

# Stanford

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## Bo Zhou

Instructor, Psychiatry and Behavioral Sciences

### Bio

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#### ACADEMIC APPOINTMENTS

- Instructor, Psychiatry and Behavioral Sciences
- Member, Maternal & Child Health Research Institute (MCHRI)

#### HONORS AND AWARDS

- K01 Mentored Scientist Career Development Award, National Institute of Health (2022)
- Stanford MCHRI Instructor K Support Award, Stanford MCHRI (2022)
- School of Medicine Dean's Postdoctoral Fellowship (awarded, but declined offer), Stanford University (2016)
- Stanford Graduate Fellowship, Stanford University (2010)
- Penn Genomics Institute Undergraduate Research Fellowship, University of Pennsylvania (2007)
- Penn Stem Cell Institute Undergraduate Research Fellowship (awarded, but declined offer), University of Pennsylvania (2007)

### Publications

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#### PUBLICATIONS

- **Resolving the 22q11.2 deletion using CTLR-Seq reveals chromosomal rearrangement mechanisms and individual variance in breakpoints.** *Proceedings of the National Academy of Sciences of the United States of America*  
Zhou, B., Purmann, C., Guo, H., Shin, G., Huang, Y., Pattni, R., Meng, Q., Greer, S. U., Roychowdhury, T., Wood, R. N., Ho, M., Dohna, H. Z., Abyzov, et al  
2024; 121 (31): e2322834121
- **Mapping recurrent mosaic copy number variation in human neurons** *NATURE COMMUNICATIONS*  
Sun, C., Kathuria, K., Emery, S. B., Kim, B., Burbulis, I. E., Shin, J., Weinberger, D. R., Moran, J. V., Kidd, J. M., Mills, R. E., McConnell, M. J., Gleeson, J. G., Breuss, et al  
2024; 15 (1): 4220
- **Automatic detection of complex structural variation in human genomes across populations and in brains of individuals with psychiatric disorders** *Cell*  
Zhou, B., Arthur, J. G., Guo, H., et al  
2024; in press
- **Genomic data resources of the Brain Somatic Mosaicism Network for neuropsychiatric diseases.** *Scientific data*  
Garrison, M. A., Jang, Y., Bae, T., Cherskov, A., Emery, S. B., Fasching, L., Jones, A., Moldovan, J. B., Molitor, C., Pochareddy, S., Peters, M. A., Shin, J. H., Wang, et al  
2023; 10 (1): 813
- **Pan-conserved segment tags identify ultra-conserved sequences across assemblies in the human pangenome.** *Cell reports methods*  
Lee, H., Greer, S. U., Pavlichin, D. S., Zhou, B., Urban, A. E., Weissman, T., Ji, H. P.  
2023; 3 (8): 100543
- **Analysis of somatic mutations in 131 human brains reveals aging-associated hypermutability.** *Science (New York, N.Y.)*  
Bae, T., Fasching, L., Wang, Y., Shin, J. H., Suvakov, M., Jang, Y., Norton, S., Dias, C., Mariani, J., Jourdon, A., Wu, F., Panda, A., Pattni, et al  
2022; 377 (6605): 511-517

- **Somatic mosaicism reveals clonal distributions of neocortical development** *NATURE*  
Breuss, M. W., Yang, X., Schlachetzki, J. M., Antaki, D., Lana, A. J., Xu, X., Chung, C., Chai, G., Stanley, V., Song, Q., Newmeyer, T. F., An Nguyen, O'Brien, S., et al  
2022; 604 (7907): 689+
- **Comprehensive identification of somatic nucleotide variants in human brain tissue.** *Genome biology*  
Wang, Y., Bae, T., Thorpe, J., Sherman, M. A., Jones, A. G., Cho, S., Daily, K., Dou, Y., Ganz, J., Galor, A., Lobon, I., Pattni, R., Rosenbluh, et al  
2021; 22 (1): 92
- **Machine learning reveals bilateral distribution of somatic L1 insertions in human neurons and glia.** *Nature neuroscience*  
Zhu, X. n., Zhou, B. n., Pattni, R. n., Gleason, K. n., Tan, C. n., Kalinowski, A. n., Sloan, S. n., Fiston-Lavier, A. S., Mariani, J. n., Petrov, D. n., Barres, B. A., Duncan, L. n., Abyzov, et al  
2021
- **Complex mosaic structural variations in human fetal brains.** *Genome research*  
Sekar, S. n., Tomasini, L. n., Proukakis, C. n., Bae, T. n., Manlove, L. n., Jang, Y. n., Scuderi, S. n., Zhou, B. n., Kalyva, M. n., Amiri, A. n., Mariani, J. n., Sedlazeck, F. n., Urban, et al  
2020
- **Haplotype-resolved and integrated genome analysis of the cancer cell line HepG2** *NUCLEIC ACIDS RESEARCH*  
Zhou, B., Ho, S. S., Greer, S. U., Spies, N., Bell, J. M., Zhang, X., Zhu, X., Arthur, J. G., Byeon, S., Pattni, R., Saha, I., Huang, Y., Song, et al  
2019; 47 (8): 3846–61
- **Allele-specific binding of RNA-binding proteins reveals functional genetic variants in the RNA.** *Nature communications*  
Yang, E., Bahn, J. H., Hsiao, E. Y., Tan, B. X., Sun, Y., Fu, T., Zhou, B., Van Nostrand, E. L., Pratt, G. A., Freese, P., Wei, X., Quinones-Valdez, G., Urban, et al  
2019; 10 (1): 1338
- **Comprehensive, integrated, and phased whole-genome analysis of the primary ENCODE cell line K562** *GENOME RESEARCH*  
Zhou, B., Ho, S. S., Greer, S. U., Zhu, X., Bell, J. M., Arthur, J. G., Spies, N., Zhang, X., Byeon, S., Pattni, R., Ben-Efraim, N., Haney, M. S., Haraksingh, et al  
2019; 29 (3): 472–84
- **Extensive and deep sequencing of the Venter/HuRef genome for developing and benchmarking genome analysis tools.** *Scientific data*  
Zhou, B., Arthur, J. G., Ho, S. S., Pattni, R., Huang, Y., Wong, W. H., Urban, A. E.  
2018; 5: 180261
- **Whole-genome sequencing analysis of CNV using low-coverage and paired-end strategies is efficient and outperforms array-based CNV analysis** *JOURNAL OF MEDICAL GENETICS*  
Zhou, B., Ho, S. S., Zhang, X., Pattni, R., Haraksingh, R. R., Urban, A. E.  
2018; 55 (11): 735-743
- **1q21.1 microduplication: large verbal-nonverbal performance discrepancy and ddPCR assays of HYDIN/HYDIN2 copy number** *NPJ GENOMIC MEDICINE*  
Xavier, J., Zhou, B., Bilan, F., Zhang, X., Gilbert-Dussardier, B., Viaux-Savelon, S., Pattni, R., Ho, S. S., Cohen, D., Levinson, D. F., Urbana, A. E., Laurent-Levinson, C.  
2018; 3: 24
- **Different mutational rates and mechanisms in human cells at pregastrulation and neurogenesis** *SCIENCE*  
Bae, T., Tomasini, L., Mariani, J., Zhou, B., Roychowdhury, T., Franjic, D., Pletikos, M., Pattni, R., Chen, B., Venturini, E., Riley-Gillis, B., Sestan, N., Urban, et al  
2018; 359 (6375): 550+
- **Detection and Quantification of Mosaic Genomic DNA Variation in Primary Somatic Tissues Using ddPCR: Analysis of Mosaic Transposable-Element Insertions, Copy-Number Variants, and Single-Nucleotide Variants.** *Methods in molecular biology (Clifton, N.J.)*  
Zhou, B. n., Haney, M. S., Zhu, X. n., Pattni, R. n., Abyzov, A. n., Urban, A. E.  
2018; 1768: 173–90
- **Intersection of diverse neuronal genomes and neuropsychiatric disease: The Brain Somatic Mosaicism Network** *SCIENCE*  
McConnell, M. J., Moran, J. V., Abyzov, A., Akbarian, S., Bae, T., Cortes-Ciriano, I., Erwin, J. A., Fasching, L., Flasch, D. A., Freed, D., Ganz, J., Jaffe, A. E., Kwan, et al  
2017; 356 (6336): 395-?

- **One thousand somatic SNVs per skin fibroblast cell set baseline of mosaic mutational load with patterns that suggest proliferative origin.** *Genome research*  
Abyzov, A., Tomasini, L., Zhou, B., Vasmatzis, N., Coppola, G., Amenduni, M., Pattni, R., Wilson, M., Gerstein, M., Weissman, S., Urban, A. E., Vaccarino, F. M.  
2017
- **The global regulatory architecture of transcription during the *Caulobacter* cell cycle.** *PLoS genetics*  
Zhou, B., Schrader, J. M., Kalogeraki, V. S., Abeliuk, E., Dinh, C. B., Pham, J. Q., Cui, Z. Z., Dill, D. L., McAdams, H. H., Shapiro, L.  
2015; 11 (1)
- **The coding and noncoding architecture of the *Caulobacter crescentus* genome.** *PLoS genetics*  
Schrader, J. M., Zhou, B., Li, G., Lasker, K., Childers, W. S., Williams, B., Long, T., Crosson, S., McAdams, H. H., Weissman, J. S., Shapiro, L.  
2014; 10 (7)
- **Global methylation state at base-pair resolution of the *Caulobacter* genome throughout the cell cycle.** *Proceedings of the National Academy of Sciences of the United States of America*  
Kozdon, J. B., Melfi, M. D., Luong, K., Clark, T. A., Boitano, M., Wang, S., Zhou, B., Gonzalez, D., Collier, J., Turner, S. W., Korlach, J., Shapiro, L., McAdams, et al  
2013; 110 (48): E4658-67
- **The risk of adolescent suicide across patterns of drug use: a nationally representative study of high school students in the United States from 1999 to 2009.** *Social psychiatry and psychiatric epidemiology*  
Wong, S. S., Zhou, B., Goebert, D., Hishinuma, E. S.  
2013; 48 (10): 1611-1620
- **Molecular mechanism underlying the regulatory specificity of a *Drosophila* homeodomain protein that specifies myoblast identity** *DEVELOPMENT*  
Busser, B. W., Shokri, L., Jaeger, S. A., Gisselbrecht, S. S., Singhanian, A., Berger, M. F., Zhou, B., Bulyk, M. L., Michelson, A. M.  
2012; 139 (6): 1164-1174
- **Persistent expression of Pax3 in the neural crest causes cleft palate and defective osteogenesis in mice** *JOURNAL OF CLINICAL INVESTIGATION*  
Wu, M., Li, J., Engleka, K. A., Zhou, B., Lu, M. M., Plotkin, J. B., Epstein, J. A.  
2008; 118 (6): 2076-2087
- **A molecular approach to species identification of *Chenopodiaceae* pollen grains in surface soil** *AMERICAN JOURNAL OF BOTANY*  
Zhou, L., Pei, K., Zhou, B., Ma, K.  
2007; 94 (3): 477-481
- **Seasonal variation in soil nitrogen availability under Mongolian pine plantations at the Keerqin Sand Lands, China** *JOURNAL OF ARID ENVIRONMENTS*  
Chen, F. S., Zeng, D. H., Zhou, B., Singh, A. N., Fan, Z. P.  
2006; 67 (2): 226-239