



Colorado Scientific Society – Earth Sciences since 1882
The oldest scientific society in the Rocky Mountain region

Founded in 1882, the objective of the Society is to promote the knowledge and understanding of Earth science, and its application to human needs. Samuel Franklin Emmons, 1841-1911, was “Geologist in Charge” of the Colorado Division of the U.S. Geological Survey when it was established in 1879 and was the first president of the Society. We focus primarily on earth science, welcoming members with interests in all fields of science. [Learn more.](#)

November-December 2025 Colorado Scientific Society Newsletter

CSS November Meeting
Poster session and “lightning talks” by early career and student earth scientists
Thursday, Nov. 20, 2025 at 6:45 p.m.

This is an opportunity for early career and student earth scientists to present their research via a poster and a Lightning Talk (3 minutes) on their research.

If you are a student or early career earth scientist and want to participate in the Colorado Scientific Society 2025 Poster Night, sign up here:

[Signup for CSS Poster Night](#)

All are welcome – no admission charge

6:30 pm – Social time begins at Golden Calvary Episcopal Church. Enter off 14th St.

6:45 pm – Join Zoom meeting, if attending remotely

7:00 PM – Meeting starts.

Please arrive early. Church doors are locked, and **no one will be at the door to let you in after 7:00 pm.**

Link to Join CSS November Meeting via Zoom

CSS invites you to Join our meeting via Zoom on Thursday, November 20th at 6:45 pm.

[Click to Join CSS Zoom Meeting](#)
from PC, Mac, Linux, iOS or Android

Details about attending the in-person Meeting at Golden Calvary Church follow details of the presentations.



2024 Poster Night, Viewing the posters

We will have pizza with beer and soft drinks for refreshments.
This meeting will be held at Calvary Church Golden. See details below.



2024 Lightning Talks

[Link to archive of 2024 Poster Night with video](#)

Presentations and Presenters

This will be updated on our website as needed if more presenters sign up.

Thermometric, Geochronologic, and Petrologic Evidence for an Oligocene Thermal Pulse in the Sangre de Cristo Range, Southern Colorado

Samantha Malavarca, Colorado State University

New Detailed Geologic Mapping of the Sand Creek and Little Sand Creek Fault Systems, Sangre De Cristo Mountains, Colorado

Dylan Frawley, Colorado State University

Neogene Southwestern U.S. Temperatures Paced by Global Temperature Change

Rachel Bernstein, Colorado State University

Preliminary geology of the northern half of the Loveland Pass 7.5 minute Quadrangle, central Colorado Front Range

Joshua Thomas, Colorado School of Mines

Subsurface Dynamics of Microplastics in the Land of Headwaters

Ashley Ford, Colorado State University

Deformation along the Nashoba-Avalon terrane boundary in Eastern Massachusetts

Nikhil Arolkar, Department of Geology and Geological Engineering, Colorado School of Mines

Sign up for CSS 2025 Poster Night Here

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In-person Meeting at Golden Calvary Church

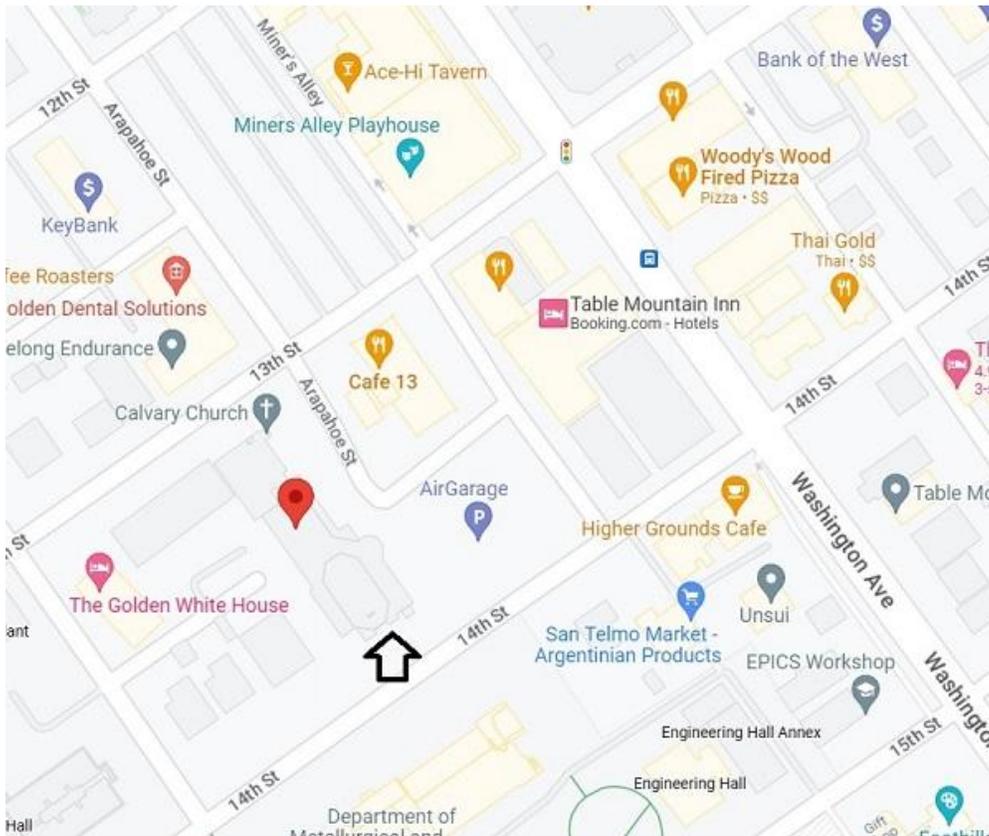
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Calvary Church in Golden. Enter

at arrow on map.

[1320 Arapahoe St, Golden, CO 80401](#)

Click on link to open a Google map.

Enter off 14th St., going in via the main glass doors on 14th St.

Do **not** enter the old church above 13th St.

Go through building following the CSS signs to the Community Rooms 1 and 2, where we meet.

The church doors must stay locked, and we will have a person to let you in at the doors off 14th st.

They want to see the presentation too, so **please arrive before 7:00 pm.**

There will be a phone number that you can text to be let in if you arrive late.

Parking On street parking is available close by, west of Washington Ave in downtown Golden.

The AirGarage parking structure, which can be entered from Arapahoe St., is \$3.00 for three hours.

For free parking: 14th Street usually has parking within a block of the entrance to the Church.

Coming from the north (CO 93) or northeast (CO 58, between North and South Table Mountains), come southeast on Washington Street, turn right (southwest) on 13th Street, Turn left on Cheyenne St. Go up the hill and turn right on 14th Street. Park on your right.

Coming from the east or or southeast on US 6 (6th Ave.), exit US 6 onto 19th St. going NE. Turn left on Illinois St. Go through the Mines campus and turn right on 14th St. If you can, park after Cheyenne St.

If 14th St. is full, park along Cheyenne St or in parking lots west of Washington St. and go up the hill along the church by Arapahoe St.

Copies of *The Geology of Boulder County* by Raymond Bridge (2004) will be available for \$20 at the meeting.

CSS December Potluck, Business Meeting, and 2025 President's Address

Geochronologic data reveal late Pleistocene to Holocene debris-flow history and wildfire association within Whiskeytown National Recreation Area, Klamath Mountains, northern California

Tuesday, December 2, 2025, 5:30 p.m.

Presentation by: **Shannon Mahan**, U. S. Geological Survey
and Colorado Scientific Society 2025 President

At New Terrain Brewing Company, 16401 Table Mountain Parkway,
Golden, CO

Come to our in-person Potluck Dinner at New Terrain Brewing Company for 50 people, or join us on Zoom

The location of New Terrain Brewery and details of the potluck dinner are described after CSS Annual Business Meeting agenda and Shannon Mahan's presentation.

Colorado Scientific Society Annual Business Meeting, Program:

2025 Best Paper Award

2025 CSS Treasurer's Report by James Paces

Election of new Colorado Scientific Society Councilors

Presentation of the Silver Gavel from the outgoing President of the Colorado Scientific Society to the incoming CSS President

See [Silver Gavel](#) and page 7 of the [History of the Colorado Scientific Society](#) for details.

Election of new Colorado Scientific Society President-Elect (see our CSS website for the slate to be posted of our nominated 2026 CSS officers)

President's Address: **Geochronologic data reveal late Pleistocene to Holocene debris-flow history and wildfire association within Whiskeytown National Recreation Area, Klamath Mountains, northern California**

Authors:

Shannon A. Mahan^a, John R. "Jack" Wood^b, Amy E. East^c, Eric L. Bilderback^d, Emma T. Krolczyk^a, Brian A. Rasmussen^e, Karina S. Zyatitsky^f, Leticia Hallas^g

^a U.S. Geological Survey, Luminescence Geochronology Lab, Denver Federal Center, Denver, CO 80225

^b National Park Service, Geologic Resources Division, Denver Federal Center, Denver CO 80225

^c U.S. Geological Survey, Pacific Coastal and Marine Science Center, 2885 Mission St., Santa Cruz, CA 95060

^d U.S. Geological Survey, Geologic Hazards Science Center, Golden, CO 80401

^e National Park Service, Lassen Volcanic National Park, PO Box 100, Mineral, CA 96063

^f Conservation Legacy, Scientists in Parks Program, 701 Camino del Rio Suite 101, Durango, CO 81301

^g Contractor, U.S. Geological Survey Pacific Coastal and Marine Science Center, 2885 Mission St., Santa Cruz, CA 95060

Abstract: Understanding the local to regional history of extreme events such as debris flows and floods provides context to plan for and mitigate these hazards to life, property, and infrastructure. The Klamath Mountains of northwestern California have experienced both debris flows and devastating wildfires. Whiskeytown National Recreation Area (WHIS) is at the heart of this range and has a wealth of debris-flow-related landforms. Gaining an understanding of pre-historic flows and the relationship with fire or other potential triggers can help mitigate future problems.

Optically stimulated luminescence and radiocarbon analyses from sediment and entrained organics in undisturbed facies, including beneath partially buried boulders, establishes a chronology of paleo-events in WHIS. The levee deposits indicate a repetition of debris flows during the latest Holocene, every 125-150 years, since 850 yr. Larger flows occurred, with a record elucidated from debris-flow deposits along Clear Creek, with middle Holocene ages, ca 2600 to 5500 yr, most of which have sufficient concentrations of charcoal to indicate origins as post-fire debris flows. Deposits at higher elevations show events from the latest Pleistocene ca. 13,000 yr. This geochronology indicates that these are not singular events but are relatively common and inherent to the geomorphic processes shaping this landscape.



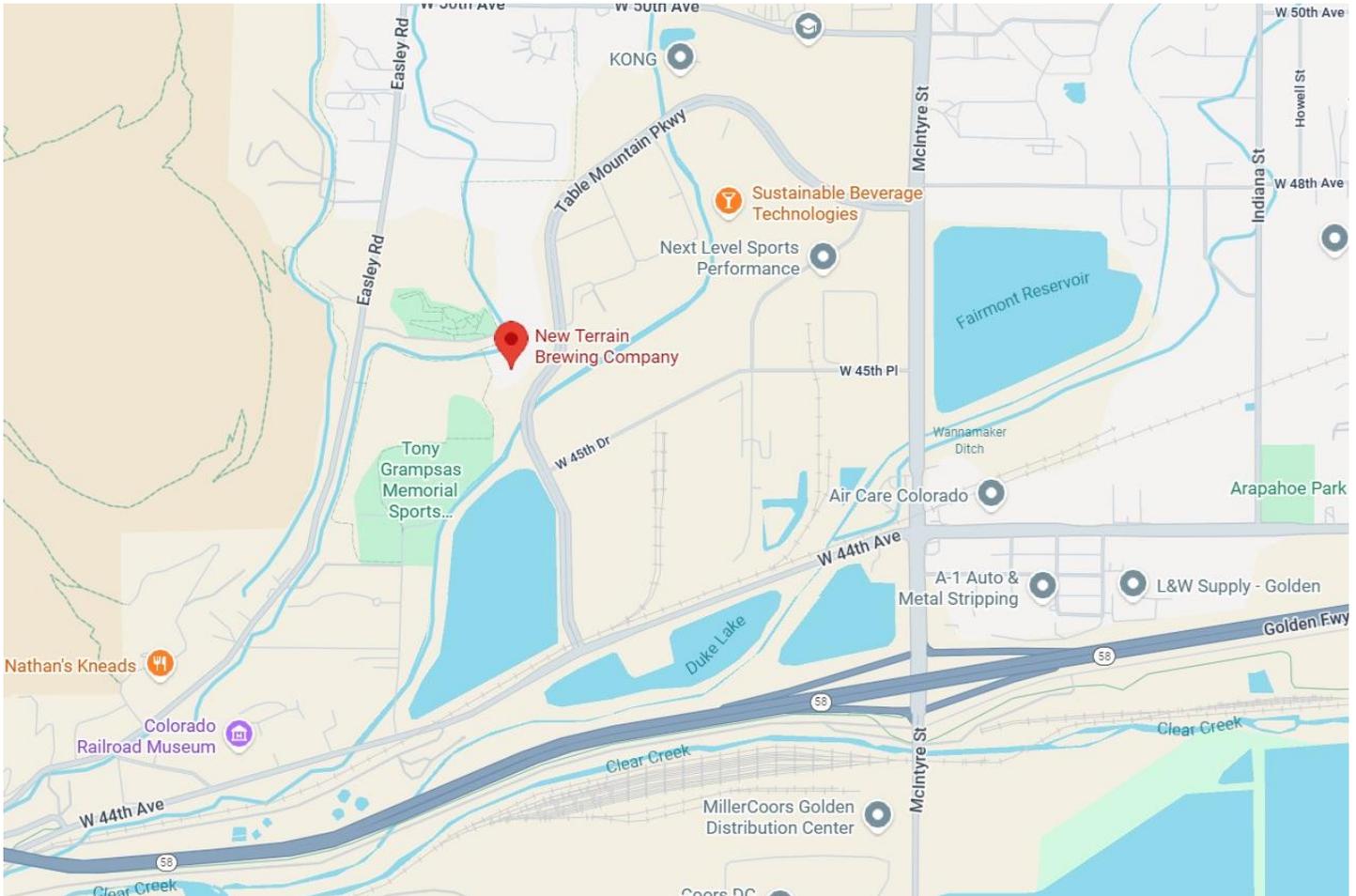
Shannon Mahan, Colorado Scientific Society 2025 President and Director of the USGS Luminescence Geochronology Lab

New Terrain Brewing Company

16401 Table Mountain Pkwy, Golden, CO 80403

New Terrain Brewing company is southeast of North Table Mountain, on Table Mountain Parkway, which is north of 44th Ave.

There is ample parking at New Terrain.



New Terrain Brewing Company is southeast of North Table Mountain

CSS Potluck Dinner – after 5:30 pm

- A baked ham and dinner rolls will be provided; attendees are invited to bring any other main or side dishes, appetizers, salads, desserts, etc. No registration to attend is needed.
- Bring a main course entree, a side dish, salad, or dessert, etc. to share with other CSS members.
- We will not be able to cook at New Terrain Brewery. We should be able to warm up dishes.
- CSS will provide plates, bowls, cups, dishes, napkins and eating utensils.

- Purchase a selection of beers and ales from New Terrain (and help cover our expenses for the night). Please do **not** bring your own alcoholic beverages.
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Please pay your CSS dues for 2025!

You may pay dues online or print out a PDF of the membership form and mail it to us with a check. Continuing your membership in CSS will enable us to continue all our ongoing programs, including our field trips, virtual meetings, Student Research Grants, and more.

See [Membership and Donations](#) for the CSS membership PDF and our online membership payment form.

Regular CSS Membership is \$25;

Student Membership, \$5;

Life Membership, \$395.

Send your membership payment, if not done through [our online membership payment form](#), to Colorado Scientific Society P.O. Box 150495 Lakewood, CO 80215-0495.

Thank you!

New and renewal memberships in November and December are also good for the next year.

[Read past Colorado Scientific Society Newsletters](#)

[Archive of Past Colorado Scientific Society Meetings](#)
[Including video recordings of most meetings](#)

About the Colorado Scientific Society

The Colorado Scientific Society was founded in 1882 as a forum for the exchange of observations and ideas on the topics of earth science. Lecture topics largely focus on earth science, and are open to the public. In addition to our monthly lecture series, the society is also active in public service. We fund student research grants, construct and post signs that describe local geologic features, and organize and lead field trips.

The Colorado Scientific Society normally **meets on the third Thursday of the month from September through May**. (In the summer months of June-August, too many members are out in the field.)

6:30 – Social time at in-person meetings

6:45 – Join Zoom meetings

7:00 – Meeting and Program begin

Field Trips and “No Moss” short field trips: *To Be Announced*

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Election of 2025 officers took place at our Dec. 3, 2024 Annual Meeting. The final slate of our 2025 officers and Councilors is:

President – **Shannon Mahon**

Secretary – **Patrick Sullivan**

Treasurer – **Jim Paces**

Past President – **Jeff Pigati**

President-elect (to become president in 2026) – **Amy Atwater**, Director of Paleontology at Dinosaur Ridge

Councilors: 2023-2025: **Michael Frothingham**

2023-2025: **Kassandra Lindsey**

2024-2026: **Nate Rogers**

2024-2026: **Susan Slomski**

2025-2027: **Lisa Rukstales**

2025-2027: **Adam Hudson**