Grace M. Steffen
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LinkedIn | Google Scholar | GitHub | OSF

EDUCATION

University of Georgia (UGA)
Ph.D., Psychology — Expected Spring 2028
M.S., Psychology — 2025
Thesis: Impact of Acute Stress on Interbrain Synchrony in Mother-Child Dyads
Supervisor: Dr. Drew Abney
Current GPA: 4.0
Relevant Coursework: Multilevel and Growth Modeling, Meta-analysis, Dyadic and Categorical Data Analysis

University of Alabama (UA)
Bachelor of Science in Biology | Bachelor of Arts in Psychology — 2022
Minors: Spanish and Liberal Arts
GPA: 3.88
Psychology major GPA: 4.27
Relevant Coursework: Computational Biology, Physiological Psychology, Human Physiology

RESEARCH INTERESTS

Developmental psychophysiology, mother–child synchrony, multimodal time-series analysis, network modeling, emotion regulation, computational methods

RESEARCH EXPERIENCE

Developmental Dynamics Lab — Aug 2023-present
Psychology Department, University of Georgia
Supervisor: Dr. Drew Abney
Graduate Research Assistant

- Creating an R Shiny app and custom R package to automate data formatting, analyses, and visualizations of multimodal, time series data. GitHub
- Clean, process, and organize complex, multimodal datasets including electrocardiogram and actigraphy data; implemented reproducible pipelines on GitHub.
- Managed and trained 10+ undergraduate researchers on coding, cleaning, and processing physiological and behavioral data; mentor undergraduates' independent research projects, which has resulted in 4 poster presentations.
- Helped manage the Infant Sleep and Movement Project, a longitudinal, multimodal study, including supporting recruitment, leading 20+ home visits, designing study protocols, and delegating tasks to research assistants
- Analyzed physiological (RSA) synchrony across time-frequency domains in 74 mother-child dyads using wavelet coherence, which led to a symposium talk. GitHub
- Constructed temporal and contemporaneous network models of physiological and behavioral data from mother-child dyads in R using the graphicalVAR package for a first author publication currently under review. OSF
- Conducted and published a meta-analysis of language and joint attention. OSF
- Provide analytical support to faculty and graduate collaborators within and outside UGA by meeting to discuss research goals and delivering tailored R code and analyses (e.g., cross-correlations, network analysis, wavelet-based coherence), and publication-ready figures.

Salekin Lab 2021-2023
Psychology Department, University of Alabama
Supervisor: Dr. Randy Salekin
Undergraduate Research Assistant

- Conducted a meta-analysis of electroencephalogram (EEG) data and psychopathy in R
- Trained in conducting social interaction behavioral assessments
- Conducted a literature review of genetic mechanisms underlying the two-factor model of psychopathy

Olson Lab 2019-2020
Biology Department, University of Alabama
Supervisor: Dr. Julie Olson
Undergraduate Research Assistant

- Aided a doctoral student in examining the role of gut microbiome in outcomes for birds in wildlife rehabilitation centers
- Plated bacteria and examined colony count and morphology
- Conducted DNA extraction and PCR

SKILLS

Programming & Tools: Excel/Sheets, R (tidyverse, ggplot2, Shiny), Python, MATLAB, HTML/CSS, Tableau

Signal Processing & Time Series Analysis: preprocessing physiological data, wavelet coherence, time–frequency analysis, cross-correlation, CRQA

Package & App Development: R/Shiny, Python/Flask

Data Science & Modeling: multilevel & SEM (lavaan, rstanarm), network analysis (graphicalVAR, qgraph) and machine learning (rpart, caret, e1071)

Languages: English (Native), Spanish (Working Proficiency)

PEER-REVIEWED PUBLICATIONS

Kretch, K.S., Enriques, F.A., Franchak, J.M., Abney, D.H., Bell, C.A., Jerry, C., Lindig, K., & **Steffen, G.** (2026). Body position classification using wearable sensors in infants with cerebral palsy. *Infant Behavior and Development.*

Steffen, G., Lindig, K., Howard, C.J., Jerry, C., Bell, Morrow, K., Gallegos, D., Oshri, A., Suveg, C., Kello, C., & Abney, D. (2026). Coupling of rhythms in prefrontal cortex and autonomic nervous system in school-age children. *Annals of the New York Academy of Sciences.* https://doi.org/10.1111/nyas.70203

Hale, M. E., Morrow, K. E., **Steffen, G.**, Wang, H., Jerry, C. M., Xu, J., Han, Z. R., Abney, D.H., & Suveg, C. (2025). Mother-Child Neurophysiological Synchrony Moderates the Relation Between Maternal Affect Experiences and Child Emotion Dysregulation. *Research on Child and Adolescent Psychopathology*, https://doi.org/10.1007/s10802-025-01380-4

BOOK CHAPTERS

~mentored undergraduate student

Steffen, G., Jerry, C., Bell, C., Kohlberg, A., ~Patel, B., & Abney, D. (2024). The Operationalization of Coordinated Attention and the Relations to Language Development: A Meta-analysis. *Advances in Child Development and Behavior (Vol. 66)*.

PUBLICATIONS UNDER REVIEW/REVISION

**equal contribution*

Hale, M.E., Peleaz Rovalo, F.X., **Steffen, G.**, Gallegos, D., Rosales, N., Juarez, K., Morrow, K., & Suveg, C. (Under Review). Physiological, Behavioral, and Parental Underpinnings of Child Persistence on a Challenge Task in Latino/a Children. *Developmental Psychology.*

***Steffen, G.**, *Jerry, C., Morrow, K., Aytuglu, A., Bell, C., Collins, S.A., Brown, G., Suveg, C., & Abney, D. (In Revision). Quantifying Complex Multimodal Interactions Between Mother-Child Dyads: A Dynamic Network Approach. *Developmental Psychobiology*.

Howard, C.J., **Steffen, G.**, Abney, D.H., Geier, C.F., & Oshri, A. (Under Review). Frequency-Optimized HRV Bands for Parent–Child Autonomic Synchrony: A Dyad-Specific Method and Evaluation. *Psychophysiology.*

Steffen, G., Bell, C., Jerry, C., Ehrlich, K.B., Suveg, C., & Abney, D. (Under Review). Methods Matter: Divergent Neural Synchrony and Behavioral Correlates in Co-Regulating Dyads. *Developmental Cognitive Neuroscience.*

MANUSCRIPTS IN PREP

Steffen, G., Suarez-Rivera, C., Shi, H., Fausey, C.M., Tamis-LeMonda, C.S., & Abney, D.H. (In Prep). DORA: an R package for analyzing and visualizing multimodal, time-series data: a comprehensive guide.

Suarez-Rivera, C., Shi, H., **Steffen, G.**, Abney, D.H., Fausey, C.M., & Tamis-LeMonda, C.S. (In Prep). Temporal Structure of Infant Vocalizations and Mother Speech at Multiple Timescales.

CHAIRED SYMPOSIA

Steffen, G. (2026, July). *Multimodal and Multi-Scale Dynamics in Early Infant–Caregiver Interactions.* Biannual Meeting of the International Congress for Infant Studies. Panama City, Panama.

SYMPOSIUM TALKS

Steffen, G., Abney, D.H., & DaSilva, E.B. (2026, July). *Longer Timescales Reveal Contextual Differences in Infant–Mother RSA Coherence.* [Conference Presentation]. Biannual Meeting of the International Congress for Infant Studies. Panama City, Panama.

Steffen, G., Bell, C., Jerry, C., Morrow, K., Suveg, C., & Abney, D. (2025, May). *Multiple timescales of RSA synchrony explain variability in stress reactivity in different ways*. [Conference Presentation]. Society for Research in Child Development Biennial Meeting, Minneapolis, MN.

POSTERS

~mentored undergraduate student

Jerry, C., Bell, C., Lindig, K., **Steffen, G.**, & Abney, D.H. (2026, July). Sleep as a Context for Infants' Autonomic Regulation: Exploring Low- and High-Frequency Heart-Rate Variability Across Sleep States. Poster presented at the Biannual Meeting of the International Congress for Infant Studies. Panama City, Panama.

Lindig, K., **Steffen, G.**, Bell, C., Jerry, C., & Abney, D.H. (2026, July). Sleep as a Context for Infants' Autonomic Regulation: Exploring Low- and High-Frequency Heart-Rate Variability Across Sleep States. Poster presented at the Biannual Meeting of the International Congress for Infant Studies. Panama City, Panama.

Ravindran, N., **Steffen, G.**, Kim, J., Wang, Z., Eason, S., & Abney, D. (2026, June) Beyond magnitude: Timescale-specific durations of parent-child physiological synchrony is associated with parent math anxiety. Poster presented at the Biannual Meeting of International Society for the Study of Behavioural Development. Incheon, South Korea.

Bell, C., **Steffen, G.**, Jerry, C., Franchak, J., & Abney, D. (2026, June). Myoclonic Twitches and Waking Motor Development Across the First Year of Life. Poster presented at the Biennial Meeting of International Society for Ecological Psychology. Omaha, Nebraska.

Steffen, G., Lindig, K., Howard, C.J., Jerry, C., Bell, C., Morrow, K., Gallegos, D., Oshri, A., Suveg, C., Kello, C., & Abney, D. (2025, November). Coupling of rhythms in prefrontal cortex and autonomic nervous system in school-age children. Poster presented at Converge: Leveraging One Health, AI, and Precision Medicine for a Smarter, Healthier Future. Precision One Health, University of Georgia. Athens, GA.

~Kightlinger, A., **Steffen, G.**, & Abney, D. (2025, April). Examining the Impact of Marital Status on Emotion Regulation in Mother-Child Dyads. Poster presented at Center for Undergraduate Research Opportunities Symposium. University of Georgia. Athens, GA.

~Justus, A., ~Sands, S., **Steffen, G.**, Suveg, C. & Abney, D. (2025, April). Exploring the Link Between Salivary Cortisol and Positive and Negative Affect in Young Children Under Stress. Poster presented at Center for Undergraduate Research Opportunities Symposium. University of Georgia. Athens, GA.

~Perno, N., Bell, C., **Steffen, G.**, Jerry, C. & Abney, D. (2025, April). Connecting Respiratory Sinus Arrhythmia and Emotional Regulation in Infants. Poster presented at Center for Undergraduate Research Opportunities Symposium. University of Georgia. Athens, GA.

Jerry, C., **Steffen, G.**, Bell, C., Kohlberg, A., ~Patel, B., & Abney, D. (2024, July). The Operationalization of Coordinated Attention and the Relations to Language Development: A Meta-analysis. Poster presented at the Biannual Meeting of the International Congress for Infant Studies. Glasgow, Scotland.

~Ellington, S.J., ~Harris, J.A., **Steffen, G.**, & Abney, D. (2024, April). Examining the Relationship Between Salivary Cortisol and Income in Mother Child Dyads During a Stressful Task. Poster presented at Center for Undergraduate Research Opportunities Symposium. University of Georgia. Athens, GA.

Steffen, G. (2022, October). Genetic and environmental factors underlying the two-factor model of psychopathy: a meta-analysis. Poster presented at BioFest. University of Alabama. Tuscaloosa, AL.

INVITED TALKS

Steffen, G. (2026, March). *Research in Psychology.* Guest Lecture at the University of Georgia, PSYC 3980.

Steffen, G. (2025, August). *Research in Developmental Psychology: Developmental Dynamics.* Guest Lecture at the Virginia Polytechnic Institute and State University, PSYC 2034.

Steffen, G. (2024, August). *Psychology of Stress: Electrocardiogram (ECG) Demonstration.* Guest Lecture at the University of Georgia, PSYC 5100.

Steffen, G. (2024, July). *Physiological Psychology Research: Respiratory Sinus Arrhythmia (RSA) as a Measure of Emotion Regulation*. Guest Lecture at the University of Georgia, PSYC 4200.

Steffen, G. (2024, May). *Physiological and Self-Reported Emotion Regulation in Mother-Child Dyads*. Guest Lecture at the University of Georgia, Social and Personality Psychology at UGA.

HONORS, AWARDS, AND CERTIFICATES

Michael E. Merriman Scholarship ($2600; UGA)	2026-2027
Outstanding Publication in Behavioral and Brain Sciences (UGA)	2026
Certification in Quantitative Methods in Family and Social Sciences (UGA)	2025
Significant Contributions to Research in Psychology (UA)	2022
Level Two CRLA certification	2022
President's List (UA)	2020-2022
National Merit Scholarship (~$200,000; UA)	2018-2022

Dean's List (UA) 2018-2019

MEMBERSHIPS AND DEPARTMENTAL SERVICE

Co-coordinator, Psychology Undergraduate Mentorship Program (UGA) 2025-present
Co-coordinator, Summer Undergraduate Research Education Program (UGA) 2025
Member, Society for Research in Child Development 2025
Committee Member, Inclusion Excellence Committee, UGA Psychology Department 2025
Member, International Congress of Infant Studies 2024-present
Mentor, Psychology Undergraduate Mentorship Program (UGA) 2023-2024
Committee Member, Diversity Committee, UGA Psychology Department 2023-2024

PROFESSIONAL EXPERIENCE

Handshake AI Fellow 2025-present
Handshake AI, Remote

- Developed and evaluated domain-specific prompts to assess the performance of large language models (LLMs)
- Analyzed LLM outputs for scientific accuracy, clarity, and depth in specialized subfields
- Contributed to improving AI understanding of human behavior through expert review and feedback
- Conducted independent research to support prompt development and evaluation tasks

PSYC 6420 Teaching Assistant Fall 2025
Psychology Department, University of Georgia

- Provide grading, feedback, and lab support for all first-year graduate students in the first core statistics/R course in required sequence for all psychology graduate students: Advanced Experimental Psychology
- Assist students with statistical modeling & data visualization in R to build and reinforce mastery of quantitative methods.

PSYC 6430 Teaching Assistant Spring 2025, Spring 2026
Psychology Department, University of Georgia

- Provide grading, feedback, and lab support for all first-year graduate students in the second core statistics/R course in required sequence for all psychology graduate students: Applied Regression
- Assist students with statistical modeling & data visualization in R to build and reinforce mastery of quantitative methods.

PSYC 4150 Teaching Assistant Fall 2023
Psychology Department, University of Georgia

- Graded assignments and assisted students in PSYC 4150 Biological Health Psychology course

Genetics Tutor 2022
Capstone Center for Student Success, University of Alabama

- Led drop-in tutoring for BSC 315 Genetics course

Academic Peer Coach 2021-2022
Capstone Center for Student Success, University of Alabama

- Provided academic coaching in weekly one-on-one sessions for undergraduate students
- Led skill session presentations on topics such as time management, study skills, and test anxiety
- Received Level Two CRLA certification

Research Coach 2021
Mentorship Program, North Carolina School of Science and Mathematics
- Guided high school students through independent research through one-on-one and small group meetings
- Graded and provided feedback on assignments
- Taught lessons on research skills, like academic writing, APA formatting, and maintaining mentorship relationships

Lead Student Assistant 2019-2020
Area of Computing Services, UA Libraries
- Managed a team of undergraduate student assistants
- Responsible for coordinating maintenance of all computing systems across all of UA libraries

Student Assistant 2018-2019
Area of Computing Services, UA Libraries
- Maintained computers and other technology across the four main libraries at UA
- Provided technical support for library staff

MENTORSHIP

- Nandita Bhat (2023)
- Avery Hughes (2023-2024)
- Ava McDonald (2023-2024)
- Neelie Perno (CURO Summer Fellow; 2023-2024)
- Gloria Del Toro (2023-2024)
- Alexa Kightlinger (2023-2025)
- Jade Harris (2024-2025)
- Shreya Lakshmisha (2025)
- Samantha Sands (2024-present)
- Angeline Justus (2024-present)
- Hannah Dutton (Russel Award; 2025-present)