

Xinran Liu

Department of Psychology
Arizona State University
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Education

- Ph.D., Quantitative Research Methods in Psychology Expected May 2026
Arizona State University, Tempe, AZ
Advisor: Dr. Daniel McNeish
- M.A., Quantitative Research Methods in Psychology December 2023
Arizona State University, Tempe, AZ
Thesis: Alternative Effect Size Estimation in Randomized Controlled Trials with Heterogeneous Treatment Effects
Advisor: Dr. Samantha F. Anderson
- B.A., Mathematics and Psychology May 2021
Ithaca College, Ithaca, NY
Advisor: Dr. Nancy Rader
Summa cum laude with honors
GPA: 4.00/4.00

Publications

- Liu, X.** & McNeish, D. (2024). Optimal number of replications for obtaining stable dynamic fit index cutoffs. *Educational and Psychological Measurement*.
<https://doi.org/10.1177/00131644241290172>
- Anderson, S. F., & **Liu, X.** (2023). Questionable research practices and cumulative science: The consequences of selective reporting on effect size bias and heterogeneity. *Psychological Methods*. Advance online publication. <https://dx.doi.org/10.1037/met0000572>
- Weibley, H., DiFilippo, M., **Liu, X.**, Lazenby, L., Goscha, J., Ferreira, A., Rader, N., Muscalu, L., Zuckerman, S. (2021). fNIRS monitoring of infant prefrontal cortex during crawling and an executive functioning task. *Frontiers in Behavioral Neuroscience*, 15.
<https://doi.org/10.3389/fnbeh.2021.675366>

Conference Presentations

- Liu, X.** & McNeish, D. (2024, October 9-12). *Optimal number of replications for obtaining stable dynamic fit index cutoffs* [poster session]. Society of Multivariate Experimental Psychology Conference. Ithaca, NY, United States.
- Liu, X.** & Anderson, S. F. (2024, August 8-10). *Alternative effect size measure in randomized controlled trials with heterogeneous treatment effects* [poster session]. American Psychological Association Convention, Seattle, WA, United States.
- Russell, A., Anderson, S. F., Rogers, J., & **Liu, X.** (2024, April 18-20). *Social media use and daily well-being during the pandemic* [paper presentation]. Midwestern Psychological Association Conference, Chicago, IL, United States.
- Liu, X.** & Anderson, S. F. (2023, June 26-28). *The role of cherry picking in the replication crisis* [poster session]. Modern Modeling Methods Conference, Storrs, CT, United States.

Weibley, H., **Liu, X.**, Rader, N., & Muscalu, L. (2020, May 21-24). *Prefrontal lobe activity during cognitive and motor tasks in infancy using fNIRS* [poster session]. Association for Psychological Science Convention.

Liu, X., Ferreira, A., Rader, N., & Muscalu, L. (2020, April 11). *Using fNIRS to measure infant prefrontal lobe activity during cognitive and motor tasks* [poster session]. James J. Whalen Academic Symposium, Ithaca, NY, United States.

Research Experiences

Graduate Research Assistant May 2024 – present

Department of Psychology, Arizona State University

- Research assistant to Dr. David MacKinnon in the Research in Prevention Laboratory to develop and evaluate research methods in mediation analysis.

Comprehensive Examination March 2024 – present

Department of Psychology, Arizona State University

- Conducting a literature review to examine direct discrepancy dynamic fit index, growth curve modeling, and their intersection.

Master's Thesis August 2022 – October 2023

Department of Psychology, Arizona State University

- Conducted Monte Carlo simulation studies investigating alternative effect size measures, ψ and δ , in randomized controlled trial experiments with heterogeneous treatment effects.

Graduate First Year Project January 2022 – May 2022

Department of Psychology, Arizona State University

- Conducted Monte Carlo simulation studies examining the consequences of multiplicity on original and replication studies.

Experimenter/fNIRS Technician July 2019 – July 2020

Department of Psychology, Ithaca College

- Served as the experimenter, fNIRS technician, and involved in the data collection and analyses.
- Conducted research on infants using Functional Near-Infrared Spectroscopy (fNIRS) to measure oxygenation and blood flow in the left prefrontal lobe to examine the link of the prefrontal cortex to both self-guided locomotion and executive functioning during infancy.

National Science Foundation Research Intern June 2019 – August 2019

Department of Psychology, Ithaca College

- Conducted data organization and exploratory data analyses on data collected in an infant research study examining the link between executive function and locomotion.

Undergraduate Honors Thesis Fall 2020 – Spring 2021

Department of Mathematics, Ithaca College

- Analyzed water flow data of Fall Creek, Ithaca and climate data of Ithaca.
- Examined the link between the water flow data and the climate data in attempt to find evidence for global warming.

Teaching Experiences

Lab Instructor, *Research Methods* August 2023 – May 2024

Department of Psychology, Arizona State University

- Taught and facilitated lab sessions on research design, statistical methods, and academic writing for undergraduate students in Psychology.
- Assisted faculty with curriculum development and administrative tasks.

Graduate Teaching Assistant August 2021 – May 2023

Department of Psychology, Arizona State University

- Facilitated faculty and advised students on course materials in *Introduction to Statistics*, *Intermediate Statistics*, and *Multiple Regression*.
- Gave guest lectures on power analysis and independent samples t-test.
- Taught lab sessions on class materials.
- Held office hours, tutored students, and graded homework assignments and exams.

Undergraduate Teaching Assistant August 2019 – May 2020

Department of Psychology, Ithaca College

- Facilitated faculty and advised students on course materials in *Infant, Child and Adolescent Development* and *Psychology of Adjustment*.
- Held office hours, tutored students, and graded homework assignments and exams.
- Organized class materials and led group discussions and exam review sessions.
- Facilitated online learning during the Covid-19 pandemic.

Services and ContributionsGuest Speaker, *Professional Issues in Psychology* October 2024

Department of Psychology, Arizona State University

- Facilitated a discussion on replication and open science with first-year psychology PhD students, providing additional context to enhance their understanding of key issues.

Poster Judge, *Psi Chi Research Conference* April 2022

Department of Psychology, Arizona State University

- Evaluated posters and gave recommendations for winner selection at the Arizona Psychology Undergraduate Research conference (AZPURC).

Technical Skills

Statistical Software: R, Mplus, SAS, SPSS, GPower, Excel

Brain-imaging Technology: Functional Near-Infrared Spectroscopy (fNIRS)

Honors and AwardsArizona State University

Teaching Excellence Award Jan 2024

Graduate College Travel Award April 2023

Ithaca College

Summa cum laude May 2021

Dean's Award May 2021

Dean's List August 2018 – May 2021

John Harcourt Scholarship August 2018 – May 2021

POC Superior Gold Senior Award August 2020

POC Academic Achievement Award August 2019

Relevant Coursework

Intermediate Statistics Grade: A

Multiple Regression Grade: A

Psychometric Methods Grade: A

Item Response Theory Grade: A

Machine Learning in Psychology Grade: A

Multilevel Models for Psychological Research	Grade: A
Categorical Data Analysis	Grade: A
Statistical Mediation Analysis	Grade: A
Structural Equation Modeling	Grade: A
Quantitative Meta-Science	Grade: A
Bayesian Analyses in Social Sciences	Grade: A
Advanced Bayesian Analyses	In Progress

Languages

Mandarin Chinese: Native and Full Professional Proficiency

English: Full Professional Proficiency