SIMON NG

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EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES – Bachelor of Science, Bioengineering *Expected 6/2021*

Minor: Environmental Engineering

Cumulative GPA: 3.9

Relevant Coursework: Molecular Biotech, Biochemical Reaction Engineering, Bioseparations, Machine Learning

Activities: Biomedical Engineering Society, Backpacking Club, Old-Time String Band, Community Garden

RESEARCH AND INTERNSHIP EXPERIENCE

UCLA BIOENGINEERING – Senior Capstone Research Project, Team Lead *9/2020 - Present*

- Led team of 6 undergraduates to design, conduct, and analyze experiments for desiccating yeast encapsulated in hydrogel microdroplets to withstand long-term storage and transport for single-cell-based autonomous space biology studies.
- Planned and tracked daily experiments 2 weeks in advance on spreadsheet, and used Gantt chart to track overall progress.

NASA AMES – Space Life Sciences Training Program, Research Associate *6/2020 - 8/2020*

- Implemented computational workflow to engineer thermostable carbonic anhydrases for CO_2 capture from spacecraft air.
- Discovered 16 novel enzyme variants with predicted thermostability >85°C using Gaussian process regression in Python.
- Identified 20% of amino acid sequence for targeted mutagenesis using weights of multivariable linear regression.
- Collaborated with 10 fellow interns to submit 2 grant proposals for Mars-analog aerobiology experiment with *S. cerevisiae*.

RESEARCH EXPERIENCE FOR UNDERGRADUATES – Micro-Encapsulations, Experiment Lead *6/2019 - 10/2020*

- Automated experimental protocols for macroscale particle fluid interaction studies with custom-built, motorized test rig.
- Wrote and edited research manuscript for publication with fellow interns, using LaTeX for format and Inkscape for figures.

DI CARLO LAB – Microfluidics, Research Assistant *9/2018 - Present*

- Cultured mesenchymal stem cells for 2-week *in vitro* experiment, assessing morphology via confocal microscopy.
- Tuned hydrogel microdroplets for single-cell algae encapsulation, enabling high-throughput biofuel secretion screening.

KHADEMHOSSEINI LAB – Tissue Engineering, Research Assistant *1/2018 - 9/2018*

- Taught 24 lab members bioprinting techniques and provided bioprinting advice for 6 projects. [publication in progress]

PROJECT EXPERIENCE

BIOMEDICAL ENGINEERING SOCIETY – Automated Ethanol Sprayer, Project Manager *9/2019 - 6/2020*

- Recruited and led multi-disciplinary team to design mechanized spray bottle with Arduino-controlled sensor and motor.
- Transitioned project goals from physical prototype to technical report to produce high-quality results despite COVID-19.

EAGLE SCOUT PROJECT – Ecological Survey, Leader *6/2016 - 6/2017*

- Trained and supervised 24 volunteers on 3 outings to empirically survey flora of 145-acre nature preserve for biodiversity.

SKILLS

Laboratory: Proficient at mammalian and yeast cell culture, microfluidics, confocal microscopy, bioprinting, rheometry, 3D printing

Software: Proficient at Python, C++, MATLAB, VBA, Microsoft Suite, Inkscape, LaTeX, CAD, Arduino | Novice at ProII, COMSOL

AWARDS

ASGSR Lightning Talk, 2nd place – BSA Eagle Scout – UCLA Student Sustainability Leader – GE-Reagan Foundation Scholar