

Amelia Ascione

Department of Astronomy and Planetary Science | Northern Arizona University

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EDUCATION

Northern Arizona University

Flagstaff, AZ

Ph.D. in Astronomy and Planetary Science

August 2024 - Present

Advisor: Dr. Christopher Edwards

Rutgers University

New Brunswick, NJ

B.S. in Earth and Planetary Sciences

September 2020 - May 2024

Minor in Business & Technical Writing

Undergraduate Thesis: Topographic Slumps and their Relation to Recurring Slope Lineae

RESEARCH EXPERIENCE

Department of Earth and Planetary Sciences | Research Assistant

September 2022 - Present

Advisor: Dr. Lujendra Ojha

Piscataway, NJ

- Identified topographic slumps and recurring slope lineae (RSL) on Mars via HiRISE imagery
- Utilized ArcGIS to track surface modification in order to constrain formation times and determine the seasonalities of topographic slumps and RSL
- Performed topographic analyses of Martian terrain using Digital Terrain Models in ArcGIS
- Completed a thermal inertia survey of slopes across different latitudes using THEMIS data
- Investigated the thermodynamic properties of high-pressure ices on Ganymede and other icy satellites using an open-source MATLAB code called SeaFreeze
- Employed a thermal evolution numerical model to test basal melting scenarios on Ganymede and estimate their effects on the moon's moment of inertia over geologic timescales

Lunar and Planetary Institute | Research Intern

June 2023 - August 2023

Advisors: Dr. Rachel Slank & Dr. Gabriel Eggers

Houston, TX

- Compiled a database of lunar subsurface cavities and used a MATLAB script to determine if they were located in areas with diurnal data coverage from the LRO's Diviner instrument
- Utilized a MATLAB script to combine the geophysical parameters necessary to produce thermal inertia and temperature maximum-to-minimum ratio maps of the lunar surface
- Analyzed MATLAB output using ENVI to determine if thermal inertia or temperature maximum-to-minimum ratio signatures indicative of various subsurface cavities were present

NASA Proposal Writing and Evaluation Experience

September 2022 - December 2022

L'SPACE Academy Program | Principal Investigator

Remote

- Led a team of ten undergraduate students in producing a technical proposal conforming to a NASA solicitation for a device to counter spinal muscle atrophy during spaceflight
- Communicated with subject matter experts in the fields of orthopedics and biomechanics
- Optimized the project by organizing regular team meetings, establishing research objectives, and ensuring that all team members were on target to meet deliverables
- Received training in proposal scoring led by the Chief Technologist at NASA Marshall

Mission Concept Academy

May 2022 - August 2022

L'SPACE Academy Program | Chief Scientist & Lead Astrobiologist

Remote

- Collaborated remotely with a distributed team to produce a 99-page Preliminary Design Review for a conceptual Mars cave exploration mission focused on astrobiology
- Utilized JMARS to obtain remotely sensed data about cave systems on Mars in order to evaluate their geomorphology and perform a trade study of potential landing sites
- Led the science team in research to create the mission's science objectives and physical parameters to be outlined in a Science Traceability Matrix

LEADERSHIP

Rutgers Writing Center

September 2021 - May 2023

Writing Tutor

Piscataway, NJ

- Assessed the writing abilities of 40+ students and designed personalized exercises to improve reading comprehension and written communication skills
- Facilitated discussions with the intent of extracting ideas from tutees and guiding them toward making original and cohesive arguments in their essays

AWARDS & HONORS

NAU Presidential Fellowship

Northern Arizona University 2024

Paul Robeson Scholar

Rutgers University 2024

Vinton Gwinn Award

Rutgers University 2024

New Jersey Space Grant Recipient

NJ Space Grant Consortium 2023

Dean's List

Rutgers University 2020-2024

ABSTRACTS

A. R. Ascione, L. Ojha, M. Chojnacki, 2024. Topographic Slumps and their Relation to Recurring Slope Lineae on Mars, *55th Annual Lunar and Planetary Science Conference*.

A. R. Ascione, R. A. Slank, G. L. Eggers, 2024. Investigating Lunar Subsurface Cavities Using Thermal Inertia and Temperature Maximum to Minimum Ratios, *55th Annual Lunar and Planetary Science Conference*.

CONFERENCES / PRESENTATIONS

Rutgers Dept. of Earth and Planetary Sciences Spring Poster Session	April 2024
NJ Space Grant Consortium Academic Year Internship Poster Session	April 2024
55th Annual Lunar and Planetary Science Conference (Poster & Oral)	March 2024
38th Annual LPI Summer Intern Conference (Oral)	August 2023

SKILLS

Software: ArcGIS, ArcMap, JMARS, MATLAB, ENVI, Excel, PowerPoint, Word

Technical Writing: Grants, Proposals, Research Papers, White Papers, Reports, Presentations

CERTIFICATES

Technical Writing Certificate	Rutgers University 2023
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References available upon request