Aya Musleh

Irvine, CA | amusleh1097@gmail.com | linkedin.com/in/ayailiana/

EDUCATION

University of Southern California, Keck School of Medicine — Los Angeles, CA
M.S. Neuroimaging and Informatics — *Class of 2021*
Relevant Coursework: *NIIN520 Experimental Design for Neuroimaging, NIIN 540 Neuroimaging Data Processing Methods, NIIN 550 Computational Modeling in Neuroimaging, NIIN 580 Introduction to Data Science, NIIN600 Science Communications*
GPA: *3.78*

University of Redlands — Redlands, CA
B.S. Biology with Honors Cum Laude — *Class of 2019*
Minors: *Chemistry & Religious Studies*
Honors: *Cum Laude, Hunsaker Scholar*
GPA: *3.47*

EXPERIENCE & RESEARCH

University of California, Irvine — Irvine, CA
Laboratory Assistant — *January 2020 – September 2021*

- Managed and propelled the data acquisition of 6+ projects simultaneously
- Utilize and optimize lightsheet microscopy methodology to image sagittal view of over 500+ rodent brains for lab wide projects
- Work in Linux (Ubuntu) environment and use bash to quality control brains, ensuring optimal data collection via Clearmap
- Use Python scripts to optimize data collection of cell counts in rodent brains for several projects

University of Southern California — Los Angeles, CA
Graduate Research Assistant — *September 2019 – August 2021*
Topic: Neuroimaging data analysis, Neurodevelopment
Goal*:* Analyze neuroimaging data collected in neonates inflicted with Hypoxic-ischemic encephalopathy (HIE) to link abnormal brain development with cognitive impairment in school-aged children.

- Actively analyze literature on machine learning methodologies in neuroimaging in relation to HIE
- Attended lab meetings to present and discuss current literature in the neuroimaging and machine learning spheres

University of Redlands — Redlands, CA
Undergraduate Laboratory Research Student — *January 2018 – April 2019*
Topic: Behavioral Neuroscience, Autism Spectrum Disorder
Goal*:* Investigate the 5-HT system by using the BGC 20-761 antagonist to determine its ability in alleviating overall anxiety-like and repetitive behaviors of C58 mice.

- Conducted a year long intensive literature research on the project and wrote a final honors Thesis on research topic and data that was evaluated by the honors committee.
- Collaborated on higher order repetitive behavior research via novel object behavioral assay
- Utilized programming software including EthoVision and Noldus the Observer to score and analyze behavior
- Awarded Cum Laude honors based on research thesis.

University of Chicago — Chicago, IL
Leadership Alliance Research Intern — *June 2018 – August 2018*
Topic: Neurobiology
Goal: Analyze the synaptic morphology of fundamental cerebellar and somatosensory cortex cells in an autism spectrum disorder mouse model using patch clamp electrophysiology and Golgi staining.

- Conducted rodent brain dissections in rodent models for autism.
- Developed proficiency in confocal microscopy imaging and Zen 2008 software.
- Conducted literature review and wrote an end of summer thesis paper on research. Independently applied to the NSF Grant Fellowship with this research.

University of Chicago — Chicago, IL
Collegiate Scholars Program Teaching Assistant — *June 2017-August 2017*

- Provided Dr. Ted Steck of the University of Chicago and Dr. Yvonne Lange of Rush University teaching assistance for approximately twenty-two students in a high school level biological science course
- Graded papers, took attendance, worked one-on-one with students, and held office hours as needed
- Taught a neuroscience lesson and created an assignment based on my lecture.

University of Redlands — Redlands, CA
Undergraduate Laboratory Research Student — *May 2016 – September 2016*
Topic: Neurophysiology, Gratitude & Self Compassion
Goal*:* Investigate the relationship between salivary amylase and psychological traits in 104 Redlands students alongside Dr. Lisa Olson.

- Conducted over 800+ ELISA assays and dedicated 8 hours a week conducting data analysis.
- Developed a proficiency in laboratory techniques, including ELISA assays, data acquisition, and processing.
- Presented research findings in 2016 and 2018.

PUBLICATIONS

Manuscript Published:

Amodeo DA, Oliver B., Pahua A., Hitchcock K., Bykowski A., Tice D., **Musleh A.**, Ryan BC (2020) "Serotonin 6 receptor blockade reduces repetitive behavior in the BTBR mouse model of autism spectrum disorder." *Pharmacology Biochemistry and Behavior*. 200(2021): 173076

Bañuelos MS, **Musleh A.,** Olson L. (2017) "Measuring Salivary Alpha-Amylase in the Undergraduate Neuroscience Laboratory." *Journal of Undergraduate Neuroscience Education.* 16(1):A23-A27

Presentations – Oral:

Musleh AI., Tice D. "5-HT_6 Antagonist and Autistic-like Behaviors in the C58 Mouse."
Oral session presented at: The University of Redlands Senior Seminar & The University of Redlands Biology Honors Defense; 2019 April 4th, April 11th; Redlands, CA

Musleh AI. "Analysis of Dendritic Spines in Cerebellar Purkinje Cells and Neocortical Pyramidal Cells in a Mouse Model of Autism." Oral session presented at: The Leadership Alliance National Symposium & The University of Chicago's Summer Research Symposium; 2018 July 27-29, Hartford, CT; 2018 August 3, Chicago, IL

Musleh AI., Haji F., Diab L., Salih H. "Racialization of Modesty: Middle Eastern vs. Western Feminism." Oral session presented at: The University of Redlands Race on Campus; 2017 May 23rd; Redlands, CA.

Presentations – Poster:

Musleh AI. "Analysis of Dendritic Spines in Cerebellar Purkinje Cells and Neocortical Pyramidal Cells in a Mouse Model of Autism." Poster session presented at: University of Redlands Stauffer Center's Summer Research Symposium & The Annual Biomedical Research Conference for Minority Students; 2018 September 26, Redlands, CA; 2018 November 14-17, Indianapolis, IN.

Musleh AI., Olson L. "A Salivary Stress Marker Inversely Correlates to Forgiveness and Self-Compassion." Poster session presented at: Southern California Conferences for Undergraduate Research, University of Redlands Stauffer Center's Summer Research Symposium & Mind & Life International Symposium for Contemplative Research; 2016 September 26, Redlands, CA.; 2016 November 12, Riverside, CA.; 2018 November 8-11, Phoenix, AZ.

Media Appearance:

"Learning in the U.S.A." *K SIC*, Broadcasting Corporation, 11 June 2013. Reference link:
https://sickapa.pt/programas/learningintheusa/2016-01-31-2-Programa---dia-8-de-junho

RELEVANT TRAINING

Neuromatch Academy Trabuco Canyon, CA
Interactive Student Track *July 2020*

- Learned about model fitting, machine learning, dimensionality reduction, bayesian statistics, linear systems, dynamic networks, and deep learning in relation to neuroscience research
- Modeled data from neuroscience experiments ranging from neuronal activity in humans to animal behavior.

TECHNICAL SKILLS & LEADERSHIP

Programming Languages: MATLAB, Bash, Python, R

Neuroimaging Software: FSL, FreeSurfer, ITK-SNAP

Leadership: Found Well Fellow: Found Well Entrepreneurial Mindset, Compassion Advocacy Respect & Enlightenment (C.A.R.E.), Multi-faith Student Association, Code On!, Lean In: Mentor Her, USC Found Well Entrepreneurial Fellowship, Race on Campus Founding Member

Awards: Google Conference Scholarship, HackSC 2021 Vertical: Device Winner, BRAINS@PLAY Brains and Games International Design Fiction VR + Neurotech + Health Runner-up, Hunsaker Scholarship, ABRCMS Travel Award, Mind & Life ISCR Scholarship, Association for Women in Science Award

Volunteer: Brains@Play, ABRCMS, Compassion Advocacy Respect & Enlightenment (C.A.R.E.), UCI Medical Affiliates Student Volunteer