JASON LIU

ASSOCIATE IN RESEARCH AT DUKE UNIVERSITY

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SUMMARY

Recent Biomedical Engineering graduate from Duke University specializing in biomaterials, tissue engineering, additive manufacturing, hardware development in biosensors, and applying engineering principles to solve all problems.

EDUCATION

Pratt School of Engineering, Duke University Class of 2017
BSE Biomedical Engineering 2017
GPA: 3.8
2016 Tau Beta Pi Engineering Honor Society-- Duke chapter
2013-2016 All Semesters Deans List

EMPLOYMENT

Duke Pratt Research Fellowship under Dr. Ashutosh Chilkoti: Synthesizing an Antibody-Toxin Fusion Protein, *Associate in Research*, Durham, NC Jan 2016 - Current
I am currently engineering a novel antibody-toxin fusion protein drug that targets glioblastoma, the most aggressive form of brain cancer. Skills used include cloning, protein purification, chemical synthesis, and standard laboratory procedures. I expect to be able to publish and present my work in Spring 2017. 900 hours.

Biomedical Research Department in the Nemours Alfred I. duPont Hospital for Children, *Research Student*, Wilmington, Delaware Jun 2015 - Aug 2015
I engineered and characterized hydrogel biomaterial formulations towards the larger goal of developing injectable biomaterials that can support diseased or at-risk blood vessels after trauma such as heart attacks. I gained biological research experience in cell culture, protein expression assays, and cell imaging, while also gaining engineering research experience in hydrogel fabrication methods and mechanical testing. I presented my work at the 2015 University of Delaware Summer Scholars Poster Symposium. 400 hours

University of Maryland School of Dentistry, *Summer Intern in Biomaterials and Tissue Engineering*, Baltimore, Maryland Jun 2014 - Aug 2014
I primarily engineered and characterized dental composite biomaterials through biofilm and mechanical experiments. In my secondary project, I cultured human mesenchymal stem cells for osteogenic tissue engineering in rabbits.120 hours. Successfully published my research in Bone Research.
Publication co-author: Ping Wang, Liang Zhao, Jason Liu, et al., Bone tissue engineering via nanostructured calcium phosphate biomaterials and stem cells. Bone research (2014) 2,14017; doi:10.1038/bones.2014.17

Duke University Pratt School of Engineering and Trinity College, *Teaching and Lab Assistant*, Durham NC Sep 2014 - Current
I have taught several classes in many departments at Duke: computational methods in engineering in MATLAB, Calculus 2, Multivariable Calculus, Differential Equations, and Biomedical Instrumentation. Most notably in this past year, I have worked as a lab assistant/instructor for 30 students in BME354, a highly intensive teaching laboratory in biomedical instrumentation. 150 hours.

National Cancer Institute, *Summer Intern in the Protein Engineering Section*, Frederick, Maryland Jun 2012 - Aug 2012
I engineered proteins for x-ray crystallographic structural determination. This is part of the larger pipeline of developing active-site specific inhibitors to cancer-linked proteins. I cultured and cloned yeast and bacterial cell lines and employed protein expression and purification techniques. Gained proficiency in the use of BLAST sequence alignment tools and Vector mapping software.

SKILLS

TECHNOLOGICAL PROFICIENCY:: MATLAB, Javascript, Python, LaTeX, Arduino, KNIME, Particle.io Photon integration, Biosensors, Analog Filter Design, 3D printing, Raspberry Pi, Laser Cutting/Engraving, AutoCAD, HTML
LABORATORY TECHNIQUES: Cell and Tissue Culture (>3 years of experience), DNA Cloning and Vector Preparation, Handling model animals, Assay design (ELISA, Cell Titer, Translation), Immunostaining, Biomaterial Engineering (Calcium Phosphate, Alginate, Hydrogel, ELP), Flow Cytometry, Elastin-like Polypeptide Protein Expression and Purification

AWARDS

3rd place Biomedical Engineering Senior Design Project: Infant Cardiac Monitoring for Developing Worlds, *Duke University Department of Biomedical Engineering* Dec 2016
This was a semester-long project to develop a low-cost but effective infant heart-rate monitor for developing worlds. I successfully constructed electrical hardware and coded the Raspberry Pi-based device to sound an alarm when heart rate was detected to be abnormal. I worked with two others, but the entire development process was my own work.

ACTIVITIES

Duke Lion Dance Performing Group, *Founder/President* Sep 2014 - Current
Founder of the first Duke Lion Dance performing group. We perform at cultural events and around the community of Duke, sharing Chinese culture. Performed at the Duke Chinese Department Chinese New Year celebration 2/22/2015 and the Duke Asian Student Association Lunar New Year celebration 2/27/2015.

VOLUNTEERING

Duke Hospital Volunteering Program- Cancer Center and Emergency Department, *Volunteer* Sep 2014 - Current
I assisted patients and provide hospitality to patients and family members in the inpatient cancer units, and currently volunteering in the Emergency department. Gained important insight as an observer of the patient, administrator, and healthcare provider environments. 200 hours.

Duke University Alpha Phi Omega, *Pledge Class Service Chair, Social Chair, Service I Chair, of the Lambda Nu chapter* Jan 2015 - Current
I am an executive member of the Alpha Phi Omega Service Fraternity, devoted to brotherhood, leadership, and service to the community and humanity. Gained logistics and planning skills as a past Service Chair, which included planning a service project for the local Hayti community. I have gained labor adaptability as a volunteer in many different environments. 400 hours.