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EDUCATION

- 1995 Ph.D. Plant Pathology, Purdue University.
- 1985 M.S. Plant Genetics and Breeding, Nanjing Agricultural University, Nanjing, China.
- 1982 B.S. Agronomy, Nanjing Agricultural University, Nanjing, China.

CURRENT EMPLOYMENT

- Research Molecular Geneticist (Plant), USDA-ARS
- Director of USDA Central Small Grain Genotyping Center, Manhattan, KS
- Adj. Professor, Dept. of Agronomy, Kansas State University, Manhattan, KS

HONOR AND AWARDS

- 2022 Outstanding Editor, Crop Journal
- 2019 Elected Fellow, American Association for the Advancement of Science
- USDA Exceeding Awards (2003-2020)
- Outstanding Papers on Plant Genetic Resources in 2015 and 2017 from Crop Science Society of American.
- 2013 Elected Fellow, Crop Science Society of America
- 2012 ASA Tengtou Agricultural Science Award, American Society of Agronomy
- 2011 'USDA Secretary's Honor Award (team member).
- 2010 Elected Fellow, American Society of Agronomy
- 2006 National Friendship Award by Chinese Government
- 2004 Provincial Friendship Award by Jiangsu Province, China.
- Member, Gamma Sigma Delta, Honor Society of Agriculture

MEMBERSHIPS AND OTHER SERVICES

- Associate editors for PeerJ, PlosOne, Front in Plant Sci, JIA, and the Crop J.
- Membership: Sigma Xi, American Phytopathology Society, Crop Science Society of American, Agronomy Society of American, Who is Who in America, American Association for the Advancement of Science

MAJOR ACDEMIC ACHIEVMENTS

- Published more than 290 peer-reviewed articles
- Cloned Fhb1 for wheat FHB resistance and TaPHS1 for wheat preharvest sprouting, and contributed to cloning of Fhb7 and Rht8 in wheat and 5 genes in sorghum and Medicago
- Transferred *Fhb1*, a major FHB resistance gene, into 18 US winter wheat backgrounds
- Co-released more than 50 hard winter wheat varieties and registered 5 germplasm lines

CURRENT RESEARCH

- Develop and deploy high-throughput DNA markers for marker-assisted breeding to facilitate the early release of superior hard winter wheat germplasm and cultivars
- Identify novel wheat genes/QTLs for biotic and abiotic stress resistance and superior yield traits and develop DNA markers for these traits to be used in breeding
- Fine map and clone the important wheat genes for yield, and disease and insect resistance
- Develop improved germplasm lines with resistance to multiple disease and abiotic stresses
- Develop novel genomic tools for high-throughput genotyping and gene editing

PUBLICATIONS

1. H Chen, Z Su, B Tian, Y Liu, Y Pang, V Kavetskyi, HN. Trick and G Bai. (2022) Development and optimization of a *Barley stripe mosaic virus* (BSMV)-mediated gene editing system to improve Fusarium head blight (FHB) resistance in wheat. Plant Biotech J DOI: 10.1111/pbi.13819
2. H Li, F Zhang, J Zhao, G Bai, P St. Amand, · A Bernardo, Z Ni, Q Sun, Z Su. (2022) Identification of a novel major QTL from Chinese wheat cultivar Ji5265 for Fusarium head blight resistance in greenhouse. Theor Appl Genet. https://doi.org/10.1007/s00122-022-04080-5
3. X Xu, D Mornhinweg, A Bernardo, G Li, R Bian, BJ Steffenson, G Bai. (2022) Characterization of Rsg2. a3: A new greenbug resistance allele at the Rsg2 locus from wild barley (*Hordeum vulgare* ssp. spontaneum). The Crop J, https://doi.org/10.1016/j.cj.2022.01.010
4. KW Jordan, PJ Bradbury, ZR Miller, M Nyine, F He, M Fraser, J Anderson, E Mason, A Katz, S Pearce, AH Carter, S Prather, M Pumphrey, J Chen, J Cook, S Liu, JC Rudd, Z Wang, C Chu, AMH Ibrahim, J Turkus, E Olson, R Nagarajan, B Carver, L Yan, E Taagen, M Sorrells, B Ward, J Ren, A Akhunova, G Bai, R Bowden, J Fiedler, J Faris, J Dubcovsky, M Guttieri, G Brown-Guedira, E Buckler, J-L Jannink, E Akhunov. (2021) Development of the Wheat Practical Haplotype Graph database as a resource for genotyping data storage and genotype imputation. G3 12 (2), jkab390 https://doi.org/10.1093/g3journal/jkab390
5. L Chai, M Xin, C Dong, Z Chen, H Zhai, J Zhuang, X Cheng, N Wang, J Geng, X Wang, R Bian, Y Yao, W Guo, Z Hu, H Peng, G Bai, Q Sun, Z Su, J Liu, Z Ni. (2022) A natural variation in Ribonuclease H-like gene underlies Rht8 to confer" Green Revolution" trait in wheat. Mol Plant 15, 377–380
6. X Li, T Guo, G Bai, Z Zhang, D See, J Marshall, KA Garland-Campbell (2022) Genetics-inspired data-driven approaches explain and predict crop performance fluctuations attributed to changing climatic conditions Mol Plant. 15, 203–206
7. H Chen, Z Su, B Tian, Y Liu, Y Pang, V Kavetskyi, HN Trick, G Bai. (2022) Development and optimization of a Barley stripe mosaic virus (BSMV)-mediated gene editing system to improve Fusarium head blight (FHB) resistance in wheat. bioRxiv doi: https://doi.org/10.1101/2022.02.25.481987
8. G Zhang, TJ Martin, AK Fritz, Y Li, BW Seabourn, RY Chen, G Bai, Robert L Bowden, Ming-Shun Chen, Jessica Rupp, Yue Jin, Xianming Chen, Jim Kolmer, David S Marshall. (2022) Registration of 'KS Hamilton'hard red winter wheat J Plant Reg. https://doi.org/10.1002/plr2.20190
9. Y Liu, H Chen, C Li, L Zhang, M Shao, Y Pang, X Xu, G Bai. (2021) Development of diagnostic markers for a wheat leaf rust resistance gene Lr42 using RNA-sequencing. The Crop Journal 9 (6), 1357-1366
10. RA. Sperotto, FK. Ricachenevsky, ER. Waters , G Bai and M Arasimowicz-Jelonek. (2021). Identification and characterization of contrasting genotypes/cultivars to discover novel players in crop responses to abiotic/biotic stresses. Front. Plant Sci. doi: 10.3389/fpls.2021.784874
11. W Wang, B Tian, Q Pan, Y Chen, F He, G Bai, A Akhunova, HN Trick, and E. Akhunov. (2021) Expanding the range of editable targets in the wheat genome using the variants of the Cas12a and Cas9 nucleases. Plant Biotechnol J. 19(12): 2428–2441.
12. L Zhang, Y Xu, M Chen, Z Su, Y Liu, Y Xu, G La, G Bai (2021) Identification of a major QTL for Hessian fly resistance in wheat cultivar Chokwang. Crop J. https://doi.org/10.1016/j.cj.2021.08.004
13. Y Xu, G La, N Fatima, Z Liu, L Zhang, L Zhao, M Chen, G Bai (2021) Precise mapping of QTL for Hessian fly resistance in the hard winter wheat cultivar Overland. Theor Appl Genet. 134 (12), 3951-3962

14. P Zhang, M Tilley, G Bai, S Harmer, S Duke, B W. Seabourn, G Zhang (2021) Effect of wheat quality traits and glutenin composition on tortilla quality from the USDA Southern Regional Performance Nursery. Cereal Chem. https://doi.org/10.1002/cche.10475
15. Y Pang, Y Wu, C Liu, W Li, PS Amand, A Bernardo, D Wang, L Dong, X Yuan, H Zhang, M Zhao, Li Li, L Wang, F He, Y Liang, Q Yan, Y Lu, Y Su, Hongming Jiang, Jiajie Wu, A Li, L Kong, G Bai, S Liu. (2021) High-resolution genome-wide association study and genomic prediction for disease resistance and cold tolerance in wheat. Theor Appl Genet, 1-17. https://doi.org/10.1007/s00122-021-03863-6
16. H S Gill, J Halder, J Zhang, N K Brar, C Hall, T S Rai, A Bernardo, P St. Amand, G Bai, E Olson, S Ali, B Turnipseed, S K Sehgal (2021) Multi-trait multi-environment models increase the prediction accuracy of agronomic traits in advanced breeding lines of winter wheat. Front. Plant Sci. 12:709545. https://doi.org/10.3389/fpls.2021.709545
17. U Hanif, H Alipour, A Gul, J Li, R Darvishzadeh, R Amir, F Munir, M K Ilyas, A Ghafoor, SU Siddiqui, P St. Amand, A Bernado, G Bai, K Sonder, A Rasheed, Z He, H Li (2021) Characterization of the genetic basis of local adaptation of wheat landraces from Iran and Pakistan using genome-wide association study. Plant Genome. https://doi.org/10.1002/tpg2.20096
18. X Xu, D Mornhinweg, A Bernardo, G Li, R Bian, BJ Steffenson, G Bai (2021) Characterization of RsgWBDC053: A New Greenbug Resistance Gene From Wild Barley (*Hordeum Vulgare ssp. Spontane*um) Crop Sci. https://doi.org/10.21203/rs.3.rs-496936/v1
19. Y Liu, H Chen, C Li, L Zhang, M Shao, Y Pang, X Xu, G Bai (2021)Development of diagnostic markers for a wheat leaf rust resistance gene Lr42 using RNA-sequencing Crop J doi.org/10.1016/j.cj.2021.02.012
20. K Jordan, P Bradbury, ZR Miller, M Nyine, F He, M Fraser, J Anderson, E Mason, A Katz, S Pearce, AH Carter, S Prather, M Pumphrey, J Chen, J Cook, S Liu, J Rudd, Z Wang, Cn Chu, AMH Ibrahim, J Turkus, E Olson, R Nagarajan, B Carver, L Yan, E Taagen, ME Sorrells, B Ward, J Ren, A Akhunova, G Bai, R Bowden, J Fiedler, J Faris, J Dubcovsky, M Guttieri, G Brown-Guedira, ES Buckler, J-L Jannink, E Akhunov. (2021) Development of the Wheat Practical Haplotype Graph Database as a Resource for Genotyping Data Storage and Genotype Imputation. BioRxiv 2021
21. Zhang G, TJ. Martin, AK. Fritz, RL. Bowden, Y Li, G Bai, M-S Chen, Y Jin, X Chen, JA. Kolmer, BW. Seabourn, RY. Chen, DS. Marshall. (2021) Registration of 'KS Silverado' hard white winter wheat. J. Plant Regist. 15:147– 153. https://doi.org/10.1002/plr2.20106
22. DA. Marburger, A de O Silva, RM. Hunger, JT. Edwards, L Van der Laan, AM. Blakey, C-C. Kan, K.A. Garland-Campbell, RL. Bowden, L Yan, M Tilley, M-S Chen, YR Chen, G Bai, Y Jin, JA. Kolmer, BW. Seabourn, G Davila-El Rassi Patricia Rayas-Duarte, RM. Kerr, BF. Carver. (2021). 'Gallagher' and 'Iba' hard red winter wheat: Half-sibs inseparable by yield gain, separable by producer preference. J. Plant Regist. 15:177–195. https://doi.org/10.1002/plr2.20116
23. Liu S., Wang, D.F., Lin M, Sehgal S.K., Dong L., Wu Y., Bai G. (2020) Artificial selection in breeding extensively enriched a functional allelic variation in *TaPHS1* for pre-harvest sprouting resistance in wheat. Theor Appl Genet. 134:339-350 https://doi.org/10.1007/s00122-020-03700-2
24. Zhang G, TJ. Martin, AK. Fritz, Y Li, G Bai, RL. Bowden, M-S Chen, Y Jin, X Chen, JA. Kolmer, BW. Seabourn, RY. Chen, and DS. Marshall. (2020) Registration of 'KS Dallas' hard red winter wheat. J. Plant Reg. https://doi.org/10.1002/plr2.20108
25. Zhang G, TJ. Martin, AK. Fritz, Y Li, G Bai, RL. Bowden, M-S Chen, Y Jin, X Chen, James A. Kolmer, BW. Seabourn, RY. Chen, and DS. Marshall. (2020) Registration of 'KS Western Star' hard red winter wheat https://doi.org/10.1002/plr2.20104

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35. Liu G., Liu X., Xu Y., Bernardo A., Chen M., Li Y., Niu F., Zhao, L. Bai G. (2020) Reassigning Hessian fly resistance genes H7 and H8 to chromosomes 6A and 2B of the wheat cultivar 'Seneca' using genotyping-by-sequencing. Crop Sci. 60:1488–1498

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37. Liu S., Bai G., Lin M., Luo M., Zhang D., Jin F., Tian B., Trick H.N., Yan L. 2020. Identification of candidate chromosome region of Sbwm1 for Soil-borne wheat mosaic virus resistance in wheat. Sci. Rep. 10: 8119. https://doi.org/10.1038/s41598-020-64993-3

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