ANDREW SIFFERLEN

Portfolio

Biomedical Engineer

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OBJECTIVE

Continue to gain real world experience and make a difference in the medical field by creating value to others through engineering.

EDUCATION

Worcester Polytechnic Institute, Worcester, MA
Bachelor's Degree of Science in Biomedical Engineering, Business Minor, GPA 4.0/4.0 May 2023
Lincoln-Sudbury Regional High School, Sudbury, MA
High School Diploma, LS Scholar (All Semesters), GPA 3.88/4.0; Cum Laude June 2019

Related Courses: Biomaterials Lab, Cellular Engineering Lab**,** Tissue Interactions, Drug Delivery, Physiology and Engineering, Transport Analysis in Bioengineering, Biomedical Data Analysis, Cell and Molecular Bioengineering, Biomedical Imaging, Cell Biology, Solid Biomechanics Lab Techniques, Skeletal Biomechanics Lab, Materials Processing, Leadership Practice

SKILLS

Programs: MATLAB, ImageJ, Bluehill, Python, ZEN, Minitab, Solidworks, XML, LabVIEW, CellProfiler, CES Edupack, Multisim, Maple, html, Microsoft Word, Excel, PowerPoint

Laboratory: Aseptic Mammalian Cell Culture, ISO 7 Cleanroom, PCR, Wet lab (centrifuge, spectrophotometry), animal surgery, Analytical concepts (calibration curves, dilutions), analytical skills (micro pipetting, balances), pH buffering, mechanical characterization of 3pt bending and tensile, Force plate, Polhemus, temperature mapping

EXPERIENCE

CQV Engineer I, ValSource, Site: GSK Cambridge, MA June 2023 – Present

- Generating and executing equipment qualification protocols for pharmaceutical manufacturing.
  - Controlled temperature units, Analytical Scales, single-use mixers, filtration pumps, and sterile tube welders.
- Collaborating with cross-disciplines to conduct risk and impact assessments within manufacturing and analytical environments.
- Producing standard operating procedures and user requirement standards.

Systems Integration Engineering Co-op, Lexagene, Beverly, MA June – December 2022

- Designed, executed, and analyzed data from system and subsystem level experimentation related to complex IVD devices.
- Experiments included component reliability, material compatibility, alternative device process studies.
- Supported the integration of biologics and instrumentation as a member of the Product Development team.
- Maintained multiple ongoing projects in a fast-paced start up environment.
- Consulted and validated manufacturing upscale, handled lab maintenance, and assisted in DHR procedures.

PROJECTS

Validating and Manufacturing a Bio-realistic Surgical Phantom for Laparoscopic Surgical Training, WPI September 2022 – May 2023

- Collaborated on a team of four to enhance a bio-realistic section of the abdomen that fits inside existing laparoscopic and robotic surgical trainers.
- Observed laparoscopic surgeries and worked with clinical clients to evaluate the strengths and limitations of current models.
- Developed bio-realistic components that are easily repaired, replaced, and reused.
- Assessed and created a scalable prototype that can be deployed as a commercial product.
- Finished runner-up in WPI Major Qualifying Project competition.

Cellular Engineering Lab, WPI January - March 2022

- Passaged, froze, thawed, and stained mammalian 3T3 cells through aseptic technique cell culture.
- Evaluated coating and adhesion materials biocompatibility and effects on cell proliferation on PDMS surface.
- Observed effects of differing Fetal Bovine Serum percentages in complete medium on cell proliferation.

Establishing IQP Partner Relationships in Prague, Prague Czech Republic October - December 2021

- Expanded opportunities available to students for the Prague Project Center.
- Conducted interviews with center directors and intermediary contacts.
- Produced and delivered a sales pitch PowerPoint Presentation to organization representatives.

Biomaterials Lab, WPI August - October 2021

- Extruded Fibrin Microthreads through a syringe pump, capture microscopic pictures with ZEN, and measure diameters from a reference hemacytometer with ImageJ.
- Produced self-assembled DCPC lipid microtubules, load with BSA protein, analyze degradation and protein release as a drug delivery system.
- Measured absorbance of BCA assay with spectrophotometer and calculate concentration from serial dilution standard curve.

COMMUNITY INVOLVEMENT

Varsity Track and Field: Captain: (September 2022 – May 2023) Involvement: (August 2019 - May 2023)
Food Recovery Network Community Service Volunteer
Phi Kappa Theta: Vice President of Membership: (Nov 2021 – Dec 2022) Involvement: (Sep 2020 – May 2023)
Membership Development Chair (November 2020 – December 2021)

HONORS & ACHIEVEMENTS

Dean's List all semesters
Alpha Eta Mu Beta Biomedical Engineering and Tau Beta Pi Engineering Honor Societies
All Academic National Athlete (2020) Heptathlon, All Region Honors (2022) Decathlon