

Emily L. Judd

Education

University of Michigan (UM): M.Eng. Space Engineering September 2018–May 2019 expected
UM: M.S. Climate and Space Sciences and Engineering September 2016–April 2018
2017–2018 Department Ambassador. 2016–2017 Dwight F. Benton Fellow. 3.1/4.0.

University of Central Florida (UCF): Burnett Honors College Student, National Merit Scholar August 2011–May 2016
B.S. in Aerospace Engineering (Cum Laude), B.M. in Music Performance on horn. University Honors, 3.7/4.0 overall GPA.

Experience

NASA Langley Research Center: Space Mission Analysis Branch Pathways Intern, Civil Servant April 2018–present

- Conducted trend analysis research for the space industry and consolidated data into databases and graphics. Assisted with lunar lander payload research and NASA Space Technology Mission Directorate strategic framework development. Estimated space mission costs through various models. Contributed to three AIAA conference papers.
- Pathways Agency Cross-Center Connection Chair. Organized learning opportunities for fellow interns, such as center tours.

Aaron Ridley Research Group: Graduate Student Research Assistant September 2016–April 2018

- Investigated planetary upper atmospheric structures and dynamics through computational modeling. Python and Fortran.
- 2018 Women in Planetary Science and Exploration Conference Poster: “Using the Global Ionosphere-Thermosphere Model to understand the importance of planetary attributes on Earth’s upper atmosphere.”

Demonstration of Systems for Michigan Bicentennial Archive (DSM-BARC) October 2016–April 2017

- Conducted orbit and solar power simulations for the 2U CubeSat team. Mission originally designed to test retroreflector technology for a following mission (M-BARC) that will serve as a 100-year time capsule to celebrate UM’s Bicentennial.

NASA Langley Research Center: Nanocomposite Materials Research Intern June 2016–August 2016

- Designed and tested methods to integrate boron nitride nanotubes into a metal matrix for use in aerospace structures. Led material characterization efforts with scanning probe microscopy. Additional work with FTIR and Raman spectroscopy.

UCF Aerospace Senior Design Project: Reusable Entry Vehicle for Suborbital Science September 2015–May 2016

- Team flight and ground operations specialist and treasurer. Designed, built, and tested a 2U spacecraft prototype designed to collect mesospheric data. Led recovery systems design and launch vehicle integration. Spearheaded funding proposal efforts.

Iowa State University Wind Energy Science, Engineering, and Policy NSF REU June 2015–August 2015

- Tested an automated manufacturing technique for the trailing edge of wind turbine blades.
- Publication: Zhu, S., Magnussen, C., Judd, E., Frank, M., Peters, F., “Automated Composite Fabric Layup for Wind Turbine Blades”, Journal of Manufacturing Science and Engineering, 2017.

UCF Mechanics of Materials Research Group: Undergraduate Research Assistant April 2014–April 2016

- Assisted with lab facilities and personnel management. Worked to simulate the effects of hypersonic flight on jet fuselage. Designed a small punch test fixture. Used Solidworks to model experimental designs.
- Conference Paper: Gordon, A., Judd, E., Bouchenot, T., and Penmetza, R., “A Microstructurally-Informed, Continuum-Level Life Prediction Model for Thermo-Acousto-Mechanically Fatigued Ti-6242S and IN617”, AIAA SciTech, 2015.

Certifications

Analytical Graphics, Inc. Systems Toolkit: Level 1 (2017), Level 3 Tracks: Analysis Workbench, STK Coverage, Spacecraft Trajectory (2018, v. 11.4). CPR/AED (2018).

Memberships | Community Service

Students for the Exploration and Development of Space, Society of Women Engineers, Tau Beta Pi Engineering Honor Society, Women in Aeronautics and Astronautics, American Institute of Aeronautics and Astronautics, Campus Symphony Orchestra, Michigan Pops Orchestra. | Detroit Area Pre-College Engineering Program Instructor (2017, 2018); The Mars Generation (2015–present), Student Space Ambassador Board Member (2017–present).