

Benjamin H. Chandler, B.S.

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EDUCATION

Michigan State University – East Lansing, MI

August 2018 - May 2023

Bachelor of Science, Neuroscience

Concentration: Cognitive & Computational Neuroscience

GPA: 3.80 (Major GPA: 4.00)

Bachelor of Science, Psychology

Minor: Cognitive Science

GPA: 3.80 (Major GPA: 4.00)

MCAT: 524, 100th percentile (4/5/2025)

RESEARCH EXPERIENCE

Experimental Therapeutics and Pathophysiology Branch

June 2024 - June 2026

National Institute of Mental Health – Bethesda, MD

Principal Investigator: Carlos A. Zarate, Jr., M.D.

***Role:** Postbaccalaureate IRTA Research Fellow*

Projects:

1. Antidepressant Effect of (2R,6R)-Hydroxynorketamine

Project Description: Double-blind, placebo-controlled, crossover phase II clinical trial assessing the efficacy and safety of a two-week course of (2R,6R)-hydroxynorketamine (HNK), an enhancer of synaptic glutamate release, for improving depressive symptoms in individuals with major depressive disorder (MDD).

2. Neurobiology of Suicide

Project Description: Clinical research study utilizing magnetoencephalography (MEG) and functional magnetic resonance imaging (fMRI) to investigate how stress and ketamine modulate biomarkers of phenotypic variation across the suicide risk continuum in individuals with treatment-resistant depression and bipolar disorder.

3. Healthy Volunteer Protocol

Project Description: Ongoing NIMH-wide protocol recruiting healthy volunteers to serve as controls across a range of neuropsychiatric research studies. Volunteers undergo comprehensive screening, neurocognitive, electrophysiology, and neuroimaging assessments to establish normative benchmarks and facilitate matched comparisons for clinical populations.

Responsibilities Across Projects:

- Engaged with a diverse clinical population across the full spectrum of depression and suicide risk severity
- Collected multimodal data (MEG, fMRI, saliva, cognitive assessments) from patients undergoing experimental treatments
- Processed and analyzed imaging, electrophysiology, and behavioral data using R, Python, Linux, AFNI, and proprietary software
- Administered standardized neurocognitive batteries and contributed to clinical visit flow

- Maintained a supportive presence during ketamine infusions, offering conversation or quiet companionship based on patient preference
- Conducted pre-visit phone screenings to assess study eligibility
- Prepared internal documentation, study reports, and IRB materials for active protocols

Clinical Psychophysiology Lab

May 2021 - May 2023

Michigan State University – East Lansing, MI

Principal Investigator: Jason S. Moser, Ph.D.

Roles: Research Assistant, Data Manager, Experimenter, ‘Camp Counselor’

Projects:

1. Brain Cycle Study

Project Description: R01 study examining how behavior, genetics, and hormones affect psychopathology in naturally menstruating women over the course of the menstrual cycle.

Roles: Experimenter, Data Manager

Project Responsibilities:

- Conducted electroencephalography (EEG) data collection visits using BioSemi ActiveTwo and ActiView software
- Organized and process six years of EEG and behavioral data using Excel, R, and SPSS
- Individually catalogued and relabeled ~5,500 archived saliva samples, reorganizing them from disordered storage into a standardized box system for downstream hormonal and genotypic assays
- Supervised and trained new lab members on EEG setup, sample handling, and data organization
- Analyzed data for senior neuroscience thesis and poster project (below)

2. Senior Neuroscience Thesis: Examining the role of dopamine and estradiol in the error positivity (Pe)

Project Description: A two-semester independent study project under the supervision of the principal investigator (Jason S. Moser, Ph.D.) and a clinical psychology doctoral student mentor (Courtney C. Louis). This thesis utilized electroencephalography (EEG) and focused on investigating the interactive effects of prefrontal dopamine-related catechol-*O*-methyltransferase (COMT) polymorphism genotypes and cyclic estradiol on the error positivity (Pe)—an EEG event-related potential (ERP) associated with conscious error awareness. A secondary hypothesis investigated the function of the Pe as it relates to post-error behavioral adaptation.

Roles: Research Assistant, Independent Study Student

Project Responsibilities:

- Built on Brain Cycle data to formulate and test novel hypotheses on COMT genotype x estradiol interactions
- Conducted literature reviews on dopamine, EEG, hormone modulation, and cognitive control
- Analyzed ERP data using BrainVision Analyzer, RStudio, and SPSS
- Translated findings into a 23-page (double-spaced; 16-page body) thesis manuscript, including publication-ready figures
- Delivered oral defense to Department of Physiology thesis committee (Jason S. Moser, Ph.D., Valerie L. Hedges, Ph.D., and Susan M. Ravizza, Ph.D.)

3. Kid Power Project

Project Description: R33 multi-site project in collaboration with University of Michigan and Columbia University investigating the efficacy of a camp-based intervention targeting cognitive control mechanisms to help reduce anxiety symptoms in clinically anxious children aged 4-5 years.

Roles: ‘Camp Counselor’, Research Assistant

Project Responsibilities:

- Delivered structured effortful control interventions to preschool-aged children with anxiety disorders
- Evaluated participant behavior using Preschool Self-Regulation Assessment (PSRA), performing inter-rater reliability assessments and reaching consensus scores for standardized clinical documentation
- Trained parents to continue behavioral practices at home
- Designed and implemented Qualtrics-based assessments for children and parents
- Constructed cross-site data dictionaries and trained RAs in standardized data entry procedures

The Belief Systems Lab

September 2020 - December 2020

Michigan State University – East Lansing, MI

Principal Investigator: Mark J. Brandt, Ph.D.

Role: Research Assistant

1. Political Consensus Project

Project Description: Study evaluating and comparing within-group consensus on policy issues between political ideologies across the political spectrum.

Project Responsibilities:

- Retrieved and organized publicly available political survey datasets for group-level comparison of policy attitudes
- Conducted data cleaning, transformation, and statistical analysis using R
- Collaborated with team members to troubleshoot code, validate findings, and refine statistical approaches

PUBLICATIONS

Chandler, B. H. (2023, May 14). *Examining the effects of estradiol and COMT polymorphism on a neural correlate of error awareness* [Undergraduate thesis, Michigan State University]. ResearchGate. <https://doi.org/10.13140/RG.2.2.17736.02569>
Advisors: Courtney C. Louis, Ph.D.; Jason S. Moser, Ph.D.

Chandler, B. H., & Addy, P. H. (2021). [Review of the book *Beyond the narrow life: A guide for psychedelic integration and existential exploration*, by Kile M. Ortigo]. *Journal of Transpersonal Psychology*, 53(2), 224-227.

POSTERS & PRESENTATIONS

Chandler, B. H., Cortes, C. R., Greene, B. D., Fijtman, A., Hu, H., Zarate, C. A., Jr., Ballard, E. D., & Gilbert, J. R. *Resting-state spectral power markers of insular dysregulation in suicide attempt history*. [Abstract submitted to Society for Neuroscience Annual Meeting, 2025].

Chandler, B. H., Greenstein, D. K., Hurst, K. T., Waldman, L. R., Zarate, C. A., Jr., Deng, Z.-D., & Ballard, E. D. (2025, May 9). *Tracking affective correlates of ketamine response in treatment-resistant depression* [Poster presentation]. NIH Postbac Poster Day, National Institutes of Health, Bethesda, MD.

Chandler, B. H. (2025, April 30). *Increased global integration in the brain after psilocybin therapy for depression (Daws et al., 2022)* [Branch-wide journal club presentation]. Experimental Therapeutics and Pathophysiology Branch, National Institute of Mental Health, Bethesda, MD.

Chandler, B. H., Greenstein, D. K., Hurst, K. T., Waldman, L. R., Zarate, C. A., Jr., Deng, Z.-D., & Ballard, E. D. (2025, April 4). *Exploring facial emotional expression as a biomarker for depression severity and treatment response* [Poster accepted for presentation; unable to attend due to government travel restrictions]. Washington Psychiatric Society Spring Presidential Symposium and Gala, Washington, DC.

Chandler, B. H. (2023, May 12). *Examining the role of dopamine and estradiol in the error positivity (Pe)* [Undergraduate thesis defense]. Department of Physiology, Michigan State University, East Lansing, MI.

Chandler, B. H., Pathak, A. D., Kashy, D. A., & Moser, J. S. (2022, July 27). *The interactive effects of progesterone and anxiety on error-related EEG activity* [Poster presentation]. 12th Annual Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE), Michigan State University, East Lansing, MI.

VOLUNTEER & WORK EXPERIENCE

Walgreens Pharmacy – Murphy, NC

August 2023 - December 2023

Role: *Pharmacy Technician*

- Assisted pharmacist in the practice of pharmacy, entering, filling, and dispensing prescriptions for patients
- Administered immunizations to patients via intramuscular injection
- Facilitated patient transactions and offered assistance with products and services
- Prioritized patient satisfaction while troubleshooting and solving complex issues involving billing, health insurance, and healthcare providers

Origami Rehabilitation – Mason, MI

January 2022 - July 2023

Role: *Client Care Volunteer*

- Spent quality time with residential clients being treated for traumatic brain injury and neurological symptoms
- Engaged each client in activities based on their unique interests
- Assisted in physical therapy and art therapy

Decriminalize Nature Mid-Michigan – East Lansing, MI

April 2021 - May 2022

Role: *Director (Volunteer)*

- Operated with guidance from Decriminalize Nature national organization leadership
- Advocated for policy reform emphasizing harm reduction, religious liberty, and non-carceral public health approaches
- Emphasized and prepared community education resources for the potential event of successful campaign
- Managed and delegated tasks to local coalition members
- Collected over 100 handwritten signatures from community members in support of local resolutions and statewide legislation
- Spoke publicly advocating for ending arrest and prosecution in favor of a public health approach at local city council hearings
- Communicated and collaborated with East Lansing City Council members and law enforcement
- Contributed to drafting local policy resolutions
- Led to a vote by East Lansing City Council on an entheogen decriminalization resolution sponsored by Councilmember Dana Watson (not approved; 2 in favor, 3 against)

Adolescent Diversion Program – Michigan State University, East Lansing, MI

May 2020 - December 2020

Role: *Youth Advocate*

- Two-semester course taken as practicum for psychology degree

- Received training and education in trauma-informed, culturally sensitive, and intersectional support and advocacy
- Supported and advocated for a youth involved in juvenile justice system
- Assessed strengths and unmet personal, social, educational, and judicial needs of youth
- Implemented youth-led, goal-oriented structure for personal growth of youth, meeting 2-3 times per week
- Tutored youth in his high school classes
- Youth successfully completed probation

Chipotle Mexican Grill – East Lansing, MI

April 2019 - November 2022

Role: *Takeout Specialist*

- Worked 20 hrs/wk during semesters and up to 50 hrs/wk in summers to support academic and research activities.

Habitat for Humanity: ReStore – Lansing, MI

December 2018 - February 2019

Role: *Volunteer*

- Collected, managed, and prepared inventory for sale
- Assisted community members with transport of equipment and inventory

AWARDS, HONORS, & SCHOLARSHIPS

- **NIH Postbaccalaureate Intramural Research Training Award (IRTA)** – Two-year research fellowship award, 2024-2026
- **Spartan Volunteer Service Award (2021-2022)** – Awarded for exceeding 100 volunteer hours in one year
- **Dean's List** – Michigan State University

ORGANIZATIONS & ACTIVITIES

Society for Neuroscience, *Member*

June 2025 - Present

Association for Autism and Neurodiversity, *Member*

September 2024 - Present

Autistic Self Advocacy Network, *Contributing Member*

September 2024 - Present

Psi Chi, The International Honor Society in Psychology, *Member*

April 2021 - Present

MSU Neuroscience Club, *Member*

January 2021 - May 2023

MSU Students for Sensible Drug Policy, *Treasurer*

September 2020 - May 2023

MSU Psychology Club, *Member*

January 2020 - May 2023

MSU Meditation Club, *Member*

August 2019 - January 2021

RELEVANT SKILLS

Programming & Data Software

- Analysis of Functional NeuroImages (AFNI)
- BioSemi ActiView
- JASP
- Microsoft Excel
- Python
- Qualtrics
- R
- SPSS Statistics
- Unix shell

Laboratory

- BrainSight neuronavigation and MRI/MEG coregistration
- Electroencephalography (EEG)
- Functional magnetic resonance imaging (fMRI)
- Magnetoencephalography (MEG)
- Saliva sample collection

Clinical

- Clinical behavior assessment
- Immunization via intramuscular injection
- Ketamine infusion monitoring
- Neuropsychological assessment administration:
 - Controlled Oral Word Association Test (COWA)
 - Hopkins Verbal Learning Test (HVLTL)
 - NIH Toolbox
 - Preschool Self-Regulation Assessment (PSRA)
 - Wechsler Adult Intelligence Scale (WAIS)
 - Wechsler Abbreviated Scale of Intelligence (WASI)
- NIH Good Clinical Practice (GCP) for human research
- NIH Toolbox neurocognitive assessment
- Structured games behavioral intervention to train effortful control in children with anxiety
- Transcranial magnetic stimulation (TMS) administration

Other

- First Aid, CPR, AED

REFERENCES

Carlos A. Zarate, Jr., M.D.

Chief, Experimental Therapeutics and Pathophysiology Branch
National Institute of Mental Health
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Elizabeth D. Ballard, Ph.D.

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