

Eric Peters

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Education

Massachusetts Institute of Technology, Cambridge, MA

Master of Science, Aerospace Engineering September 2014

Thesis Title: "Dynamic Instabilities Imparted by CubeSat Deployable Solar Panels"

Bachelor of Science, Aerospace Engineering June 2011

Professional Development Courses

Aerospace Analysis Bootcamp, *Roulo Consulting, Inc.* March 2016

Geometric Tolerancing Pro Fundamentals, *Technical Consulting, Inc.* November 2017

Experience

Independent Consultant

July 2021 – September 2021

- Conducted a three-month conceptual design study for an ESPA-class weather radar satellite, culminating in the delivery of subsystem sizing tools, preliminary technical budgets, and a report comparing the merits of three architectural layouts against top-level mission requirements for ground coverage and mass/volume constraints.

Blue Origin – Structures Design Engineer, Kent, WA

December 2016 – Present

- Responsible Engineer for New Shepard Crew Capsule aft structure subsystem, spanning multiple vehicle instances and lifecycle phases. Conduct design and analysis for future configuration upgrades. Provide manufacturing and flight operations support through discrepancy resolution, maintenance procedures, and repair definition.
- Supported human flight certification process by conducting verification activities for 20 safety-critical assemblies within the Aft Structure subsystem, culminating in the successful first crewed flight in July 2021. Authored engineering analysis packages for composite and metallic components; defined coupon geometry and test procedures for all regions requiring point design allowables; and conducted supersonic flutter assessment for all external panels.
- Designed composite base heat shield panel and oversaw production of manufacturing demonstrator panels and final flight units. Sourced and established relationship with an additional composites supplier to meet AS9100 quality requirements.

Firefly Space Systems – Payload Segment Lead Engineer, Cedar Park, TX

September 2014 – November 2016

- Led a team of three engineers to design and analyze major structural components of the Alpha 1.0 launch vehicle, including payload fairing, payload attachment structures, and associated manufacturing tooling.
- Instituted elementary systems engineering process to establish Design Reference Missions and define subsystem functional requirements and technical budgets. Tailored process around limited personnel and software resources.
- Developed the initial relationship between Firefly's executive team and Seedinvest, an equity crowdfunding platform, that resulted in over \$1 million of seed round funding.
- Wrote and maintained payload accommodations sections of the Firefly Alpha Payload User's Guide. Communicated directly with customers to define mechanical and electrical interfaces, payload integration facility requirements, and multi-payload deployment CONOPS.

MIT Space Systems Laboratory, Cambridge, MA

Staff/Graduate Research Assistant

June 2011 – August 2014

- Designed motor assembly, chassis, and other structural components for Micro-sized Microwave Atmospheric Satellite (MicroMAS) 3U weather-sensing CubeSat. Supported hardware fabrication, vehicle integration, and qualification/acceptance testing of flight hardware. Launched in May 2014 and January 2018.
- Matured design of Regolith X-ray Imaging Spectrometer (REXIS) instrument primary structure from initial concept to PDR fidelity. Launched as part of NASA OSIRIS-REx mission in September 2016.

Skills

Engineering Software: PTC Creo, Dassault CATIA/SolidWorks, Autodesk Inventor, Ansys Composite PrepPost, Ansys Mechanical, Altair Hyperworks, Femap, Nastran, MSC Adams

Languages and Computer Systems: Python, Matlab, Java, JavaScript, Go, Linux/Unix command-line utilities, SVN, Git

Fabrication: Manual operation and CNC programming of mills, lathes, and OMAX Water Jet Machining Centers; hands-on experience with composite wet layup procedures.

Publications

- **Peters, E**, et al. "Design and Functional Validation of a Mechanism for Dual-Spinning CubeSats," *Proceedings of the 42nd Aerospace Mechanisms Symposium, NASA Goddard Space Flight Center, May 14-16, 2014*.
- Blackwell, WJ, et al. 2013. "MicroMAS: A First Step Towards a Nanosatellite Constellation for Global Storm Observation," *Proceedings of the AIAA/USU Conference on Small Satellites, Around the Corner*.
- **Peters, E**, et al. 2013. "Design and Functional Validation of a Mechanism for Dual-Spinning CubeSats," *Proceedings of the AIAA/USU Conference on Small Satellite, Pre-Conference: CubeSat Developers' Workshop*.
- **Peters, E**, et al, "Challenges of Mechanism Design for Small Educational Satellites," *Mechanical Engineering Technology Symposium, MIT Lincoln Laboratory, Lexington, MA, 2012*.
- Blackwell, WJ, et al. 2012. "Nanosatellites for Earth Environmental Monitoring: The MicroMAS Project," *Proceedings of the AIAA/USU Conference on Small Satellites, The Horizon, SSC12-I-2*.
- **Peters, E. D.**, Corbin, B. A., and Kendrick, D. P., "Validating Waste Collection System Hardware Developed for the Mars Gravity Biosatellite Program Aboard a Parabolic Research Flight," *AIAA Region I-NE Student Conference, AIAA, Boston, MA, 2010*.