Newsletter of the Society **January 2018**

Colorado Scientific Society

The objective of the Society is to promote the knowledge and understanding of Earth science, and its application to human needs

January Meeting, Thursday, Jan. 18, 2018, 7:00 p.m.
Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood
Social time, 6:30; program at 7:00

Two presentations this evening, both on the theme of "the human context of scientific work":

FOSTERING CITIZEN SCIENTISTS IN THE REMOTE REACHES OF COLORADO

Elizabeth 'Liz' Johnson
Colorado Northwestern Community College, Craig, CO

and

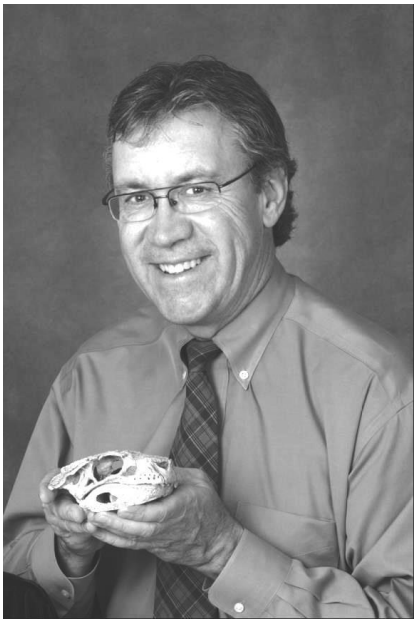
SCIENCE WITH A SOCIAL CONSCIENCE: A NATURAL OUTGROWTH OF FIELDWORK IN REMOTE REGIONS OF THE WORLD

David Krause
Denver Museum of Nature and Science

Elizabeth 'Liz' Johnson is a science faculty member and curator of paleontology at Colorado Northwestern Field Museum within Colorado Northwestern Community College (CNCC) in Craig, CO. Liz received her masters from North Carolina State University in Molecular Paleontology – the study of preserved organic biomolecules within fossil bone. Her bachelor's degree is from Montana State University where she developed a love of field work working with Museum of the Rockies. Today she teaches a variety of sciences at CNCC in conjunction with overseeing all paleontology operations at CNCC including the field work of digging up dinosaurs from northwest Colorado every summer.

Liz Johnson's presentation will focus on the critical need for outreach in remote areas of northwest Colorado, not only to successfully find and extract significant paleontological specimens, but also to ignite, teach, and foster an excitement about the advances and relevancy of the scientific process to everyone. Johnson's background is in molecular paleontology – the preservation of original organic molecules in fossil bone. Utilizing her extensive interdisciplinary skill set, she currently teaches a broad spectrum of sciences at Colorado Northwestern Community College (CNCC) in Craig, CO. In 2014, she instituted a new and unique partnership between a BLM Government fossil repository and the paleontology education program at the Community College level. This collaboration is designed both to prospect, collect, and prepare specimens, and simultaneously to educate students and the public within CNCC's service area. The marvelous and scientifically important specimens currently being excavated and prepared are under study by researchers from a variety of universities and institutions. This research helps to inspire individuals of all education and age levels. Johnson has witnessed the importance of working with local communities to give citizens ownership in the scientific process. Her work and leadership have demonstrated that building strong relationships between paleontologists, ranchers, and federal officials in northwest Colorado benefits all parties.

Dr. David Krause is Senior Curator of Vertebrate Paleontology at the Denver Museum of Nature and Science (Denver, CO; since 2016); Emeritus Distinguished Service Professor in the Department of Anatomical Sciences, Department of Geosciences, and Interdepartmental Doctoral Program in Anthropological Sciences at Stony Brook University (Stony Brook, NY); Research Associate of the Field Museum of Natural History (Chicago, IL); Founder and Executive Director of the Madagascar Ankizy Fund (www.ankizy.org); former Editor of the Journal of Vertebrate Paleontology (1987–1990); and former Vice President (1992–1994) and President (1994–1996) of the Society of Vertebrate Paleontology. Born and raised on a cattle ranch in southeastern Alberta, Dr. Krause received his B.Sc. and M.Sc. from the University of Alberta (Zoology) and his Ph.D. from the University of Michigan (Geology, 1982). He was also awarded a Distinguished Alumni Award from the University of Alberta in 2010 and an honorary doctorate from The University of Antananarivo (Madagascar) in 2012.



Dave Krause's presentation will focus on field science conducted in Madagascar, one of the very poorest countries on Earth. The paleontological project that he initiated there 25 years ago focused on the collection and analysis of Late Cretaceous vertebrates, everything from fishes to dinosaurs to mammals, and their geological context. The project has yielded exquisitely preserved and complete skulls and skeletons that have allowed him and his teams to address hypotheses concerning the plate tectonic and biogeographic history of not just Madagascar but of the entire southern supercontinent of Gondwana. This research also led to interactions with various indigenous populations in remote regions of the island and the realization that field scientists, who benefit greatly from working in such areas, have the opportunity to give back and thereby make a meaningful difference in the lives of those much less fortunate. Dave will review some of his work with children, work that has had the ability to profoundly change, and even save, lives. He will conclude by attempting to extrapolate to other field sciences and other areas, emphasizing that there is much need, and therefore much opportunity to make a difference, whether it be on remote islands like Madagascar or in under-served areas in this country. Field scientists working in remote areas are, in some ways, uniquely positioned to be "first responders for science."

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President's Message, January 2018

Welcome to the 136th year of the Colorado Scientific Society. Our society is dedicated to the promotion and dissemination of scientific research in Colorado and the surroundings and we plan to push this agenda forward with enthusiasm this year.

Last year we participated in the March For Science and had a booth in Denver at Civic Center Park where we reached out to friends and supporters in the Front Range area. I hope that we can increase our reach over the next year and become a strong voice for scientific discussion in our region. Our first talks for the year will set the stage with a goal we all share---making our work more accessible and more relevant to the public. I once had a professor tell me that if I couldn't turn around in the check out line at the food store and explain my research to the person behind me, I should seek another line of work.

I am a stratigrapher, a term not recognized by my spell-checker. My interests lie in understanding the evolution of the earth and its creatures through reading the stories told by layers of rock that reflect and report on the passing landscapes. Why does this matter to the person waiting behind me in line?

We used to say the present is the key to the past; now many suspect that patterns from the past may hint at patterns in the present. As I write this note I'm visiting my Mom in Cody, Wyoming, and here in the Bighorn Basin, many revelations have come from detailed stratigraphic studies of the layers of rock that define the transition form the Paleocene to the Eocene. The region is magnificent for many reasons, but the astonishing accommodation provided by the subsiding Bighorn Basin (over 14,000 feet of Laramide synorogenic fill) coupled with the excellent preservation of faunas and floras allows an unparalleled resolution for stratigraphic studies. The rocks tell us that during a short interval of time about 55 million years ago the floras and faunas of the region changed dramatically, ending the Paleocene and beginning the Eocene. Primates, Artiodactyls, and

Perissodactyls all arrived suddenly taking advantage of a spasm of global warming to cross along newly open ecosystem bridges from the Old World. As the high latitudes warmed, the plants moved north and the animals followed their food. Thus changes in climate can lead to dramatic changes in ecosystems. "We may have much to learn from the past" I might mention to the person behind me.

Our present trajectory into the Anthropocene brings with it many changes, some we have anticipated and some that may be unexpected. Our Society can help move the discussion of these relevant topics forward and share the discussion beyond our geo-science discipline.

Bob Raynolds, 2018 President, Colo. Sci. Soc.

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Two upcoming sciences fairs at which YOU can volunteer to be a judge (or to help at many other needed volunteer tasks there:

Denver Metro Regional Science & Engineering Fair** **is Feb. 16, at CU-Denver.

Sing up online at: https://denversciencefair.com/volunteers/

2018 Colorado Science & Engineering Fair** **is April 5, at CSU.

Sign up online at: http://www.csef.colostate.edu/

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Corporate Sponsorship of the Colorado Scientific Society *(we'll repeat this from previous months)* Corporate sponsorship helps the Society continue to provide earth science-related talks, field trips, and other events to a broad cross-section of Front Range geologists and interested people. Please accept an invitation from the Colorado Scientific Society to become a corporate sponsor, enabling us to continue and expand our programs.

Cost: The annual rate for corporate sponsorship is $200. Alternatively, sponsors may wish to support a specific event, such as underwrite the cash prizes at our annual Student Night competition, our awards to students at the Colorado State Science Fair, or support a field trip.
Benefits of sponsorship: All sponsors receive public acknowledgment for their support, including your company logo, name, and web address displayed in the CSS monthly newsletter and on our web page.
How to donate: The Colorado Scientific Society is a 501(c)(3) exempt organization, and contributions to it are tax deductible as charitable gifts and contributions. To donate and become a corporate sponsor, contact our Treasurer: Don Sweetkind, CSS Treasurer, email dsweetkind@usgs.gov .

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Renew your membership in the **Colorado Scientific Society** for 2018. 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. You'll find a membership form on our website at http://coloscisoc.org/membership-payment/. Please remember that when you make your dues payment, you might like to include an extra contribution to support one of our **six Memorial Funds** that go toward student research grants, or the Society's Endowment Fund. You'll find all the categories listed on the membership form. *Did we mention that there's a $5 discount if you pay your dues before January 31?*
Colorado Scientific Society, P.O. Box 150495, Lakewood CO 80215-0495 http://www.coloscisoc.org

For more news & information about the Society, always check our website, **www.coloscisoc.org**, or search for us, Colorado Scientific Society, and "like" us on Facebook. Anyone can view our facebook page, whether you have an account or not, at **https://www.facebook.com/groups/511533159044226/** .

Our meetings are normally held on the third Thursday of the month at Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood. All are always welcome. Social time 6:30, meeting begins at 7. See www.coloscisoc.org for more info. Our next meeting will be on Thursday, January 18, 2018.

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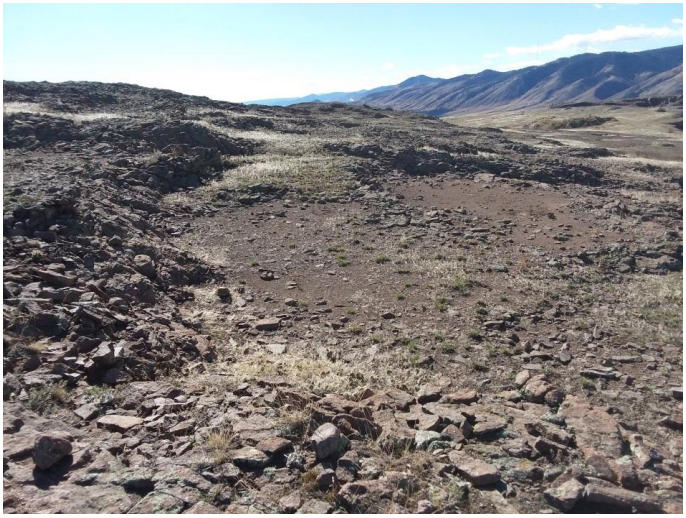
November's "Where is this rock?" + January "What are these structures in it?"

This month I'll add a few more photos to follow up this one from November (shown at left) from North Table Mountain, showing the dike-like ridges of lava that crop out around the highest point on the mountain ("Lichen Peak"), between which the lava has a very pronounced horizontal, tabular jointing. First, here's a picture of the strong horizontal jointing—seen along the path that leads to the top of "Lichen Peak". Then below, two views of areas with the flat-bottomed depressions, that tend to be floored by lava with strong horizontal jointing, and separated by the massive dike-like structures. Harald Drewes described the lava flows in his 2008 USGS report, "Table Mountain Shoshonite Porphyry Lava Flows and Their Vents, Golden, Colorado, SIR 2006-5242 (28 p.). He believed that the elevated area now called Lichen Peak represented a "tumulus"—lava uplifted by steam pressure from its burying a stream channel with water-saturated sediments, and that the flat alcove-like depressions may represent historic human activity—workers prying up flat slabs of lava to use in local building construction. More recently, Leah Morgan (USGS) and Alexie Millikin (Colorado College) have reported (unpublished data---given at a CU Geological Science Colloquium presentation by Leah on Oct. 18, 2017) that the dike-like rocks on Lichen Peak represent a latest, 5th episode of magma/lava emplacement on North Table Mountain, with considerably younger Ar/Ar dates than all the other Table Mountain lava flow. I'd be curious to hear any comments/ideas that anyone has, about the origin of these vertical and horizontal structures in the lava! Write to me at pmodreski@usgs.gov. ---Pete Modreski, editor



Are you familiar with Macrostrat? Macrostrat is "A collaborative platform for geological data exploration and integration". "Macrostrat Beta 0.3 is the initial public, graphical interface for a comprehensive relational database currently containing 33931 stratigraphic units and more than 90,000 attributes (radioisotopic ages, lithologies, economic uses, etc.). Macrostrat is intended to become a community-driven platform for macrostratigraphy, which facilitates the rigorous testing of hypotheses related to the spatial and temporal distribution of sedimentary, igneous, and metamorphic rocks and proxy data extracted from them. It is also meant to facilitate teaching in the earth sciences." See https://macrostrat.org/map . This is a remarkably useful interactive database! It brings up a world geologic map, on which you can zoom in anywhere in remarkable detail (depending on the quality and resolution of the geologic mapping available for any given area). Clicking on any map location brings up a capsule description of the geologic unit present at that site. --- *the editor*

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Newly published: Geologic Map of the Upper Arkansas River Valley Region, North-Central Colorado
By Karl S. Kellogg, Ralph R. Shroba, Chester A. Ruleman, Robert G. Bohannon, William C. McIntosh, Wayne R. Premo, Michael A. Cosca, Richard J. Moscati, and Theodore R. Brandt
U.S. Geological Survey Scientific Investigations Map 3382, pamphlet 70 p., 2 sheets, scale 1:50,000, https://doi.org/10.3133/sim3382 . Downloadable free online; no printed copies available.

Abstract
This 1:50,000-scale U.S. Geological Survey geologic map represents a compilation of the most recent geologic studies of the upper Arkansas River valley between Leadville and Salida, Colorado. The valley is structurally controlled by an extensional fault system that forms part of the prominent northern Rio Grande rift, an intra-continental region of crustal extension. This report also incorporates new detailed geologic mapping of previously poorly understood areas within the map area and reinterprets previously studied areas. The mapped region extends into the Proterozoic metamorphic and intrusive rocks in the Sawatch Range west of the valley and the Mosquito Range to the east. Paleozoic rocks are preserved along the crest of the Mosquito Range, but most of them have been eroded from the Sawatch Range. Numerous new isotopic ages better constrain the timing of both Proterozoic intrusive events, Late Cretaceous to early Tertiary intrusive events, and Eocene and Miocene volcanic episodes, including widespread ignimbrite eruptions. The uranium-lead ages document extensive about 1,440-million years (Ma) granitic plutonism mostly north of Buena Vista that produced batholiths that intruded an older suite of about 1,760-Ma metamorphic rocks and about 1,700-Ma plutonic rocks. As a result of extension during the Neogene and possibly latest Paleogene, the graben underlying the valley is filled with thick basin-fill deposits (Dry Union Formation and older sediments), which occupy two sub-basins separated by a bedrock high near the town of Granite. The Dry Union Formation has undergone deep erosion since the late Miocene or early Pliocene. During the Pleistocene, ongoing steam incision by the Arkansas River and its major tributaries has been interrupted by periodic aggradation. From Leadville south to Salida as many as seven mapped alluvial depositional units, which range in age from early to late Pleistocene, record periodic aggradational events along these streams that are commonly associated with deposition of glacial outwash or bouldery glacial-flood deposits. Many previously unrecognized Neogene and Quaternary faults, some of the latter with possible Holocene displacement, have been identified on lidar (light detection and ranging) imagery which covers 59 percent of the map area. This imagery has also permitted more accurate remapping of glacial, fluvial, and mass-movement deposits and aided in the determination of their relative ages. Recently published ^{10}beryllium cosmogenic surface-exposure ages, coupled with our new geologic mapping, have revealed the timing and rates of late Pleistocene deglaciation. Glacial dams that impounded the Arkansas River at Clear Creek and possibly at Pine Creek failed at least three times during the middle and late Pleistocene, resulting in catastrophic floods and deposition of enormous boulders and bouldery alluvium downstream; at least two failures occurred during the late Pleistocene during the Pinedale glaciation.

Volcanoes, the Failures of the Gods, and the Collapses of Empires: The 6th Century CE

Friday-Saturday | February 9-10, 2017
Benson Earth Sciences Rm 180 | Free and Open to the Public

One of the two most severe and long cold periods of the past few thousand years began abruptly in 536 CE. The cold lasted for many years, and suppressed evaporation of water from oceans, therefore reducing precipitation resulting in droughts in many areas of the world. The cause evidently was immense volcanic eruptions. In this symposium, we will explore the controversy over which volcanoes were the instigators as well as the historical and religious consequences of the climate changes due to the eruptions.

'The Great Day of His Wrath', John Martin, 1851

Keynote Address, Friday 7PM:

Clive Oppenheimer: Volcanic Eruptions and People's Vulnerabilities and Resiliencies

Saturday Speakers, 8:15AM - 5:00PM:

Payson Sheets: Introduction, nature of stress, impacts, and controversies
Tom Casadevall: Huge Explosive Eruptions: Their nature and effects.
Kees Noreen: Timing and impact of El Chichon's mid-6th century eruption
Robert Dull: The magnitude 7 eruption of Ilopango: Environmental impacts on the Classic Period Maya and the world
Kyle Harper: The Ice Age Cometh: The 536 Event as a Turning Point in Roman History
John Hadon: On 536 CE and the Rise of Islam
Terry Kleeman: Ash fell from a cloudless sky: Chinese Records of the 536 CE Event

Event Details: **https://goo.gl/sycMyW**

Center for the Study of Origins
UNIVERSITY OF COLORADO **BOULDER**

Center for the Study of Origins

Calendar of Coming Events

Wed., Jan. 17, 3:00 p.m., first in the year's **2018 Earth Sciences Colloquium** program at the Denver Museum of Nature & Science: **Telling time with rock clocks**, by Leah Morgan, USGS. This and most of the talks (one to two per month) will be in the VIP Room; Museum admission is not required—if you are not a member, enter via the staff/volunteer door and tell the security guard that you are here to attend the Earth Sciences Colloquium.

Wed., Jan. 17, 4:00 p.m., University of Colorado Geological Sciences Colloquium, Dr. Boswell Wing, Associate Professor of Geology, CU-Boulder. "We are excited to **have Dr. Boz Wing presenting as our Department Faculty Spotlight**! Benson Earth Sciences Building, Room 180. Also, join us for a 'Welcome Back' social hour following Boz's talk in 185 from 5-6 pm where food and drink will be provided." **Dr. Wing's specialty is Geobiology**; you can read about Boz' work on his webpage: https://www.colorado.edu/geologicalsciences/boswell-wing . "In thinking about Geobiology, two facts offer a clear guide. The first is that microbes dominate elemental cycling on modern Earth. The second is the age of Earth. Together, they imply a long co-evolutionary relationship between the geochemistry of earth surface environments and the activity of their microbial inhabitants."

Thurs., Jan. 18, 4:00 p.m., Van Tuyl Lecture at Colorado School of Mines, "**Measurement of 3D Deformation of the Central Calaveras Fault at Coyote Dam Combining Ground-Based Radar and Spaceborne SAR Interferometry**" by Charles Werner, Gamma Remote Sensing AG, Gümligen, Switzerland. Berthoud Hall, room 241.

Thurs., Jan. 18, 7:00 p.m., Colorado Scientific Society monthly meeting, Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood; Social time, 6:30; program at 7:00. All are welcome; for more info see http://coloscisoc.org/ . Two presentations, both on the theme of "the human context of scientific work":
Fostering citizen scientists in the remote reaches of Colorado, by Elizabeth 'Liz' Johnson, Colorado Northwestern Community College, Craig, CO; and
Science with a social conscience: a natural outgrowth of fieldwork in remote regions of the world, by David Krause, Denver Museum of Nature and Science

Sun., Jan. 21, 12 noon, monthly meeting of the Florissant Scientific Society. "**Craig Hazelton will tell of his adventures traveling to Madagascar!"** Dinosaur Ridge Visitor Center (east side in the barn [upstairs], 16831 W. Alameda Parkway), 12 noon for lunch, talk after. All are welcome.

Tues., Jan. 23, 10:30 a.m., USGS Rocky Mountain Science Seminar, Building 25 Lecture Hall, Denver Federal Center. **"Tectonic history of Siletzia in the Puget Sound lowland"**, by Megan Anderson, Colorado College. *The USGS seminar series is held biweekly, always at 10:30 on alternate Tuesday mornings. Visitors are welcome to attend; enter the Federal Center via the Main Gate (Gate 1) on Kipling St., turn right to follow First St. 3 blocks to park east of Building 25, and enter Bldg. 25 at entrance E-14 where you'll sign in as a visitor with the security guard.*

Tues., Feb. 6, 10:30 a.m., USGS Rocky Mountain Science Seminar, Building 25 Lecture Hall, Denver Federal Center, "**Volcanic crisis at Agung Volcano, Indonesia: the role of VDAP/USGS"**, by Heather Wright, USGS Cascades Volcano Observatory.

Fri.-Sat., Feb. 9-10, **Volcanoes, the Failures of the Gods, and the Collapses of Empires: The 6th Century CE.** A symposium at CU-Boulder, Benson Earth Sciences Building, Room 180. Free and open to the public. For event details and an RSVP for free registration, see https://goo.gl/sycMyW .

Sat., Feb. 10, 4:00 p.m., "**Finding Darwin"** with Michon Scott -- science writer, web designer, and proprietor of strangescience.net -- at the Secular Hub's Darwin Day event, at the Secular Hub, 3100 Downing St. #C, Denver. The event is free and open to the public. See https://www.secularhub.org/. " 'You care for nothing but shooting, dogs, and rat-catching, and you will be a disgrace to yourself and all your family,' Charles Darwin's dad once told him. Darwin failed to become a doctor, but he succeeded in changing how we see life on Earth. Darwin developed the theory central to understanding biology, all the while trying to live down the reputation of his quirky, libertine grandfather. Michon Scott will share her experiences as she traced the presence of Charles Darwin on some of the Galapagos Islands and in England, and will also talk about evolution, Charles Darwin's life, and his grandfather Erasmus Darwin."-- Glenn Branch, Deputy Director, National Center for Science Education (NCSE).

Thurs., Feb. 15, February Colorado Scientific Society meeting.

Fri., Feb. 16, 1:30 p.m., Denver Museum of Nature & Science Earth Sciences Colloquium, **"Modeling growth rates in trilobites"**, by Melanie Hopkins, American Museum of Natural History. VIP Room, DMNS.

Tues., Feb. 20, 10:30 a.m., USGS Rocky Mountain Science Seminar, Building 25 Lecture Hall, Denver Federal Center, "**Oxygen isotope fractionation in the $CaCO_3$-DIC-H_2O system"**, by Jim Watkins, Univ. of Oregon.

Fri-Sat-Sun, Feb. 23-25, Denver Gem and Mineral Guild, **Jewelry, Gem, and Mineral Show**. Jefferson County Fairgrounds, Exhibits Building, 15200 W. 6th Ave. Golden CO; 10-6 Fri. & Sat., 10-5 Sun.; free parking and admission

Thurs., March 8, 7:30 p.m. Friends of Mineralogy, Colorado Chapter, bimonthly meeting, at Lakewood Event Center,7864 W. Jewell Ave. "**Mineral Species and Occurrences of the Swiss Alpine Clefts**", by Brent Lockhart, of Houston, TX. Alpine-cleft minerals occur in open fissures within tectonically deformed igneous or metamorphic host rocks, in the Alps as well as many other mountain belts worldwide. They are noted for quartz (smoky and "rock crystal"), adularia, fluorite, titanite, anatase, hematite, magnetite, chlorite, axinite, and many other minerals.

Mar 23-25, Fort Collins Rockhound Club Gem & Mineral Show, at The Ranch/Larimer County Fairgrounds, Thomas M. McKee 4-H Building, 5280 Arena Circle, Loveland, CO (I-25 exit 259, Crossroads Blvd; 4-8 p.m. Fri, 9-6 Sat., 10-5 Sun.)

Thurs., Mar. 15, March Colorado Scientific Society meeting.
Fri.-Sat.-Sun., April 13-15, Colorado Mineral & Fossil Spring Show, Crowne Plaza Hotel DIA, 15500 E 40th Ave., Denver CO. Free admission; hours 9-6 Fri. & Sat., 10-5 Sun.

Thurs., May 10, 7:30 p.m., Friends of Mineralogy, Colorado Chapter, bimonthly meeting, at Lakewood Event Center,7864 W. Jewell Ave.: **Five Days on Xuebaoding Mountain, Sichuan Province, China: minerals and geology**", by Markus Raschke. Xuebaoding is a mining area in central China, seldom visited by westerners, that has produced many fine specimens of orange scheelite (often on a matrix of muscovite crystals), beryl (aquamarine and goshenite), cassiterite, and numerous other minerals. Markus is a Professor in the Physics and Chemistry Departments at the University of Colorado, Boulder.

For more lecture series during the year see:

Colorado Café Scientifique in Denver, monthly lectures on science topics held either at Blake Street Station or Brooklyn's, Denver; open to the public, no charge other than refreshments you may choose to purchase; see http://cafescicolorado.org/ .

CU Geological Science Colloquium (Wednesdays, 4 p.m.) see http://www.colorado.edu/geologicalsciences/colloquium

CSU Dept. of Geoscience Seminars (Fridays, 4 p.m.), see https://warnercnr.colostate.edu/geosciences/geosciences-seminar-series/

Van Tuyl Lecture Series, Colorado School of Mines, (Thursdays, 4 p.m.): https://geology.mines.edu/events-calendar/lectures/

Denver Mining Club (Mondays, 11:30), see http://www.denverminingclub.org/

Denver Region Exploration Geologists Society (DREGS; 1st Monday, 7 p.m.), http://www.dregs.org/index.html

Florissant Scientific Society (FSS); meets monthly in various Front Range locations for a lecture or field trip; meeting locations vary, normally on Sundays at noon; all interested persons are welcome to attend the meetings and trips; see http://www.fss-co.org/ for details and schedules.

Rocky Mountain Map Society (RMMS; Denver Public Library, Gates Room, 3rd Tuesday, 5:30 p.m.), http://rmmaps.org/

Western Interior Paleontology Society (WIPS; Denver Museum of Nature & Science, 1st Monday, 7 p.m.), http://westernpaleo.org/ .

CSS Officers for 2018

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President Elect…… Tom Casadevall, tcasadev@gmail.com
Past President……. Marith Reheis, 303-277-1843, marith16@gmail.com
Secretary……. Lisa Fisher, 303-215-0480, lisa.fisher@alumni.mines.edu
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2016-2018: Melissa Foster, melissa.ann.foster@gmail.com, 707-498-2484
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2017-2019: Chris Morrison, chris-morrison@comcast.net
2018-2020 Pete Modreski, pmodreski@aol.com, 720-205-2553
2016-2020: (position not yet filled)

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Field Trip Chair: Cal Ruleman, 303-236-7804, cruleman@usgs.gov
GSA Meeting Co-chairs, Lisa Fisher & Libby Prueher
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CSS outreach to public non-science groups *(repeating this from an earlier newsletter… please contact us if you would like to be on our list of volunteer speakers!)*
As a follow-up to our participation in the March for Science, we'd like to compile a list of members who would be willing to give an occasional lecture or presentation to non-science audiences. Groups such as neighborhood organizations, churches, social groups (Elks, Rotary, etc.) sometimes ask for speakers and it would be wonderful to have a list of knowledgeable people on whom to call. We'd like to post willing speakers and their topics on our website, so that visitors to the site could see what topics might be easily available. If you'd like to participate, please email your name and topic to Pete Modreski, pmodreski@usgs.gov , or Joe Mestichelli, joseph.mestichelli@gmail.com .

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