

## EXPERIENCE

### Cal Poly San Luis Obispo | Master's Thesis

September 2023-December 2024

- **Redesigned** a **hypoxic incubator** control system by applying **FMEA** methodologies, developed and manufactured **PCBs** in **EAGLE**, performed precision **soldering**, and **scripted** firmware to enhance controls system robustness and reliability.
- Developed **SOPs** for incubator use and study/data collection.
- Performed 7.5-day live test, collected and analyzed live data, validating 99.63% long term **reliability**, **repeatability**, and **consistency** across all user interaction workflows.
- Processed and imaged cells using **microscopy** techniques to demonstrate incubator **efficacy** through Warburg's Effect.
- **Automated** cell growth quantification via an ImageJ macro.
- Performed **ANOVA** and **post-hoc tests** to evaluate variability and significance across experimental conditions.

### Stryker ENT | R&D Engineering Intern

June-September 2023

- Developed **PoC design** and **prototype** of frontal sinus foam/delivery device via **machining**, **CAD**, and **3D printing**.
- Authored an **Invention Disclosure Form** for a novel foam shape, material, and deliver device PoC and design.
- Modeled 34 **CAD parts/prints** on **CREO** in 1 month to de-risk a critical **design review** for balloon delivery device handle and assembly components.
- Designed **test fixture** and **protocol** to optimize balloon device bend angle via 3D printing, machining, and CREO.
- Performed 48 bend tests collecting geometry data via a **MicroVu** and analyzed data using **Minitab** for a hypotube, sensor, and balloon assembly.
- Collaborated with **suppliers** to develop/optimize test fixture and protocol for sensor coil robustness and **DFM**.
- Developed and executed **benchmarking test** protocol for battery selection of 3 battery types across 4 brands.
- Optimized and performed **sensor accuracy testing** using a 3D printed fixture and Stryker EM navigation device.
- Attended clinical study observing device use cases in the OR.

### Stryker Neurovascular | Clinical Intern

June-September 2022

- Led BU implementation of Dolphin365 contract management platform and **automated user licensing tracking system**.
- Collaborated with PMs globally to automate graphic visualization of trial subject enrollment data through **Smartsheet** and **PowerBI**.
- Ran **gauge repeatability** and **reproducibility tests** for coil unsheathing friction and analyzed data via Minitab.
- Supported **test method optimization** for coil force on aneurysm wall using 3D printed models and an Instron.

## EDUCATION

### California Polytechnic State University, San Luis Obispo

- M.S. Biomedical Engineering  
(B.S. Mechanical Design Concentration)

## PROJECTS

### Hochschule Luzern | Study Abroad

- Designed and automated machinery to recycle and maintain scaffold boards using laser cutting, 3D printing, and controls systems.
- Collaborated with interdisciplinary global team while considering differing safety regulations and customer cultural differences abroad.

### Medical Design Club | Project Lead

- Organize, plan, and lead meetings and build nights to conduct user research, prototype, test, and iterate an axillary crutch redesign.
- Develop and test torsional spring systems referring to knowledge and experience in materials, biomechanics, and FEA simulation.
- Teach team members necessary skills such as 3-dimensional solid and structural FEA simulation modeling.

### Cal Poly | Summer Research Program

- Trained object detection models by labeling sharks, surfers, and marine life through LabelBox.
- Proposed hardware solutions to integrate camera, sensors, and a neural accelerator on a drone.
- Collaborated to publish and present research to the 2021 American Society for Engineering Education Conference.

### Biomedical Make-A-Thon

- Prototyped an intuitive blood pressure monitor.
- Collected and analyzed BP data via MATLAB and validated with industry standard BP monitors.

## SKILLS

### CAD/Design

- SolidWorks, Creo, COMSOL, AutoCAD

### Prototyping/Fabrication

- 3D Printing, Milling, MIG/TIG, Laser Cutting, Micro Welding, Die Casting Injection Molding/Microfabrication

### Programming/Data Analysis

- Python, MATLAB, Minitab, JMP, Excel

### Laboratory/Testing Techniques

- Cell Culture, Microscopy, Instron Testing, MicroVu, ImageJ

### Documentation/Communication

- Technical Writing, PowerPoint, Word, Power BI, Smartsheet, Windchill PLM

## LANGUAGES

- English
- Cantonese
- Mandarin Chinese (Beginner/Conversational)