

University of Idaho
JIANLI CHEN

EDUCATION:

Ph.D., 2005	Virginia Polytechnic & State Univ., Blacksburg	Plant Breeding & Genetics
M.S., 1988	Northwest Agricultural Univ., Shaanxi, China	Plant Breeding & Genetics
B.S., 1983	Northwest Agricultural Univ., Shaanxi, China	Agronomy

RESEARCH EXPERIENCE (Selected):

2019 – current, Prof. & Senior Wheat Breeder, Graduate Faculty, Dept of Plant Sciences, University of Idaho Aberdeen Research & Extension Center, Aberdeen, ID
2014-2019, Assoc. Prof. & Wheat Breeder, Graduate Faculty, Dept of Plant Sciences, University of Idaho Aberdeen Research & Extension Center, Aberdeen, ID
2007-2013, Assist. Prof. and Wheat Breeder, Graduate Faculty, Dept of Plant Sciences, University of Idaho Aberdeen Research & Extension Center, Aberdeen, ID
2007-2013, Adjunct Assoc. Prof., Department of Plants, Soils, and Climate, Utah State University, Logan, UT (Graduate committee)
2010-present, Adjunct Prof., Department of Plant and Soil Sciences, Northwest A & F University, Yangling, Shaanxi, P. R. China (Graduate committee)
2006-2007, Research Scientist, Department of Crop and Soil Environmental Sciences (CSES), Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, VA
1997-2006, Research Associate, Department of CSES, Virginia Tech, Blacksburg, VA
1996, Visiting Scientist, USDA-ARS Forage and Range Research Laboratory (FRRL), Utah State University, Logan, UT
1994-1995, Adjunct Assoc. Prof., Shaanxi Academy of Agricultural Sciences (SAAS), Yangling, Shaanxi, P.R. China

TEACHING EXPERIENCE:

Areas of Specialization: Plant Breeding, Genetics, Genomics, Cytogenetics
Courses Taught at UI: Advanced plant breeding & genetics (PLSc502, DS); QTL mapping in cereal crops (PLSc502, DS); Cereal breeding & genetics (PLSc502, DS); Grad. sem. (PLSc501)
Graduate Students: 12; *Undergraduate Students:* 14

HONORS AND AWARDS:

Science Award, Idaho Grain Producer Association, 2018
UI President's Mid-Career Award, University of Idaho, 2018
USDA Certificate of Appreciation, outstanding service as a member of the Plant Variety Protection Board from 2015-2017, 2017
First Place Outstanding Papers, CSSA Plant Genetic Resource, 2016
USDA-NIFA panelist, Biology of Agricultural Plants, 2011 and 2015
Aberdeen Wheat Breeding Professorship, Idaho Wheat Commission Endowment, 2013-current
Award of Excellence, Western Association of Agricultural Experiment Station Directors, 2012
Dr. Richard C. Heimsch Outstanding Research Award, Gamma Sigma Delta Awards Committee and College of Agricultural and Life Sciences, 2011

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SERVICE:

USDA's Plant Variety Protection Board, 2015-2016
National Wheat Improvement Committee, PNW Chair, 2014-2016
National Crop Improvement Committee, member, 2012-2015
Western Wheat Workers, chair, 2014-2016
WERA-1009 committee, 2008-2016
Foundation Seed Stock Committee, member, 2007-present
Member of UI-LCS Steering Committee, 2012-current
Crop Science Society of America (2005-current)
Agronomy Science of America (2007-current)
Gamma Sigma Delta, the Honor Society of Agriculture, member (2011-current)

PATENTS AND CULTIVAR RELEASES (since 2008):

UI Cataldo Soft White Spring Wheat, 2008
UI Winchester Hard Red Spring Wheat, 2009
VA04W433 and VA04W-474 Soft Red Winter Wheat Germplasm, 2009
UICF-Grace Hard White ClearField Winter Wheat, 2009, PVP filed in 2010 (20100086)
UI Silver Hard White Winter Wheat, 2009, PVP filed in 2013 (201400011)
UI SRG Hard Red Common Winter Wheat, 2010
UI Stone Soft White Common Spring Wheat, 2012, PVP filed in 2013 (201300342)
UI Platinum Hard White Spring Wheat, 2014, PVP filed in 2014 (201400419)
UI Sparrow Soft White Winter Wheat, 2016, PVP filed in 2017 (201700189)
UI Bronze Jade hard white winter wheat, 2019, PVP pending
UI Cookie Soft White Spring Wheat, 2020, PVP filed in 2020 (202000298)

GRANTS AND CONTRACTS AWARDED:

J. Dubcovsky, J. Chen et al (41 coPIs). "NIFA CAP for Innovation in Genomic Technology to Accelerate Breeding: "Leveraging high-throughput genotyping and phenotyping technologies to accelerate wheat improvement and mitigate the impacts of climate change" sponsored by USDA-NIFA, 15M, SA \$537,644 (01/01/2022 – 12/31/2026).

J. Chen, F. Xiao, M. Krause. PLANT BREEDING PARTNERSHIP: "Genomics-enabled wheat breeding to accelerate development of dwarf bunt resistant cultivars" sponsored by USDA-NIFA-AFRI, \$800,000 (12/01/2021 – 11/30/2024), SA \$428,174.

J. Chen, D. Fu, J. Marshall. "Finding solutions to low falling number wheat in Idaho". \$150,000. SA \$50,000, USDA-ARS NACA (Non-Assistance Cooperative Agreement) (7/1/2018-6/30/2023).

J. Dubcovsky, J. Chen et al. "Validation, characterization and deployment of QTL for grain yield components in wheat," USDA-NIFA-IWYP, 10M. SA \$432,685 (1/1/2017-12/31/2021).

J. Chen. "Developing FHB resistant wheat cultivars for Idaho and the Western US," USWBSI, SA \$113,124 (07/01/20 – 06/30/21).

D. Strawn, J. Chen, X. Liang. Integration of variety selection and soil properties to reduce cadmium in wheat grain. USDA-NIFA, \$200,000. SA \$10,000 (07/01/19 – 06/30/21).

J. Dubcovsky, J. Chen et al. "Improving barley and wheat germplasm for changing environments," USDA-NIFA, 25M. SA \$510,495 (2/1/2011-12/31/2016).

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- J. Chen. “Phenotyping of NSGC,” USDA-ARS ATCA, \$246,625. SA \$246,625 (2/1/2011-12/31/2015).
- J. Chen, R. Zemetra, and D. Hole. “Developing the Next Generation of Neoclassical Plant Breeders,” USDA-NIFA, \$249,000. SA \$80,000 (1/15/11-1/14/16).
- J. Chen, R. Wang, and S. Hunter. “Breeding durable, high level, dwarf bunt resistance using molecular-marker assisted selection”, \$146,655. SA \$126,249 (07/01/18 – 06/30/21)
- J. Chen. “Developing wheat cultivars for Idaho” sponsored by Idaho Wheat Commission, \$1,043,094. SA \$1,043,094 (07/01/14 – 06/30/21).
- J. Chen. “Characterizing the cause effect for low falling number hard white spring wheat” sponsored by Idaho Wheat Commission, \$191,218. SA \$191,218 (07/01/17 – 06/30/20).
- J. Chen. “Digging the genetic factors underlying late maturity α -amylase (LMA) in wheat” sponsored by Idaho Wheat Commission, \$51,503. SA \$44,023 (07/01/14 – 06/30/16).
- D. Strawn, X. Liang, J. Chen, P. McDaniel, and J. Marshall. “Agronomic and genetic factors affecting cadmium uptake by wheat from Idaho soils” sponsored by Idaho Wheat Commission. \$264,105. SA \$103,657 (07/01/14 – 06/30/20).

PEER REFERRED PUBLICATIONS (Selected since 2015, *Corresponding author):

- He, F., W. Wang, W.B. Rutter, K.W. Jordan, J. Ren, E. Taagen, N. Witt, S. Sukumaran, S. Dreisigacker, M. Reynolds, **J. Chen**, J. Cook, G. Brown-Guidera, M. Pumphrey, A. Carter, M. Sorrells, J. Dubcovsky, M. Hayden, A. Akhunova, P. L. Morrell, L. Szabo, M. Rouse, E. Akhunov*. The landscape of genetic effects on gene expression levels in allopolyploid wheat reveals the impact of homoeologous gene dysregulation on agronomic traits. *Nature Communications*. **IF:14.9**. Accepted.
- Isham, K., R. Wang, W. Zhao, J. Wheeler, N. Klassen, E. Akhunov, and **J. Chen***. 2021. QTL mapping for grain yield and three yield components in a population derived from two high-yielding spring wheat cultivars. *Theor Appl Genet*. <https://doi.org/10.1007/s00122-021-03806-1>. **IF: 4.4**.
- Qiao, L., J. Wheeler, R. Wang, K. Isham, N. Klassen, W. Zhao, R. Chowdhury, J. Zheng, **J. Chen***. 2021. Novel QTL for grain cadmium content identified in hard white spring wheat. *Frontier in Plant Science*. *Frontier in Plant Science*. <https://doi.org/10.3389/fpls.2021.756741>. **IF: 5.8**.
- K.W. Jordan, **J. Chen**, 20 co-authors, and E. Akhunov*. 2021. Development of the Wheat Practical Haplotype Graph Database as a Resource for Genotyping Data Storage and Genotype Imputation. *G3 (Genes/Genomes/Genetics)*. <https://doi.org/10.1101/2021.06.10.447944>. Contributed to research ideas, studying materials, and editing of the manuscript. **IF: 3.2**.
- Chen, J***, J. Wheeler, N. Klassen, W. Zhao, K. O’Brien, C. Jackson, J.M. Marshall, K. Schroeder, and X.M. Chen. 2020. Registration of ‘UI Bronze Jade’ hard white winter wheat. *Journal of Plant Registration* DOI:10.1002/plr2.20029.
- Gordon, T., R. Wang, B. Bowman, N. Klassen, J. Wheeler, J. M. Bonman, H. Bockelman, and **J. Chen**. 2020. Agronomic and Genetic Assessment of Terminal Drought Tolerance in Two-Row Spring Barley. *Crop Sci*. DOI:10.1002/csc2.20040.
- Gordon, T., R. Wang, D. Hole, H. Bockelman, J. M. Bonman, and **J. Chen***. 2020. Genetic characterization and genome-wide association mapping for dwarf bunt resistance in bread wheat accessions from the USDA National Small Grains Collection. *Theor Appl Genet*. <https://doi.org/10.1007/s00122-020-03532-0>.

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- Wang, R., T. Gordon, D. Hole, W. Zhao, K. Isham, J. M. Bonman, B. Goates, and **J. Chen***. 2019. Identification and Assessment of Two Major QTL for Dwarf Bunt Resistance in Winter Wheat Line 'IDO835'. *Theor Appl Genet*. <https://doi.org/10.1007/s00122-019-03385-2>.
- Singh, L., J.A Anderson, **J. Chen**, B.S Gill, V.K Tiwari, and N. Rawat. 2019. Development and validation of a perfect KASP marker for Fusarium head blight resistance gene *Fhb1* in wheat. *The Plant Pathology Journal*.
- Zheng, X., X. Wen, L. Qiao, J. Zhao, X. Zhang, X. Li, Sh. Zhang, Z. Yang, Zh. Chang, **J. Chen***, J. Zheng*. 2019. Genetic dissection of QTrl.saw-2D.2, a major QTL for total seedling root length in wheat. *Planta*.
- Shao, Y., M-H. Tsai, Y. He, **J. Chen**, C. Wilson, A.H. Lin. 2019. Reduction of falling number in soft white spring wheat caused by an increased proportion of spherical B-type starch granules. *Food Chemistry* 284:140–148.
- Wang, R., Y. Liu, K. Isham, W. Zhao, J. Wheeler, N. Klassen, Y. Hu, J.M., Bonman, **J. Chen***. 2018. QTL identification and KASP marker development for productive tiller and fertile spikelet numbers in two high-yielding hard white wheat cultivars. *Molecular Breeding* 38 (135). Open access. <https://doi.org/10.1007/s11032-018-0894-y>.
- Dong, H., R. Wang, Y. Yuan, J. Anderson, M. Pumphrey, Zh. Zhang, and **J. Chen***. 2018. Evaluation of the Potential for Genomic Selection to Improve Spring Wheat Resistance to Fusarium Head Blight in the Pacific Northwest. *Frontiers in Plant Science*. <https://doi.org/10.3389/fpls.2018.00911>
- Liu, Y., R. Wang, Y. Hu, and **J. Chen***. 2018. Genome-Wide Linkage Mapping of Quantitative Trait Loci for Late-Season Physiological and Agronomic Traits in Spring Wheat under Irrigated Conditions. *Agronomy*, 60. doi:10.3390/agronomy8050060.
- Bissonnette, K. M., Ph. Wharton, J. Chen, J. Marshall. 2018. Survey of *Fusarium* species associated with fusarium head blight of spring wheat (*Triticum aestivum*) in Southeastern Idaho. *Plant Health Progress* 19: 125-127. <https://doi.org/10.1094/php-10-17-0066-S>.
- Zheng, X., X. Li, Ch. Ge, J. Chang, M. Shi, **J. Chen**, L.Qiao, Zh. Chang, J. Zheng, J. Zhang. 2017. Characterization of the *CCT* family and analysis of gene expression in *Aegilops tauschii*. *Dec. 2017. PLoS ONE*. <https://doi.org/10.1371/journal.pone.0189333>
- Assanga, S.O., S. Dhakal, C-T., Tan, J.C. Rudd, G. Zhang, A. Ibrahim, Q. Xue, R. Devkota, S. Haley, **J. Chen**, M. P. Fuentealba, S. Baker, J. Baker. S.Y. Liu. 2017. Mapping of quantitative trait loci for grain yield and its components in a US popular winter wheat using 90K SNPs. *PLoS ONE*. Dec. 2017. DOI 10.1371/journal.pone.0189669.
- Liang, X., D. Strawn, **J. Chen**, J.M. Marshall. 2017. Variation in cadmium accumulation in spring wheat cultivars: uptake and redistribution to grain. *Plant and Soil* DOI [10.1007/s11104-017-3454-z](https://doi.org/10.1007/s11104-017-3454-z).
- Chen, J***, J. Wheeler, N. Klassen, W. Zhao, K. O'Brien, C. Jackson, J. M. Marshall, X.M. Chen. 2017. Registration of 'UI Sparrow' wheat. *Journal of Plant Registration*. DOI: 10.3198/jpr2017.04.0021erc.
- Liu, Y., B.C. Bowman, Y. Hu, X. Liang, W. Zhao, J. Wheeler, N. Klassen, H. Bockelman, J. M. Bonman, **J. Chen***. 2017. Evaluation of agronomic traits and drought tolerance of winter wheat accessions from the National Small Grain Collection. *Agronomy* 7: 51. DOI:10.3390/agronomy7030051.
- Wang, R., **J. Chen***, J. Zhang, W. Zhao, J. Wheeler, N.Klassen, J.A. Anderson, D.R. See and Y. Dong. 2017. Genome-Wide Association Mapping of Resistance QTL to Fusarium Head

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Blight in Spring Wheat Lines Grown in Pacific Northwest and CIMMYT. *Phytopathology*. DOI: 10.1094/PHYTO-02-17-0073-R.

- K.L. Jernigan, C. F. Morris, R. Zemetra, **J. Chen**, K. Garland-Campbell, A.H. Carter. 2017. Genetic mapping of quantitative trait loci for end-use quality traits in a soft wheat RIL population. *Journal of Cereal Science*. DOI: 10.1016/j.jcs.2017.06.005.
- Liang, X., Y. Liu, **J. Chen**, and C. Adams. 2017. Late-season photosynthetic rate and senescence were associated with grain yield in winter wheat of diverse origins. *J. Agro Crop Sci*. DOI: 10.1111/jac.12231.

ORAL TALKS WITH PUBLISHED ABSTRACTS (Selected):

- Chen, J.** 2021. Breeding soft white wheat cultivars with value-added traits. Soft White Wheat Quality Summit organized by the US Wheat Associate. Invited oral talk. Virtue meeting. June 24-25, 2021.
- Chen, J.**, R. Chowdhury, D. Hole, M. Krause, T. Gordon. 2021. Assessment of two quantitative trait loci for dwarf bunt resistance in winter wheat grown in Pacific Northwest of the USA. Oral talk. Proceeding of XXI international bunt and smut workshop. Virtue meeting. May 5 – 6, 2021.
- Chen, J.**, D. Hole, M. Krause, T. Gordon., and J. Zhang. 2021. Molecular breeding for resistance to critical bunt diseases in organic wheat production. 2021 International ASA, CSSA, and SSSA. Salt Lake City, UT. Nov. 6 – 10, 2021.
- Joshi, P., M. Su, J. Wheeler, and **J. Chen**. 2021. Genome wide prediction for grain yield, protein content and test weight in common wheat. 2021 International ASA, CSSA, and SSSA. Salt Lake City, UT. Nov. 6 – 10, 2021.
- Su, M., L. Qiao, K. Isham, J. Wheeler, K. O’Brein, and **J. Chen**. 2021. Assessing the effects of four wheat glutenin genes on bread-baking quality. 2021 International ASA, CSSA, and SSSA. Salt Lake City, UT. Nov. 6 – 10, 2021.
- Chen, J.**, R. Wang, K. Isham, J. Wheeler, W. Zhao, N. Klassen. 2019. Prospects and challenges to improve wheat grain yield components using molecular markers. Oral presentation and abstract in the proceedings of 2019 ASA, CSSA and SSSA Int’l Annual meeting, San Antonio, TX, Nov. 9 - 14.
- Chen, J.**, L. Qiao, J. Wheeler, K. Isham, R. Wang, W. Zhao, N. Klassen. 2019. QTL mapping of grain cadmium and other related metal in spring wheat. Oral presentation and abstract in the proceedings of 2019 ASA, CSSA and SSSA Int’l Annual meeting, San Antonio, TX, Nov. 9 - 14.
- Chen, J.**, R. Wang, K. Isham, J. Wheeler, W. Zhao, N. Klassen. 2019. QTL associated with yield components identified in two spring wheat populations. Oral presentation and abstract in the proceedings of 2019 International Plant and Animal Genome XVI Conference, Town & Country Convention Center, San Diego, California Jan.12-16, 2019.
- Chen, J.**, D. Hole, R. Wang, J. Zhang, W. Zhao, M.Guttieri, E. Souza, B. Goates. 2017. Perspective using molecular marker-assisted breeding for dwarf and common bunt resistance in winter wheat. Oral presentation and abstract in the proceedings of 2017 International Wheat Genetics Symposium, Tulln, Austria, April 23 to 28.