**JASPREET SINGH**

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**education**

**University of Pittsburgh, Pittsburgh, PA**

**Master of Science in Bioengineering** August 2023 – December 2024*Neural**Engineering Track with focus in Brain Computer Interfaces & Medical Devices*

**Bachelor of Science in Neuroscience,** Cum Laude HonorsApril 2022

*Minors in Chemistry & Theatre and Certificate in Conceptual Foundations of Medicine*

Undergraduate Thesis

Analyzed relationship between childhood adversity and perceived socio-economic status and adulthood stress regulation through examination of functional resting state activity within a central visceral neural network in an independent thesis in collaboration with the University of Pittsburgh Department of Neuroscience and Dr. Layla Banihashemi, PhD.

**Research experience**

**Research Associate** September 2022 - July 2023

*Longitudinal Late-Life Suicide Research Program, UPMC (PI: Dr. Kaitlin Szanto, MD)*

* Administered clinical interviews and psychiatric evaluations for internal review, such as: Hamilton Depression Rating Scale-24 item, Scale of Suicide Ideation, Suicide Intent Scale, Cumulative Illness Rating Scale-Geriatric, and Structured Clinical Interview for DSM in an outpatient clinic setting as well as in at Western Psychiatric Hospital on patient units.
* Conducted neuropsychiatric assessments, including MMSE, WTAR, and DRS during baseline and 1-year follow-up visits with study participants both in outpatient and hospital settings.
* Authored clinical summaries, presented at weekly lab meetings, communicated with clinical staff including psychiatrists, nurses, social workers, and outpatient care team.
* Collaborated with data team (R, statistics meetings, presentation meetings, data report meetings etc.)
* Managed participant recruitment cycle for multiple patients each week: screened, scheduled, completed battery of neuropsychiatric assessments.

**Undergraduate Research Investigator** September 2019 - May 2022

*Brain Body Stress Lab, UPMC (PI: Dr. Layla Banihashemi, PhD)*

* Inspected neural pathways implicated in stress through tractography and fMRI imaging.
* Assessed how childhood experiences alter brain circuits and may affect stress responses physiologically, influencing stress reactivity and mental health in adulthood.
* Reviewed literature, co-authored publication, authored thesis, and presented at weekly research focused journal club meeting, etc.

*Publication*

Banihashemi, Layla, et al. "Childhood Threat Is Associated with Lower Resting-State Connectivity within a Central Visceral Network." Frontiers, Frontiers, 1 Jan 2022. 1AD, [www.frontiersin.org/articles/10.3389/fpsyg.2022.805049/full](http://www.frontiersin.org/articles/10.3389/fpsyg.2022.805049/full).

**SEA-PHAGES Program at University of Pittsburgh** Fall 2018, Spring 2019

* Isolated and named a novel bacteriophage.
* Able to microcentrifuge, pipet, read a Qubit, and the knowledge necessary to adjust experimental protocols to get positive results experimentation yields negative results.
* Annotated and sequence a genome using programs such as PECAAN, HHPred, NCBI PBLAST, DNA Master, Starterator, Phamerator, etc.
* Studied the evolution of bacterial defense systems, as well as bacteriophage defense systems.

*Publication*

Chen, O., Orman, F., Rao, A., Reslink, M., **Singh, J.,** Kukkillaya, M., … Hatfull, G. F. (2019). Gordonia phage Teal, complete genome. NCBI. Retrieved from

**clinical experience**

**Nursing Assistant & Patient Care Technician** May 2022 - Present

*UPMC Saint Margaret’s*

* Examine and treat patients by aiding care team with patient care. Example responsibilities: monitoring vital signs, glucose/urine tests, bladder scanning, facilitating patient transport or movement, assisting with daily living activities, and collaborating with a healthcare team to ensure optimal patient outcomes.

**Hospital Elder Life Program Intern** January 2021 - Present

*UPMC Shadyside & AHN West Penn Hospital*

* Implemented techniques to prevent delirium in a geriatric hospital patient population, contributing to enhanced patient well-being and care outcomes.
* Executed and designed research projects with guidance from Drs. Debra Artim, PhD, and Lisa McIlvried, PhD, to explore the profound influence of social determinants of health on progression of dementia and delirium in geriatric hospital patients. Topics of investigation were focused on critical factors affecting healthcare outcomes and included race, gender, socioeconomic status, and systemic bias.

**leadership experience**

**Master Student Liaison**

*Biomedical Engineering Society at University of Pittsburgh* September 2023 - Present

* Facilitate communication between ’23 graduate student cohort and BMES executive board to create effective programming for the academic year.
* Create professional and social opportunities for Master and PhD graduate students.
* Represent the department at National Conferences (BMES 2024 in Baltimore, MD).

**Outreach Chair & Writer**

*Pre-health Spotlight at University of Pittsburgh* October 2019 - July 2022

* Facilitated and managed collaborations with organizations including MCAT, DAT, GRE workshops with the Princeton Review and a medical school information session with a representative from Trinity School of Medicine.
* Improved social media visibility and engagement on Instagram by increasing follower numbers and engaging with social media audience.
* Designed social media posts and coordinate collaborations with dozens of organizations across campus.
* Directed, researched, and wrote a podcast on adverse childhood experiences with an expert on childhood adversity, Dr. Layla Banihashemi.
* Organized multiple virtual medical student panels and research panels attended by 50+ students.
* Wrote an article for publication each semester. Sample topics: Ayurvedic Medicine, Antibiotic Resistance, Sexism in Healthcare, etc.

**Rise University Free College Fellowship Fellow** June 2021– August 2021

* Co-produced an episode of IG Live series on *Why we Vote* and created additional voter promotional materials.
* Attend weekly meetings with other fellows from Virginia, Pennsylvania, Georgia, and other states to plan events to boost young voter registration and voter awareness in home states.
* Advocated and successfully registered new voters in PA while promoting free college in Pennsylvania to young voters.

**Vice President & Freshman Chair** August 2018 – August 2021

* Arranged collaborations with other organizations in Pittsburgh community including hosting a mock policy hack-a-thon.
* Implemented a volunteer program for club members. Board members alone achieved 600+ volunteer hours during the academic year of 2019-2020.
* Personally completed 250+ volunteer hours.
* Advocated and raised awareness on factors that affect children’s access to education globally while focusing on region of India, as well as consequences of inadequate access to education has on individuals and communities.
* Develop and coordinate various fundraisers over two years to raise $1,000+ for chosen project in India to build restrooms in impoverished areas of India.

**Volunteer Coordinator and Business Manager** **at Girl Up** Fall 2020 – July 2022

* Executed a volunteer drive to donate $190+ for Bethlehem Haven, a local women’s shelter.
* Engaged in planning and execution of a sanitary product drive for a local women’s shelter in which over 1,400 menstrual products were donated.
* Led discourse on current event issues women face globally including infanticide, child marriage, inadequate access to education, domestic violence, etc.
* Consulted in planning and execution of a women in academic panel with 4 career-oriented workshops with ~50 undergraduate attendees.
* Designed over eight volunteer events to give back to local Pittsburgh Community.
* Devised several fundraisers and raised close to $700 dollars during 2021-2022 academic year.

**Service Committee & Education Committee** Spring 2020 – Spring 2022

*Delta Epsilon Mu, University of Pittsburgh*

* Engaged in service, education, social, professional, and academic requirements with students from all pre-health backgrounds to learn about how various healthcare professionals work together to effect change and advance healthcare outcomes.

**Teaching experience**

**Undergraduate Teaching Assistant, NROSCI 0080** Fall 2019, Summer 2020, Spring 2022

*Dr. Lisa McIlvried, PhD and Debra Artim, PhD*

* Created quiz and test questions and conducted exam review sessions.
* Facilitated class discussions, attended lectures, and mentored small groups of students on worksheet questions and assignments.
* Taught students on a one-on-one basis.

**Undergraduate Teaching Assistant, Physics II (PHYS 0111)** Spring 2022

* Taught students one-on-one and attended lectures.

**Peer Tutor** Spring 2022

*Study Lab of Dietrich School of Arts and Sciences*

* Tutored students in groups and on a one-on-one basis in Neuroscience, Organic Chemistry I, Physics I and Physics II for the University of Pittsburgh School of Dietrich Arts and Sciences.

**Awards**

**Outside the Classroom Curriculum Honors Society Inductee,** April 2020

**The National Society of Leadership and Success Inductee,** Fall 2020

**Science Olympiad**: State Competition 7th place Invasive Species (2017), Science Olympiad State Competition 7th Place in Herpetology (2018), Science Olympiad Regional Competition 1st place in Invasive Species (2017), Science Olympiad Regional Competition 1st Place in Wind Power (2017), Science Olympiad Regional Competition 2nd Place in Herpetology (2018), Science Olympiad 4th Place Regional Team Award (2017), Science Olympiad 4th place Regional Team Award (2018).

**Lehigh Valley Psychological Association** Monetary Award for Science Research (2016, 2014)

**Delaware Valley Science Fair**: Second Place Behavior & Social Sciences (2015), Honorable Mention Behavior & Social Sciences (2017)

**Lehigh Science and Engineering Fair Behavior and Social Sciences**: First Place (2015), Second Place (2017)

**Pennsylvania State Junior Academy of Sciences (PJAS) Behavioral Science Award**: First Place at Regional level (2015, 2017), Second Place at State level (2015), First Place at State level (2017).

**Skills**

* *Software Skills*: Supervised/Unsupervised Machine Learning (Python/MATLAB), MATLAB, Python, Neural Networks (ANN, SNN, CNN), Intel’s Loihi Platform (Lava), C++, Power BI, ITK-SNAP (tractography)*,*Genome software (PECAAN, HHPred, NCBI PBLAST, DNA Master, Starterator, Phamerator,)
* *Research-related skills:* wet-lab skills, inical Patient Care, Clinical Interviewing, Grant Editing, Research Performance Progress Report (RPPR), IRB renewal, Medical Device Prototyping, Human Factors Engineering, Scientific Writing.