Madelin Jauregui

(209) 421-6760 ● Merced, CA ● mjauregui7@ucmerced.edu ● linkedin.com/in/madelinjasu

EDUCATION

PhD Student, Psychological Sciences (Quantitative Psychology)   **2023 – May 2028**
University of California, Merced
- *Topic*: Bayesian Estimation, Structural Equation Modeling, Longitudinal Data Analysis, Mixture Modeling.

Master of Arts, Psychological Sciences   **2023 – 2025**
University of California, Merced
- *Thesis:* Advancing SEM Mixture Model Selection: Reversible Jump Markov chain Monte Carlo.

Master of Science, Theory and Research (Magna Cum Laude)   **2021 – 2023**
KU Leuven, Belgium
- *Thesis:* Effect Size Estimation in Multiple Baseline Design Studies: A Simulation Study.

Bachelor of Arts, Psychology (Academic Exchange)   **2018**
Mount Royal University, Canada

Bachelor of Arts, Psychology   **2016 – 2021**
Universidad de La Sabana, Colombia

AWARDS

- Teaching Fellowship, University of California, Merced (2026)
- Graduate Student Research and Development Support Award, University of California, Merced (2023 – 2025)
- COLFUTURO (Foundation for the Future of Colombia) Scholarship, Colombia (2021 – 2023)
- Recognition from the Colombian Ministry of Education, Colombia (2021)
- Emerging Leaders in the Americas Program (ELAP) Scholarship, Canada (2018)
- Excellence Scholarship, Universidad de La Sabana, Colombia (2016 – 2020)

RESEARCH EXPERIENCE

Graduate Student Researcher in Quantitative Psychology   **2023 – Present**
University of California, Merced
- Engineered automated R pipelines for large-scale Monte Carlo simulations, optimizing computation time by 70% through parallel processing on high-performance clusters.
- Implemented mixture models to uncover sub-groups of people with distinct behavioral patterns.

Research Intern in Quantitative Psychology   **2022 – 2023**
KU Leuven, Belgium
- Assembled and evaluated a predictive algorithm using logistic regression and principal component analysis (PCA) to classify levels of carelessness and data quality based on participant response-pattern features.
- Collected and managed intensive longitudinal data from over 200 participants, ensuring data integrity through rigorous validation and cleaning pipelines in R.
- Interpreted analytical results into actionable insights through clear data visualizations and technical reports.

Research Intern in Clinical Psychology   **2021 – 2022**

Universidad de La Sabana, Colombia

- Designed and executed an experimental study examining *internal vs. external attentional focus* in public-speaking anxiety, translating theoretical constructs into measurable variables.
- Operationalized psychological theory into a testable model, formulating hypotheses and selecting statistical methods aligned with experimental goals.
- Analyzed experimental data using inferential statistics to evaluate theoretical predictions and quantify attention-focus effects on anxiety outcomes.

Research Intern in Neuroscience   **2017 – 2018**

Universidad de La Sabana, Colombia

- Collaborated on an in-vivo lesion study examining the *infra-limbic cortex* using a cost–benefit T-maze paradigm to understand neural mechanisms of decision-making.
- Applied quantitative analysis to biological datasets, integrating behavioral performance metrics with lesion outcomes to identify significant neural–behavioral relationships.

TEACHING EXPERIENCE

University of California, Merced   **2023 – Present**

- PSY 010 Analysis of Psychological Data (Fall 2025)
- PSY 156 Social Psychology (Spring 2025)
- PSY 191 Culminating Experience in Psychology (Fall 2024)
- PSY 010 Analysis of Psychological Data (Spring 2024)
- PSY 010 Analysis of Psychological Data (Fall 2023)

Universidad de La Sabana, Colombia   **2017 – 2020**

- Psychobiology (Fall 2020)
- Neuroscience (Spring 2020)
- Clinical and Health Psychology (Fall 2019)
- Personality (Fall 2017)
- Sensation and Perception (Spring 2017)

PEDAGOGICAL TRAINING

University of California, Merced (Teaching Commons)   **2023 – 2024**

- Advanced Pedagogy (2024)
- Principles of Pedagogy (2023)

PUBLICATIONS

- Depaoli, S., Qiu, M., Liu, H., & **Jauregui, M**. (2025). Class Selection in Growth Mixture Models: Comparing Information Criteria to Nonparametric and Parametric Bayesian Approaches. *Structural Equation Modeling: A Multidisciplinary Journal*.
- Depaoli, S., Heo, I., **Jauregui, M**., Liu, H., & Jia, F. (2025). A Comprehensive Evaluation of Model Selection Indices for Class Enumeration in Bayesian Latent Growth Mixture Models. *Structural Equation Modeling: A Multidisciplinary Journal.*

WORKING PAPERS

- **Jauregui, M**., Liu, H., & Depaoli, S. (*under review*). Bayesian Class Enumeration and Parameter Estimation

in Latent Growth Mixture Modeling via Reversible Jump Markov Chain Monte Carlo.

- **Jauregui, M**., Depaoli, S., & Liu, H. (2026). Exploring Heterogeneity Using Latent Growth Curve–Based Structural Equation Modeling Trees with Categorical and Continuous Covariates.
- **Jauregui, M**., Depaoli, S., Liu, H., & Qiu, M. (2026). Bayesian Non-parametric and Parametric Approaches to Mixture Modeling in Longitudinal SEM: A Tutorial using R.
- Depaoli, S., Liu, H., **Jauregui, M**., & Qiu, M. (2026). The Impact of Prior Specification on Mixture Structure Recovery in Dirichlet Process Latent Growth Curve Models. *(Author list pending finalization.)*

CONFERENCES

- **Jauregui, M**., Depaoli, S., & Liu, H. (2026). Exploring Heterogeneity Using Latent Growth Curve–Based Structural Equation Modeling Trees with Categorical and Continuous Covariates. *International Meeting of the Psychometric Society.* Seoul, Republic of Korea.
- **Jauregui, M.**, Liu, H., & Depaoli, S. (2025). Exploring a Data-Driven Estimation Approach to Mixture SEM: Reversible Jump Markov Chain Monte Carlo. *Meeting of the Structural Equation Modeling Working Group.* Chemnitz, Germany.
- **Jauregui, M**., Heo, I., Depaoli, S., & Liu, H. (2024). The Final Class Model Depends on the Index: Exploring Bayesian Model Fit Index Performance in Growth Mixture Modeling. *Association for Psychological Science.* San Francisco, United States.
- **Jauregui, M**., Dejonckheere, E., Verdonck, S., & Tuerlinckx, F. (2023). Indicators of Careless Responding: Identifying Carelessness in ESM Questionnaires. *Belgian Association for Psychological Sciences.* Mons, Belgium.

REVIEW EXPERIENCE

Structural Equation Modeling: A Multidisciplinary Journal   **2025**