Celeste Forester

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SUMMARY OF QUALIFICATIONS

Biomedical Engineer with 6+ months of industry co-op experience in medical device R&D, CAD modeling (SolidWorks/CREO), rapid prototyping, and device testing (ANSYS, COMSOL). Contributed to the 3D design of 5 FDA-approved devices, honing skills in protocol development, SOP, verification & validation, and regulatory compliance (21 CFR 820.30, ISO 13485, ISO 14971). Proven leadership from managing a research laboratory and designing a year-long large animal study at a top research institution.

WORK EXPERIENCE

Department of Biomedical Engineering, University of Michigan **Ann Arbor, MI**
Supervisor for Biomedical Engineering Design Space *Mar. 2023 - Dec. 2023*

- Manufactured 10+ teaching models using 3D printing, laser cutting, and pressure formers to educate users on design principles
- Spearheaded weekly teaching workshops, assisting students in brainstorming to overcome unique design requirements and promote creative problem-solving to develop accessible, cost-effective, and efficient products
- Led 4 informative tours for potential investors to showcase the facility's capabilities and foster strong donor relationships, receiving over $100,000 in financial investments
- Implemented 2 department-wide sustainability initiatives to minimize production waste, creating resource-efficient operations

DePuy Synthes, Johnson & Johnson **West Chester, PA**
Product Development Engineering Co-op *Jan. 2022 - July 2022*

- Designed orthopedic implants and developed rapid 3D prototypes using CREO to minimize muscle atrophy and improve patient outcomes, while ensuring compliance through verification and validation
- Integrated surgeon feedback from US/EU pre-clinical trials into 5 design revisions, improving modeled wrist ROM by 14%
- Optimized CAD models for injection molding by accounting for material cooling rates, casting shape, and parting lines to decrease production cost, increase manufacturing scalability, and improve product quality

RESEARCH EXPERIENCE

Department of Molecular and Integrative Physiology, University of Michigan **Ann Arbor, MI**
Laboratory Manager at the Larkin Skeletal Tissue Engineering Laboratory *May 2021 - Sep. 2024*

- Led a research team of 5, overseeing experimental design, data analysis, and financial budget to comply with grant deadlines
- Authored preclinical protocol for large animal study (30+ subjects), ensuring compliance with regulatory and ethical standards
- Automated data analysis, saving 120+ hours, then presented findings at TERMIS, an international tissue engineering conference
- Mentored students and organized trainings on data collection, analysis, and proper techniques to prepare them for presentations

PROJECT EXPERIENCE

University of Michigan: Neural Bionic Hand *Jan. 2023 - Apr. 2023*

- Designed a neural bionic hand in SolidWorks using over 100 anatomical measurements, capable of decoding 4 live EMG signals through hardware filters and Arduino code to control 4 servo motors that recreated realistic hand movement.
- Utilized FDM/SLA 3D printing, breadboard circuitry, and custom wiring to fabricate multiple prototypes and final device

PUBLICATIONS & CONFERENCES

- Forester, CE et al., *Characterization Of Myogenic and Fibrogenic Cells Within a Primary Skeletal Muscle Isolate*. TERMIS, Toronto, July 2022
- Wroblewski, OM, et al., *Impact of Passaging of Primary Skeletal Muscle Cell Isolates on the Engineering of Skeletal Muscle.* Tissue Engineering, May 2024

TECHNICAL SKILLS

- **CAD & Multiphysics:** ANSYS Finite Element Analysis, Autodesk Inventor, COMSOL, CREO, Fusion 360, SolidWorks
- **Computer Software:** C++, Excel (advanced), LabView, Python, MATLAB, Raspberry Pi, RStudio, GraphPad Prism
- **Manufacturing**: CNC Machining, Cleanroom procedures, Design for Manufacturing, Laser Cutting, SLA/FDM 3D Printing
- **Regulations & Quality**: FDA Regulations, ISO Standards, Risk Management, 510(k) Premarket Notification
- **Professional:** Budget Management, Cross-Functional Collaboration, Public Speaking, Project Leadership, Technical Writing

EDUCATION

University College London **London, UK**
MPA in Health, Technology, and Public Policy *Sep. 2024 - Sep. 2025*

University of Michigan **Ann Arbor, MI**
BSE in Biomedical Engineering | Minor in Materials Science *Jan. 2021 - Dec. 2023*