

Bradley Bialke

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Education

University of Michigan

Bachelor of Science in Engineering in Aerospace Engineering

Ann Arbor, Michigan

Apr. 2025

- GPA: 3.966/4.000
- Course Highlights: Hovercraft Design-Build-Fly, Dynamics & Vibrations, Gas Dynamics, Solid Mechanics
- Honors: Engineering Dean's List (F22, W23), University Honors (F22, W23), ΣΓΤ Aerospace Honor Society

Work Experience

Widebody Nacelle Design & Stress

Propulsion Structures Engineering Intern

The Boeing Company

May 2023 – Aug. 2023

- Conducted comprehensive design work on exhaust manifolds for the 767 and KC-46 Tanker program using CATIA, ensuring optimal functionality and adherence to engineering specifications.
- Performed in-depth examination and assessment of spring seals on the 777X thrust reverser, employing a combination of manual calculations and industry-leading FEA/FEM analysis software. Determined root cause of primary nonconformity and presented findings and potential corrective actions to suppliers.
- Assisted in ensuring compliance with industry regulations and internal quality standards. Participated and presented content in 4 major design reviews, providing insights to enhance overall product performance.

Lightweight Copper Synthesis and Nanofabrication

Undergraduate Researcher

University of Michigan

Sept. 2022 – Apr. 2023

- Conducted research into nanometer-scale copper sheet fabrication and testing, resulting in the successful synthesis of a lightweight material with electrical properties comparable to commercially available copper.
- Achieved a 7-fold reduction in material density and a resistance value just 0.04 ohms greater than that of pure copper, exceeding project goals and demonstrating the material's potential for weight-sensitive applications.
- Delivered research results at spring symposium to over 150 fellow researchers, graduates, and professors.

Project Experience

Michigan Aeronautical Science Association (MASA)

Igniters Team Leader

University of Michigan

May 2022 – Present

- Led a group of 6 engineers through the design, testing, and manufacturing of liquid-propellant igniters for use on MASA's Clementine rocket, utilizing computer analysis alongside manual chemical and geometrical calculations.
- Oversaw and directed 12 small-scale chemical tests in order to optimize igniter performance to meet project requirements for burn duration, ramp-up time, and safety. Final samples demonstrated a 50% improvement in overall flame duration compared to prior models, while still achieving a ramp-up time of under 3 seconds.
- Developed brand-new manufacturing plan for full-scale custom igniter design, alongside planning and carrying out 3 high-stress tests. Final igniters were successfully deployed during MASA's Summer 2023 launch program.

Plasmadynamics and Electric Propulsion Laboratory (PEPL)

In-Space Propulsion Engineer and Outreach Leader

University of Michigan

Feb. 2023 – Present

- Developed 0.3m-scale hall thruster and pulsed-plasma thruster technologies for use in space propulsion systems.
- Upgraded software interfaces for hall thruster to streamline operation and improve performance.
- Modified chamber and pressure systems to optimize thrust output.
- Coordinated and oversaw outreach events to showcase thruster technologies to the local community.

Activities

Sigma Gamma Tau Aerospace Honor Society, *Active Member and Volunteer*

Jan. 2023 – Present

Tau Beta Pi National Engineering Honor Society, *Electee*

Sept. 2023 – Present

Trident Terminal (NSS Space Settlement Contest), *First Prize Winner and Team Leader*

Sept. 2021 – Feb. 2022

Skills

Technical: Structural Analysis/FEA/FEM, CAD, CFD, Project Design, Planning, and Management, Computer-Aided Data Analysis, Physics & Mathematics, Research | **Computer Software:** CATIA, Abaqus, STK (Level 1), Solidworks, Siemens NX, Fusion 360, Nastran, StarCCM+, MATLAB, C#/C++/C (Arduino), Java/Javascript/Node.js, Python, Microsoft Office.