Alexander Barry

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EDUCATION

Cornell University, College of Engineering **Ithaca, NY**
Anticipated Major in Mechanical Engineering *Expected Graduation: May 2027* – GPA: 4.1

WORK EXPERIENCE

CENTER FOR COMPOSITE MATERIALS, UNIVERSITY OF DELAWARE **Newark, DE**
Research Assistant *May 2024 – August 2024*

- Contributed to the experimental validation of a new material model MAT213
- Designed and completed testing to obtain through-thickness properties of a composite material
- CCM Summer Poster Symposium– 2nd Place Winner ($500)

CENTER FOR COMPOSITE MATERIALS, UNIVERSITY OF DELAWARE **Newark, DE**
NASA ULI Research Assistant; Supervisor: Dr. John W. Gillespie Jr. *June 2022 – August 2023*

- Collaborated as a team of 3 to improve adhesive properties of Copper/Polyimide bond
- Increased peel strength by 375% by decreasing CTE mismatch, 300% by improving processing conditions
- Resolved significant void defects seen in TuFF carbon fiber, improving tensile properties by over 10%

ACTIVITIES

CORNELL AUTONOMOUS DRONE PROJECT TEAM **Ithaca, NY**
Mechanical Subteam – Mechanical Engineer *January 2025 – Present*

- Completed development of novel drone designs in CAD to a fully assembled carbon fiber flight ready drone
- Developed and tested prototypes aiming to break the fastest drone world record (298 MPH)

BEWLEY APPLIED TURBULENCE LABORATORY **Ithaca, NY**
Undergraduate Research Assistant *September 2024 – Present*

- Managed tasks in a team of 6 to carry out turbulence experiments with quadcopter drones
- Implemented code for real-time drone control reactive to current positioning

AMERICAN SOCIETY OF MECHANICAL ENGINEERS **Ithaca, NY**
Secretary *January 2025 – Present*

PUBLICATIONS

CCM RESEARCH *January 2024*
S. M. Doshi, A. Barry, *et al.*, "Adhesion Characterization and Enhancement between Polyimide-Silica Composite and Nodulated Copper for Applications in Next-Generation Microelectronics," *ACS Applied Materials & Interfaces*, vol. 16, no. 2, pp. 2692–2703, Jan. 2024, doi: 10.1021/acsami.3c14434.

INDEPENDENT RESEARCH *August 2022*
Barry, A. (2022). Investigation on the effect of infill orientation on the flexural properties in FDM parts. *The Young Researcher*, 6(1), 94-105. http://www.theyoungresearcher.com/papers/barry.pdf

SKILLS

- 3D CAD (Fusion 360, Inventor, Onshape) – 9th Place Winner in National TSA CAD Competition (2021)
- MATLAB, Python, Microsoft Excel (PowerQuery), Data Analysis
- Instron Mechanical Testing