Amanda V. Steckel

Boulder, CO 80305 ▪ (301) 706-1151 ▪ avsteckel@gmail.com

RESEARCH INTERESTS

Planetary science missions and remote sensing instruments. From formulation / proposal, engineering design through integration and test, launch, operations, and science publications. Planetary surfaces (icy moons, Earth's moon, Mars) and payload R&D.

PROFESSIONAL EXPERIENCE

California Institute of Technology, Pasadena, CA *Sept. 2024-Present*
Postdoctoral Researcher

- Mastcam-Z instrument team on Mars 2020 rover. Tactical science downlink and uplink (sPDL/sPUL) and multispectral research.
- Lead research on water ice abundance in permanently shadowed regions (PSRs) for the Lunar Trailblazer (LTB) science team.
- Lead external hackathons to analyze radar and optical photometry observations post launch assisting with LTB recovery effort.

University of Colorado Boulder and **Laboratory for Atmospheric and Space Physics** (**LASP)**, Boulder, CO *June 2020-Aug 2024*
National Science Foundation (NSF) Graduate Research Fellow

- Lead hyperspectral spectroscopy during lunar exploration simulation in Green River, Utah with TREX team (NASA SSERVI node).
- Assess Ojos del Salado (22,600') as analogue for Mars and Europa by collecting solar radiation, microbial, and geologic samples.
- Modeled landscape evolution of valleys on Mars; Europa penitente growth in Python.
- Instructor for Intro to Field Geology
- Microbial/geologic/solar radiation study evaluating Ojos del Salado: 22,600' as analog.
- Designed icy moon plume experiment.

Maybell Quantum Industries (MQI), Denver, CO *June 2021-Sept 2021*
Contractor (8th hire, part-time)

- Lead Engineer for venture backed startup. Design / analysis / manufacturing, personnel hiring, training of new engineering staff.

Cooperative Institute for Research in Environmental Sciences (CIRES), Boulder, CO *Aug. 2019-June 2020*
Research Assistant

- Upgrade and operate Fe Boltzmann, Na Flourescence, Fe Doppler lidar (McMurdo, Antarctica). Analyze stratospheric warming.

MIT Lincoln Laboratory (MIT LL), Lexington, MA *Sept. 2015-Sept 2019*
Associate Staff, Mechanical Engineering (Group 71). Security Clearance: Top Secret / SCI

- Progenitor and Primary Investigator for internally funded (total ~$200k) Freeform Propellant Delivery System FY '17, '18, '19
- Mechanical Lead for ISS Optical Payload Program LASSO.
- Managed interns and co-ops for group 71.
- Lead design, assembly/test, and delivery of custom camera payload integrating thermal, structural, electrical, optical engineering
- Mechanical design for ESPA-class spacecraft research programs, leading propulsion, attitude control, and SWaP trade studies
- CubeSat and Small Satellite working groups supporting mission formulation and expertise to existing programs.

Space Exploration Technologies (SpaceX), McGregor, TX *June 2014-Aug. 2014*
Ground Support Equipment Engineer

Space Systems Loral (SSL), Palo Alto, CA *Jan. 2013-Aug. 2013*
Structural Analyst / Mainbody Design

NASA Goddard Space Flight Center, Greenbelt, MD *June 2012-Aug. 2012*
Magnetospheric Multiscale Mission (MMS) Propulsion Integration and Testing

EDUCATION

University of Colorado Boulder, Boulder, CO *Dec. 2024*
Doctor of Philosophy, Geological Sciences GPA: 3.95/4.00

Cornell University, Ithaca, NY
Masters of Engineering, Aerospace Engineering GPA: 4.00/4.00 *May 2015*
Bachelor of Science, Mechanical Engineering GPA: 3.31/4.00 *May 2014*

AWARDS

Henry A. Waldrop Scholarship 2024, Bruce and Marcy Benson Graduate Fellowship 2023 **($44,000**), Benson Travel Grant Award 2023, GPSG Travel Grant 2023, DPS Hartmann Travel Award 2023, CU Boulder Domestic Travel Grant 2023, Geology Student Travel Scholarship 2023, Graduate School International Travel Scholarship 2021, NSF Graduate Research Fellowship 2020 (**$102,000**), Air Force Technical Initiative 2017, 2018, 2019 (**$200,000**), Thomas J. and Joan T. Kelly Aerospace Prize 2015

SKILLS

Software: Python, Matlab, C, Fortran, Tetracorder, Labview, ArcGIS • **CAD:** Solidworks, OnShape • **FEA:** ANSYS, Fluent, Nastran
Training: XRD, Laser, Cryo, Haz Waste, Chemical Handling (H2O2), Micro FOD, Clean Room, ESD, Solder, Lathe, Mill, 3D Print
Professional Development: MIT Course Physical Principles of Remote Sensing (2018), MIT LL Technical Education Course Hyperspectral Imaging and Remote Sensing (2018), NSREC Radiation Short Course (2017), Small Satellite Conference (2017, 2018)