NOAH MARTIN

U.S. Citizen
Lafayette, IN • (810) 922-7768 • mart1707@purdue.edu • www.linkedin.com/in/martin-n

SUMMARY

Current Planetary Science PhD student at Purdue University that holds a role in the Mars 2020 Perseverance rover's SuperCam instrument engineering operations and science teams. Also holds a position with the optics development team for the OrganiCam instrument. Over three years of total research experience with published work and presentations. Proficient in multiple programming languages and computational software packages.

EDUCATION

Purdue University, West Lafayette, IN 05/2024 – Present
PhD in Planetary Science Advisor: Roger Wiens

Purdue University, West Lafayette, IN Class of 2023
Bachelor of Science in Aeronautical and Astronautical Engineering GPA: 3.52/4.0
Minor in Earth, Atmospheric, and Planetary Sciences

COURSEWORK AND TECHNICAL SKILLS

Relevant Coursework: Planetary Surface Processes**,** Remote Sensing of the Planets, Spacecraft Attitude Dynamics, Spacecraft Design, Satellite Constellations, Thermodynamics, Fluid Mechanics, Atmospheric Science, Electricity and Optics
Technical Skills: Python, MATLAB, IDL, ENVI, C, Java, CATIA V5, AutoCAD, Inventor

WORK EXPERIENCE

OrganiCam Optics Development – Purdue University May 2024 – Present
- Working on the optical design and tolerancing for the OrganiCam instrument using Ansys Zemax OpticStudio.

SuperCam Science Team – Los Alamos National Laboratory and Purdue University May 2022 – Present
- Working as part of the Mars2020 Perseverance rover mission science team. I specialize in analysis of Laser Induced Breakdown Spectroscopy (LIBS) data and microphone audio signals.

SuperCam Engineering Operations Team – Los Alamos National Laboratory and Purdue University May 2022 – Present
- Working on the Mars2020 Perseverance rover mission operations as an engineering Payload Uplink Lead (ePUL) and engineering Payload Downlink Lead (ePDL) for the SuperCam instrument.

Space Data Science & Systems Post-Bachelor Student – Los Alamos National Laboratory May 2023 – May 2024
- Continued studies of soil effects on SuperCam audio signals and LIBS spectra as a part of the SuperCam science team.
- Wrote and submitted an abstract to the 2024 Lunar and Planetary Science Conference.
- Presented a research poster at the 2024 Lunar and Planetary Science Conference.

Planetary Science Undergraduate Research Assistant – Purdue University, West Lafayette, IN January 2023 – May 2023
- Studied the relationship between audio signals and soil properties of soil targets as a part of the SuperCam science team.
- Wrote and submitted an abstract to the 2023 Lunar and Planetary Science Conference.
- Presented a research poster at the 2023 Lunar and Planetary Science Conference.
- Analyzed SuperCam soil datasets for decay of full-width half-maximum spectra values.

Space Data Science & Systems Intern – Los Alamos National Laboratory May 2022 – May 2023
- Conducted an analysis of audio datasets from the SuperCam instrument's microphone as a part of the SuperCam science team.
- Presented a research poster at the 2022 Los Alamos National Laboratory Student Symposium.

WORK EXPERIENCE (CONT'D)

Composite Manufacturing Undergraduate Research Assistant – Purdue University, West Lafayette, IN August 2021 – May 2022

- Conducted material permeability research through experimentation and calculation.
- Experimented with the use of Vacuum Assisted Resin Transfer Molding (VARTM).
- Learned how to conduct basic simulation in the Computational Fluid Dynamics (CFD) software STAR-CCM+.

Summer Undergraduate Research Fellowship (SURF) – Purdue University, West Lafayette, IN May 2021 – August 2021

- Conducted material permeability research through experimentation and calculation.
- Compiled basic machine-learning information for future use in material permeability calculation.
- Published "Permeability Characterization and Machine Learning" in the Purdue 2021 SURF Symposium booklet.
- Presented research at the 2021 Virtual SURF Symposium.

LEADERSHIP POSITIONS

Spacecraft Design Team Project Manager January 2023 – May 2023

- Elected by fellow team members to the position of Project Manager at the beginning of the Spring 2023 semester.
- Led spacecraft design team to complete a mission design architecture for the human exploration of the surface of Mars.
- Held twice-weekly team meetings in which sub-teams would report progress and future work would be assigned.
- Presented key team updates to the teaching staff and peers in bi-weekly presentations.
- Created and presented a mid-semester design review to the teaching staff and peers.
- Orchestrated the creation of a final technical document detailing the mission design architecture developed by the team.
- Produced and presented a final design review to the teaching staff, peers, and a board of reviewers.

Purdue AAE Student Ambassador August 2022 – May 2023

- Selected to represent the school of Aeronautics and Astronautics to serve as a tour guide to prospective students and faculty.
- Presented key information about the school of Aeronautics and Astronautics to prospective and first-year engineering students.

ACTIVITIES AND INTERESTS

FAA Licensed Private Pilot December 2022
Purdue Pilots Incorporated Treasurer January 2023 – May 2023
Purdue Pilots Incorporated Member January 2021 – May 2023
Purdue Astronomy Club Member March 2022 – May 2023
Planetary Science Society of Purdue Member February 2022 – May 2023

PUBLICATIONS

N. D. Martin, H. T. Manelski, R. C. Wiens, S. Clegg; P. B. Hansen, S. Schröder, B. Chide, "LIBS Peak Broadening in Soils on Mars," Lunar and Planetary Science Conference, The Woodlands, TX, March 2024.

N. D. Martin, B. Chide, A. Sheridan, A. Cousin, E. M. Hausrath, O. Beyssac, R. C. Wiens, N. Lanza, "Acoustic and LIBS Profiling of Soils at Jezero Crater, Mars," Lunar and Planetary Science Conference, The Woodlands, TX, March 2023.

N. D. Martin, "Geology on Mars with the SuperCam Microphone," Los Alamos National Laboratory Summer Student Symposium, Los Alamos, NM, August 2022.

N. D. Martin, R. Enos, D. Zhang, "Permeability Characterization and Machine Learning," Presentation and Proceedings Paper at Purdue Summer Undergraduate Research Symposium, West Lafayette, IN, August 2021.

H. T. Manelski, R. C. Wiens, S. Schröder, P. B. Hansen, B. Bousquet, **N. D. Martin**, S. Clegg. "LIBS Plasma Diagnostics with SuperCam on Mars," Lunar and Planetary Science Conference, The Woodlands, TX, March 2024.

PUBLICATIONS (CONT'D)

A. Cousin, O. Beyssac, O. Forni, P.Y Meslin, **N. D. Martin**, B. Chide, E. M. Hausrath, R. Sullivan, F. Poulet, E. Dehouck, J. Lasue, S. Schröder, O. Gasnault, P. Pilleri, R. C. Wiens, S. Maurice, "Soil Diversity on Mars: Comparison Between Gale and Jezero Craters," Lunar and Planetary Science Conference, The Woodlands, TX, March 2023.

M. Elenchezhian, R. Enos, **N. D. Martin,** et. al., "Cure Process Modeling and Characterization of Composites Using In-Situ Dielectric and Fiber Optic Sensor Monitoring," The Composites and Advanced Materials Expo, Anaheim, CA, October 2022.