

# Zhang, Junli

---

Assistant Project Scientist, University of California, Davis

2946 Quail ST, Davis, CA 95616

✉ [psjzhang@ucdavis.edu](mailto:psjzhang@ucdavis.edu) ☎ 208-596-3521 📄 [pinbo](#) 📄 [citation](#)

---

## Professional Experience

**Nov 2018 - Present** Assistant Project Scientist  
Dr. Jorge Dubcovsky's lab, Department of Plant Sciences  
*University of California, Davis, California, USA*

**Nov 2013 - Oct 2018** Postdoctoral Scholar  
Dr. Jorge Dubcovsky's lab, Department of Plant Sciences  
*University of California, Davis, California, USA*

## Education

**Aug 2008 - Dec 2013** Ph.D. Plant Science  
Dr. Jianli Chen's lab, Dept. of Plant, Soil & Entomological Sciences  
*University of Idaho, Moscow, Idaho, USA*

**Sep 2004 - Jul 2008** B.S. Agronomy  
College of Agronomy  
*Northwest A&F University, Shaanxi, China*

## Research Experience

*Nov 2013-Present. Postdoc & Assistant Project Scientist. University of California, Davis*

- Cloning and Characterization of Plant Height Gene *Rht25*
- Yield QTL Pyramiding to Improve Elite Wheat Cultivars
- Fine Mapping and Cloning Genes Related to Drought Tolerance and Yield Components in Wheat
- Genome-wide Association Study on Water Use Efficiency and Yield Components of Wheat Using a Spring Wheat Association Mapping Panel and Nested Association Mapping Panel
- Genome-wide Association Mapping of Stripe Rust Resistance in Spring Hexaploid Wheat from National Small Grains Collection (NSGC)

*Aug 2008-Oct 2013. Research Assistant. University of Idaho*

- Association Mapping of Hagberg Falling Number in Hard White Spring Wheat
- Water and Nitrogen Use Efficiency Study of Triticeae CAP (TCAP) Wheat and Barley Collections (Canopy spectrum reflectance and genome-wide association mapping)
- Quantitative Trait Locus (QTL) Mapping of Grain Yield and Physiological Traits Using a Population of Recombinant Inbred Lines of Common Wheat
- Study on Barley Yellow Dwarf Virus (BYDV) Resistance of Bread Wheat by RNAi Technique Using Both Virus-Induced Gene Silencing (VIGS) and Transgenic Methods

## Teaching Experience

*Guest Lecturer, UC-Davis, Jan 2018: Marker development in polyploid wheat*

*Guest Lecturer, UC-Davis, Jan 2018: Introduction of the wheat EcoTilling website*

## **Mentoring Experience**

### **Dubcovsky Lab**

- Dr. Hongchun Xiong, Visiting scholar from Chinese Academy of Agricultural Sciences (CAAS) (May 2019 - May 2020)
- Priscilla Glenn, Graduate Student (2017-2019)
- Saarah Kuzay, Graduate Student (2016-2018)
- Dmitry Vaisman, visiting Graduate Student from University of Haifa (2018)
- Yana Olifir, undergraduate student (2015-2020)
- Brendan McCarthy-Sinclair, undergraduate student (2014-2015)
- Laurel Hoffman, Junior Specialist (2013-2014)

## **Professional Skills**

- Plant breeding, field experiment design and management, and marker-assisted selection
- Quantitative trait locus (QTL) mapping: linkage mapping and association mapping
- Fine mapping and cloning
- Common lab procedures used in molecular genetics
- EMS mutation and selection
- Next Generation Sequencing and analysis
- Gene Editing with CRISPR/Cas9
- Experiment design and statistical analysis
- Strong computer skills (know Linux platform well) and bioinformatics skills
- Computer languages: Perl, Python, R, Shell Script
- Good at Microsoft Office and statistical software R and SAS
- Good at MapMaker 3.0b, Windows Cartographer, TASSEL, GAPIT, R/qlt

## **Tools Developed**

- [SNP Primer Design Pipeline](#): design KASP and CAPS/dCAPS primers for SNP genotyping
- [CRISPR-wheat](#): design CRISPR guide RNAs in wheat
- [CRISgo](#): process NGS data of CRISPR editings

## **Professional Affiliation**

- American Society of Agronomy (ASA)
- Crop Science Society of America (CSSA)

## **Professional Service**

**Reviewer:** African Journal of Biotechnology, African Journal of Microbiology Research, Agronomy, BMC Plant Biology, Euphytica, Genes & Genomics, Theoretical and Applied Genetics, Agriculture (MDPI), Genes (MDPI), Plants (MDPI), G3: Genes | Genomes | Genetics, Journal of Experimental Botany

## **Honors and Awards**

- **2011-2012** Easton, Gene and Marlene PSES Scholarship
- **2010-2011** Pure Line Scholarship & Toevs, John L. & Lois K. Scholarship

## Publications

1. Kuzay, S., Y. Xu, **J. Zhang**, A. Katz, S. Pearce, Z. Su, M. Fraser, J. A. Anderson, G. Brown-Guedira, N. DeWitt, A. P. Haugrud, J. D. Faris, E. Akhunov, G. Bai, J. Dubcovsky. 2019. Identification of a candidate gene for a QTL for spikelet number per spike on wheat chromosome arm 7AL by high-resolution genetic mapping. *Theor Appl Genet* 132: 2689-2705. (**First 3 authors contributed equally**)
2. **Zhang, J.**, S. A. Gizaw, E. Bossolini, J. Hegarty, T. Howell, A. Carter, E. Akhunov, J. Dubcovsky. 2018. Identification and validation of QTL for grain yield and plant water status under contrasting water treatments in fall-sown spring wheats. *Theor Appl Genet* 131: 1741-1759.
3. Dong, Z., J. M. Hegarty, **J. Zhang**, W. Zhang, S. Chao et al. 2017. Validation and characterization of a QTL for adult plant resistance to stripe rust on wheat chromosome arm 6BS (*Yr78*). *Theor Appl Genet* 130: 2127-2137. (**First 3 authors contributed equally**)
4. Liu, Y., **J. Zhang**, Y.-G. Hu, and J. Chen. 2017. Dwarfing genes *Rht4* and *Rht-B1b* affect plant height and key agronomic traits in common wheat under two water regimes. *Field Crops Research* 204: 242-248.
5. Wang, R., J. Chen, J. A. Anderson, **J. Zhang**, W. Zhao et al. 2017. Genome-wide association mapping of Fusarium Head Blight resistance in spring wheat lines developed in the Pacific Northwest and CIMMYT. *Phytopathology* 107: 1486-1495.
6. Chen, J., M.J. Guttieri, **J. Zhang**, D. Hole, E. Souza, and B. Goates. 2016. A novel QTL associated with dwarf bunt resistance in Idaho 444 winter wheat. *Theor Appl Genet*. 129: 2313-2322
7. Chen, J., J. Wheeler, K. O'Brien, W. Zhao, N. Klassen, **J. Zhang**, B. Bowman, Y. Wang, C. Jackson, J. M. Marshall and X.M. Chen. 2016. Registration of 'UI Platinum' hard white spring wheat. *Journal of Plant Registrations* 10: 36-40.
8. Bulli, P., **J. Zhang**, S. Chao, X. Chen, and M. Pumphrey. 2016. Genetic architecture of resistance to stripe rust in a global winter wheat germplasm collection. *G3: Genes, Genomes, Genetics* 6: 2237-2253.
9. Bowman, B.C., J. Chen, **J. Zhang**, J. Wheeler, Y. Wang, W. Zhao, S. Nayak, N. Heslot, H. Bockelman, and J.M. Bonman. 2015. Evaluating grain yield in spring wheat with canopy spectral reflectance. *Crop Science* 55: 1881-1890.
10. Bonman, J.M., E.M. Babiker, A. Cuesta-Marcos, K. Esvelt-Klos, G. Brown-Guedira, S. Chao, D. See, J. Chen, E. Akhunov, **J. Zhang**, H.E. Bockelman, T.C. Gordon. 2015. Genetic diversity among wheat accessions from the USDA National Small Grains Collection. *Crop Science* 55: 1243-1253.
11. Maccaferri, M., **J. Zhang**, P. Bulli, Z. Abate, S. Chao, D. Cantu, E. Bossolini, X. Chen, M. Pumphrey, J. Dubcovsky. 2015. A Genome-Wide Association Study of Resistance to Stripe Rust (*Puccinia striiformis* f. sp. *tritici*) in a Worldwide Collection of Hexaploid Spring Wheat (*Triticum aestivum* L.). *G3: Genes, Genomes, Genetics* 5: 449-465. (**First 3 authors contributed equally**)

12. **Zhang, J.**, J. Chen, C. Chu, W. Zhao, J. Wheeler, E.J. Souza, and R.S. Zemetra. 2014. Genetic dissection of QTL associated with grain yield in diverse environments. *Agronomy* 4: 556-578.
13. **Zhang, J.**, J. Chen, B.C. Bowman, K. O'Brien, J.M. Marshall, J.M. Bonman. 2014. Association mapping of Hagberg falling number in hard white spring wheat. *Crop Science* 54: 1243-1252.
14. Chen, J., G. Hu, **J. Zhang**, C. Chu, Y. Wu. 2014. Mapping of STS markers developed from drought tolerance candidate genes and preliminary analysis of their association with yield-related traits in common wheat (*Triticum aestivum*). *Cereal Research Communications* 42: 199-208.
15. Chen, J., J. Wheeler, J. Clayton, W. Zhao, K. O'Brien, **J. Zhang**, C. Jackson, J.M. Marshall, B.D. Brown, K. Campbell, X.M. Chen, R. Zemetra, and E.J. Souza. 2013. Registration of 'UI Stone' soft white spring wheat. *Journal of Plant Registrations* 7: 1-6.
16. Li, P., J. Chen, P. Wu, **J. Zhang**, C. Chu, D. See, G. Brown-Guedira, R. Zemetra, and E. Souza. 2011. Quantitative trait loci analysis for the effect of *Rht-B1* dwarfing gene on coleoptile length and seedling root length and number of bread wheat. *Crop Science* 51: 2561-2568.

## Posters and Oral Talks

1. Gabay, G., T. R. Howell, **J. Zhang**, T. Fahima, A. Lukaszewski, J. Dubcovsky. Characterization of a 1RS chromosome with a 1BS introgression associated with seminal root length and root development in Wheat. Poster presentation and abstract in the proceedings of 2020, Plant and Animal Genome XXVIII Conference, San Diego, CA, Jan. 11-15.
2. **Zhang, J.**, S. Gizaw, E. Bossolini, M. Maccaferri, J. Hegarty, A. H. Carter, S. Chao, E. Akhunov and J. Dubcovsky. 2017. Identification and validation of QTL for yield components under contrasting water treatments in a collection of spring wheat from North America. Poster presentation and abstract in the proceedings of 2017, Plant and Animal Genome XXV Conference, San Diego, CA, Jan. 13-18.
3. Hegarty, J., Z. Dong, **J. Zhang**, W. Zhang, S. Chao, X. Chen and J. Dubcovsky. 2017. Validation and characterization of two QTL for adult plant resistance to stripe rust on wheat chromosome arms 6DS (*Yr77*) and 6BS (*Yr78*). Poster presentation and abstract in the proceedings of 2017, Plant and Animal Genome XXV Conference, San Diego, CA, Jan. 13-18.
4. **Zhang, J.**, S. Abate Gizaw, E. Bossolini, M. Maccaferri, J. M. Hegarty, A. H. Carter, S. Chao, E. Akhunov, J. Dubcovsky. 2016. Identification and validation of QTL for canopy water status under terminal drought in a collection of spring wheat from North America. Poster presentation and abstract in the proceedings of 2016, Plant and Animal Genome XXIV Conference, San Diego, CA, Jan. 08-13.
5. Bulli, P., **J. Zhang**, S. Chao, X.M. Chen, M. Pumphrey. Population Structure, Genetic Diversity, and Stripe rust resistance in core subset of the USDA-ARS winter wheat germplasm collection. 2015. Poster presentation and abstract in the proceedings of 2015 ASA, CSSA and SSSA Int'l Annual meeting, Minneapolis, MN, Nov. 15-18.
6. Chen, J., **J. Zhang**, W. Zhao, J. Wheeler, N. Klassen, and J. Anderson. Assessment of resistance to Fusarium head blight in spring wheat lines grown in the Pacific Northwest and CIMMYT. 2015. Poster presentation and abstract in the proceedings of 2015 ASA, CSSA and SSSA Int'l Annual meeting, Minneapolis, MN, Nov. 15-18.

7. Maccaferri, M., **J. Zhang**, P. Bulli, Z. Abate, S. Chao, D. Cantu, E. Bossolini, X. Chen, M. Pumphrey, J. Dubcovsky. A genome-wide association study of resistance to stripe rust (*Puccinia striiformis* f. sp. *tritici*) in a worldwide collection of hexaploid spring wheat (*Triticum aestivum* L.). 2015. International Plant & Animal Genome XXIII, San Diego, CA, Jan. 10-14. (**Invited Talk and Poster**)
8. **Zhang, J.**, J. Chen, C. Chu, W. Zhao, J. Wheeler, E.J. Souza, and R.S. Zemetra. 2013. Genetic dissection of QTL associated with grain yield in diverse environments. Poster presentation and abstract in the proceedings of 2013 ASA, CSSA and SSSA Int'l Annual meeting, Tampa, FL, Nov. 3-6.
9. **Zhang, J.**, Chen, J., Y. Wang, B. Bonman, J. Wheeler, W. Zhao, K. O'Brien, J.M. Marshall, H. Bockelman, and J. Bonman. 2012. Association mapping of low falling number in hard white spring wheat collection materials. Poster presentation and abstract in the proceedings of 2012 ASA, CSSA and SSSA Int'l Annual meeting, Cincinnati, OH, Oct. 21-24.
10. **Zhang, J.**, J. Chen, W. Zhao, J. Wheeler, E. Souza, and R. Zemetra. 2012. Quantitative trait loci associated with canopy temperature, chlorophyll content index, and flag leaf senescence in a recombinant inbred line population of winter wheat (*Triticum aestivum* L.). Poster presentation and abstract in the proceedings of 2012 International Plant and Animal Genome meeting, San Diego, California, Jan. 14-18, 2012
11. **Zhang, J.**, J. Chen, Ch. Chu, P. Li, W. Zhao, J. Clayton, J. Wheeler, E. Souza, and R. Zemetra. 2011. QTL analysis in a RIL population indicated effects of increasing wheat grain yield through coordinated improvements on yield-related traits. Poster presentation and abstract in the proceedings of 2011 NAPB (National Association of Plant Breeders), annual conference, College Station, TX, May 23-25, 2011
12. **Zhang, J.**, J. Chen, P. Li, W. Zhao, E. Souza, and R. Zemetra. 2010. Quantitative trait loci for grain yield in a recombination inbred line population of wheat (*Triticum aestivum* L.). Poster presentation and abstract in the proceedings of Plant Breeding for Drought Tolerance, Fort Collins, CO, June 24-25, 2010
13. **Zhang, J.**, P. Li, W. Zhao, Ch. Chu, E. Souza, and Robert Zemetra, and J. Chen. 2010. Identifying quantitative trait loci for canopy temperature, chlorophyll content, and grain yield in a recombination inbred line population of wheat (*Triticum aestivum* L.). Poster presentation and abstract in the proceedings of 2010 International Plant and Animal Genome meeting, San Diego, California, Jan. 10-13, 2010.