

JAE Y. LEE

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EDUCATION

University of California, San Diego | San Diego, CA

GPA: 4.00

M.S. Bioengineering

Expected Jun 2020

B.S. Bioengineering

Conferred Jun 2019

- Awards: Volt Alumni Scholarship, Alice M. Marriott Scholarship, Golden President's Volunteer Service Award, Certificate of Congressional Recognition, California Legislature Assembly Award
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EXPERIENCE

(4+ years of analytical biology wet-lab research experience and 2 years of dry-lab biostatistical analysis)

Nanoscale Bioengineering Lab, Sanford Consortium (UCSD)

San Diego, CA

Graduate Researcher

Jan 2019 – Present

- Improve the vascular deliverable siRNA gene therapy by engineering polymeric nanocapsule around siRNA nanoparticles to improve cargo stability during delivery and target cell specific silencing efficacy
- Create and adjust protocol to optimize nanocomplex size, z-potential, structural integrity, and silencing efficacy

Biosensors Laboratory (UCSD)

San Diego, CA

Graduate Researcher

Sep 2018 – Feb 2020

- Create and optimize test protocol for assessing blood glucose sensor accuracy for diabetic patient monitoring and safety via Monte Carlo method
- Create an autoregressive-moving-average (ARMA) model for the ideal sensor sampling and reference glucose sampling rate to improve the accuracy of blood glucose measurements and future blood glucose predictions

The Scripps Research Institute (TSRI)

San Diego, CA

Research Assistant Intern

Jun 2017 – Feb 2020

- Identified Progesterone Receptor Membrane Component 2 (PGRMC2) as a metabolic significant protein in adipocytes that may be harnessed to treat diabetes
- Design and manipulate gene expressions, mutagenesis, biochemical analyses, and in-vivo and in-vitro assays to discover the metabolic role of PGRMC2 in trafficking heme from the mitochondria to nucleus

SAMY Medical Pole (UCSD)

San Diego, CA

Project Lead

May 2018 – June 2019

- Prototyped a maneuverable IV pole implemented with multifunctional and customizable devices by orchestrating the collaboration with the companies – Welch Allyn, GCX Solutions, UCSD Jacob's Medical Center and Inogen.
- Supplemented and updated the provisional patent via CAD, prototyping, and QA testing primarily using SolidWorks and Finite Element Analysis while being conscientious of timelines, cost-efficiency, GD&T, DFA, and DFM

Gilead Sciences

San Diego, CA

Visiting Scholar

Sep 2019 – Oct 2019

- Designed a chemically linked multivalent anti-Hyaluronan Synthase 3 (HAS3), clone 3C9, antibody to Nab-Paclitaxel to create a more specific yet less cytotoxic drug for treating Pancreatic Ductal Adenocarcinoma (PDAC) patients and planned the upstream and downstream bioprocessing of the drug

Cartilage Tissue Engineering Lab (UCSD)

San Diego, CA

Undergraduate Lab Assistant

Oct 2015 – Mar 2017

- Collaborated with Colorado State University to analyze the biomechanical function, structure, compositions, and metabolism of cartilages and joint tissues to investigate the therapy of cartilaginous and osteocartilaginous tissue for repairing focal articular cartilage defects and for craniofacial reconstructive surgery
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PUBLICATIONS

1. Galmozzi A, Kok B.P., Kim A.S., Montenegro-Burke J.R., Lee J.Y. et al. PGRMC2 is an Intracellular Heme Chaperone Critical for Adipocyte Function. *Nature* **576**, 138-142 (2019) doi:10.1038/s41586-019-1774-2.
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SKILLS

- Proficient with MS Software, Fiji, MATLAB, AutoCAD, Inventor, Solidworks, FEA, Fusion, and Wet-Lab Skills
- Experienced in cGMP, SOP, Decision Making, Benchmark Planning, Management, and Data Analysis (Prism)
- Knowledgeable of R, Python, JavaScript, Java, C++, Swift, and HTML/CSS