Mitchell B. Slapik

MD/PhD Candidate & NIH Fellow, McGovern Medical School, mslapik@gmail.com

Education

2027	McGovern Medical School, *Houston, TX* Medical Scientist Training Program	MD
2025	Graduate School of Biomedical Sciences *Houston, TX,* Neuroscience	PhD
2017	Johns Hopkins University, *Baltimore, MD* Post-Baccalaureate Premedical Program	
2014	Swarthmore College, *Swarthmore, PA* With High Honors in Philosophy and Linguistics	BA
2013	University of Oxford, *Oxford, UK* Study Abroad: Philosophy of Mind	

Publications

2025

R. Milton*, **M. Slapik***, S. Egranov, et. al. "Locomotor Activity Enhances Visuo-frontal Communication during Environment Exploration." Under review at Nature Neuroscience.

M. Slapik, H. Shouval. "Simulated Complex Cells Contributes to Object Recognition through Representational Untangling." Neural Computation.

M. Slapik. "Computational Evidence for an Inverse Relationship between Brain and Retinal Complexity." Journal of Vision.

2022

M. Joyce, P. Nadkarni, S. Kronemer, […], **M. Slapik**, et. al. "Quality of Life Changes Following the Onset of Cerebellar Ataxia: Symptoms and Concerns Self-reported by Ataxia Patients and Informants." Cerebellum.

2020

O. Morgan., **M. Slapik**, K. Iannuzzelli, et. al. "The Cerebellum and Sequencing in Motor and Cognitive Domains: Evidence from Cerebellar Ataxia." Cerebellum.

S. Kronemer, **M. Slapik**, J. Pietrowski, et. al. "Neuropsychiatric Symptoms as a Reliable Phenomenology of Cerebellar Ataxia." Cerebellum.

2018 M. Slapik, S. I. Kronemer, O. Morgan, et. al. “Visuospatial Organization and Recall in Cerebellar Ataxia.” Cerebellum.

Presentations

Talks

2024 M. Slapik. “Retinal Complexity Varies Inversely with Brain Complexity in a Computational Model.” Post-candidacy Talk at Fall Neuroscience Retreat for UTHealth. Houston, TX.

2023 M. Slapik, H. Shouval. “Unshattering Dimensionality.” Post-candidacy Talk at Fall Neuroscience Retreat for UTHealth. Cleveland, TX.

2022 M. Slapik, Andrei, S. Khan, et al. “Optimal Stimuli as a New Method to Investigate Neural Networks.” Pre-candidacy Talk at Fall Neuroscience Retreat for UTHealth. Cleveland, TX.

2018 O. Morgan, M. Slapik, K. Iannuzzelli, et al. “Motor and Cognitive Sequencing in Cerebellar Ataxia.” Hot Chair Talk. National Ataxia Foundation’s 9th Ataxia Investigators Meeting. Virtual.

O. Morgan, M. Slapik, S. Kronemer, et al. “Motor-cognitive Multitasking in Cerebellar Ataxia.” Presentation to the faculty and staff of the Johns Hopkins Ataxia Clinic, Baltimore, MD.

M. Slapik, O. Morgan, J. Creighton, et. al. “Timing and Sequencing in Cerebellar Ataxia.” Nanosymposium talk accepted for presentation at: Society for Neuroscience San Diego, CA.

O. Morgan, J. Creighton, M. Slapik, et. al. “Neural correlates of value-driven attentional capture in addiction.” Nanosymposium talk accepted for presentation at: Society for Neuroscience, San Diego, CA.

M. Slapik, O. Morgan, C. Marvel. “Language Abilities in Cerebellar Ataxia.” Presentation to the faculty and staff of the Johns Hopkins Ataxia Clinic, Baltimore, MD.

2017 M. Slapik, S. Kronemer, O. Morgan, et. al. “Visuospatial Organization and Recall in Cerebellar Ataxia.” Talk presented at: Sensorimotor Day, Johns Hopkins University, Baltimore, MD.

Posters

2025 J. Kim, M. Franch, **M. Slapik** et al. “Flexible V4-dlPFC communication enhances context-appropriate visual encoding in dlPFC.” Society for Neuroscience. San Diego, CA.

X. Niu, **M. Slapik**, A. McConnell et al. “Executive regions encode movement through multiplexing and visual subspace modulation.” Society for Neuroscience. San Diego, CA.

2024 **M. Slapik**, X. Niu, A. McConnell, et al. “Executive Regions Encode Movement of Individual Body Parts in Macaque Monkeys.” Society for Neuroscience. Chicago, IL.

S. Egranov, R. Milton, **M. Slapik**, et al. “Communication between Visual and Executive Areas is Improved Post-locomotion in Rhesus Macaques.” Society for Neuroscience. Chicago, IL.

M. Slapik, H. Shouval. “The Visual System Relies on Organized but Low-Dimensional Representations for Object Recognition.” Spring Neuroscience Retreat for UTHealth, Houston, TX.

2023 S. Egranov, R. Milton, **M. Slapik**, et al. “Influence of Intracortical Microstimulation on Synaptic Efficacy between Visual and Executive Cortical Areas in Macaques.” Society for Neuroscience. Washington, D.C.

S. Khan, A. Andrei, **M. Slapik**, et al. “Optogenetic Control of Inhibitory Neurons in Macaque Visual Cortex.” Society for Neuroscience. Washington, D.C.

M. Slapik, A. Andrei, S. Khan, et al. “A Deep Learning Approach to Naturalistic Surround Modulation.” Society for Neuroscience. Washington, D.C.

S. Khan, A. Andrei, **M. Slapik**, et. al. “Inhibitory Control of Up and Down Cortical States during Sleep.” Spring Neuroscience Retreat for UTHealth, Houston, TX.

2022 **M. Slapik**, A. Andrei, S. Khan, et al. “Deep Networks Design Optimal Stimuli for Early Visual Cortex.” Society for Neuroscience. San Diego, CA.

2020 **M. Slapik**, S. Patwardhan, R. Costa, et al. “Using Machine Learning To Classify Feeding Behavior in Aplysia.” American Physician Scientists Association. Houston, TX.

2019 O. Morgan, M. Slapik, S. Kronemer, et al. “Motor-Cognitive Multitasking in Machado-Joseph’s Disease.” The International MJD Research Conference, Washington, DC.

2018 E. Hill, M. Slapik, O Morgan, et al. “Abstract Thinking in Cerebellar Ataxia.” Poster at: Iowa Neuroscience Institute Workshop, Cerebellum in Bipolar Disorder and Other Neuropsychiatric Diseases, Iowa City, IA.

C. Marvel, J. Creighton, O. Morgan, M. Slapik, et al. “Cerebro-Cerebellar Contributions to Working Memory in Early Lyme Disease.” International Society of Behavioral Neuroscience, Anchorage, AK.

O. Morgan, M. Slapik, S. Kronemer, et al. “Motor-cognitive Multitasking in Cerebellar Ataxia.” The National Ataxia Foundation’s 8th Ataxia Investigator’s Meeting, Philadelphia, PA.

M. Slapik, J. Pietrowski, O. P. Morgan, et al. “A Characterization of Language Impairment in Cerebellar Ataxia.” The National Ataxia Foundation’s 8th Ataxia Investigator’s Meeting. Philadelphia, PA.

C. Marvel, J. Creighton, O. Morgan, M. Slapik, et al. “Cerebro-Cerebellar Contributions to Working Memory in Early Lyme Disease.” Society for Neuroscience, San Diego, CA.

2017 M. Slapik, S. Kronemser, J. Mandel, et al. “Visuospatial Processing and Strategy Formation in Cerebellar Ataxia.” Society for Neuroscience, Washington, D.C.

Work

2021 – Now **Graduate Research Assistant, Dragoi Lab**
McGovern Medical School, *Houston, TX*

Investigate how the brain processes visual information

- Design optimal stimuli for neurons in visual cortex using an image generator and optimizer
- Analyze communication subspaces between brain areas and how they transform based on brain state

2016 - 2019 **Research Assistant, Marvel Lab**
Johns Hopkins Medical School, *Baltimore, MD*

Examined the cognitive and emotional effects of cerebellar ataxia

- Designed new cognitive tasks assessing visuospatial skills, gestalt processing, sequence learning and verbal encoding
- Administered cognitive tasks, emotional questionnaires and motor tests to ataxia patients and controls

Volunteering

2021 – Now **Volunteer Counselor**
Crisis Text Line, *Houston, TX*

- Provide counseling to callers on the crisis line experiencing thoughts of suicide and self-harm
- Refer to personalized resources on depression, anxiety, substance use disorder, and gender/sexual identity

2021 – Now **Shadowing, Department of Psychiatry**
UTHealth, *Houston, TX*

- Work with a team of psychiatrists, residents and social workers treating patients with a variety of psychiatric disorders

2017 – 2019 **Team Leader, Health Resource Coordinator**
Charm City Clinic, *Baltimore, MD*

- Assisted clients with a variety of challenges related to medical care, employment, and housing
- Trained a new group of volunteers

2016 – 2019 **Shadowing, Parkinson's Neuropsychiatric Clinic**
Johns Hopkins Medicine, *Baltimore, MD*

- Shadowed a psychiatrist treating Parkinson's disease, including psychiatric, cognitive and motor symptoms

2015 – 2016 **Emergency Room Volunteer**
Penn Presbyterian Medical Center, *Philadelphia, PA*

- Took incoming calls, paged nurses, restocked supplies, and observed procedures

2015 – 2016 **Front-Desk Volunteer**
Washington West Project, *Philadelphia, PA*

- Enrolled patients for STD screening and counseling

Service

Mentoring
Xiaoke Niu, Jaehwan Kim, Joey Zambelas, Madeline Gomez

Reviewing
Scientific Reports, Frontiers in Computational Neuroscience, Cerebellum

Awards

2024 Osborne Endowed Scholarship in the Neurosciences
Department of Neurobiology and Anatomy, McGovern Medical School

Dean's Research Scholarship
McGovern Medical School

2023 George M. Stancel Fellowship in the Biomedical Sciences
McGovern Medical School

Osborne Endowed Scholarship in the Neurosciences
Department of Neurobiology and Anatomy, McGovern Medical School

National Research Service Award (F30)
National Institutes of Health: National Eye Institute

Best Work-In-Progress Talk
Department of Neurobiology and Anatomy, McGovern Medical School

2022 Clinical and Translational Science Predoctoral Fellowship (TL1)
National Institutes of Health: National Center for Advancing Translational Sciences

Osborne Endowed Scholarship in the Neurosciences
Department of Neurobiology and Anatomy, McGovern Medical School

2018 Travel Award for 8th Annual Ataxia Investigator's Meeting
The National Ataxia Foundation

2014 High Honors in Philosophy and Linguistics
Swarthmore College Honors Program

2009 National Merit Semifinalist
National Merit Scholarship Program

Certificates

2023 Machine Learning Specialization
Stanford University (Coursera)

Deep Learning Specialization
deeplearning.ai (Coursera)

Organizations

2017 - Now Society for Neuroscience

2017 - 2019 National Ataxia Foundation

Skills

Electrophysiology: Acute and chronic recording

MRI: Structural scans

Eye-Tracking: Eyelink

Data analysis: Matlab, Python, SPSS

Machine Learning: Matlab, Python

Task Development: E-Prime, PsychToolbox, MonkeyLogic

Languages

English: Fluent

Spanish: Basic

Hobbies

Jazz Saxophone
The Chirp Chirps, Bayou City Funk

Machine Learning Journal Club
Leadership Committee

Classical and Jazz Piano