

Adrián Alejandro Medina

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EDUCATION

Harvard University	Cambridge, MA
Master of Public Health (M.P.H.), Health & Social Behavior	2024
Concentrations: Population Mental Health, Maternal & Child Health	
Master of Education (Ed.M.), Human Development & Education	2023
Concentration: Identity, Power, Justice, & Education	
Graduate Certificate: Child Protection	
Loyola University Chicago	Chicago, IL
Bachelor of Science (B.S.) with Honors & Distinction, Neuroscience & Psychology	2021
Minors: Biology, Arabic Language & Culture	
Advisor: Rebecca Silton, Ph.D.	

RESEARCH INTERESTS

Clinical, epigenetic, inflammatory, and neurodevelopmental outcomes driven by multidimensional adverse and traumatic experiences, including threat, deprivation, and unpredictability. Computational modeling of differential and transdiagnostic perturbations in affective processing, cognitive functioning, brain morphometry, and network connectivity across psychiatric conditions. Neurobehavioral mechanisms linking social determinants of health to mental health outcomes within an ecological systems framework.

PUBLICATIONS

Wang, J., Turesky, T., Loh, M., Barber, J., Hue, V., Escalante, E., **Medina, A.**, Zuk, J., & Gaab, N. (2024). Lateralization of Activation Within the Superior Temporal Gyrus During Speech Perception in Sleeping Infants is Associated with Subsequent Language Skills in Kindergarten: A Passive Listening Task-fMRI Study. *Brain & Language*, 257, 105461. <https://doi.org/10.1016/j.bandl.2024.105461>

Saboor, S., **Medina, A.**, & Marciano, L. (2024). Application of Positive Psychology in Digital Interventions for Children, Adolescents, and Young Adults: Systematic Review and Meta-Analysis of Controlled Trials. *JMIR Mental Health*, 11, e56045. <https://doi.org/10.2196/56045>

Under Review

Korponay, C., Cohen-Gilbert, J. E., Kumar, P., Harnett, N. G., **Medina, A. A.**, Forester, B. P., Ressler, K. J., Demsar, J., Frederick, B. B., Beckmann, C. F., Harper, D. G., & Nickerson, L. D. (submitted, [preprint](#)). Concurrent Large-Scale Brain Dynamics During Emotion Processing & Their Distinct Roles in Behavior. *Communications Biology*.

Wu, B., Vyas, C., **Medina, A.**, Slopen, N., Mahalingaiah, S., Chavarro, J. E., Mukherjee, R., Weisskopf, M., & Roberts, A. L. (submitted). Estimating the Associations Between Women's Maltreatment in Childhood & Inflammatory Biomarker Levels Prior to & During Pregnancy. *Child Abuse & Neglect*.

In Preparation

Korponay, C., Cohen-Gilbert, J. E., Kumar, P., Harnett, N. G., **Medina, A. A.**, Cheng, Y., Forester, B. P., Ressler, K. J., Demsar, J., Frederick, B. B., Beckmann, C. F., Harper, D. G., & Nickerson, L. D. Undiversified and Cognition-Centric Brain Activity Across Imaging Tasks Constrains the Reflection of Mental Health in Brain Function Data. To be submitted for publication in winter (before spring) 2025.

Medina, A. A., & Slopen, N. From Risk to Resilience: Ecological Exploration of Psychopathology and Flourishing in Neurodivergent Children Facing Adversity. To be submitted for publication in spring 2025.

PRESENTATIONS

**Indicates I was/will be the presenting author.*

Cheng, Y., **Medina, A.**, Korponay, C., Harper, D., & Nickerson, L. (Submitted). *Multi-Modal Neuroimaging Reveals Predictive Patterns of Affective Symptoms and Hyperactivity in Alzheimer's Disease*. Alzheimer's Association International Conference. Toronto, ON, CAN. July 2025.

***Medina, A.**, Korponay, C., Cheng, Y., Cohen-Gilbert, J., Kumar, P., Harper, D., & Nickerson, L. (**Accepted**). *Cognitive Function, Neuropsychiatric Symptoms and Deviations from Normative Brain Network Structure in Treatment Resistant Depression*. Society for Biological Psychiatry Annual Meeting. Toronto, ON, CAN. April 2025.

Salavrakos, M., Korponay, C., **Medina, A.**, & Nickerson, L. (**Accepted**). *Exploring the Link Between Neuropsychiatric Symptoms and Cortical Thickness in Alcohol Use Disorder: Insights from Normative Modelling*. Society for Biological Psychiatry Annual Meeting. Toronto, ON, CAN. April 2025.

Pagnier, G., **Medina, A.**, Romer, A., Nicastrì, C., Kumar, K., & Kumar, P. *Associations Between Mental Health Phenotypes and Subjective Cost/Benefit Decision-Making During the COVID-19 Pandemic*. McLean Hospital's Research Day. Belmont, MA, USA. January 2025.

Turlick, L., Hurtubise, O., **Medina, A.**, Kumar, K., Dillon, D., Kumar, P., & Cataldo, A. *Viewing Images Boosts Emotional Sensitivity: An Overview of the VIBES task*. McLean Hospital's Research Day. Belmont, MA, USA. January 2025.

Wang, J., Turesky, T., Loh, M., Barber, J., Hue, V., Escalante, E., **Medina, A.**, & Gaab, N. *Lateralization of Activation in the Superior Temporal Gyrus for Speech Processing in Sleeping Infants Is Predictive of Their Language Skills in Kindergarten: an fMRI Study*. Flux Society Annual Congress. Santa Rosa, CA, USA. September 2023.

***Medina, A.**, Jolie, S., Sosa, S., & DeCarlo Santiago, C. *Immigrant Related Stress and Child Somatization: Examining the Moderation Effect of Voluntary Engagement Coping*. Society for Research in Child Development Biennial Meeting. Virtual. April 2021.

***Medina, A. A.**, Polnaszek, K., Kahrilas, I.J., & Sifton, R.L. *Anxious Arousal & Anxious Apprehension are Distinctly Related to the Temporal Course of Response Inhibition*. Loyola University Chicago's Undergraduate Research & Engagement Symposium. Chicago, IL, USA. April 2021.

Miller, E., **Medina, A.**, Zarzour, H., Jolie, S., & DeCarlo Santiago, C. *Latino Children's Responses to Family Cultural Conflict Stress*. Midwestern Psychological Association Annual Conference. Chicago, IL, USA. April 2021.

***Medina, A.**, Tan, L., Harb, F., Elahi, S., & DeCarlo Santiago, C. *The Right to Equitable Education for Refugee and Immigrant Youth during COVID-19*. Center for the Human Rights of Children's Symposium. Chicago, IL, USA. November 2020.

***Medina, A. A.** *Visual Schedules & Priming Strategies: Integrating Behavioral Strategies in Transition Support for Persons with ASD at Misericordia Home*. Loyola University Chicago's Undergraduate Research & Engagement Symposium. Chicago, IL, USA. April 2020.

***Medina, A.**, Salifu, E., & Ransom, M. *Opulence: Do We Really Own Everything?* Loyola University Chicago's Social Justice Symposium. Chicago, IL, USA. March 2020.

***Medina, A.**, Hernandez, M., Blake, J., & Saeed, R. *Genetic Editing & Its Ethical Dilemma*. University of Florida's Summer Health Professions Education Program (SHPEP) Gallery Walk Symposium. Gainesville, FL, USA. June 2019.

PROFESSIONAL RESEARCH EXPERIENCE

¹Applied Neuroimaging Statistics Research Laboratory 2023 – Present

²Computational Psychopathology Laboratory 2023 – Present
McLean Hospital, Harvard Medical School

^{1,2}Research Data Manager, ^{1,2}Senior Clinical Research Assistant: ¹*Combining Computational Methods, RDoC, & Big Neuroimaging Data to Understand Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Disease*; ²*Building Normative Models of Reinforcement Learning Decision Making Behavior*

Supervisors: Lisa Nickerson, Ph.D.¹, David Harper, Ph.D.¹ & Poornima Kumar, Ph.D.²

- Analyzed/visualized/harmonized neuroimaging and clinical data derived from the Human Connectome Project (Lifespan and Connectomes Related to Human Disease) and the Alzheimer's Disease Neuroimaging Initiative using R & Python, learned introductory Unix commands and functionalities related to FMRIB Software Library (FSL), utilized Unix to extract FreeSurfer imaging values, performed data cleaning and analysis, compiled detailed reports of statistical analysis results using GitHub and Quarto/HTML formatting, supervised junior research assistants, and assisted with administrative duties for study progression (e.g., NDA data upload).

Vision Sciences Laboratory 2022 – 2023

Harvard University

Laboratory Administrator

Supervisors: George Alvarez, Ph.D. & Talia Konkle, Ph.D.

- Managed lab operations, coordinated administrative tasks, prepared content for publications, and managed lab resources and financial reports.

Stress & Development Laboratory 2021 – 2023

Harvard University

Research Project Manager, Research Coordinator: *Observing Children's Environments & Neurodevelopment (OCEAN) Study, Feelings & Childhood Experiences (FACES) Study*

Supervisors: Katie McLaughlin, Ph.D., Maya Rosen, Ph.D., & David Weissman, Ph.D.

- Conducted virtual cognitive assessments and MRI sessions (sMRI, fMRI) with children and adolescents, managed study finances and expenditures, modified study IRB protocols and drafted study procedural/training protocols, programmed study data instruments on REDCap, oversaw data management (SharePoint), quality assurance, & recruitment for OCEAN & FACES studies, and supervised study team of 20 including hiring and training.

¹Wellbeing & Emotion Laboratory at Loyola 2019 – 2021
²Children Adapting to Stress & Adversity Laboratory 2019 – 2021

Loyola University Chicago

^{1,2}Laboratory Manager & ^{1,2}Research Assistant: ¹*Supported Mindful Learning (SMiLe) Study*; ²*Supporting Transition Resilience of Newcomer Groups (STRONG) Study, Protective Processes among Immigrant Families Study*
 Supervisors: Rebecca Silton, Ph.D.¹ & Catherine DeCarlo Santiago, Ph.D.²

- Conducted EEG sessions, managed lab infrastructure, developed basic MATLAB proficiency, analyzed family coping mechanisms using the Family Interaction Macro-Coding System, piloted school-based interventions for refugee/immigrant students, managed data collection on SPSS, translated materials to Spanish, formatted materials in Arabic, and enhanced communication structures within the team.

STUDENT/INTERN RESEARCH EXPERIENCE

Department of Social & Behavioral Sciences 2024

Harvard T.H. Chan School of Public Health

Graduate Research Assistant: *From Risk to Resilience: Ecological Exploration of Psychopathology and Flourishing in Neurodivergent Children Facing Adversity*

Supervisor: Natalie Slopen, Sc.D.

- Continuation of course (SBS 220: *Social and Structural Inequalities & Children's Health*) project, manuscript to be submitted for publication, secondary analysis on data from the National Survey of Children's Health to explore the relationships between adverse childhood experiences, psychopathology, and child flourishing among neurodivergent children.

Mental Health for All Laboratory 2024

Harvard Medical School

Research Practicum Intern: *EMPOWER Program – Lone Star Project*

Supervisors: Vikram Patel, M.B.B.S., Ph.D., John Naslund, Ph.D., & Natali Carmio, PsychD

- Translated and collaborated on developing training resources and manuscripts for the EMPOWER program's psychosocial interventions for Spanish-speaking healthcare workers.

Environmental Neuroepidemiology Group 2023 – 2024

Harvard T.H. Chan School of Public Health

Graduate Research Assistant: *Maternal Exposure to Childhood Abuse and Disparities in Offspring Neurodevelopment: Identifying Mechanisms*

Supervisor: Andrea Roberts, Ph.D., M.P.H.

- Conducted literature reviews on stress and trauma's impact on perinatal mental health, synthesized findings for reports, and developed visual aids for presentations, and contributed to drafting a manuscript to be submitted for publication.

Lee Kum Sheung Center for Health & Happiness 2023

Harvard T.H. Chan School of Public Health

Graduate Research Assistant: *HappyB Project*

Supervisor: Laura Marciano, Ph.D.

- Co-led a systematic review & meta-analysis on positive psychology digital interventions, prepared PowerPoint presentations, and conducted literature reviews for social media use and digital mental health interventions.

Schacter Memory Laboratory 2022 – 2023

Harvard University

Graduate Research Assistant: *Autobiographical Memory & Problem-Solving Study, Repetition Suppression Study*

Supervisors: Daniel Schachter, Ph.D. & Roni Setton, Ph.D.

- Co-conducted MRI (sMRI, fMRI) sessions on memory and imagination across age groups, learned Python and utilized R for data wrangling, and analyzed psychometric data using statistical testing.

Gaab Laboratory

2022 – 2023

Harvard Graduate School of Education

Graduate Research Assistant: *BabyBOLD Study*

Supervisors: Nadine Gaab, Ph.D., Ted Turesky, Ph.D., & Jin Wang, Ph.D.

- Assisted with MRI (sMRI, fMRI, MRSI) of children and caregivers, cleaning/organizing longitudinal pediatric psychometric data, preparation/review of manuscript for publication, & training research staff on MRI operations for pediatric subjects.

Wellbeing & Emotion Laboratory at Loyola

2019 – 2021

Loyola University Chicago

Thesis Researcher: *Anxious Arousal & Anxious Apprehension are Distinctly Related to the Temporal Course of Response Inhibition*

Supervisor: Rebecca Silton, Ph.D.

- Collaborated on an ASPIRE scholarship-funded honors thesis study on anxious symptoms, response inhibition, & neural activity resulting in an institutional conference poster and a manuscript.

Children Adapting to Stress & Adversity Laboratory

2019 – 2021

Loyola University Chicago

Provost Fellow: *Immigrant Related Stress & Child Somatization: Examining the Moderation Effect of Voluntary Engagement Coping*

Supervisor: Catherine DeCarlo Santiago, Ph.D.

- Conducted provost fellowship-funded independent project on immigrant-related stress, child somatization, & secondary control coping resulting in a national conference poster and a manuscript.

TEACHING EXPERIENCE

Harvard University

2022 – 2024

Teaching Fellow, Research Instructor*

PSY 1900: Introduction to Statistics for the Behavioral Sciences

Spring 2024

Student Evaluation: 4.89/5.0

- *Topics covered: measures of central tendency, variability, probability, distributions, correlations, regressions, hypothesis testing, t-tests, analysis of variance, & chi-square tests.*

- Conducted lab sections focusing on statistical analysis using R Studio, developed and managed laboratory materials and exercises, engaged students in interactive learning experiences, & provided individualized feedback on assignments and lab exercises.

HDE 101: Connecting Human Development Throughlines Across Research & Practice

Fall 2023

Student Evaluation: 4.96/5.0

- *Topics covered: universal human needs and capacities, impact of developmental experiences, solutions to human development challenges, integration of science and practice, case studies on language development, motivation, identity, relationships, critical analysis of research, evidence review, and development of a "theory of change".*

- Facilitate graduate student engagement during lectures, workshops, and small-group meetings, prioritizing dialogue, feedback, and reflection to connect knowledge with personal and professional experiences.

EVI 101: Evidence

Summer 2023

Student Evaluation: 4.86/5.0

- *Topics covered: major forms of evidence, including quantitative/qualitative, experimental/quasi-experimental, synthetic, & process.*
- Facilitated student discussions on readings and project development using team-based learning approaches, graded daily forum posts and quizzes, & evaluated final group presentations.

**MBB S-102: Becoming a Brain Scientist: Neuroscience and Psychology Research*

Summer 2023

Student Evaluation: 4.95/5.0

- *Topics covered: brain science research methods, neuroanatomy, neuroimaging, tractography, & developmental cognitive neuroscience.*
- Taught weekly sections, guided students in formulating hypotheses, designing experiments, collecting/analyzing data, presenting their findings, designed laboratory materials related to neuroimaging and tractography, & provided individualized feedback on assignments.

PSY 1901: Methods of Behavioral Research

Fall 2022

Student Evaluation: 4.67/5.0

- *Topics covered: research design/evaluation, statistical/research ethics, statistics exercises, data analysis, table/figure preparation, research project construction, & manuscript/presentation development.*
- Designed all laboratory materials and problem sets, teaching weekly 60-minute lab sections providing individualized written feedback on assignments.

ACADEMIC ACHIEVEMENTS, AWARDS, & MEMBERSHIPS

Presidential Scholarship Recipient, Harvard University (\$69,300)	2023 – 2024
Member, Harvard Gender & Sexuality Caucus	2022 – 2023
Member, Queer Neuropsychological Society	2022 – 2023
Damen Award	2021
Beta Beta Beta International Honors Society in Biology	2021
Psi Chi International Honors Society in Psychology	2021
All Students Prosper If Resources Exist Fund (\$1,500)	2021
Kale Williams Human Rights Scholarship Recipient (\$1,000)	2020 – 2021
Honors in Cognitive/Behavioral Neuroscience	2020 – 2021
Center for Urban Research & Learning Fellowship (\$5,000)	2020 – 2021
Provost Research Fellowship Recipient (\$2,000)	2020 – 2021
Community & Solidarity Award	2020
Nu Rho Psi International Honors Society in Neuroscience	2020
SHPEP Certificate of Completion, University of Florida	2019
Dean's List	2017 – 2021
Presidential Scholarship Recipient, Loyola University Chicago (\$80,000)	2017 – 2021

SKILLS & CERTIFICATIONS

Certifications: Project Management Professional (PMP®), Human Rights Education Training, Basic Life Support (BLS)

Laboratory: Magnetic Resonance Imaging (sMRI, fMRI, MRSI, dMRI, rs-fMRI), Behavioral Task Administration (PsychoPy, E-Prime), Electroencephalography (EEG)

Programming: R (Positron, R Studio), Python (Positron, Google Colab), Unix (FSL, FreeSurfer), SQL (Azure Data Studio), STATA, MATLAB, SPSS

Spoken Languages: Spanish (native), German (intermediate), Arabic (elementary)

Technical: Google Suite, Microsoft Office Suite (Word, Excel, PowerPoint), Qualtrics, REDCap, Schedule Management, Translation/Interpretation, Zotero