



**Gabrielle Lea, M.B.E.**  
**Project Engineer**

**Professional Specialization**

- Biomechanical investigation, reconstruction, and failure analysis
- Analysis of motion and injury biomechanics in vehicle incident applications
- Evaluation of accident and injury data
- Exemplar vehicle and human surrogate testing and analysis

**Education**

M.B.E. (Applied Bioengineering), Rice University, 2025

Graduate Research Project: “PEGDA-based Microgels Using Dynamic Covalent Chemistry for Extended Drug Release”

B.S. (Biomedical Engineering), University of Houston, 2024, *summa cum laude*

**Professional Experience**

Design Research Engineering, Project Engineer, September 2025 – present

Carr Engineering, Inc., Biomechanical Engineer, June 2025 – August 2025

Rice University, McHugh Lab, Graduate Researcher, July 2024 – May 2025

University of Houston, Conrad Lab, Research Assistant, August 2023 – May 2024

University of Houston, Mohan Lab, Undergraduate Researcher, March 2022 – May 2024

Rice University, Biswal Lab, Summer Research Assistant, June 2021 – August 2021

**Professional Affiliations**

Biomedical Engineering Society, Member

Society of Automotive Engineers, Member

Tau Beta Pi, Member

**Publications and Presentations**

Li Y, Tang C, Vanarsa K, Thai N, Castillo J, **Lea GAB**, Lee KH, Kim S, Pedroza C, Wu T, Saxena R, Mok CC, Mohan C. “Proximity extension assay proteomics and renal single cell transcriptomics uncover novel urinary biomarkers for active lupus nephritis.” *J Autoimmun.* 2024 Feb;143:103165. doi: 10.1016/j.jaut.2023.103165. PMID: 38194790.

“Microfluidic Devices to Produce Liquid-Liquid Interfaces for the Imaging of Bacterial Adhesion.” University of Houston Biomedical Engineering Day, April 2024.

“The Identification of Urinary Proteins as Markers of Disease Activity in Childhood-onset SLE.” University of Houston Undergraduate Research Day, April 2023.

“Enhanced Microfluidic Encapsulation for Single-Cell Sorting.” Rice University, Institute for Biosciences and Bioengineering, Summer Undergraduate Research Symposium. August 2021.