

Adelie Lorge

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📍 College Station, TX

🌐 [LinkedIn](#)

🎓 [First-Author Publication](#)

Education

Texas A&M University

B.S. Chemical Engineering, Cumulative GPA: 3.4

May 2027
College Station, TX

Selected Coursework: Chemical Engineering Thermodynamics I (Study Abroad), Undergraduate Research

Research Experience

Undergraduate Researcher, [Dr. Pushkar Lele Lab](#)

College Station, TX

Texas A&M University

Microfluidic Process Development and Materials Research

Aug 2025 – Present

- Develop a low-cost microfabrication process using photocurable optical adhesives as reusable masters for high-fidelity PDMS replication.
- Design and execute experiments varying surface treatments, curing conditions, and demolding methods to improve mold release, durability, and reusability.
- Achieved high-fidelity replication of features as small as 1.1 μm while evaluating mold degradation across 10 casting cycles.
- Compare polymeric molds with conventional silicon masters based on feature fidelity, durability, fabrication cost, and accessibility.
- Present experimental findings and process recommendations to faculty and graduate researchers.

Summer Research Project – *Bacterial Motility and Microfluidics*

June 2026 – Present

- Cultured *E. coli*, *H. pylori*, and *Caulobacter crescentus* using aseptic techniques and BSL-2 laboratory practices.
- Conducted bacterial motility and chemotaxis experiments in microfluidic devices and recorded cell behavior using video microscopy.
- Used fluorescence microscopy to visualize bacterial flagella and evaluate their relationship to cell motility.
- Performed quantitative image and video analysis to measure cell and flagellar velocities, cell length, swimming angles, and motility behavior in bulk and confined microchannels.

Publications & Awards

Lorge, A., et al. [High-Fidelity Micron-Sized Pattern Transfer to PDMS Molds through UV-Ozone Treated Polymeric Replicas of Silicon Wafers](#). Preprint.

Best Undergraduate Poster Award – ChEGSA Annual Symposium, Texas A&M University

Summer 2026

Skills

Engineering Software: Excel, MATLAB, Python, Aspen Plus

Microfabrication: PDMS Replication, Polymer Processing, Surface Treatment

Microscopy & Analysis: Optical Microscopy, Fluorescence Microscopy, Video Analysis

Biological Methods: Experimental Bacterial Culture, Chemotaxis Assays, Aseptic Technique, BSL-2 Practices

Languages: French (Native)

Certifications

- Biosafety Level 2 Training; Bloodborne Pathogens Training
- Introduction to Programming with MATLAB, Coursera

Leadership & Activities

European Scouts – Leader

Aug 2020 – May 2023

- Coordinated logistics, safety planning, risk assessments, budgets, and activity execution for ~40 children during day and overnight events.

American Institute of Chemical Engineers (AIChE) – Member

Aug 2023 – Present

- Supported the Freshman AIChE Chair in organizing events, reviewing ETAM essays, and helping first-year students prepare for Chemical Engineering.

Texas A&M Women's Lacrosse – Player

Sep 2023 – Sep 2025