VINCENT SOLDANO

EDUCATION

MS	University of Nevada – Reno, Geology Graduate Student, current GPA: 3.64	Summer 2027 (expected)
BS	University of Nevada - Reno, Geology Undergraduate Student, cumulative GPA: 3.64	Fall 2023
AS	Sierra College, Natural Sciences	Spring 2020

HONORS AND AWARDS

- **Mission Support and Test Services Undergraduate Research Fellowship (MSTS)**
  Award $2000.00 2023
- **Women's Auxiliary to the American Institute of Mining Engineers (WAAIME) Scholarship**
  Award $4000.00 2022
- **Lhoist Scholarship** 2021-2022
  Award: $2500.00
- **John V. Eisinger Scholarship** 2021-2022
  Award: $1300.00
- **Winner of the Vodopia-Hasson Poster Competition at Caltech** 2022
  Award: $150.00
- **University of Nevada – Reno, College of Science, Dean's List** 2021-2022
  Spring 2021 and Spring 2022
- **Summer Session Undergraduate Award** 2021
  Award: $1500.00

ACADEMIC RESEARCH

University of Nevada, Reno, NV **Aug 2024 to Present**
Graduate Student, Advisor: Dr. Wendy Calvin

- **Graduate Research Project: "From Pixels to Provinces: Cross-Platform Mineral Mapping at Cuprite, NV"** Utilizing UAS-based hyperspectral imagery and AI to enhance and improve mineral detection across regional (airborne and satellite) imagery.

University of Nevada, Reno, NV Aug 2021 to Fall 2023
Student Researcher Level 2, Advisors: Dr. Wendy Calvin and Dr. Scott McCoy

- "**Analysis of Hyperspectral Data from Drone-based Monitoring in Perry Canyon, NV**" Mapping soil mineralogy using hyperspectral data to search for potentially acid generating material draining into Perry Creek.

- "**Investigating Martian Deltas for Evidence of Paleoshorelines**"
  Utilizing high-resolution stereo images to create high spatial resolution digital elevation models of Martian deltas to search for proximal horizontal bench features.

- "**Quantifying the Persistence of Martian Lakes**"
  Investigation of Martian deltas based on their level of fluvial incision to place constraints upon the activity of the Martian hydrologic cycle through time.

California Institute of Technology, Pasadena, CA Summer 2022
WAVE Fellows Summer Research Intern, Advisor: Dr. Michael Lamb

- "**Mapping Arctic Permafrost and Floodplain Evolution Using LiDAR**"
  Created a relative age map of the Yukon River floodplain near Beaver, Alaska using LiDAR and GIS. Then used vegetation type and height to better constrain permafrost extent.

Sierra College, Rocklin, CA Fall 2019
Student Researcher, Advisor: Dr. Benjamin Samudio

- **Chemistry Honors Project**
  Built molecules using an augmented reality application to create a potential SARS therapy treatment.

ABSTRACTS AND PRESENTATIONS

Soldano, V. A., S. W. McCoy, W. M. Calvin, and K. D. Adams (2022), Ubiquity of Unincised Martian Deltas Holds Clues to Understanding Hydrology on Mars, in *53rd Lunar and Planetary Science Conference*, Abstract #1714, Lunar and Planetary Institute, Houston. Poster presentation.

Soldano, V. A., S. W. McCoy, W. M. Calvin, and K. D. Adams (2023), Investigating Martian Deltas for Evidence of Paleoshorelines, in *54th Lunar and Planetary Science Conference*, Abstract #1376, Lunar and Planetary Institute, Houston. Poster presentation.

Soldano, V. A. and W.M. Calvin, Analysis of Hyperspectral Data from Drone-based Monitoring in Perry Canyon, NV, planned submission to 119th Annual Meeting of the Geological Society of America Cordilleran Section, May 17th – 19th, 2023

Soldano, Vincent, Wendy Calvin, and Scott McCoy. "Analysis of Hyperspectral Versus Multi-Spectral Data from Drone-Based Acid Mine Drainage Monitoring in Perry Canyon, NV." In *Geological Society of America Abstracts*, vol. 55, p. 392036. 2023.

V. Soldano, W. Calvin, E. Hartshorn, S. Hibbard, and B. Sion, (2025). Comparing hyperspectral imaging platforms for monitoring and remediation of acid mine drainage: A case study at the Leviathan Mine, California, USA," 2025 IEEE International Geoscience and Remote Sensing Symposium: Brisbane, AU, August 3, 2025-August 8, 2025

PUBLICATIONS AND TECHNICAL REPORTS

Geyman, E. C., Ke, Y., Magyar, J. S., Reahl, J. N., **Soldano, V. A**., Brown, N. D., West, A. J., Fischer, W. W., Lamb, M. P. (2025). Scaling laws for sediment storage and turnover in river floodplains, *Science Advances*, 11 (15), American Association for the Advancement of Science: Science Advances, April 11, 2025, 10.1126/sciadv.adu8574

Hartshorn, E. J., **Soldano, V. A.**, Lobsinger, M. A., Sion, B. (2025). EXPLORING EFFECTS OF NATURAL MICROTOPOGRAPHIC SOIL SURFACE ROUGHNESS ON SPECTRAL IMAGING USING 3D PRINTED PHYSICAL MODELS, 2025 IEEE International Geoscience and Remote Sensing Symposium: Brisbane, AU, August 3, 2025-August 8, 2025

Toller, J. A., Rybarski, S. C., Korotkin, M., Lancaster, J., Jasoni, R. L., Lobsinger, M. A., Briem, C. M., Uka, N., Harsha, G. L., Chameroy, E., **Soldano, V. A.**, Page, D. J., Sion, B. (2025). PMERS Data Collection and Analysis of Thermal Imagery Captured Over Surface and Buried Targets Across Diverse Environmental Conditions, Report prepared for U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory under contract W903E520C0015

Rybarski, S. C., Korotkin, M., Toller, J. A., Nadler, C., Jasoni, R. L., Lancaster, J., Lobsinger, M. A., Dunkerly, C. W., Page, D. J., Minor, T. B., Briem, C. M., Uka, N., Hausner, M. B., Harsha, G. L., **Soldano, V. A.**, Sion, B. (2025). Environmental Conditions Controlling Spatial and Temporal Thermal Contrast of Buried and Surface Targets: Synoptic Report, Report prepared for U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory under contract W903E520C0015

Hartshorn, E. J., Page, D. J., Langston, A., **Soldano, V. A.**, Feldman, A. D., Staley, S. E., Wriston, T. A., Uka, N., Korotkin, M., Briem, C. M., Kielhofer, J., Hancock, D. J., Sion, B. (2025). 5.6. YPG 3-Dimensional (3D) Point Cloud Modeling [PRS #6], 37, U.S. Army Yuma Proving Ground PWS: Environmental Characterization for Test Operations, YPG

OTHER PRESENTATIONS

Caltech Summer Symposium Recorded Video Presentation and Poster Presentation,
"Mapping Arctic Permafrost and Floodplain Evolution Using LiDAR," Caltech WAVE Fellows Summer Symposium, August 18th, 2022.

Poster Presentation, "Quantifying the Persistence of Martian Lakes," Wolfpack Discoveries UNR Undergraduate Fall Research Symposium, December 7th, 2021.

Podcast Presentation, "Deltas on Mars (NASA!)," Thesis Thursdays: Science with Sahara", November 24th, 2021.Listen at: https://www.spreaker.com/user/14707023/vince-soldano-deltas-on-mars

AFFILIATIONS

- Geological Society of America, Planetary Geology Division, 2022 - Present
- Geological Society of Nevada, 2021 – Present
- Reno Gem and Mineral Society, 2021 - Present
- Society for Mining, Metallurgy, and Exploration, 2021 – Present
- University of Nevada – Reno Astronomy Club, 2021 – 2023
- Geosciences Education & Mentorship Support, 2021 – 2022
- Phi Theta Kappa Honor Society, 2019 – Present

COMMUNITY SERVICE

Nevada's Recovery and Prevention Community (NRAP), Meeting Secretary
NRAP provides an environment of nurturing support and peer connections for students recovering from substance and behavioral addictions and students choosing a substance-free lifestyle. I hosted a weekly 12-step meeting on campus to offer hope, guidance, and support for students seeking recovery from alcohol and substance abuse.

SKILLS

- FAA Part 107 Certification # 4940056
- UAS Commercial Flight Experience
- Hyperspectral Imagery Data Collection
- Hyperspectral Imagery Analysis
- Hyperspectral Imagery Interpretation
- Extensive Field Experience
- Field Equipment Construction
- Site Surveying

COMPUTER SKILLS

- ArcGIS
- QGIS
- JMARS
- USGS Earth Explorer
- ENVI
- Agisoft Metashape
- Python
- MARSSI
- Google Earth Pro
- HiView
- Microsoft Suite
- POSPac UAV

REFERENCES

Dr. Wendy Calvin, Department of Geological Sciences and Engineering Chair, Mentor
Department of Geological Science and Engineering
University of Nevada - Reno
Email: wcalvin@unr.edu

Dr. Scott McCoy, Professor, Research Project Advisor
Department of Geological Science and Engineering
University of Nevada - Reno
Email: scottmccoy@unr.edu

Dr. Mike Lamb, Professor, WAVE Fellows Summer Internship Mentor
Division of Geological and Planetary Sciences
California Institute of Technology
Email: mpl@caltech.edu