

Inland Geological Society

April 2025

Newsletter of the Inland Geological Society Volume 37 No. 4

Next Meeting:

**Tuesday,
April 15th**

Time:

**Social: 6:00pm
Dinner 6:15pm
Presentation:
7:00pm**

Location:

**3 Iron
Brewing Company
898 South Via Lata,
Suite A
Colton, CA 92324**

Coming to Dinner?

**Students \$10
IGS Members \$12
Non-Members \$15
Please RSVP by
April 11th to:**

rsvp.igs@gmail.com

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April Speaker: Jose Eduardo Jimenez

"Degradation of Martian Glacier-Like Forms in Relation to the Observed Evolution of Emmons Glacier on Mount Rainier, Washington"

Abstract:

On Mars, glacier-like forms (GLFs) have been mapped across regions of the mid-latitudes, and are characterized by their lobate morphology that has a similar appearance to terrestrial glaciers. Visual similarities between terrestrial glaciers and Martian GLFs include surface features oriented with the direction of ice flow and landforms that appear to be depositional. Interpretations of the evolution of GLFs that led to the modern glacial landform record on Mars are made using available remote sensing data. To further evaluate evolutionary pathways for GLFs, we use the debris-covered Emmons Glacier, located on Mount Rainier, WA as a basis for comparison. Emmons Glacier has a long record of remote and ground-based observations of the glacier surface. The relatively rapid recession of Emmons Glacier offers a unique opportunity to observe changes in glacier surface morphology. In this study, we use our remote sensing techniques such as digitization of glacier areas from 1951 to 2023, Digital Elevation Model (DEM) differencing, and 'Geomorphon Landforms' to study the evolution of Emmons Glacier. Additionally, manually excavated pits on the debris-cover provides insights into how rock cover can hinder or accelerate melt. For Mars, we selected GLFs from a previously mapped inventory and targeted 6 GLFs covered by the High-Resolution Imaging Science Experiment DEMs for Geomorphon analysis. This study draws parallels between the observed evolution of Emmons Glacier and the modern state of selected Martian GLFs, adding to our understanding of glacial history in different planetary environments.

Speaker Biography:

Jose Eduardo Jimenez is a Master's student in Geology at California State University San Bernardino (CSUSB), where he combines remote sensing technologies with field-collected data to analyze terrestrial glaciers and draw parallels to cryospheric processes on Mars. Jose began his journey at Riverside City College, earning an Associate of Science before transferring to CSUSB. There, he completed his Bachelor of Arts in Geology, cultivating a foundation in geospatial analysis and Earth processes. As a student researcher, he focuses on integrating cutting-edge remote sensing techniques with ground-truth fieldwork to validate models applicable to both Earth's changing glacial landscapes and Martian ice formations. Jose's work underscores the value of comparative planetology and reflects a commitment to advancing geoscience through innovative, cross-disciplinary methodologies.

ANNOUNCEMENTS:

The Inland Geological Society will meet the second Tuesday of each month at:

3 Iron Brewing Company

898 South Via Lata , Suite A
Colton, California 92324

(<https://www.3ironbrewingco.com>)

Our next meeting is scheduled for Tuesday, May 13, 2025.

Visit our:

- Webpage at <https://www.inlandgeo.org>.
- Facebook Page at <https://www.facebook.com/groups/InlandGeo/>.

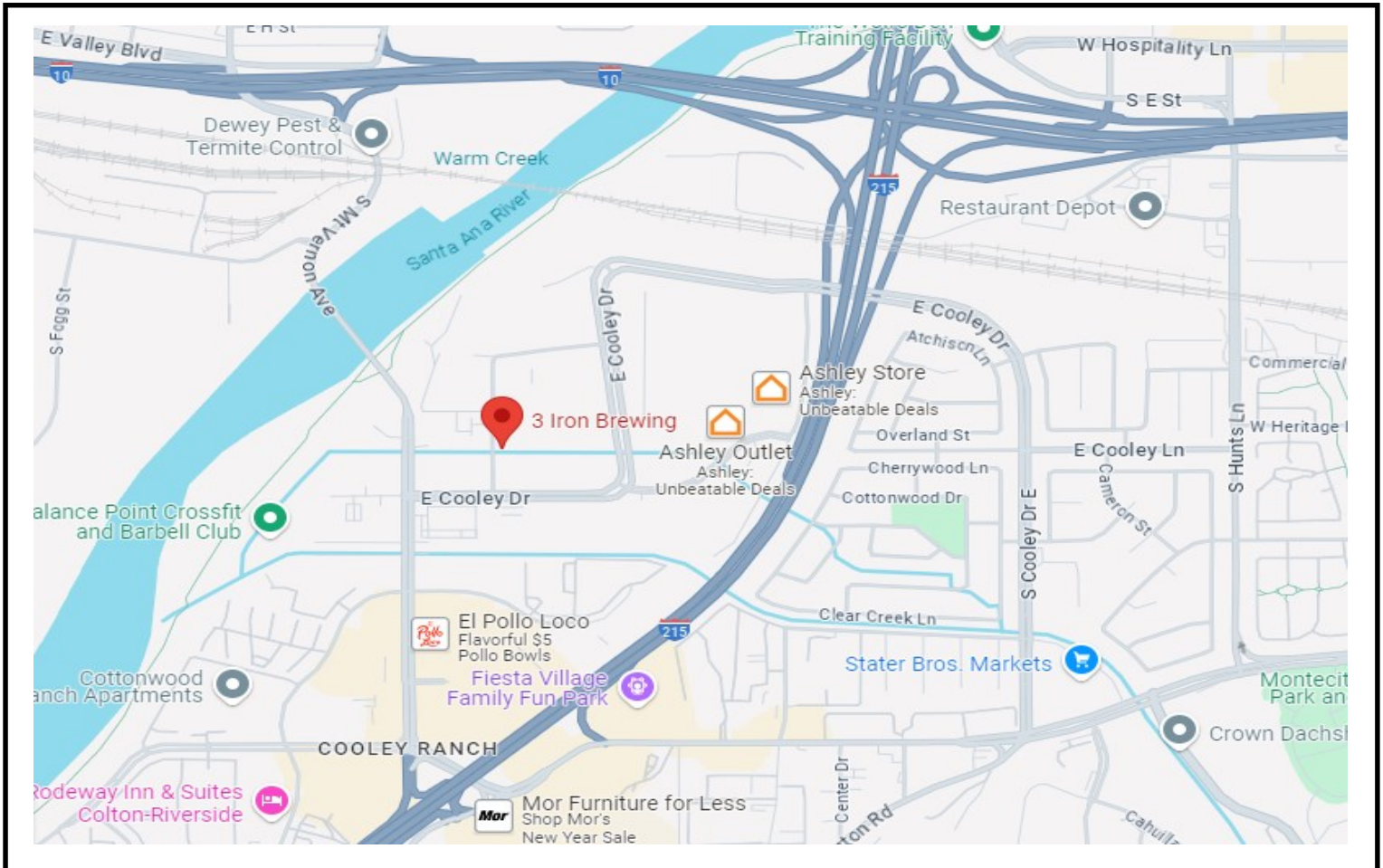
If you are interested in serving as the Inland Geological Society Membership Chair, please email Margaret Gooding at mgooding@roadrunner.com.

IGS coffee mugs are available at the monthly meetings for \$10. Get yours at the upcoming meeting!





898 South Via Lata , Suite A
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(<https://www.3ironbrewingco.com>)



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