Lauren M. McLaughlin-Kelly

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EDUCATION

University at Buffalo, The State University of New York
Bachelor of Biomedical Engineering*, May 2022*
Cum Laude Honors
Masters of Biological Sciences with a focus in Anatomy & Physiology, *Expected May 2023*

University of Technology of Troyes, Troyes France
Engineering Study Abroad, Summer 2018

RESEARCH EXPERIENCE

University at Buffalo, Dr. Stuart Inglis's Cadaver Lab, January 2021 – Present
- Dissected the lower left leg, focusing primarily on the foot
- Observed the mechanics of the knee and foot
- Dissected the hand to assist with 3D printed hand project
- Worked with a current medical student on a nervous system dissection
- Currently working on a soft body and evaluating that type of cadaver vs. a normal cadaver, for musculoskeletal dissections and surgical training

University at Buffalo, Dr. Yongho Bae's Pathology Lab, February 2021 – May 2021
- Cultured Vascular Smooth Muscle Cells to create spheroids
- Mimicked vascular diseases by use of spheroids and Atomic Force Microscopy
- Learning how to do Atomic Force Microscopy

University at Buffalo, Dr. Yongho Bae's Pathology Lab , July 2020 – January 2021
- Research was remote due to COVID-19
- Assisted an MD/PhD student on Piezo-1 research, specifically subcellular compartmentalization in Smooth Vascular Muscle Cells
- Learned about scientific literature reviews
- Read mechanobiology reviews regarding Piezo-1, mechanotransduction, and the inhibitor peptide GsMTx4

University art Buffalo, Dr. Ruogang Zhao's Biofabrication Lab*,* March 2020 (cut short due to COVID-19)
- Worked with MS student on her Design and Optimization of Biofabricated 3D Tissue Platforms for Organoid Development and Drug Testing.
- Observed how she created an Organ-on-a-Chip and cultured the pulmonary tissues
- Assisted with building an organ on a chip and culture pulmonary cells into tissues

SKILLS

Electrocardiograms/Telemetry, Phlebotomy, Computer Proficiency, ImageJ, Cell Culturing and Microscopy Techniques, Microsoft Suite, Solidworks, and MATLAB
- Basic Life Support for Healthcare Providers (CPR & AED), American Red Cross
- Biomedical Research Investigators, CITI Program, Expires March, 2024
- COVID-19 Contact Tracing, No expiration

WORK EXPERIENCE

WiSE & Amazon Local High School Mentor, NY September 2022 – Present

- UB WiSE received a $50,000 grant from Amazon, enabling WiSE to extend its reach to high school students, helping to strengthen the pipeline for women to enter STEM fields
- Act as a mentor to two high school students in the Buffalo public school systems
- Empowering other women to pursue a major in the field of STEM, but to also act as a mentor for other aspects of their educational life as needed

UB WiSE & Amazon High School Mentor, NY, September 2022– Present

- Acted as a mentor to two high school students in the Buffalo public school systems
- Empowering other women to pursue a major in the field of STEM, but to also act as a mentor for other

Assay Development Research Intern at Lucira Health, CA, May– August 2022

- Performed guard banding to test the tolerance to variations in the elution buffer & pellet for the COVID-19 FLU A+B Test
- Utilized techniques such as PCR, fLAMP-assays, and DNA/RNA purification in a BSL2 environment under GXP
- Assisted in data analysis and creating device guard banding documents for the FDA

Patient Care Technician at St Peters Hospital, November 2020 – Present

- Assisted physicians in the Emergency Department with central lines, intubation, CPR/BLS, etc.
- Monitored cardiac telemetry and take the vitals of patients
- Performed EKG's and phlebotomy on patients, and urine tests & COVID/FLU tests on patient samples

PROJECTS

3D Printed, Ehlers's Danlos Syndrome & Arthritis Finger Brace, September 2021 – Present

- 3D printing finger braces to prevent hypermobility in the distal phalanges, preventing worsening Arthritis
- Making brace stronger & more effective for surgeons in the operating room

3D Printed, Anatomically Correct Hand for Surgical Training, September 2021 – September 2022

- Utilized Curia & Fusion 360 to 3D print a CT of the hand, allowing it to be personalized to each patient
- One of two groups selected to present our 3D Printed Anatomically Correct Hand to the UB BME Advisory Board
- Coordinated design testing with the former Buffalo Bills Orthopedic Surgeon, fellows, and residents
- Currently applying for a patent for this training model

PRESENTATIONS

University ay Buffalo Biomedical Engineering Advisory Board, December 2021

- One of two groups selected to present our 3D Printed Anatomically Correct Hand to the UB BME Advisory Board
- The project will be used for surgeons to practice bone pinning on fifth metacarpal fractures
- Received feedback on how to move forward with the utilization of this project for surgical and marketing uses

RESEARCH PAPERS

Drugs Against the Biofilms of Cystic Fibrosis, December 2019

- Wrote a mock NIH paper for Biomaterials and Mechanics (BE305)
- Pseudomonas Aeruginosa (PA) renders drugs useless and affects lung ability anf efficiency
- Proposed the idea to identify a combination of mucus permeable molecule and suitable drug for degradation of biofilm (Bacterial Vaginosis and E. coli biofilm), and identify if the use of a carrier molecule delivery system increases the efficiency of drug delivery by measuring the effect of the drug on pathogenic biofilms associated with CF.
- Created an experimental design on how to execute this research

AWARDS & HONORS

EAS199 First Year Engineering Award*,* December 2018

- Created the first functional vertical wind turbine for the University at Buffalo's Freshmen Engineering Seminar
- Awarded EAS199 "patents" for: curved blades with polyurethane, hexagonal base and top, wooden axel, and horizontal nacelle

PROFESSIONAL ASSOCIATION MEMBERSHIPS

- Students for a National Health Program, Junior Class Representative, February 2021 – May 2021
- Student Organ Donations Advocates, Marketing and Social Media Coordinator, April 2021 – Present
- Association of Pre-Medical Students, Emergency Expeditor, April 2021 – Present
- Biomedical Engineering Society, Junior and Senior Class Representative, August 2021 – Present
- Pre-Meds Without Boarders, August 2020 – Present
- Women in Science and Engineering, Ambassador, January 2019 – Present

COMMUNITY SERVICE

- Biomedical Engineering Society at the University of Buffalo, April 2021 – Present
- Kitten Angels, December 2020 – Present
- Red Cross Blood Ambassador, September 2020 – Present
- Biomedical Engineering Society Social Media Volunteer, October 2020 – Present
- Women in Science and Engineering, August 2019 – Present
- South Colonie Fetal Pig Dissection, May 2017