Xin Cynthia Tong, Ph.D.
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University of Virginia, Charlottesville, VA 22903
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EDUCATION

2014   **Ph.D. in Quantitative Psychology**
University of Notre Dame, Notre Dame, IN
Advisor: Zhiyong Johnny Zhang

2013   **M.A. in Quantitative Psychology**
University of Notre Dame, Notre Dame, IN

2009   **M.S. in Applied Mathematics**
Renmin University of China, Beijing, China

2007   **B.S. in Mathematics**
Renmin University of China, Beijing, China

EMPLOYMENT

2021-Now   **Associate Professor**
Department of Psychology, University of Virginia
2014-2021   **Assistant Professor**
Department of Psychology, University of Virginia

GRANTS – AWARDED AND PENDING

2024-2027   **NSF** (pending)
Modeling Population Heterogeneity in Complex Longitudinal Data with Dynamic Intervention Effects
Role: PI

2023-2024   **Learning Technology Incubator (LTi) Grants, UVA**
Writing, Programming, and Statistical Reasoning: Developing three critical skills for Psychology student training using Lyx, RStudio, and R Shiny software
Role: Co-PI (PI: Karen Schmidt, UVA); $15,520

2022-2023   **Quantitative Collaborative Seed Grant, UVA**
Disentangling Longitudinal Dynamic Intervention Effects and Population Heterogeneity in Social Sciences
Role: PI
$15,000

2022-2024   **4-VA Collaborative Research Grants**
Longitudinal Structural Equation Modeling for Incomplete Proportion Data in Obesity Research
Role: PI
$26,000

2022-2023   Learning Technology Incubator (LTi) Grants, UVA
Return to the classroom and beyond: Developing an inclusive active learning classroom environment with statistics and programming in Psychology
Role: Co-PI (PI: M. Joey Meyer, UVA); $12,920

2022-2024   NSF
Collaborative Research: Advancing Bayesian Thinking in STEM
Role: Faculty Collaborator (PI: Jingchen Hu, Vassar College)
$99,517

2021-2023   William K. and Katherine W. Estes Fund
Bayesian Longitudinal Data Modeling
Role: PI
$10,000

2021-2022   Learning Technology Incubator (LTi) Grants, UVA
Return to the classroom: Importance of integrating interactive learning with Statistics and Programming
Role: Co-PI (PI: M. Joey Meyer, UVA); $10,006

2020-2024   NSF
Robust and Interpretable Bayesian Quantile Longitudinal Analysis in Social and Behavioral Sciences
Role: PI
$250,000

2020-2021   Learning Technology Incubator (LTi) Grants, UVA
Empowerment through Engagement and More: Promoting Student Active Learning in Quantitative Psychology Courses
Role: PI; $10,229

2020   4-VA Collaborative Research Grants
Longitudinal Structural Equation Modeling for Incomplete Proportion Data in Obesity Research
Role: PI

$25,000

(Awarded initially, but not funded due to significant reduction in sponsoring program budget caused by COVID-19.)

2019-2020   Learning Technology Incubator (LTi) Grants, UVA

Empowerment through Engagement: A Fresh and Interactive Approach for Teaching

Applied Statistical Courses in Psychology

Role: PI

$10,326

2019   Sustainability Course Development Grant, UVA

Role: PI

$8,000

2018-2019   3 Cavaliers Seed Grant, UVA

How should companies develop, promote, price, and deliver healthy, sustainable food

products to increase market share, profitability, and sensory experience?

Role: Co-PI (PI: Jeffrey Boichuk, UVA)

$60,000

2018-2021   NSF
A Human-Centered Context-aware Responsive Smart Building for Enhancing Human Performance, Comfort and Health
Role: Faculty collaborator (PI: Haiying Shen, UVA)
$337,432

2017-2019   NSF of China
Random Coefficient Meta-Analytic Structural Equation Modeling: A Bayesian Approach to Identifying Causes of Between-Study Variations
Role: Co-PI (PI: Zijun Ke, Sun Yat-sen University)
$37,500

2017-2018   Quantitative Collaborative Seed Grant, UVA
Robust and Interpretable Quantile Growth Curve Modeling in Social Sciences
Role: PI
$10,000

2015-2017   Fundamental Research Funds for the Central Universities of China
Robust Growth Curve Analysis for Nonnormal Data
Role: Co-PI (PI: Zijun Ke, Sun-Yat-sen University)
$12,078

HONORS & AWARDS

2023-	Elected member of the Society of Multivariate Experimental Psychology (SMEP)
2023	Mead Honored Faculty, University of Virginia
2023-	UVA College Fellow
2019-2022	UVA Learning Technology Incubator (LTi) Award
2019	UVA Sustainability Course Development Fellowship
Since 2015	LIFE Academy Faculty Fellow
2014	Award for Computational Sciences and Visualization, University of Notre Dame
2014	Outstanding Graduate Student Teaching Award, University of Notre Dame
2014	Workshop support from the Society of Multivariate Experimental Psychology
2013	Travel Award from the Society of Multivariate Experimental Psychology
2012	Travel Award from the Society of Multivariate Experimental Psychology to chair the pre-conference of its annual meeting at Vancouver, BC, Canada
2012	Graduate Student Professional Development Award, University of Notre Dame.
2011	Travel Award from the Society of Multivariate Experimental Psychology

RESEARCH INTERESTS

Methodology: Bayesian methodology and statistical computing; Robust and interpretable longitudinal research; Missing data analysis.

Applications: Longitudinal development of cognitive ability and achievement skills; Healthcare analytics; Sustainability research.

JOURNAL ARTICLES

Note. (*) current or former students and post-docs; (ɪ) undergraduate student; (§) if the corresponding author is not the first author.

Under Review:

Gong, X., Chen, C. & **Tong, X.** (submitted). Does Grit Compensate for Family Background Disadvantage in Predicting Mental Health Difficulties? A Longitudinal Visit to Chinese Migrant and Urban Children.

*Moulder, R. G., & **Tong, X.** (in revision). A Data Permutation Method for Testing Random Slopes in Bayesian Growth Curve Modeling.

Young, J. N., **Tong, X.**, Sansovich, C., Kleinot, M., & Buchholz, A. (in revision). Spinal Pain after Motor Vehicle Crashes: A Neurosurgical Experience.

Vasc, D., Smith, E. D., Richey, E. M., Heise, M. J., Stefan, C. A., **Tong, X.**, & Lillard, A. S. (submitted). Bobo Revisited: A Preregistered Replication of the Bobo Doll Experiment.

*Tsang, S., Kaiser, S., **Tong, X.**, & Wood, A. (submitted). Emotional Contagion throughout Relationship Formation: A Longitudinal Dyadic Conversation Study.

*Womack, S. R., Beam, C. R., Giangrande, E. J., **Tong, X.**, Scharf, R. J. Davis, D. W., Turkheimer, E. (submitted). Co-Recovery of Physical Size and Cognitive Ability from Infancy to Adolescence: A Twin Study.

In Press and Published:

[35] *Womack, S. R., Beam, C. R., Giangrande, E. J., Scharf, R. J., **Tong, X.**, Ponnapalli, M., Davis, D. W., Turkheimer, E. (2023). Nonlinear Catch-Up Growth in Height, Weight, and Head Circumference from Birth to Adolescence: A Longitudinal Twin Study. *Behavior Genetic*. DOI: 10.1007/s10519-023-10151-0.

[34] Lillard, A. S., **Tong, X.**, Bray, P. M. (2023). Seeking Racial and Ethnic Parity in Preschool Outcomes: An Exploratory Study of Public Montessori Schools vs. Business-as-Usual Schools. *Journal of Montessori Research*. DOI: 10.17161/jomr.v9i1.19540.

[33] **Tong, X.**, *Kim, S., Sun, S., & §Bandyopadhyay, D. (2023). Association Between Body Fat and Body Mass Index from Incomplete Longitudinal Proportion Data: Findings from the Fels Study. *Journal of Data Science*. DOI: 10.6339/23-JDS1104.

[32] *Dela-Cruz, K. L., Kelsey, C. M., **Tong, X.**, & Grossmann, T. (2023). Infant and Maternal Responses to Emotional Facial Expressions: A Longitudinal Study. *Infant Behavior and Development.* DOI: 10.1016/j.infbeh.2023.101818.

[31] ɪ Leffler, G., & §**Tong. X.** (2022). A Tutorial on Collecting and Processing Longitudinal Social Media Data. *International Journal of Arts , Humanities & Social Science*. DOI: 10.56734/ijahss.v3n10a2.

[30] *Zhang, T., **Tong, X.**, & Zhou, J. (2022). Disentangling the influence of data contamination in growth curve modeling: A median based Bayesian approach. *Journal of Behavioral Data Science*. DOI: 10.35566/jbds/v2n2/p1.

[29] *Womack, S. R., Wilson, M. N., **Tong, X.**, Lemery-Chalfant, K., & Shaw, D. S. (2022). Trajectories of Early Childhood Family Instability and the Development of Externalizing Behaviors from Middle Childhood to Adolescence: A Prospective Study of At-risk Families. *Child Development*. DOI: 10.1111/cdev.13726.

[28] Snyder, A. L., **Tong, X.**, & Lillard, A. S. (2021). Standardized Test Performance in Public Montessori Schools. *Journal of School Choice: International Research and Reform*. DOI: 10.1080/15582159.2021.1958058.

[27] *Kim, S., **§Tong, X.**, Zhou, J. & Boichuk, J. P. (2021). Conditional Median based Bayesian Growth Mixture Modeling for Nonnormal Data. *Behavior Research Methods*. DOI: 10.3758/s13428-021-01655-w.

[26] **Tong, X.** (2021). Semiparametric Bayesian Methods in Growth Curve Modeling for Nonnormal Data Analysis. *Journal of Behavioral Data Science*. DOI: 10.35566/jbds/v1n1/p4.

[25] Ren, L., **Tong, X.**, Xu, W., Wu, Z., Zhou, X. & Hu, B. Y. (2021). Distinct Patterns of Organized Activity Participation and Their Associations with School Readiness among Chinese Preschoolers. *Journal of School Psychology.* 86, 100-119. DOI: 10.1016/j.jsp.2021.03.007.

[24] Ke, Z., & **§Tong, X.** (2021). Correcting for the Multiplicative and Additive Effects of Measurement Unreliability in Meta-Analysis of Correlation. *Psychological Methods.* DOI: 10.1037/met0000396.

[23] **Tong, X.**, & Ke, Z. (2021). Assessing the impact of precision parameter prior in Bayesian nonparametric growth curve modeling. *Frontiers in Psychology*. A special research topic on Moving Beyond Non-Informative Prior Distributions: Achieving the Full Potential of Bayesian Methods for Psychological Research. DOI: 10.3389/fpsyg.2021.624588.

[22] *Kim, S., **§Tong, X.** & Ke, Z. (2021). Exploring Class Enumeration in Bayesian Growth Mixture Modeling based on Conditional Medians. *Frontiers in Education.* A special research topic on Advances in Mixture Modeling. DOI: 10.3389/feduc.2021.624149.

[21] *Mazen, J. A. M., & **Tong, X.** (2020). Bias Correction for Replacement Samples in Longitudinal Research. *Multivariate Behavioral Research.* DOI: 10.1080/00273171.2020.1794774.

[20] **Tong, X.,** *Zhang, T., & Zhou, J. (2020). Robust Bayesian Growth Curve Modeling using Conditional Medians. *British Journal of Mathematical and Statistical Psychology.* DOI: 10.1111/BMSP.12216.

[19] *Shi, D., & **Tong, X.** (2020). Mitigating Selection Bias: a Bayesian Approach to Two-stage Causal Modeling with Instrumental Variables for Nonnormal Missing Data. *Sociological Methods & Research.* DOI: 10.1177/0049124120914920.

[18] *Shi, D., **Tong, X.,** & *Meyer, M. J. (2020). A Bayesian Approach to the Analysis of Local Average Treatment Effect for Missing and Nonnormal Data in Causal Modeling: a Tutorial with the ALMOND Package in R. *Frontiers in Psychology.* DOI: 10.3389/fpsyg.2020.00169.

[17] **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, 544-560. DOI: 10.1080/10705511.2019.1683014.

[16] Taylor, L. K., **Tong, X.,** & Maxwell, S. E. (2020). Evaluating Supplemental Samples in Longitudinal Research: Replacement and Refreshment Approaches. *Multivariate Behavioral Research.* 55, 277-299. DOI: 10.1080/00273171.2019.1628694.

[15] Green, C. S., Bavelier, D., Kramer, A. F., Vinogradov, S., Ansorge, U., Ball, K. K., Bingel, U., Chein, J. M., Colzato, L. S., Edwards, J. D., Facoetti, A., Gazzaley, A., Gathercole, S. E., Ghisletta, P., Gori, S., Granic, I., Hillman, C. H., Hommel, B., Jaeggi, S., M., Kanske, P., Karbach, J., Kingstone, A., Kliegel, M., Klingberg, T., Kühn, S., Levi, D. M., Mayer, R. E., McLaughlin, A. C., McNamara, D. S., Morris, M. C., Nahum, M., Newcombe, N. S., Panizzutti, R., Prakash, R. S., Rizzo, A., Schubert, T., Seitz, A. R., Short, S. J., Singh, I., Slotta, J. D., Strobach, T., Thomas, M. S. C., Tipton, E., **Tong, X.,** Vlach, H. A., Wetherell, J. L., Wexler, A., & Witt, C. M. (2019). Improving Methodological Standards in Behavioral Interventions for Cognitive Enhancement. *Journal of Cognitive Enhancement.* 3, 2-29. DOI: 10.1007/s41465-018-0115-y.

[14] Ke, Z., Zhang, Q., & **Tong, X.** (2019). Bayesian Meta-Analytic SEM: A More Flexible Framework to Model Between-study Heterogeneity in Structural Parameters. *Structural Equation Modeling.* 26, 348-370. DOI:10.1080/10705511.2018.1530059.

[13] *Mazen, J. A. M., **Tong, X.**, & Taylor, L. K. (2019). Evaluation of Supplemental Samples in Longitudinal Research with Nonnormal Missing Data. *Behavior Research Methods.* 51, 1321-1335. DOI: 10.3758/s13428-018-1070-3.

[12] *Shi, D., & **Tong, X.** (2018). Bayesian Robust Two-stage Causal Modeling with Nonnormal Missing Data. *Multivariate Behavioral Research*, 53, 127. (Abstract). DOI: 10.1080/00273171.2017.1404894.

[11] Lillard, A. S., Heise, M. J., Richey, E., **Tong, X.**, Hart, A. & Bray, P. (2017). Montessori Preschool Elevates and Equalizes Child Outcomes, *Frontiers in Psychology.* DOI: 10.3389/fpsyg.2017.01783.

[10] **Tong, X.,** & Zhang, Z. (2017). Outlying Observation Diagnostics in Growth Curve Modeling. *Multivariate Behavioral Research,* 52, 768-788. DOI: 10.1080/00273171.2017.1374824.

[9] *Shi, D. & **Tong, X** (2017). The Impact of Prior Information on Bayesian Latent Basis Growth Model Estimation. *Sage Open*, 7, 1-14. DOI: 10.1177/2158244017727039.

[8] 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: A Multidisciplinary Journal*, 22, 178-192. DOI: 10.1080/10705511.2014.935750.

[7] **Tong, X.,** Zhang, Z., & Yuan, K.-H. (2014). Evaluation of Test Statistics for Robust Structural Equation Modeling with Nonnormal Missing Data. *Structural Equation Modeling: A Multidisciplinary Journal,* 21, 553–565. DOI: 10.1080/10705511.2014.919820.

[6] **Tong, X.,** & Zhang, Z. (2014). Semiparametric Bayesian Modeling with Application in Growth Curve Analysis. *Multivariate Behavioral Research,* 49, 299. (Abstract). DOI: 10.1080/00273171.2014.912928.

[5] Zhang, Z., Lai, K., Lu, Z., & **Tong, X.** (2013). Bayesian inference and application of robust growth curve models using student's t distribution. *Structural equation modeling,* 20(1), 47-78. DOI: 10.1080/10705511.2013.742382.

[4] **Tong, X.,** & Zhang, Z. (2012). Diagnostics of Robust Growth Curve Modeling using Student's t Distribution. *Multivariate Behavioral Research,* 47(4), 493-518. DOI: 10.1080/00273171.2012.692614.

[3] **Tong, X.**, Zhang, Z., & Yuan, K.-H. (2011). Evaluation of Test Statistics for Robust Structural Equation Modeling with Non-normal Missing Data. *Multivariate Behavioral Research*, 46, 1016. (Abstract). DOI: 10.1080/00273171.2011.636715.

[2] Liu, W., **Tong, X.,** & Lin, Y. (2011). An Approximation Procedure for Stock Prices with Fractal Functions. *Journal of Mathematics in Practice and Theory,* 41(2), 15-24.

[1] Lin, Y., & **Tong, X.** (2008). Fractal Fitting Research on Stock Prices. *Congress on Image and Signal Processing,* 4, 49-53.

REFEREED PUBLICATIONS IN PROCEEDINGS & BOOKS
Note. (*) current or former students and post-docs.

[6] **Tong, X.,** Kim, S., & Ke, Z. (2022). Impact of Likelihoods and Class Enumeration in Bayesian Growth Mixture Modeling. In: Wiberg, M., Molenaar, D., González, J., Kim, JS., Hwang, H. (eds) Quantitative Psychology. IMPS 2021. *Springer Proceedings in Mathematics & Statistics*, vol 393. Springer, Cham. DOI: 10.1007/978-3-031-04572-1_9.

[5] *Shi, D. & **Tong, X.** (2017). Bayesian Two-Stage Robust Causal Modeling with Instrumental Variables using Student's t Distributions. In J. P. Tejedor (Eds.) *Bayesian Inference.* InTechOpen. DOI: 10.5772/intechopen.70393.

[4] *Shi, D. & **Tong, X.** (2017). Robust Bayesian Estimation in Causal Two-Stage Least Squares Modeling with Instrumental Variables. In: van der Ark L.A., Wiberg M., Culpepper S.A., Douglas J.A., Wang WC. (eds) Quantitative Psychology. IMPS 2016. *Springer Proceedings in Mathematics & Statistics*. 196, 395-405. Springer, Cham. DOI: 10.1007/978-3-319-56294-0_34.

[3] **Tong, X.** & Ke, Z. (2016). Growth Curve Modeling for Nonnormal Data: A Two-Stage Robust Approach Versus a Semiparametric Bayesian Approach. In: van der Ark L., Bolt D., Wang WC., Douglas J., Wiberg M. (eds) Quantitative Psychology Research. *Springer Proceedings in Mathematics & Statistics*. 167, 229-241. Springer, Cham. DOI: 10.1007/978-3-319-38759-8_17.

[2] Zhang, Z., Wang, L., & **Tong, X.** (2015). Mediation Analysis with Missing Data Through Multiple Imputation and Bootstrap. In: van der Ark L., Bolt D., Wang WC., Douglas J., Chow SM. (eds)

Quantitative Psychology Research. *Springer Proceedings in Mathematics & Statistics*. 140, 341-355. Springer, Cham. DOI: 10.1007/978-3-319-19977-1_24.

[1] Seroczynski, A.D., **Tong, X.,** Grundy, A., Jobst, A., & Hull, B. (2014). Quantifying the Qualitative: Using Growth Curve Models to Differentiate Moral Development among Juvenile Offenders. *Can Virtue be Measured: Proceedings of the annual conference of the Jubilee Centre for Character and Values.*

OTHER PUBLICATIONS

Meyer, M. J., Schmidt, K. M., & **Tong, X.** (2022). Using the R packages *rmarkdown* and *learnr* for creating interactive websites to teach statistical analyses to Psychology students. In H. Scherschel & D. S. Rudmann (Eds.) *Teaching tips: A compendium of conference presentations on teaching,* 2021-22. (pp. 138-140). Society for the Teaching of Psychology. *http://teachpsych.org/ebooks/teachingtips7*.

Tong, X. (2021). 10 Questions: An Invited Interview. *LIFE Newsletter*. 15 (2), 28-32.

SOFTWARE PRODUCTS
Note. (*) current or former students and post-docs.

[5] *Moulder, R. G., & **Tong, X.** (2019). Software for testing random slopes in Bayesian growth curve modeling. Available at *http://www.people.virginia.edu/~xt8b*.

[4] *Shi, D., **Tong, X.,** & *Meyer, M. J. (2019). ALMOND: An R package for the robust Bayesian two-stage causal modeling with nonnormal and missing data. Available at *https://github.com/dingjshi/ALMOND/.*

[3] **Tong, X.**, & Zhang, Z. (2016). gcmdiag: An R package to identify multivariate outlying observations in growth curve modeling. Available at *https://rdrr.io/rforge/gcmdiag/man/gcmdiag.html*.

[2] Zhang, Z. & **Tong, X.** (2011). Online software of distribution diagnostics for robust growth curve models. Available at *http://nd.psychstat.org/research/mbr2012*.

[1] Zhang, Z., **Tong, X.**, & Lu, Z. (2010). Online software for Bayesian estimation of robust growth curve models using Student's t distribution. Available at *http://webstats.psychstat.org/semrgcm*.

BOOK IN PROGRESS

Kubovy, M, **Tong, X**, & Meyer, M. J. (under contract, expected December 2023). *Statistics with R for Experimentalists*. Routledge.

INVITED PRESENTATIONS & LECTURES

[14] **Tong, X.**, (2022, February). Bayesian Analysis of Longitudinal Data using Conditional Quantiles. An invited Zoom talk given to the Quantitative Psychology and Modeling Program at McGill University, Canada.

[13] **Tong, X.**, (2021, December). R Workshop. An invited 3-hour workshop given at the preconference of Pacific Rim Objective Measurement Symposium 2021.

[12] **Tong, X.**, (2021, November). Robust Bayesian Growth Curve Modeling using Conditional Quantiles. An invited talk given at the QC seminar series. Charlottesville, VA.

[11] **Tong, X.** (2021, July). Robust Bayesian Analysis of Longitudinal Data. Virtual forum on Data Science and Methodology.

[10] **Tong, X.**, (2020, December). Conditional Median based Bayesian Growth Mixture Modeling. An invited virtual talk given to the Department of Psychology, UCLA.

[9] **Tong, X.** (2020, March). Robust Bayesian Growth Curve Modeling using Conditional Medians. Given at the 2020 Charlottesville Women in Data Science Conference. Charlottesville, VA.

[8] **Tong, X.** (2019, November). Bayesian Statistics. An invited 3-hour Bayesian workshop given to graduate students at the Max Planck Institute.

[7] **Tong, X.**, Ke, Z., & *Sjobeck, G. (2018, June). Robust Semiparametric Bayesian Methods in Growth Curve Modeling with Nonnormal Missing Data. An invited talk given at the 2nd International Conference on Econometrics and Statistics (*Invited Paper Session*). Hong Kong, China.

[6] **Tong, X.** (2017, Feburary). How to Handle Outlying Observations in Structural Equation Modeling: Deletion or Robust Methods? An invited talk given to the Department of Biostatistics, Virginia Commonweath University, Richmond, VA.

[5] **Tong, X.** (2016, December). Strategies for Nonnormal Data Analysis in Growth Curve Modeling. An invited talk at the Silk Road Young Scholars Forum, Xi'an, China.

[4] **Tong, X.** (2016, June). Robust Frequentist versus Bayesian Methods for Growth Curve Modeling. An invited talk given to the Department of Mathematics, Renmin University of China, Beijing, China.

[3] **Tong, X.** (2016, June). Diagnostics of Growth Curve Modeling. An invited talk given to the Department of Psychology, Sun Yat-Sen University, Guangzhou, China.

[2] **Tong, X.** (2013, June). Robust structural equation modeling with nonnormal/missing data. An invited talk given to the Department of Mathematics, Renmin University of China, Beijing, China.

[1] 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. Given at the 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting (*Invited Paper Session*). Tsukuba, Japan.

REFEREED CONFERENCE PRESENTATIONS

[48] *Tang, D., & **Tong, X.** (2023, July). An investigation of missing data analytical methods in longitudinal research: Traditional and machine learning approaches. Oral presentation at the 2023 Annual Conference of Psychometric Society. College Park, MD.

[47] **Tong, X.,** *Di, J., & *Liu, Y. (2023, July). Bayesian Compositional Data Analysis with Informative Priors. Oral presentation at the 2023 meeting of the International Society for Data Science and Analytics. Shanghai, China.

[46] **Tong, X.,** Liu, H., *Tsang, S., & Wood, A. (2023, July). An analysis of emotion contagion with longitudinal text data. Oral presentation at the 2023 meeting of the International Society for Data Science and Analytics. Shanghai, China.

[45] *Li, Y., & **Tong, X.** (2023, May). Inconsistency between conventional levels of different effect size measures: Practical suggestions for sample size planning. Poster presentation at the 2023 Association for Psychological Science Annual Convention. Washington, D.C.

[44] *Eberle, J. W., *Daniel, K. E., Baee, S., Behan, H. C., Silverman, A. L., Baglione, A. N., Werntz, A., French, N. J., Ji, J. L., Hohensee, N., **Tong, X.**, Huband, J. M., Boukhechba, M., Funk, D. H., Barnes, L. E., & Teachman, B. A. (2023, June 20-21). Web-based interpretation bias training to reduce anxiety: A sequential multiple-assignment randomized trial [Flash talk]. Meeting of the Society for Digital Mental Health. https://bit.ly/3yCMedA

[43] Lillard, A. S., **Tong, X.,** & Bray, P. M. (2023, April). Racial and Ethnic Parity in Preschool: Public Montessori Versus Lottery Wait List Alternatives. Oral presentation at the 2023 American Educational Research Association meeting. Chicago, IL.

[42] **Tong, X.**, & Liu, H. (2023, January). Robust Data Analysis in Education Research. Oral presentation at the 2023 meeting of the Hawaii International Conference on Education. Honolulu, HI.

[41] **Tong, X.** (2022, June). Robust Bayesian Analysis of Longitudinal Data using Conditional Quantiles. Oral presentation at the 2022 meeting of the International Society for Data Science and Analytics. Notre Dame, IN.

[40] **Tong, X.**, & Kim, S. (2022, May). Robust Bayesian Growth Curve Modeling using Conditional Quantiles. Oral presentation at the 2022 Association for Psychological Science Annual Convention. Chicago, IL.

[39] Snyder, A. L., **Tong, X.**, & Lillard, A. S. (2022, April). Standardized Test Proficiency in Public Montessori Schools. Oral presentation at the 2022 American Educational Research Association Annual Meeting. San Diego, CA.

[38] Meyer, M. J., Schmidt, K. M., & **Tong, X.** (2022, February). Using the R Packages Rmarkdown and Learnr for Creating Interactive Websites to Teach Statistical Analyses to Psychology Students. A (virtual) teaching tutorial given at the Southeastern Teaching of Psychology Conference.

[37] **Tong, X.**, *Kim, S., & Ke, Z. (2021, July). The Impact of Likelihoods and Outliers on Bayesian Model Selection. Oral presentation at the 2021 (virtual) International Meeting of the Psychometric Society.

[36] Snyder, A. L., **Tong, X.**, & Lillard, A. S. (2021, April). Standardized Test Performance of Hispanic, Black, and Low Income Students in Public Montessori Schools. Oral presentation at the 4th Annual Diversifying Scholarship Research Conference at the University of Virginia.

[35] *Womack, S., Wilson, M., **Tong, X.**, Lemery-Chalfant, K., & Shaw, D. (2021, April). Trajectories of Early Childhood Environmental Instability and the Development of Disruptive Behaviors into Adolescence: A Prospective Study of At-Risk Families. Poster presented at the 2021 (virtual) Society for Research in Child Development Biennial Meeting.

[34] Schmidt, K. M., **Tong X.**, & Meyer, M, J., (2021, February). Using R Shiny Apps to Illustrate Statistical Concepts with Psychology Courses. A teaching demonstration at the (virtual) Southeastern Teaching of Psychology Conference.

[33] *Mazen, J., & **Tong, X.** (2020, October). Bias Correction for Replacement Samples in Longitudinal Research.   Poster presented at the 2020 (virtual) Society of Multivariate Experimental Psychology Meeting.

[32] *Kim, S., & **Tong, X.** (2020, July). Bayesian Growth Mixture Modeling using Conditional Medians. Paper presented at the 2020 (virtual) International Meeting of the Psychometric Society.

[31] *Zhang, T., **Tong, X.**, & Zhou, J. (2020, May). Robust Bayesian Growth Curve Modeling using Double Conditional Medians.   Paper presented at the (virtual) 2020 meeting of the International Society for Data Science and Analytics.

[30] *Shi, D. & **Tong, X.** (2019, May). Eliminating selection bias in two-stage Bayesian causal models with nonnormal missing data.   Paper presented at the 31th Annual Convention of Association for Psychological Science, Washington, D. C.

[29] *Moulder, R. G. & **Tong, X.** (2019, May). Testing for interindividual differences in intraindividual change in Bayesian growth curve modeling.   Paper presented at the 31th Annual Convention of Association for Psychological Science, Washington, D.C.

[28] **Tong, X.,** *Zhang, T., & Zhou, J. (2019, May). Robust Growth Curve Modeling using Conditional Medians.   Poster presented at the 31th Annual Convention of Association for Psychological Science, Washington, D. C.

[27] *Womack, S., Wilson, M., **Tong, X.**, Shaw, D., & Lemery-Chalfant, K. (2019, March). Longitudinal Associations Between Family Instability and Conduct Problems in Early Childhood. Poster presented at the 2019 Society for Research in Child Development Biennial Meeting, Baltimore, MD.

[26] *Mazen, J. A. M. & **Tong, X.** (2018, October). Bias Correction for Replacement Samples in Longitudinal Research. Poster presented at the Fall 2018 Academy of the International Max Planck Research School on the Life Course, Charlottesville, VA.

[25] *Mazen, J. A. M., & **Tong, X**., (2018, September). Bias Correction for Replacement Samples in Longitudinal Research. Paper presented at the 2018 Developmental Methods Conference, Whitefish, MT.

[24] **Tong, X.**, *Zhang, T., & Zhou, J. (2018, July). Robust and Interpretable Quantile Growth Curve Modeling. Paper presented at the 2018 International Forum on Statistics at Renmin University of China, Beijing, China.

[23] *Shi, D. & **Tong, X.** (2017, October). Bayesian Robust Two-stage Causal Modeling with Nonnormal Missing Data. Poster presented at the 2017 Annual Society of Multivariate Experimental Psychology Meeting, Minneapolis, MN.

[22] **Tong, X.** (2017, July). How to Handle Outlying Observations in SEM: Deletion or Robust Methods? Paper presented at the 2017 Annual Conference of Psychometric Society, Zurich, Switzerland.

[21] *Kim, B. & **Tong, X.** (2017, May). What to Do with Outliers in Bayesian Analysis. Poster presented at the 29th Annual Convention of Association for Psychological Science, Boston, MA.

[20] *Mazen, J. A. M. & **Tong, X.** (2017, May). Evaluation of supplemental samples in longitudinal research with nonnormal missing data. Paper presented at the 2017 Modern Modeling Methods Conference, Storrs, CT.

[19] Lillard, A. S., Heise, M. J., Richey, E., **Tong, X.**, Bray, P., Hart, A. (2017, April). Outcomes in Montessori and Conventional Preschool Programs. Poster presented at the 2017 Society for Research in Child Development Biennial Meeting, Austin, TX.

[18] *Moulder, R. G. & **Tong, X.** (2017, May). Overcoming the Boundary Problem in Bayesian Growth Curve Modeling: A Data Permutation Method for Testing Random Slopes. Poster presented at the 2017 Modern Modeling Methods Conference, Storrs, CT.

[17] **Tong, X.** & Boker, S. M. (2016, August). The Impact of Masking and Swamping Effects for Multivariate Outlier Diagnosis in Structural Equation Modeling. Paper presented at the 2016 Annual Convention of the American Psychological Association, Denver, CO.

[16] Ke, Z., & Zhang, Q., & **Tong, X.** (2016, August). Random Effect Meta-Analytic Structural Equation Modeling: A Bayesian Approach. Paper presented at the 2016 Annual Convention of the American Psychological Association, Denver, CO.

[15] *Shi, D. & **Tong, X.** (2016, August). The Impact of Prior Information on Bayesian Estimation for Latent Basis Growth Models. Paper presented at the 2016 Annual Convention of the American Psychological Association, Denver, CO.

[14] **Tong, X.,** & Boker, S. M. (2016, May). Bootstrap Standard Error Estimates in Latent Differential Equation Modeling. Paper presented at the 28th Annual Convention of Association for Psychological Science, Chicago, IL.

[13] *Shi, D. & **Tong, X.** (2016, April). The Impact of Informative Priors for Parameter Recovery in Bayesian Confirmatory Factor Model. Paper presented at the 2016 Annual Meeting of American Educational Research Association, Washington, DC.

[12] **Tong, X.,** & Ke, Z. (2015, July). Growth curve modeling for nonnormal data: a two-stage robust approach versus a semiparametric Bayesian approach. Paper presented at the 2015 Annual Conference of Psychometric Society, Beijing, China.

[11] **Tong, X.,** & Zhang, Z. (2015, May). Robust Bayesian Methods in Growth Curve Modeling. Paper presented at the 2015 Modern Modeling Methods Conference, Storrs, CT.

[10] Taylor, L. K., **Tong, X.**, & Maxwell, S. E. (2014, September). Evaluating supplemental samples in longitudinal research: Replacement and Refreshment approaches. Poster presentation at the 2014 Society for Research on Child Development, Special topic Meeting on Developmental Methodology, San Diego, CA.

[9] **Tong, X.,** & Zhang, Z. (2014, May). Robust semiparametric Bayesian methods in growth curve modeling with nonnormal data.   Paper presented at the 26th Annual Convention of Association for Psychological Science, San Francisco, CA.

[8] Seroczynski, A.D., **Tong, X.,** Grundy, A., Jobst, A., and Hull, B. (2014, January). Quantifying the Qualitative: Using Growth Curve Models to Differentiate Moral Development among Juvenile Offenders.   Paper presented at the 2nd Annual Conference of the Jubilee Centre for Character and Values, Oxford, UK.

[7] **Tong, X.,** & Zhang, Z. (2013, October). Nonparametric Bayesian modeling with applications in growth curve analysis.   Poster presentation at the 11th Graduate Student Pre-conference of Annual Society of Multivariate Experimental Psychology Meeting, Tampa, FL.

[6] **Tong, X.,** & Zhang, Z. (2013, July). Outlying Observation Diagnostics in Growth Curve Modeling. Paper presented at the 78th Annual Conference of Psychometric Society, Arnhem, the Netherlands.

[5] **Tong, X.**, Zhang, Z., & Yuan, K.-H. (2012, May). Evaluation of test statistics for robust structural equation modeling.   Paper presented at the 24th Annual Convention of Association for Psychological Science, Chicago, IL.

[4] 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 Association for Psychological Science, Chicago IL.

[3] **Tong, X.**, Zhang, Z., & Yuan, K.-H. (2011, October). Evaluation of test statistics for robust SEM with non-normal missing data.   Paper presented at the 9th Graduate Student Pre-conference of Annual Society of Multivariate Experimental Psychology Meeting, Norman, OK.

[2] **Tong, X.,** & Zhang, Z. (2011, August). Bayesian inference for robust growth curve modeling using t distribution.   Paper presented at the 119th Convention of the American Psychological Association, Washington, DC.

[1] Cheung, R. Y. M., **Tong, X.**, & Shrestha, G. (2011, June). The role of social support in the relationship between family violence and suicidal tendency: a test of competing hypotheses. Paper presented at the Society of Prevention Research 2011 Annual Meeting, Washington, DC.

PRESENTATIONS AT UVA

[12] Li, Y., & **Tong, X.** (2023, February). Inconsistency between conventional levels of different effect size measures: Practical suggestions for sample size planning. Presented at the Quantitative Psychology weekly seminar, University of Virginia.

[11] **Tong, X.** (2022, November). Robust Bayesian Quantile Growth Curve Modeling for Analyzing Population Heterogeneity. Presented at the Quantitative Psychology weekly seminar, University of Virginia.

[10] **Tong, X.**, & Kim, S. (2021, March). Conditional Likelihood or Marginal Likelihood? A Trap in Bayesian Model Selection with Latent Variables. Presented at the Quantitative Psychology weekly seminar, University of Virginia.

[9] **Tong, X.** (2020, October). Robust Bayesian Analysis of Longitudinal Data using Conditional Medians. Presented at the UVA Psychology Departmental Colloquium, Charlottesville, VA.

[8] Boichuk, J., **Tong, X.**, & Cian, L. (2019, December). Accelerating the Transition to Healthy and Sustainable Food by Appealing to the Senses. **One of the six selected talks** in the 3 Cavaliers Symposium, Charlottesville, VA.

[7] **Tong, X.** (2019, October). Nonparametric Bayesian Modeling. Presented at the Quantitative Psychology weekly seminar, University of Virginia.

[6] **Tong, X.** (2018, October). Robust Bayesian Methods in Growth Curve Modeling. Dynamics of Healthy Development Blitzarama, Charlottesville, VA.

[5] *Mazen, J. A. M. & **Tong, X.** (2018, March). Bias correction for replacement sample. Poster presented at the annual Huskey Graduate Research Exhibition, Charlottesville, VA. **Won the Poster Award.**

[4] **Tong, X.** (2017, October). Robust and Interpretable Quantile Modeling of Growth Curves.   Presented at the Quantitative Psychology weekly seminar, University of Virginia.

[3] **Tong, X.** (2016, September). Bootstrap Standard Errors and Confident Intervals for Parameter Estimates in Latent Differential Equation Modeling.   Presented at the Quantitative Psychology weekly seminar, University of Virginia.

[2] **Tong, X.** (2015, September). Outlying Observation Diagnostics in Growth Curve Modeling. Presented at the Quantitative Psychology weekly seminar, University of Virginia.

[1] **Tong, X.** (2014, September). Robust Bayesian methods in growth curve modeling.   Presented at the Quantitative Psychology weekly seminar, University of Virginia.

COURSES TAUGHT

Department of Psychology, University of Virginia (2014-Now)

- **Quantitative Methods II: Experimental Design (PSYC7720)**
  (*Graduate level*. Every Spring since 2017)

- **Longitudinal Data Analysis (PSYC 7670)**
  (*Graduate level.* Fall 2017; Fall 2016)

- **Introduction to Bayesian Methods (PSYC 5705)**
  (*Undergraduate and graduate levels.* Fall 2021; Fall 2020; Spring 2018; Fall 2016; Spring 2015)

- **Practical Longitudinal Sustainability Studies (PSYC 5725)**
  (*Undergraduate level*. Summer 2023; Fall 2021; Fall 2020)

- **Scientific and Empirical Engagement Course: "Updates Available!" (EGMT 1520)**
  (*Undergraduate level*. Fall 2023)

- **Research Methods & Data Analysis II (PSYC 3006)**
  (*Undergraduate level*. Spring 2016)

- **Analyzing Decision Making using Regression Models (PSYC 3559)**
  (*Undergraduate level*. Jterm 2022; Jterm 2021)

Department of Psychology, University of Notre Dame (2009-2014)

- Laboratory instructor for **Quantitative Methods I & II**
  (*Graduate level*. Fall 2013; Spring 2014)

- Laborotory instructor for **Structural Equation Modeling**
  (*Graduate level*. Spring 2012)

- Laborotory instructor for **Statistics**
  (*Undergraduate level.* Fall 2010; Spring 2011)

WORKSHOPS TAUGHT

- Bayesian Longitudinal Data Modeling Workshop. Funded by APS William K. and Katherine W. Estes Fund. Shanghai, China. July 3, 2023.

- Bayesian Longitudinal Data Modeling Workshop. A hybrid workshop funded by APS William K. and Katherine W. Estes Fund. Notre Dame, IN. June 2-3, 2022.

- R Workshop. An invited workshop given at the preconference of Pacific Rim Objective Measurement Symposium 2021.

- Bayesian Statistics Workshop. An invited workshop given to graduate students at the Max Planck Institute, 2019.

ADVISING

Post-doctoral Mentee

2019-2021   Seohyun Kim (Now a biostatistician at Kaiser Permanente Mid-Atlantic Permanente Research Institute)

Doctoral Dissertation Directed

2021   Jessica Mazen (Now a senior staff associate at Columbia University Irving Medical Center)
2020   Dingjing Shi (Now tenure-track assistant professor at the University Oklahoma)

Doctoral Dissertation Committees

2023   Yanbin (Barbara) Li (Committee member)
2023   Chuiwei Li (Committee member)
2022   Sarah Coe-Odess (Committee member)
2022   Sean Womack (Committee member)
2021   Zhen Pu (Department of Statistics; Committee member)
2021   Tonghao Zhang (Department of Statistics; Committee member)
2020   Sarah Coe-Odess (Committee member)
2018   Joey Meyer (Committee member)
2016   Bommae Kim (Committee member)

Doctoral Comprehensive Exam Committees

2022   Amanda Hellwig (Committee member)
2022   Chuiwei Li (Committee member)
2019   Jessica Mazen (Chair)
2019   Dingjing Shi (Chair)
2020   Gus Sjobeck (Committee member)
2019   Robert Moulder (Committee member)
2017   Joey Meyer (Committee member)
2015   Sarah Thomas (Committee member)
2015   Bommae Kim (Committee member)

Pre-dissertation Committees

2023   Kenn Dela Cruz (Committee member)
2021   Christina Carroll (Committee member)
2018   Dingjing Shi (Chair)
2017   Jessica Mazen (Chair)
2019   Ian Becker (Committee member)
2019   Jeremy Eberle (Committee member)
2018   Sean Womack (Committee member)
2015   Joey Meyer (Committee member)

Quantitative Concentration Adivisor

2022-   Yanbin (Barbara) Li

Distinguished Majors Thesis Committees

2023   Justin Schreiber
2020   Noah French

Undergraduate Advisees

Over 200 students

LIFE Dissertation Proposal Reader

2020	Andrea Hasl (LIFE fellow, Universität Potsdam)

Research Support as a Faculty Sponsor

2023	Dandan Tang (Ph.D. student) – Quantitative Collaborative Fellow Grant
2020	Jewel Simon (Undergraduate) – Student research grant from the Race, Religion, and Democracy lab
2019	Cat Thrasher (Ph.D. student) – NIH National Research Service Award
2017	Kathleen Marie Krol (Postdoctoral Research Associate) - NIH National Research Service Award
2017	Sarah Coe-Odess (Ph.D. student) - NIH National Research Service Award
2017	Jessica Mazen (Ph.D. student) and Jianyu Su (undergraduate) - Double Hoo Research Grant

SERVICE

Departmental Service

2023	Area Head of Quantitative Psychology
2023	Peer review committee
2023	DEI Award reviewer
2022	DEI undergraduate data and outreach committee
2022	Psychology department chair search committee
2021	P&T committee
2020-2022	Steering committee
2020-2021	Science outreach committee
Since 2019	Graduate +1MA program recruitment subcommittee
Since 2019	Stats consulting committee
2019-2020	Colloquium committee
2019 Spring	Aread Head of Quantitative Psychology
2017-2018	Futures committee
2016-2017	Quantitative psychology job search committee
2016 Fall	Steering committee
2015-2017	Ethnic & minority relations committee
Since 2014	Graduate recruitment committee for the quantitative psychology area

University Service

2023-2026	Committee on Personnel Policy, College of A&S
2023	Faculty advisor, College of A&S
2023	4-VA Grant reviewer
2023	Double Hoo Award reviewer
2022	P&T committee (Statistics)

Professional Service

Grant reviewer

> Netherlands Organisation for Scientific Research (NWO)

Manuscript reviewer

> Australian & New Zealand Journal of Statistics
> Behavioral Research Methods
> Behavior Genetics
> Behaviour Research and Therapy
> BMC Medical Informatics and Decision Making
> British Journal of Mathematical and Statistical Psychology
> EURASIP Journal on Wireless Communications and Networking
> European Journal of Computational Mechanics
> Expert Systems with Applications
> Journal of Autism and Developmental Disorders
> Journal of Behavioral Data Science
> Journal of Educational and Behavioral Statistics
> Journal of Experimental Child Psychology
> Journal of Family Psychology
> Journal of the Korean Statistical Society
> Journal of Multivariate Analysis
> Journal of Research on Adolescence
> Measurement and Evaluation in Counseling and Development
> Multivariate Behavioral Research
> PLOS One
> Psychological Methods
> Psychosomatic Medicine: Journal of Biobehavioral Medicine
> Statistical Modelling
> Structural Equation Modeling: A Multidisciplinary Journal

Service to Professional Associations

Since 2023	Review Editor, Frontiers in Psychology - Quantitative Psychology and Measurement
Since 2022	Statistical Editor, Psychosomatic Medicine: Journal of Biobehavioral Medicine
2021-2022	Technical Committee of International Conference on Humanity and Social Sciences
Since 2021	Quantitative Collaborative Steering Committee at University of Virginia
2021	LIFE Outstanding Alumni Award Committee
Since 2020	Associate editor, Quantitative and Computational Methods in Behavioral Sciences Journal
Since 2020	Guest editor, Journal of Behavioral Data Science

Since 2019	Organizing committee, International Society for Data Science and Analytics (ISDSA)
2020	Invited panel reviewer, Society for Research on Adolescence Biennial Meeting
2019	Session chair, Association for Psychological Science annual meeting.
2017	Invited member of an NSF sponsored meeting on methodology in cognitive training interventions, Boston, MA. Participated in drafting a consensus white paper.
2016	Session chair, American Psychological Association annual meeting.
2015	Session chair, Modern Modeling Methods Conference.
2012	Chair of the Pre-conference of the Society of Multivariate Experimental Psychology's Annual Meeting, Vancouver, BC, Canada.

Other Service and Award

2023, Mar	Presented "How to calm your brain?" as a part of the Brain Awareness Outreach Program to 2nd and 3rd graders at the Free Union Country School.
2023, Jan	Presentations at the Peabody School about the Chinese culture, language, and food.
2022, Sept	First Place in the Best Visual category of the Capture the Moment Scavenger Hunt and Photo Contest in the State of Virginia
2022, Jan	A 1-hour presentation about the Lunar New Year to 1st graders at the Peabody School. Set up a display table and made a poster to introduce the Lunar New Year to the entire school.
2021, May	Presented "How do our brains help us make senses of the world around us?" as a part of the Brain Awareness Outreach Program to 2nd graders at a local public elementary school.
2021, May	Presented "How do our brains help us make senses of the world around us?" as a part of the Brain Awareness Outreach Program to Kindergarteners at the Peabody School.
Since 2015	Statistical consultant, Department of Psychology, University of Virginia
2012-2013	Statistical Consultant, Department of Psychology, University of Notre Dame