Hexin (Christina) Luo

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EDUCATION

Washington University in St. Louis School of Medicine   St. Louis, MO

M.S. *in Applied Health Behavioral Research*   *Sep.2023-Aug.2024*

GPA: 4.00/4.00

Thesis Topic: *Altered Functional Connectivity and Emotion Regulation in Children with Early Sensory Challenges*

Mentor: *Dr. Rebecca Schwarzlose, Assistant Professor*

University of California, Davis, College of Letters and Sciences   Davis, CA

B.A. *in Psychology and Communication (Graduated with Honors)*   *Sep.2018 – Jun.2022*

GPA: 3.918/4.00

RESEARCH EXPERIENCE

Neurodevelopment of Naturalistic Social/Emotion Encoding and Emotion Regulation from Infancy to Adolescence

Washington University School of Medicine, Dr. Cat Camacho, Dr. Rebecca Schwarzlose

St. Louis. MO, *Jun.2024-Present*

- Characterized neonatal thalamus to visual cortex functional (fMRI) and structural (DTI) connectivity patterns and assess individual differences in relation to social looking behaviors at age 1 year
- Developed encoding models of contextualized emotional, semantic, and audio-visual stimuli (movies) across development from fMRI data of 620 5-to-15-year-old children
- Characterized associations between individual cortical selectivity maps and emotion regulation strategies (cognitive reappraisal/repression) in 8-to15 year-old children using machine learning
- Developed pilot study to develop measures of behavioral and neural naturalistic emotion regulation during peer interactions among young adolescents using DOT

Clinical and Neural Correlates of Sensory Over-responsivity in Childhood

Washington University School of Medicine, Dr. Rebecca Schwarzlose, Dr. Chad Sylvester

St. Louis. MO, *Aug. 2023-Jun.2025*

- Identified differences in resting-state functional connectivity pattern associated with sensory over-responsivity through multi-level regression using multiple autism/non-autism neuroimaging datasets
- Synthesized clinical symptom data across 5 national data consortiums (n=15000) to characterize symptom presentation differences in children with severe/mild sensory over-responsivity and healthy controls
- Characterized phenotypic heterogeneity in subcortical volume among preadolescents with autistic traits using hierarchical mixed-effects models and ABCD Study data
- Assessed the development of emotion regulation strategies in children with early-onset sensory challenges and their mediating role in the development of concurrent and future psychopathology

Emotion Regulation and Sleep Bruxism

Stanford University, PI: Dr. Sylvia Kreibig, Dr. James Gross   Stanford, CA, *Sep.2022-Jul.2023*

- Analyzed actigraphy and polysomnography recordings from 300 participants to quantify associations between individual differences in rhythmic masticatory muscle activity and sleep bruxism patterns with emotion regulation capabilities
- Conducted extensive literature reviews and synthesized research on sleep bruxism, emotion regulation, and physiological measures, contributing to the development of comprehensive theoretical frameworks and definitions

Smoking Behaviors and Cognitive Control

University of California, Davis, PI: Dr. Shelley Blozis   Davis, CA, *Sep.2021-Mar.2022*

- Analyzed national public health data (MIDUS2) to examine how smoking behavior impacts self-reported impulsivity trait and emotional control in middle-aged Americans

MANUSCIRPTS IN PROGRESS

Under Review

- **Luo, H.,** Kim, A. W., Gurnett, C. A., Abbacchi, A. M., Constantino, J. N., Luby, J. L., Perino, M. T., Barch, D. M., Sylvester, C. M., Camacho, M. C. & Schwarzlose, R. F. (2025). *Replicable, Transdiagnostic Behavioral and Neural Correlates of Sensory Over-responsivity. bioRxiv*, 2025.09.04.672422. https://doi.org/10.1101/2025.09.04.672422 (under review at the Journal for the American Academy of Child and Adolescent Psychiatry)

- **Luo, H.*,** Kim, W.A.*, Constantino, J.N., Sylvester, C.M., Camacho, M.C., Barch, D.M., Schwarzlose, R.F. *Role of Phenotypic Heterogeneity in Volumetric Brain Associations with Autistic Traits in Preadolescence* (submitted to Biological Psychiatry)

- Egeland, C., Aklilu, J., Brown, A., Sui, E., Sutjiadi, B., Song, A., **Luo, H.**, Conti, A., Sun, MW., Goel, S., Rau, A., Villarreal, J., Azagury, D., Yeung-Levy, S., Sorenson, E., Jopling, J. *SurgVis+500-An Open, Multi-Procedure Dataset of Laparoscopic Surgical Videos from Intermountain Healthcare* (submitted to Nature Scientific Data)

- Schwarzlose, R. F., Kim, A. W., Abbacchi, A. M., Luby, J. L., Gurnett, C. A., Constantino, J. N., Barch, D. M., Sylvester, C. M., Camacho, M. C., **Luo, H.** *Childhood sensory over-responsivity in autistic and community samples: Specific relations to anxiety and replicable neural correlates* (under review at International Society for Autism Research)

In Preparation

- Schwarzlose, R.F., Laumann, T.O., Agard, R.H., Scanga, A.J., Myers, M.J., **Luo, H.,** Overschmidt, S., Labonte, A.K., Kay, B.P., Marek S., Sylvester, C.M. *Brain activation associated with scanner noise contaminates functional MRI data* (in preparation for Nature Methods)

- Schwarzlose, R.F., **Luo, H.,** Overschmidt, S., Overschmidt S. R., Constantino. J.N., Barch, D.M. *Clinical relevance and neurobiology of Sensory Over-Responsivity in Childhood.* (invited submission in preparation, Volume 8 of the Annual Review of Developmental Psychology)

- **Luo, H.,** Kanchanam, M., Strickland, J., Fogarty, M., Fehner, W., Cadena, V., Culver, J., Eggebrecht, A., Deshpande, E., Barch, D.M., Sylvester, C. M., Schwarzlose, R. F., Camacho, M. C. *Developmental differences in contextualized social-emotional encoding.* (in preparation)

CONFERENCE PRESENTATIONS

- **Luo, H.,** Kim, W.A., Camacho, M.C., Barch, D.M., Sylvester, C.M., Schwarzlose, R.F. (2026) *Role of Phenotypic Heterogeneity in Volumetric Brain Associations with Autistic Traits in Preadolescence* 2026 American College of Neuropsychopharmacology Annual Meeting (Submitted)

- **Luo, H.**, Kim, W.A., Camacho, M.C., Constantino, J.N., Sylvester, C.M., Barch, D.M., & Schwarzlose, R.F. (2025). *Replicable functional connectivity patterns associated with sensory over-responsivity in children.* 2025 Annual Conference of Society of Neuroscience. San Diego, CA

- Overschmidt, S.R., **Luo, H.,** Sylvester, C.M., Luby, J. L., Schwarzlose, R.F. *Examining Associations Between Brain Volume and Sensory Over-Responsivity in Infancy.* 2025 Annual Conference of Society of Neuroscience. San Diego, CA

- **Luo, H.,** Strickland, J., Fogarty, M., Fehner, W., Cadena, V., Culver, J., Eggebrecht, A., Sylvester, C.M., Barch, D.M., Schwarzlose, R.F & Camacho, M.C. (2025). *Individual Differences in Emotion Regulation Strategies Shape*

- *Neural Discrimination Patterns Among Basic Emotions.* 2025 Annual Conference of The Social and Affective Neuroscience Society. Chicago, IL
- **Luo, H.**, Kim, W.A., Camacho, M.C., Constantino, J.N., Sylvester, C.M., Barch, D.M., & Schwarzlose, R.F. (2025). Sensory Over-Responsivity in Childhood: Neural Correlates and Specific Links to Anxiety in Large Pediatric Samples. 2025 Society of Biological Psychiatry Annual Meeting. Toronto, Canada
- Kim, W.A., **Luo, H.**, Camacho, M.C., Barch, D.M., Sylvester, C.M., Schwarzlose, R.F. (2025) *Associations Between Sensory Over-Responsivity and Brain Volume in Early Adolescence.* 2025 Society of Biological Psychiatry Annual Meeting. Toronto, Canada
- **Luo, H.,** Strickland, J., Fogarty, M., Fehner, W., Cadena, V., Culver, J., Eggebrecht, A., Sylvester, C.M., Barch, D.M., Schwarzlose, R.F & Camacho, M.C. (2025). *Emotion Regulation Strategies Shape Neural Discrimination Patterns Among Basic Emotions.* 2025 Mallinckrodt Institute of Radiology Research Symposium. St. Louis, MO
- **Luo, H.,** Camacho, M.C., Kim, W.A., M.C., Sylvester, C.M., Barch, D.M, Schwarzlose, R.F., (2024). *Functional Connectivity Associated with Sensory Over-responsivity: Replication and Extension.* 2024 Mallinckrodt Institute of Radiology Research Symposium. St. Louis, MO
- **Luo, H.,** Camacho, M.C., Sylvester, C.M., Barch, D.M, Schwarzlose, R.F., (2024). *Psychiatry Symptoms and Maladaptive Emotion Regulations in Children with Elevated Sensory Sensitivity.* Washington University Annual Psychiatry Research Symposium. St. Louis, MO

PROFESSIONAL EXPERIENCE

Professional Rater II   *Aug.2024 – Present*
Organization for Cognitive, Emotional, and Attentional Neurodevelopment, Washington University School of Medicine
- Managed over 100 MRI, EEG, EMG sessions as lead technician, performing neuroimaging procedures on diverse populations ranging from neonates to adolescents with various neurodevelopmental conditions
- Administered behavioral assessments to measure sensory challenges (SP3D-A), autistic traits (CARS-2), and cognitive function (WASI) with children aged 8-15, and facilitated observational sessions evaluating parent-child interaction for 4-, 14-, and 24-month-old infants
- Conducted rigorous quality control on raw structural MRI data, rectifying parcellation errors using FreeSurfer, and preprocessed fMRI data by applying temporal filtering and motion censoring techniques, preparing comprehensive tabulated datasets for advanced neuroimaging analyses
- Spearheaded participant recruitment and screening, managed data for multiple projects using REDCap, and coordinated team efforts for IRB compliance, including drafting materials for updates and renewals while ensuring data integrity and security

Project Coordinator, Stanford Medical AI and Computer Vision Lab, Stanford University   *Sep.2023 – Aug.2024*
- Annotated over 100 cholecystectomy surgical videos, identifying condition severity, procedural steps and errors using Hierarchical Task Analysis (HTA) via Label Box, contributing to the creation of a comprehensive databank for algorithm training
- Collaborated with lab scientists and stakeholders to facilitate open-sourcing of surgical videos, ensuring data privacy compliance for public access, and coordinated with repository platforms to optimize distribution

Research Assistant, Stanford Psychophysiology Lab, Stanford University   *Sep.2022 – June .2023*
- Performed day-to-day high-level quality control checks on actigraphy and PSG data and contributed to scoring protocol creation, facilitating the standardization and high reliability of RMMA event scoring
- Created high-precision anatomical illustrations using Adobe Illustrator to visualize multiple physiological measures of emotion for book publications, enhancing consistency and accuracy in physiological research applications

Intern Journalist, <u>Ruder Finn, Guangzhou, China</u>   *April.2021 - Oct. 2021*
- Composed an average of 3 stories monthly on trending social topics, leveraging effective storytelling techniques to increase audience reach and spark public discourse
- Analyzed social media metrics and media coverage data to evaluate campaign performance and track progress, delivering actionable insights to inform strategic decision-making

LEADERSHIPS AND MENTORING

Podcast host, *Apple Podcast*   *Sep.2023 – Present*
- Host a psychology and brain sciences podcast, producing episodes that address the critical gap in mental health awareness among Chinese youth.
- Interview area experts and local clinicians to discuss current social trends, introducing psychological concepts and contributing to increased mental health literacy

Volunteer, *Chengdu No.4 Child Psychiatry Hospital - Autism Center*   *May.2021-Aug.2021*
- Organized and facilitated 12 community support activities for families of autistic children, providing evidence-based guidance to enhance family dynamics and child development strategies
- Coordinated 50+ ABA sessions, ensuring adherence through empathetic communication and rapport-building

Head of Public Relationships, *Davis Movie Club, UC Davis*   *Oct.2019 - May.2022*
- Organized 12 campus-wide film events cooperated with art professors and industrial professionals attracted 6000+ total attendees. Interviewed over 20 college community members and wrote a movie and art column in UC Davis Magazine

AP Psychology Teaching Assistant, *USUK International School*   *Jun.2019 - Sep.2020*
- Instructed AP psychology course for a class of 9 students, four-hours a week
- Created assignments and mock exams for students to understand the key concepts and practice for exam

HONORS AND AWARDS

WashU School of Medicine Scholarship *($21000)*   *Fall 2023*
UC Davis Dean's honors list - all semesters   *Fall 2018-Spring 2022*

SKILLS

Data Collection:
- Neuroimaging: MRI, EEG, DTI, DOT
- Assessments: WASI-II, CARS-II, SP3DA
- Physiology: EMG, Actigraphy, Polysomnography

Language:
- English: Advanced
- Mandarin: Native

Data Analysis:
- Programming: Python, R, Bash
- Neuroimaging: FreeSurfer, Workbench, fMRIPrep
- Data Management: Redcap, Excel, IRB, SPSS

Certifications:
- MRI level II Operator
- CITI, HIPAA
- Associate Data Analyst in Python (Datacamp)