

Ethan Sandberg

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Mechanical engineer with experience in medical device R&D, electro-mechanical system design, embedded firmware, and design for manufacturing. Experienced in operating room observations and incorporating surgeon feedback into engineering models.

RELEVANT EXPERIENCE

Stryker

March 2025- Present

Research and Development Contractor

Provo, Utah

- Designed and prototyped electro-mechanical subsystems for surgical devices to support feasibility, internal validation, and early risk reduction
- Developed C/C++ firmware to control mechanical actuation, implement closed-loop behavior, and log synchronized test data
- Designed and manufactured benchtop fluidic fixtures, evaluated pressure, flow, losses, and leakage to directly inform the product's development direction
- Conducted operating room observations, translating clinician workflows and feedback into engineering design requirements and system models

Phoenix DeVentures Inc. (Now PDV MedTech)

May 2024-Aug 2024

Biomedical Research and Development Intern

Morgan Hill, California

- Improved functional efficiency of assigned medical device by 2x through iterative mechanical redesigns, rapid prototyping, and bench testing
- Designed molds in CAD for injection molding that were used for mid-life cycle prototyping stage
- Created Bill of Materials (BOM) and Exploded Views for assemblies in SOLIDWORKS
- Led a \$50,000-80,000 data driven equipment and material selection process for R&D projects
- Supported FDA submission activities across 5+ projects, documenting experimental methods, results, and engineering change order ECOs

BYU Biomechanics Research Lab

Jun 2023-May 2024

Research Assistant

Provo, Utah

- Performed MATLAB-based data analysis on motion capture data supporting biomechanics research
- Applied dynamics and stress-strain analysis to analyze tendon energetics under load
- Authored and presented accepted technical writing, presenting at the American Association of Biomechanics, Rocky Mountain Conference
- Retrofitted legacy lab equipment using soldering and electro-mechanical design, reducing lab costs by 1,000\$

Biomedical Engineering TA

Jan 2025-April 2025

Course Teaching Assistant: Tutor and Lab Instructor

Provo, Utah

- Tutored the fundamentals of biomechanics, biochemistry, bioinstrumentation, and medical imaging
- Led bi-weekly labs to explain the underlying physics of industry equipment and demo its use (inclusive of pulse oximetry devices, motion capture, EMG, EEG, and blood glucose monitors)

EDUCATION

Brigham Young University-Senior

Grad. Apr 2026

Bachelor of Science in Mechanical Engineering-GPA: 3.57

Provo, UT

- Academic Full-Tuition Merit Scholarship, 2 year entry scholarship
- Biomedical Student Association 2022-Present

TECHNICAL SKILLS

Embedded & Prototyping: C/C++, Arduino, PIC24F, SLS/SLA/FDM 3D printing, injection molding, mold design, multimeter, oscilloscopes, Git | **Fabrication & Documentation:** Manual mill and lathe, basic woodworking, ANSI/ISO drawings, clean room procedures (ISO 7), soldering

CAD & Analysis: SOLIDWORKS (2D, 3D, and renders), ANSYS, MATLAB, Python, Qualisys