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Professor

University of Notre Dame

January 2025

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Education

2008	Ph.D. of Quantitative Psychology	University of Virginia
2005	Master of Quantitative Psychology	University of Virginia
2003	Master of Statistics	Renmin University of China
2000	Bachelor of Statistics	Renmin University of China

Employment

2021–Current	Faculty Affiliate	Lucy Family Institute for Data & Society
2020–Current	Professor	University of Notre Dame
2016–Current	Fellow	Institute for Educational Initiatives
2015–2020	Associate Professor	University of Notre Dame
2010–2015	Assistant Professor	University of Notre Dame
2008–2010	Research Assistant Professor	University of Notre Dame

Honors and Awards

2024	Jacob Cohen Award for Distinguished Contributions to Teaching and Mentoring, Division 5, American Psychological Association
2023	Joyce Award for Excellence in Undergraduate Teaching, University of Notre Dame
2019	Tanaka Award for Best Article in Multivariate Behavioral Research
2019	Elected Fellow, Division 5, American Psychological Association
2018–Current	President, International Society for Data Science and Analytics
2018	SMEP Early Career Research Award, Society of Multivariate Experimental Psychology
2016	Elected member, Society of Multivariate Experimental Psychology
2007–2008	Dissertation Award, Society of Multivariate Experimental Psychology

2007–2008 Dissertation Year Presidential Fellowship, University of Virginia
 2007 Young Scientists Scholarship, Annual Meeting of the Psychometric Society
 2006, 2007 Travel Award, American Psychological Association
 2005, 2006, 2007 Robert J. Huskey Travel Award, University of Virginia
 2005, 2007 Travel Award, Society of Multivariate Experimental Psychology
 2003–2007 Presidential Fellowship, University of Virginia Graduate School

Editorial Service

2024–Current Editorial Board, Computation
 2021–Current Editor, Journal of Behavioral Data Science
 2020–Current Associate Editor (Editorial Board), Neurocomputing
 2016–Current Associate Editor, Multivariate Behavioral Research
 2014–Current Consulting Editor (Editorial Board), Psychological Methods

Grants and Sponsored Programs

External Grants Proposal Submitted in 2022, 2023 and 2024

1. *Bayesian multilevel modeling for single case designs in handling categorical data, missing data, and nonnormal data.*
 Year: 2024
 Funding source: Institute of Education Sciences
 Role: Co-PI
2. *Bayesian Longitudinal Data Modeling in Education Sciences.*
 Year: 2024
 Funding source: Institute of Education Sciences
 Role: Co-PI
3. *A Comprehensive Toolkit for Effect Size Calculation with Confidence Intervals.*
 Year: 2024
 Funding source: Institute of Education Sciences
 Role: PI
4. *Bayesian multilevel modeling for single case designs in handling categorical data, missing data, and nonnormal data.*
 Year: 2023
 Funding source: Institute of Education Sciences
 Role: Co-PI
5. *Publication Bias and Missing Data in Bayesian Meta-Analysis: Methodological Extensions and Software.*
 Year: 2023
 Funding source: NSF
 Role: Co-PI
6. *Developing a Police Performance Assessment Scale to Curtail Police Misconduct through Psychometric Methods and Machine Learning.*
 Year: 2023
 Funding source: NSF
 Role: PI

7. *Publication Bias and Missing Data in Bayesian Meta-Analysis: Methodological Extensions and Software.*
 Year: 2023
 Funding source: NSF
 Role: Co-PI
8. *Applied Bayesian Data Science for Longitudinal Analysis in Education Research.*
 Year: 2022
 Funding source: IES
 Role: Co-PI
9. *Advancing the Methods of Path Analysis with Weighted Composites in Social and Behavioral Sciences.*
 Year: 2022
 Funding source: NSF
 Role: Co-PI

External (funded)

Ongoing

1. *Bayesian Longitudinal Data Modeling in Education Sciences.*
 Begin-End Dates: 2024–2027
 Funding source: Institute of Education Sciences
 Role: Co-PI (ND PI)
 PI: Cynthia Tong, University of Virginia
 Amount: \$792,636
2. *CAREER: Complex Causal Moderated Mediation Analysis in Multisite Randomized Trials: Uncovering the Black Box Underlying the Impact of Educational Interventions on Math Performance*
 Begin-End Dates: 2024–2029
 Funding source: National Science Foundation
 Role: Advisory Panel
 PI: Xu Qin, University of Pittsburgh
 Amount: \$842,512
3. *Methods and Software for Handling Network Data and Text Data in Structural Equation Modeling.*
 Begin-End Dates: 2021–2024
 Funding source: Institute of Education Sciences
 Role: PI
 Amount: \$861,354

Completed

4. *REU Site: Computational Social Science at the University of Notre Dame.*
 Begin-End Dates: 2019–2022
 Funding source: National Science Foundation
 Role: Senior Personnel.
 PI: Paul Brenner, University of Notre Dame
 Amount: \$120,069

5. *Exploring Adaptive Cognitive and Affective Learning Support for Next-generation STEM Learning Games.*
 Begin-End Dates: 2017–2021
 Funding source: Institute of Education Sciences
 Role: Statistical Consultant
 PI: Valerie Shute, Florida State University
 Amount: \$1,399,996

6. *REU Site: Computational Social Science at the University of Notre Dame.*
 Begin-End Dates: 2016–2019
 Funding source: National Science Foundation
 Role: Senior Personnel
 PI: Paul Brenner, University of Notre Dame
 Amount: \$374,685

7. *Structural Equation Modeling with Small N and Large p.*
 Begin-End Dates: 2015–2018
 Funding source: National Science Foundation
 Role: Co-PI
 PI: Ke-Hai Yuan, University of Notre Dame
 Amount: \$430,725

8. *A General Framework for Statistical Power Analysis with Non-normal and Missing Data through Monte Carlo Simulation.*
 Begin-End Dates: 2014–2018
 Funding source: Institute of Education Sciences
 Role: PI
 Amount: \$573,097

9. *Lymphatic Filariasis Transmission and Elimination Modelling Using a Bayesian Data-Model Assimilation Framework.*
 Begin-End Dates: 2014–2017
 Funding source: Gates Foundation
 Role: Co-PI
 PI: Edwin Michael, University of Notre Dame
 Amount: \$345,446

10. *MRI: Acquisition of Data Analytics Cluster for Computational Social Sciences.*
 Begin-End Dates: 2012–2015
 Funding source: National Science Foundation
 Role: Senior Personnel
 PI: Jarek Nabrzyski, University of Notre Dame
 Amount: \$451,839

Internal

1. *East Asia Research Collaboration Grant*
Begin-End Dates: 2024-2025
Funding source: Notre Dame Global
Role: PI
Amount: \$4,250
2. *ISLA International Travel Grant*
Begin-End Dates: 2024
Funding source: ISLA
Role: PI
Amount: \$1,000
3. *Small Henkels Grant for conference support*
Begin-End Dates: 2022
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$1,000
4. *Machine Learning Methods for Handling Nonlinear Relationships in Psychometric Models*
Begin-End Dates: 2022-2024
Funding source: Lucy Family Institute
Role: PI
Amount: \$66,000
5. *A Longitudinal Social Network Approach to Understanding the Relationship between Friendship and Alcohol Use among College Students*
Begin-End Dates: 2020-2024
Funding source: Asia Research Collaboration Grant
Role: PI
Amount: \$17,415
6. *Small Henkels Grant for conference support*
Begin-End Dates: 2021
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$1,000
7. *Small Henkels Grant for conference support (canceled because of Covid)*
Begin-End Dates: 2019
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$3,000

8. *Improving Teaching Evaluation using Text Mining.*
Begin-End Dates: 2019
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$2,000
9. *A Social Network Approach to Understanding the Relationship between Friendship and Alcohol Use among College Students.*
Begin-End Dates: 2018
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$2,239
10. *A Blessing or a Curse? An Overview of Non-normal Data and Missing Data.*
Begin-End Dates: 2018
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$2,068
11. *Testing a Latent Trait Model with Orthogonal and Unorthogonal Factor Structures.*
Begin-End Dates: 2017
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$2,500
12. *A Web Interface for Drawing Path Diagrams for Structural Equation Modeling.*
Begin-End Dates: 2012–2013
Funding source: Center for Creative Computing & Institute for Scholarship in the Liberal Arts
Role: PI
Amount: \$4,000 & \$2,500
Note: The project was jointly funded by CCC and ISLA that allowed us
13. *A General Bayesian Estimation Method for Structural Equation Modeling.*
Begin-End Dates: 2009–2010
Funding source: Faculty Research Grants
Role: PI
Amount: \$10,000
14. *Seed Grants for Cooperative Projects: Daily Religious Research.*
Begin-End Dates: 2009–2010
Funding source: Institute for Scholarship in the Liberal Arts
Role: PI

Work in Progress Books (*current or former graduate students; +current or former undergraduate students; ^post-doctoral researchers. At Notre Dame, papers with students are counted as first author papers.)

1. Zhang, Z., & *Liu, H. (under contract). *Applied network analysis for social and behavioral research using R: A structural equation modeling framework*. Springer Nature.
2. Zhang, Z. (in preparation). *Practical data processing for social and behavioral research using R*. The current version is retrievable from <https://books.psychstat.org/rdata/>.
3. Zhang, Z. (in preparation). *Text mining for social and behavioral research using R: A case study on teaching evaluation*. The current version is retrievable from <https://books.psychstat.org/textmining>.

Articles in Preparation

1. Jin, Z., Zhang, H., Zhao, Z., & Zhang, Z. (in preparation). Generating multivariate non-normal random numbers from generators with assigned copula.
2. Ming, S., Zhang, H., Zhang, Z., & Wang, L. (in preparation). bmemLavaan: An R Package for Estimating and Testing Mediation Effect in Mediation Models.
3. *Tong, L., & Zhang, Z. (in preparation). Incorporating Text as High Dimensional Data in Structural Equation Modeling
4. *Xu, Z., & Zhang, Z. (in preparation). Structural Equation Models with Social Networks
5. *Tong, L., & Zhang, Z. (in preparation). Structural Equation Models with Text Data
6. Zhang, L., Kanopka, K., Rahal, C., Ulitzsch, E., Zhang, Z., & Domingue, B. (2023, September 30). The InterModel Vigorish for Model Comparison in Confirmatory Factor Analysis with Binary Outcomes. <https://doi.org/10.31234/osf.io/tv9bd>
7. *Shao, S., Qu, W., Zhang, Z., & Liu, Q. (under preparation). ZIP vs. Hurdle: Tackling Zero Inflation in Ecological Momentary Assessment Research.
8. Qiu, M., Xu, Z., & Zhang, Z. (in preparation). Determining power and sample size for latent class mediation models.
9. Qiu, M., Zhang, Z., & Wang, C. (in preparation). Bayesian semiparametric longitudinal item response theory models.
10. Zhang, Z., & *Che, C. (under preparation). A Bayesian method for latent space models with factor structure.
11. *Liu, H., & Zhang, Z. (under preparation). The quadratic relationship between friendship network and personality.
12. Zhang, Z., & Yuan, K.-H. (in preparation). A fast and efficient algorithm for factor analysis with a huge number of indicators.
13. Zhang, Z., & Zhao, Z. (in preparation). Longitudinal social network clustering with mixed-effects link strength.
14. *Tong, X., & Zhang, Z. (to submit). Bayesian estimation of differential equation models with Gaussian processes.
15. Zhang, Z., & Grimm, K. J. (in preparation). Random coefficient latent difference score models.
16. Zhang, Z. (in preparation). Simulation based power analysis for longitudinal study with attrition.

Journal Articles Under Review

1. *Xu, Z., & Zhang, Z. (under review). Co-evolution of Friendship and Psychological States: A Dynamic Latent Space Model for Social Networks with Time-Varying Covariates
2. *Shao, S., *Xu, Z., Liu, Q., McClure, K., Jacobucci, R., Maxwell, S. E., Zhang, Z. (R&R). Zero inflation in intensive longitudinal data: why is it important and how should we deal with it? *Psychological Methods*.
3. Balkaya-Ince, M., Schnitker, S. A., Ratchford, J. L., Hardy, S. A., Zhang, Z. (under review). The Role of Personality Traits in the Dynamic Interplay of Daily Emotions. *Journal of Personality and Social Psychology*
4. *Zhang, L., Qu, W., & Zhang, Z. (R & R). Bayesian Growth Curve Modeling with Measurement Error in Time. *Multivariate Behavioral Research*.
5. *Wyman, A., & Zhang, Z. (R & R). Naturalistic Emotion Regulation Detection: A Framework for Extracting Features from Emotion Detection AI Data. *Current Psychology*
6. *Tong, L., & Zhang, Z. (R & R). Neural Network Analysis of Psychological Data: A Step-by-Step Guide. *Multivariate Behavioral Research*.
7. Parra, D., Zhang, Z., & Radvansky, G. A. (R&R). Should We All Just Take 10? A Meta-Analysis of Wakeful Rest. *Psychonomic Bulletin & Review*

Journal Articles (H-index: 34, i10index: 72, total citations: 5,725)

1. *Wyman, A., & Zhang, Z. (accepted). A Tutorial on the Use of Artificial Intelligence Tools for Facial Emotion Recognition in R. *Multivariate Behavioral Research*. [CiteScore: 6.0; Q1]
2. Yuan, K.-H., & Zhang, Z. (accepted). Parameterizing the LISREL Model as a Correlation Structure Model for More Efficient Parameter Estimates and More Powerful Statistical Tests. *Structural Equation Modeling: A Multidisciplinary Journal* [CiteScore: 8.7; Q1]
3. Yuan, K.-H., Ling, L., & Zhang, Z. (accepted). Scale-invariance, equivariance and dependency of structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*. <https://doi.org/10.1080/10705511.2024.2353168> [CiteScore: 8.7; Q1]
4. Liu, X., Zhang Z., & Wang, L. (accepted). Detecting mediation effects with the Bayes factor: Performance evaluation and tools for sample size determination. *Psychological Methods*. <https://doi.org/10.1037/met0000670> [CiteScore: 13.1; Q1]
5. *Tong, L., Qu, W., & Zhang, Z. (2024). Comparison of the K1 Rule, Parallel Analysis, and the Bass- Ackward Method on Identifying the Number of Factors in Factor Analysis. *Fudan Journal of the Humanities and Social Sciences*, 1-28. <https://doi.org/10.1007/s40647-024-00423-2> [CiteScore: 3.9; Q1]
6. Yuan, K.-H., Zhang Z., & Wang, L. (2024). Signal-to-Noise Ratio in Estimating and Testing the Mediation Effect: Structural Equation Modeling versus Path Analysis with Weighted Composites. *Psychometrika*, 89(3), 974-1006. <https://doi.org/10.1007/s11336-024-09975-4> [CiteScore: 4.4; Q1]

7. Yuan, K.-H., & Zhang, Z. (2024). Modeling Data with Measurement Errors but without Predefined Metrics: Fact versus Fallacy. *Journal of Behavioral Data Science*, 4(2), 1-28. <https://doi.org/10.35566/jbds/yuan> [Average citation per article 3.4]
8. *Xu, Z., *Gao, F., *Fa, A., Qu, W., & Zhang, Z. (2024). Statistical Power Analysis and Sample Size Planning for Moderated Mediation Models. *Behavior Research Methods*, 56, 6130–6149. <https://doi.org/10.3758/s13428-024-02342-2> [CiteScore: 11.2; Q1]
9. *Zhao, S., Zhang, Z., & Zhang, H. (2024). Bayesian Inference of Dynamic Mediation Models for Longitudinal Data. *Structural Equation Modeling: A Multidisciplinary Journal*, 31(1), 14-26. <https://doi.org/10.1080/10705511.2023.2230519> [CiteScore: 8.7; Q1]
10. Liu, X., Zhang, Z., Valentino, K., & Wang, L. (2024). The impact of omitting confounders in parallel process latent growth curve mediation models: Three sensitivity analysis approaches. *Structural Equation Modeling: A Multidisciplinary Journal*, 31(1), 132-150. <https://doi.org/10.1080/10705511.2023.2189551> [CiteScore: 8.7; Q1]
11. *Zhang, L., +Li, X., & Zhang, Z. (2023). Variety and Mainstays of the R Developer Community. *R Journal*, 15(3), 5-25. [CiteScore: 2.5; Q1]
12. *Wilcox, K. T., Jacobucci, R., Zhang, Z., & Ammerman, B. A. (2023). Supervised Latent Dirichlet Allocation with Covariates: A Bayesian Structural and Measurement Model of Text and Covariates. *Psychological Methods*, 28(5), 1178–1206. <https://doi.org/10.1037/met0000541> [CiteScore: 13.1; Q1]
13. *Xu, Z., *Hai, J., *Yang, Y., & Zhang, Z. (2023). Comparison of Methods for Imputing Social Network Data. *Journal of Data Science*, 21(3), 599–618 <https://doi.org/10.6339/22-JDS1045> [No data]
14. *Wyman, A., & Zhang, Z. (2023). API Face Value: Evaluating the Current Status and Potential of Emotion Detection Software in Emotional Deficit Interventions. *Journal of Behavioral Data Science*, 3(1), 59–69. <https://doi.org/10.35566/jbds/v3n1/wyman> [Average citation per article 3.4]
15. *Liu, X., Wang, L., & Zhang, Z. (2023). Bayesian hypothesis testing of mediation: Methods and the impact of prior odds specifications. *Behavior Research Methods*, 55, 1108-1120. <https://doi.org/10.3758/s13428-022-01860-1> [CiteScore: 11.2; Q1]
16. *Mai, Y., *Xu, Z., Zhang, Z., & Yuan, K.-H. (2023). An Open Source WYSIWYG Web Application for Drawing Path Diagrams of Structural Equation Models. *Structural Equation Modeling: A Multidisciplinary Journal*, 30(2), 328-335. <https://doi.org/10.1080/10705511.2022.2101460> [CiteScore: 8.7; Q1]
17. *Liu, H. ., *Qu, W., Zhang, Z., & Wu, H. (2022). A New Bayesian Structural Equation Modeling Approach with Priors on the Covariance Matrix Parameter. *Journal of Behavioral Data Science*, 2(2), 23–46. <https://doi.org/10.35566/jbds/v2n2/p2> [Average citation per article 3.4]
18. Krettenauer, T., Lefebvre, J. P., Hardy, S. A., Zhang, Z., & Cazzell, A. R. (2022) Daily moral identity: Linkages with integrity and compassion. *Journal of Personality*, 90(5), 663-674. <https://doi.org/10.1111/jopy.12689> [CiteScore: 9.7; Q1]
19. Lu, L., & Zhang, Z. (2022). How to Select the Best Fit Model among Bayesian Latent Growth Models for Complex Data. *Journal of Behavioral Data Science*, 2(1), 35–58. <https://doi.org/10.35566/jbds/v2n1/p2> [Average citation per article 3.4]

20. Lu, Z., & Zhang, Z. (2021). Bayesian Approach to Non-ignorable Missingness in Latent Growth Models. *Journal of Behavioral Data Science*, 1(2), 1–30.
<https://doi.org/10.35566/jbds/v1n2/p1> [Average citation per article 3.4]
21. *Liu, H., Jin, I.-H., Zhang, Z., & Yuan, Y. (2021). Social network mediation analysis: A latent space approach. *Psychometrika*, 86(1), 272–298.
<https://doi.org/10.1007/s11336-020-09736-z> [CiteScore: 4.4; Q1]
22. Zhang, Z. (2021). A Note on Wishart and Inverse Wishart Priors for Covariance Matrix. *Journal of Behavioral Data Science*, 1(2), 119–126.
<https://doi.org/10.35566/jbds/v1n2/p2> [Average citation per article 3.4]
23. *Che, C., Jin, I.-K., & Zhang, Z. (2021). Network Mediation Analysis Using Model-based Eigenvalue Decomposition. *Structural Equation Modeling*, 28(1), 148–161.
<https://doi.org/10.1080/10705511.2020.1721292> [CiteScore: 8.7; Q1]
24. Zhang, Z. & *Zhang, D. (2021). What is Data Science? An Operational Definition based on Text Mining of Data Science Curricula. *Journal of Behavioral Data Science* 1(1), 1–16. <https://doi.org/10.35566/jbds/v1n1/p1> [Average citation per article 3.4]
25. *Liu, H. & Zhang, Z. (2021). Birds of a Feather Flock Together and Opposites Attract: The Nonlinear Relationship Between Personality and Friendship, *Journal of Behavioral Data Science* 1(1), 34–52. <https://doi.org/10.35566/jbds/v1n1/p3> [Average citation per article 3.4]
26. *Kuang, Y., Zhang, Z., Duan, B., & Zhang, P. (2020). Fuzzy Cognitive Maps-based Switched-Mode Power Supply Design Assistant System. *IEEE Access*, 8, 183014–183024. <https://doi.org/10.1109/ACCESS.2020.3029090> [CiteScore: 9.0; Q1]
27. *Tong, X., & Zhang, Z. (2020). Robust Bayesian approaches in growth curve modeling: Using Student's t distributions versus a semiparametric method. *Structural Equation Modeling*, 27(4), 544–560. <https://doi.org/10.1080/10705511.2019.1683014> [CiteScore: 8.7; Q1]
28. *Wen, Q., *Liu, H., & Zhang, Z. (2020). Generating multivariate non-normal random numbers with specified multivariate skewness and kurtosis. *Behavior Research Methods*, 52, 939–946. <https://doi.org/10.3758/s13428-019-01291-5> [CiteScore: 11.2; Q1]
29. *Wilcox, L.T., Jacobucci, R. & Zhang, Z. (2019). Bayesian Supervised Topic Modeling with Covariates (Abstract). *Multivariate Behavioral Research*.
<https://doi.org/10.1080/00273171.2019.1695568> [CiteScore: 6.0; Q1]
30. *Du, H., Edwards, M., & Zhang, Z. (2019). Bayes factor in one-sample tests of means with a sensitivity analysis: A discussion of separate prior distributions. *Behavior Research Methods*, 51(5), 1998–2021. <https://doi.org/10.3758/s13428-019-01262-w> [CiteScore: 11.2; Q1]
31. Serang, S., Grimm, K. J., & Zhang, Z. (2019). On the correspondence between the latent growth curve and latent change score models. *Structural Equation Modeling*, 26(4), 623–635. <https://doi.org/10.1080/10705511.2018.1533835> [CiteScore: 8.7; Q1]
32. *Cain, M. K., & Zhang, Z. (2019). Fit for a Bayesian: An evaluation of PPP and DIC for structural equation modeling. *Structural Equation Modeling*, 26(1), 39–50.
<https://doi.org/10.1080/10705511.2018.1490648> [CiteScore: 8.7; Q1]
33. Yuan, K., Zhang, Z., & Deng, L. (2019). Fit indices for mean structures with growth curve models. *Psychological Methods*, 24(1), 36–53.
<https://doi.org/10.1037/met0000186> [CiteScore: 13.1; Q1]

34. *Liu, H., Jin, I. K., & Zhang, Z. (2018). Structural equation modeling of social networks: Specification, estimation, and application. *Multivariate Behavioral Research*, 53(5), 714–730. <https://doi.org/10.1080/00273171.2018.1479629> [CiteScore: 6.0; Q1]
35. ^Mai, Y., Zhang, Z., & Wen, Z. (2018). Comparing exploratory structural equation modeling and existing approaches for multiple regression with latent variables. *Structural Equation Modeling*, 25(5), 737–749. <https://doi.org/10.1080/10705511.2018.1444993> [CiteScore: 8.7; Q1]
36. ^Mai, Y., & Zhang, Z. (2018). Review of software packages for Bayesian multilevel modeling. *Structural Equation Modeling*, 25(4), 650–658. <https://doi.org/10.1080/10705511.2018.1431545> [CiteScore: 8.7; Q1]
37. *Cain, M. K., Zhang, Z., & Bergeman, C. S. (2018). Time and other considerations in mediation design. *Educational and Psychological Measurement*, 78(6), 952–972. <https://doi.org/10.1177/0013164417743003> [CiteScore: 5.9; Q1]
38. *Ke, Z., & Zhang, Z. (2018). Testing autocorrelation and partial autocorrelation: Asymptotic methods versus resampling techniques. *British Journal of Mathematical and Statistical Psychology*, 71(1), 96–116. <https://doi.org/10.1111/bmsp.12109> [CiteScore: 4.6; Q1]
39. *Tong, X., & Zhang, Z. (2017). Outlying observation diagnostics in growth curve modeling. *Multivariate Behavioral Research*, 52(6), 768–788. <https://doi.org/10.1080/00273171.2017.1374824> [CiteScore: 8.7; Q1]
40. Zhang, Z., Jiang, K., *Liu, H., & Oh, I.-S. (2017). Bayesian meta-analysis of correlation coefficients through power prior. *Communications in Statistics: Theory and Methods*, 46(24), 11988–12007. <https://doi.org/10.1080/03610926.2017.1288251> [CiteScore: 1.7; Q3]
41. *Cain, M. K., Zhang, Z., & Yuan, K. (2017). Univariate and multivariate skewness and kurtosis for measuring nonnormality: Prevalence, influence and estimation. *Behavior Research Methods*, 49(5), 1716–1735. <https://doi.org/10.3758/s13428-016-0814-1> [CiteScore: 11.2; Q1]
42. *Liu, H., & Zhang, Z. (2017). Logistic regression with misclassification in binary outcome variables: A method and software. *Behaviormetrika*, 44(2), 447–476. <https://doi.org/10.1007/s41237-017-0031-y> [CiteScore: 4.1; Q1]
43. Yuan, K.-H., Zhang, Z., & Zhao, Y. (2017). Reliable and more powerful methods for power analysis in structural equation modeling. *Structural Equation Modeling*, 24(3), 315–330. <https://doi.org/10.1080/10705511.2016.1276836> [CiteScore: 8.7; Q1]
44. *Cheung, R. Y. M., Cummings, E. M., Zhang, Z., & Davies, P. (2016). Trivariate modeling of interparental conflict and adolescent emotional security: An examination of mother-father-child dynamics. *Journal of Youth and Adolescence*, 45(11), 2336–2352. <https://doi.org/10.1007/s10964-015-0406-x> [CiteScore: 5.6; Q1]
45. *Liu, H., Zhang, Z., & Grimm, K. J. (2016). Comparison of inverse-Wishart and separation-strategy priors for Bayesian estimation of covariance parameter matrix in growth curve analysis. *Structural Equation Modeling*, 23 (3), 354–367. <https://doi.org/10.1080/10705511.2015.1057285> [CiteScore: 8.7; Q1]
46. Zhang, Z. (2016). Modeling error distributions of growth curve models through Bayesian methods. *Behavior Research Methods*, 48(2), 427–444. <https://doi.org/10.3758/s13428-015-0589-9> [CiteScore: 11.2; Q1]

47. Zhang, Z. & Yuan, K.-H. (2016). Robust coefficients alpha and omega and confidence intervals with outlying observations and missing data: Methods and software. *Educational and Psychological Measurement*, 76(3), 387–411. <https://doi.org/10.1177/0013164415594658> [CiteScore: 5.9; Q1]
48. Serang, S., Zhang, Z., Helm, J., Steele, J. S., & Grimm, K. J. (2015). Evaluation of a Bayesian approach to estimating nonlinear mixed-effects mixture models. *Structural Equation Modeling*, 22(2), 202–215. <https://doi.org/10.1080/10705511.2014.937322> [CiteScore: 8.7; Q1]
49. Yuan, K.-H., *Tong, X., & Zhang, Z. (2015). Bias and efficiency for SEM with missing data and auxiliary variables: Two-stage robust method versus two-stage ML. *Structural Equation Modeling*, 22(2), 178–192. <https://doi.org/10.1080/10705511.2014.935750> [CiteScore: 8.7; Q1]
50. Bernard, K., Peloso, E., Laurenceau, J-P, Zhang, Z., & Dozier, M. (2015). Examining change in cortisol patterns during the 10-week transition to a new childcare setting. *Child Development*, 86(2), 456–71. <https://doi.org/10.1111/cdev.12304> [CiteScore: 9.3; Q1]
51. Merluzzi, T.V., Philip, E.J., Zhang, Z., & Sullivan, C. (2015). Perceived discrimination, coping, and quality of life for African-American and Caucasian persons with cancer. *Cultural Diversity and Ethnic Minority Psychology*, 21(3), 337–344. <https://doi.org/10.1037/a0037543> [CiteScore: 5.2; Q1]
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 101. *Lu, Z., Zhang, Z., & Cohen, A. (2015). Model selection criteria for latent growth models using Bayesian methods. In R. E. Millsap, D. M. Bolt, L. A. van der Ark, & W.-C. Wang (Eds.), *Quantitative psychology research—The 78th annual meeting of the psychometric society* (pp. 319–341). Springer Proceedings in Mathematics & Statistics. New York, NY: Springer.
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Encyclopedia Entries

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Book Review

109. Zhang, Z. (2018). Psychometrics from a Bayesian perspective: A review of Bayesian Psychometric Modeling (Levy & Mislevy, 2016). *Journal of Educational and Behavioral Statistics*, 43(4), 502–505. <https://doi.org/10.3102/1076998618778011>

Software Development

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Invited Lectures and Addresses

1. Zhang, Z. (2024, July). Introduction to an online app for SEM analysis with text data. Invited talk at the 2024 Annual Meeting of ISDSA, Vienna, Austria.
2. Zhang, Z. (2024, June). Structural Equation Modeling with Network Data. Invited talk at the 2024 ICSA Applied Statistics Symposium, Nashville, TN.
3. Zhang, Z. (2024, June). A Two-Stage Method to Utilize Text Information in Structural Equation Modeling. Invited talk at the Beijing Normal University, Beijing, China.
4. Zhang, Z. (2024, May 17). Structural Equation Modeling with Text Data. Invited talk at the Nanjing University of Posts and Telecommunications, Nanjing, China.
5. Zhang, Z. (2024, May 15). Prevalence, Influences, and Handling Methods of Non-normal Data. Invited talk at the Tsinghua University, Beijing, China.
6. Zhang, Z. (2023, July). Social Network Analysis in the Framework of Structural Equation Modeling. Invited talk at the Nanjing University of Posts and Telecommunications, Nanjing, China.
7. Zhang, Z. (2023, July). Statistical power for linear and quadratic growth curve models with ignorable and non-ignorable missing data. Invited talk at the 2023 Annual Meeting of ISDSA, Shanghai, China.
8. Zhang, Z. (2022, August, Chair). *Methods and Applications of Network Science in Psychology*. Invited symposium conducted at the 2022 Annual Convention of the American Psychological Association, Minneapolis, MN.

9. Zhang, Z. (2022, April). *Prevalence, Influences, and Handling Methods of Non-normal Data*. Invited talk at the University of Southern California
10. Zhang, Z. (2021, November). *Social Network Analysis In The Framework Of Structural Equation Modeling*. Invited talk by Data Analytics Colloquium.
<https://dacolloquium.com>
11. Zhang, Z. (2021, November). *What is Data Science?* Invited talk by Data Science Forum.
12. Zhang, Z. (2020, November). *Quantitative Psychology at the Age of Data Science*. Presented to the Monday Symposium in Measurement and Statistics at University Of Maryland & the Brownbag Series of the Quantitative Psychology Program at The Ohio State University. (Online)
13. Zhang, Z. (2020, July). *Psychometric Models for Social Network Data Analysis*. Invited talk at the 85th Annual Meeting of Psychometric Society. (Online)
14. Zhang, Z. (2019, October). *Measure changes in networks*. Cattell Award address at the Annual Meeting of the Society of Multivariate Experimental Research, Baltimore, MA.
15. Zhang, Z. (2019, August). *A comparison of machine learning methods for understanding teaching evaluation comments*. Invited talk at the 2019 Global Summit on Artificial Intelligence and Big Data in Education, Beijing, China.
16. Zhang, Z. & Liu, H. (2019, July). *Social Network Analysis in the Structural Equation Modeling Framework*. Invited talk at the Yangtze Normal University, Chongqing, China.
17. Zhang, Z. & Liu, H. (2019, July). *A Structural Equation Modeling Framework for Social Network Analysis*. Invited talk at the University of Science and Technology of China, Hefei, China.
18. Zhang, Z. (2019, July). *Improving teaching evaluation using text mining*. Invited talk at the 2019 Meeting of the International Society for Data Science and Analytics, Nanjing, China.
19. Zhang, Z. (2019, March). *Stones from one hill may serve to polish the jade of another: Bridging quantitative psychology and data science*. Invited talk at the Pennsylvania State University, University Park, PA.
20. Zhang, Z. (2018, July). *A blessing or a curse? An overview of non-normal data and missing data*. Invited talk at the 2018 International Conference on Management and Operations Research, Beijing, China. [Invited keynote]
21. Zhang, Z., *Ye, M., *Huang, Y., & *Sun, N. (2018, July). *A longitudinal social network clustering method based on tie strength*. Invited talk at the 8th International Forum on Statistics, Beijing, China.
22. Zhang, Z. (2017, June). *Modeling non-normal distributions in mixed-effects and multilevel models*. Invited talk at the 2017 ICSA Applied Statistics Symposium, Chicago, IL.
23. Zhang, Z. (2017, May). *Statistical methods and software for handling non-normal data in social, behavioral and economic sciences*. Invited talk at Henan University, Kaifeng, China.
24. Zhang, Z. (2017, March). *Two-stage Bayesian estimation in structural equation modeling*. Invited talk at the ACMS Statistics Seminar, Department of ACMS, University of Notre Dame, Notre Dame, IN.

25. Zhang, Z., & *Liu, H. (2016, October). *Sample size planning for latent change score models through Monte Carlo simulation*. Invited talk at the Conference on Advances in Longitudinal Models for Multivariate Psychology: A Festschrift for Jack McArdle, Richmond, VA.
26. Zhang, Z., & Yuan, K.-H. (2015, December). *Online statistical software for simple and complex models*. Invited software demonstration/tutorial at the IES PI meeting, Washington, D.C.
27. Zhang, Z. (2015, June). *Statistical power analysis for mediation effects through WebPower*. Invited talk at the Renmin University of China, Beijing, China.
28. Zhang, Z. (2015, March). *Bayesian factor analysis*. Invited talk at the University of Southern California, Los Angeles, CA.
29. Zhang, Z. (2014, September). *The use of relaxed and Bayesian assumptions on error terms in dynamic models of change*. Invited talk at the 2014 Society for Research in Child Development themed meeting: Developmental Methodology, San Diego, CA.
30. Yuan, K.-H., *Tong, X., & Zhang, Z. (2012, July). *Bias and efficiency for SEM with missing data and auxiliary variables: Robust method versus normal distribution based ML*. Invited talk at the 2nd meeting of the Institute of Mathematical Statistics Asia Pacific Rim, Tsukuba, Japan.
31. *Lu, Z., Zhang, Z., & Lubke, G. (2012, January). *Bayesian inference for growth mixture models with latent class dependent missing data*. Invited talk at the Hong Kong Institute of Education, Hong Kong, China.
32. Zhang, Z. (2011, June). *Introduction to Bayesian analysis*. Invited lecture at the Renmin University of China, Beijing, China.
33. Zhang, Z., McArdle, J. J., & Nesselroade, J. R. (2011, May). *Growth rate models: Emphasizing growth rate analysis through growth curve modeling*. Invited talk at the Nesselroade Festschrift, Charlottesville, VA
34. Zhang, Z. (2009, July). *Bayesian analysis*. Invited workshop at the University of Southern California, Los Angeles, CA.

Conference Presentations

Organized Meetings

35. Zhang, Z., & Yuan, K.-H. (2024, July). *The 2024 ISDSA Meeting on Behavioral Data Science*. Vienna, Austria.
36. Zhang, Z., & Yuan, K.-H. (2023, July). *The 2023 ISDSA Meeting on Behavioral Data Science*. Shanghai, China.
37. Zhang, Z., & Yuan, K.-H. (2022, May). *The 2022 ISDSA Meeting on Behavioral Data Science*. Notre Dame, IN.
38. Zhang, Z., & Yuan, K.-H. (2021, June). *The 2021 ISDSA Meeting on Behavioral Data Science*. Notre Dame, IN. (Online)
39. Zhang, Z., & Yuan, K.-H. (2020, May). *The 2020 Annual Meeting of the International Society for Data Science and Analytics*. Notre Dame, IN. (Online)
40. Zhang, Z., & Yuan, K.-H. (2019, July). *The 2019 Annual Meeting of the International Society for Data Science and Analytics*. Nanjing, China.
41. Yuan, K.-H., & Zhang, Z. (2017, May). *Statistics in social sciences: Present and future*. Beijing, China.

Chaired Symposia

42. Zhang, Z. (2024, August). New statistical methods for variable selection and text data analysis. Symposium conducted at the 2024 Annual Convention of the American Psychological Association, Seattle, WA.
43. Zhang, Z. (2024, July). New insights in longitudinal data and mediation analysis. Symposium organized at the IMPS 2024 Annual Meeting, Prague, Czech.
44. Zhang, Z., & Yuan, K.-H. (2015, May, Chaired Symposia). *Methods and software for statistical power analysis with non-normal data*. Symposium conducted at the 27th Annual Convention of the Association for Psychological Science, New York, NY.
45. Zhang, Z. (2014, May). *New developments in Bayesian analysis*. Symposium conducted at the 26th Annual Convention of the Association for Psychological Science, San Francisco, CA.
46. Zhang, Z., & Yuan, K.-H. (2012, May). *Robust statistical data analysis*. Symposium conducted at the 24th Annual Convention of the Association for Psychological Science, Chicago, IL.
47. Zhang, Z. (2011, August). *Bayesian methods for non-normal and non-ignorable missing data analysis*. Symposium conducted at the 119th Annual Convention of the American Psychological Association, Washington DC.

Workshops

48. Zhang, Z. (2023, July). Invited workshop on *Deep Learning Using R* at the 2023 ISDSA Annual Meeting. Online.
49. Du, H. & Zhang, Z. (2023, May). *Power Analysis*. Invited workshop conducted at the 2023 Annual Convention of Association for Psychological Science, Washington DC.
50. Tong, X., Du, H., & Zhang, Z. (2022, June). Workshop on *Bayesian Longitudinal Data Modeling*. Two-day workshop supported by the Association of Psychological Science.
51. Zhang, Z. (2022, June). *Workshop on Statistical Power Analysis for Structural Equation Modeling* at the 2022 ISDSA Annual Meeting. Online.
52. Zhang, Z. (2021, June). *Workshop on Statistical Power analysis* at the 2021 ISDSA Annual Meeting. Online.
53. Zhang, Z. (2019, July). *Data mining methods for education and psychology*. Workshop conducted at the 2019 Global Summit on Artificial Intelligence and Big Data in Education, Beijing, China.
54. Zhang, Z. (2016, August). *Practical statistical power analysis for simple and complex models*. Workshop conducted at the 124th Annual Convention of the American Psychological Association, Denver, CO.
55. Zhang, Z., & Yuan K.-H. (2013, August). *Robust SEM for non-normal and missing data using WebSEM*. Workshop conducted at the 121th Annual Convention of the American Psychological Association, Washington DC.
56. Zhang, Z. (2009, August). *Introduction to Bayesian analysis*. Workshop presented at the 117th Annual Convention of the American Psychological Association, Toronto, Canada.

Paper Presentations

57. Zhang, Z. (2024, August). Factor analysis with text data through Universal Sentence Encoder. Paper presented at the 2024 Annual Convention of the American Psychological Association, Seattle, WA.

58. Zhang, Z. (2024, July). Mediation Analysis with Text Data. Paper presented at the IMPS 2024 Annual Meeting, Prague, Czech.
59. Zhang, Z. (2023, October). WebPower as an open system for statistical power analysis. Online presentation at the 2023 SMEP Meeting.
60. +Wyman, A., & Zhang, Z. (2022, October). API Face Value: Enhancing Emotional Deficit Interventions with Emotion Detection Software. Presented at the ninety-third annual conference of the Indiana Association of the Social Sciences, Gary, IN, United States.
61. *Xu, Z., *Hai, J., *Yang, Y., & Zhang, Z. (May, 2022). *Comparison of Methods for Imputing Social Network Data*. Paper presented at the 2022 Annual Convention of the American Psychological Association, Minneapolis, MN.
62. *Xu, Z., *Hai, J., *Yang, Y., & Zhang, Z. (May, 2022). *Comparison of Methods for Imputing Social Network Data*. Paper presented at the 2022 Annual Meeting of the International Society for Data Science and Analytics, Notre Dame, IN, USA.
63. Zhang, Z. (May, 2022). *Social Network Analysis in the Framework of Structural Equation Modeling*. Paper presented at the 2022 Annual Meeting of the International Society for Data Science and Analytics, Notre Dame, IN, USA.
64. *Wilcox, K. T., Jacobucci, R., and Zhang, Z. (2020, July). *Combining topic modeling and regression: Supervised topic modeling with covariates*. Paper presented at the 85th Annual Meeting of Psychometric Society. (Online)
65. *Qu, W. & Zhang, Z. (2020, July). *Evaluating the effect of multivariate non-normality on confirmatory factor analysis*. Paper presented at the 85th Annual Meeting of Psychometric Society. (Online)
66. *Qu, W., Liu, H., & Zhang, Z. (2019, July). *Permutation Test on Logistic Regression Coefficients with Social Network Data*. Paper presented at the 85th Annual Meeting of Psychometric Society. Santiago, Chile.
67. *Qu, W., & Zhang, Z. (2019, July). *An Application of Aspect-Based Sentiment Analysis on Teaching Evaluation*. Paper presented at the 2019 Annual Meeting of the International Society for Data Science and Analytics. Nanjing, China.
68. Zhang, Z., +Ye, M., +Huang, Y., & +Sun, N. (2018, December). *A longitudinal social network clustering method based on tie strength*. Paper presented at the 2018 IEEE Big Data Conference, Seattle, WA.
69. *Qu, W., *Liu, H., & Zhang, Z. (2018, July). *Generation of multivariate non-normal random numbers with specified multivariate measures*. Paper presented at the 2008 International Meeting of the Psychometric Society, New York, NY.
70. Zhang, Z. (2017, Oct). *Two-stage Bayesian estimation in structural equation modeling*. Paper presented at the 2017 meeting of the Society of Multivariate Experimental Psychology, Minneapolis, MN.
71. *Liu, H., & Zhang, Z. (2016, July). *Logistic regression with misclassification in binary outcome variables: Method and software*. Paper presented at the Annual Meeting of the Psychometric Society, Asheville, NC.
72. Zhang, Z. (2016, July). *Statistical power analysis for mediation with non-normal and missing data*. Paper presented at the Annual Meeting of the Psychometric Society, Asheville, NC.
73. *Cain, M. K., & Zhang, Z. (2016, May). *Time and other considerations in mediation design*. Paper presented at the 2017 Modern Modeling Methods Conference, Storrs, CT.

74. Zhang, Z. (2014, May). *Monte Carlo based statistical power analysis for mediation analysis with non-normal data: Methods and software*. Paper presented at the 27th Annual Convention of the Association for Psychological Science, New York, NY.
75. *Lu, Z., & Zhang, Z. (2014, July). *Aggregating time series: Illustration through an AR(1) model*. Paper presented at the 79th Annual Meeting of the Psychometric Society, Madison, Wisconsin.
76. Zhang, Z., Wang, L., & *Tong, X. (2014, July). *Mediation analysis with missing data through multiple imputation and bootstrap*. Paper presented at the 79th Annual Meeting of the Psychometric Society, Madison, Wisconsin.
77. *Liu, H., & Zhang, Z. (2014, July). *Separating-strategy priors for covariance matrices*. Paper presented at the 79th Annual Meeting of the Psychometric Society, Madison, Wisconsin.
78. *Lu, Z., Zhang, Z., & Cohen, A. (2014, May). *Bayesian model selection criteria for latent growth models*. Paper presented at the 26th Annual Convention of the Association for Psychological Science, San Francisco, CA.
79. *Tong, X., & Zhang, Z. (2014, May). *Robust semi-parametric Bayesian methods in growth curve modeling with nonnormal data*. Paper presented at the 26th Annual Convention of the Association for Psychological Science, San Francisco, CA.
80. Zhang, Z., Jiang, K., & *Liu, H. (2014, May). *Bayesian meta-analysis of correlation coefficients through power prior*. Paper presented at the 26th Annual Convention of the Association for Psychological Science, San Francisco, CA.
81. *Lu, Z., & Zhang, Z. (2014, April). *Robust growth mixture models with non-ignorable missingness*. Paper presented at the 2014 Annual Meeting of National Council on Measurement in Education, Philadelphia, Pennsylvania.
82. Liu, X., Liu, F., Simon, M., & Zhang, Z. (2014, April). *Are the score gains suspicious? – A Bayesian growth analysis approach*. Paper presented at the 2014 Annual Meeting of National Council on Measurement in Education, Philadelphia, Pennsylvania.
83. Zhang, Z., & Grimm, K. J. (2013, April). *A random-coefficient latent change score model for nonlinear growth data*. Paper presented at the 2013 Biennial Meeting of Society for Research in Child Development, Seattle, Washington.
84. Zhang, Z., *Lai, K., *Lu, Z., & *Tong, X. (2012, May). *Bayesian robust growth curve modeling based on Student's t distribution*. Paper presented at the 24th Annual Convention of the Association for Psychological Science, Chicago IL.
85. Yuan, K.-H., & Zhang, Z. (2012, May). *Robust structural equation modeling with missing data and auxiliary variables*. Paper presented at the 24th Annual Convention of the Association for Psychological Science, Chicago IL.
86. *Tong, X., Zhang, Z., & Yuan, K.-H. (2012, May). *Evaluation of fit statistics for robust SEM with non-normal missing data*. Paper presented at the 24th Annual Convention of the Association for Psychological Science, Chicago IL.
87. *Lu, Z., & Zhang, Z. (2012, May). *Robust growth mixture modeling using Bayesian methods*. Paper presented at the 24th Annual Convention of the Association for Psychological Science, Chicago IL.
88. *Lu, Z., Zhang, Z., & Cohen, A. (2012, July). *Latent growth curve models with non-ignorable missing data: Bayesian inference and model selection criteria*. Paper presented at the 77th Annual International Meeting of the Psychometric Society, Lincoln, Nebraska.

89. Zhang, Z. & *Lu, Z. (2012, February). *Issues in aggregating time series: Illustration through an AR(1) model*. Paper presented at the 2012 Society for Research in Child Development Themed Meeting: Developmental Methodology, Tampa, Florida.
90. *Lu, Z., Zhang, Z., & Cohen, A. (2012, April). *Latent growth curve models with non-ignorable missing data: Bayesian inference and model selection criteria*. Paper presented at the 2012 Annual Meeting of the National Council on Measurement in Education (NCME), Vancouver, BC, Canada.
91. *Xin, T., Zhang, Z., & Yuan, K.-H. (2011). *Evaluation of test statistics for robust structural equation modeling with non-normal missing data*. Paper presented at the Annual Society of Multivariate Experimental Psychology Graduate Student Pre-conference, Oklahoma.
92. Zhang, Z., & Wang, L. (2011, August). *Overview of full Bayesian analysis of non-ignorable missing data*. Paper presented at the 119th Annual Convention of the American Psychological Association, Washington DC.
93. *Lu, Z., Zhang, Z., & Lubke, G. (2011, August). *Bayesian inference for growth mixture models with non-ignorable missing data*. Paper presented at the 119th Annual Convention of the American Psychological Association, Washington DC.
94. Wang, L. & Zhang, Z. (2011, August). *Bayesian estimation and inference on mediation effects with censored data*. Paper presented at the 119th Annual Convention of the American Psychological Association, Washington DC.
95. *Tong, X., & Zhang, Z. (2011, August). *Bayesian inference for robust growth curve modeling using t distributions*. Paper presented at the 119th Annual Convention of the American Psychological Association, Washington DC.
96. *Lu, Z., Zhang, Z., & Lubke, G. (2011, July) *Bayesian inference for growth mixture models with latent class dependent missing data*. Paper presented at the 76th Annual International Meeting of the Psychometric Society, Hong Kong, China.
97. *Lu, Z., Zhang, Z., & Lubke, G. (2010, September) *Bayesian inference for growth mixture models with non-ignorable missing data*. Paper presented at the Annual Society of Multivariate Experimental Psychology Graduate Student Pre-conference, Atlanta, GA.
98. Zhang, Z. (2010, July). *Testing the invariance of latent traits in multiple group analysis*. Paper presented at the 7th Conference of the International Test Commission, Hong Kong, China.
99. Zhang, Z. (2009, June). *Bayesian SEM: Current developments and future directions*. Paper presented at the 21th Annual Convention of the Association for Psychological Science, San Francisco, CA.
100. Zhang, Z. (2007, October). *Bootstrap analysis of mediation effects*. Paper presented at the Annual Society of Multivariate Experimental Psychology Graduate Student Pre-conference, Chapel Hill, NC.
101. Zhang, Z., & Wang, L. (2007, July). *Methods evaluating mediation effect: Rationale and comparison*. Paper presented at the 72nd Annual Meeting of the Psychometric Society, Tokyo, Japan.
102. Wang, L., Zhang, Z., & McArdle, J. J. (2006, June). *Investigating the ceiling effects in longitudinal data analysis*. Paper presented at the 71st Annual Meeting of the Psychometric Society, Montreal, Canada.

103. Zhang, Z., Wang, L., & Nesselroade, J. R. (2006, June). *Growth rate models and Bayesian estimation*. Paper presented at the 71st Annual Meeting of the Psychometric Society, Montreal, Canada.

Poster Presentations

104. Parra, D., Radvansky, G.A., Zhang, Z. (2024, April). A Meta-Analysis of the Wakeful Rest Effect. The 2024 Midwestern Psychological Association Conference.
105. Zhang, Z. (2018, May). *A new software program for practical statistical power analysis*. Poster presented at the 30th Annual Convention of the Association for Psychological Science, San Francisco, CA.
106. ⁺Tzakis, T., ^{*}Liu, H., & Zhang, Z. (2018, May). *A review of social network analysis in psychological research*. Poster presented at the 30th Annual Convention of the Association for Psychological Science, San Francisco, CA.
107. ⁺Tzakis, T., & Zhang, Z. (2018, March). *A review of social network analysis in psychological research*. Poster presented at the 2018 Conference of Michigan Academy, Alma, MI.
108. Zhang, Z. (2017, August). *Practical statistical power analysis for multilevel modeling: Methods and software*. Poster presented at the 125th Annual Convention of the American Psychological Association, Washington DC.
109. Zhang, Z., & ^{*}Liu, H. (2017, May). *Sample size planning for latent change score models through Monte Carlo simulation*. Poster presented at the 30th Annual Convention of the Association for Psychological Science, Boston, MA.
110. ^{*}Cain, M. K., & Zhang, Z. (2017, May). *Fit for a Bayesian: An evaluation of PPP and DIC*. Poster presented at the 2017 Modern Modeling Methods Conference, Storrs, CT.
111. [^]Mai, Y., & Zhang, Z. (2016, May). *Multilevel modeling through path diagramming: An online graphical interface*. Poster presented at the 28th Annual Convention of the Association for Psychological Science, Chicago, IL.
112. ^{*}Liu, H., & Zhang, Z. (2016, May). *Power of logistic regression with correction of misclassifications*. Poster presented at the 28th APS Annual Convention of Association for Psychological Science, Chicago, IL.
113. ^{*}Liu, H., & Zhang, Z. (2016, May). *Power of logistic regression with correlated predictors*. Poster presented at the 28th APS Annual Convention of Association for Psychological Science, Chicago, IL.
114. Zhang, Z. (2016, October). *Practical statistical power analysis for structural equation modeling: Methods and software*. Poster presented at the 87th Annual Meeting of the Indiana Academy of the Social Sciences, Westville, IN.
115. Zhang, Z., & Wang, L. (2010, August). *Power analysis for linear and nonlinear growth curve modeling*. Poster presented at the 118th Annual Convention of the American Psychological Association, San Diego, CA.
116. Zhang, Z., & Wang, L. (2007, August). Bayesian analysis of longitudinal data using growth curve models. Poster presented at the 115th Annual Convention of the American Psychological Association, San Francisco, CA.
117. Zhang, Z., McArdle, J. J., Wang, L., and Hamagami, F. (2006, August). *Using WinBUGS inside SAS for Bayesian analysis*. Poster presented at the 114th Annual Convention of the American Psychological Association, New Orleans, LA.

118. Wang, L. & Zhang, Z. (2006, April). *Memory training on individual learning performance for independent and vital older adults*. Poster presented at the 19th Cognitive Aging Conference, Atlanta, GA.
119. Zhang, Z., Wang, L., & Hamagami, F. (2006, April). *Evaluation of the intervention of memory training on short-term learning for elderly*. Poster presented at the 19th Cognitive Aging Conference, Atlanta, GA.

Teaching and Mentoring

Course Taught

- 2024 R for Data Science (Spring, Fall), Advanced Statistics (Fall), Quantitative Study Seminar (Spring, Fall)
- 2023 R for Data Science (Spring, Fall), Advanced Statistics (Fall), Quantitative Study Seminar (Spring, Fall)
- 2022 R for Data Science (Spring), Advanced Statistics (Fall), Bayesian Statistics (Fall), Quantitative Study Seminar (Spring, Fall)
- 2021 Advanced Statistics (Fall), Quantitative Study Seminar (Spring, Fall)
- 2020 R for Data Science (Spring), Advanced Statistics (Fall), Structural Equation Models (Fall), Quantitative Study Seminar (Spring, Fall)

Doctoral Dissertations Directed

- 2021 Change Che (Now data scientist at Facebook)
- 2021 Wen Qu (Now associate research professor at the Fudan University)
- 2018 Haiyan Liu (Now tenure-track assistant professor at the University of California, Merced)
- 2017 Megan Cain (Now Senior Statistician at StataCorp, started as a research assistant professor at University of Texas at San Antonio, co-advised with Ke-Hai Yuan)
- 2014 Xin Tong (Now tenured associate professor at the University of Virginia)
- 2011 Zhenqiu Lu (Now tenured associate professor at the University of Georgia, co-advised with Ke-Hai Yuan)

Post-docs, Visiting Students and Visiting Scholars

- 2025 Claire Scott-Bacon (Visiting Scholar)
- 2024 Yongtao He, Zhengzhou University (Visiting Professor)
- 2020 Dan Wei, Shanxi Normal University (Visiting Student)
- 2020 Yi Kuang, Xiangtan University (Visiting Student)
- 2017 Yujiao Mai (Postdoc)

Undergraduate Students Advised

- 2024 Caroline Schafer, Anna Krush, Aedan Joel
- 2023 Julia Savino, Caroline Schafer, Annie Lee, Anna Krush, Anna Kierski, Aedan Joel, Austin Wyman
- 2022 Weining Wang, Lirui Xiao, Xinyu Wei, Xinran She, Zheyuan Cui, Austin Wyman, Aedan Joel, Rena Steele, Sarah Deussing, Kyle Phan
- 2021 Shuangtong Li, Caroline Smith, Xueyang Li, Jiarui Hai, Lijin Zhang, Yutong Yang
- 2020 Keyu Han, Yunlu Chen, Xueyang Li, Changrong Xiao, Yuxin Wu
- 2019 Jacob Chang, Lingbo Tong, Zhaowen Wang, Shivani Kamtikar

2018 Shitao Fan, Jingyi Xu, Silvia Camara, Roann Yanes, Ann Keenan, Leah Tzakis
2017 Christopher Clarizio Kelly Dodson, Xin Tong, Yiwen Chen, Margaret West, Jianan Wang, Ann Keenan, Leah Tzakis, Yuchen Liu
2016 Ann Keenan, Leah Tzakis, David Mattia, Cindy Wang, Brett Baumgartner, Yijie Huang, Mao Ye, Nan Sun
2015 Ann Keenan, Leah Tzakis, David Mattia, Cindy Wang
2014 Leah Tzakis, Leah Tzakis

Master's Theses Directed

2015 Megan Cain
2012 Xin Tong

Master Thesis Paper Reader (For students already with a master degree, they need to have a paper approved by two readers to pass the qualification exam.)

2024 Qizhou Duan
2022 Meng Qiu
2022 Dayoung Lee
2020 Tyler Wilcox
2020 Max Hong
2019 Brenna Gomer
2019 Wen Qu
2019 Alex Brodersen
2018 Ian Campbell
2014 Can Shao

Master Thesis Committees

2023 Dani Parra
2022 Jessica Hocking
2022 Kenneth McClure
2019 Lauren Trichtinger
2019 Chang Che
2016 Ryan Woodbury
2015 Callie Baird
2012 Zijun Ke

Qualification Exams/ Prelim Committee

2022 Meng Qiu, Xiaobei Li
2021 Tyler Wilcox, Xiao Liu
2020 Chang Che, Wen Qu, Daniella Reboucas, Lauren Trichtinger, Brenna Gomer
2019 Alex Brodersen
2018 Ian Campbell
2016 Samantha Anderson, Haiyan Liu
2013 Charles Laurin, Raymond Walters
2012 Xin Tong
2011 Keke Lai

Dissertation Committees

2024 Meng Qiu, Claire Scott-Bacon, Jamie Flannery, Yanran Chen (proposal), Sijing Shao
2023 Dayoung Lee
2022 Claire Scott-Bacon (proposal), Xiao Liu, Tyler Wilcox
2021 Brenna Gomer, Maxwell Hong, Minami Hattori, Lauren Trichtinger
2020 Jaime Shapiro, Alex Brodersen
2018 Agung Santoso, Miao Yang, Ge Jiang, Erin Hillard, Robert Miller
2017 Han Du, Meghan Cain, Amber Shoaib
2016 Patrick Miller, Daniel McArtor, Can Shao, Callie Baird
2015 Qian Zhang, Quinn Lathrop
2014 Charles Laurin, Raymond Walters, Jeffrey Patton
2013 Zijun Ke
2012 Chun-Ting Lee, KeKe Lai
2011 Melissa Mitchell
2010 Stephen Tueller

Quantitative Minor Advised

2015 Rebecca Cheung (Associate Professor at the University of Reading)
2010 Windy McNerney

Services

University and Departmental Service

2024-Current Research IT Stewardship Committee
2019–2023 Graduate Studies Committee
2018–2021 University Committee on Research and Sponsored Programs
2017–Current Psychology Department Communication and Website Committee
2017–Current Department Committee on Appointment and Promotion
2008–Current Psychology Department Computer/Tech Support Committee
2015 Review Committee of the Bernoulli awards
2015 ISLA Bi-Annual Large Grant Review Committee

Professional Service

Editor

Journal of Behavioral Data Science, 2021–

Associate Editor

Multivariate Behavioral Research, 2016–Current

Neurocomputing (Editorial Board), 2020–Current

Guest Action Editor

Psychological Methods (2016, 2017)

Sage Open (2017, 2018, 2019)

Consulting Editor

Psychological Methods, 2014–Current

Manuscript reviewer

Abstract and Applied Analysis

Aging, Neuropsychology and Cognition

American Education Research Journal

Anxiety, Stress, & Coping
Applied Psychological Measurement
Behavior Genetics
Behavior Research Methods
BMC Medical Research Methodology
Brazilian Journal of Probability and Statistics
British Journal of Mathematical and Statistical Psycho
Child Development
Communications in Statistics: Simulation and Computati
Communications in Statistics: Theory and Methods
Computational Statistics and Data Analysis
Developmental Psychology
Educational Research and Evaluation
Emotion
Frontier in Quantitative Psychology
Human Resource Management Journal
International Journal of Behavioral Development
International Journal of Osteoarchaeology
Journal of Agricultural, Biological, and Environmental
Journal of Applied Statistics
Journal of Biopharmaceutical Statistics
Journal of Early Adolescence
Journal of Educational and Behavioral Statistics
Journal of Experimental Education
Journal of Statistical Software
Journal of the Royal Statistical Society
Methodology
Multivariate Behavioral Research
Nursing Research
Personality and Social Psychology Bulletin
Perspectives on Psychological Science
Psychological Methods
Psychological Science
Psychometrika
Psychonomic Bulletin & Review
Public Health Nutrition
R Journal
Religious
Research Synthesis Methods
Sage Open
Social Psychological and Personality Science
Statistics
Statistics and Probability Letters
Statistics in Medicine
Structural Equation Modeling
Studies in Nonlinear Dynamics & Econometrics

Technological Forecasting & Social Change

Professional Affiliations and Memberships

American Psychological Association

Association for Psychological Science

Institute of Electrical and Electronics Engineers

Psychometric Society

Society of Multivariate Experimental Psychology

International Society for Data Science and Analytics