Christopher Jewell

Los Angeles, CA, 90007 • crjewell@usc.edu • (914) 588-6061 • *christopher-jewell.com*

EDUCATION

University of Southern California, *Los Angeles, CA* — May 2024
Bachelor of Science, Biomedical-Mechanical Engineering — GPA 4.00
Presidential Scholar (Half Tuition)

ACADEMIC PROJECTS

HEDCO Neuroscience (USC), *Los Angeles, CA* — Jan 2022–Present
Neuron Modeling Programmer
- Developed a compartmentalized layer 5 pyramidal dendrite model using NEURON module in **Python**
- Characterized nonlinear relationships of action potential firing under gamma rhythm background stimulus

Senior Design (USC), *Los Angeles, CA* — Aug 2023–Dec 2023
Team Lead for *Rhythmia* Holter Monitor
- Built software for monitoring EKG activity and detecting heart arrhythmias using **Arduino** and **LabVIEW**
- Created 3D-printed housing unit and silicon mold in **SolidWorks** to reduce device size and attach to heart region

USC MEDesign*, Los Angeles, CA* — Jan 2023–May 2023
Mechanical Design Lead
- Fabricated 3D-printed cassettes for peanut-detecting lateral flow assays in **SolidWorks**
- Optimized capillary flow and product cost through material selection and computational stress analysis

---

WORK EXPERIENCE

University of Southern California, *Los Angeles, CA* — Aug 2022–Dec 2023
Teaching Assistant for Communications in the Nervous System
- Led guest lectures and instructed weekly discussion sections using **MATLAB and Excel** to simulate dynamic action potential firing of a neuron (10 hr/week)
- Provided supplemental instruction and facilitated all exam and assignment creation and grading

AesculaTech, *Los Angeles, CA* — May 2023–Aug 2023
Product Development Intern for *Humidifeye*
- Created a qualified clinical database for OUS pilot study data via **Excel VBA** programming featuring dynamic user and data validation with responsive UI
- Devised and performed cadaveric rabbit study for biocompatibility protocol of hydrogel punctal plug
- Implemented and modified test methods for design and process V&V of hydrogel-applicator system
- Iterated on manufacturing fixturing in **SolidWorks** for hydrogel microdispensing process

Terasaki Institute for Biomedical Innovation, *Los Angeles, CA* — May 2022–Jan 2023
Glioblastoma-on-Chip Researcher
- Synthesized novel gelatin- and hyaluronic acid-based hydrogels to mimic brain rheology
- Fabricated microfluidic glioblastoma spheroids-on-chip for chemotherapy drug screening
- Performed tensile testing, cell culture, immunocytochemistry, LDH assays, and cell viability quantification

Mount Sinai Hospital, *New York City, NY* — Jun 2018–Dec 2019
Diabetic Neuroendocrine Researcher
- Developed novel ECI tissue clearing protocols in murine pancreatic and pituitary tissue
- Profiled neuroendocrine pathways disrupted by repeated hypoglycemia in diabetic mice
- Utilized immunohistochemistry, murine models, confocal microscopy, ImageJ, and Prism8 analyses

---

COLLEGIATE LEADERSHIP AND COURSEWORK

USC Associated Students of Biomedical Engineering (ASBME), *Los Angeles, CA* — Sep 2020–Present
Social Liaison
- Coordinate venues, guest outreach, and logistical planning of social events for ASBME students

Relevant Coursework: CAD for Biomechanical Systems, FDA Regulations of Medical Devices, Applied Python, Linear Circuits, Orthopeadic Biomechanics, Dynamics of Fluids, Strength of Materials, Statistics

---

TECHNICAL SKILLS

Python • MATLAB • C++ • SolidWorks • SQL • R • QSR • DV&V • ImageJ • Excel • HTML • CSS • Adobe Suite • LabVIEW