

Xinran Liu

Department of Psychology
Arizona State University
PO Box 871104
Tempe, AZ 85287

847-987-3789
xinran.liu@asu.edu
[Google Scholar](#)

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
Summa cum laude with honors
GPA: 4.00/4.00

Publications

- 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>.

Manuscripts Under Review

- Liu, X.** & McNeish, D. (under review). Optimal number of replications for obtaining stable dynamic fit index cutoffs. *Educational and Psychological Measurement*.
- Liu, X.** & Anderson, S. F. (under review). Alternative effect size estimation in randomized studies: An investigation of Hand's paradox. *Behavior Research Methods*.

Conference Presentations

- 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 2024 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 2024 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 2023 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 2020 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.

Professional ActivitiesPoster 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, SPSS, GPower, Excel

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

Honors and AwardsArizona State UniversityTeaching Excellence Award Jan 2024Graduate College Travel Award April 2023Ithaca CollegeSumma cum laude May 2021Dean's Award May 2021Dean's List August 2018 – May 2021John Harcourt Scholarship August 2018 – May 2021POC Superior Gold Senior Award August 2020POC Academic Achievement Award August 2019**Relevant Coursework**Intermediate Statistics Grade: AMultiple Regression Grade: APsychometric Methods Grade: AItem Response Theory Grade: AMachine Learning in Psychology Grade: AMultilevel Models for Psychological Research Grade: ACategorical Data Analysis Grade: AStatistical Mediation Analysis Grade: AStructural Equation Modeling Grade: A

Quantitative Meta-Science
Bayesian Analyses in Social Sciences

Grade: A
In Progress

Languages

Mandarin Chinese: Native and Full Professional Proficiency
English: Full Professional Proficiency