CURRICULUM VITAE
November 2023

I. PERSONAL INFORMATION

Name: Shuyu Liu
Rank: Professor in whet breeding, genetics and genomics
Unit: Texas A&M AgriLife Research at Amarillo
Department: Soil and Crop Sciences
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II. EDUCATION

Ph.D., Plant Breeding and Genetics, University of Missouri-Columbia, Columbia, MO, USA. 12/2003.
Dissertation: *Genetic studies of Fusarium head blight resistance in the winter wheat cultivar Ernie. Major Professor: Anne L. McKendry*

M.S. Candidate, Bioinformatics, completed MS required 21 credit courses, University of Missouri-Columbia, MO, USA. 12/2003.

M.S., Plant Breeding and Genetics, Colorado State University, Fort Collins, CO, USA. 8/1998.
Thesis: Chromosome location of Russian wheat aphid resistance genes in wheat germplasms PI 372129, PI 243781, PI 220127. Major Professor: James Quick

B.S., Crop Science, Shandong Agricultural University, Tai'an, Shandong, China. 7/1988.
Thesis: Multi-crop management system with wheat and alfalfa. Major professor: Yuhai Chen

III. BIOGRAPHY

Dr. Shuyu Liu is a professor in wheat breeding, genetics and genomics with Texas A&M AgriLife Research-Amarillo and Dept of Soil and Crop Sciences of Texas A&M University. He worked as a visiting fellow at Agriculture Agri-Food Canada and a research scientist at Virginia Tech before he joined TAMU in 2010. He got his M.S. from Colorado State University and Ph.D. from University of Missouri-Columbia. He leads the wheat genetic program at the Amarillo Center and mainly focuses on genetic and genomic studies on important traits of wheat in the US Great Plains. Target traits include drought and heat tolerance, resistance to diseases (leaf, stem and stripe rusts, wheat streak mosaic virus), and pests (greenbug, Hessian fly, and wheat curl mite) as well as superior end-use quality for bread making. Both traditional and molecular breeding techniques are being used to develop germplasm lines with multiple target traits. Genomic techniques including gene/QTL mapping, target molecular marker identification, validation and utilization, diagnostic high throughput KASP SNP screening, gene cloning, and gene functional analysis are used to understand and improve those target traits. The established doubled haploid development and genomic prediction are integrated to the traditional and molecular breeding pipelines in Texas. He has led a USDA-NIFA project as a PD and one as a Co-PD on germplasm and

cultivar development using primary synthetics. He completed a USDA-NIFA-IWYP (International Wheat Yield Partnership) WheatCAP project as a co-PD for the subaward of TAMU on yield QTL cloning and is a co-PI for the current subaward of WheaCAP in 2022-2027 on high throughput genotyping and phenotyping. He leads a collaborative project with hard winter wheat regional breeders and geneticists on pyramiding FHB resistance genes using doubled haploid funded by US wheat and Barley Scab Initiative. He has secured $3.3M for his wheat genetic research and involved with $28M funding as a team member. He has published 98 peer reviewed publications and presented 127 oral and 156 posters. He has trained 15 Ph.D. and 15 M.S. and 30 undergraduate students. He has chaired 6 committees including plant genetic resources in the ASA-CSSA-SSSA tri-societies and joined 15 committees as a member. He is an ambassador of scientists engaging and educating decision makers and joined the virtual congressional visiting day in 2022. He has been an associate editor of 5 journals and reviewed >250 journal articles for 35 journals. He got research faculty ward from the department and Vice Chancellor team award from TAMU system in 2019, the Dean's excellent team award, the outstanding reviewer award from the editor board of the Plant Genome in 2021, and a career award in 2022 from the Chinese Association of Soil and Plant Science of North America.

IV. PROFESSIONAL EXPERIENCE

Professor, Sep. 2021-Present; Associate professor, 9/2016-8/2021; Assistant professor, 8/2010-8/2016. Small Grain Breeding, Genetics, and Genomics, Texas A&M AgriLife Research/Dept. of Soil ad Crop Sciences (AMARC/SCSC), TAMUS, Amarillo, Texas, 79106, USA. 100% research full time, Project Leader

Major duties:

1. Lead a program to conduct research in germplasm enhancement; develop, evaluate, and apply genomic molecular tools; and determine molecular mechanisms of stress resistances.
2. Increase production efficiency through improved biotic and abiotic resistances, increased yield, and enhanced end-use value in both dryland and irrigated production system.
3. Secure grant funding from federal, state, university, and industry sources to support research goals of the project.
4. Supervise assigned research support staff, graduate students, and undergraduate students as necessary to accomplish goals of the projects. Communicate effectively with other faculty, research partners, and clientele groups.
5. Manage the wheat genetics laboratory. This includes appropriate equipment and supply procurement and maintenance as necessary, hiring and supervising laboratory personnel, and establishing and implementing protocols for laboratory procedures and laboratory safety. Perform other job-related duties as required.

Research Objectives:

1. Understanding genetic mechanisms of improved tolerance to drought and other stresses in wheat cultivars.
2. Identifying new sources of tolerance to various stresses and identifying molecular markers tightly linked to the target genes/loci conditioning these tolerances.
3. Developing genetic and genomic tools for genomic-assisted selection and breeding.

4. Accelerating the development of germplasm and cultivars with tolerance to multiple stresses by integrating the doubled haploid pure line development pipeline and genomic selection into breeding pipelines.

Major accomplishments:

1. Developed medium-throughput Kompetitive allele specific PCR (KASP) markers using single nucleotide polymorphisms (SNPs) from array, genotyping-by-sequencing (GBS), or exome capture for several major genes to greenbug, hessian fly, wheat streak mosaic virus, stripe rust, wheat curl mite (*Gb3*, *Gb7*, *H32*, *Wsm2*, *YrTAM111*, *Cmc4*, and kernel weight QTL in TAM 111. **They have been used in Texas and other regional breeding programs through USDA-ARS Genotyping Center at KSU**.
2. **Integrated marker-assisted selection and genomic prediction/selection into two Texas wheat breeding programs**. A set of 669 wheat elite lines and parents have been screened for a set of 20 major genes related markers, and 1793 advanced breeding lines from 2018 to 2023 were conducted GBS for training model building and predictions. The predicted results on yield from 2022 and 2023 were used by two breeders and matched their phenotypic selections well.
3. **Established wheat doubled haploid line (DHL) development system shortening 3 years for cultivar development and produced 3,500 DHLs for breeding and genetic research** from 2018 to 2023. A set of 210 DHLs were in the 2023 yield trials and 1198 DHLs were planted as 2158 plots in 2024 yield trials for breeders to select. **Seven DHLs were in the regional nursery with potential to be released as germplasm or cultivars** and 42 in the regional germplasm nursery after breeders testing within Texas locations.
4. **Developed six bi-parental, two association, two nested association, and three multi-parent advanced generation inter-cross (MAGIC) mapping populations with a total of 3,245 lines** using single seed descent and/or DH. A set of 51significant loci were identified for increasing yield, yield components, end-use quality, and disease and pest resistances in popular adapted cultivars and primary synthetics (artificially synthesized from durum wheat and *Aegilops tauschii* lines).
5. Evaluated a set of 209 primary synthetics with **new sources of pests (greenbug, hessian fly, wheat curl mite) and diseases (three rusts, viral diseases)** and utilized them in the winter wheat breeding programs. More than 1,000 synthetic derived lines from backcrosses with adapted cultivars were tested in yield trials and many were advanced to elite yield trials. A set of 391 lines was developed with new pest resistance genes introgressed into a popular cultivar TAM 114.
6. Conducted **transcriptomic analyses for grain filling seeds, resistance to greenbug, and drought tolerance to understand the mechanisms**. Differentially expressed genes were identified using DNA microarray and RNA sequencing. Some of the genes were confirmed through biparental and association mapping.
7. Trained next generation scientists including 6 Ph.D. and 5 M.S. graduates as chair/co-chair, 10 Ph.D. and 10 M.S. graduates as a committee member, 2 visiting Ph.D. students from foreign countries, 8 scientists and postdocs, 4 technicians, and 21 undergraduates. They received 7 international scholarships and fellowships, 12 national oral/poster awards, and 21 university or state awards and fellowships. Several are leading scientists in the private companies.

8. Received patent awards for releasing four wheat cultivars. A set of unique germplasm lines with combinations of major genes and loci from those 11 bi-parental and association mapping populations will be summarized and released to the public.
9. Collaborated with 18 scientists within TAMUS, 30 outside of TAMUS, and 4 from international on wheat genetic research using adapted wheat lines and alien relatives of wheat to increase genetic diversity, productivity and quality. Published 74 articles with an i10-index of 50, h-index of 29, and total citation of 2300 times (https://scholar.google.com/citations?hl=en&user=sw1nRIYAAAAJ) in peer-reviewed journals, including TAG, Crop Sci, Mol. Breed, Scientific Report, PloS One, G3, Field Crop Res., Nature Biotechn., and Nat. Commun.
10. Obtained total funding of $28.4M ($21.1M since 2016), of which $3.32M ($2.3M since 2016) was allocated to the wheat genetic program. Currently leading one USDA-NIFA Foundation project as PD ($0.5M), and one USDA-ARS/Wheat and Barley Scab Initiative project ($0.1M), and collaborating in one NIFA as Co-PD ($0.3M); Participating the new WheatCAP (total $15M to UC-Davis) project as a Co-PI for the TAMU subaward ($0.93M) from 2022-2027; Recently accomplished a sub-awarded TAMU WheatCAP project funded by the USDA-NIFA International Wheat Yield Partnership (total $9.6M to UC-Davis) as a Co-PD.
11. Chaired 6 committees and member in 15 committees across ASA-CSSA-SSSA (ACS, current in 4). Associate editors in 5 journals and guest editor of two topics in Frontiers in Plant Science and one topic in MDPI-Agronomy. Panel reviewers for proposals from NSF in the U.S., and Science Foundations in China, Austria, and Israel. Reviewed more than 230 journal manuscripts from 35 journals since 2010.
12. Join in several expert working groups with an international organization, Wheat Initiative including pest resistance, pathogen resistance, breeding methods and strategies, global wheat germplasm conservation and use community, improving whet quality for processing and health, Wheat information system. Joined work groups for public genetic resources in Agbiodata.

Skills:

1. Using various software to analyze mapping and association panel data to identify significant marker-trait associations as well as applying genomic prediction and selection and doubled haploid in wheat breeding practice.
2. Developed soft skills to manage employees and communicate with supervisors and collaborators to accomplish all projects.
3. Increased leadership skills through involving with professional societies and university committees in research related activities and budget management.

Dec. 2012-Present, Adjunct Professor, Dept. of Agricultural Sciences, West Texas A&M University, Canyon, TX 79016.

1. Train and supervise graduate and undergraduate students on research projects and theses, give guest lectures in plant breeding and genetics, and Biology.
2. Co-chair 3 and committee in 2 M.S. students and supervised 14 student workers.

Aug. 2007-Jul. 2010, Research Scientist, Small Grain Breeding and Genomics, Department of Crop and Soil Environmental Sciences, Virginia Tech, Blacksburg, VA 24060, USA. 100% research full time, Co-PI

Major accomplishments:

1. Understood how the plant height and awn were associated with FHB resistance in native sources Massey, Ernie, Becker, and VA00W38.
2. Collaborated with breeders in selecting and releasing native FHB resistant cultivars.
3. Worked on funded FHB projects from USDA-National Wheat Scab Initiative and Virginia Small Grain Board and University as PI/Co-PI for a total of $558,874.
4. Published 7 peer-reviewed articles on the FHB resistance QTL with a meta-analyses QTL paper, cited 264 so far. Those markers linked to major QTL in Ernie and Massey were used in the soft red winter wheat regional breeding programs.
5. Participated in the release of 10 wheat cultivars (7 soft red, 2 hard red, and 1 durum), 2 wheat germplasm lines, 2 barley cultivars, and 2 wheat mapping populations.
6. Supervised 7 graduate/undergraduate student workers. Trained them for the lab techniques, like DNA extraction, PCR, gene/QTL linkage and association analyses, etc.

Skills:

1. Point inoculation in greenhouse and field spray inoculation of *Fusarium* spores, spread infected corn seeds into the field nursery, and evaluated FHB incidence, severity, damaged kernel, and toxin to select the resistant wheat lines.
2. Improved presentation skills through participating in various national and international conferences.

Jan.-Aug. 2007, Biologist; Jan. 2004-Dec. 2006, Visiting Fellow, Greenhouse Processing Crops Research Center, Agriculture and Agri-Food Canada (AAFC), Harrow, N0R, 1G0, ON, Canada.

Major accomplishments:

1. Developed germplasm lines with multiple disease resistance and released one bean germplasm line HR67.
2. Published 5 peer-reviewed articles on marker development and major loci cloning for common bacterial blight resistance.
3. Completed research projects funded by Agriculture Agri-Food Canada and Ontario Bean Producer Board for a total of CA$786,000 as a major investigator.

Skills:

1. Worked with Bacterial artificial chromosome (BAC) library from a resistant cultivar to clone a major QTL for common bacterial blight resistance.
2. Ran 2-D gel to separate the enzyme digested BAC clones to build BAC contig for the major resistance QTL for CBB.

Aug. 1998-Dec. 2003, PhD Research Assistant, Plant Science Unit, University of Missouri-Columbia, Columbia, MO 65211, USA.

Major accomplishments:

1. Obtained Ph.D. degree in Plant breeding and genetics and finished all MS required bioinformatic courses in Computer science.
2. Identified the native resistance for Fungal FHB in wheat; mapped loci for FHB incidence, severity, damaged kernel, and toxin in a popular soft winter wheat Ernie, named after Dr. Ernie Sears, a cytogeneticist of USDA-ARS at Columbia, MO.
3. Published 3 peer-reviewed articles for FHB resistance with google citation of 198.
4. Screened the germplasm lines using point inoculation for FHB spread resistance.

Skills:
1. Point inoculation of FHB spores on heads in the greenhouse using pipet for severity of FHB spread rating.
2. Learned computer skills to set up analyses using software in Linux, Windows, etc.

Sep. 1996-Aug. 1998. Visiting Scholar and Research Assistant, Soil and Crop Science, Colorado State University, Fort Collins, CO 80523, USA.
Major accomplishments:
1. Used gamma-ray irradiation to induce favorable mutation for RWA resistance.
2. Utilized wheat monosomics to locate RWA resistance in three alien lines.
3. Finished 22 credits of courses in one year and obtained M.S. degree.
4. Published one paper for new RWA resistance.

Skills:
1. Used gamma-ray irradiation to induce favorable mutants and stabilize the RWA resistance faster; Infested RWA and rated for resistance on wheat germplasm.
2. Improved genetic and statistical analyses skills.

July 1988-Sep. 1996, Wheat breeder, Shandong Academy of Agricultural Sciences, Jinan, 250100, Shandong, China. 100% research, full time, Team Member
Major accomplishments:
1. Selected superior lines based on pedigree and single plant selection for higher yield, resistance to powdery mildew.
2. Applied gamma-ray irradiation on wheat pollen, ovary, head, and the whole plant and developed mutant lines with superior agronomic traits.
3. Released a new cultivar "Lumai 20" developed through gamma-ray irradiation,
4. Finished M.S. courses in Plant Genetics at Shandong University.
5. Promoted from Research Assistant Professor to Research Associate Professor.

Skills:
1. Mutant breeding induced favorable mutants.
2. Field selection of plants with superior yield and disease resistance.

V. INTELLECTUAL PROPERTIES (17 cultivars, 3 germplasm lines and 2 populations)

1. Cultivar released at TAMU (5):
   a. TAM 116 (TX14A001035) released in 2022.
   b. TAM 115 (TX12A001295) and TAM 205 (TX12V7415) Winter Wheat Cultivars-2019.
   c. TAM 114 (TX07A001505) and TAM 204 (TX06V7266) Winter Wheat Cultivars-2014. Widely planted in the U.S. High Plains.
2. Wheat and barley releases in Virginia Polytechnic and State University: 7 soft red, 2 hard red, and 1 durum winter wheat cultivars, 2 barley cultivars, 2 germplasm lines, and 2 mapping populations.
3. Bean release in Agriculture Agri-Food Canada: 1 dry bean germplasm.

VI. AWARDS AND HONORS

1. Awards to Shuyu Liu (13)

1) Outstanding Editor of The Crop Journal in 2022 by The Editor-in-Chief.

2) 2022 Career award from the Association of Chinese Soil and Plant Scientists of North America to recognize the life-time achievement.
3) **2022 Texas A&M Technology Commercialization's Patent and Innovations Award:** 5252AGLR19-01, "TAM 115 (TX11A001295) Wheat", PVP 202000429 and 5253AGLR19-01, "TAM 205 (TX12V07415) Wheat", PVP 202000430, Issued 9/28/2021.
4) **2021-2022 SEED Ambassador Award:** The Scientists Engaging and Educating Decision-makers (SEED) Ambassador Award is a year-long, immersive advocacy leadership program with the goal of developing trusted relationships between Society members and Members of Congress.
5) **2022 Graduate Mentoring Academy Fellow** from Dean of Faculties and Graduate and Professional School of TAMU
6) **2021 The Plant Genome Outstanding Reviewer Award** by The Plant Genome Editorial Board.
7) **2019 Research Faculty Award in Soil and Crop Science Dept**., Texas A&M University. Integrated wheat doubled haploid (DH) developing pipeline and genomic prediction in breeding. The DH technique shortens pure germplasm line development by 3-4 years compared with conventional breeding methodology. Only award to faculty who has conducted excellent research in the last three years.
8) **2019 Vice Chancellor Award in Excellence for Team Collaboration in Wheat Genomics**. I am the major bridge faculty linking the genomic and bioinformatic applications to wheat breeding. There was only one team award, and our multi-disciplinary team received it by conducting excellent research at TAMUS.
9) **2015 TAMU College of Agriculture and Life Science Dean's Outstanding Research Achievement Award for Interdisciplinary Research Team, Wheat Improvement Team**. Successfully conducted a public-private collaborative project with more than $7.7 M wheat breeding and genetic research.
10) **Visiting Fellowship from Agriculture and Agri-Food Canada awarded by Natural Sciences and Engineering Research Council of Canada** from 2004 to 2007.
11) **Tak Tsuchiya Graduate Student Achievement Award from 1997 to 1998** at Colorado State University.
12) **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.
13) **Awarded the 3rd progress prize by the Chinese Ministry of Agriculture** for participation in the study "The Study of Comprehensive Technology and Application in Improving Crops through Irradiation" in 1992.

2. Awards and recognitions of Liu supervised students and staff (40 since 2012)

VII. COMPUTER SKILLS

1. Set up and work with various software under Windows, Unix (Lunix), and MAC.
2. Genomic prediction of estimated breeding values using rrBLUP and GBLUP combining with high throughput phenotyping data to select better germplasm.

3. Analyze genotype data from 90K SNP array using GenomeStudio and genotyping-by-sequencing as well as association analyses using STRUCTURE, TASSEL, GAPIT, BLINK etc.
4. Remove outliers for phenotypic data using JMP and filtering genotypic genotyping-by-sequencing SNP data.
5. 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, and IciMapping for traits from multiple environments to analyze epistasis and QTL by environmental interactions.

VIII. LABORATORY TECHNIC SKILLS

1. Optimize PCR conditions and analyze AFLP, SSR, STS, SCAR, and KASP SNP markers.
2. Design primers to amplify genome specific target bands using Primer 3, GENERUNER 3.0, and PolyMarker.
3. Target band cloning and DNA sequencing. Compare sequences using BLAST, Vector NTI, or other software.
4. 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.
5. Extract and purify RNA and study gene expression. Northern and Southern blot analyses of target band or cDNA clones. Data analyses and interpretation of RNAseq results.

IX. PROFESSIONAL AND EXTERNAL SERVICES (64)

1. Professional Society members (7)

1) Crop Science Society of America since 2003
2) American Society of Agronomy since 2009
3) National Association of Plant Breeders since 2019
4) American Society of Plant Biologists since 2022
5) American Association for the Advancement of Science (AAAS) since 2022
6) International Wheat Initiative Expert Working Groups: Breeding methods and strategies, wheat phenotyping, control of pathogen and pest. Since 2014
7) Association of Chinese Soil and Plant Scientists of North America Since 2003 and served as Secretary/president-elect/president, 2015-2018

2. Faculty Committees of Graduate Advising (4)

1) Department of Soil and Crop Sciences (SCSC), College of Agriculture and Life Sciences (CALS), TAMU, College Station, Texas. 2010-present.
2) Interdisciplinary program Molecular Environmental Plant Sciences (MEPS), CALS, TAMU. 2010-present.
3) Interdisciplinary program Genetics and Genomics (GENE), TAMU. 2022-present.
4) Plant Soil and Environmental Sciences (PSES), Dept. of Agriculture Sciences, College of Agriculture and Natural Sciences, West Texas A&M University, Canyon, Texas. 2012-present.

3. Leadership role and volunteer experience (28)

A. Chaired committees of ASA-CSSA-SSSA (6)

1) **Chair Elect/Chair/Past Chair of C011.08-8 Plant Genetic Resources officers of ASA-CSSA-SSSA (A-C-S)**, 1/1/2020-12/31/2022: *Organized the symposiums, invited speakers and arranged program plans in 2021 and helped to organize in other years.*
2) **ACS320-Book and Multimedia Publishing Committee, Chair** (1/1/2017-12/31/2019), member (1/1/2020-12/31/2022, 1/1/2013-12/31/2016)*: Lead the > 10 committee members to provide scientific suggestions and comments on submitted book proposals from three societies.*
3) **Chair of C453-Frank N. Meyer Medal for Plant Genetic Resources Committee**, 1/1/2022-12/31/2023. *Discuss with the committee members and vote for the awardee. Arrange the presentation during the annual meeting.*
4) **Co-Chairs of ACS-SASES (Students of Agronomy, Soils, and Environmental Sciences) Undergraduate Research Contest- Oral and Poster committees** 1/1/2021-12/31/2022. *Organize and arrange the presenters and judges and finalize the winners for competition awards from >10 oral and >50 posters each year.*
5) **Member/Chair-Elect/Chair of C711.10-Calvin Sperling Memorial Biodiversity Lectureship** Committee, 1/1/2020-12/31/2022. *Propose and invite speaker and arrange the lectureship*.
6) **C-8 Plant Genetic Resource best paper committee,** chair 2022, committee (2020, 2021-2023): organize committee member to vote or vote for awards.

B. Advocacy Leadership (2)

7) **The Scientists Engaging and Educating Decisionmakers (SEED) Ambassador advocacy leadership program**. 2021-2022.
8) **Joined the 2022 Virtual Congressional Visits Day** *to discuss with the Senates and congressmen or Congresswomen for the supporting on agricultural research funds*.

C. Members of Committees (18)

9) **ACS321.2 Peer Review Advisory Committee**. 1/1/2023-12/31/2023
10) **A441 ASA Fellow Committee**, 3/2023-12/2024.
11) **C455 CSSA Fellow Committee**, 3/2023-12/2024.
12) **C-8 Plant Genetic Resource 5-min oral and poster graduate student competition** judge committee chair (2022), member (2021).
13) **C711.12-Ron Phillips Plant Genetics Lectureship** Committee member, 1/1/2020-12/31/2020.
14) **ACS449.8-Student Research Symposium Contest Committee** member, 1/1/2020-12/31/2022.
15) **Member and Ex Officio of C453-Frank N. Meyer Medal for Plant Genetic Resources Committee**, 1/1/2021-12/31/2021.
16) **C101-Nominations for President-Elect Committee Chair** in Div. C-8, 1/1/2021-12/31/2021.
17) **C-Div. C-8, Plant Genetic Resources Officers**-member, 1/1/2023-12/31/2023.
18) **Mentor for Golden Opportunity Scholar**, ASA-CSSA-SSSA, 2019-2020. *Communicate with an undergraduate student, Jason Wigen, a senior BS student in Agricultural Biotechnology from Washington State University, September 2019-August 2020.*

19) ACS321-Editorial Policy Coordination Committee, Book Editor 1/1/2017-12/31/2019.
20) C655.2-National Small Grain Variety Review Board, Liaison (1/1/2016-12/31/2017) and Member (1/1/2014-12/31/2015): Reviewed the release proposals for 20-30 small grain varieties including wheat, sorghum, durum, barley, rye etc and provided suggestions and comments.
21) CSSA-C454: Young Scientist (Early Career) Award Committee (1/1/2014-12/31/2015)
22) ASA-A45: Tengtou Ag Sci Award Committee member 1/1/2012-12/31/2013
23) CSSA-C451: Crop Science Research Award Committee member, CSSA, 1/1/2009-12/31/2010.
24) **McFadden Symposium Organizing Committee** April 24-26, 2023, Grapevine, Texas
25) **Joined the Public genetic Resources Working Group organized** by AgBioData. Jan-Dec 2023.
26) **Secretary/president-elect/president -The Association of Chinese Soil & Plant Scientists in North America (ACSPSNA)**, 2015-2018: *Organized annual meeting of the association and chaired the committees to award for excellent graduate students, young scientists, and scientists with distinguished careers. Invited ACS award winners to share their experiences with young scientists.*
27) **Joined Expert working groups in Wheat Initiative for breeding methods and strategies, wheat phenotyping, control of disease, pest, and global wheat germplasm conservation & use community, durum, etc** since Sep. of 2014.
28) Adjunct Professor, West Texas A&M University.

4. Editorial Board and Reviewer (19)

1) **Associate Editor, The Plant Genome. 1/1/2023-present.**
2) **Associate Editor, MDPI-Agronomy**, Spring 2021-present.
3) **Associate Editor-Frontiers in Genetics-Plant Genomics**, 2020-present.
4) Editorial Board-The Crop Journal, Since 2014, ScienceDirect Publisher. Review at least 3 manuscripts per year, assigned reviewers, and provided suggestions and recommendations for publication. (International).
5) Associate Editor-Crop Science (2017-2019), ASA-CSSA-SSSA. Responsible for more than 10 manuscripts per year to assign reviewers, summarize suggestions and comments and make final recommendations.
6) **Guest Associate Editor of Frontiers in Plant Science-Plant Bioinformatics** for topic "Genetic Improvement of Triticeae Crops Based on High-throughput Phenotyping: Molecular Design for Yield, Resistance and Tolerance", 2021-2022.
7) **Guest Associate Editor of Frontiers in Plant Science** for topic "Genomics-enabled Triticeae Improvement", 2020-2021. A set of 14 papers was published.
8) **Review Editor of Frontiers in Plant Science:** Plant Abiotic Stress 2022-present
9) **Review Editor of Frontiers in Horticulture:** Breeding and Genetics 2022-present
10) **NSF Reviewer 2021, 2022**: *Reviewed 25 proposals and provided suggestive positive comments each year.*
11) Invited to review wheat Fusarium head blight proposal submitted to **Austrian Science Foundation** program in April of 2021.

12) **Poster judge for graduate student posters in National Association of Plant Breeders**, Pine Mountain, GA. August 25-29, 2019. *Reviewed posters, talked to the students, and provided suggestions and scores to the committee to select winner.*
13) **Poster judge for student posters in the 1st International Wheat Congress**, Saskatoon, SK, Canada, July 2019. *Reviewed 30 posters, talked to the students, and provided suggestions and scores to choose a winner.* (**International**)
14) **Poster and scholarship chair for graduate presentation in Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Workshop**. April 17-20, 2016. San Antonio, Texas.
15) **Program Chair of Crop Productions and Physiology** Studies Session at **The 4th International Conference on Agricultural and Biological Sciences** in Hangzhou, Zhejiang, China, June 26-29, 2018. *Presided the workshop and led the questions and discussion.* (**International**)
16) Reviewer-USDA-ARS external peer review: Proposal review for USDA-Ogallala Program.
17) **Panel reviewer-National Natural Science Foundation of China, The United States-Israel Binational Agricultural Research and Development Fund (BARD)**. *Scored and provided comments as required.* (**International**)
18) **Reviewer of Journal Articles (>230):** Over 35 journals for 13-29 reviews/year since 2010.
19) **Wheat research proposal review for Washington Grain Commission.** 2011, 2012

5. Organizers or Reviewers-TAMUS (6)

1) **2023 Soil and Crop Science Department Program Review Co-Chair of Plant Breeding and genetic group who organized review contents of 30 faculty for outside review panel.**
2) **Poster judge for student posters in the 2022 and 2023 Genome Editing Symposium. College Station, TX Oct 10.**
3) **Review for the 2021-2022 Dr. Dionel Avilés '53 and Dr. James Johnson '67 Fellowship Program.** Reviewed 12 applicants in Feb. of 2021 and was invited and joined the faculty-awardee welcome meeting in Sep. of 2021 organized by the Graduate and Professional School.
4) **Reviewer-University Hatch Project review.**
5) **Invited to review 7 proposals from Vegetable and Fruit Improvement-TAMUS in Sep of 2021.**
6) **Poster judge for the 28th Student Research Week of TAMUS and a Distinguished Table Host at the 2022 Community of Scholars.**

X. PROFESSIONAL ADVISORY AND CONSULTING ACTIVITIES (11)

1. Consulted for wheat curl mite resistance screening by wheat breeder from Kansas State U. Guorong Zhang (2023), USDA-ARS scientist Guihua Bai (2015), former winter wheat breeder Phil Bruckner from Montana State U. (2014), former wheat breeder Hugo Ferney Gometz Becerra from BASF (2019) and helped them to screen wheat lines and provided them results with differentiated resistance or susceptibility.
2. Consulted on haploid embryo culture for wheat plants pollinated with corn pollen by Rong Di from plant protection and biotic and abiotic interactions in Rutgers University in 2023 regarding of how to improve the embryo growth efficiency.

3. Conducted U.S. wheat and barley scab initiative hard winter wheat coordinated project (USWBSI HWW-CP) sponsored collaborative project on pyramiding various Fusarium head blight (FHB) resistance genes using wheat doubled haploid. Collaborated wheat breeders are Gideon Marais from NDSU, Sunish K. Sehgal from SDSU, Katherine Frels from UNL, Guihua Bai from USDA-ARS, Amir Ibrahim and Jackie Rudd from Texas.

XI. LIST OF COLLABORATORS

1. TAMUS (18):

Jackie C. Rudd, wheat breeder, Texas A&M AgriLife Research, Amarillo, Texas (TAMAR-A); Qingwu Xue, plant physiologist (TAMAR-A); Charlie Rush, plant pathologist (TAMAR-A); Kiran Gadhave, entomologist (TAMAR-A); Amir Ibrahim, wheat breeder, Soil and Crop Science, College Station, Texas (SCSC); Dirk Hays, molecular physiologist (SCSC); Joseph Awake, quality specialist (SCSC); Scott Finlayson, molecular physiologist (SCSC); Hongbin Zhang, molecular geneticist (SCSC); Clark Neely, extension specialist (SCSC); Sakiko Okumoto, molecular biologist (SCSC), Xuejun Dong, plant physiologist (TAMAR-Uvalde); Charlie Johnson, Richard Metz, and Shichen Wang, Genomics and Bioinformatic Center; Betsey Pierson, Plant pathologist, Dept. of Horticulture; Leland S Pierson III, Plant Pathologist, Dept. of Plant Pathology and Microbiology, College Station; Brock Blaser, Agronomist, West Texas A&M University.

2. Other Institutes (32):

Guorong Zhang, wheat breeder, Kansas State University (KSU), Hays, KS; Eduard Akhunov, molecular geneticist (KSU); Alina Akhunov, molecular biologist (KSU); Jesse Poland, wheat geneticist (KSU); Guihua Bai, wheat geneticist (USDA-ARS and KSU); Robert Bowden, wheat pathologist, USDA-ARS; Mingshun Chen, molecular entomologist (USDA-ARS and KSU); Michael C. Smith, Professor in Entomology, KSU; Mary Guttieri, USDA-ARS geneticist, KS; Xuefeng Ma, Small grain forage breeder, Noble Research Institute/Forage Genetics International; Scott Haley, wheat breeder, Colorado State University (CSU), Fort Collins, CO; Patrick Byrne, wheat geneticist (CSU); Steve Baenziger, wheat breeder, University of Nebraska-Lincoln (UNL); Robert Graybosch, Xiwen Cai, and Jeffrey Boehm, wheat geneticists, USDA-ARS and UNL; Gary Hein, Professor in entomology, UNL; Katherine Frels, wheat breeder, UNL; Sunish Kumar Sehgal, wheat breeder, SDSU; Greg Dorn, wheat breeder, NDSU; Luther Talbert, wheat breeder, and Mary Burrows, Plant pathologist, Montana State University, Bozeman, MT; Jianli Chen, wheat breeder; Daolin Fu, molecular geneticist, University of Idaho, Aberdeen, ID; Sally Clayshulte, Edward Souza, wheat breeders, BASF (Lincoln, NE); Xiangyang Xu, Research Geneticist, USDA-ARS, Stillwater, OK; Steven Xu, Research Geneticist, USDA-ARS, Fargo, ND; Xianming Chen, Research Plant Pathologist, USDA-ARS, Pullman, WA; Yue Jin, Plant Pathologist, USDA-ARS, St. Paul, MN; Zhiwu Zhang, Statistician, Washington State University

3. International Institutes (4):

Alex Morgunov, Head of International Winter Wheat Breeding Program, CIMMYT representative in Turkey, Ankara, Turkey.

Simon Krattinger, Assistant Professor; Brande Wuff, Associate Professor; Jesse Poland, Professor in Plant Science, King Abdullah University of Science and Technology (KAUST), Biological and Environmental Science & Engineering Division, Thuwal, 23955-6900, Kingdom of Saudi Arabia.

XII. MAJOR IMPACT OF WHEAT GENETIC PROGRAM

1. Wheat genetics, genomics and breeding

Wheat is one of the major crops in Texas and the U.S. Great Plains. It provides grain for humans and forage for cattle. Especially in Texas and Oklahoma, 50% of the planted 12M acres are used for grazing. My wheat genetic and genomic research has been focusing on how to improve the productivity of grain and forage in the Texas and U.S. High Plain environments where stresses include drought, high evaporation, insects and their transmitted diseases, wheat curl mite and its transmitted wheat streak mosaic virus, and rusts. **Our goal is to develop better germplasms and cultivars that are resilient to these stresses.** Texas A&M AgriLife Research is well-known for the release of popular cultivars since the 1960s. After I joined Texas A&M AgriLife Research in 2010, **I have developed seven bi-parental mapping populations and three association panels to identify why the previous and newly released cultivars, TAM 111, TAM 112, TAM 113, TAM 114, and TAM 204, are so popular through studying their yield, yield components, bread-making quality, and resistance to diseases and pests.** In order to have larger and useful diversities for genetic research and cultivar development, we developed primary synthetic (derived from crosses between a set of 49 durum with A and B genomes and 149 *Aegilop tauschii* lines with D genomes)-derived lines to form an association mapping population to identify new genes and loci for these important traits. We also developed three multi-parent advanced generation intercross (MAGIC) populations that combined the power of both bi-parental and association analyses to validate and confirm those previously identified genes/loci so that we will apply the knowledge in our next step of designing wheat molecular breeding models. With the next generation genotyping-by-sequencing, exome capture, skimseq, and whole genome sequencing, we can gather the whole genome loci for superior cultivars at certain chromosome regions and **apply genomic predictions and selections to increase selection efficiency and accuracy**.

I am leading one USDA-NIFA project on "transfer resistance to three pests simultaneously from primary synthetics into the popular cultivar TAM 114" as a PD and joined another one on cultivar development as co-PD. The USDA-NIFA and International Wheat Yield Partnership (IWYP) funded the WheatCAP project, led by Jorge Dubcovasky at UC-Davis during 2011-2016, along with 15 other U.S. universities and USDA-ARS centers. **I led the TAMUS subaward as a Co-PD to understand the underlining genes that increase kernel weight in TAM 111**. Three PhD students have been trained in this project and we have made great progress in identifying the genes. I am a co-PI for the TAMU subaward in the current WheatCAP project during 2022-2027 and the TAMU team is leading the UAS data analyses pipeline for other national wide breeding programs. In addition, I am one major faculty member in the TAMU wheat improvement team and successfully accomplished the collaborative project with BASF on a $7.7 M grant from 2011-2017. I led two additional BASF funded projects from 2018-2020 to demonstrate the private-public collaborative effort in discovering the new genes/loci for better wheat production. Two PhD students were awarded the Monsanto Beachell-Borlaug Scholarships even though the company only awarded about 11 proposals internationally from many proposals every year from 2011 to 2016.

I led the wheat genetic program and established a medium throughput wheat doubled haploid (DH) developing system. Compared to the traditional breeding procedure to plant winter wheat one generation per year in the field, **this DH system shortens the**

timeline by 3-4 years, allowing us to obtain genetically 100% pure lines for yield trials faster. **I have optimized the procedure and integrated the wheat doubled haploid pure line development into the breeding pipelines of TAMUS**. It saves time and money overall since we will release better cultivars to farmers sooner. **We have developed more than 3,500 doubled haploid lines from breeding populations since 2018. The first set of 700 lines were in yield trials and four DHLs were in the regional nursery and 12 in the regional germplasm nursery this year after breeders testing within Texas locations**. Another set of 600 DHLs for genetic populations and 1,000 DHLs for breeding purposes are ready to be planted in the fall of 2024.

My wheat genetic program has **developed a high throughput platform for molecular markers linked to those most useful loci in our germplasm pool for breeding and they are being applied in marker-/genomic-assisted breeding**. **The loci include the resistances to greenbug, hessian fly, wheat curl mite, wheat streak mosaic virus, stripe rust, kernel weight, and better bread-making quality**. These target gene-linked molecular markers have been used by the USDA-ARS genotyping center in Manhattan, KS to genotype breeding lines from the winter wheat regions that include TX, OK, KS, CO and NE. With funding from the Multi-state Hatch project, we have purchased equipment to increase the genetic and genomic high throughput analyzing capacity. Scientific peer-reviewed publications shared all the information about these new high throughput screening markers. **Many wheat breeding programs worldwide are using the markers since these stresses pose major problems in many countries, including the spring wheat regions**. **These markers greatly increase the target gene selection efficiency and accuracy for germplasm and cultivar development**.

News articles have been published in AgriLife today to educate the public on the importance of molecular technologies in cultivar release and many of them have been broadcasted by other news journals, such as the Southwest Farm Press and Seed Today. We were invited to present to the Texas Wheat Producer Board members on how our doubled haploid development was integrated into the breeding process. We also presented our research findings in field days.

2. International impact

In addition to research presentations at the international ASA-CSSA-SSSA meetings held in the U.S., **Our research findings were presented at the international meetings held in other countries, including Australia, Canada, China, Mexico, Spain, and Tunisia.** In the first Wheat Congress in Saskatoon, Canada in July of 2019, I presented research progress for the NIFA project and evaluated student posters on the control of pathogen and pest expert group in wheat Initiative. **I was invited to give guest presentations in the Pest Expert group of Wheat Initiative about the progress of pest resistance in my program,** at Nanjing Agricultural University, Jiangsu Academy of Agricultural Sciences in Nanjing, China Agricultural University in Beijing, Shandong Agricultural University in Taian and Shandong Academy of Agricultural Sciences in Jinan, China. The majority of the audiences were students, and I had enjoyed the discussions with them. **I hosted two international Ph.D. students to conduct their thesis research in the wheat genetic lab in Amarillo. One was from Huazhong Agricultural University in Wuhan, China and one was from Hazara University in Manshera, Pakistan**.

I am associate editors of five journals including Crop Science, The Crop Journal, Agronomy, and Frontiers in Genetics, The Plant Genome as well as two topic editors of Frontiers in Plant Science and one topic editor of Agronomy; Chairs of the CSSA session C-8 in Plant Genetic Resources and ASA-CSSA-SSSA Book and Multi-media Publishing Committee, which are involved with many researchers internationally. **I have helped them to disseminate their research findings to a global audience**. I have also been invited to review proposals from the National Natural Science Foundation of China, Austria, and The United States-Israel Binational Agricultural Research and Development Fund (BARD). **I have collaborated with wheat scientists in CIMMYT-Kenya, -Turkey and -China, and Kenyan Agricultural Research Institute following Borlaug Legacy**. **The wheat curl mite screening protocol was requested by many researchers from Australia and Canada**. **High throughput molecular markers developed for major genes, *Gb3, Gb7, H32*, and mite resistance were requested by the global agricultural company, BASF, to be used for their research worldwide, especially in America and Europe**.

XIII. RESEARCH PROFILES

University website: https://amarillo.tamu.edu/facultystaff/shuyu-liu-ph-d/
Research gate: https://www.researchgate.net/profile/Shuyu_Liu3
Google scholar: https://scholar.google.com/citations?user=sw1nRIYAAAAJ&hl=en
Twitter: https://twitter.com/HighPlainWheat
Linked in: https://www.linkedin.com/feed/?trk=hb_signin
Orcid: https://orcid.org/0000-0003-4748-2900
ResearchID from web of Science: J-2022-2019

APPENDIX I. Summary of Graduate Student Training and Supervision (Chaired 6 Ph.D. and 5 M.S., committee in 10 Ph.D. and 10 M.S. since 2012)

	Since 2016		Career	
Degree	**Chair/Co-chair**	**Member**	**Chair/Co-chair**	**Member**
Ph.D.	6	8	6	10
M.S.	5	7	5	10

I am in the graduate faculty committee in Soil and Crop Science department, two interdisciplinary programs including Molecular Environmental Plant Science (MEPS) and the Genetic and Genomic (GENE) at College Station, TX in TAMU as well as Plant Soil and Environmental Science at Canyon, TX in WATMU since 2010: Chair/co-chair of committees for 6 Ph.D. and 5 M.S. (6 Ph.D. and 4 M.S. since 2016), committee members of additional 9 Ph.D. and 10 M.S. since 2010. In addition, I have supervised full-time employees, including 3 scientists, 4 postdocs, and 4 research Assistants/Associates, as well as 21 undergraduate part-time student workers.

All three scientists received the most prestigious award from Soil and Crop Science-research collaboration award. My supervised Ph.D. students were awarded as student speakers or poster presenters at the TAMU Plant Breeding Symposiums seven times from 2015 to 2020. The number is far higher than the average for off-campus AgriLife faculty. Two students received the Excellent Graduate Student award from the Texas Plant Protection Association (TPPA) and/or SCSC department; two received the Tom B. Slick Fellowship from the College of Agriculture and Life Sciences; and two received the prestigious Monsanto Beachell-Borlaug International Scholarships. One participated in the American Seed Trade Association student convention and another acted as the Borlaug Next Generation Delegate, received the Borlaug Leadership Enhancement in Agriculture Program support by USAID, and was invited to the International Forum for Tomorrow's Leaders on Food, Feed, Fiber and Fuel Security as Climate Change in Canada. Of the 4 Ph.D. students, one is corn breeders with Bayer, one is a bioinformatic scientist at Stanford University, one is a wheat research scientist in a private company, one joined Bayer CropSciences as a breeder lead in Mexico.

1. Graduate students-Chair/Co-chair (Total-11; 10-since 2016: 6 Ph.D., 4 M.S.)

Name	**Degree**	**Univ.**	**Period**	**Current position**
Mr. Kyle Parker	Ph.D.	TAMU MEPS	2020.8-present	Ph.D. student/**Travel Award to PAG in 2023 and 2024/McFadden Symposium poster award/ Bayer Crop Science/ Intern/AG2PI Intern**
Mr. Zhen Wang	Ph.D.	TAMU SCSC	2019.8-2023.8	Ph.D. student/**Excellent student award from ACSPSNA, Travel Awards to Visit a Lab and to NAPB/First place poster award in 2022 TAMU Gene Editing**

				Symposium/SCSC Departmental Graduate Research Award
Ms. Lyanna DeLeon	M.S.	Biology WTAMU	2021.8-2022.8	M.S. student
Mr. Mustafa Cerit	M.S.	TAMU SCSC	2019-2021	Barley breeder in Turkey
Ms. Kaycee Sebastiani	M.S.	WTAMU	2019.8-2021.5	Clerk in Amarillo City
Mr. Jorge Luis Valenzuela Antelo	Ph.D.	TAMU SCSC	2017-2020	Breed Lead in Bayer in Mexico/**poster award of TPPA, PBS speaker award in 2020, graduate office travel award**
Mr. Mehmet Dogan	M.S.	TAMU SCSC	2018-2020	Wheat breeder in Turkey
Mr. Smit Dhakal	Ph.D.	TAMU SCSC	2014-2018	Scientist in Powerpollen/**PBS 1st poster award/Tom Slick Graduate Research Fellowship**
Ms. Yan Yang	Ph.D.	TAMU SCSC	2014-2018	Scientist in company/**PBS speaker and poster award/MBBIS/SCSC travel award/America Seed Trade student convention/Tom Slick Graduate Research Fellowship**
Mr. Silvano Assanga Ocheya	Ph.D.	TAMU SCSC	2012-2016	Corn breeder in Bayer/**Borlaug Next Generation Delegate, excellent student awards of SCSC and TPPA, MBBIS, BLEAP, PBS speaker and 1st poster, Travel Bursary for Rood Security Leader Forum in Canada.**
Mr. Smit Dhakal	M.S.	WTAMU	2012-2014	**Amarillo excellent graduate student**

TAMU, Texas A&M University; WTAMU, West Texas A&M University; SCSC, Soil and Crop Science; TPPA, Texas Plant Protection Association; PBS, TAMU Plant Breeding Symposium sponsored by DuPont-Pioneer/Corteva; MBBIS, Monsanto Beachell-Borlaug International Scholarship; BLEAP, The Norman E. Borlaug Leadership Enhancement in Agriculture Program by USAID; ACSPSNA, Association of Chinese Soil and Plant Scientists of North America. NAPB, National Association of Plant Breeders.

2. Graduate students-Committee (Total-20; 17-since 2016: 7Ph.D., 10 M.S.)

Name	Degree	Univ.	Period	Current position
Sabahat Zahra	Ph.D.	TAMU	2022.8-present	Ph.D. student
Luke Whiteley	MS	TAMU	2022.8-present	M.S. student

Sydney Gillespie	M.S.	TAMU Distance	2022.1-present.	Associate in KWS Seeds
Mr. Abdullah	Ph.D.	TAMU SCSC	2021.8-present	Ph.D. student
Ms. Kylie Scott	M.S.	WTAMU PSES	2021.8-2022.8	M.S. student
Mr. ZeTian Fang	Ph.D.	TAMU MEPS	2019-present	Ph.D. student
Mr. Travis Meyer	M.S.	TAMU Distance	2019-present	M.S. student
Ms. Ellen Melson	Ph.D.	TAMU Distance	2020.1-2023.8	Assistant professor in Grayson College/PBS-McFadden 1st poster awards/Travel award
Mr. Anil Adhikari	Ph.D.	TAMU SCSC	2016-2020	Scientist in Bayer/PBS in WSU
Ms. Sara Ajayi	Ph.D.	TAMU	2014-2018	Poster award in WTAMU
Ms. Xiangkun Gu	Ph.D.	TAMU	2013-2017	Scientist
Ms. Yuanyuan Chen	Ph.D.	TAMU	2014-2016	Scientist
Mr. Bharath Reddy	Ph.D.	TAMU	2010-2015	Vegetable breeder
Ms. Padmarathi Sengodon	Ph.D.	TAMU	2010-2015	Scientist in Bayer CropSciences
Ms. Fatma Betul Sade	M.S.	TAMU	2017-2019	Ag. Worker in Turkey
Ms. Tessa Rose Ries	M.S.	TAMU	2014-2018	
Ms. Xi Chen	M.S.	TAMU	2012-2017	
Ms. Sabahat Zahra	M.S.	TAMU	2015-2017	Ag. Worker in Turkey
Mr. Brandon J. Gerrish	M.S.	TAMU	2014-2015	Postdoc
Mr. Mahendra Bhandari	M.S.	WTAMU	2014-2016	Postdoc

3. Other graduate students trained in my laboratory (2)

Name	Degree	Period	University/activity
Mr. Xiaolong Yang	Ph.D.	2016-2017	HZAU, trained genetic research
Ms. Rabia Maswood	Ph.D.	2016-2017	HU, conducted Ph.D. research

HZAU, Huazhong Agricultural University, China; HU, Hazara University, Pakistan.

4. Postdocs and Scientists (Total -8; 5-since 2018)

Name	Period	Current position	Employer
Dr. Zhen Wang	2023.9-present	Postdoc	AgriLife Research
Dr. Yahya Rauf	2022.3-present	Assistant professor	AgriLife Research/McFadden poster/Eastern New Mexico University

Dr. Shuhao Yu	2021.1-2022.5	Research Assist. Professor	Oklahoma State Univ./Excellent paper from MDPI
Dr. Xiaoxiao Liu	2018.1-2021.4	Postdoc	Foreign institute
Dr. Chenggen Chu	2017.8-2020.2	Scientist	USDA-ARS, Fargo, ND/**SCSC Collaboration award, Team award of Vice-Chancellor**
Dr. Silvano Assanga Ocheya	2012-2016	Breeder	Monsanto/Bayer Crop Science
Dr. Chor Tee Tan	2013-2017	Postdoc/Assist/Assoc. Res. Scientist	Ag. Worker in Australia/ **SCSC Collaboration award**
Dr. Srirama Krishna Reddy	2011-2014	Scientist	**SCSC Collaboration award**

5. Research Assistant/Associate (6-career; 4-since 2018)

Name	Period	Position & Affiliation
Ms. Kay Selman	2023.11-present	Research Assistant
Ms. Li Chen Paetzold	2023.9-present	Research Associate
Ms. Kele Hui	2017.10-2021.7	Research Assistant
Ms. Lisa Garza	2015-2018	Research Associate/**Center Team Builder Award in 2017**
Ms. Hangjin Yu	2015-2017	Research Associate
Ms. Maria Pilar Fuentealba	2011-2015	Research Associate

6. Graduate and Undergraduate student workers supervised (Total-31, 21 since 2010, 11 since 2018):

Order	Name	Period	University
1	Grace Parker	2022.6-8	U. of Wyoming
2	Benadette Kwisera	2022.5-2023.1	Berea College in KY
3	Kobe Hodges	2023.1-2023.8	WTAMU
4	Claude Bigirimana	2022.8-2023.8	WTAMU
5	Gustavo A. Ledesma	2022-present	WTAMU
6	Maria L. Zavala	2021-2022.8	WTAMU, MS
7	Reagan Blair Heinrich	2020-2021	WTAMU
8	Lyanna De Leon	2020-2022.8	WTAMU, MS
9	Brittany M. Ehrlich	2019-2021	WTAMU
10	Kila Andrews	2017-2018	WTAMU
11	Cameron Skees	2016	WTAMU
12	Julio Rocha	2016-2017	WTAMU

13	Jaqueline Avila	2016-2020	Amarillo College/WTAMU/**Center research award**
14	Theresa Albrecht	2015	WTAMU
15	Cody Shachter	2011-2014	Amarillo College/WTAMU/ **published 1 co-author paper**
16	Ashley Holms	2014	Texas Tech University
17	Jay Martin	2012-2013	WTAMU
18	Serina Nelson	2011-2012	WTAMU, MS
19	Benjamin Brooks	2011	WTAMU, MS
20	Jared Suhr	2010-2011	WTAMU
21	Zac Badrow	2010-2011	WTAMU, MS
22	Mark D. Christopher	2007-2010	Virginia Tech, PhD
23	Gregory Berger	2007-2010	Virginia Tech, PhD
24	Patrick D. O'Boyle	2007-2010	Virginia Tech, PhD
25	Tiffany Sikes	2007-2010	Virginia Tech, MS
26	Kayla Jones	2007-2010	Virginia Tech
27	Kathy Chen	2007-2010	Virginia Tech
28	Ben	2007-2010	Virginia Tech
29	Erin Hall	2007-2010	Virginia Tech
30	Anne Ke Zhang	2004-2007	AAFC-Harrow
31	Amy	2004-2007	AAFC-Harrow

7. Awards and recognitions of Liu supervised students and staff (34 from students; 8 from staff since 2016)

Recognitions	**Travel award**	**Scholarship**	**Fellowship**	**Oral/Poster**	**Others**	**total**
International	2	2	1	1	2	8
National	2		1	4	3	10
State/University	4		4	6	1	15
Local			1			1
Total	8	2	6	11	6	34

1) Ph.D. student Kyle Parker (2020-Present, **5**)
   a. 3rd oral presentation on ASA on model application and field research.
   b. AG2PI Internship for graduate student, $8,000. Working on data analyses.
   c. Internship from Bayer CropScience, June 8 – November 30, 2023. Working on crop sequence analyses.
   d. Lloyd and Maxine Rooney Travel scholarship from TAMU, $1000 to The Plant and Animal Genome Meeting in 2023 and 2024

   e. 2nd place poster award in McFadden Wheat Symposium, Grapeville, TX. April 24-26, 2023.

2) Ph.D. student Zhen Wang (2019-2023, **5**)
   a. Lloyd and Maxine Rooney Travel scholarship from TAMU, $1000 to the National Association of Plant Breeders meeting, July 2024.
   b. Soil and Crop Science departmental graduate research award. Jan. 12, 2022.
   c. First place award in poster presentation at TAMU Genome editing Symposium sponsored by Bayer Crop Sciences. October 13, 2022.
   d. Dudley Smith Travel Scholarship from Soil and Crop Sciences Dept, College of Agriculture and Life Sciences, TAMU. $1500. Visit USDA-ARS Genotyping Lab to learn high throughput DNA sequencing, exome capture, deep sequencing etc data analyses. August, 2022.
   e. Excellent student award from **Association of Chinese Soil and Plant Scientist of North America**, Nov. 11, 2020.

3) Ph.D. student Jorge L Valenzuela-Antelo (2017-2019, **4**)
   a. was selected as a **student speaker award on the Texas Plant Breeding Symposium** at College Station, Texas on Feb 20, 2020.
   b. Received **2nd student poster competition during Texas Plant Protection Association** during Dec 10-11, 2019, College Station TX.
   c. Received **Research and Presentation Travel Award from Office of Graduate and Professional Studies** in 2019.
   d. Joined the WheatCAP graduate student training workshops and symposium in Cornell University and San Diego Plant Breeding symposium.

4) Ph.D. student, Smit Dhakal (2014-2018, **4**)
   a. Received **Tom B. Slick Fellowship**, $33,010. Jan. 2018-Dec. 2018
   b. Received **First place poster award in Plant Breeding Symposium** at College Station, Feb 2015.
   c. Received the **Excellence Fellowship from College of Agriculture and Life Science**, TAMU, 2014-2015.
   d. Received **Texas A&M AgriLife Research Amarillo Fund for Excellence** for graduate student, 2012-2014.

5) Ph.D. student, Yan Yang (2014-2018, **7**)
   a. Received **Tom B. Slick Fellowship**, $32,696. Sep. 2017-Aug. 2018.
   b. Received **excellent Student Award from Association of Chinese Soil and Plant Scientists of North America**, Tampa, FL, Oct 23, 2017.
   c. Received **3rd place in poster presentation in DuPond Pioneer Plant Breeding Symposium** on Feb. 15, 2017
   d. Received **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.
   e. Participated **2015 Student Operation Connection for the 132nd Convention, American Seed Trade Association**, Washington, DC, June 17-20, 2015.
   f. Received **Monsanto Beachell-Borlaug International Scholarship**. 2015-2017. $99,368.
   g. Received **student speaker award in Plant Breeding Symposium** at College Station sponsored by DuPond-Pioneer, Feb. 2015,

6) Ph.D. student, Silvano Ocheya Assanga (2012-2016, **8**)
    a. Received **first place poster Award in DuPond Pioneer Plant Breeding Symposium** on Feb 18, 2016.
    b. Received the **excellent graduate research award from the Dept. of Soil and Crop Sci**. in TAMUS in 2015.
    c. Received student **speaker award on research in Plant Breeding Symposium** at College Station sponsored by DuPond-Pioneer, Feb. 2015.
    d. Received the **outstanding graduate student award from Texas Plant Protection Association** in 2014.
    e. Received **The Norman E. Borlaug Leadership Enhancement in Agriculture Program (LEAP) of the US government's Feed the Future Borlaug 21st Century Leadership Initiative by USAID**, Sep. 2014-Aug. 2015. $19,512.
    f. Received **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.
    g. Received **Borlaug Next Generation Delegate by Chicago Council**, May 2014.
    h. Received **Monsanto Beachell-Borlaug International Scholarship**, 2013-2016. $180,000.
7) Postdoc Yahya Rauf received poser award at McFadden Wheat Symposium, Grapevine, TX. April 24-26, 2023. Became Assistant Professor in Eastern New Mexico University.
8) Scientist Chenggen Chu received the **Research Collaboration Award from Soil and Crop Science** Dept, Texas A&M University.
9) Scientist Chenggen Chu received **the 2019 Vice Chancellor Excellence Team Award in Wheat Genomics**.
10) Research Assistant and undergraduate Jaqueline Avila Moore received the **Amarillo Center Excellence award** in 2019.
11) Research Associate Lisa Garza received the 2017 Texas A&M AgriLife Research and Extension **Amarillo Center Team Build Award**, the most honorable award in the center.
12) Ph. D. students, Silvano Assanga, Smit Dhakal, and Yan Yang received the **McFadden Conference Scholarship** to participate the Joint Edgar McFadden Symposium/ Hard Winter Wheat Workers Workshop. April 17-20, 2016. San Antonio, Texas.
13) Research Scientist, Chor Tee Tan received the **Research Collaboration award from the Dept. of Soil and Crop Sci.** in TAMUS in 2015.
14) Srirama Krishna Reddy, Assistant Research Scientist, **Research Collaboration Award from Soil and Crop Science**, TAMU, 2012.

10. Seminars, workshops, and guest lectures to train graduate/undergraduate students (17 TAMUS[1], 4 National[2], 4 International[3], 4 other US universdities[4], 1 commidoty[5]):

Guest lecture/ workshop/ Seminars	Course	Presentations	No. of students, time	Location

October 13, 2022	Student poster judge	TAMU gene editing symposium	7, 1h	TAMU [1]
April 23-25, 2023	Poster chair for students	Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Workshop	25, 2 days	Grapevine, Texas[2]
April 15, 2023	Genetics in Biology	Application molecular markers in genetic research in wheat	50, 1h	WTAMU[1]
October 13, 2022	Student poster judge	TAMU gene editing symposium	7, 1h	TAMU[1]
March 22-25, 2022	Scholarship judge	The 28th Student Research Week of TAMUS and a Distinguished Table Host at the 2022 Community of Scholars	7, 1h	TAMU[1]
March 25, 2022	Plant breeding Gumbo	Genomic selection and phenomics in cereal	40, 1h	Zoom[2]
January 28, 2022	Plant breeding circle	Understanding wheat target traits using bi-parental populations	20, 1h	Zoom[1]
February 2022	Scholarship judge	2021-2022 Dr. Dionel Avilés '53 and Dr. James Johnson '67 Fellowship Program.	12, 2h	TAMU[1]
January 8, 2020	Workshop in SCSC	META-R and IciMapping and the results interpretations for publications	40, 3h	TAMU[1]
December 2019	invited presentation	Wheat Doubled haploid research in Texas A&M AgriLife Research-Amarillo" to Texas Wheat Producer Board and Association	20 members, 2h	TWPB[5]
Nov. 2019	Mentor	Golden opportunity scholar, Jason Wigen, a senior BS student in Agricultural Biotechnology from Washington State University	3 days	ASA-CSSA-SSSA[3]
August 25-30, 2019	Student poster judge	National Association of Plant Breeders	6, 2h	Pine Mountain, GA[2]
July 22-26, 2019	Student poster judge	1st International Wheat Congress for the Expert works group on pathogen and insect resistance	7, 2h	Saskatoon, SK Canada[3]
July 16, 2019	Seminar	Texas Wheat breeding and genetic research	20, 1h	Montana State University [4]

April 4, 2019	PSS6322-Advanced plant breeding	Application of genetic diversity and molecular markers in plant breeding	15, 1h	Texas Tech University [4]
April 11, 2019	BIOL4401 -Biology	Mendal inheritance and molecular marker application	35, 1h	WTAMU[1]
January 10, 2019	Workshop in SCSC (with Chenggen Chu)	linkage and association analyses using IciMapping, TASSEL and GAPIT	40, 3h	TAMU[1]
June-July, 2018	Seminars	Application of 90K array and GBS SNPs in wheat genomic breeding in the US High Plains	40 +50, 2h	Zhejiang, Shandong[3]
November 17, 2017	Plant breeding circle	Application of array and GBS SNPs in Texas wheat genetics and breeding	25, 1h	TAMU[1]
May 17, 2017	Field day	Application of markers and genomics in wheat genetics and breeding	20, 2h	TAM AgriLife Research[1]
January 12, 2017	Workshop in SCSC	Association analyses of Genotypes and phenotypes using GAPIT and TASSEL 5.0	45, 3h	TAMU[1]
May 18-19, 2016	Invited talk	Texas A&M AgriLife Mini-Symposium: Grand networks for Grand Challenges	40, 30 min	TAMU[1]
April 17-20, 2016	Poster and scholarship chair for students	Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Workshop	20, 1 day	TAM AgriLife research[1]
April 25-28, 2015	Invited talk	The 8th Annual World Congress of Industrial Biotechnology	30, 2 days	Jiansu, China[3]
April 9, 2015	Seminar	Wheat genetic research in Texas High Plains	35, 2h	Amarillo College[4]
October 2014	SCSC seminar	Wheat genetic research on important traits in the High Plains	40, 1h	TAMU[1]
August 11, 2014	Seminar	Wheat Research for Important Traits in the U.S. High Plains	35, 1h	University of north Texas[4]
August 12, 2014	Workshop in SCSC	Software demo: JoinMap 4.0 for genetic map construction, MapQTL 6.0 for QTL mapping, QTLnetwook 4.0 for QTL by environment interaction analyses, TASSEL for association mapping	25, 2h	TAMU[1]

May 16, 2014	WheatCAP students	Detection of QTL Epistsasis and QTL by Environment Interactions Using QTLNetwork. https://www.youtube.com/watch?v=IUFJGKJq66A, 908 views	40, 1h	zoom[2]
2010-2014	Plant breeding and genetic	Application of genetic research in breeding	30, 2h	WTAMU[1]

11. Chaired/Co-chaired graduates and their thesis titles (10)

1) Kyle Parker, Ph.D., 2020-2024, **Application of linkage and association analyses, as well as genomic prediction to understand the genetic control of yield and quality traits.**
2) Zhen Wang, Ph.D. candidate, 2018-2022**, QTL mapping and cloning, association analyses, genomic-assisted breeding for improved yield, components, and end-use quality in TAM 112/Duster and synthetic derived lines.**
3) Mustafa Cerit, M.S., 2018-2021, **Genetic mapping of loci for yield components in TAM 113/Gallagher.**
4) Kaycee Sebastiani, M.S., 2019-2020, **Allele differentiation for wheat curl mite resistance in wheat cultivar TAM 1112 and germplasm OK05312.**
5) Jorge Luis Valenzuela Antelo, Ph.D., 2017-2020, **Mapping of traits adaptive to the U.S. Southern and Central Great Plains in a TAM 204/Iba population and developing superior pre-harvest sprouting tolerant hard white winter wheat version of TAM 114 using CRISPR-Cas9 gene editing.**
6) Mehmet Dogan, M.S., 2018-2020, **QTL analysis of end-use quality in a mapping population from two Texas wheat TAM 111/TX1822.**
7) Smit Dhakal, Ph.D., 2014-2018, **Genetic dissection of grain yield, agronomic traits and end-use quality in Texas wheat using linkage and association study in TAM 112/TAM 111 and synthetic derived lines**.
8) Yan Yang, Ph.D., 2014-2018, **Characterization of yield and yield components using bi-parental and association mapping of Texas popular cultivars and synthetic wheat.**
9) Silvano Assanga Ocheya, Ph.D., 2012-2016, **Genetic mapping and phenotypic characterization of wheat for yield, yield components and agronomic traits in CO960293-2/TAM 111**.
10) Smit Dhakal, M.S., 2012-2014, **Wheat curl mite resistance screening and mapping of resistance in wheat cultivar TAM 112.**

12. Committee graduate students and their thesis titles (17)

1) Ellen Melson, Ph.D., TAMU Distance, Mapping resistance QTL for hessian fly in hard red winter wheat and analyzing hessian fly virulence in Texas.
2) Kylie Scott, M.S., WTAMU, PSES, Fall 2021-present. UAS phenotyping data collection

and analyses.

3) Abdullah Azam, Ph.D., TAMU SCSC, Fall 2021-present. Introgression of improved yield and root biomass related traits into wheat hybrids for manipulation of commercial heterosis.
4) ZeTian Fang, Ph.D., TAMU MEPS, Fall 2019-present. Work on amino acid transporters for wheat grain filling and nitrogen use efficiency.
5) Travis J. Meyer, M.S., Plant breeding (PLBR), TAMU Soil and Crop Science (SCSC). Spring 2019-present. Hemp breeding
6) Sarah O. Olanrewaju, Ph.D., AGRO, SCSC, Spr 2014-Spr 2018. Development and evaluation of remote sensing techniques for assessing winter wheat growth and yield.
7) Yuanyuan Chen, Ph.D. PLBR, MEPS. Sum 2013-Fall 2016. High-density linkage map construction, mapping of agronomic traits in tropical maize (*Zea mays* L.) and validating SNPs controlling maize grain yield and plant height in southern hybrid testcrosses.
8) Xiangkun Gu, Ph.D., PLBR, MEPS, Sum 2013-Sum 2017. Dissection of the genetic basis underlying wax biosynthesis in hexaploid wheat using bi-parental linkage mapping and genome-wide association study.
9) Fatma B. Sade, MS, PLBR, Spring 2017-Sum 2019. Genotype-by-floral characteristics interaction for hybrid wheat (*Triticum aestivum* L.) production in Texas.
10) Anil Adhikari, Ph.D. PLBR, SCSC, Sum 2016-Spr 2020. Development of genetic and genomic resources for hybrid wheat (*Triticum aestivum* L.) development in the US Great Plains.
11) Tessa R. Mahmoudi, M.S., PLPA, Sum 2015-Fall 2017. Bacterially mediated water-stress tolerance in wheat conferred by phenazine-producing rhizobacteria.
12) Sabahat Zahra, M.S., PLBR, Spr 2015-Sum2017. Characterization of a wheat mapping population for growth pattern and studying stay green wheat canopy using multispectral UAV images.
13) Brandon J. Gerrish, M.S., PLBR, Sum 2014-Fall 2015. Screening Texas A&M germplasm and environments for hybrid wheat potential.
14) Xi Chen, M.S., PLBR, Spr 2015-Spr 2018. No thesis option.
15) Mahendra Bhandari, M.S., Agronomy, PSES, WTAMU. 2014-2016. Use of infrared thermal imaging for estimating canopy temperature in wheat and maize.
16) Bharath Reddy, Ph.D., PLBR, SCSC, TAMU. 2010-2015. Enhancing yield potential of hard red winter wheat (*Triticum aestivum* L.) via use of improved synthetic backcrosses.
17) Padmarathi Sengodon, Ph.D., PLBR, SCSC, TAMU. 2010-2015. Influence of epicuticular wax on heat and drought tolerance in TAM 112 x TAM 111 populations.

APPENDIX II. Grants and Contracts Awarded (Page 26-34)

1. Grant Summary

I have written and assisted in the development of many successful proposals and contracts from various agencies and sources including federal, state, commodity, TAMUS, International, and Industry in the research areas of my expertise. From 2011 to 2023, these proposals and contracts have garnered **$28.4M ($21.1M since 2016),** of which **$3.32M ($2.3M since 2016)** went to my wheat genetic research program.

Fig. 1. Total Grants and Funding to LIU in Texas A&M AgriLife Research (2011-2023)

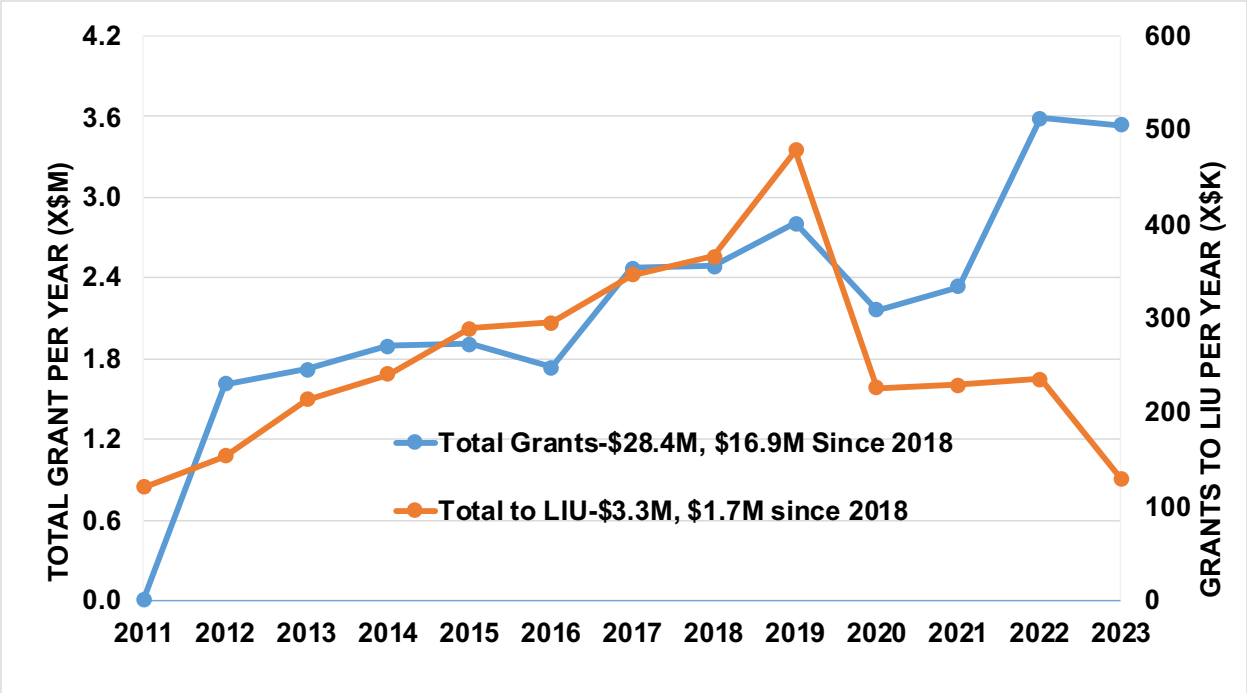


Fig. 2 Total Grants and Funding to LIU as PI in Texas A&M AgriLife Research (2011-2023)

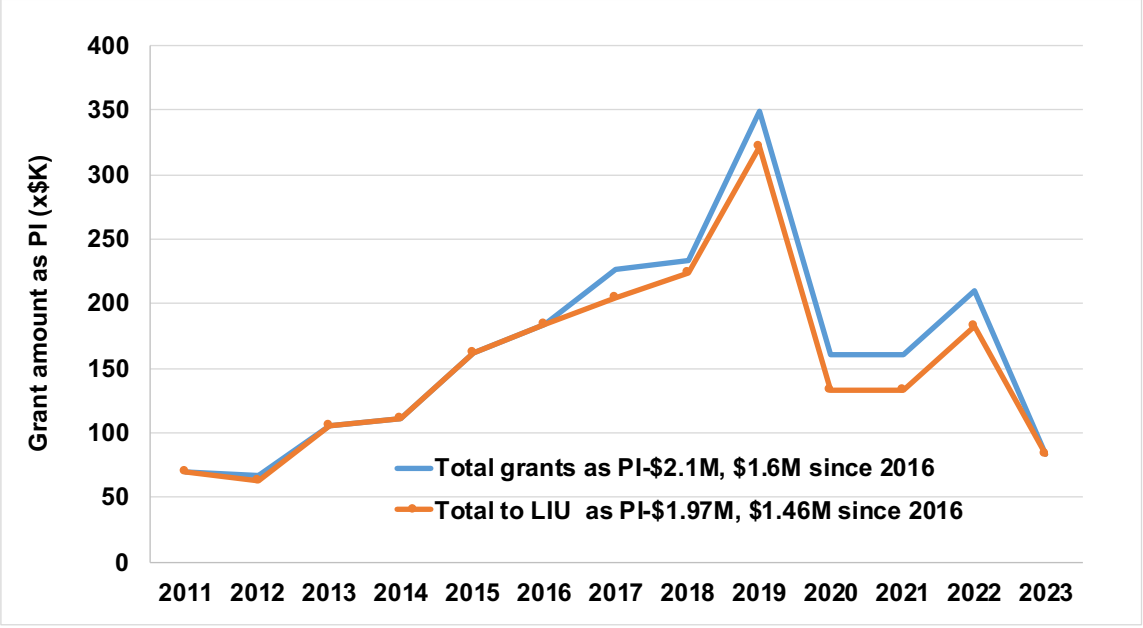


Fig. 3. Total Grants and Funding to LIU as Co-PI in Texas A&M AgriLife Research (2011-2023)

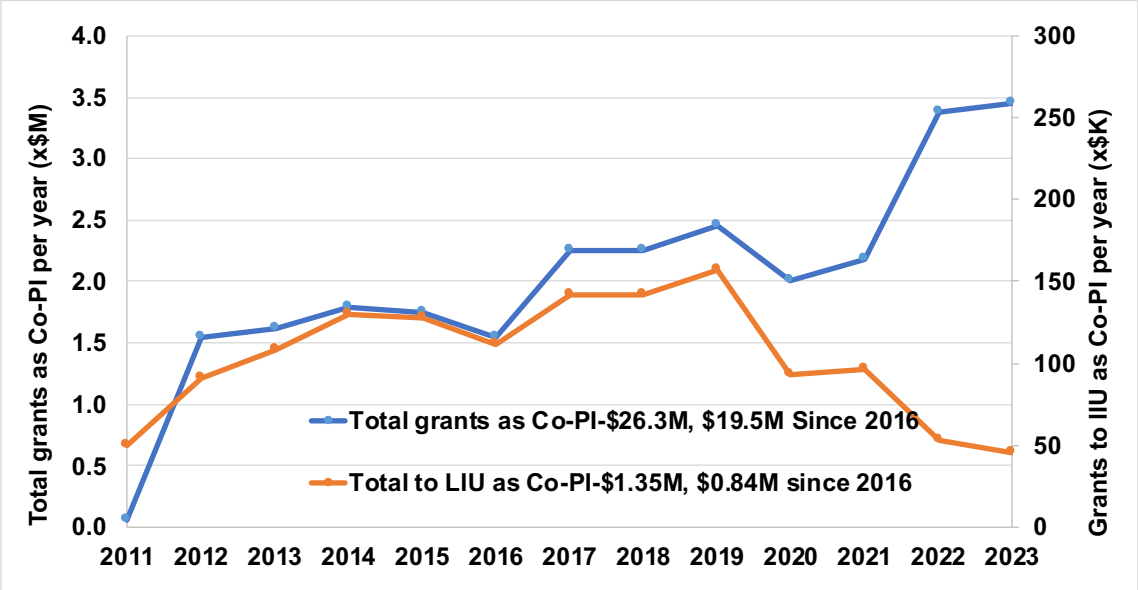


Fig. 4. Total Grants and To LIU Program Distribution Chart in 2011-2023 and 2016-2023

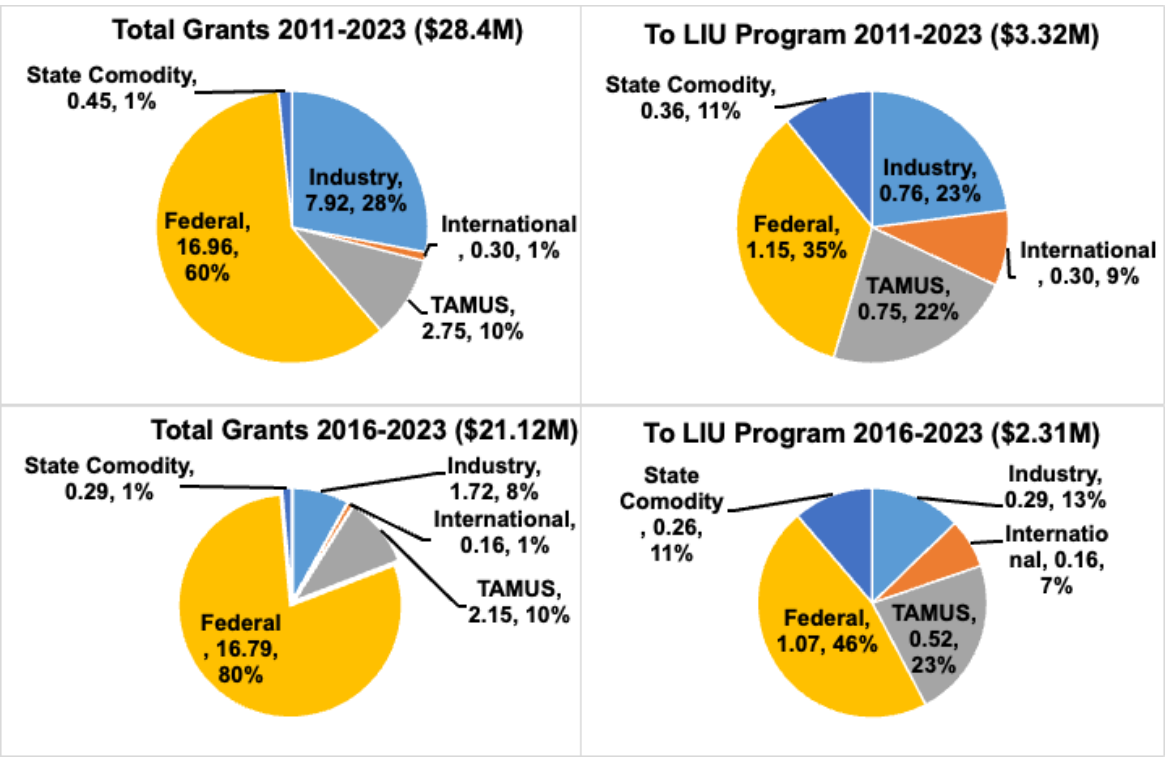


Table 1. Summary Table of Grants and Contracts Received.

Type and Role	AgriLife Since 2011 (2011-2023) Total to all PIs	AgriLife Since 2011 (2011-2023) To LIU Program	AgriLife Since 2016 (2016-2023) Total to all PIs	AgriLife Since 2016 (2016-2023) To LIU Program
External Competitive				
PI	$1,510,700	$1,401,772	$1,198,930	$1,090,002
Co-PI	$16,236,560	$533,047	$16,030,000	$473,047
Total (PI + Co-PI)	$17,747,260	$1,934,819	$17,228,930	$1,563,049
Internal Competitive				
PI	$606,348	$571,031	$403,287	$372,751
Co-PI	$2,345,331	$288,250	$1,945,331	$255,250
Total (PI + Co-PI)	$2,951,679	$859,281	$2,348,618	$628,001
Contracts from Bayer & BASF				
PI	$3,155	$3,072	$3,155	$3,072
Co-PI	$7,679,225	$525,173	$1,535,845	$111,696
Total (PI + Co-PI)	$7,682,380	$528,245	$1,539,000	$114,768
Total	$28,381,319	$3,322,345	$21,116,548	$2,305,818

2. List of Funded Projects (Federal, Industry, and Commodity) (2010-2023)
Research Projects (Total funded $28.4M and $3.3M to genetic program since 2011; total funded $21.1M since 2016 with $2.3M to genetic program)
A. Federal Competitive

i. Funded multi-state project equipment funding $104,335 to purchase microscope for plant research. PI: Nolan Anderson, Co-PI: Kiran Gadhave, Qingwu Xue, Shuyu Liu, Ken C. Obasa.

ii. Funded multi-state project equipment funding $75,000 to purchase NIR scanner. PI: Hingbin Zhang, CO-PIs: Seth Murray, Michael Thompson, Waltram Ravelombola, Shuyu Liu, and Russell W. Jessup.

iii. "Breed FHB Resistant Hard Winter Wheat Cultivars and Germplasm via Doubled haploid" funded by USDA-ARS/USWBSI (US Wheat and barley Scab initiative Hard winter wheat cooperative project) at **$98,500 for 2 years. 2022-2023. PI**: Shuyu Liu All to genetic program. Co-PI: Yahya Rauf, Amir Ibrahim, Jackie Rudd, Qingwu Xue, Sunish Sehgal.

iv. NIFA CAP for Innovation in Genomic Technology to Accelerate Breeding: "Leveraging high-throughput genotyping and phenotyping technologies to accelerate wheat improvement" funded by **USDA-NIFA WheatCAP project. 2022-2027. $15M. Led by UC-Davis. Co-PI for TAMU subaward of $913,929, $107K to genetic program.**

v. **"**CULTIVAR DEVELOPMENT: Accelerated Introgression of Synthetic Hexaploid Derived Diversity into an Applied Hard Winter Wheat Breeding Program" funded by **USDA-NIFA Foundation 2021-67013-33940**. **PD: Jackie**

Rudd; Co-PD: Amir Ibrahim, Shuyu Liu, Qingwu Xue, Audrey Girard. 2021-2024. $300,000. To genetic program: $14,802.

vi. "Developing Hard Winter Wheat Germplasm with New Resistance to Multiple Arthropods Using Primary Synthetics and Exome Capture" funded by **USDA-NIFA Foundation 2019-67013-29172**. **PD: Shuyu Liu**; Co-PD: Jackie Rudd, Chenggen Chu, Amir Ibrahim, Qingwu Xue, Shichen Wang, Ada Szczepani, 2019-2023. $500,000. To genetic program: $368,072.

vii. "Validation, Characterization and Deployment of QTL for Grain Yield Components in Wheat" Coordinated Agricultural Project (WheatCAP), funded by **USDA-NIFA-IWYP (International Wheat Yield Partnership)** 2017-67007-25939. PD Jorge Dubcovsky from UC-Davis. Total fund $9.7 M. **Co-PD: Shuyu Liu**, subaward to TAMUS, $432,685. 2016-2021. All to genetic program. Liu is Leading the TAMU effort on this subaward project. (with I**nternational collaboration**).

viii. "Insect Vectored Diseases and High Value Specialty Crops" funded by Texas A&M AgriLife Research Equipment RFP, Hatch and Multi-State Federal Funds FY22. 2022. PI: Kiran Gadhave. Co-PI: Charlie Rush, Shuyu Liu, Jackie Rudd. Total $150,000.

ix. Lab equipment supported by **Multi-State Hatch project** equipment funding $130,000. PI: Kiran Gadhave, Co-PI: Charlie Rush, **Shuyu Liu**, Jackie Rudd.

x. "Wheat Genetic and Genomic Equipment on High Throughput Genotyping" proposal funded by **Multi-State Hatch project** equipment funding $98,855. **PI**. 2019-2020. All to my program.

xi. "Vector Biology Equipment Proposal Submitted by Vector Biology Research Team-Amarillo" funded by **Multi-State Hatch project** equipment funding $97,831. **Co-PI**. 2019-2020. $9,500 to my program.

xii. "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. All to my program.

xiii. "Impact of Deficit Irrigation on Host Resistance, Disease Incidence and Water Use Efficiency of Wheat". Charles M. Rush, S. O'Shaughnessy, **S.-Y. Liu. USDA-ARS Ogallala Aquifer Research Initiative**. **Collaborator**, US$96,000. Sep. 2012-Aug. 2013, To my program.: $10,000.

xiv. "Identification of Molecular Markers Linked to Water Use Efficiency in A Drought Tolerant Wheat Cultivar". **USDA-NIFA-CSREES funded Triticeae Coordinated Agricultural Project to train under-represented undergraduate student**, University of Minnesota. **PI**, US$20,000. Jul. 2011-Jun. 2013. All to my program.

B. Industry (Competitive if not labeled as non-competitive)

i. "2019 Greenhouse Trial Agreement (Curl Mite and Greenbug Insect Screening)" funded by **BASF Corporation**. 2019-2020. **PI**, $3,155. To Liu program: $3,072. (**non-competitive)**

ii. "Finishing What We Started; a Graduate Student Project" funded by **Bayer CropScience LP**, 2017-2019, **PI**, $180,000. To reanalyze the data and identify target loci for yield and bread making quality that can be used for both TAMUS and Bayer. All to wheat genetic program. (**non-competitive)**

iii. "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. All to my program. **About 12 projects were funded internationally.** *Collaborated with wheat scientist in CIMMYT-China.* **(International competitive)**

iv. "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. All to my program. **Only 11 projects were funded internationally.** *Collaborated with wheat scientist in CIMMYT-Kenya.* **(International competitive)**

v. "An Accelerated Pipeline to Develop Superior Commodity and Identity Preserved Hard Winter Wheat Varieties. Bayer Crop Science" funded by **Bayer CropScience**. 2011-2016. Rudd, J. C., A. Ibrahim, D. R. Hays, J. Awika, R. W. Duncan, Q. Xue, **S.-Y. Liu** and C.D. Johnson. **Co-PI**. Total $7,679,233. To my Program: $524,137**.** (**Collaborative project with private company)**

C. Commodity Competitive

i. "Molecular Marker Identification, Validation, and Application in Genomic-Assisted Breeding and doubled haploid breeding pipeline to Improve Multiple Stress Tolerances in Texas Wheat" funded by **Texas Wheat Producer Board and Association**, **PI**, $140,000. 2021-2024. All to my program.

ii. "Molecular Marker Identification, Validation, and Application in Genomic-Assisted Breeding to Improve Multiple Stress Tolerances in Texas Wheat" funded by **Texas Wheat Producer Board and Association**, **PI**, $25,000. 2020-2021. All to my program.

iii. "Using Doubled Haploid to Accelerate Developing New Germplasm Lines with Increased Genetic Diversity for Wheat Improvement" Funded by **Texas Wheat Producer Board and Association**, **Co-PI**, $10,000. 2020-2021. All to my program.

iv. "A rapid, reliable and cost-efficient method to phenotype wheat for plant-beneficial interactions with plant-associated microorganisms" funded by **Texas Wheat Producer Board and Association**, $32,000. 2020-2021. **Collaborator**.

v. "Molecular Marker Identification, Validation, and Application in Marker-Assisted Breeding to Improve Multiple Stress Tolerances in Texas Wheat" funded by **Texas Wheat Producer Board and Association**, **PI**, $24,750. 2019-2020. All to my program.

vi. "Using Doubled Haploid (DH) Technique to Accelerate Developing Breeding Lines with High Grain Yield and Excellent Quality" funded by **Texas Wheat**

Producer Board and Association, **Co-PI,** $10,800. 2019-2020. All to my program.

vii. "Developing Superior Pre-harvest Sprouting Tolerant Hard White Winter Wheat Using CRISPR-Cas9 Gene Editing" funded by **Texas Wheat Producer Board and Association**, **Co-PI**, $12,000. 2017-2018. (PI, Michael Thomson)

viii. "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 and Association**, **PI**, $217,500. Sep. 2010-Aug. 2019. All to my program for average $2-2.5K per year.

D. TAMUS Competitive (if not labeled as non-competitive)

i. "Transmission biology of wheat curl mites and the pathogens they transmit: wheat streak mosaic virus and Triticum mosaic virus" funded by Texas A&M AgriLife Research Insect Vector Disease Seed Grant program. 2021-2023. PI: Kiran Gadhave. **Co-PI**: Charlie Rush, Fekede Workneh, **Shuyu Liu**, Jackie Rudd. Total $394, 556. To Liu: $62,000.

ii. "Host/Pathogen/Vector Interactions, with Emphasis on Mite-Vectored Virus Diseases of Wheat and Zebra Chip of Potato" funded by **Texas A&M AgriLife Research Insect Vector Diseases Grant Program**. PI: Charlie Rush. **Co-PI: Shuyu Liu** and Jackie Rudd. $187,500. 2018-2021. $18,750 to my program.

iii. **Tom B. Slick Fellowship** to Ph.D. student Yan Yang. 2018-2019. **College of Agriculture and Life Sciences**. **PI,** $32,696 to my program.

iv. **Tom B. Slick Fellowship** to Ph.D. student Smit Dhakal. 2018-2019. **College of Agriculture and Life Sciences**. **PI**, $33,010 to my program.

v. "Enhancing Bread-baking Quality of Wheat Carrying the 1BL.1RS Wheat-rye Translocation by Knocking Out the Secalin Protein" funded by **Texas A&M AgriLife Research Genome Editing Seed Grant Program**. **Co-PI.** $30,000. 2018-2019.

vi. "Utilizing the T1AL·1RS Wheat-Rye Translocation in TAM 112 as A Delivery System For Introduced or Edited Genes" funded by **Texas A&M AgriLife Research Genome Editing Seed Grant Program**. **Co-PI.** $30,000. 2018-2019.

vii. "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. To my program: $109,464.

viii. "Accelerated Cultivar Development in the TAM Wheat Breeding Program" by **Texas A&M AgriLife Research Director's office.** $900,000**. 2016-2019. Co-PI.** To LIU program**:** $165,000. (**non-competitive**)

ix. "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. All to my program.

x. "Texas A&M Genomics Seed Grant Program for Plant Water Use" funded by **Texas A&M AgriLife Research**. 2016. **PI,** $9,998.40. All to my program.

xi. "Wheat Royalty Equipment Funding" from **Texas A&M AgriLife Research**. 2018. $8,728, **PI**. All to my program.

xii. "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. All to my program.

xiii. "Growth Chamber Equipment" by **Texas A&M AgriLife Research and Texas Small Grain Advisory Committee Royalty Fund**, $30,000. **PI.** 2014-2015. All to my Program.

xiv. Excellence Scholarship from College of Agriculture and Life Science. $13,533. (For Smit Dhakal scholarship and tuition). **Liu, S.-Y.** and A.M. Ibrahim. 2014-2015. **PI**.

xv. "Freezer Equipment". **Texas A&M AgriLife Research and Texas Small Grain Advisory Committee Royalty Fund**, $12,028. $7247 to my Program. **Liu, S.-Y.**, C. Rush. 2012-2013.

xvi. "Development of Wheat Germplasm Lines for Texas and High Plains". **Texas A&M AgriLife Research**, **PI**, $87,500. 2010-2013. All to my program. (**non-competitive**)

xvii. "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 A&M AgriLife Research Cropping System Program**. **Co-PI**, $300,000. Funded. To my program: $33,000. 2014-2015.

xviii. "Developing Hybrid Wheat for Texas and the Broader US Great Plains" funded by **Texas A&M AgriLife Research Monocot Program**. Ibrahim, A., J.C. Rudd, C. Johnson, **S.-Y. Liu**, D. Hays. 2013. US$ $80,000. **Co-PI**. 2014-2015.

E. Other competitive grants and contracts before TAMUS

i. "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.

ii. "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.

iii. "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.

iv. "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. **I am the major scientist who conducted this project**. Jan. 2004-Aug. 2007.

v. "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. **I am the major scientist who conducted this project**. Jan. 2004-Aug. 2007.

vi. **Visiting fellowship granted to Shuyu Liu by Canadian National Science and Engineer Resource Council.** 2004-2007. CA$141,000.

F. Proposals submitted

i. "Deep Rooting Traits in Winter Wheat under Drought" submitted to **USDA-NIFA Foundation, 2023.** $649,946. **Co-PI**.

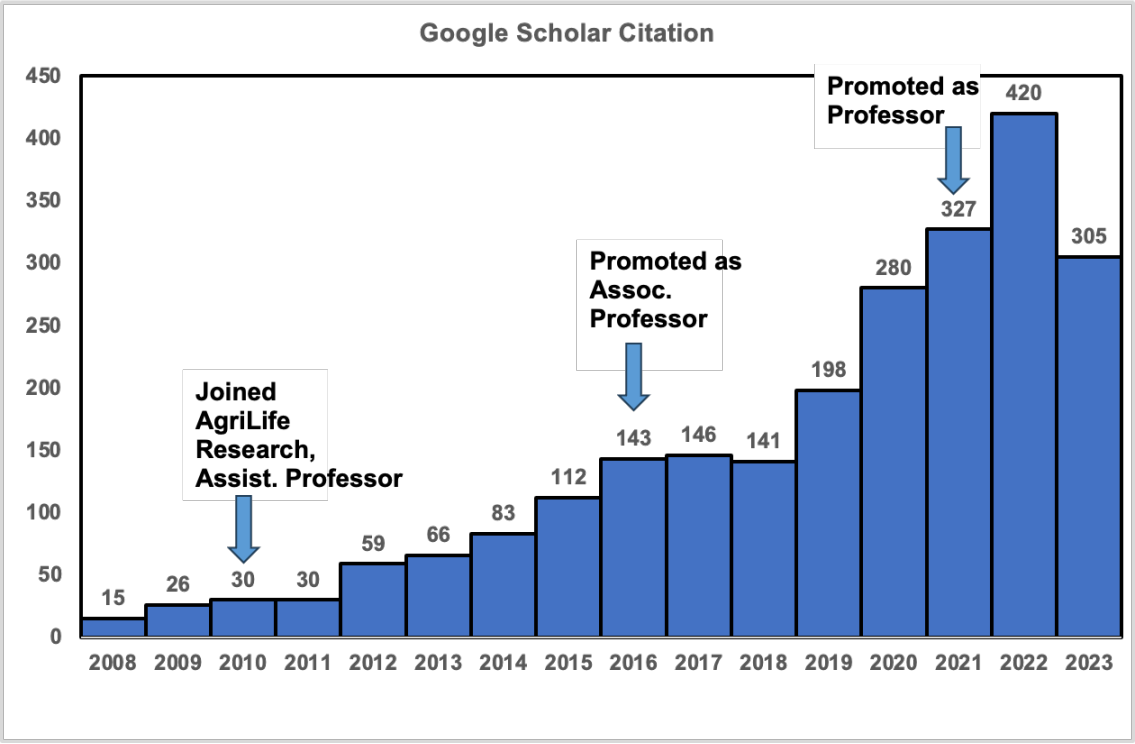
ii. "PARTNERSHIP: Water and nitrogen- efficient wheat: Climate resilience through improved root traits" submitted to **USDA-NIFA Foundation, 2023.** US$799, 743**. Co-PI.**

APPENDIX III. Publications and Professional Outputs (Page 35-75)

1. Publications and Scholarly Work Summary

	Last 7 years (Since 2016)	AgriLife Research (Since 2010)	Career
Peer-reviewed Journal	46	75	98
Oral presentations	89	123	127
Poster presentations	67	120	156
Popular Press	17	47	50
Book Chapters	2	2	4

2. Refereed Journal Articles (**98-career, google citation 2448, h-index 30, i-10 index 53; 75-since joined AgriLife Research; 37-since 2018; google citation since 2018 is 1693, h-index 23, i-10 index 45 by Nov. 9, 2023**)
(https://scholar.google.com/citations?hl=en&user=sw1nRIYAAAAJ)



1)

3. List of peer-reviewed publications and impact of major publications
["*" indicates the research conducted at the Texas A&M AgriLife Research wheat genetic program at Amarillo and Liu was the corresponding author or supervisor; chaired/co-chaired graduate students have "[1]"; post-doctoral research associate and scientists have "[2]", research staff have "[3]", graduate students with Liu in committee have "[4]", undergraduate students have "[5]"; visiting students have "[6]".]

1) Cerit M.[1], Wang Z.[1], Dogan M. [1], Yu S.[2], Valenzuela-Antelo J.L.[1], Chu C.[2], Wang S., Xue Q., Ibrahim A.M.H., Rudd J.C., Metz R., Johnson C.D., Liu S.* 2023. Mapping QTL

for Yield and Its Component Traits Using Wheat (*Triticum aestivum L.*) RIL Mapping Population from TAM 113 × Gallagher. Agronomy 13:2402 https://doi.org/10.3390/agronomy13092402 (**Citations: 0, Impact Factor (IF): 4**)

2) Bhandari, M., Chang, A., Jung, J., Ibrahim, A. M., Rudd, J. C., Baker, S., Landivar, J., **Liu, S**., & Landivar, J. 2023. Unmanned aerial system-based high-throughput phenotyping for plant breeding. The Plant Phenome Journal, 6(1), e20058. https://doi.org/10.1002/ppj2.20058 (**2, NA**)
3) Dogan, M. [1], Wang, Z. [1], Cerit, M. [1], Valenzuela-Antelo, J. L. [1], Dhakal, S. [1], Chu, C. [2], Xue, Q., Ibrahim, A. M. H., Rudd, J. C., Bernardo, A., St. Amand, P., Bai, G., Zhang, H., & **Liu, S**.* 2023. QTL Analysis of Yield and End-Use Quality Traits in Texas Hard Red Winter Wheat. Agronomy, 13(3), 689. Doi: 2073-4395/13/3/689 (**2, 4**)
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58) 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. **(17, 1.88)**

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60) 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. **(86, 44**)

61) **Liu, S.-Y.**, C.A. Griffey, M.D. Hall, J. Chen, S.-Y. Liu, D. Tucker, W.S. Brooks. 2012. Registration of Becker/Massey wheat recombinant inbred line mapping population. **J. of Plant Reg**. 3:358–362. Doi:10.3198/jpr2012.01.0013crmp **(6, 0.38)**

62) **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. Doi:10.2135/cropsci2012.03.0144 **(43, 1.88)**

63) Chen, J., C.A. Griffey, **S.-Y. Liu**, M. A. Saghai-Maroof. 2012. Release of scab resistance wheat germplasm VA04W-433, VA04W-474. **J. of Plant Reg**. 6:111–116. **(8, 0.38)**

64) Khatibi, P.A., G. Berger, **S.-Y. Liu**, W.S. Brooks, C.A. Griffey, D.G. Schmale III. 2012. Resistance to Fusarium head blight and deoxynivalenol accumulation in Virginia barley. **Plant Dis**. 96:279–284. **(24, 4.44)**

65) 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 hulless barley. **J. of Plant Reg**. 5:1–4. **(3, 0.38)**

66) 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. of Plant Reg**. 5: 68–74. **(3)**

67) 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. of Plant Reg**. 5:91–97. **(1)**

68) Hall, M.D., C.A. Griffey, A. Green, **S.-Y. Liu**, et al. 2011a. Registration of 'Vision 30' wheat. **J. of Plant Reg**. 5:353–359. **(5)**

69) Hall, M.D., C.A. Griffey, A. Green, **S.-Y. Liu**, et al. 2011b. Registration of 'Vision 40' wheat. **J. of Plant Reg**. 5:360–366. (**3**)

70) Hall, M.D., W. Rohrer-Perkins, C.A. Griffey, **S.-Y. Liu**, et al. 2011c. Registration of 'Snowglenn' winter durum wheat. **J. of Plant Reg**. 5:81–86. **(3)**

71) **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. **(11, 2.15)**

72) Hall, M.D., C.A. Griffey, D. Tucker, **S.-Y. Liu**, et al. 2010. Registration of USG 3209/Jaypee wheat recombinant inbred line mapping population. **J. of Plant Reg.** 4:159–162. **(3)**

73) 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.-Y. Liu**, et al. 2010. Registration of 'Jamestown' wheat. **J. of Plant Reg.** 4:28–33. (**25)**

74) 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.-Y. Liu**, et al. 2010. Registration of 'Shirley' wheat. **J. of Plant Reg.** 4:38–43. **(7)**

75) 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.-Y. Liu**, et al. 2010. Registration of '3434' wheat. **J. of Plant Reg.** 4:44–49.

76) 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.-Y. Liu** et al. 2009. Registration of 'USG3555' wheat. **J. of Plant Reg.** 3: 273–278. **(5)**

77) 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.-Y. Liu** et al. 2009. Registration of '5205' wheat. **J. of Plant Reg.** 3:283–288. **(4)**

78) **Liu, S.-Y.,** K. Yu, S.J. Park. 2009. Marker-assisted breeding for resistance to common bacterial blight in common bean. Plant Breeding, Huttunen, N., and Sinisalo, T.(eds), 211-226. **(5)**

79) **Liu, S.-Y.**, 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. Doi:10.2135/cropsci2009.03.0115 **(271, 2.3)**

80) **Liu, S.-Y.**, 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. **(51, 1.83)**

81) Abate Z., **S.-Y. 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. **(40)**

82) **Liu, S.-Y.**, 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. **(128, 4.44**)

83) **Liu, S.-Y.**, 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. **(9)**

84) 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. **(5)**

85) **Liu, S.-Y.**, 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. (**46, 5.4)**

86) Zhang Y., J. S. Quick, **S.-Y. Liu.** 1998. Genetic Variation in PI 294994 wheat for resistance to Russian Wheat Aphid. **Crop Sci**. 38:527–530. **(39)**

87) Authored or co-authored 12 papers in peer-reviewed journals in Chinese on wheat mutation breeding.

4. Book Chapter (career-3; since joining AgriLife-1; since last promotion-1**)**

1) Xue, Q., S. Thapa, S.-Y. Liu, J. Bell, T. Marek, J.C. Rudd. 2023. Physiological mechanisms for improving crop water use efficiency in the US Southern Great Plains. Soil and Drought, Basic process. Ch. 9, p236-255. Ed By Rattan Lal. ISBN: 978-1-03228-674-7. CRC Press.
2) 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**.

3) **Liu, S.-Y.,** 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**.
4) Banik M, **S.-Y. Liu**, 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.

5. Manuscripts in Review or Preparation (5)

1) Wang, Z. [1], S. Yu[2], S. Dhakal[1], Y. Rauf[2], K. Parker[1], C. Chu[2], J.C. Rudd, A.M.H. Ibrahim, Q. Xue, J. Baker, S. Baker, G. Opena, B. Simoneaux, M.-S. Chen, S. Wang, R.P. Metz, C.D. Johnson, Z. Zhang, S.-Y. Liu*. 2023. Improving hard winter wheat using primary synthetics through nested association analyses and genomic prediction of yield, quality, and resistances to diseases and pests. Manuscript is under author review.

2) Parker, K. [1], Wang, Z. [1], S. Yu[2], S. Dhakal[1], Y. Rauf[2], C. Chu[2], J.C. Rudd, A.M.H. Ibrahim, Q. Xue, J. Baker, S. Baker, G. Opena, B. Simoneaux, M.-S. Chen, S. Wang, R.P. Metz, C.D. Johnson, Z. Zhang, S.-Y. Liu*. 2023. Genomic prediction for yield, yield components, end-use quality, and kernel traits on synthetic derived lines. Manuscript in preparation.

3) Rauf, Y. [2], Parker, K. [1], Wang, Z. [1], S. Yu[2], S. Dhakal[1], C. Chu[2], J.C. Rudd, A.M.H. Ibrahim, Q. Xue, J. Baker, S. Baker, G. Opena, B. Simoneaux, M.-S. Chen, S. Wang, R.P. Metz, C.D. Johnson, Z. Zhang, S.-Y. Liu*. 2023. Association analyses for rusts, and other pests of a set of 209 synthetics to validate new resistances in synthetics. Manuscript is under author review.

4) Parker, K. [1], Z. Wang[1], Y. Rauf[2], L. Gao, J. Poland, J.C. Rudd, A.M.H. Ibrahim, **S. Liu**. 2023. Reference Bias Observed Between Alignment of Whole Genome Sequences of Hexaploid Wheat to Alternative Reference Genomes: A Reason to Adopt Pan-Genomics. Manuscript is under author review.

5) Valenzuela-Antelo, J.L. [1], C. Chu[2], X. Liu[2], M. Dogan[1], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, R. Metz, C. Johnson, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2022. Mapping traits adaptive to the U.S. Southern and Central Great Plains in a 'TAM204'/'Iba' population. In preparation.

6. Presentations:

	Oral and poster presentations since 2016		
Type	**Invited oral (Liu + Others)**	**Oral + poster (Awards)**	**Total**
International	9 + 2	35(1) + 40(2)	86
National	4 + 5	0 + 27(3)	36
State and Regional	9 + 1	24 + 0	34
Total	30	126	156

A) Oral: 127-career; 117-since joined AgriLife Research in 2010; 87-since 2016, 62 of 87 from Liu program. 63 since 2018.

a) 47 Oral talks by Liu (7 international, 4 national, 5 regional and state including 30 invited)

i. International (9 since 2016, all invited)

1) **Liu, S.-Y**. * et al. 2023. Improving food security and safety through high throughput phenotyping and genotyping. **The 9th International Conference on Agricultural and Biological Sciences** (ABS 2023). July 4-7, 2023. Macau, China. **Invited keynote speaker**.

2) Liu, S.-Y.* Research on Pest Resistance in TAMU Wheat. **The Expert Working Group from Wheat Initiative**. Aug. 25, 2022. Zoom. **Invited.**

3) **Liu, S**.*, J.C. Rudd, Q. Xue, A.M.H. Ibrahim, C.D. Johnson, D.B. Hays, J.M. Awika, G. Bai, P.S. Amand, M. Chen, X. Xu, S. Yu[2], Z. Wang[1], and K. Parker[1]. 2021. Utilization of alien species and primary synthetics in Texas wheat breeding and genetics research. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT. **Invited.**

4) **Liu, S.-Y.***, S. Dhakal[1], Y. Yang[1], X. Liu[2], C. Chu[2], J.A. Avila5, K. Hui[3], Q. Xue, J.C. Rudd, A. Ibrahim, S. Wang, R. Metz, C. Johnson, K. Jessup, J. Baker, R. Devkota, S. Baker. 2020. Identify favorable alleles from Texas popular cultivars and synthetic wheat using bi-parental and association analyses. **ASA-CSSA-SSSA International Annual Meeting**. Nov 8-11, Pheonix, AZ. **Invited.**

5) **Liu, S.-Y.***, C. Chu[2], J.C. Rudd, A. Ibrahim, Q. Xue, X. Xu, M.-S. Chen, S. Wang, R. Metz, C. Johnson, J. Baker, R. Devkota, J.A. Avila[5], K. Hui[3], S. Baker and X. Liu. Transfer new sources of resistance to three pest resistance simultaneously into local adapted cultivar TAM 114. 2019. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the Texas Small Grain Workers Meeting on August 28, 2019, in College Station Texas. **Invited.**

6) **Liu, S.-Y.***, C. Chu[2], J.C. Rudd, A. Ibrahim, Q. Xue, X. Xu, M.-S. Chen, S. Wang, R. Metz, C. Johnson, Y. Yang[1], S. Dhakal[1], J. Baker, R. Devkota, L. Garza[3], X. Liu[2]. 2018. Utilization of primary synthetics in winter wheat genomic breeding. **ASA-CSSA-SSSA International Annual Meeting**. Baltimore, MD. Nov. 4-7, 2018. **Invited.**

7) **Liu, S.-Y.***, Tan, C.T. [2], S. Assanga[1], S. Dhakal[1], Y. Yang[1], J.C. Rudd, Q. Xue, A. Ibrahim, R. Metz, S. Wang, C.D. Johnson, G. Zhang, X. Xu, G. Bai, M. Chen, R. Devkota, H. Yu[3], L. Garza[3]. 2018. Application of 90K Array and GBS SNPs in wheat genomic breeding in the US High Plains. Presented in Crop Productions and Physiology Studies Session at **The 4th International Conference on Agricultural and Biological Sciences** in Hangzhou, Zhejiang, China, June 26-29, 2018. The similar contents were also presented in the Shandong Agricultural University, Shandong Academy of Agricultural Sciences in July of 2018. **Invited.**

8) **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[1], S. Dhakal[1], J. Baker, R.N. Devkota, H. Yu[3], X. Yang[5] and L. Garza[3]. 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. **Invited.**

9) **Liu, S.-Y.***, Tan, C.T. [2], S. Assanga[1], S. Dhakal[1], Y. Yang[1], J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Xu, G. Bai, M. Chen, R. Devkota, M.P. Fuentealba[3], H. Yu[3], L. Garza[3]. 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. **Invited.**
10) **Liu, S.-Y. ***, S.O. Assanga[1], S. Dhakal[1], Y. Yang[1], P. Fuentealba[3]. 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.**
11) **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. 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. **Invited.**
12) **Liu, S.-Y. *** The U.S. wheat production and research progress. 2011. Presented at Shandong Agricultural University on Nov. 2, Taian, Shandong, and Shandong Academy of Agricultural Sciences on Nov. 4, Jinan, Shandong. **Invited.**
13) **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.
14) **Liu, S.-Y. ***, 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.
15) **Liu, S.-Y. ***, C.A. Griffey, A.L. McKendry, J. Chen, M.D. Hall, G. Brown-Guedira, 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.
16) **Liu, S.-Y. ***, 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.
17) **Liu, S.-Y. ***, 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.
18) **Liu, S.-Y. ***, 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.
19) **Liu, S.-Y. ***, 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.

20) **Liu, S.-Y.** *, 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.

ii. National (4 since 2016, invited)

21) **Liu, S.-Y*.** Understanding important traits in wheat using bi-parental, association analyses, and genomic predictions. Dec 2, 2022. Tropical Research & Education Center (TREC), **University of Florida**, HomeStead, FL. **Invited.**
22) **Liu, S.-Y*.** Understanding Wheat target traits Using Bi-parental Populations. **TAMU Plant Breeding and genetic Cycle**, Soil and Crop Sciences, College Station, Texas. Jan 28, 2022. Zoom. **Invited.**
23) **Liu, S.-Y.** *, B.R. Basnet, Y. Yang[1], J.C. Rudd, A.M.H. Ibrahim, X. Chen, E.R. Mason, R.L. Bowden, R.P. Singh, Q. Xue, D.B. Hays, P. St Amand, G. Bai. Adult plant resistance in a popular cultivar TAM 111. 2021 **Hard winter wheat rust symposium**. Apr. 6-8, 2021. **Invited.**
24) **Liu, S.-Y.** * Texas Wheat breeding and genetic research. July 16, 2019. **Montana State University**, Bozeman, MT. **Invited.**
25) 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.**

iii. Regional and State (9 since 2016, 16 invited)

26) Liu, S.-Y. * and K. Parker[1]. Wheat selection index and genomic prediction. **Texas Small Grain Workers Meeting**. April 24, 2023. **Invited.**
27) **Liu, S.-Y**. * Wheat genetic research update in Amarillo. **Texas Small Grain Workers meeting**. Aug 3-4, 2022. College Station, Texas, USA. **Invited.**
28) Liu, S.-Y. * Wheat genetic research update in Amarillo. Texas Small Grain Workers meeting. Aug 3-4, 2021. Amarillo, Texas, USA. **Invited.**
29) **Liu, S.-Y.** * 2020. Wheat genetic research in Amarillo. **Texas Small Grain Workers meeting**. Aug 4-5. Online zoom meeting. **Invited.**
30) **Liu, S.-Y.** *, C. Chu[2], Y. Yang[1], S. Dhakal[1], J. Antelo[1], L. Garza[3], and X. Liu[2]. 2018. Update on wheat genetic research in Amarillo. **Texas Small Grain Workers Meetin**g, College Station, Texas. Aug. 1-2, 2018. **Invited.**
31) 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. Invited.
32) **Liu, S.-Y**. *, J. C. Rudd, A.M.H. Ibrahim, Q. Xue, Y. Yang[1], S. Dhakal[1], S. Assanga[1], K. Jessup, S. Wang, R. Metz, C. Johnson, J. Baker, R.N. Devkota, H. Yu[3], X. Yang[6] 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. **Invited.**
33) **Liu, S.-Y*.** Texas A&M AgriLife Research Wheat Genetics, genomics and breeding. Seminar at **Texas A&M AgriLife Research Center in Dallas**, Texas. July 14, 2017. **Invited.**

34) **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. **Invited.**
35) **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. **Invited.**
36) **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.**
37) **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.**
38) **Liu, S.-Y.** *2014. The wheat research update at Amarillo. **Texas Small Grain Workers Meeting**. Aug. 12-13. College Station. **Invited.**
39) **Liu, S.-Y.** * Wheat research for important traits in the U.S. High Plains. **University of North Texas**, Denton, TX. Aug. 11, 2014. **Invited.**
40) **Liu, S.-Y.** * The wheat research progress at Amarillo Center. 2013. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX. **Invited.**
41) **Liu, S.-Y.** * The wheat research progress at Amarillo Center. 2012. **Texas Small Grain Workers Meeting**. Aug. 1-2. College Station, TX. **Invited.**
42) **Liu, S.-Y.** * 2011. The research progress in wheat genetics at Amarillo Center. **Texas Small Grain Workers Meeting**. Aug. 2-3. Vernon, TX.
43) **Liu, S.-Y.** * 2010. Research plan of wheat genetics at Amarillo Research Center. **Texas Small Grain Workers Meeting**. Aug. 2-3. Commerce, TX.
44) **Liu, S.-Y.** * 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.
45) **Liu, S.-Y.** 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.
46) **Liu, S.-Y.** , 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. 2005, 2006, 2007. London, Ontario, Canada.
47) **Liu, S.-Y.**, 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.

b) Other oral presentations by mentees (80 in total; 31 international, 4 national, 16 state and regional since 2018; 29 before 2018)

i. International (35 since 2016, 3 awards)

1) Parker, K. [1], **Liu, S**.*, Ibrahim, A. M. H., Opena, G., Baker, J. A., Baker, S., Rudd, J. C., St. Amand, P., Bai, G., & Simoneaux, B. 2023. Genomic Prediction of Advanced Breeding Lines in Multi-Environment Trials in Texas Hard Winter Wheat Breeding

Programs [Abstract]. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO. https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/150905 (**3rd oral award**)

2) Parker, K. [1], Wang, Z. [1], Gao, L., Ibrahim, A. M. H., Poland, J., Rudd, J. C., Rauf, Y., & **Liu, S.*** (2023) Reference Bias Observed between Alignment of Whole Genome Sequences of Hexaploid Wheat (Triticum aestivum L.) to Alternative Reference Genomes: A Reason to Adopt Pan-Genomics [Abstract]. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO. https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/150765
3) Parker, K. [1], Wang, Z. [1], Dhakal, S. [1], Yu, S. [2], Rauf, Y. [2], Baker, J. A., Baker, S., Ibrahim, A. M. H., Xue, Q., Wang, S., Johnson, C., & **Liu, S**.* 2023. Multi-trait genomic prediction of baking quality traits for synthetic derived hexaploid wheat. ASA-CSSA-SSSA International Annual Meeting, St. Louis, MO. Oct. 28-Nov. 2. https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/150686
4) Wang, Z. [1], Parker, K. [1], Yu, S. [2], Rauf, Y. [1], Xue, Q., Dhakal, S. [1], Rudd, J. C., Ibrahim, A. M. H., Baker, J. A., Baker, S., Wang, S., Johnson, C., **S. Liu***. 2023. Exploring novel genetic alleles for improving wheat yield and resistances using genome-wide association analyses and genetic prediction of synthetic derived wheat lines. ASA-CSSA-SSSA International Annual Meeting, St. Louis, MO. Oct. 28-Nov. 2. https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/151081
5) Parker, K. [1], P.S. Amand, G. Bai, A.M.H. Ibrahim, B. Simoneaux, G. Opena, J.A. Baker, S. Baker, J.C. Rudd, and **S. Liu***. Genomic prediction and selection of advanced breeding lines in Texas hard winter wheat breeding programs. ASA-CSSA-SSSA International Annual Meeting. Nov 6-9. Baltimore, MD, USA. Texas A&M Plant Breeding Symposium, Feb. 13, 2023. College Station. Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Workshop, Grapevine, TX, April 24-26, 2023.
6) Rauf, Y. [2], K. Parker[1], Z. Wang[1], J. C. Rudd, Q. Xue, A.M.H. Ibrahim, D. Hays, J.A. Baker, S. Baker and **S. Liu***. 2022. Association mapping for seed traits and biomass in wheat doubled haploid lines. ASA-CSSA-SSSA International Annual Meeting. Nov 6-9. Baltimore, MD, USA.
7) Wang Z[1]., S. Yu[2], S. Dhakal[1], K. Parker[1], Y. Rauf[2], C. Chu[2], S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, D. Hays, J.A. Baker, S. Baker and **S. Liu***. 2022. Improving wheat production and quality through genome wide association study of synthetic derived wheat lines. **ASA-CSSA-SSSA International Annual Meeting.** Nov 6-9. Baltimore, MD, USA. Texas A&M Genome Editing Symposium, Oct. 13, 2022.
8) Wang Z[1]., S. Dhakal[1], M. Cerit[1], Y. Rauf[2], C. Chu[2], S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, D. Hays, J.A. Baker, S. Baker and **S. Liu***. 2022. QTL Mapping of Yield Components in Wheat Cultivars TAM 112 and Duster. **ASA-CSSA-SSSA International Annual Meeting**. Nov 6-9. Baltimore, MD, USA.
9) Melson, E. [4], A. M. H. Ibrahim, D.R. Drake, **S. Liu**, R.L. Sutton, and J.L. Valenzuela-Antelo. 2022. Mapping quantitative trait loci for hessian fly resistance in wheat. **ASA- CSSA-SSSA International Annual Meeting**, Nov 6-9, Baltimore, MD. https://scisoc.confex.com/scisoc/2022am/meetingapp.cgi/Paper/142712
Texas A&M Plant Breeding Symposium, Feb. 13, 2023. College Station. **1st poster award.**

10) Yu, S.[2], J.C. Rudd, Q. Xue, A.M.H. Ibrahim, and **S.-Y. Liu***. 2021.Comparative differentially expressed gene analyses for the molecular mechanisms response to drought stress and greenbug aphids. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT. Also presented in Texas Plant Protection Association Annual meeting in Dec 7-8, 2021.
11) Yu, S.[2], S. Ocheya[1], Maria P. Fuentealba[3], J. Awika, A.M.H. Ibrahim, J.C. Rudd, Q. Xue, G. Zhang, J.A. Baker, K. Jessup, H. Yu[3], L. Garza[3], and **S.-Y. Liu***. 2021. Genetic mapping of end-use quality quantitative trait loci in hard red winter wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT.
12) Wang Z.[1], C. Chu[2], Q. Xue, J.C. Rudd, A.M.H. Ibrahim, D. Hays, J. Baker, K. Jessup, S. Baker, K. Hui, G. Opena, and **S.-Y. Liu***. 2021. Map-based cloning of a QTL for kernel weight on chromosome arm 2BS of wheat cultivar 'TAM 111'. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT. Also presented in the TAMU Genome editing symposium, Oct 28, 2021.
13) Wang, Z.[1], M. Cerit[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], C. Chu[2], X. Liu[2], K. Hui[3], B.M. Ehrlich[5], S. Wang, Q. Xue, G. Opena, A.M.H. Ibrahim, J.C. Rudd, B. Simoneaux, J. Baker, S. Baker, and **S.-Y. Liu***. 2021. QTL mapping of yield components in wheat cultivars TAM 112 and Duster. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT. Also presented in Texas Plant Protection Association Annual meeting in Dec 7-8.
14) Cerit, M[1]., Z. Wang[1], S. Yu[2], S. Dhakal[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], K. Hui[3], S. Wang, P.S. Amand, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, G. Bai, G. Opena, B. Simoneaux, S. Baker, J. Baker, K. Jessup, and **S.-Y. Liu***. 2021. QTL mapping for kernel traits in four different RIL populations. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT. Also presented in the TAMU Genome editing symposium, Oct 28.
15) Cerit, M[1]., Z. Wang[1], S. Yu[2], S. Dhakal[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], K. Hui[3], S. Wang, P.S. Amand, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, G. Bai, G. Opena, B. Simoneaux, S. Baker, J. Baker, K. Jessup, and **S.-Y. Liu***. 2021. QTL mapping for yield and yield -related traits in two wheat cultivars TAM 113 and Gallagher. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT. Also presented in Texas Plant Protection Association Annual meeting in Dec 7-8, 2021.
16) Ibrahim, A.M.H., A. Adhikari, S.P. Baenziger, B.R. Basnet, J.C. Rudd, B. Sade, J. Tadlock, B. Gerrish, N. Subramaniam, G. Opeña, and **S.-Y. Liu.** 2021**.** Updates on Hybrid Wheat Work in Texas. The 3rd International Plant Genetics and Genomics Conference (IPGG), Nov 1-3, 2021. Online. (**Invited**)
17) Cerit, M[1]., Z. Wang[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], C. Chu[2], X. Liu[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, R. Metz, C. Johnson, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2020. QTL mapping for Hessian fly resistance and yield component in hexaploid wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov 8-11, Pheonix, AZ. Also presented in the Texas Plant Protection Association oral and poster on Dec 8-10, 2020.
18) Wang, Z[1]., M. Cerit[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], C. Chu[2], X. Liu[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, R. Metz, C. Johnson, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y.**

Liu*. 2020. QTL for yield and yield components in Texas and Oklahoma wheat using TAM 112/Duster. **ASA-CSSA-SSSA International Annual Meeting**. Nov 8-11, Pheonix, AZ. Also presented in the Genome Editing Symposium organized by Soil and Crop Science graduates on Oct 22, 2020.

19) Xue, Q., S. Thapa, K. Jessup, **S.-Y. Liu**, J.C. Rudd, J.M. Bell, S. Baker, J.A. Baker and R.N. Devkota. 2020. Genetic improvement contributed to increased yield and water use efficiency in wheat under water-limited conditions - a long-term study. **ASA-CSSA-SSSA International Annual Meeting**. Nov 8-11, Pheonix, AZ.
20) Dogan, M[1]., J.L. Valenzuela-Antelo[1], S. Dhakal[1], A. Girard, C. Chu[2], X. Liu[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], P.S Amand, G. Bai, S. Wang, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2019. QTL analysis of end-use quality in a mapping population from two Texas wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the Texas Small Grain Workers Meeting on August 28, 2019, in College Station Texas.
21) Liu X[2]., C. Chu [2], J.L. Valenzuela-Antelo [1], M. Dogan[1], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], J.A. Baker, S. Baker, R.N. Devkota, J.C. Rudd, A.M.H. Ibrahim and **S-Y. Liu***. 2019. Mapping quantitative trait loci for seed traits in a winter wheat population. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX.
22) Valenzuela-Antelo, J.L[1]., C. Chu[2], X. Liu[2], M. Dogan[1], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, R. Metz, C. Johnson, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2019. Mapping traits adaptive to the U.S. Southern and Central Great Plains in a 'TAM204'/'Iba' population. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the Texas Small Grain Workers Meeting on August 28, 2019, in College Station Texas.
23) Valenzuela-Antelo, J.L[1]., A.M.H. Ibrahim, M.J. Thomson, **S.-Y. Liu** and J.C. Rudd. 2019. Developing a superior hard white winter wheat 'TAM 114' using gene editing. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the Texas Small Grain Workers Meeting on August 28, 2019, in College Station Texas.
24) Chu, C[2]., S. Wang, H. Dong, R.N. Devkota, J.A. Baker, S. Baker, X. Liu[2], J.C. Rudd, A.M.H. Ibrahim, Q. Xue, Z.S. Zhang and **S.-Y. Liu***. 2019. Association analysis in Texas elite breeding lines to identify gene and loci affecting grain yield and resistance to arthropods. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the Texas Small Grain Workers Meeting on August 28, 2019, in College Station Texas.
25) Adhikari A[4]., B.R. Basnet, A.M.H. Ibrahim, J.C. Rudd, P.S. Baenziger, S. Dresigacker, N. Subramanian and **S.-Y. Liu**. 2019. Exploring the genetics of fertility restoration in cytoplasmic male-sterility-based seed production system of hybrid

wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX.

26) Rudd J.C., A.M.H. Ibrahim, Q. Xue, **S.-Y. Liu**, A. Girard and J. Awika. 2019. Development of high yielding synthetic-derived winter wheat in Texas. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. (**Invited**).
27) Chu C[2]., S. Wang, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, and **S.-Y. Liu***. 2018. RNAseq analysis to identify genes responsible for drought tolerance in wheat cultivars TAM 111 and TAM 112. **ASA-CSSA-SSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018. Also in **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2, 2018.
28) Dhakal S[1]., Y. Yang[1], C. Chu[2], 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-SSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
29) Yang Y[1]., S. Dhakal[1], C. Chu[2], S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, J. Baker, K. Jessup, L. Garza[3], 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-SSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
30) 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-SSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
31) 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-SSSA Annual International Meeting**, Baltimore, MD. Nov. 4-7, 2018.
32) 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.
33) 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.
34) Tan, C.T[2]., S. Assanga[1], S. Dhakal[1], Y. Yang[1], 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.-Y. Liu***. 2016. Developing KASP markers for biotic stress tolerances in wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 6-9, Phoenix, AZ USA.
35) Xue, Q., J. Zhao, X. Lin, T.H Marek, S.-Y. 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

ii. National (5 since 2016, 4 invited)

36) Valenzuela-Antelo, J.L[1]., A.M.H. Ibrahim, M. Thomson, J.C. Rudd and **S.-Y. Liu**. 2020. Developing a superior hard white winter wheat version of 'TAM 114' using gene editing. Texas A&M Plant Breeding Symposium-Corteva Agricultural Sciences Plant Science Symposia Series. Feb 20, 2020. **(Invited with student speaker awards**)
37) Ibrahim, A.M.H., Valenzuela-*Antelo, J.L.* [1], M. Thomson, **S.-Y. Liu** and J.C. Rudd. 2019. Developing a superior HWWW version of 'TAM 114' via gene editing. North Corallina State University, Apr 19, 2019. **(Invited**)
38) Dhakal S. [2], C. Chu[2], **S-Y. Liu***, A. Ibrahim, J.C. Rudd. 2019. The progress of QTL cloning for thousand kernel weight on 2BS of TAM 111. **USDA-NIFA-IWYP annual report**. San Diego. CA. Jan. 14**. (Invited)**
39) Ibrahim, A.M.H., J.C. Rudd, **S.-Y. Liu,** Q. Xue, D. Hays, J. Jung, M. Maeda, J. Landivar, C. Neely, X. Dong, C. Johnson, M. Thomson, N. Rajan, A. Thomson, B. Auvermann, H. Neely, and J. Awika. 2018. Current trends in genomics and phenomics in wheat breeding at Texas A&M. **Cornell University**, Ithaca, NY. Feb 2018. **(Invited)**
40) Ibrahim, A., J.C. Rudd, **S.-Y. Liu**, S. Assanga[1], 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. **(Invited**)

iii. State and Regional (16 since 2018)

41) Parker, K[1]., Z. Wang[1], Y. Rauf[2], J.C. Rudd, Amir Ibrahim, Q. Xue, **S.-Y. Liu***. Genomic prediction and applications in Texas A&M wheat breeding. Texas Small Grain Workers meeting. Aug 3-4. 2022. College Station, Texas, USA.
42) Wang, Z. [1], …, **S.-Y. Liu***. 2022. QTL mapping of yield components in wheat cultivars TAM112 and Duster. Texas Small Grain Workers meeting. Aug 3-4. College Station, Texas, USA.
43) Parker, K. [1], A.M.H. Ibrahim, J.C. Rudd, **S.-Y. Liu***. Association analyses of Texas wheat advanced lines. Texas Small Grain Workers meeting. Aug 4-5, 2021. Amarillo, Texas, USA.
44) Yu, S. [2], S. Ocheya[1], Maria P. Fuentealba[3], J. Awika, A.M.H. Ibrahim, J.C. Rudd, Q. Xue, G. Zhang, J.A. Baker, K. Jessup, H. Yu[3], L. Garza[3], and **S.-Y. Liu***. 2021. Genetic mapping of end-use quality quantitative trait loci in hard red winter wheat. Texas Small Grain Workers meeting. Aug 4-5, 2021. Amarillo, Texas.
45) Cerit, M. [1], Z. Wang[1], S. Yu[2], S. Dhakal[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], K. Hui[3], S. Wang, P.S. Amand, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, G. Bai, G. Opena, B. Simoneaux, S. Baker, J. Baker, K. Jessup, and **S.-Y. Liu***. 2021. QTL mapping for yield and yield -related traits in two wheat cultivars TAM 113 and Gallagher. Texas Small Grain Workers meeting. Aug 4-5, 2021. Amarillo, Texas, USA.
46) Xue, Q., S. Thapa, K. E. Jessup, J. C. Rudd, S.-Y. Liu, J. Bell, S. Baker, J. Baker, and R. N. Devkota. 2019. Effect of climatic variability on irrigated wheat yield in the U.S. Southern Great Plains. Texas Small Grains Workers Meeting, August 28-29, 2019, College Station, Texas.
47) Chu, C. [2], **S.-Y. Liu***. 2019. Wheat Doubled haploid research in Texas A&M AgriLife Research-Amarillo. Dec. 3. Amarillo, Texas. **Texas Wheat Producer**

Board and Association invited presentation at their board meeting. > 20 board members participated and discussed. Invited.

48) Chu C. [2], X. Liu[2], L. Garza[3], S. Dhakal[1], 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.

49) Valenzuela-Antelo J. [1], Amir M.H. Ibrahim, **S.-Y. Liu***, J.C. Rudd and M. Thomson. 2018. Genetic mapping of QTL linked to greenbug resistance and gene editing in Wheat. **Texas Small Grain Workers Meeting**, College Station, Texas. Aug. 1-2.

50) Dhakal S. [1], Y. Yang[1], C. Chu[2], 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.

51) Yang Y. [1], S. Dhakal[1], C. Chu[2], 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.

52) Sade F.B. [4], 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.

53) 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.

54) 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.

55) 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.

56) 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.

57) Ajayi-Olanrewaju S. [4], 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.

58) 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.

59) Dhakal S. [1], C-T. Tan[2], H. Yu[3], L. Garza[3], 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.

60) Yang Y. [1], S. Dhakal[1], J. C. Rudd, Q. Xue, A.M.H. Ibrahim, Y. Yang, J. Baker, K. Jessup, L. Garza[3], 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.

61) Tan C.T. [2], H. Yu[3], Y. Yang[1], L. Garza[3], 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.

62) Ajayi, S. [4], Q. Xue, N. Rajan, S. K. Reddy, J. C. Rudd, A. Ibrahim, **S.-Y. 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.

63) Bhandari, M. [4], S.K. Reddy, Q. Xue, J.C. Rudd, **S.-Y. 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.

64) Xue, Q., S. Thapa, K. Jessup, G. Pradhan, X. Hou, J. C. Rudd, **S.-Y. 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.

iv. Before 2015 (16, 2 invited)

65) Assanga, S.O. [1], S. Dhakal[1], C-T., Tan[2], J.C. Rudd, G. Zhang, A. Ibrahim, Q. Xue, R. Devkota, S. Haley, J. Chen, M. P. Fuentealba[3], 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.

66) Reddy, B. [4], 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.

67) Ocheya, S. Assanga[1], M. P. Fuentealba[3], C. T. Tan[2], S. Dhakal[1], 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.-Y. 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.

68) Dhakal, S. [1], R. N. Devkota, J. Baker, S. Baker, Y. Yang[1], Q. Xue, A. M. H. Ibrahim, **S.-Y. 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.

69) Yang, Y. [1], K. Joseph, M. P. Fuentealba[3], S. Dhakal[1], Q. Xue, J. C. Rudd, A. Ibrahim, R. N. Devkota, J. Baker, and **S.-Y. 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.

70) Tan, C. T. [2], M. P. Fuentealba[3], S. Ocheya[1], S. Dhakal[1], J. C. Rudd, Q. Xue, G. Zhang, G. Bai, X. Zhang, S. D. Haley, and **S.-Y. 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.

71) Gu, X.K. [4], 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.

72) Ajayi, S.O. [4], Q. Xue, N. Rajan, A. M. H. Ibrahim, S. K. Reddy, J. C. Rudd, **S.-Y. 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.

73) Ocheya, S.A. [1], C.-T. Tan[2], **S.-Y. 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[1], M.P. Fuentealba[3]. 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. http://plantbreedingsymposium.com/2015-symposium (**Invited as student speaker**)

74) Yang, Y. [1], 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. http://plantbreedingsymposium.com/2015-symposium (**Invited as student speaker**)

75) Yang Y.[1], …., **S. Liu*.** 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).

76) Smit Dhakal[1], …, **S. Liu***. 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).

77) Silvano Ocheya Assanga[1], …, **S. Liu***. 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).

78) Chor-Tee Tan[2], …, **S. Liu***. 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).

79) Ocheya, S.A. [1], …, **S. Liu***. 2013. Identification of SNP Markers for Drought Tolerance in Wheat. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX (Ph D student).

80) Dhakal, S.[1], …, **S. Liu***. 2013. Study of mite resistance in TAM112. **Texas Small Grain Workers Meeting**. Aug. 6-7. Amarillo, TX (MS student).

B) Proceedings and Poster Abstracts (156-career; 120-since joined AgriLife Research; 67-since 2016, 49 of 67 from Liu program. 40 since 2018. If the first author is student or postdoc Liu supervised, Liu is the corresponding author)

a) International (40 Since 2016, one 1st and one 2nd poster, and one 3rd oral awards)

1) Parker, K.[1], **Liu, S.***, Ibrahim, A. M. H., Opena, G., Baker, J. A., Baker, S., Rudd, J. C., St. Amand, P., Bai, G., & Simoneaux, B. 2023. Genomic Prediction of Advanced

Breeding Lines in Multi-Environment Trials in Texas Hard Winter Wheat Breeding Programs [Abstract]. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO. https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/150905 (**3rd oral award**)

2) Parker, K. [1], Wang, Z. [1], Gao, L., Ibrahim, A. M. H., Poland, J., Rudd, J. C., Rauf, Y., & **Liu, S.** (2023) Reference Bias Observed between Alignment of Whole Genome Sequences of Hexaploid Wheat (Triticum aestivum L.) to Alternative Reference Genomes: A Reason to Adopt Pan-Genomics [Abstract]. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO. https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/150765
3) Parker, K[1]., Wang, Z[1]., Dhakal, S[1]., Yu, S. [1], Rauf, Y. [2], Baker, J. A., Baker, S., Ibrahim, A. M. H., Xue, Q., Wang, S., Johnson, C., & **Liu, S.** 2023. Multi-trait genomic prediction of baking quality traits for synthetic derived hexaploid wheat. ASA-CSSA-SSSA International Annual Meeting, St. Louis, MO. Oct. 28-Nov. 2. https://scisoc.confex.com/scisoc/2023am/meetingapp.cgi/Paper/150686
4) Rauf Y. [2], K. Parker[1], Z. Wang[1], J.C. Rudd, Q. Xue, A.M.H. Ibrahim, J.A. Baker, S. Baker and **S. Liu**. Association mapping for seed traits and biomass in wheat doubled haploid lines. 2022. **ASA-CSSA-SSSA International Annual Meeting**. Nov 6-9. Baltimore, MD, USA. Also presented in the National Association of Plant Breeders meeting at Ames, IA on Aug 9-11.
5) Parker, K. [1], P. St Amand, G. Bai, A. M. H. Ibrahim, B. Simoneaux, G. Opena, J.A. Baker, S. Baker, J.C. Rudd, and **S. Liu**. 2022. Genomic Prediction and Selection of Advanced Breeding Lines in Texas Hard Winter Wheat Breeding Programs. **ASA-CSSA-SSSA International Annual Meeting**, Baltimore, MD. Nov 6-9. Baltimore, MD, USA. https://scisoc.confex.com/scisoc/2022am/meetingapp.cgi/Paper/142529. Also presented in the TAMU Genome Editing Symposium at College Station on Oct 13. Also presented in the National Association of Plant Breeders meeting at Ames, IA on Aug 9-11.
6) Melson, E. [4], A. M. H. Ibrahim, D.R. Drake, S. Liu, R.L. Sutton, and J.L. Valenzuela-Antelo. 2022. Mapping quantitative trait loci for hessian fly resistance in wheat. **ASA- CSSA-SSSA International Annual Meeting**, Nov 6-9, Baltimore, MD. https://scisoc.confex.com/scisoc/2022am/meetingapp.cgi/Paper/142740
7) Wang Z. [1], S. Yu[2], S. Dhakal[1], K. Parker[1], Y. Rauf[2], C. Chu[2], S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, D. Hays, J.A. Baker, S. Baker and **S. Liu**. 2022. Improving wheat yield, end-use quality, and resistance through genome wide association study and genomic prediction of synthetic derived wheat lines. **ASA-CSSA-SSSA International Annual Meeting**. Nov 6-9. Baltimore, MD, USA. Also presented in the TAMU Genome Editing Symposium at College Station on Oct 13.
8) **Liu, S.-Y**., Z. Wang[1], S. Yu[2], Y. Rauf[2], K. Parker[1], J.C. Rudd, A. Ibrahim, Q. Xue, D.B. Hays, C. Johnson, J. Awika, G. Bai, X. Xu, M.-S. Chen. Improving Texas wheat breeding and genetics research using alien species and primary synthetics. **The 2nd International Wheat Congress**. Sep 12-15, 2022. Beijing, China.
9) **Liu, S.-Y**., Z. Wang[1], Y. Rauf[2], K. Parker[1], J.C. Rudd, Q. Xue, A.M.H. Ibrahim. 2022. Understanding wheat target traits using biparental populations. **Annual Meeting of American Association of Plant Biologists**. Portland, OR. July 8-14.

10) Wang Z. [1], C. Chu[2], Q. Xue, J.C. Rudd, A.M.H. Ibrahim, D. Hays, J. Baker, K. Jessup, S. Baker, K. Hui, G. Opena, and S.-Y. Liu. 2021. Map-based cloning of a QTL for kernel weight on chromosome arm 2BS of wheat cultivar 'TAM 111'. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT. Also presented in the **TAMU Genome editing symposium**, Oct 28, 2021. (Oral and poster).
11) Cerit, M. [1], Z. Wang[1], S. Yu[1], S. Dhakal[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], K. Hui[3], S. Wang, P.S. Amand, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, G. Bai, G. Opena, B. Simoneaux, S. Baker, J. Baker, K. Jessup, and **S.-Y. Liu***. 2021. QTL mapping for kernel traits in four different RIL populations. **ASA-CSSA-SSSA International Annual Meeting**. Nov 7-10, Salt Lake City, UT.
12) Wang, Z. [1], X. Liu[2], C. Chu[2], S. Wang, S. Dhakal[1], Y. Yang, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, D. Hays, J. Baker, K. Jessup, R. Devkota, S. Baker, K. Hui[3], G. Opena, R. Metz, C. Johnson, and **S.-Y. Liu***. 2020. Association analyses for yield components and end-use quality in synthetic derived and adapted winter wheat lines and model selections for genomic prediction. **National Association of Plant Breeders Annual Meeting**. Aug. 16-19, Lincoln, NE. USA. Also presented in the **Texas Plant Protection Association Annual Conference** on Dec. 8-10, 2020.
13) Cerit, M. [1], Z. Wang[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], C. Chu[2], X. Liu[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, R. Metz, C. Johnson, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2020. QTL mapping for Hessian fly resistance and yield component in hexaploid wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov 8-11, Pheonix, AZ.
14) Wang, Z. [1], M. Cerit[1], J.L., Valenzuela-Antelo[1], M. Dogan[1], C. Chu[2], X. Liu[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, R. Metz, C. Johnson, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2020. QTL for yield and yield components in Texas and Oklahoma wheat using TAM 112/Duster. **ASA-CSSA-SSSA International Annual Meeting**. Nov 8-11, Pheonix, AZ.
15) Valenzuela-Antelo, J.L. [1], A.M.H. Ibrahim, M. Thomson, J.C. Rudd and **S.-Y. Liu**. 2020. Developing a superior hard white winter wheat version of 'TAM 114' using gene editing. **Texas A&M Plant Breeding Symposium-Corteva Agricultural Sciences Plant Science Symposia Series**. Feb 20, 2020. **(Invited with student speaker awards)**
16) Maulana F., J.D. Anderson, W. Huang, H.A. Tamir, T. Kumssa, **S.-Y. Liu**, X. Ma. 2020. QTL Mapping of forage yield traits in winter wheat. **International Plant and Animal Meeting XXIII.** Jan. 11-15. 2020.
17) Dogan, M. [1], J.L. Valenzuela-Antelo[1], S. Dhakal[1], A. Girard, C. Chu[2], X. Liu[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], P.S Amand, G. Bai, S.Wang, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2019. QTL analysis of end-use quality in a mapping population from two Texas wheat. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the **Texas Small Grain Workers Meeting** on August 28, 2019, in College Station **Texas and Texas Association of Plant Protection Meeting** on Dec 10, 2019.

18) Liu X. [2], C. Chu[2], J.L. Valenzuela-Antelo[1], M. Dogan[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], J.A. Baker, S. Baker, R.N. Devkota, J.C. Rudd, A.M.H. Ibrahim and **S-Y. Liu***. 2019. Mapping quantitative trait loci for seed traits in a winter wheat population. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX.
19) Valenzuela-Antelo, J.L. [1], C. Chu[2], X. Liu[2], M. Dogan[1], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, R. Metz, C. Johnson, J. Baker, S. Baker, R. Devkota, G. Opena, B. Simoneaux, Q. Xue, A.M.H. Ibrahim, J.C. Rudd and **S.-Y. Liu***. 2019. Mapping traits adaptive to the U.S. Southern and Central Great Plains in a 'TAM204'/'Iba' population. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the **Texas Small Grain Workers Meeting** on August 28, 2019, in College Station **Texas and Texas Association of Plant Protection Meeting** on Dec 10, 2019. **(CSSA oral, TPPA 2nd place poster Award)**
20) Valenzuela-Antelo, J.L. [1], A.M.H. Ibrahim, M.J. Thomson, **S.-Y. Liu** and J.C. Rudd. 2019. Developing a superior hard white winter wheat 'TAM 114' using gene editing. **ASA-CSSA-SSSA International Annual Meeting**. Nov 10-13., San Antonio, TX. Also presented in the Texas Small Grain Workers Meeting on August 28, 2019, in College Station Texas and Texas Association of Plant Protection meeting on Dec 10, 2019.
21) **Liu, S.-Y.**, C. Chu[2], J.C. Rudd, A. Ibrahim, Q. Xue, X. Xu, M.-S. Chen, S. Wang, R. Metz, C. Johnson, J. Baker, R. Devkota, J.A. Avila[5], K. Hui[3], S. Baker and X. Liu[2]. 2019. Identification of new sources of resistance to biotic and abiotic stresses and linked KASP marker development. **The 1st International Wheat Congress**. July 21-26, Saskatoon, SK Canada.
22) Chu, C. [2], X. Liu[2], K. Hui[3], J.A. Avila[5], B. Ehrlich[5], J.C. Rudd, A. Ibrahim, Q. Xue, S. Wang, A. Szczepaniec, **S.-Y. Liu***. Developing hard winter wheat germplasm with new resistance to multiple arthropods using primary synthetics and exome capture. **The 2019 Annual Meeting of National Association of Plant Breeders**, August 25-30, Pine Mountain, GA.
23) Rudd, J. C., A.M.H. Ibrahim, Q. Xue, **S.-Y. Liu**, A. Girard, and J. Awika. 2019. Development of high yielding synthetic-derived winter wheat in Texas. **1st International Wheat Congress**, July 21-26, 2019, Saskatoon, Saskatchewan, Canada.
24) Dhakal, S. [1], Y. Yang[1], C. Chu[2], 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.
25) Yang, Y. [1], S. Dhakal[1], C. Chu[2], 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.
26) Yang, Y. [1], 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.

27) Dhakal, S. [1], C-T. Tan[2], H. Yu[3], M.P. Fuentealba[3], 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.
28) 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.
29) Xue, Q., K.E Jessup, G.P. Pradhan, X. Hou, S. Ajayi, J.C. Rudd, **S-Y. Liu**, A.M.H. Ibrahim and 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.
30) Xue, Q., J.C. Rudd, **S.-Y. Liu,** T.H. Marek, K.E. Jessup, G. Pradhan, B. Hao, and X. Hou. 2017. Physiological responses of wheat to drought stress in the Texas High Plains. **The 2nd Agriculture and Climate Change Conference**, March 26-28, 2017, Sitges, Spain.
31) Xue, Q., A. M. H. Ibrahim, J. C. Rudd, **S.-Y. Liu,** J. J. Mowrer, and A. Somenahally. 2017. Improving winter wheat yield and water use efficiency in the Southern Great Plains of USA. **Conference Internationale sur l'Environnement et l'Agriculture**, April 24-25, 2017, Hammamet, Tunisia.
32) Tan, C.-T. [2], **S-Y. Liu**, S. Assanga[1], S. Dhakal[1], Y. Yang[1], J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Xu, G. Bai, M. Chen, R.N. Devkota, H. Yu[3], and L. Garza[3]. 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.
33) 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.
34) **Liu, S.-Y.,** J.C. Rudd, A. Ibrahim, Q. Xue, Y. Weng, S. Xu, J. Baker, R. Devkota, C.-T. Tan[2], H. Yu[3], X. Yang[6], and L. Garza[3]. 2016. Utilization of primary synthetics in winter wheat breeding. **ASA-CSSA-SSSA International Annual Meeting**. Nov. 6-9, Phoenix, AZ USA.
35) Tan, C.-T. [2], M. Chen, L. Garza[3], H. Yu[3], **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.
36) Ajayi, S. O. [4], Q. Xue, A.M.H. Ibrahim, N. Rajan, S.K. Reddy, J.C. Rudd, **S.-Y. 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.
37) Bhandari, M[4]., S.K. Reddy, Q. Xue, J.C. Rudd, **S.-Y. 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.

38) Xue, Q., J. Zhao, X. Lin, T.H Marek, **S.-Y. 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 International Annual Meetings**, November 6-9, 2016, Phoenix, AZ.
39) **Liu, S.-Y.***, C.-T. Tan[2], S. Assanga[1], S. Dhakal[1], Y. Yang[1], J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Xu, G. Bai, M. Chen, R. Devkota, M.P. Fuentealba[3], H. Yu[3], L. Garza[3]. 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.
40) Tan, C.-T. [2], S. Assanga[1], S. Dhakal[1], Y. Yang[1], J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, X. Xu, G. Bai, M. Chen, R.N. Devkota, H, Yu[3], L. Garza[3], and **S-Y. Liu***. 2016. 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.

b) National (27 Since 2016, two 1st poster awards, two 2nd poster awards)

41) Parker, K. [1], Z. Wang[1], Y. Rauf[2], J.C. Rudd, A.M.H. Ibrahim, **S. Liu***. 2023. Is Chinese spring enough? A comparison of alignment of whole genome sequencing of elite great plains wheat germplasm to alternative reference genomes. **Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Worksho**p, Grapevine, TX, April 24-26, 2023. 2nd poster Award. (**2nd poster award**)
42) Wang Z. [1], K. Parker[1], Y. Rauf[2], S. Dhakal[1], S. Yu[2], C. Chu[2], Q. Xue, J. C. Rudd, A.M.H. Ibrahim, J.A. Baker, S. Baker and **S. Liu***. 2023. Characterizing novel resistance alleles using synthetic hexaploid wheat and synthetic derived wheat by genome wide association studies. **Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Workshop**, Grapevine, TX, April 24-26, 2023. 2nd poster Award.
43) Rauf, Y. [2], Z. Wang[1], S. Yu[2], K. Parker[1], J. C. Rudd, Q. Xue, A.M.H. Ibrahim, Y. Jin, **S. Liu***. 2023. Exploring novel alleles in synthetic and synthetic derived wheat lines for rust resistance. **Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Workshop**, Grapevine, TX, April 24-26, 2023. (**Poster award**).
44) Melson, E. [4], A.M.H. Ibrahim, D. Drake, S. Liu, R. Sutton. 2023. Quantitative trait loci for hessian fly resistance in wheat mapped across multiple environments. Joint Edgar McFadden Symposium/Hard Winter Wheat Workers Workshop, Grapevine, TX, April 24-26, 2023. **1st poster Award.**
45) Wang Z. [1], S. Yu[2], S. Dhakal[1], K. Parker[1], Y. Rauf[2], C. Chu[1], S. Wang, Q. Xue, J. C. Rudd, A.M.H. Ibrahim, J.A. Baker, S. Baker and **S. Liu***. 2022. Improving wheat production and quality through genome wide association study of synthetic derived wheat lines. **9th Plant Genomics &Gene Editing Congress: USA and 6th Partnerships In Biocontrol, Biostimulants & Microbiome Congress: USA**. Raleigh, NC, USA. Oct 24-25.
46) **Liu, S.-Y***., Z. Wang[1], Y. Rauf[2], K. Parker[1], J.C. Rudd, Q. Xue, A.M.H. Ibrahim. 2022. Understanding wheat target traits using biparental populations. **American Association of Plant Biologists**. Portland, OR. July 8-13.
47) **Liu., S***., J.C. Rudd, A.M.H. Ibrahim, Q. Xue. 2022. Utilizing primary synthetics to improve Texas wheat. National Association of Plant Breeders. Ames, IA. Aug. 8-11.

48) Melson, E. [4], S.-Y. Liu, D. Drake, A. Ibrahim. 2022. Mapping quantitative trait loci for hessian fly resistance in wheat. **National Association of Plant Breeders**. Ames, IA. Aug. 8-11.
49) Wang, Z. [1], C. Chu[2], Y. Xu, Y. Rauf[2], K. Parke[1]r, S. Yu[2], M. Cerit[1], Q. Xue, J.C. Rudd, A.M.H. Ibrahim, P. St Amand, G. Bai, D. Hays, J. Baker, K. Jessup, S. Baker, K. Hui, **S.-Y. Liu*.** 2022. Map-based cloning of a QTL for kernel weight on chromosome arm 2BS of wheat cultivar 'TAM 111'. **National Association of Plant Breeders**. Ames, IA. Aug. 8-11.
50) Wang, Z. [1], M. Cerit[1], S. Dhakal[1], J.L. Valenzuela-Antelo[1], M. Dogan[1], Y. Rauf[2], C. Chu[2], X. Liu[2], J.A. Avila[5], B.M. Ehrlich[5], K. Hui[3], S. Wang, Q. Xue, J.C. Rudd, A.M.H. Ibrahim, G.B. Opena, B.E. Simoneaux, J. Baker, S. Baker, **S.-Y. Liu***. 2022. QTL mapping of yield components in wheat cultivars TAM 112 and Duster. **National Association of Plant Breeders**. Ames, IA. Aug. 8-11.
51) Rauf, Y. [2], K. Parker[1], Z. Wang[1], J.C. Rudd, Q. Xue, A.M.H. Ibrahim, J.A. Baker, S. Baker, **S.-Y. Liu***. 2022. **National Association of Plant Breeders**. Imes, IA. Aug. 8-11.
52) Chu, C. [2], Z. Wang[1], Smit Dhakal[1], J.C. Rudd, A. Ibrahim, and **S.-Y. Liu***. 2020. Cloning and characterization of genes affecting kernel weight on chromosome 2BS. **USDA-NIFA-IWYP WheatCAP project annual report**. Jan 11. San Diego, CA
53) Dhakal, S. [1], C. Chu[2], K. Hui[3], X. Liu[2], J.A. Avila[5], J.V. Antelo[1], J.C. Rudd, A. Ibrahim, and **S.-Y. Liu***. 2019. Cloning and characterization of genes affecting kernel weight on chromosome 2BS. USDA-NIFA-IWYP WheatCAP project annual report. Jan 13. San Diego, CA. Updated progress was presented in **The 2019 Annual Meeting of National Association of Plant Breeders**, August 25-30, Pine Mountain, GA.
54) **Liu, S.-Y**, J.C. Rudd, A.M.H. Ibrahim, C. Chu[2], J. Valenzuela-Antelo[1], and X. Liu[2]. 2018. Editing awn suppressing gene B1 to develop awned or awnless wheat cultivars. **The 6th Plant Genomics & Gene Editing Congress: USA**. Oct 1-2, 2018. Philadelphia, PA, USA.
55) Valenzuela-Antelo, J. [1], Amir M.H. Ibrahim, M. Thomson, B. Kim, **S.-Y. Liu**, J.C. Rudd. 2018. Editing the red grain color homoeologous genes to develop a white grain cultivar. **Genome Editing Symposium**. Oct 4-5, 2018. College Station, Texas.
56) Yang, Y. [1], S. Dhakal[1], C. Chu[2], 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***. 2017. QTL analyses for yield and yield components in TAM 111 and TAM 112 and their interactions with environments. **TAMU Plant Breeding Symposium**. Feb 19, 2015. **3rd place Poster winner**.
57) Ries, T. [4], **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.
58) Assanga, S.O. [1], M.P. Fuentealba[3], 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.

59) Dhakal, S. [1], C-T. Tan[2], M.P. Fuentealba[3], 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.
60) Gu, X. [4], 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.
61) Bhandari, M. [4], **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.
62) Ajayi, S. [4], Q. Xue, N. Rajan, S. K. Reddy, J. C. Rudd, A. Ibrahim, **S.-Y. 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.
63) **Liu, S.-Y.**, S. Ocheya[1], S. Dhakal[1], X. Gu[4], C.-T. Tan[2], Y. Yang[1], 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.
64) Tan, C.-T. [2], S. Assanga[1], S. Dhakal[1], J.C. Rudd, Q. Xue, A. Ibrahim, G. Zhang, G. Bai, S. Haley, L. Garza[3], H, Yu[3], **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.
65) Yang, Y. [1], C.-T. Tan[2], X.Y Xu, J.C. Rudd, Q. Xue, A.M. Ibrahim, **S.-Y. Liu***. 2016. Genetic mapping and KASP 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.
66) Assanga, S. [1], M.P. Fuentealba[3], S. Vader, J.M. Awika, A. Ibrahim, J. Rudd, **Q. Xue**, R.N. Devkota, J. Baker, **S.-Y. 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. (**1st place poster winner**).
67) Ajayi, S. [4], Q. Xue, N. Rajan, S. K. Reddy, J. C. Rudd, A. Ibrahim, S.-Y. 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.

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69) Tan, C.-T. [2], S. Ocheya[1], G. Zhang, S. Haley, J.C. Rudd, Q. Xue, G. Bai, X. Zhang, P. Byrne, M.P. Fuentealba[3], 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.

70) Tan, C.-T. [2], S. Ocheya[1], S. Dhakal[1], J.C. Rudd, Q. Xue, G. Zhang, G. Bai, X. Zhang, R. Devkota, M.P. Fuentealba[3], S.-Y. Liu*. 2015. Development of high throughput SNPs for host plant resistance. 9th International Wheat Conference. Sep. 20-25. Sydney, AUS.

71) Ocheya, S.A. [1], J.C. Rudd, A. Ibrahim, Q. Xue, G. Zhang, R. Devkota, J. Chen, H. Scott, J. Baker, S. Baker, C.-T. Tan[2], S. Dhakal[1], M.P. Fuentealba[3], 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.

72) Ajayi, S. O. [1], Q. Xue, N. Rajan, A. M. H. Ibrahim, S. K. Reddy, J. C. Rudd, S.-Y. 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.

73) Bhandari, M. [4], S.-Y. 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.

74) Gu, X.K. [4], 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.

75) Bhandari, M. [4], S.-Y. 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).

76) Gu, X.K. [4], 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.

77) Dhakal, S. [1], C.-T. Tan[2], S.-Y. Liu*, J.C. Rudd, Q. Xue, B. Blaser, R. Devkota, C.M. Rush, M.P. Fuentealba[3]. 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**)

78) Ocheya, S.A. [1], **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.

79) Tan, C.-T. [2], **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.

80) 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.

81) Yang, Y. [1], 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.

82) Dhakal, S. [1], **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.

83) Ocheya, S.A. [1], **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.

84) Ocheya, S.A. [1], **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.

85) Tan, C-T. [2], S.A. Ocheya[1], **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.

86) Ocheya, S.A. [1], **S.-Y. Liu***, J.C. Rudd, A. Ibrahim, Q. Xue, R. Devkota, S. Chao, G. Zhang, S. Haley, J. Chen, C-T. [2], Tan, M. P. Fuentealba[3]. 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**)

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90) Reddy, S.K. [2], J. Baker, S. Baker, D. Malinowski, C. Neely, A. Ibrahim, **S.-Y. 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.

91) Dhakal, S. [1], 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.

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94) Ajayi, S. [4], Q. Xue, G. Pradhan, R. Sui, S. K. Reddy, K. E. Jessup, A. Ibrahim, J. C. Rudd, and **S.-Y. Liu**. 2014. Monitoring early plant growth of wheat genotypes using ground-based plant health sensing system. The 26th Annual Texas Plant Protection Conference, December 10-11, 2014, Bryan, TX.

95) Ajayi, S. [4], S. K. Reddy, P. Gowda**, S.-Y. Liu,** J. C. Rudd, Q. Xue, and B. A. Stewart. 2014. Use of spectral reflectance for estimating plant parameters of wheat genotypes in the Texas High Plains. **Borlaug Summit on Wheat for Food Security,** March 25-28, 2014, Ciudad Obregón, Mexico.

96) 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.

97) **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.

98) Ocheya, S.A. [1], **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.

99) 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.

100) Reddy, B. [4], 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

101) Reddy, S.K. [2], **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.

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103) Reddy, S.K. [2], **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.

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105) Ajayi S. [4], S. Reddy, **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.

106) Reddy, S.K. [2], **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.

107) Reddy, S.K. [2], 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.

108) **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.

109) **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.

110) 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.

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112) **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.

113) 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.

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115) 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.

116) **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.

117) 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.

118) 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.

119) 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).

120) Berger, G.L., **S.-Y. 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.

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