

Ashley Bailly, M.E.
Project Engineer

Education

Master of Engineering, Biomedical Engineering, Texas A&M University, College Station, Texas,
May 2024. Select Track Electives: Orthopedic Biomechanics, Soft Tissue Mechanics and Finite
Element Methods, Motion Biomechanics, FDA Good Laboratory and Clinical Practices.

Bachelor of Science, Biomedical Engineering, Texas A&M University, College Station, Texas,
May 2023.

Professional Experience

Design Research Engineering, Project Engineer, September 2025 – present

Carr Engineering, Inc., Biomechanical Engineer, July 2024 – August 2025

Southwest Research Institute, Student Engineer, June – August 2023, May – August 2022

Texas A&M University, Cardiovascular Pathology Lab, Undergraduate Research Scholar,
August 2022 – May 2023

Thesis: Methods for In Vitro Development of Thrombi and Puncture Testing to Assess Clot
Mechanical Properties, 2023.

Texas A&M University, Engineering Department, NeuroErgonomics Research Lab, LEARNER Project
Student Researcher, August 2021 – May 2022

Publication

Kote VB, Frazer LL, Shukla A, Bailly A, Hicks S, Jones DA, DiSerafino DD, Davis ML, Nicolella DP,
“Probabilistic Finite Element Analysis of Human Rib Biomechanics: A Framework for Improved
Generalizability”, *Annals of Biomedical Engineering*, July 2024.

Research Activities

- Human kinematics, injury potential, and injury mechanisms in motor vehicle crashes and matters involving industrial equipment.
- Human surrogate testing and analysis.
- Modeled behind-armor blunt-force trauma and long duration flights with finite element analysis using FEBio and LSDYNA, focusing on material modeling optimization and data extraction with Python.
- Developed and compared methods for creating thrombi *in vitro*, including a Chandler Loop and 3D-printed rotating disc system.
- Puncture testing on blood clots to determine mechanical properties, comparing the stiffness of variously aged and fixed clots.
- Analyzed movement tracking data, physiological data, and subjective surveys to determine the value of training emergency responders using augmented reality technology, incorporating machine learning to categorize participants based on performance to better personalize training.

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Awards

- 1st Place in Major, Engineering Project Showcase, “Novel Method to Deliver Apneic Oxygenation During Intubation”, Texas A&M University, 2023.
- Capstone Design Innovation Award – Pediatrics, Texas A&M University, Biomedical Engineering Department, 2023.
- Best Poster, “Analysis of Cognitive Load in Personalized Emergency Medical Training Using Augmented Reality”, Human Factors and Ergonomics Society, 2022.