

JULIA LEE

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EDUCATION

University of Southern California, Viterbi School of Engineering

Los Angeles, CA

B.S. in Chemical Engineering (Biochemical)

GPA: 3.92

W.V.T. Rusch Honors Program- Innovation Track

August 2018 - May 2022

Relevant Coursework: Calculus I, II, III, Chemical Engineering Laboratory, Differential Equations, General Chemistry, MATLAB, Molecular Biology, Organic Chemistry, Separation Processes, Thermodynamics

WORK EXPERIENCE

Samuelson Laboratory at University of Nebraska Medical Center

Omaha, NE

Undergraduate Research Intern

Summer 2020

- Construct a microbiome analysis pipeline using R packages to analyze treatments for alcohol use disorder.
- Investigate significant differences with PERMANOVA among indole treatment groups in gut microbiota.
- Write a systematic review paper on 10 different treatments and measure effectiveness against alcohol.

Chung Laboratory at University of Southern California

Los Angeles, CA

Undergraduate Research Assistant

September 2019 - Present

- Synthesize and purify micelle peptides with HPLC and MALDI to build self-assembling nanoparticles.
- Create mice artery cross sections, utilize staining and microscopy to visualize nanoparticle uptake in cells.
- Analyze hundreds of fluorescence microscopy images in FIJI to measure plaque buildup in mice arteries.

Cardiovascular Biomechanics at University of Nebraska Medical Center

Omaha, NE

Research Intern

June 2019 - July 2019

- Simulated interactions of monocytes, endothelial, and smooth muscle cells to construct 3D cultures.
- Examined shear stress impact on atherosclerosis by exposing 3D cultures to different pressured flows.
- Manipulated lipid nanoparticles to understand adsorption and absorption processes into cell membranes.

LEADERSHIP

Theta Tau (Co-ed Professional Engineering Fraternity)

Los Angeles, CA

Executive Board- Treasurer, Professional Development Chair

January 2019-Present

- Arrange 7 events for each semester such as the Mock Career Fair, workshops, and mentorship program.
- Coordinate and network with 30 professionals in engineering industries to attend professional events.
- Delegate weekly tasks to a professional committee of 11 students and manage the quality of work.

Teaching and Sharing Skills to Enrich Lives (TASSEL)

Los Angeles, CA

Writing Head

August 2016 - Present

- Educate a community of Cambodian students from ages 16 to 22 to enhance English proficiency.
- Managed 7 fundraisers and raised \$5,300 from food sales for a small village in Cambodia.
- Direct a committee of 15 students and organized bi-weekly meetings to relay new lesson plans.

SKILLS

Technical: MATLAB, Python, R Programming, Autodesk Inventor, Microsoft Office, HTML/CSS

Laboratory: Batch Distillation, Liquid-Liquid Extraction, HPLC, MALDI, Membrane Separation, Nanoparticle Synthesis, Cryostat, Hematoxylin Staining, Oil Red O Staining, Picro Staining, Peptide Synthesis, Cell Culturing, 3D Modeling, Confocal and Fluorescence Microscopy, PCR, ELISA Test, Gel-Electrophoresis

AWARDS

KSEA Scholar (2020), OTEFE Scholar (2019-20), USC Viterbi Associates Award (2019), Dean's List (2018-19), Korean Honors Scholarship (2019), KASF Scholar (2019), Kimbo Scholarship (2019), Regent Scholar (2018)