

Sarah Cooke

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Education

Case Western Reserve University

Neurosciences Graduate Program, PhD Student

Cleveland, OH

July 2023 - Present

University of Michigan

Honors in Neuroscience, B.S. | GPA: 3.606
University Honors, four semesters
James B. Angell Scholar

Ann Arbor, MI

September 2016 - August 2020
Fall 2016 – Fall 2018 and Winter 2020
March 2018

Research Experience

CWRU Neurosciences Graduate Program, Dr. Xin Qi Lab

December 2023 – Present

PhD Student

- Explores role of mitochondrial dysfunction in amyotrophic lateral sclerosis progression

University of Michigan Dept. of Physiology, Dr. Lei Yin and Dr. Xin Tong Lab

July 2021 – June 2023

Laboratory Manager

- Investigated the impact of brown adipose tissue on the progression of non-alcoholic fatty liver disease by utilizing in vivo and in vitro methods, including primary tissue isolation, qPCR, western blots, and virus production.
- Trained and managed undergraduate researchers in safe laboratory practices and protocols.
- Ensured laboratory equipment was properly maintained, ordered reagents, and coordinated lab events.

University of Michigan Dept. of Neuroscience, Dr. Catherine Collins Lab

May 2019 – August 2020

Undergraduate Researcher

- Honors thesis research characterizing an inhibitor of *wallenda* to determine its utility in further understanding the functions of the *wallenda* signaling cascade in nerve development and injury.
- Performed *Drosophila melanogaster* larva dissections, confocal microscopy, and analyzed resulting data using Prism.

University of Michigan Dept. of Psychology, Dr. Christopher Monk Lab

Fall Term 2018

Undergraduate Researcher

- Participated in a neural connectivity project as part of the Psych 331 upper level writing course.
- Analyzed diffusion MRI data to determine the probability of white matter connectivity between brain regions.

University of Michigan Dept. of Pathology, Dr. Jean Francois Rual Lab

June 2017 - August 2017

Undergraduate Researcher

- Analyzed factors influencing gene expression in the Notch signaling pathway.
- Handled multiple cell culture lines, utilized RNAi to help identify modulators of Notch signaling, and performed qPCR.

University of Michigan Dept. of Infectious Disease, Dr. Robert Woods Lab

October 2016 – August 2018

Undergraduate Researcher and Laboratory Assistant

- Extracted RNA samples and performed PCR genotyping of rotavirus strains isolated from ill Ecuadoran patients.
- Prepared general lab solutions and assisted in experimental setup and clean up.

Teaching Experience

BINA Movement for Social Change

August 2020 - July 2021

Teaching Fellow

- Partnered with English teachers in underprivileged schools in Nazareth and Tel Aviv to increase language fluency in elementary school students.
- Taught small groups of students, as well as tutored individual students, to further their English comprehension and speech.

Quest Martial Arts

October 2015 - September 2017

Instructor

- Taught elementary school aged children the art of ninjitsu.
- Engaged in community outreach with students.

Presentations

Understanding the Molecular Mechanism Linking Mitochondrial Dysfunction and TDP43 Neuropathology in Amyotrophic Lateral Sclerosis, CWRU Physiology and Biophysics Retreat, October 2024

Investigating the Probability of White Matter Connectivity Between the Prefrontal Cortex and the Ventral Striatum, University of Michigan, Psych 331 Symposium, November 2018

Investigating The Role Of RBPJ Protein Interactors As Potential Modulators Of Notch Signaling In Breast Cancer, University of Michigan, UROP Summer Research Symposium, August 2017

Rotavirus Genotyping, University of Michigan, Undergraduate Research Opportunities Program Symposium, April 2017

Skills

- 16 credits of computer science courses, with a focus on C/C++
- 2nd degree black belt in ninjitsu
- Moderate fluency in Hebrew