

# Simran Rajpal

Third Year Undergraduate Student at UCLA  
HHMI Undergraduate Researcher at The Ozcan Research Group

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## EDUCATION

B.S. in Bioengineering, June 2019

University of California Los Angeles (UCLA), Los Angeles, CA

Minor: Bioinformatics

GPA: 3.765/4.000

Relevant Courses: Bioengineering Fundamentals, Bioengineering Lab, Bioinformatics Algorithms, Biotransport and Bioreaction Processes, Computer Science in C++, Data Structures in C++, Discrete Structures, Differential Equations, Intro to Electrical Engineering, Engineering Ethics, Linear Algebra, Multivariable Calculus

## LABORATORY EXPERIENCE

**Howard Hughes Medical Institute Undergraduate Researcher**

The Ozcan Research Group, UCLA, Los Angeles, CA, Nov 2016-Present

Leading a project to design and test a smartphone microscope to capture water turbidity for mobile health applications, especially in detection of waterborne pathogens.

- Designing and building the smartphone microscope using rapid prototyping with Autodesk Inventor and 3D printing.
- Developing algorithms in Matlab to process and analyze images from the device.
- Developing a machine learning algorithm to find the turbidity of samples imaged.
- Designing experiments to test the threshold of the device and update its design.

**Undergraduate Researcher**

Gerard Wong Lab, UCLA, Los Angeles, CA, Aug-Sept 2016

Tested the killing and inhibitory effects of novel antimicrobial conjugates of the drug Tobramycin on persistent bacteria to combat drug resistance.

- Performed cytotoxicity assays on the pathogen *staphylococcus aureus* to determine the efficacy of the novel drugs to kill persistent bacteria.

## LEADERSHIP EXPERIENCE

**Industry Chair**

Biomedical Engineering Society, UCLA, Los Angeles, CA, 2015-Present

- Scheduling and organizing about 4-5 company information sessions and 1-2 professional development events per quarter.
- Working in a team with the board to ensure smooth event planning and execution.
- Maintaining corporate relations to ensure the organization's future contact with companies.

**Membership Coordinator & Club Liaison**

Tau Beta Pi, UCLA, Los Angeles, CA, 2017-Present

- Tutoring students in engineering classes for 2 hours each week.
- Organizing events for new candidates and keeping track of candidates and members.
- Communicating between Tau Beta Pi and BMES to hold interorganizational events.

**Engineering Peer Mentor**

Mentor SEAS, UCLA, Los Angeles, CA, 2016-Present

- Mentoring 2 first year engineering students each year, providing resources.

## TECHNICAL SKILLS

**Computer Skills**

C++

Matlab

Simulink

Autodesk Inventor

Data Acquisition Software

Excel

**Laboratory Skills**

3D Printing

Microcontact Printing

Soft Lithography

Cell Culture & Assays

Pipetting & Solution Preparation

Chromatography Techniques (thin-layer & column)

Organic Extractions

Recrystallization

Use of Spectrophotometer & Plate Reader

## AWARDS & HONORS

Tau Beta Pi – Engineering Honor Society

Alpha Lambda Delta Honor Society

Dean's Honors: Fall 2015, Fall 2016, Winter 2017, Spring 2017