

Travis Mize

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CURRENT POSITION

University of Colorado Boulder

Boulder, Colorado

Graduate Assistant, Department of Ecology and Evolutionary Biology

August 2019 - Present

EDUCATION

M.A. Psychology July 2019
University of Nevada Las Vegas, Las Vegas, Nevada

B.S. Psychology December 2014
Idaho State University, Pocatello, Idaho

HONORS AND AWARDS

Idaho Promise Scholarship Fall 2013 – Spring 2014
Idaho Promise Scholarship Fall 2012 – Spring 2013
Idaho Promise Scholarship Fall 2011 – Spring 2012
Dean's List (Idaho State University) Spring 2012, Fall 2013,
Spring 2014, Fall 2014
T32 IBG Training Grant Appointee 06/01/2020 – 05/31/2023

PEER-REVIEWED PUBLICATIONS

Banerjee, A., Lu, Y., Do, K., **Mize, T.**, Wu, X., Chen, X., Chen, J. (2020). Validation of Induced Microglia-Like Cells (iMG Cells) for Future Studies of Brain Diseases. *Frontiers in Cellular Neuroscience*, 15, 85. <https://doi.org/10.3389/fncel.2021.629279>

Chen, J., **Mize, T.**, Wu, J., Hong, E., Nimgaonkar, V., Kendler, K., Allen, D., Oh, E., Netski, A., & Chen, X. (2020). Polygenic Risk Scores for Subtyping of Schizophrenia. *Schizophrenia Research and Treatment*, 2020. <https://doi.org/10.1155/2020/1638403>

Jiang, S., Zhou, D., Wang, Y., Jia, P., Wan, C., Li, X., He, G., Cao, D., Jiang, X., Kendler, K., Tsuang, M., **Mize, T.**, Wu, J., Lu, Y., He, L., Chen, J., Zhao, Z., & Chen, X. (2020). Identification of de novo mutations in prenatal neurodevelopment-associated genes in schizophrenia in two Han Chinese patient-sibling family-based cohorts. *Translational psychiatry*, 10. <https://doi.org/10.1038/s41398-020-00987-z>

Chen, J., Wu, J., **Mize, T.**, Moreno, M., Hamid, M., Servin, F., Bashy, B., Zhao, Z., Jia, P., Tsuang, M., Kendler, K., Xiong, M., & Chen, X. (2019). A Frameshift Variant in the CHST9

Gene Identified by Family-Based Whole Genome Sequencing Is Associated with Schizophrenia in Chinese Population. *Scientific reports*, 9(1), 1-9. <https://doi.org/10.1038/s41598-019-49052-w>

Chen, J., Wu, J., **Mize, T.**, Shui, D., & Chen, X. (2018). Prediction of Schizophrenia Diagnosis by Integration of Genetically Correlated Conditions and Traits. *Journal of Neuroimmune Pharmacology*, 13(4), 532-540. <https://doi.org/10.1007/s11481-018-9811-8>

RESEARCH EXPERIENCE

Heritability and Genetic Architecture

Graduate Research Assistant, University of Colorado Boulder

August 2019 - Current

- Supervisor: Luke Evans, Ph.D.
- *Responsibilities*: Create reproducible automated pipelines via Bash, Python, and R for various projects examining the complex genetic architecture of polygenic traits.
- **Nicotine Dependence Transcriptome Wide Association Study**: Generation of expression weights using a wide range of publicly available genotype and tissue-specific expression data, followed by TWAS, linkage analysis, fine-mapping, and gene set association tests for nicotine dependence traits.
- **Examination of a Novel Expression-Based Gene-SNP Annotation Strategy**: I examined whether incorporating SNPs with effects on tissue-specific *cis*-expression would improve our ability to detect trait-relevant tissues across complex traits using S-LDSC, rather than simply annotating SNPs to genes based on their physical proximity.
- **Translational Study of Previously Identified Nicotine-Use Mouse Genes**: I assessed whether human orthologs of mouse-identified genes, either individually or as a set, were genetically associated with five human smoking traits using MAGMA and S-LDSC.

Bioinformatics and Computational Biology

Graduate Research Assistant, University of Nevada Las Vegas

August 2018 – July 2019

- Supervisor: Mira Han, Ph.D.
- *Responsibilities*: Download/management of Genomic Data Commons open source cancer data, reformatting/combining datasets with Python programming, dimension-reduction, batch effect correction, and classification employing various machine learning algorithms.
- **Classification of Unknown Primary Cancer**: DNA methylation and RNA-seq data for various tissue types are being used in the classification of cancers of unknown primary.

Human Genetics and Big Data Analyses

Graduate Research Assistant, University of Nevada Las Vegas

August 2016 – July 2019

- Supervisors: Xiangning “Sam” Chen, Ph.D. and Jingchun Chen, Ph.D.
- *Responsibilities:* DNA/RNA sequence analyses utilizing the GATK workflow, differential gene expression analyses, Linux server administration, statistical analyses in R, and data parsing with Python programming.
- **Whole-Genome Sequence Data Analysis:** Processing and analyzing whole-genome sequencing data for 187 individuals to discover genetic variants involved in the development of schizophrenia.
- **Polygenic Risk Score Prediction Model of Mental Health Disorders:** Open source genetic data was used to create a statistical model that will allow us to accurately predict the diagnoses of mental health disorders in individuals.

Genetics of Major Depressive Disorder

Undergraduate Research Assistant, Idaho State University

May 2014 – Dec. 2014

- Supervisors: Mark Austin, Ph.D. and Prabha Awale, Ph.D.
- *Responsibilities:* Genotyping, western blotting, and BCA protein assay.
- **Depression Development in SIRT6 Gene-Knockout Mice:** We assessed the development of depression in mice with a knockout of the SIRT6 gene.

Social, Health, and Neuroscience

Undergraduate Research Assistant, Idaho State University

Jan. 2014 – Dec. 2014

- Supervisor: Xiaomeng “Mona” Xu, Ph.D.
- *Responsibilities:* Literature review, manuscript preparation, data entry, and data collection.
- **Self-Expansion in Art and Music Majors:** The role of self-expansion and its importance in Art and Music student’s success in their field of study was scrutinized by examining self-report measures.

TEACHING EXPERIENCE

University of Colorado Boulder

Boulder, Colorado

Teaching Assistant, General Biology

August 2019 - Present

- Prepare lectures on basic biological principles.
- Supervise experiments and exercises designed to teach students basic biological concepts and applications.

University of Nevada Las Vegas

Las Vegas, Nevada

Instructor of Record, General Psychology

August 2018 – May 2019

- Prepare lectures and classroom activities on a wide range of topics within psychology.
- Construct course material and assess student progress to increase likelihood of success.

CONFERENCE PRESENTATIONS

Mize, T., & Evans, L. (2021, June). *Examination of a Novel Expression-Based Gene-SNP Annotation Strategy to Identify Tissue-Specific Contributions to Heritability in Multiple Traits*. Poster presentation at the 2022 Institute of Behavioral Genetics Mini-Conference.

Mize, T., Funkhouser, S., Buck, J., Stitzel, J., Ehringer, M., & Evans, L. (2021, June). *Testing Association of Previously Implicated Gene-Sets and Gene-Networks in Nicotine Exposed Mouse Models with Human Smoking Phenotypes*. Poster presentation at the 2021 Behavior Genetic Association Annual meeting, Online.

Mize, T., Funkhouser, S., Buck, J., Stitzel, J., Ehringer, M., & Evans, L. (2021, June). *Testing Association of Previously Implicated Gene-Sets and Gene-Networks in Nicotine Exposed Mouse Models with Human Smoking Phenotypes*. Poster presentation at the 2021 Institute of Behavioral Genetics Mini-Conference.

Mize, T. & Evans, L. (2020, August). *Transcriptome-Wide Association Study of Smoking Behaviors*. Poster presentation at the 2020 Institute of Behavioral Genetics Virtual Poster Day.

Mize, T. & Chen, X. (2018, May). *Multi-Polygenic Risk Score Prediction Model for Bipolar Disorder*. Oral presentation at the 2018 Nevada Institute of Personalized Medicine Symposium, Las Vegas, NV.

Mize, T., Thigpen, A., Moreno, M., Hamid, M., Bashy, B., Servin, F., Chen, J., & Chen, X. (2018, May). *Whole-Genome Sequencing of Schizophrenia Families with Multiple Affected Individuals*. Poster presentation at the 2018 Nevada Institute of Personalized Medicine Symposium, Las Vegas, NV.

Moreno, M., Hamid, M., Servin, F., Bashy, B., **Mize, T.**, Thigpen, A., Chen, X., & Chen, J. (2018, May). *Identification of CHST9 as a Candidate Gene for Schizophrenia from Whole-Genome Sequencing*. Poster presentation at the 2018 Nevada Institute of Personalized Medicine Symposium, Las Vegas, NV.

Chen, X., Wu, J., **Mize, T.**, & Chen, J. (2017, October). *Whole Genome Sequencing of Schizophrenia Families with Multiple Affected Individuals*. Poster presentation at the 25th World Congress of Psychiatric Genetics, Orlando, FL.

Chen, X., Wu, J., **Mize, T.**, & Chen, J. (2017, October). *Genetically Informed Subtyping of Schizophrenia*. Poster presentation at the 25th World Congress of Psychiatric Genetics, Orlando, FL.

Mize, T., Wu, J., Ingle, A., Chen, J., & Chen, X. (2017, May). *Polygenic Risk Score Prediction Model for Schizophrenia*. Poster presentation at the 26th Annual Nevada Psychological Association Conference, Las Vegas, NV.

Mize, T., Wu, J., Ingle, A., Chen, J., & Chen, X. (2017, February). *Polygenic Risk Score Prediction Model for Schizophrenia*. Poster presentation at the 2017 Nevada Institute of Personalized Medicine Symposium, Las Vegas, NV.

Mize, T., Tart-Zelvin, A., & Xu, X. (2014, April). *A Neuroimaging Approach to Working Memory Performance*. Oral presentation at the 3rd Annual Southeastern Idaho Psi Chi Psychology Conference, Pocatello, ID.

Savary, T. A., **Mize, T.**, Colman, D. E., & Letzring, T. D. (2014, April). *Correlates of the Satisfaction with Life Scale: A look at age, gender, ethnicity, religion, and social support*. Poster presentation at the 3rd Annual Southeastern Idaho Psi Chi Psychology Conference, Pocatello, ID.

MANUSCRIPTS IN PREPARATION OR UNDER REVIEW

Mize, T. J., Funkhouser, S. A., Buck, J. M., Stitzel, J. A., Ehringer, M. A., & Evans, L. M. (under review by *Nicotine & Tobacco Research*). Testing Association of Previously Implicated Gene-Sets and Gene-Networks in Nicotine Exposed Mouse Models with Human Smoking Phenotypes.

Mize, T. J. & Evans, L. M. (under review by *European Journal of Human Genetics*). Examination of Novel Expression-Based Gene-SNP Annotation Strategy to Identify Tissue-Specific Contributions to Heritability in Multiple Traits.

Maizy, B., **Mize, T. J.**, Thomas, A., Hoeffler, C., Ehringer, M., & Evans, L. M. (under review by *Genes, Brain, and Behavior*) Testing Associations Between Human Anxiety and Genes Previously Implicated by Mouse Anxiety Models.

PROFESSIONAL MEMBERSHIPS

Phi Kappa Phi Student Member
2018 – present

Psi Chi Student Member
2012 – present

REFERENCES

Luke Evans, Ph.D.

Assistant Professor
Department of Ecology and Evolutionary Biology, Institute of Behavioral Genetics
University of Colorado Boulder, Boulder, CO 80303
luke.m.evans@colorado.edu

Mira Han, Ph.D.

Assistant Professor
Department of Life Sciences, Nevada Institute of Personalized Medicine
University of Nevada Las Vegas, Las Vegas, NV 89118
(702) 774-1503

Rochelle Hines, Ph.D.

Assistant Professor
Department of Psychology
University of Nevada Las Vegas, Las Vegas, NV 89118
(702) 895-0187

Xiaomeng “Mona” Xu, Ph.D.

Associate Professor
Department of Psychology
Idaho State University, Pocatello, ID 83209
(208) 282-3541, xuxiao@isu.edu