

Maria Ivana Perica, M.S.

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**Education**

- 2018 – present      Ph.D., Clinical Psychology  
University of Pittsburgh, Pittsburgh, PA  
Dissertation (proposal approved 7/2023): “Impact of neighborhood deprivation on excitation and inhibition in frontal cortex through adolescence”  
Advisor: Beatriz Luna, Ph.D.
- 2024 – 2025      Predoctoral Internship, Adult Psychopathology track (APA accredited)  
Charleston Consortium (Medical University of South Carolina & Ralph H. Johnson Veterans Affairs Medical Center), Charleston, SC  
Research Advisor: Lindsay Squeglia, Ph.D.
- 2018 – present      Graduate certificate program, Cognitive Neuroscience  
Center for the Neural Basis of Cognition, Carnegie Mellon University and University of Pittsburgh
- 2018 – 2021      M.S., Clinical Psychology  
University of Pittsburgh, Pittsburgh, PA  
Master’s Thesis: “Characterizing how age-related changes in GABA and Glutamate underlies development of working memory through adolescence”  
Advisor: Beatriz Luna, Ph.D.
- 2012 – 2016      B.S. in Neural Science with Honors, minors in Chemistry and Child and Adolescent Mental Health Studies  
New York University, New York, NY

**Research Experience**

- 2018 – present      Graduate Student Researcher  
Laboratory of Neurocognitive Development, University of Pittsburgh  
Primary Investigator: Beatriz Luna, Ph.D.
- 2016 – 2018      Postbaccalaureate Intramural Research Training Award (IRTA) Fellow  
National Institute of Mental Health, National Institutes of Health  
Primary Investigator: Theodore Usdin, M.D., Ph.D.
- 2012 – 2016      Research Assistant  
Neurobiology of Cognition Laboratory, New York University  
Primary Investigator: Andre Fenton, Ph.D.

## Publications

Peer-reviewed articles (10 total: 4 first/co-first author, 5 co-author; \* denotes co-first author)

1. McKeon, S.D., **Perica, M.I.**, Parr A.C., Calabro, F., Foran, W., Hetherington, H. P., Moon, C., Luna, B. Aperiodic EEG and 7T MRSI evidence for maturation of E/I balance supporting the development of working memory through adolescence. *Developmental Cognitive Neuroscience*.
2. **Perica, M.I.\***, Ravindranath, O.\*, Parr, A.C., Ohja, A., McKeon, S., Montano, G., Ullendorf, N., Luna, B., Edmiston, K. (2024). “Adolescent neurocognitive development and decision-making abilities regarding gender-affirming care.” *Developmental Cognitive Neuroscience*.
3. **Perica, M.I.**, Luna, B. (2023) “Impact of stress on excitatory and inhibitory markers of adolescent cognitive critical period plasticity.” *Neuroscience and Biobehavioral Reviews*
4. Mayeli, A., Sonnenschein, S. F., Yushmanov, V.E., Wilson, J.D., Blazer, A., Foran, W., **Perica, M.I.**, Calabro, F.J., Luna, B., Hetherington, H. P., Sarpal, D. K., Ferrarelli, F. (2022) “Dorsolateral Prefrontal Cortex GABA/Glutamate Alterations in Clinical High Risk and First-Episode Schizophrenia: a 7-T Magnetic Resonance Spectroscopic Imaging Study.” *International Journal of Molecular Sciences*.
5. **Perica, M.I.**, Calabro, F.J. , Larsen, B., Foran, W., Yushmanov, V.E., Hetherington, H. P., Tervo-Clemmens, B., Moon, C., Luna, B. (2022) “Development of frontal GABA and glutamate supports excitation/inhibition balance from adolescence into adulthood.” *Progress in Neurobiology*
6. Sonnenschein, S. F., Mayeli, A., Yushmanov, V.E., Blazer, A., Calabro, F.J., **Perica, M.I.**, Foran, W., Luna, B., Hetherington, H.P., Ferrarelli, F., Sarpal, D. K. (2022) “A Longitudinal Investigation of GABA, Glutamate, and Glutamine Across the Insula During Antipsychotic Treatment of First-Episode Schizophrenia.” *Schizophrenia Research*
7. **Perica, M.I.\***, Ravindranath, O.\*, Calabro, F.J., Foran, W., Luna, B. (2021) “Hippocampal-prefrontal Connectivity Prior to COVID-19 Pandemic Predicts Stress Reactivity.” *Biological Psychiatry: Global Open Science*
8. O’Reilly, K.C., **Perica, M.I.**, Fenton, A.A. (2018) “Synaptic Plasticity and Dysplasticity in Schizophrenia.” *Schizophrenia Research*
9. O’Reilly, K.C., Levy, E.R.J., Patino, A.V., **Perica, M.I.**, Fenton, A.A. (2018) “Sub-Circuit Alterations in Hippocampus Metabolic Coupling, Structure, and Function After Global Neurodevelopmental Insult.” *Brain Structure and Function*
10. O’Reilly, K.C., **Perica, M.I.**, Fenton, A.A. (2016) “Memory Deficits with Intact Cognitive Control in the Methylazoxymethanol Acetate (MAM) Exposure Model of Neurodevelopmental Insult.” *Neurobiology of Learning and Memory*

Articles In Preparation/Ongoing Projects

1. Parr A.C., **Perica M.I.**, Calabro F, Tervo-Clemmens B, Foran W, Yushmanov V, Hetherington H, Luna B. (intended submission May 2024). Dopamine Supports the Maturation of Prefrontal Cortex Glutamate/GABA Balance during Adolescence.

## Book Chapters

1. Ravindranath, O., Parr, A.C., **Perica, M.I.**, Elliot, S., Luna, B. (2022) Adolescent neurocognitive development. In: Halpern-Felsher, Bonnie (eds.) Encyclopedia of Child and Adolescent Health. pp. 40-62. Oxford: Elsevier.

## Presentations

1. **Perica, M.I.** *Measuring excitation and inhibition using human neuroimaging methodologies*. 2024 data blitz talk presented at the National Institutes of Mental Health, virtual.
2. **Perica, M.I.**, Calabro, F., Foran, W., Hetherington, H., Moon, C., Luna, B. *Environmental impacts on adolescent excitatory and inhibitory processes in frontal cortex*. Poster presented at the 2023 Flux Society conference, Santa Rosa, CA.
3. **Perica, M.I.**, McKeon, S.D., Calabro, F., Foran, W., Hetherington, H., Moon, C., Luna, B. *Developmental change in GABA and glutamate underlies changes in aperiodic neural activity through adolescence*. Poster presented at the 2023 UPMC Western Psychiatric Hospital Research Day. Pittsburgh, PA.
4. Parr, A.C., **Perica, M.I.**, Calabro, F., Tervo-Clemmens, B., Foran, W., Yushmanov, V., Hetherington, H., Luna, B. (2022) *Dopamine modulation of prefrontal GABA/ Glutamate suggests critical period plasticity during adolescence*. Poster presented at the 2023 Society for Neuroscience conference, Washington, DC.
5. Ojha, O., **Perica, M.I.**, Foran, W., Calabro, F., Luna, B. *Unique age-related amygdala-cingulate functional connectivity is associated with emotion regulation difficulties in human adolescents: a high-field longitudinal 7T study*. Poster presented at the 2023 UPMC Western Psychiatric Hospital Research Day. Pittsburgh, PA.
6. McKeon, S.D., **Perica, M.I.**, Parr, A.C., Calabro, F., Foran, W., Luna B. *Aperiodic EEG evidence for maturation of E/I balance supporting the development of working memory through adolescence*. Poster presented at the 2023 UPMC Western Psychiatric Hospital Research Day. Pittsburgh, PA.
7. **Perica, M.I.**, Calabro, F., Foran, W., Yushmanov, V., Hetherington, H., Moon, C., Luna, B. *Longitudinal changes in glutamate and GABA balance through adolescence*. Poster presented at the 2022 Flux Society conference, Paris, France.
8. S. McKeon, F. Calabro, **M. Perica**, B. Luna. *Reliability of cortical signal processing is driven by glutamate maturation and supports working memory development*. Poster presented at the 2022 Society for Psychophysiological Research, Vancouver, Canada.
9. S. McKeon, F. Calabro, **M. Perica**, B. Luna. *Reliability of cortical signal processing is driven by glutamate maturation and supports working memory development*. Poster presented at the 2022 Flux Society conference, Paris, France.
10. Parr, A.C., **Perica, M.I.**, Calabro, F., Tervo-Clemmens, B., Foran, W., Yushmanov, V., Hetherington, H., Luna, B. (2022) *Variation in striatal dopamine-related neurophysiology is associated with GABA and glutamate in human adolescence*. Poster presented at the 2022 Flux Society conference, Paris, France.

11. Ohja, A., Calabro, F., Foran W., **Perica, M.I.**, Jalbrzikowski, M., Luna, B. (2022). *Characterizing fronto-amygdala circuitry development during adolescence: implications for internalizing symptoms*. Poster presented at the 2022 Flux Society conference, Paris, France.
12. Parr, A.C., **Perica, M.I.**, Calabro, F., Tervo-Clemmens, B., Foran, W., Yushmanov, V., Hetherington, H., Luna, B. (2022) *Variation in striatal dopamine-related neurophysiology is associated with GABA and glutamate in human adolescence*. Poster presented at the 2022 UPMC Western Psychiatric Hospital Research Day. Pittsburgh, PA.
13. **Perica, M.I.**, Calabro, F., Foran, W., Yushmanov, V., Hetherington, H., Tervo-Clemmens, B., Luna, B. (2021) *Age-related changes in glutamate and GABA support excitatory/inhibitory balance during adolescence*. Poster presented at the 2021 UPMC Western Psychiatric Hospital Research Day. Pittsburgh, PA.
14. **Perica, M.I.** (2021) *Characterizing how age-related changes in GABA and glutamate underlie development of working memory through adolescence*. Talk given at the Center for the Neural Basis of Cognition Brain Bag series, Carnegie Mellon University, Pittsburgh, PA.
15. **Perica, M.I.**, Calabro, F., Foran, W., Yushmanov, V., Hetherington, H., Luna, B. (2021) *Linking changes in excitatory and inhibitory balance through adolescence with working memory*. Poster presented at the Flux Society conference, virtual due to COVID-19.
16. **Perica, M.I.** (2021) *Age-related changes in excitation, inhibition, and their balance through adolescence*. Talk given at the University of Pittsburgh Clinical Psychology Seminar Series, Pittsburgh, PA.
17. Ravindranath, O., **Perica, M.I.**, Calabro, F., Foran, W., Luna, B. (2021) *Hippocampal-prefrontal connectivity prior to COVID-19 pandemic predicts later anxiety in adolescents*. Poster presented at the Flux Society conference, virtual due to COVID-19.
18. **Perica, M.I.\*** & Ravindranath, O.\* (2021) *A brain marker of heightened anxiety during the COVID-19 pandemic in teens*. Infographic presented at COVGEN Summit 2021, virtual due to COVID-19.
19. **Perica, M.I.**, Calabro, F., Foran, W., Yushmanov, V., Hetherington, H., Luna, B. (2020) *Association between changes in GABA and Glutamate through adolescence and age-related change in brain activity underlying working memory*. Poster presented at the Flux Society conference, virtual due to COVID-19.
20. Sarpal, D., Sonnenschein, S., Blazer, A., Foran, W., **Perica, M.I.**, Luna, B., Hetherington, H. (2020) *Antipsychotic efficacy and associated changes in prefrontal neurotransmitter levels: preliminary results from a 7-Tesla neuroimaging study of early phase schizophrenia*. Poster presented at the American College of Neuropsychopharmacology conference, virtual due to COVID-19.
21. **Perica, M.I.**, Calabro, F., Foran, W., Yushmanov, V., Hetherington, H., Luna, B. (2019) *Changes in GABA and Glutamate associated with age-related improvements in working memory ability through adolescence*. Poster presented at the Flux Society conference, New York, NY.
22. Ravindranath, O., Calabro, F., **Perica, M.I.**, Foran, W., Yushmanov, V., Hetherington, H., Luna, B. *Associations between the development of GABA and Glutamate and emotion processing through adolescence*. Poster presented at the Flux Society conference, New York, NY.
23. **Perica, M.I.**, Calabro, F., Foran, W., Yushmanov, V., Hetherington, H., Luna, B. (2019) *Mechanisms underlying age-related improvements in visuospatial working memory ability through adolescence*. Poster presented at the Organization of Human Brain Mapping conference in Rome, Italy.
24. **Perica, M.I.**, O'Reilly, K.C., Fenton, A.A. (2016) *Altered functional connectivity due to neurodevelopmental insult in the MAM model of schizophrenia*. Talk given at the NYU Undergraduate Research Conference, New York, NY.

25. **Perica, M.I.**, O'Reilly, K.C., Fenton, A.A. (2015) *Learning-induced long-term changes as measured by Cytochrome Oxidase activity*. Poster presented at the NYU Undergraduate Research Conference, New York, NY.
26. **Perica, M.I.**, O'Reilly, K.C., Fenton, A.A.. (2014) *Cognitive control circuits in the gestational methylazoxymethanol (MAM) model of schizophrenia*. Poster presented at the NYU Summer Student Conference, New York, NY.

## Media Coverage

1. Technology Networks (November 10, 2022) "Revealing the plastic landscape of the teen brain"
2. Neuroscience News (November 9, 2022) "A clearer picture of the developing teen brain"
3. Science Daily (November 8, 2022) "Scientists get clearer picture of developing teen brain"
4. UPMC News (November 8, 2022) "Scientists get clearer picture of developing teen brain: new evidence for neuroplasticity in frontal cortex during adolescence."

## Research Fellowships, Awards, and Grants

2023	Bassell Student Publication Award, University of Pittsburgh Graduate student publication award with \$100 honorarium
2022	Bassell Student Publication Award, University of Pittsburgh Graduate student publication award with \$100 honorarium
2021	David & Grace Lazovik Grant, University of Pittsburgh \$1,000 research grant awarded to University of Pittsburgh clinical psychology doctoral students for research expenses
2020	David & Grace Lazovik Grant, University of Pittsburgh \$1,500 research grant awarded to University of Pittsburgh clinical psychology doctoral students for research expenses
2018	Pittsburgh Supercomputing Grant, University of Pittsburgh Awarded CPU hours through competitive grant application to Pittsburgh Supercomputing Center
2016 – 2018	NIH Post-Baccalaureate Intramural Research Training Award, National Institutes of Health Post-baccalaureate research fellowship award that covers stipend to work full-time in a research laboratory.
2016	Founder's Day Award, New York University Awarded to top-ranking students of the current graduating class
2016	Dean's List, New York University Awarded to students who obtained at least a 3.7 GPA
2015	Dean's Undergraduate Research Fund Grant, New York University

- 2014 \$1,000 research grant awarded to NYU undergraduate students to conduct independent research in a laboratory
- Dean's Undergraduate Research Fund Grant, New York University  
\$1,000 research grant awarded to NYU undergraduate students to conduct independent research in a laboratory
- 2013 Freshman and Sophomore Training Grant, New York University  
\$500 research grant awarded to NYU undergraduate students to train in a research laboratory

## Clinical Experience

- May 2023 - present Adult OCD Intensive Outpatient Program Practicum  
University of Pittsburgh Medical Center, Western Psychiatric Hospital  
Supervisors: Leah Sufirin, PsyD and Rebecca Price, Ph.D.  
Intervention: Co-led group therapy and provided individual therapy using primarily ERP with supportive CBT, DBT, and ACT skills to adults with moderate to severe OCD and anxiety disorders; consulted with psychiatrists on medication management; provided family therapy as necessary
- Sept. 2022 – Aug. 2023 Affective Neuroscience and Developmental Psychopathology Lab Practicum  
University of Pittsburgh Medical Center  
Supervisor: Erika Forbes, Ph.D.  
Project title: Anhedonia, Development, and Emotions: Phenotyping and Therapeutics study  
Assessment: Conducted semi-structured interviews with young adults to determine affective disorder diagnoses and study eligibility using the SCID-5 and MADRS
- Sept. 2022 – Aug. 2023 Environmental Context and Youth Mental Health Lab Practicum  
University of Pittsburgh Medical Center  
Supervisors: Rachel Vaughn-Coaxum, Ph.D. & Tina Goldstein, Ph.D.  
Project titles: Life Experiences in Adolescents and the Development of Skills study and the Shaping Actions and Responses to Emotions study  
Intervention: Provided brief, manualized interventions to adolescents, including a four-session Problem Solving Therapy intervention and a two-session cognitive restructuring intervention  
Assessment: Conducted semi-structured interviews with adolescents and their parents to determine affective disorder diagnoses and study eligibility using the KSADS, the DRS, C-SSRS, CTQ, and the STRAIN
- May 2022 – Dec. 2022 Center for Eating Disorders Practicum  
University of Pittsburgh Medical Center, Western Psychiatric Hospital  
Supervisor: Rachel Kolko-Conlon, Ph.D.  
Intervention: co-led group therapy for adolescent and adult patients with a variety of Eating Disorder diagnoses including Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder using Enhanced CBT, ACT, and DBT

- Aug. 2021 – HOPE TEAM Practicum  
 May 2022 University of Pittsburgh Medical Center, Western Psychiatric Hospital  
Supervisors: Dr. Leslie Horton and Dr. Lauren Bylsma  
Intervention: provided individual therapy for adolescents at clinical high risk for psychosis using CBT for Psychosis with supportive ERP and DBT; consulted with psychiatrists on medication management; consulted with families and schools as necessary  
Assessment: administered and observed the SIPS assessment, K-SADS, CY-BOCS, C-SSRS
- May 2019 – Graduate Student Clinician  
 October 2021 Clinical Psychology Center, University of Pittsburgh  
Supervisors: Andrew Koffmann, Ph.D., Elizabeth Pacoe, Ph.D., Jill Cyranowski, Ph.D., Anna Marsland, Ph.D., RN  
Intervention: provided individual therapy using CBT and ACT to adults in an outpatient mental health clinic with mild to moderate mood and anxiety disorders and chronic pain disorders; consulted with psychiatrists on medication management  
Assessment: conducted semi-structured intake evaluations with adult clients using the mini-mental state examination; conducted neuropsychological assessments using the WAIS-IV, WASI, TOMM, Trails, FAS, BAI, BDI, MMPI

## Specialized Clinical Training

- 2024 Basic Training in Child Trauma  
 3 hour interactive workshop on understanding how early adversity and traumatic experiences can impact child development, attachment, and behavior and how to integrate this into mental healthcare.  
 Instructor: Teri Pentz, MS, LPC, NCC, IMH-E (Theiss Center for Child and Adolescent Trauma, UPMC)
- 2023 Culturally humble approaches to discussing firearm safety, University of Pittsburgh  
 1 hour seminar on multicultural factors impacting firearm ownership and storage and strategies to approach this in clinical work.  
 Instructor: Dr. Sarah Butterworth, Ph.D.
- 2023 Addressing Mental Health Needs of LGBTQ+ Communities, University of Pittsburgh  
 1.5 hour seminar on strategies to improve clinical experiences for LGBTQ+ clients  
 Instructor: Kristen Eckstrand, M.D., Ph.D.
- 2022 Columbia Suicide Severity Rating Scale training, Columbia Light House Project  
 1 hour online workshop on administration of the C-SSRS to assess suicidality
- 2021 Motivational Interviewing Training  
 3 hour interactive workshop on incorporating the principles of motivational interviewing into clinical practice  
 Instructor: Billie Jo Smith, MS, LPC
- 2021 Teaching in Psychology, University of Pittsburgh  
 Semester-long course in pedagogy, techniques for teaching Psychology to

undergraduate students, and development of a teaching portfolio  
Instructor: Barbara Kucinski, PhD

2020  
Telepsychology Best Practice 101, American Psychological Association  
A series of virtual workshops discussing strategies to provide culturally competent care via telehealth, how to use telehealth technology, and legal and ethical implications of telehealth  
Instructor: Marlene Maheu, PhD

### **Research Mentorship**

2024  
Mentored an undergraduate research assistant, Alyssa Famalette, in an independent project

2021 – present  
Mentored an undergraduate honors thesis student, Anna Gillen, B.S. in Neuroscience (May 2024, expected)

- Awarded Brackenridge Fellowship (\$4000 stipend) for senior thesis research project

2023 – present  
Organized and led a journal club for the undergraduate students and research assistants in our lab

2020 – 2022  
Mentored undergraduate students Sydney Galipeau, B.A. in Psychology (May 2023; current Psy.D. student) and Jacqueline Joo, B.S. in Neuroscience (May 2024, expected)

### **Teaching Experience**

Summer 2022  
Psychopathology Course Guest Lecturer (Topic: Developmental Psychopathology)  
University of Pittsburgh, Department of Psychology

Spring 2022  
Psychopathology Course Instructor  
University of Pittsburgh, Department of Psychology

### **Service**

2023  
Psychology Equity, Inclusion, and Community Committee (Clinical Program Subcommittee)

2021 – 2022  
University of Pittsburgh Graduate Education Committee

2020 – 2022  
Pitt Science Policy Group Member  
The PSPG is a group of STEM graduate students that work toward applying science to policy, advocacy, and communications.

2020  
Project SHORT Consultant  
[www.project-short.com](http://www.project-short.com)  
Project SHORT aims to help provide information and mentoring to students who may not have those opportunities, with the ultimate aim of diversifying the higher-education applicant pool. As a consultant, I offered pro-bono consulting services for graduate school admissions.

2020  
Peer Mentor  
University of Pittsburgh  
I guided and provided support for an incoming student to our department.

### **Professional Memberships**

Flux Society  
American Psychological Association



Society for Neuroscience

### **Relevant Skills**

Computer and data analytic skills: R, bash, AFNI, mixed-effects models, longitudinal data analysis, data visualization, neuroimaging data analysis (spectroscopy, fMRI)

Languages: English and Croatian (fluent bilingual)

### **Journal Reviewer**

Ad-hoc reviewer: Journal of Neuroscience, Developmental Psychobiology, Brain Imaging and Behavior