Cell: (856) 418-8136   Email: madelinebowne@gatech.edu   Website: madelinebowne.com

Madeline Bowne

B.S. in Mechanical Engineering, M.S. in Aerospace Engineering & pursuing PhD

Education

- **Georgia Tech**

MS in Aerospace Engineering. 4.0 cumulative GPA. Grad. Research Asst. at ASDL. Pursuing PhD

- **Rutgers University**

BS in Mech. Engineering, Minor in English. 3.738 GPA. Summa Cum Laude with Highest Honors. FSAE for 4 years.

Skills

MATLAB, Advanced Design Methods, Modeling & Simulation, JMP, FEA, Siemens NX 11 & Teamcenter, SolidWorks, Inventor, Mastercam, MoTeC, AutoCAD, Mathcad, C++, Python, Linux, Microsoft Office VBA, OptimumG, Machining (Lathe, Manual & CNC Mill), Composite Lay-ups, Design & 3D Modeling, GD&T, 3D Printing, Adobe Software, Video & Photography, Final Cut Pro X

Honors

- Matt Isakowitz Fellow, '21
- Rutgers University Alumni-Industry Scholarship, '18
- Boeing Leadership Award Scholarship, '18
- Runner-up finalist for the Science Ambassador Scholarship, 2018. Top ten finalist in 2017.
- New Jersey Hall of Fame, Arete
  Scholarship recipient, 2016
- Six-time winner of C-SPAN StudentCam, '11-'16
- GSSPA Bob Stevens Scholarship
- NJ Rep. for the Al Neuharth Free Spirit and Journalism Program

Experience

Redwire Space: Jacksonville, FL. Matthew Isakowitz Fellow.

Mechanical Engineering Intern for the Archinaut satellite, Summer '21

- Designed mass off-loader for the demonstration of the Archinaut's 10m long beam print
- Calculated the cause of a jamming error in the Archinaut's Transform Detection System and developed short-term and long-term redesigns
- Designed the mechanical ground support equipment to support and actuate the solar surrogate array during thermal vacuum testing

Georgia Institute of Technology, Atlanta, GA

Grad. Research Asst., Aerospace Systems Design Lab, Aug. '20-present

- Developed sizing tool for 3D printed bistable mechanisms and validated with testing
- Formulated conceptual reliability program for NASA Marshall's Robust Mars trade study
- Created a satellite constellation & capability trade study tool for information allocation in a battlespace awareness context. Developed the discrete event sim. using graph theory.
- Learned CASA (Common Astronomy Software Applications) for implementation in a Satellite Constellation Design to Enhance Passive Millimeter Wave Imaging
- Developed an active Wire Strike Protection System for helicopters and small airborne vehicles (drones, UAM & VTOL vehicles)
- Developed program that predicts supersonic inlet performance and structural characteristics given inlet geometry and flow characteristics

Lockheed Martin: Moorestown, NJ

Systems Engineering, RMS, AEGIS, Command & Decision, Summer '20

- Created MATLAB tool that feeds threat simulation data through existing C++ propagation algorithm and compares results with updated propagation methods, using Monte Carlo simulation to evaluate error

Northrop Grumman Innovation Systems: Dulles, VA

Propulsion & Systems Engineering, Antares Rocket program, Summer '19

- Performed torque testing in thermal and ambient conditions to test Propellant Disconnect Initiators for stress relaxation in the copper gasket
- Saved hours by creating Excel VBA tool that instantly compares As-Designed parts with every As-Built part in their previous mission
- Helped perform work packages to test Commodity Control software changes

Northrop Grumman Innovation Systems: Chandler, AZ

Mech. Eng. Co-op, Launch Vehicles, June '18 - Dec. '18

- Designed test fixture & performed Instron flight-like load testing on 3D-printed rocket umbilical brackets
- Completed several structural analyses of ground support equipment (GSE), identified issues in previous analyses and proposed cheap & effective solutions
- Compiled work package for critical attach hardware proof testing
- Completed lay-ups with carbon fiber materials and assisted in testing for R&D

Rutgers Formula Racing, Formula SAE

Design & Testing Lead: '19-'20, Vice President: '17-'19, General member: '16-'17

- Managed static & dynamic vehicle testing, managed team deadlines and scheduling, reinforced data acquisition and analysis architecture with various scripting tools using MoTeC i2 Pro, MATLAB, and Excel, developed driver training system based on Key Performance Indicators
- Designed, simulated, machined, and assembled components and testing mechanisms
- Applied communication skills for management, outreach, business presentations, industry/university relations, and recruitment. Produced promotional videos.