Sarah Cooke
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Education

Case Western Reserve University   **Cleveland, OH**

Neurosciences Graduate Program, PhD Student   July 2023 - Present

University of Michigan   **Ann Arbor, MI**
Honors in Neuroscience, B.S. | GPA: 3.606   September 2016 - August 2020
University Honors, four semesters   Fall 2016 – Fall 2018 and Winter 2020
James B. Angell Scholar   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 - Present**
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 w*allenda* 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