

Kelly Crumley

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Education

University of Michigan—PhD, Biomedical Engineering	Ann Arbor, MI
• Biomaterials and Regenerative Medicine concentration	<i>Anticipated graduation May 2024</i>
University of Michigan—Bachelor of Science in Engineering, Biomedical Engineering	Ann Arbor, MI
• Bioelectrical concentration, Computer Science minor	<i>Graduated May 2020</i>
• Cumulative GPA: 3.71, Major GPA: 3.86	

Experience

University of Michigan (Dept. of BME), Lempka Lab – Ann Arbor, MI	<i>Summer 2020</i>
• Worked remotely on pudendal nerve mapping project with aim of developing patient specific neuromodulation	
University of Michigan (Dept. of BME), Arnold Lab – Ann Arbor, MI	<i>Fall 2019</i>
• Modeled signaling pathways using ordinary differential equations in MATLAB in order to evaluate the rate of product formation and the time-course of reactant and product concentrations	
• Implemented technique of Principle Component Analysis in order to evaluate multivariate systems	
University of Michigan, Department of Biomedical Engineering– Ann Arbor, MI	<i>Fall 2019</i>
• Scored and provided feedback on Quantitative Cell Biology (BME 418) assignments and exams	
Johns Hopkins University, Lutty Lab – Baltimore, MD	<i>Summer 2018, 2019</i>
• Assisted experimentation related to glial cell involvement in macular degeneration	
• Led research project and directed other students for duration of summer while supervisor was on travel leave	
• Performed assays to quantify the influence of growth factors, then determined trends and significant differences in treatment efficacy through statistical methods and image processing techniques	
University of Michigan (Dept. of BME), Shea Lab – Ann Arbor, MI	<i>Winter 2017 – Summer 2018</i>
• Engaged in multifaceted drug delivery research including production of biomaterials and culture of stem cells	
• Designed and executed a project to optimize confluence of β -cells within microporous scaffolds	
Naval Surface Warfare Center – Carderock, MD	<i>Summer 2017</i>
• Contributed to fabrication and characterization of high temperature, non-oxide ceramics	

Leadership and Service

Michigan Health Engineered for All Lives (M-HEAL) – Ann Arbor, MI	<i>Fall 2017 – present</i>
• Lead project dedicated to improving the quality of life of children with cerebral palsy in Bangladesh	
• Partnering with doctors and researchers in Bangladesh and Australia to develop a procedure for reducing the prominence of malnutrition amongst disabled children in low resource populations	
• Developed urinary tract infection diagnostic tool for use in medical clinics in Guatemala	
Service Coordinator of Tau Beta Pi – Ann Arbor, MI	<i>Fall 2018 – Spring 2019</i>
• Directed campus-wide and broader community service, social, and professional development events	
Mentor at Michigan Engineering Zone – Detroit, MI	<i>Winter 2017, 2018</i>
• Assisted high school students in after-school preparations for FIRST robotics competition	

Skills

Lab: Cell Culture, Microscopy (optical, electron, confocal), Polymerase Chain Reaction (PCR), Immunofluorescence (IF), Immunohistochemistry (IHC), X-ray Diffraction, Western blotting

Computer: C++, MATLAB, Mimics, 3-matic, Image J, Autodesk Fusion 360, LabVIEW, Microsoft Office, Photoshop

Awards and Honors

College of Engineering Dean's List and University Honors	<i>F16, W17, F17, W18, W19, F19</i>
Provost's Award	<i>2016-2019</i>
Tau Beta Pi, Mi-G	<i>F18</i>