

SAMANTHA A. MORUZZI

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EDUCATION

- PhD** **The University of Arizona**, The Lunar and Planetary Laboratory Expected: 2025
Thesis Advisor: Dr. Jeff Andrews-Hanna
- BS** **Cornell University**, Earth and Atmospheric Science 2016-2020
Concentration: Planetary Science
Minor: Italian
GPA: 3.63
Senior Honors Thesis: “Investigating Sub-Resolution Surface Properties of Comet 67P/Churyumov-Gerasimenko from Optical Photometry and Hapke Modeling”

PUBLICATIONS

Published Papers

Reath, K., Pritchard, M. E., **Moruzzi, S.**, Alcott, A., Coppola, D., & Pieri, D. (2019). The AVTOD (ASTER Volcanic Thermal Output Database) Latin America archive. *Journal of Volcanology and Geothermal Research*.

Reath, K.A., Pritchard, M., Poland, M., **et al.** (2019). “Thermal, deformation, and degassing remote sensing time series (CE 2000–2017) at the 47 most active volcanoes in Latin America: Implications for volcanic systems,” *Journal of Geophysical Research-Solid Earth*, 124

PRESENTATIONS AND SEMINARS

The Lunar and Planetary Science Conference March 2020
LPSC, Houston, TX- Canceled due to COVID-19| Poster and Abstract Title: “Thrust Faulting on Venus: Tectonic Modeling of the Vedma Dorsa Ridge Belt”

The Lunar and Planetary Science Conference March 2020
LPSC, Houston, TX- Canceled due to COVID-19| Poster and Abstract Title: “Investigating Sub-Resolution Surface Properties of Comet 67P/Churyumov-Gerasimenko from Optical Photometry”

American Geophysical Union Conference Fall Meeting December 2019
AGU Fall Meeting, San Francisco| Poster and Abstract Title: “Investigating Sub-Resolution Surface Properties of Comet 67P/Churyumov-Gerasimenko from Optical Photometry”

The 2019 LPI Summer Intern Conference August 2019
The Lunar and Planetary Institute, Houston, TX| Presentation and Abstract Title: “Thrust Faulting on Venus: Tectonic Modeling of the Vedma Dorsa Ridge Belt”

Earth and Atmospheric Science Student Association Spring 2019 Symposium May 2019

Cornell University, Ithaca, NY | Poster Title: “Investigating the Surface Properties of Comet 67P/Churyumov-Gerasimenko from Optical Photometry”

Coordinator and mediator for Undergraduate Research Presentations

The Scientista Symposium

March 2019

The Scientista Symposium, Boston, MA | Poster Title: “Investigating the Surface Properties of Comet 67P/Churyumov-Gerasimenko from Optical Photometry”

Earth and Atmospheric Science Student Association Fall 2018 Symposium

December 2018

Cornell University, Ithaca, NY | Poster Title: “Characterizing Morphologies of Comet 67P/Churyumov-Gerasimenko”

Coordinator and mediator for Undergraduate Research Presentations

Science of Earth Systems Student Association Spring 2018 Symposium

May 2018

Cornell University, Ithaca, NY | Poster Title: “Satellite Detection of Thermal Anomalies at Latin American Volcanoes”

Coordinator and mediator for Honors Thesis Presentations

Science of Earth Systems Student Association Fall 2017 Symposium

December 2017

Cornell University, Ithaca, NY | Poster Title: “Volcanic Thermal Anomalies Detected by Satellite in Latin America: Precursors to Eruptions?”

Earth and Atmospheric Science Andes Seminar

November 2017

Cornell University, Ithaca, NY | Seminar Topic: AVTAD: ASTER Volcanic Thermal Anomaly Database for 47 Latin American Volcanoes of Interest

Presented alongside Dr. Kevin Reath

Science of Earth Systems Student Association Spring 2017 Symposium

May 2017

Cornell University, Ithaca, NY | Poster Title: “Volcanic Thermal Anomalies Detected by Satellite: Precursors to Eruptions?”

RESEARCH EXPERIENCE

Cornell University, Ithaca, NY

Sept. 2018-Present

Student Research Assistant, Supervisor: Dr. Alexander Hayes

Senior Honors Thesis Research

- Analyzing photometric properties of characteristic terrain types of Comet 67P/Churyumov-Gerasimenko as observed by the European Space Agency (ESA) Rosetta’s OSIRIS narrow angle camera.
- Creating high resolution phase curves comparing radiance factor, I/F, with phase angles for 11 available filter wavelengths and fitting them to Hapke photometric models in order to derive the best fit coefficients.
- Constraining roughness factors and dielectric constants in each region indicative of erosional and active surface processes.

LPI Summer Intern Program in Planetary Science, Houston, TX

Summer 2019

LPI Summer Intern, Supervisor: Dr. Walter S. Kiefer

- Performed elastic dislocation modeling of thrust faulting along the Vedma Dorsa Ridge Belt in Llorona and Vellamo Planitiae on Venus in order to constrain faulting parameters such as fault displacement, faulted layer thickness and fault dip angle.
- Determined estimates for paleothermal gradient and lithospheric heat flux at the time of ridge belt formation based on best fit values for faulted layer thickness, improving our understanding of the lithospheric properties and conditions under which the ridge belt formed.

Cornell University, Ithaca, NY

Summer 2018

Student Research Assistant, Supervisor: Dr. Matthew Pritchard and Dr. Rowena Lohman

- Acquired and analyzed InSAR data of Ithaca, Lansing and Tully Valley, NY to identify deformation and subsidence signals in these areas. Research in conjunction with CLEAN and Cornell University's Earth Source Heat Project

Cornell University, Ithaca, NY

Jan. 2017-May 2018

Student Research Assistant, Supervisor: Dr. Matthew Pritchard

- Created a database of temperature time series for approximately 330 volcanoes in Latin America using thermal images from the NASA/Japan funded ASTER (Advanced Spaceborne Thermal Emission Reflection Radiometer) mission.
- Studied thermal anomalies as precursors to eruptions and comparing the manual detection to the algorithmic detection by JPL created and run AVA (ASTER Volcano Archive)

HONORS AND AWARDS

NSF Graduate Research Fellowship Program Honorable Mention	2020
CALS Academic Excellence Award in Earth and Atmospheric Science	2020
Michael W. Mitchell Memorial Fund/Cornell EAS Scholarship	2019
Society of Exploration Geophysicists/Excel Geophysical Services Scholarship	2019
American Association of Petroleum Geologists/L. Austin Weeks Undergraduate Award	2019
Society of Exploration Geophysicists/Earl D. & Reba C. Griffin Memorial Scholarship	2018
American Institute of Professional Geologists Undergraduate Scholarship	2018
Cornell Engineering Learning Initiatives Research Student Grant	Summer 2017
Society of Exploration Geophysicists/Landmark Scholarship	2017
National Organization of Italian American Women Scholarship Award	2017
Society of Exploration Geophysicists/Anadarko Scholarship	2016
Dean's List 5 Semesters	

TEACHING EXPERIENCE

Cornell University, Ithaca NY

Fall 2017-Present

EAS 1540/1560: Introduction to Oceanography (Teaching Assistant)

- Graded labs, homework and proctored examinations for undergraduate course of approx. 1100 students
- Facilitated weekly laboratory sections.
- Worked with other teaching assistants and professor to develop projects and newsletters to engage students' interest in the course material.

The Lunar and Planetary Institute, Houston, TX

July 2019

Sky Fest-Apollo 11: Looking Back to Move Forward

- Led educational activities on lunar phases and the Earth's interior for elementary and middle school students.

Cornell University, Ithaca NY

April 2019

Cornell University SPLASH!: Introduction to Earth and Space Sciences

- Taught an introductory course on Earth and Space Sciences to middle school and high school students from around the northeast.
- Course emphasized the connections between aspects of the environment as well as the solar system.

Cornell University, Ithaca NY

April 2019

Expanding Your Horizons: How to Make a Comet

- Taught a course on the importance of comets in our solar system and their role in the origin of life to middle school girls from the Ithaca area.
- Course included a hands-on experiment on how to artificially make a comet.

ADDITIONAL SKILLS

Proposal Writing: NSF Graduate Research Fellowship (2020 Honorable Mention); Cornell University Engineering Learning Initiatives Summer Research Grant (Received)

Programming: Unix/Linux, Python, MATLAB

Applications: Coulomb 3.3, ArcGIS, ENVI, USGS Glovis, NASA Reverb Echo, ASF Vertex Data Portal, ISCE, Seismic Unix, Oasis Montage: Geosoft, Google Earth Engine

Languages: Italian – Writing/Reading/Conversational Proficiency: Intermediate

AFFILIATIONS

The Scientista Foundation

Fall 2016-Present

Cornell University Chapter

- Present research at the annual national symposium.
- Organize leadership summits for middle school and high school female students to encourage their interest in STEM.
- Network with professionals in fields of interest.

Earth and Atmospheric Science Student Association (EASSA)

Fall 2016-Present

Co-President| Cornell University

- Organize biannual undergraduate research symposiums.

- Coordinate information sessions regarding graduate school, course selections and networking events for Earth and Atmospheric Science majors.

Society of Exploration Geophysicists Student Member

June 2016-Present

- Mentored by society member from University of Texas at Austin. Discussed internship opportunities and future career goals.

Cornell Undergraduate Research Board Peer Mentorship Program

Fall 2016, Spring 2017

- Worked with student mentors and gained CV/Resume writing and interview skills.

Hudson Mohawk Professional Geologists Association and NYSCPG Student Member

August 2015-Present | Albany, NY

- Attend meetings and discuss careers and geological research with professional geologists in the Capital District.

Phi Sigma Sigma Philanthropy Chair-Cornell Chapter

Fall 2017-Spring 2018

- Coordinated and organized all philanthropy events for Phi Sigma Sigma Sorority-Cornell Chapter, including campus wide fundraising galas.