

Yuwan Guo

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Education

University of Texas at Austin (UT)
Doctor of Philosophy, Chemical Engineering
Jiang Lab of Systems of Immunology

Austin, TX
Expected June 2024

University of California, Los Angeles (UCLA)
Bachelor of Science, Chemical Engineering
GPA: 3.85

Los Angeles, CA
September 2015 to June 2019

Research Experience

Monbouquette Lab

UCLA

Undergraduate Research Program (URP) Scholar

September 2016 to June 2019

- Assisted a PhD student to develop silicon wafer based biosensors for measuring neurotransmitters, choline, glutamate and dopamine, in the brain of rats.
- Electrodeposited polymer films onto microelectrode sites of the biosensors to block interferences.
- Optimized the deposition of different enzymes onto the microelectrode sites to reduce response time and achieve high sensitivity.
- Immobilized enzyme on the surface of microelectrodes to enhance its productivity via cross-linking method.
- Collaborated with another lab in the chemical engineering department to analyze the substrate selectivity and enzyme activity of polymer-encapsulated enzymes.
- Presented a research poster on model-guided optimization of biosensors for neurotransmitters at the UCLA Research Poster Forum and won the Best Poster Award.
- Contributed to three completed manuscripts about model-guided optimization of microsensors, microcontact printing, and enzyme immobilization by bis(sulfosuccinimidyl)suberate (BS3) and hydrophilic polycation polymer.

Study Abroad Experience

University of Cambridge

King's College and Pembroke College

Undergraduate Researcher

July 2017 to September 2017

- Engaged in a class that focused on the principles of cell signaling and completed a 5000-word paper titled "G Proteins and Their Roles in Intracellular Signaling."
- Planned a research project with a Cambridge professor who specializes in neurological diseases to gain insights on how biosensors for neurotransmitters could contribute to the management of neurological diseases.
- Investigated the characterization, risk factors, and treatments of Alzheimer's disease, and completed 2500-word paper on this topic.
- Researched on synergistic interactions of neurotransmitters involved in Parkinson's disease (PD) and the use of deep brain stimulation (DBS) in the treatment of PD, and completed a 5000-word paper on this topic.
- Explored the applications of magnetic resonance spectroscopy and implantable microsensors to the management of PD, and completed a 2500-word paper on this topic.

Internship Experience

Boehringer Ingelheim

Fremont

Process Analytics Intern

June 2018 to September 2018

- Proposed timelines of the project based on internship objectives to ensure the success of the project.
- Initiated weekly meetings with supervisor to discuss progress and to resolve challenges.
- Developed a feasible insulin homogeneous time-resolved fluorescence assay (HTRF) that saves half of the time and reduces costs by 5-fold comparing with insulin ELISA assay.
- Evaluated assay parameters (robustness, LOQ, intermediate precision, repeatability, accuracy, and specificity) and determined those parameters met the acceptance criteria proposed by protocol.
- Analyzed in-process samples from the cell culture group to provide insights on how insulin concentration would affect cell productivity.
- Automated insulin HTRF assay using a liquid handling robot, Tecan, and achieved similar performance as manual HTRF assay.
- Presented internship project achievement to Process Science department and received positive feedback.

Leadership Experience

Chinese Students and Scholars Association (CSSA)

UCLA

Senior Representative at Career Development Department

September 2015 to June 2019

- Coordinated several events, including Lunch for 12 (an event of 40 people), Winter Cocktail Party (an event of 300 people), and Woo's Conference (an event of 200 people) to engage students to network with alumni and professionals.
- Held weekly meetings to discuss the progress of the events mentioned above with a team of 12 students.
- Designed and managed an event page on a Chinese social media platform, WeChat, to publicize the above events.

Dashew Center for International Students & Scholars

UCLA

International Student Ambassador of China

June 2017 to June 2018

- Coordinated monthly volunteer and cultural events on campus for 50-100 international students.
- Held weekly meetings to discuss the progress of the programs with a team of 6 students.
- Host weekly drop-in office hours for international students to ask questions and seek help.

Volunteer Experience

Ronald Reagan Hospital

UCLA

Nursing Volunteer

June 2016 to June 2017

- Assisted nurses with transporting and feeding patients, physical therapy, and medical procedures, such as blood transfusion.
- Participated in One-on-One Companionship Program to provide patients with care and company.
- Interviewed nurses and conducted Patients Falling and Wrong Dose of Medication Incidents audit to decrease fall and injury rates.

Growth International Volunteer Excursions (GIVE)

Thailand

Infrastructure and Education Volunteer

December 2016 to February 2017

- Built a 100-meter cement road with 30 other volunteers for residents in a rural Thai village to make their trips in and out of the village faster and more convenient.
- Constructed an environmentally friendly water reservoir using plastic water bottles and sand, solving the problem that residents must travel long distances to obtain potable water.

- Taught students age of 6 to 14 English four times a week and received positive feedback.

Skills

Proficient in MS Office; proficient in MATLAB and R; beginner level in C++ and Python.