Alex Clonan

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EDUCATION

University of Connecticut, Storrs, CT

Bachelor of Science Engineering, Electrical Engineering, December 2022
Bachelor of Science, Molecular and Cell Biology, December 2022
Member of Etta Kappa Nu, the International Honor Society for Electrical and Computer Engineers
Honors Thesis: Developing a Physiologically Inspired Model of Human Speech Recognition In Noise

Doctor of Philosophy, Biomedical Engineering, Graduation Date TBD
Concentration: Neural Engineering
Advisor: Dr. Monty Escabí

RESEARCH EXPERIENCE

Health Research Program, Center for Quantitative Medicine, Farmington, CT
Student Research Assistant, May 2019 - August 2020

- Fabricated a neural network, python-based simulation of the immune system's cellular response to infection
- Worked alongside industry, clinical and academic researchers to develop a 3D lung alveoulus model
- PI: Dr.Reinhard Laubenbacher

URAP Course, CT Children's Hospital, Hartford, CT
Student, December 2020 - December 2021

- Perform data analysis on ICD10 codes from Connecticut Emergency Room data to synthesize an analysis of self-harm during the onset of COVID 19 and the WIC program
- Administer clinical research surveys to pediatric populations in the CT Children's Emergency Department
- Course: Introduction to Translational Research, UConn MCB Honors Program

Research Assistant, Department of Biomedical Engineering, Storrs, CT
Escabí Lab - Research Assistant Undergraduate, Oct 2020 - December 2022, *PhD Student* January 2023 - Present

- Investigate the acoustic cues that drive human speech recognition in naturally noisy environments
- Perform human psychoacoustic data collection, and neural recordings from an in vivo rabbit model
- Construct listening paradigms and fit audio hardware to address questions of bottom-up acoustic processing
- Develop biologically inspired models for task-variant auditory perception to identify inductive biases
- Analyze how the acoustic invariances of black-box neural networks compare to those in human perception

LEADERSHIP EXPERIENCE

Department of Computer Science and Engineering, Storrs, CT
Teaching Assistant, August 2021-January 2022

- Instructed a weekly lab course for introduction to computer science students
- Taught python programming to students, answering questions about the fundamentals of programming

Department of Residential Life, Storrs, CT
Engineering Learning Community Resident Assistant, August 2019-August 2022

- Communicate the rules of residential life to residents and create a safe living environment that fosters a community for undergraduate students, specifically for first-year engineering students
- Participate and engage in weekly meetings with supervisors and staff to further the department mission

Engineering Ambassadors, Storrs, CT
Student Leadership, May 2019- 2021; *Member,* August 2018 - August 2022

- Lead weekly meetings, develop/implement educational activities, and coordinate tours of the School of Engineering
- Manage 80+ volunteers for the School of Engineering Open House
- Engage in STEM education demonstrations and presentations at local elementary schools
- Provided tours of the school of Engineering to prospective students and families

Peer Research Ambassador, Office of Undergraduate Research, Storrs, CT
Student Peer Counselor, August 2021- December 2022

- Present workshops with co-workers to facilitate interest in undergraduate research experiences
- Coordinate individual conversations with students to help them get involved in research experiences
- Presented to first year engineering students about current research in the School of Engineering

Engineering House Graduate Mentor, Office of Experiential Education, Storrs, CT
Mentor, August 2022 - Present

- Support Engineering House Student leaders in coordinating events for first/second year students
- Help develop a curriculum targeted towards social impact and awareness of engineering education
- Implement a project to integrate modular wheelchair design for movement impaired toddlers into curriculum

AWARDS & HONORS

Health Research Program Award, 2019
UConn Co-op Legacy Fellowship, 2020 - *Pediatric Setting Engineering Education*
UConn Summer Undergraduate Fund Research Award, 2022
UConn Conference Presentation Award, Fall 2022
UConn BME Travel Award, Spring 2023, Fall 2023, Spring 2024
Next Gen Scholar Graduate Fellowship, Fall 2023
IBACS Outreach Fellowship, Spring 2024
NSF GRFP Honorable Mention, Spring 2024

PROFESSIONAL MEMBERSHIPS

Society for Neuroscience
Association for Research in Otolaryngology

PUBLICATIONS

Clonan AC, Zhai X,, Stevenson I, Escabí MA Low-dimensional interference of mid-level sound statistics predicts human speech recognition in natural environmental noise *bioRxiv 2024*

PRESENTATIONS

Clonan AC, Zhai X, Stevenson I, Escabí MA, Mid Level Computations Predict Human Speech Recognition in Natural Environmental Noise , Presentation and Poster Blitz at the Association for Research in Otolaryngology MidWinter Meeting, Anaheim, February 2024

Clonan AC, Zhai X,, Stevenson I, Escabí MA, The Contribution of Spectrum and Modulation Statistics Towards Speech Recognition in Natural Environmental Noise , Presentation at the Association for Research in Otolaryngology MidWinter Meeting, Anaheim, February 2024

Clonan AC, Zhai X,, Stevenson I, Escabí MA, Mid Level Computations Predict Human Speech Recognition in Natural Environmental Noise, Presentation at the Society for Neuroscience/Advances and Perspectives in Auditory Neuroscience, Washington DC,November 2023

Clonan AC, Zhai X,, Stevenson I, Escabí MA, Mid Level Computations Predict Human Speech Recognition in Natural Environmental Noise, Presentation at Auditory SPLASH, Philadelphia, April 2023

Zhai X, Clonan AC, Stevenson I, Escabí MA, Modeling and predicting human perceptual sensitivity of speech recognition in natural environmental noise, Presentation at the Society for Neuroscience/Advances and Perspectives in Auditory Neuroscience, San Diego, November 2022

Clonan AC, Zhai X,, Stevenson I, Escabí MA, Developing a Physiologically Inspired Model of Human Speech Recognition In Noise, University of Connecticut, Fall Frontiers Undergraduate Symposia, October 2022

Clonan AC, Zhai X, Stevenson I, Escabí MA, Modeling and predicting human perceptual sensitivity of speech recognition in natural environmental noise, Presentation at the Neuroscience at Storrs Event, Storrs CT, November 2022

Faryna Y, Slifer J, Dong J, Clonan AC, Smith SR. Caregiver Risk Factors and Reasons for Nonparticipation in the WIC Program. Presentation at Eastern Society for Pediatric Research, Virtual, March 2022.

Faryna Y, Slifer J, Dong J, Clonan AC, Smith SR. Predictive Factors for Nonparticipation in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) by Caregivers of Eligible Children. Presentation at Pediatric Academic Societies Meeting, Denver CO, April 2022.

George K, Clonan AC, Nemesure A, Patel P, Hunter A Assessing the relationship between the geographic location of residence and self-harm in adolescents, Presentation at the American Public Health Association, Virtual, Oct 2021

Clonan AC, Sordo-Vieira L, Laubenbacher R, Modeling the Dendritic Cell Response to A. fumigatus Dynamic Morphological States, University of Connecticut Health Summer Symposia, August 2019