughn, E.G. Hokanson, H.D. Behl, R.A. Corbin, M.D. Hall, **S. Liu** et al. 2009. Registration of 'USG3555' Wheat. **J. of Plant Reg.** 3: 273–278.
37. Griffey, C.A., W.E. Thomason, R.M. Pitman, B.R. Beahm, J.J. Paling, J. Chen, P.G. Gundrum, J.K. Fanelli, J.C. Kenner, D. W. Dunaway, W.S. Brooks, M.E. Vaughn, E.G. Hokanson, H.D. Behl, R.A. Corbin, M.D. Hall, **S. Liu** et al. 2009. Registration of '5205' Wheat. **J. of Plant Reg.** 3:283–288.
38. **Liu S.**, M.D. Hall, C.A. Griffey, A.L. McKendry. 2009. Meta-analyses of Fusarium head blight resistance QTL in wheat. **Crop Sci.** 49:1955–1968.
39. **Liu S.**, K. Yu, S.J. Park. 2008. Development of STS markers and QTL validation for common bacterial blight resistance in common bean. **Plant Breed.** 127: 62–68.
40. Abate Z., **S. Liu**, A.L. McKendry. 2008. QTL associated with resistance to Deoxynivalenol and Fusarium damaged kernel in a soft red winter wheat Ernie. **Crop Sci.** 48:1408–1418.
41. **Liu S.**, Z. Abate, H. Lu, T. Musket, G. Davis, A.L. McKendry. 2007. QTL associated with Fusarium head blight resistance in soft red winter wheat 'Ernie'. **Theor. Appl. Genet.** 115:417–427.
42. **Liu S.**, M. Banik, K. Yu, S.J. Park, V. Poysa, Y. Guan. 2007. Marker-assisted selection in major cereal and legume crops – current progress and future direction. **International Journal of Plant Breeding** 1:74–88.
43. 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.
44. **Liu S.**, Z. A. Abate, A. L. McKendry. 2005. Inheritance of Fusarium head blight resistance in the soft red winter wheat Ernie. **Theor. Appl. Genet.** 110:454–461.
45. Zhang Y., J. S. Quick, **S. Liu**. 1998. Genetic Variation in PI 294994 wheat for resistance to Russian Wheat Aphid. **Crop Sci.** 38:527–530.
46. Authored or co-authored 12 papers in peer-reviewed journals in Chinese.

Book Chapter (2)

- 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**. 2016. Improving water management in winter wheat. Ed. by P. Langridge, Achieving sustainable wheat cultivation.

Manuscripts in Review or Preparation (8)

1. Wang S., S. Kiani, K. Jordan, **S.Y. Liu**, P. Byrne, S. Haley, S. Baenziger, S. Chao, R. Bowden, E. Akhunov. 2016. Genotype imputation and genome-wide association mapping in winter wheat using first-generation haplotype map SNPs. G3. Submitted.
2. 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.
3. Dhakal, S., C.-T. Tan, J.C. Rudd, Q. Xue, B. Blaser, R. Devkota, M.P. Fuentealba, **S.Y. Liu***. 2015. Genetic mapping of wheat curl mite resistance gene in TAM 112 and KASP SNP validation. In preparation.
4. Ocheya, S.A., C.-T. Tan, J.C. Rudd, A. Ibrahim, Q. Xue, G. Zhang, R. Devkota, J. Chen, H. Scott, J. Baker, S. Baker, S. Dhakal, M.P. Fuentealba, **S.Y. Liu***. 2015. Identification of SNP markers linked to QTL for yield and yield components. In preparation.
5. Tan C.-T., J.C. Rudd, Q. Xue, **S.Y. Liu***. Development and validation of diagnostic KASPar SNP markers for greenbug resistance locus *Gb3* in wheat. In preparation.
6. Tan C.-T., Y. Yang, M. Chen, **S.Y. Liu*** et al. Development and validation of KASPar SNP markers linked to Hessian fly resistance gene *H32* in wheat using Genotyping-by-sequencing. In preparation.
7. Yang, Y., C.-T. Tan, X.Y Xu, J.C. Rudd, Q. Xue, A.M. Ibrahim, **S.Y. Liu*** et al. Genetic mapping and KASP SNP validation of greenbug resistance gene *Gb7* in wheat. In preparation.
8. Zhang, Y., Q. Xue, K.E. Jessup, **S.Y. Liu** and J. C. Rudd. Genotypic variation in seedling vigor and water use efficiency in Southern Great Plains.

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 (45)

1. **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.
2. 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.
3. 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.
4. 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.
5. **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).
6. 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.
7. 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.
8. 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. 2015 Texas Small Grain Workers Meeting, Aug.12, Amarillo TX.
9. 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. 2015 Texas Small Grain Workers Meeting, Aug.12, Amarillo TX.
10. 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. 2015 Texas Small Grain Workers Meeting, Aug.12, Amarillo TX.
11. 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. 2015 Texas Small Grain Workers Meeting, Aug.12, Amarillo TX.
12. 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. Small Grain Workers Meeting. Aug.12. Amarillo, Texas, USA.

13. 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. 2015 Texas Small Grain Workers Meeting, Aug,12, Amarillo TX.
14. Shuyu Liu et al. 2015. Genetic and genomic studies on important traits of Texas wheat. Texas Small Grains Workers Meeting. Aug. 12. Amarillo, Texas.
15. **Liu S.Y.** et al. 2015. KASP SNP markers development and application in marker-assisted breeding in wheat. **The 8th Annual World Congress of Industrial Biotechnology**. Apr. 25-28. Nanjing, China. (**Invited**). Similar contents were presented in Shandong Academy of Agricultural sciences in Jinan, Jiangsu Academy of Agricultural sciences and Nanjing Agricultural University in Nanjing during the China visit.
16. **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**)
17. 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**)
18. 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**)
19. **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**)
20. 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).
21. 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).
22. 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).
23. 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).
24. **Liu, S.Y.** 2014. The wheat research update at Amarillo. **Texas Small Grain Workers Meeting**. Aug. 12-13. College Station. (**Invited**)
25. **Liu, S.Y.** Wheat research for important traits in the U.S. High Plains. **University of North Texas**, Denton, TX. Aug. 11, 2014. (**Invited**)
26. **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**)
27. **Liu, S.Y.** The wheat research progress at Amarillo Center. 2013. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX. (**Invited**)
28. 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).
29. Dhakal, S. 2013. Study of mite resistance in TAM112. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX (MS student).
30. **Liu, S.Y.** The wheat research progress at Amarillo Center. 2012. **Texas Small Grain Workers Meeting**. Aug. 1-2. College Station, TX. (**Invited**)

31. **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)**
32. **Liu, S.Y.** 2011. The research progress in wheat genetics at Amarillo Center. **Texas Small Grain Workers Meeting.** Aug. 2-3. Vernon, TX. **(Invited)**
33. **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.
34. **Liu, S.Y.** 2010. Research plan of wheat genetics at Amarillo Research Center. **Texas Small Grain Workers Meeting.** Aug. 2-3. Commerce, TX.
35. **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.
36. **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.
37. **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.
38. **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.
39. **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.
40. **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.
41. **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.
42. **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.
43. **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.
44. **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. **5th Canadian Pulse Research Workshop.** Nov. 28 – 31. London, Ontario, Canada.
45. **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 (92)

1. **Liu, S.Y.**, C.-T. Tan, 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. 2016. Development, validation and application of KASP SNPs for biotic and abiotic adaptation in wheat marker-assisted breeding. **The 7th International Crop Science Congress**. August 14-19, Beijing, China.
2. 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.
3. 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.
4. 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.
5. Dhakal, 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.
6. 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***. 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.
7. Tan, C.-T., S. Ocheya, S. Dhakal, 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. **9th International Wheat Conference**. Sep. 20-25. Sydney, AUS.
8. 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. Dhakal, 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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)**.
14. 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.
15. Dhakal, 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. (**1st place in poster competition**)
 16. 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.
 17. 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.
 18. 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.
 19. 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.
 20. 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.
 21. 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.
 22. 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.
 23. 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.
 24. 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**)
 25. **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.
26. **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.
 27. **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.
 28. 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.
 29. **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.
 30. **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.
 31. 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.
 32. **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.
 33. **Liu, S.Y.***, J.C. Rudd, G. Bai, S. Haley, A. Ibrahim, Q. Xue, D. Hays, R. Devkota, R. Graybosch, P.S. Amand. 2013. 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, 2014. Cd. Obregon, Sonora, Mexico.
 34. **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.
 35. 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.
 36. **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
 37. **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.

38. **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.
39. **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.
40. **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.
41. *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.
42. **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.
43. **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.
44. **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.
45. **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.
46. 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.
47. **Reddy, S.K., Y. Weng, J.C. Rudd, A. Akhunova, S.Y. Liu***. 2011. Transcriptome profiling of defense responses to greenbug feeding in wheat. **The 6th International Conference on Genome**. Nov. 12 – 15, Shenzhen, China. *Corresponding author.
48. **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.
49. 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.
50. 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.
51. 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.

52. **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.
53. 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.
54. 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.
55. 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).
56. 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.
57. **36** poster abstracts or papers in proceedings in international, national and regional conferences before 2010 (7 in 2009).

Instruction of Students and Outreach (31)

1. ASA-CSSA-SSSA International Annual Meeting. Nov. 6-9, Phoenix, AZ USA.
2. The 7th International Crop Science Congress. August 14-19, Beijing, China.
3. Invited to join the discussion for gene/genome editing in Soil and Crop Science in College Station, May 17, 2016.
4. Ogallala Aquifer Annual Meeting at Amarillo, TX, Mar. 9-10, 2016.
5. Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, San Antonio, Texas. Poster presentation program Chair.
6. Poland AG company visitors, invited to College Station to present the research progress in wheat genetics and production. Feb. 2016. College Station.
7. Texas Small Grains Workers meeting, Aug, 2010-2015.
8. The Annual Hard Winter Wheat Workers' Field Day. OSU North Central Agronomy Research Station at Lahoma, OK. May 7, 2015.
9. Texas A&M AgriLife Research Wheat Field Day, May 21, 2015, Bushland, Texas.
10. 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.
11. 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
12. Regional hard red winter wheat field day, May 13, 2014, Vernon, Texas.
13. Texas A&M AgriLife Research wheat field day, May 14, 2014, Vernon, Texas.
14. Syngenta wheat field day, May 15, 2014, Vernon, Texas
15. Worked with breeder Jackie Rudd and invited wheat dry breeders, Xiumin Chen, Huimin Li, Zhenliang Wu, from the Institute of Dry-Land Farming, and Yajun Li, from the Institute of Grain and Oil Crops, Hebei Academy of Agriculture and Forestry Sciences, Hebei, China to visit Texas A&M AgriLife Research at Amarillo. We discussed the dry land wheat breeding and related research on Oct 31, 2013.

16. Wheat drought/insect/disease interactions. 2013. Wheat Field day, by Texas AgriLife Research, May 22, Etter, TX
17. 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.
18. USDA-ARS Ogallala Aquifer Workshop at Amarillo, TX. March 5-7, 2013
19. 75th Anniversary for USDA-ARS CPRL at Bushland, TX on Aug 29, 2013.
20. Liu et al. Jan 29-30. Discuss with Bayer Crop Science about the cooperative projects.
21. Liu et al. July 10-11, Discussed with IBM data analyses group.
22. Provide marker information for low PPO for Jackie Rudd to discuss with ConAgra about wheat quality for Nov 18, 2013 at College Station.
23. Wheat Field Day, 2011 Chillicothe, 2012 Bushland, TX.
24. Grant review panel for a state wheat commission to select better proposals for funding 2011-2013
25. Presented wheat genetics research progress in various wheat fields at Bushland, Etter, Chillicothe since 2011.
26. Present research progress in meetings with producers and seed companies organized by Virginia Crop Improvement Association on Feb. 18, 2010.
27. 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.
28. Co-instructed interdisciplinary graduate student course “Topics in Molecular Cell Biology and Biotechnology” in the fall of 2008 (ALS6024).
29. Guest lectures in Plant Breeding and Genetics for both graduate and undergraduate students in Virginia Tech (CECS5414, 4414).
30. Supervised 14 Intern undergraduate students in Agriculture Agri-Food Canada in plant breeding and molecular genetics related research work.
31. 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 (51)

Africa J. of Agri. Res. (1), Crop Sci (8), Euphytica (2), Europ J of Plant Path (1), G3 (1), Internat J of Plant Bio and Res (2), J of Crop Improv (1), J of Phytopath (3), J. Plant Reg. (2), Mol Breed (5), Phytopath (2), Plant Sci (1), PLOS one (10), Theor and Appl Genet (1), ASA book proposals (12)

Professional Association Members and Activities (13)

1. Associate Editor of Crop Science, Jan. 2017 – Dec. 2020.
2. C655.2: National Small Grain Variety Review Board, Alternate (Jan. 2014 – Dec. 2015) and Member (Jan. 2016 – Dec. 2017)
3. CSSA-C454: Young Scientist Award Committee (Jan. 2014 – Dec. 2015)
4. ACS320: Book and Multimedia Publishing Committee (2013-2016)
5. ASA-A45: Tengtou Ag Sci, Award Committee Jan. 1, 2012 – Dec. 31, 2013
6. CSSA-C451: Crop Science Research Award Committee, CSSA, 2008-2010.
7. Crop Science Society of America – member since 2003
8. American Society of Agronomy – Member since 2009
9. Joined Expert working groups in Wheat Initiative for Breeding methods and strategies, wheat phenotyping, control of pathogen and pest since Sep. of 2014.
10. Chinese-English translation quality check for scientific research in agriculture since 2015.
11. Editorial Board: International Journal of Plant Biology & Research Since Sep., 2013:

<http://www.jscimedcentral.com/PlantBiology/editors.php>

12. 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 Scientists (2):

Dr. Chor Tee Tan, Aug. 2013-present (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):

Maria Pilar Fuentealba, Sep. 2011 – Aug. 2015, Texas A&M AgriLife Research and Extension Center at Amarillo

Lisa Garza, Feb. 2015 – Present, Texas A&M AgriLife Research and Extension Center at Amarillo

Hangjin Yu, Jul. 2015 – Present, Texas A&M AgriLife Research and Extension Center at Amarillo

6. Graduate Committee Chair (2 Ph.D.):

Smit Dhakal, Jun. 2014-May 2018; Yan Yang, Jun. 2014-May 2018; Dept. of Soil and Crop Sciences, College Station

7. Graduate Committee Member (2Ph.D., 3MS):

Xiangkun Gu, Jun. 2013-present; Sara Ajayi, Jan. 2014-present; Xi Chen, Aug. 2012-Present; Sabahat Zahra, Jan. 2015 –present; Tessa Ries, Hort.

8. Graduated (Chair:1MS, 1Ph.D; Committee: 3Ph.D., 2MS):

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

Silvano Assanga Ocheya, Soil and Crop Science, Texas A&M University, Aug. 2012-Aug. 2016;

Yuanyuan Chen, Molecular Environmental Plant Sciences, Aug. 2014-Dec. 2016;

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

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

Brandon J. Gerrish, Jun. 2014-Dec. 2015, Dept. of Soil and Crop Sciences/Molecular Environment Plant Sciences, College Station.

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

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

Jackie Avila, Amarillo College, May 2016 – Present; Cameron Skees, June 2016 – Present; Julio Rocha, June 2016 – Present;

Lisa Garza (WTAMU, Feb. 2015-present), 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 (35)

1. 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.
2. 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/>
 3. 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.
 4. 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/>
 5. 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/>
 6. Mollie Bryant, Wheat work: Researchers seek drought-resistant grain. Amarillo Global-News. Apr. 13, 2015. (S.Y. Liu's genetic research with other collaborations).
 7. "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.
 8. 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).
 9. 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.
 10. 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**)
 11. Silvano Ocheya was selected as the 2014-2015 fellow of Norman E. Borlaug Leadership enhancement in Agriculture Program. <http://borlaugleap.org/fellow/silvano-ocheya>
 12. 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/>
 13. 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>.
 14. 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/>
 15. Colin Saunders. Ph. D. student carrying on Borlaug Legacy. About Ocheya, S.A. The Battalion. Jun. 5, 2014.
 16. Wayne Smith, Texas A&M Plant Breeding Bulletin, May 2014. Silvano Ocheya was selected as the Borlaug Next Generation Delegate.

17. 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**)
18. 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/>
19. 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>
20. 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/>
21. KGNC Radio, by James Hunt, Shuyu Liu*. Talked about wheat curl mite resistance in TAM 112. Apr. 23, 2014.
22. 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/>
23. 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/>
24. “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. May16, 2013. Weblink: <http://www.connectamarillo.com/news/story.aspx?id=898501#.UouOPCfu7wW>. Video link: <http://www.youtube.com/watch?v=GV28FbNHunI&feature=youtube.be>
25. 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/>
26. 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/>
27. 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/>

28. 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/>
29. Meet MSI student and faculty – Dr. Shuyu Liu* and Serina England. TCAP Transmission, Spring 2012.
30. James Hunt Show, J.C. Rudd, Q. Xue, S.Y. Liu, Jan. 26, 2012. Wheat production in Texas Panhandle. KGNC Talk Radio 710AM.
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