
NAME, Ph.D.

Address
Email; Phone

EDUCATION:

Doctor of Philosophy, Bioengineering

University of Pennsylvania, Philadelphia, PA
Thesis Defense Date: December 20XX
Cumulative GPA: 3.72 (of 4.00)

Bachelor's of Science, Biochemistry

University of Maryland, College Park, MD
Graduation Date: May 20XX
Cumulative GPA: 3.83 (of 4.00)

RESEARCH EXPERIENCE:

Graduate Research Fellow, University of Pennsylvania, Philadelphia, PA January 20XX – December 20XX

Polymeric Biomaterials Laboratory, Department of Bioengineering, School of Engineering and Applied Science
Howard Hughes Medical Institute (HHMI) and National Institute of Biomedical Imaging and Bioengineering (NIBIB)
Interfaces Initiative

Advisor: NAME, Ph.D.

- *Dissertation Title:* TITLE
- Synthesized and characterized degradable hydrogels with a range of tunable properties, particularly gelation, temporal mechanics and degradation. Optimized initial mechanics and degradation *in vitro*.
- Visualized hyaluronic acid hydrogels in myocardial tissue using MRI. Quantified hydrogel dispersion *ex vivo* using T₂-weighted MRI, ImageJ, and ITK-SNAP software. Assessed differences in hydrogel concentration and chemistry using chemical exchange saturation transfer MRI and MATLAB software.
- Assessed temporal effects of hydrogel therapy on long-term left ventricular (LV) remodeling using cardiac MRI and finite element (FE) modeling in an *in vivo* porcine infarct model. Assessed global LV structure and function, infarct thickness and tissue volume, and myocardial contractility using custom ImageJ and MATLAB software. Input diastolic strains into FE model to evaluate infarct stiffness.

Graduate Research Fellow, Janelia Farm Research Campus, Ashburn, VA Summer 20XX

Howard Hughes Medical Institute (HHMI) and National Institute of Biomedical Imaging and Bioengineering (NIBIB) Interfaces Initiative

Advisor: NAME, Ph.D.

- Designed behavioral task for a dopamine-deficient Parkinson's disease mouse model to measure cognitive and behavioral parameters relevant to learning impairments in Parkinson's disease.
- Constructed head-fixed apparatus for mice and implemented task that required them to react (i.e. lick) at a particular time after onset of a rising tone to examine trial-and-error feedback learning. Probability and size of reward sucrose was independently and parametrically varied with time and tone frequency.

Undergraduate Research Fellow, University of Maryland, College Park MD Fall 20XX - Summer 20XX

Department of Cell Biology and Molecular Genetics, College of Chemical and Life Sciences
Howard Hughes Medical Institute (HHMI) and Departmental Honors Program

Advisor: NAME, Ph.D.

- Analyzed *Mycobacterium tuberculosis*-mediated protection of primary bone marrow derived mouse macrophage death induced by cytokine withdrawal to improve the Bacillus Calmette-Guerin vaccine.
- Assessed effect of mycobacterium virulence on apoptosis induced by cytokine withdrawal. Ran polymerase chain reactions, gel electrophoresis, Southern Blots, mini-Preps and midi-Preps to gather results on gene knockouts. Cell harvest and culture to obtain primary murine macrophages. Propidium iodide staining and TUNEL assays for cell viability analyzed using flow cytometry to quantify apoptosis.

Summer Undergraduate Research Fellow, NIST, Gaithersburg, MD Summer 20XX, 20XX, 20XX.

Biomaterials Group, Polymers Division, Materials Science and Engineering Department
National Institute of Standards and Technology (NIST) Summer Undergraduate Research Program
Advisor: NAME, Ph.D.

- Fabricated tissue scaffold libraries for artificial bone grafts with murine osteoblasts seeded on scaffold gradients of poly(desaminotyrosyl-tyrosine ethyl ester carbonate) and poly(caprolactone).
- Developed novel microcomputed tomography (μ CT)-based method for 3D imaging of tissue generation in polymer scaffold gradients to aid clinicians in imaging radiopaque medical implants using X-ray.
- Designed combinatorial methods for screening cell response to scaffold composition using cell culture, biochemical assays, scaffold fabrication protocols, and radiopaque scaffold treatment for subsequent μ CT imaging. Determined optimal μ CT imaging parameters, threshold selection and data analysis.

TEACHING EXPERIENCE:

Lecturer, University of Pennsylvania, Philadelphia, PA

Bioengineering Lab II (BE 310), Department of Bioengineering, Spring 20XX

- Independently instructing lecture and lab component of course to 26 bioengineering majors on combining experimental and mathematical approaches to understand biological systems. Concepts include mass transport, heat transfer, signal analysis, and control engineering with applications in pharmacology and physiology. Grading all assignments, lab reports, and final group project.

Tissue Engineering Principles, Methods, and Applications (BE 553), Department of Bioengineering, Spring 20XX

- Developing and directing course investigating the fundamentals in designing engineered tissues and organs; solely responsible for course content. Lecture, advise students, write and grade assignments and exams, and oversee group project for about 20 undergraduate and graduate students.

Teaching Assistant, University of Pennsylvania, Philadelphia, PA

Introduction to Biomaterials (BE 220), Department of Bioengineering, Spring 20XX (Lab), Spring 20XX (Lecture)

- Lab: Assisted with design of four lab experiments performed throughout the semester. Graded lab reports for approximately 90 undergraduate students. Oversaw exams for lecture component of course.
- Lecture: Graded homework assignments and exams for approximately 70 undergraduate students.

Molecular Imaging (BE 583), Department of Bioengineering, Fall 20XX, Fall 20XX

- Assisted with grading of homework assignments and exams for course of approximately 80 undergraduate and graduate students. Delivered guest lecture on ultrasound contrast agents prepared by course instructor.

Guest Lecturer, University of Pennsylvania, Philadelphia, PA

Tissue Engineering (BE 553), Department of Bioengineering, Spring 20XX

- Independently prepared and delivered guest lecture on cell encapsulation using biomaterials to approximately 30 undergraduate and graduate students.

Research Laboratory Mentor, University of Pennsylvania, Philadelphia, PA

NAME (Hightstown High School student), Summer 20XX

- Summer shadowing experience with mini project on degradable hydrogels for molecule release.

NAME (University of Pennsylvania Bioengineering Undergraduate student), Winter 20XX-Spring 20XX

- Independent study thesis on the evaluating the effects of injectable hydrogel therapy on myocardial infarct repair by analyzing cardiac magnetic resonance imaging (MRI) data from *in vivo* large animal model in terms of global cardiac structure and function, myocardial contractility, and infarct expansion.

NAME (Central Bucks High School West student), Winter 20XX/20XX

- Science fair project on site-specific delivery of antibiotics using hydrogels. 1st place in Pennsylvania Junior Academy of Science competition and Intel International Science and Engineering Fair competition.

NAME (University of Pennsylvania Bioengineering Graduate student), Summer 20XX-Summer 20XX

- Master's thesis on synthesizing and characterizing injectable non-sulfated and sulfated degradable hyaluronic acid hydrogels for tunable and sustained delivery of proteins (tissue inhibitors of matrix metalloproteinases, TIMPs) for myocardial infarct repair. Assessed delivery and activity of exogenous TIMP released from hydrogels of varying rates of degradation and degrees of sulfation *in vitro*.

NAME, NAME, NAME, NAME (University of Pennsylvania Bioengineering Undergraduate students), Fall 20XX-Spring 20XX

- Senior design project on catheters for minimally-invasive delivery of rapid-polymerizing hydrogels.

NAME (Central High School student), Summer 20XX

- Assisted in imaging injectable hydrogels in cardiac tissue explants using high-field strength MRI.

Teaching Workshops, University of Pennsylvania, Philadelphia, PA

Roundtable, Center for Teaching and Learning, Spring 20XX.

- Weekly graduate workshop course on successfully preparing and delivering lectures. Gave practice lecture to other graduate student in the course, followed by a session of constructive criticism.

Course in College Teaching, Center for Teaching and Learning, Fall 20XX.

- Weekly discussion-based graduate workshop course on generating a teaching philosophy statement, homework assignment, course syllabus, and lecture.

Volunteer, iPRAXIS, Philadelphia, PA

Guest Lecturer, Northwood Academy Charter School, Spring 20XX and Spring 20XX.

- Organized and conducted guest lecture with four other bioengineering graduate students to about 100 eighth grade students. Lecture designed to provide applications of engineering to real-world problems.

Scienteer, Cook-Wissahickson Elementary School, Fall 20XX.

- Volunteered as a science mentor at a local school to help students with their science fair projects.

Teaching Assistant, University of Maryland, College Park, MD

Organic Chemistry II (CHEM 232), Department of Chemistry and Biochemistry, Fall 20XX and Spring 20XX.

- Oversaw weekly labs performed by about 20 undergraduates. Designed mini-lectures for each lab period, graded lab reports and held lab review sessions. Oversaw exams for lecture component.

Introductory Freshman Course (GEMS 100), Gemstone Honors College, Fall 20XX and Fall 20XX.

- Led weekly workshop course for about 10 undergraduates to introduce them to the University and Gemstone honors program. Designed lesson plans, activities, and assignments. Served as student coordinator in 20XX, which involved leading bi-weekly meetings with the other teaching assistants.

PEER-REVIEWED PUBLICATIONS:

NAME, Name JR, Name H, Name A, Name L, Name KJ, (20XX). TITLE, in review.

Name JR, Mojsejenko D, **NAME**, Name A, Name JA, (20XX). TITLE. *Annals of Thoracic Surgery*, in press.

Name CB, Name JW, **NAME**, (20XX). TITLE. *Advanced Functional Materials* #:600-612.

GRANTS AND FELLOWSHIPS:

National Institutes of Health, Training Grant (T32), 20XX-20XX.

Howard Hughes Medical Institute and National Institute of Biomedical Imaging and Bioengineering Interface Initiative, Training Grant (T32), 20XX-20XX.

Howard Hughes Medical Institute Fellowship Program sponsored by the University of Maryland, 20XX-20XX.

National Institute of Standards and Technology Summer Undergraduate Research Fellowship Program, Summer 20XX, 20XX, 20XX.

HONORS AND AWARDS:

University of Pennsylvania Certificate in College and University Teaching, 20XX.

University of Pennsylvania Graduate and Professional Student Assembly Student Travel Grant, 20XX.

National Science Foundation Graduate Research Fellowship Program, Honorable Mention, 20XX.

University of Maryland Cell Biology and Molecular Genetics Honors Program Citation, High Honors, 20XX. University of Maryland Gemstone and University Honors Program Citations, MD 20XX-20XX.

University of Maryland Dean's List, 20XX-20XX.

State of Maryland Robert C. Byrd Honors Scholarship, 20XX-20XX. University of Maryland Dean's Scholarship, 20XX-20XX.

ORAL SCIENTIFIC PRESENTATIONS:

NAME, Name JF, Name JF, "TITLE", Society for Biomaterials, Annual National Conference, Denver, CO, April 20XX.

PROFESSIONAL AFFILIATIONS:

University of Pennsylvania Department of Bioengineering Mentoring Program, 20XX-Present.

Society for Biomaterials, 20XX-Present.

American Chemical Society, 20XX-20XX.

University of Pennsylvania Graduate Student Engineering Group, 20XX-Present (Secretary 20XX-20XX).

University of Pennsylvania Graduate Association of Bioengineers, 20XX-Present (Holiday party chair 20XX- 20XX, social chair 20XX-20XX, community service and outreach chair 20XX-20XX).

University of Maryland MTECH Ventures Hinman CEO's Entrepreneurship Program, 20XX-20XX.

University of Maryland National Society of Collegic Scholars Honors Society Chapter, 20XX-20XX.

University of Maryland Primannum Honors Society Chapter, 20XX-20XX.

University of Maryland Panhellenic Association, Sigma Kappa Chapter, 20XX-20XX.

University of Maryland College of Chemical and Life Sciences Big/Little Mentoring Program, 20XX-20XX.