

Gavin Flood

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EDUCATION

Northeastern University

Boston, MA

Bachelor of Science in Bioengineering and Biochemistry, GPA: 3.86

Sept 2023 – Dec 2027

Activities and Honors: Give a Hand (3D-Printed Prosthetics), Dean's List (2023, 2024, 2025)

Relevant Coursework: Bioengineering Measurements, Experimentation and Statistics; Biomechanics; Quantitative Physiology; Organic Chemistry I & II; Genetics and Molecular Biology; Biomolecular Dynamics and Control; Transports and Fluids

TECHNICAL SKILLS

CAD/Prototyping: SolidWorks & PDM, Onshape, AutoCAD, 3D Printing (Stratasys J35 Pro)

Testing & Validation: Instron, Visual Inspection Measurement (Keyence & Flexbar), Tensile/Peel Testing, Friction Testing, Bubble Leak (ASTM F2096), ISO 8536-8/9, Flow Rate Testing, TMV, IQ/OQ

Data & Analysis: MATLAB, Minitab, JMP, Microsoft Excel, Copilot

Documentation: SOPs, Protocols, Engineering Reports, ETQ Reliance Document Control

EXPERIENCE

Research & Development Mechanical Engineering Co-op

Jan. 2026 – Jun. 2026

Insulet Corporation, Hardware Engineering

Acton, MA

- Thermoformed and conducted biomechanical testing - leak, friction, and phenolic compatibility - assess performance and manufacturability of 13 materials to down select alternate material for fluid path component.
- Designed and fabricated fixtures to enable test sample preparation, manufacturing sub-assembly spec validation, insertion and friction force testing, and preparation of 300+ samples for chemical compatibility testing.
- Applied statistical analysis methods to Instron-based insertion force data to identify performance drivers for 10+ key single and multi-variable design changes to fluid path sub-assembly.
- Performed proteomic analysis on HypoSkin (ex-vivo) tissue models exposed to continuous insulin infusion, investigating biological pathway enrichment and tissue responses relative to controls.
- Utilized production equipment to develop in-line prototypes of modified fluid path components.
- Supported voluntary medical device correction and recall activities, including replacement device fulfillment and development of a fixture to improve the protocol for device teardown without fume generation.

Research & Development Engineering Intern

Summer 2024 & Summer 2025

Koru Medical Systems

Mahwah, NJ

- Authored Standard Operating Procedures and Test Method Validations for water leakage, air leakage, and tensile testing of tubing sets per ISO 8536.
- Developed CAD Models and 3D-printed components for test fixtures used in Test Method Validations.
- Maintained SolidWorks CAD models for design components, managing revisions and documentation within the ETQ Reliance document control platform.
- Conducted flow rate testing on in-development products, comparing device performance across varied syringe and tubing combinations to optimize infusion systems.
- Designed and executed experiments for new product packaging, examining parameters such as force, time, and temperature during sealing to refine packaging integrity and sterility.
- Utilized Minitab for data analysis, contributing to statistical assessment of test results and driving design adjustments for enhanced product performance.

PROJECTS

Portable Rehabilitation Stairs Design Project

Jan. 2024 – Apr. 2024

Northeastern University

- Collaborated with a team to design and build a set of portable rehabilitation stairs for Pen Bay Hospital's physical therapy department in Rockport, Maine.
- Engaged with clients through virtual meetings to gather requirements and feedback.

Sumo Robot Design Project

Sept. 2023 – Dec. 2023

Northeastern University

- Designed and fabricated an autonomous sumo battle robot that won the engineering department competition.
- Utilized Arduino programming to control the robot and process input from ultrasonic and reflective sensors.

INTERESTS

Street photography in New York City and Boston, capturing urban life, architecture, and candid moments with a creative eye for composition and natural light.