

JUSTIN W. LAM
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Education

Carnegie Mellon University, Pittsburgh, PA

Bachelor of Science in Chemical Engineering and Biomedical Engineering, GPA: 3.85

Expected: May 2024

Relevant Coursework: Rehabilitation Engineering, Physiology, Organic Chemistry II

Honors

James McKenny Award, AGHE, Gerontological Society of America, 2023

RERC on AAC Award, RESNA, Penn State University, 2023

Dean's List, Carnegie Mellon University, 2020 — 2021, 2023

The Bernard Mackler Class of '52 Scholarship in Social Studies, 2020

Research Experience

Regeneron Pharmaceuticals, Formulation Development Group

Research Intern, May 2023 – August 2023

Advisor: Caroline Tsao

Tested the long-term stability of a monoclonal antibody formulation under different stress conditions using different analytical methods.

Wake Forest University School of Medicine, Department of Biomedical Engineering

Research Intern, May 2022 — July 2022

Advisors: Delanie Lynch, Ashley Weaver

Developed subject-specific finite element models of a proximal femur. Created a nearest neighbors method in MATLAB to assign cortical bone thickness values to regions on a finite element model. Performed analysis in R using one-way ANOVA and built a multiple linear regression model with feature selection conducted by a forward and backwards stepwise AIC method. Presented poster at the ADAR summit (11/2/2022) and the Gerontological Society of America (11/2/2022)

Carnegie Mellon University, Biohybrid and Organic Robotics Group (B.O.R.G.)

Research Assistant, Nov. 2021 — May 2022

Advisors: Ashlee Liao, Victoria Webster-Wood

Traced the path of rat hippocampal neurites using NeuronJ, a plug-in for ImageJ. Conducted a change point analysis, a quantitative method for assessing changes in a path of a neurite, using R.

Carnegie Mellon University, Health and Human Performance Laboratory

Research Assistant, Jan. 2021 — Jan. 2022

Advisors: Sarah Lipitz, David Creswell

Assisted project pipeline by creating macros in Excel VBA to facilitate the processing of various biometric data for a healthy aging study.

Stuyvesant High School, Student Union

Volunteer Data Analyst, Jan. 2021 — March 2021

Examined data about the relationship between academic and non-academic stressors. Performed analysis in R using chi-square tests and a multiple logistic regression model. Presented a 45-minute lesson about mental health to various classes (03/18/21 and 03/19/21)

New York City Department for the Aging, Research Division

Research Intern, July 2019 — May 2020

Advisors: Madison Gates, Jackie Berman

Conducted a literature review of mental health stigma and existing outreach methods for older adults. Performed analysis of aggregate data in R using Kruskal-Wallis test and a multiple logistic regression.

Presentations

Annual Meeting of the Gerontological Society of America 2023, Tampa, FL, Nov. 2023. Lam, J.

“Design Needs and Perceptions of Older Adults Regarding Shared-use Automated Vehicles” (poster).

Rehabilitation Engineering and Assistive Technology Society of North America. New Orleans, LA, Jul. 2023. Lam, J.

“TOASTI: Tongue Operated ASsisTive Instrument” (presentation).

Annual Meeting of the Gerontological Society of America 2022, Indianapolis, IN, Nov. 2022. Lam, J.

“Compartmental Femoral Cortical Thickness in Older Adults Differs by Demographics and Physical Function” (poster).

New York City Science and Engineering Fair, New York, NY, March 2020. Lam, J. "Reaching Out to Older Adults with Mental Health Disorders in New York City" (poster).

Leadership / Service

University of Pittsburgh Medical Center Shadyside Hospital

HELP Volunteer, Jan. 2021 — Present

Perform interventions to address risk factors of delirium in older adults. Improve quality of stay of older patients by ensuring meals are accessible.

Department for the Aging

Friendly Visting Volunteer, May 2023 — Present

Friendly VOICES Volunteer, Dec. 2020 — May 2023

Contact an older adult experiencing social isolation over phone for an hour a week. Organized and facilitated a weekly support group for older adults with anxiety (Oct. 2021 — Nov. 2021).

Here for You Club

Webmaster, May 2023 — Present

Vice President, Dec. 2020 — May 2023

Help facilitate weekly general body meetings about accessing mental health resources. Develop events for encouraging mental health breaks for students on campus.

Lean On Me @ Carnegie Mellon University

Chapter Coordinator, May 2023 — Present

Supporter Coordinator, Dec. 2020 — May 2023

Support students on a peer-to-peer mental health help text line. Organize meetings to help address needs of text line supporters.

Selfhelp's Virtual Senior Center

Volunteer Facilitator, July 2020 — Nov. 2021

Organized biweekly ~1 hour long lessons for a group of older adults through Zoom. Created lesson plans and a curriculum around various science, psychology, and health topics

Technical Skills

Computational: Stradview, Mimics, Python, R, MATLAB, Excel VBA, SPSS, LaTeX, Microsoft Office

Wet Laboratory: Microflow imaging, HPLC, imaged capillary isoelectric focusing, PCR, agarose gel electrophoresis, ELISA, serial dilutions, bacterial transformation