

RESEARCH INTERESTS

I am currently most interested in pursuing academic research in the areas of synthetic biology and protein engineering.

EDUCATION

University of California, San Diego

Major: Bioengineering: BTEC (06/2010)

GPA: 3.43

TECHNICAL SKILLS & LANGUAGES**Molecular & Cell Biology Research:**

Immunofluorescent & Immunohistochemical staining,
ELISA, PCR, Gel electrophoresis, Western Blot,
DNA, RNA and protein purification,
fluorescence anisotropy, circular dichroism

Languages:

Mandarin Chinese

RESEARCH EXPERIENCE

04/2009 - present

Hasty Lab, Department of Bioengineering, UCSD***Oscillatory Driving of an Engineering Mevalonate Network to Increase Biofuel Yields***

The goal of this project is to use computational modeling & experimental biocircuits to determine whether oscillatory production of enzymes in the mevalonate network can mitigate the metabolic load, relieve cell toxicity and thus lead to higher yields of the desired products. Using a previous synthetic oscillator we are constructing several plasmids that drive either the *MevB*, *MevT*, or *nudF* genes responsible for producing isopenteneol at a particular frequency using a previously engineering mevalonate pathway for high production of terpenoids in *E. coli*. Preliminary findings for this research were presented at the Biomedical Computation at Stanford Symposium 11/7/2009. P.I: Dr. Jeff Hasty, PhD; Lead GRA: Tal Danino

06/2008 - 08/2008

Kortemme Lab, Department of Biopharmaceutical Sciences, UCSF***Rational Design of Phosphorylation Sites into the Erbin-PDZ Domain***

As a summer student research intern through the Amgen Scholars Program at UCSF, my project involved developing a computational method to rationally redesign the Erbin-PDZ domain to introduce a Protein Kinase A (PKA) phosphorylation motif into its sequence. We received the plasmid for Erbin-PDZ on the second day of my internship and just finished purifying the first soluble mutant on my second to last day. My lead GRA Colin Smith continued to work on this project and presented our findings at the SynBERC conference in Boston several weeks after my internship.

P.I: Dr. Tanja Kortemme, PhD; Lead GRA: Colin A. Smith

08/2007 - 05/2008

Sung Lab, Department of Bioengineering, UCSD***Etiology and Biomechanical Properties of Pancreatic B-cells in IDDM***

For the Chancellor's Research Scholarship, my project involved exploring the effect of wheat gluten on the etiology and biomechanical properties of pancreatic beta cells in non-obese diabetic mice. I did immunofluorescent analysis of the levels of insulin, TG and GAD64 in mouse pancreatic tissue sections.

P.I: Dr. Amy Sung, PhD; Lead GRA: Dr. Weijuan Yao, PhD

06/2007 - 08/2007

Nanoscale Science and Engineering Center, Ohio State University
Characterization of Lipopolyplex Nanoparticles for Oligonucleotide Drug Delivery

As a Summer REU Student Research Intern, my project involved characterization of lipopolyplex nanoparticles made from different types of lipids for delivery of siRNA and miRNA in cancer treatment. I was partnered with another student intern (whose project focused more on the cancer treatment than the drug vector) since our projects involved the same ELISA and Western blot assays. Though we both had prior experience with Westerns, we spent the latter two thirds of the internship, left more or less to our own devices, setting up and trouble-shooting the Western blot for Bcl-1 and beta actin (from the time we received the newly bought Bio-Rad mini Protean Tetra cells and reagents to the time we visualized Bcl-2 and beta-actin).
 P.I: Dr. Robert Lee, PhD; Lead GRA: Bo Yu

09/2000 - 06/2005

Zheng Lab, Department of Pathology, Ohio State University

As a student researcher, I did my science fair projects in the Zheng Tumor Immunology lab with graduate student, Beth McNally (now graduated and serving a postdoctoral fellowship at the University of Michigan, Ann Arbor) from 7th-11th grade during which I learned immunofluorescent and immunohistochemical staining, gel electrophoresis and Western blot.
 P.I: Dr. Pan Zheng MD, PhD; Lead GRA: Dr. Beth McNally, MS, PhD

WORK EXPERIENCE

10/2007 - present

Department of NanoEngineering, UCSD

As web assistant, I created and manage the NanoEngineering Departmental website located at nanoengineering.ucsd.edu.
 Supervisor: Carolyn Sheehan, MSO, Department of Nanoengineering

01/2007 - 02/2008

Sung Lab, Department of Bioengineering, UCSD

As research assistant, I do autoclaving, order lab supplies, make stock solutions, etc. I have also been trained in PCR for genotyping.
 Supervisor: Dr. Amy Sung, PhD

STUDENT PROFESSIONAL ORGANIZATIONS

2007 - 2009

Biomedical Engineers Society

2007 - 2008

Publicity Lead, Student Activities Committee (aka TESC FORCE)

As Publicity Lead, I helped get the word out to the Jacobs Engineering Students about TESC's events, including but not limited to E-GAMES, Impulse, and the Triton Junkyard Derby. I coordinate volunteers, design flyers, and think up interesting ways to get peoples' attention, such as our giant KNEX "E."

AWARDS AND HONORS

2008-2010

CSEMS Scholarship

2008

Chancellor's Research Scholarship

2006-2008

Provost's Honors (F'06, S'07, S'08)

2006

Warren Honors Scholar