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# Mitchell B. Slapik

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## Education

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

## Awards

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2023	<b>George M. Stancel Fellowship in the Biomedical Sciences</b> McGovern Medical School
	<b>Travel Awards</b> for Society for Neuroscience in Washington, DC McGovern Medical School
	<b>Osborne Endowed Scholarship in the Neurosciences</b> Department of Neurobiology and Anatomy, McGovern Medical School
	<b>National Research Service Award (F30)</b> National Institutes of Health: National Eye Institute
	<b>Best Work-In-Progress Talk</b> Department of Neurobiology and Anatomy, McGovern Medical School
2022	<b>Clinical and Translational Science Predoctoral Fellowship (TL1)</b> National Institutes of Health: National Center for Advancing Translational Sciences
	<b>Osborne Endowed Scholarship in the Neurosciences</b> Department of Neurobiology and Anatomy, McGovern Medical School
	<b>Travel Awards</b> for Society for Neuroscience in San Diego, CA McGovern Medical School
2018	<b>Travel Award</b> for 8 <sup>th</sup> Annual Ataxia Investigator's Meeting The National Ataxia Foundation

2014	<b>High Honors</b> in Philosophy and Linguistics Swarthmore College Honors Program
2009	<b>National Merit Semifinalist</b> National Merit Scholarship Program

## Publications

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2023	<b>M. Slapik</b> , H. Shouval. "Unshattering Dimensionality: How the Brain Reconciles Expressive Power with Computational Efficiency." In preparation.  R. Milton*, <b>M. Slapik*</b> , S. Egranov, V. Dragoi. "Locomotion Enhances Communication Between Brain Areas." In preparation.
2022	M. Joyce, P. Nadkarni, S. Kronemer, [...], <b>M. Slapik</b> , et. al. "Quality of Life Changes Following the Onset of Cerebellar Ataxia: Symptoms and Concerns Self-reported by Ataxia Patients and Informants." <i>Cerebellum</i> .
2020	O. Morgan., <b>M. Slapik</b> , K. Iannuzzelli, et. al. "The Cerebellum and Sequencing in Motor and Cognitive Domains: Evidence from Cerebellar Ataxia." <i>Cerebellum</i> .  S. Kronemer, <b>M. Slapik</b> , J. Pietrowski, et. al. "Neuropsychiatric Symptoms as a Reliable Phenomenology of Cerebellar Ataxia." <i>Cerebellum</i> .
2018	<b>M. Slapik</b> , S. I. Kronemer, O. Morgan, et. al. "Visuospatial Organization and Recall in Cerebellar Ataxia." <i>Cerebellum</i> .

## Presentations

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### Talks

2023	<b>M. Slapik</b> , H. Shouval. "Unshattering Dimensionality." Post-candidacy Talk at Fall Neuroscience Retreat for UTHealth. Cleveland, TX.
2022	<b>M. Slapik</b> , 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, <b>M. Slapik</b> , 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, <b>M. Slapik</b> , 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

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

S. Khan, A. Andrei, **M. Slapik**, et al. "Optogenetic Control of Inhibitory Neurons in Macaque Visual Cortex." 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 8<sup>th</sup> 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 8<sup>th</sup> 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

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- 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

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- 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

## Certificates

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- 2023            **Machine Learning Specialization**  
 Stanford University (Coursera)
- Deep Learning Specialization**  
 deeplearning.ai (Coursera)
- AI for Medicine Specialization**  
 deeplearning.ai (Coursera)

## Organizations

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- 2017 - Now     **Society for Neuroscience**
- 2017 - 2019    **National Ataxia Foundation**

## Skills

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**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

## Languages

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English: Fluent

Spanish: Basic

## Hobbies

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Jazz Saxophone

The Chirp Chirps, Bayou City Funk

Machine Learning Journal Club

Leadership Committee

Classical and Jazz Piano