



Colorado Scientific Society

Newsletter of the Society

December 2019

***December meeting – Annual Meeting, Potluck Dinner,
& President's Address Thursday, Dec. 19
social time & dinner 5:30 p.m., program at 7:00
Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood***

Geoheritage - a new frontier for the Earth Sciences

Tom Casadevall, Scientist Emeritus, U.S. Geological Survey

The cumulative evidence of Earth's long and dynamic history is embodied in unique and beautiful destinations across the United States and around the globe. Collectively, this record comprises our *geoheritage* — a legacy of landscapes, landforms, and features with significant scientific, cultural, educational, or historical value that embodies the connection between people, the land, and the processes that have formed, and continue to shape, our singular planet. Geoconservation is the action taken with the intent of conserving and enhancing our geoheritage – the geological and geomorphological features, processes, sites and specimens that make up our landscape.

To help inform and educate Americans about geoheritage and promote the conservation of geologically important sites, the National Academy of Sciences established the [U.S. Geoheritage and Geoparks Advisory Group](#) in 2016 as a program development activity of the U.S. National Committee for the International Union of Geological Sciences. The advisory group's principal aim is to promote an understanding and recognition of geoheritage within the United States.

To accomplish this goal, the Advisory Group is working with willing partners, including the Association of American State Geologists (AASG), the Geological Society of America (GSA), the American Geosciences Institute (AGI), and the National Park Service (NPS), among others so that interested communities, states, and land-management organizations can develop and tailor a program that highlights the geological diversity found within their borders.

In the arc of development of the Earth Sciences, geoheritage conservation represents a relatively new frontier requiring fresh ways of looking at and thinking about the diversity of our landscapes and Earth history.



Tom's bio:

Thomas Casadevall is a Scientist Emeritus with the U.S. Geological Survey in Denver since 2008. His scientific interests focus on mineral resources related to volcanic environments; on active volcanism and the related hazards to people and aviation operations; and on geologic heritage with an emphasis on Protected Volcanic Landscapes. He currently leads the U.S. Geoheritage and Geoparks Advisory Group and has undertaken the revision of the International Union for the Conservation of Nature (IUCN) thematic study on World Heritage Volcanoes.

From 1996 through 2008, Tom served in the Office of the Director, USGS, with terms as Regional Director for the Western Region (1996-1997), Acting Director of the USGS (1998), Deputy Director (1999-2000) and Regional Director for the Central Region (2000-2008). From 1978 to 1996, he

worked as a geologist with the USGS Volcano Hazards Program, stationed at the Hawaiian Volcano Observatory, the Cascades Volcano Observatory, the Alaskan Volcano Observatory, and Denver. From 1989 to 1996, he led the USGS project Volcanic Hazards and Aviation Safety. From 1985 to 1998, he was Advisory Volcanologist to the Volcanological Survey of Indonesia, residing in Java, Indonesia. From 1997 to 1998, he taught geology of volcanic environments at the Escuela Politecnica Nacional in Quito, Ecuador. From 1969 to 1972, he worked as a mineral exploration geologist with Bear Creek Mining Company, and from 1972 to 1974 he worked as production geologist for the Sunnyside Gold Mine at Silverton, Colorado.

Tom holds an M.A. in Geology and a Ph.D. in Geochemistry from the Pennsylvania State University. He holds a B.A. in Anthropology and Geology from Beloit College.

* * * * *

We'll hope to see all of you at our Annual Meeting & potluck holiday dinner this Thursday evening! All are welcome to come—feel free to invite & bring your family and friends. The Society will be providing a ham for the main entrée, please bring any other kind of dish (appetizer, salad, vegetables, meat or other hot dish, dessert...) to share!



CSS Upcoming Meetings:

Thursday, December 19, 2019: CSS Annual Meeting, Potluck Dinner & President's Address:

Geological heritage: a new frontier for the Earth Sciences

Dr. Tom Casadevall, Scientist Emeritus, U.S. Geological Survey, 2019 CSS President

Social time & dinner will begin at 5:30 p.m.

Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood

The Annual Meeting will also include our election of 2020 CSS officers and presentation of the Society's Best Paper Award for 2019 Meetings.

Important note – change in meeting place for 2020!

Beginning January, 2020, CSS will meet in Berthoud Hall, Room 241, Colorado School of Mines campus.

Located along 16th St. between Illinois and Maple Streets, Berthoud Hall may be entered from doors on any side of the building. Campus parking is free after 5 p.m.; you may park on Maple, Illinois, or other campus streets (16th St. next to the building is a pedestrian mall, closed to traffic) or in campus parking lots. There is a ground level entrance with access to an elevator, off 16th St. Room 241, on the 2nd floor, is located on the west (Maple St.) side of the building. Meetings will begin at 7:00 p.m., preceded by a social time beginning at 6:30. We will meet in Berthoud Hall unless otherwise noted.

2020 CSS meeting schedule:

Thurs., Jan. 16, **Deciphering the timing and causes of Great Unconformity erosion: An example from Pikes Peak, Colorado**, by Rebecca Flowers, University of Colorado

Thurs., Feb. 20, **Petrologic evolution of Platoro magmatic system after the eruption of the Chiquito Peak Tuff, San Juan Volcanic Locust, Colorado**, by Amy Gilmer, U.S. Geological Survey, Geoscience and Environmental Change Science Center

Thurs., Mar. 19, **Historic 2019 Colorado Avalanches: A case history of destruction in Hinsdale County, impacts to historic mining dams, and how snow avalanches may influence development of rock glaciers**, by Jonathon Lovekin, Colorado Geological Survey

Thurs., Apr. 16, **The Corral Bluffs Mammal Find**, by Ian Miller and Tyler Lyson, Denver Museum of Nature and Science; at the **CSS Annual Past Presidents' Dinner**, to be held at the **Mount Vernon Canyon Club**

Sat., May 16, CSS will co-sponsor a **2020 Symposium on Water and Energy**, to be held in Ricketson Auditorium, Denver Museum of Nature and Science

Thurs, Sept. 17, program topic to be confirmed

Thurs., Oct. 15, **CSS Annual Emmons Lecture: Comets: Where We Are, How We Got Here, and Where We Want to Go Next**, by Mike Zolensky, NASA Johnson Space Center; *Meeting location TBA*

Thurs., Nov. 19, program topic to be confirmed

Thurs., Dec. 17, **CSS Annual Meeting, Potluck Dinner, and President's Address**; meeting place TBA



November's "Where is this rock?" I posted this picture last month and said it was near Longmont, and asked you to guess what it is and its geologic age. The age answer I was looking for was "Anthropocene", and its identity is—a bank of waste material from sugar beet processing! It's located near the old sugar beet mill on the east end of Longmont, and, yes, there's a similar large bank of material clearly visible when you drive along I-76 at Fort Morgan. It looks like a bed of chalk (which it most closely resembles), volcanic ash, or clay. The composition of the material is mostly calcium carbonate; here's a



description of the stage in the sugar-refining process that produces it, from <https://www.crystalsugar.com/sugar-processing/> : *"The raw juice is mingled with milk of lime and carbon dioxide gas in carbonation tanks. The carbon dioxide bubbles through the mixture forming calcium carbonate. The non-sugar particles attach themselves to the calcium carbonate and settle to the bottom of the tanks."*

We'll resume a next "What is this rock?" in January. It's been a very hectic few weeks for some of us at USGS; my group (Office of Communications) and others who work in Building 810 at the Federal Center have been moved to a new location (7th floor of Building 67), and *everything* in our offices had to be packed up for moving as of Monday morning, Dec. 16. This has meant that I've had no USGS computer access for the past several days. And, our new office quarters are all very small cubicles instead of private offices, so, most of my books & files have had to be sorted through and "moved elsewhere" (= home). It's been a challenge! As some of you know, I would have had to do this anyway, as, after 40 years at the USGS, I am planning to retire within the next few months (perhaps, in March).---*Pete Modreski, CSS newsletter editor*

Calendar of Coming Events — I see no other particular "coming events" to list right now, other than our own next meeting, January 16, as it's Christmas time and most lecture series won't resume until the new year. We hope to see you this Thursday evening, Dec. 19, have a wonderful holiday time, and our next meeting will be Thursday, January 16, 2020! In Berthoud Hall on the CSM campus.

Thurs., Dec. 19, 5:30 p.m., Colorado Scientific Society Annual Meeting, 2019 President's Address (Tom Casadevall, USGS), and potluck dinner. Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood; all welcome.

* * * * *

A sad note, Marjorie Maclachlan, longtime CSS member and a past (1989) CSS President, passed away on Oct. 21, 2019 at the age of 94. Marge worked for the USGS for 40 years before retiring, where, in our Publications group, she was the chief person in charge of maintaining the Geologic Names database. A Celebration of Life was held at Horan and McConaty, 3101 S. Wadsworth Blvd., Dec. 14, 2019. "In lieu of flowers please donate to your favorite charity".



* * * * *

Colorado Scientific Society dues are \$25 for regular members, **\$20 if dues renewals are paid before Jan. 31 of each year**, \$10 for corresponding members (outside the Colorado Front Range area) and only \$5 for students. A Lifetime Membership is now available, for \$395.00. Mail a check to the CSS or pay with a credit

card using PayPal on the CSS website. Please contact CSS Treasurer Don Sweetkind at 303-236-1828 or dsweetkind@usgs.gov if you are uncertain of your dues or membership status. Extra payments to contribute to our Memorial Funds or Endowment Fund are always most welcome; you'll see a list of them on the membership form attached to this newsletter, or see our website at <http://coloscisoc.org/membership-payment/>. Or see <http://www.coloscisoc.org>. To pay by mail, send payments to:
Colorado Scientific Society, P.O. Box 150495, Lakewood CO 80215-0495

* * * * *

2019 Colorado Scientific Society Officers, Councilors, and Committee Chairs

Officers

President..... Tom Casadevall, tcasadev@gmail.com, 720-244-7052
President-elect Jim Paces, jamespaces@comcast.net
Past President..... Bob Raynolds, bob.raynolds@dmns.org
Secretary..... Lisa Fisher, 303-215-0480, lisa.fisher@alumni.mines.edu
Treasurer..... Don Sweetkind, 303-236-1828, dsweetkind@usgs.gov, or
dsweetkind@gmail.com

Councilors

2017-2019: Jim Reed, jim@rockware.com
2017-2019: Chris Morrison, chris-morrison@comcast.net
2018-2020: Pete Modreski, pmodreski@aol.com, 720-205-2553
2018-2020: Matt Rhoades, rhoadesgeo1@gmail.com
2019-2021: Linda Barton Cronoble, lbarton1611@gmail.com, 720-338-1237
2019-2021: Yvette Kuiper, ykuiper@mines.edu, 303-273-3105

Committee Chairs

Database Manager: Paul Morgan, 303-384-2648, morgan@mines.edu
Field Trip Chair: Cal Ruleman, 303-236-7804, cruleman@usgs.gov
GSA Meeting Co-chairs, Lisa Fisher & Libby Prueher
History Chair: Beth Simmons, cloverknoll@comcast.net
Hospitality Chair: Mary-Margaret Coates, geotechedit@gmail.com
Membership Chair: Bob Raynolds, bob.raynolds@dmns.org
Newsletter & Publicity: Pete Modreski, office 303-202-4766, cell 720-205-2553, pmodreski@aol.com
Outreach: Linda Barton Cronoble, lbarton1611@gmail.com, 720-338-1237
Past Presidents' Best Paper Award: Bob Raynolds, bob.raynolds@dmns.org
State Science Fair Awards: Chuck Weisenberg, 303-238-8806, cweisnrg@msn.com
Student Programs Chair: Melissa Foster, melissa.ann.foster@gmail.com, 707-498-2484
Student Research Grants Chair: Bob Raynolds, bob.raynolds@dmns.org
Webmaster: Chris Morrison, chris-morrison@comcast.net

* * * * *

The CSS website is www.coloscisoc.org. Anyone can also view our facebook page, whether you have a facebook account or not, at <https://www.facebook.com/groups/511533159044226/>. If you use facebook—please go there and “like” the CSS! (Just search there for Colorado Scientific Society.)

To pay dues online, please go to:

<http://coloscisoc.org/membership-payment/>

Thank you!