Colorado Scientific Society

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

September Meeting
50th Annual
S.F. Emmons Lecture

by
Kenneth B. Tankersly, Ph.D.
Depts. of Anthropology and Geology
University of Cincinnati

Foss Auditorium
American Mountaineering Center
710 10th Street
Golden, Colorado

Social half-hour—6:30 p.m. Meeting time—7:00 p.m.

PLEASE NOTE THE CHANGE OF MEETING PLACE!

Everyone is Welcome
Abstract

Geologically, the end of the Pleistocene marks a period of mass extinction. Five theories have been proposed to explain this extinction event: human overkill, a hyper-disease, an extraterrestrial impact event, climate change, or some combination of climate change and overhunting. In order to evaluate these theories, we need to first determine if the extinctions were synchronous and provide the chronometric resolution needed to demonstrate or negate synchronous extinction as well as explore how species respond to climate change and what role climate plays in species extinction.

Biography

Kenneth Barnett Tankersley, Ph.D.

Dr. Tankersley is an archaeological geologist and Quaternary scientist. He earned his baccalaureate and masters’ degrees at the University of Cincinnati, his doctorate at Indiana University, and conducted post-doctorate research at the Quaternary Research Program, Illinois State Museum. With funding from the National Science Foundation, the National Academy of Sciences, the L.S.B. Leakey Foundation, Earthwatch, the International Research and Exchange Program, the Court Family Foundation, the Charles Phelps Taft Foundation, and the University of Cincinnati Research Council, he has conducted investigations across the western Hemisphere and Eastern Siberia. This research has resulted in a consistent and sustained record of performance with more than 120 professional publications. Additionally, his research has been featured on the National Geographic Channel, the Discovery Channel, the History Channel, the Animal Planet, BBC Nature, NOVA, PBS, in Science, National Geographic News, Geo, the Wall Street Journal, the New Yorker magazine, Scientific American, Archaeology magazine, and on All Things Considered as well as local, national, and international newspapers, magazines, radio and television programs. He has been a Foreign Delegate for the National Academy of Science, a Delegate of the International Geology Congress, a Carnegie Mellon Scholar Lecturer, guest editor of Scientific American magazine, and a Gubernatorial appointed member of the Native American Heritage Commission. Dr. Tankersley’s current research is innovative and interdisciplinary, focusing on archaeological geology problems associated with periods of climatic, environmental and catastrophic change. From an evolutionary perspective, these are significant periods of change, which force species to economically adapt, downsize, or migrate.
CSS President’s Message  

by Matt Sares

I hope you had a wonderful summer full of outdoor excursions with family, friends, and fellow geologists. I was able to escape the city some, but not as much as I wanted (isn’t that always the case?) My wife, son, and I took an early August weekend up to Breckenridge for the specific purpose of climbing Quandary Peak. It was a beautiful day for a hike and we made it to the top in good time to enjoy the fabulous views. It’s always sobering to look at the landscape from such a vantage point and consider the tremendous forces that have conspired to create the amazing scene laid out before us: tectonic forces uplifting the crust of the earth, glaciers, water, and wind carving the uplifted land, exposing the earth’s inner workings, and trying to lay the earth low again. We live in a wonderful place on the earth – it’s no wonder that so many geologists love Colorado, even if they don’t live here.

With that thought, this autumn season will bring a plethora of geologists to our state in two national meetings. The first is the American Institute of Professional Geologists (AIPG) holding its 50th Annual Meeting on October 23-26 at the Omni Interlocken Resort in Broomfield. Right on its heels is the Geological Society of America’s (GSA) 125th Annual Meeting from October 27-30 at the Convention Center in downtown Denver. Both meetings have many field trip opportunities. CSS is heavily involved in the GSA meeting. If you can help with staffing our booth, logistics for the CSS field trip to central Colorado, or our session “150 Years of Geological Research in Colorado II,” please contact Beth Simmons (field trip) or Lisa Fisher (session).

Many thanks go to Pete Modreski who led a July field trip to the Green Mountain kimberlite behind the Flatirons in Boulder. Several CSS members attended with great enjoyment.

As you have seen on the cover of this newsletter, our 50th annual Emmons lecture is taking place this September 19th at the American Mountaineering Center in Golden. The end of Pleistocene large mammal extinction topic will be interesting to a wider audience, even non-scientists, and promises to have lively discussion after the talk. Please help advertise this event with your friends and co-workers by posting the cover of the newsletter in a public place at your office.

Finally, August 27th marked the untimely passing of our 2002 past-president Eric Nelson. Eric made a profound and lasting impact on the whole geological community in Colorado and beyond. From all accounts, he brought his love of life wherever he went. Jonathan Caine, a USGS geologist and Eric’s close friend, wrote a tribute to Eric and allowed us to include it in the pages of this newsletter. Please take a moment to read it.

---

Please note – The “Map Store” at the USGS (Building 810, Denver Federal Center) is closing! The Store, now operated by the Rocky Mountain Nature Association (RMNA) is expected to close within about a month. As of now, all the items in stock in the store (field & nature guides, geological books, children’s books, games, road atlases, National Geographic maps, and other items as well as USGS topo maps in stock) are all being sold at a 45% discount. Quantities of many items are limited. At this time it has not been decided how one will be able to purchase USGS maps and publications in the future, other than by internet/mail/phone order.
Eric Nelson, an exceptional, and exceptionally enthusiastic, friend, mentor, teacher, geologist, skier, thinker, intellect, guitar player, humorist, traveler, partner, family member, and connoisseur of good food, fine wine, art, and powder skiing (oops, did I say that?) will be missed by many across the globe.

Eric grew up in California and hiked in the Sierra Nevada from an early age, turned on to nature by his family and his innate love of doing and being out there. He studied geology at Northridge, Rice, and Columbia universities. He worked at all ends of the Earth and became a professor of geology at the Colorado School of Mines. In his more than 30 years of teaching, he creatively integrated structural geology with economic geology using both fundamental as well as practical aspects of each. Eric spent much time in the field with his students, beating them over the head with the need for ground truthing and for gaining an appreciation for the messy complexity of real rocks for a largely engineering minded group. Eric’s research contributions were many fold and combined a well-rounded, first-hand knowledge of global tectonics supported by detailed and insightfully creative field observations. Eric loved rocks and a tour of his collection at his home was like going to a museum with the most enthusiastic docent; many rocks had engaging stories. A cadre of post-docs, consultants and colleagues interacted with Eric in his constant travels from South America to Africa to Asia as he got down to the nitty-gritty of helping companies with detailed mapping and developing an understanding of key processes involved with some of the world’s most interesting polymetallic, structurally controlled, vein hosted mineral deposits. Life in various man-camps at 12,000+ feet for weeks on end did not deter his enthusiasm. I am sure he was a booming, god-like figure to many Peruvian geologists surprised by his fluent Spanish, spoken with humility and grace.

Between travels, returning home was always sweet; a chance to chill and ski with his loving, and tolerant, wife Barb, and the “tele-pod” of friends at Loveland where his profound love of Colorado was exuberantly expressed by whoops and hollers as Eric shredded down, off the ridge in flight-like graceful turns. Yet, he often waited for the last skier at the bottom of the run with a huge smile and ebullient words of praise for the beauty of the turns of others. Eric also was very concerned and insightful about humanity and our fate as a species in these rapidly changing times. As an Earth scientist, traveler, and avid reader he often expressed appalled dismay about the degraded role of education in our nation and culture. He keenly recognized the importance of science as a way of knowing and generously gave his time to help promote science and rationality. As president of the Colorado Scientific Society in 2002, Eric’s creativity and desire to draw in new members was reflected by inviting speakers to talk about such unconventional but alluring topics as the terroir of wine and writing forensic geology mystery novels. At the end of his term the Society was treated to his picturesque and thought-provoking address on his sabbatical research in New Zealand on the geomorphic response of collisional tectonics. Most of all, Eric was a kind friend to all. He made all who came into his life feel like they were the most important individuals, fully included, fully involved. Eric was a shining spirit and gave his love and boundless enthusiasm freely and unabashedly; we all gained from his life and his graceful spirit lives on in all of us.

Jonathan Caine, Research Geologist, Boulder, CO
Calendar of Events—September

Colorado Scientific Society’s regular meetings are held the 3rd Thursday of the month at the Shepherd of the Hills Presbyterian Church, 11500 West 20th Ave., Lakewood, CO. Unless otherwise advertised—Social time begins at 6:30 p.m. and talks start at 7:00 p.m. For more information, contact Matt Sares, tel. 303-717-3983, matt.sares@state.co.us

Upcoming CSS Meeting presentations:

50th Annual S.F. Emmons Lecture, September 19, 2013, Foss Auditorium, American Mountaineering Center 710 10th Street Golden, Colorado. Social half-hour—6:30 p.m. Meeting time—7:00 p.m. Speaker: Kenneth B. Tankersley, Ph.D. Depts. Of Anthropology and Geology University of Cincinnati, “What Killed the Ice Age Megamammals of North America.”

USGS Rocky Mountain Area Seminar Series is held once every two weeks, 10:30-11:30 a.m., alternate Tuesday mornings, Building 25 Lecture Hall, Denver Federal Center, Lakewood, CO. Public is welcome. Park in the lot east of Bldg. 25 and use entrance E-14. For more information, contact Pete Modreski, tel. 303-202-4766, pmodreski@usgs.gov.

Colorado School of Mines-Friends of Dinosaur Ridge (FODR) Sat., Sept. 14, 10 a.m.-2:00 p.m., Dinosaur Discovery Day monthly public tour day at Dinosaur Ridge, Morrison CO, featuring Geohazards Day. See www.dinoridge.org for more info, or contact Tom Moklestad at tom_moklestad@dinoridge.org.

The Denver Mining Club Mon., Sept. 16, 11:30 a.m.-1:00 p.m., “Pegmatite Mining for Gem Tourmaline in Maine.” Speaker: Dr. Pete Modreski, USGS. At Golden Corral Buffet & Grill, 3677 S. Santa Fe Dr., Sheridan, CO (purchase of buffet lunch is required). Visitors always welcome! See www.denverminingclub.org for more info.


RMAG Wed., October 2, Check in: 11:30 a.m.; Lunch: 12:00 p.m.;
Talk: 12:20 p.m. Denver City Center Marriott. “Hydrocarbon Maturity and Migration Analysis Using Production Gas Stable Isotopic Signatures in the Wattenberg Field, Denver Basin, Colorado, USA.” Speaker: Michael Dolan. Lunch $30. Walk-in without lunch $10. Please note: online registration for this event will close on Thursday, September 26, 2013 at 4:00 p.m. See www.rmag.org for more information or to register.

Western Museum of Mining and Industry's newest exhibit opening and Heritage Lecture Thurs., Sept. 12, 6:00 p.m. “Lost Miner!” A Brief History of Mine Safety and Rescue. “The opening of this unique exhibit reviews the history of mine safety and rescue, and features the expertise and harrowing experiences of Hidde Mine miner and Colorado Mine Rescuer, Jon Northern. All Heritage Lectures at WMMI are always free. Please RSVP to rsvp@wmmi.org or by calling 719-488-0880.

Colorado School of Mines Geology Museum Annual Reception and Open House, Wed., Sept. 11, 6:00-9:00 p.m., at 16th and Maple Streets, Golden, CO. All are welcome. Preview of the museum’s new Colorado Fluorite exhibit. “It’s free, with food, music, and a cash bar.”

Denver Gem and Mineral Show Fri.-Sun., Sept. 13-15, held at the Denver Merchandise Mart, 58th Ave. at I-25 exit 215; 9-6 Fri., 10 a.m.-6 p.m. Sat., 10 a.m.-5 p.m. Sun.; see http://www.denvermineralshow.com/. The second-largest gem and mineral show in the country!

The Colorado Mineral & Fossil Show Sept. 11-15 at the Ramada Plaza, 4849 Bannock Street Denver.

More Events

CU-Boulder Geological Science Colloquium:
Wed., Sept. 11, 4:00 p.m., “Deep Crustal Structure, Processes, and Properties from Xenoliths and Seismic Observations in the Rocky Mountains.” Speaker: Dr. Kevin Mahan, CU-Boulder, Benson Earth Science Building, Room 180. Refreshments will be served at 3:30 pm upstairs, outside Benson Room 380.

Wed., Sept. 18, 4:00 p.m., “Induced Earthquakes and Remote Earthquake Triggering.” Speaker: Dr. Heather Savage, Lamont Doherty Earth Observatory, Benson Earth Science Building, Room 180. Refreshments will be served at 3:30 pm upstairs, outside Benson Room 380.

9/25 - “TBA.” Speaker: Becky Flowers, University of Colorado Boulder

10/2 - “TBA.” Speaker: Ed Nissen, Colorado School of Mines


CSU, Department of Geosciences Seminar Schedule
Seminars are located in Warner College of Natural Resources Building, Room 320, Monday afternoon, and will begin at 4:00 pm unless noted otherwise. Schedule posted at http://warnercnr.colostate.edu/geo-news-and-events/department-seminars

DIPS- March Luncheon Friday, September 13, Wynkoop Brewing Company, 1634 18th St., Denver. Members generally arrive at 11:30 am with the lunch buffet starting at noon. The talk generally starts at 12:20 pm to 12:30 pm and goes for 20 to 30 minutes. The cost for the lunch and talk is $20 for members and $24 for non-members. It is $5 for just the talk. “Eastern Hemisphere Unconventional Plays: The View in 2013; Hope, Hype and Hysteria.” Speaker: Jeffrey B. Aldrich, Vice President, MHA Petroleum Consultants, Denver

Autumnal Equinox
September 22, 2013 at 4:44 P.M EDT.

The word equinox comes from the Latin words for "equal night." The fall and spring equinoxes are the only days of the year in which the Sun crosses the celestial equator. From here on out, the temperatures begin to drop and the days start to get shorter than the nights (i.e., hours of daylight decline).

From: The Old Farmer’s Almanac
Where is this Rock? By Pete Modreski

Our May picture was (as some suspected) of a kimberlite pipe in Colorado. Not the Green Mountain pipe near Boulder that we visited on our July 27 field trip, but a larger one, further north; the Sloan (No. 1) kimberlite pipe, Larimer County (east of Prairie Divide). The rocky ridge in the photo is NOT the kimberlite, but the Sherman Granite that surrounds it. The gray talus material in the foreground, plus a few low ledges exposed by quarrying, is the kimberlite, which extends up the mostly open slope, to the right.

September Where is this rock? This month’s picture is not a rock exactly (please forgive me?), but it’s mineral-related, and it’s holding a rock (plus the ones in the ore bucket). So, where is it, who is it, and what is its history? And what’s it made of?
“Arthur Lakes: Discovering Dinosaurs” directed by Dr. Beth Simmons won BEST DOCUMENTARY FEATURE in the Colorado Film Awards Competition on Friday, August 30, 2013. Congratulations Beth!

The Dinosaur Ridge Summer Camp won the “Totally Awesome Award” for the Best Camps in the Denver Metro Area from the Red Tricycle awards. Some of you helped by voting for them. Thank you!

MARK YOUR CALENDAR: Rock-Out for the Ridge Dinner, Raffle, Silent and Live Auctions, Friday, November 8, at Pinehurst Country Club, 6255 West Quincy Ave., Denver. R.S.V.P. before November 1st!

Mail checks to: Rock Out for the Ridge
Friends of Dinosaur Ridge
16831 West Alameda Parkway
Morrison, CO. 80465
Payable to: Dinosaur Ridge
Raffle tickets available NOW! Call Linda Barton 720-338-6201 for Raffle Tickets! All proceeds from raffle ticket sales will go toward preserving the fossils on the Ridge.

Student Scholars

Pikes Peak Pebble Pups will be presenting in the Speak’s Room at 12p.m., Denver Gem and Mineral Show Saturday, Sept 14, 2013. The topics and speakers include:

“Unimaginable Fossils from the Depths of the Cripple Creek Volcanic Complex in the Cripple Creek and Victor Mining District”, by Zach Sepulveda
“An Introduction to Garnets”, by Jenna Salvat
“An Update on the Florissant Fossil Beds National Monument”, by Blake Reher

Notes:
♦ Each speaker will have 13 minutes to present
♦ Presentations will be MS PowerPoint
♦ A commemorative poster to honor the youth and future of our hobby will be provided free to all attendees. The original artwork is by an award-winning pebble pup / Earth Science Scholar of the Pikes Peak Pebble Pups who attends the Lake George, Colorado unit.
♦ The program will start at 12 noon
♦ The presenters will be available for a few questions after the session.

Please show them your support of their efforts by attending.
Topical Session (Lisa Fisher and Libby Prueher)
T-148: The Colorado Scientific Society & 150 Years of Geologic Research in Colorado: II: Development of Geological Concepts, and Studies in Colorado Geology, sponsored by the Rocky Mountain Region’s oldest scientific society, founded in 1882. Our session was approved, filled, and is scheduled for October 30, Wednesday afternoon 1-5 p.m.. Talk topics include conglomerates, fossils, hot springs, volcanics, mapping, upper RGR, Laramide tectonics, Front Range faults and metamorphics, etc. At 4:00 we have scheduled a “Forum” event – after the talks; the topic will be posted in our newsletter. After the meeting, we will be requesting submission of written articles from this session, the previous (2010) session, and any other articles by our members that would fit into the theme – to be put together into a volume (possibly a GSA memoir).

Field Trip (Beth Simmons)
Colorado Geology Then and Now, 1901 to 2013: Following the route of the Societies' 1901 trip through central Colorado – Evolution of geological thought and discovery
See Beth Simmons for additional reports and details. As of today, there are already 13 registrants, so it is likely to fill.

Booth (Liz Pesce)
CSS will again have a booth in the GSA Exhibit Hall – #1032, a corner booth in a good location. Volunteers are needed to man the booth for 2 hour time slots. We are soliciting giveaway prizes (large and small) for door prizes, etc., and also interesting rock samples and photos for display. Please contact Liz Pesce if you would like to contribute or volunteer.

Gala Dinner
A special Gala Dinner celebrating the 125th Anniversary of GSA will be held Tuesday evening, October 29. CSS has received a formal invitation, and members interested in attending can sign up with GSA or contact CSS Officers or Councilors for further information. Black Tie or Period Costume (Victorian, 1888) is required. A list of costume shops and rentals will be available. (Note – there IS a Youtube video on how to sit with a bustle!) Victorian Dress may also be worn during the week of the meeting.

Other
Beth Simmons suggested a pin or other such attachment to our nametags identifying us as CSS members. If you will be attending the meeting, please pick this up from our booth.
Liz Pesce is putting together activities planned to encourage social interaction – during the ice-breaker, student activities, and/or other times during the meeting. This may include trivia questions, scavenger hunt items or activities (such as take a photo of as many past presidents of the various societies as you can find at the meeting – or other ideas), etc. for this with prizes for selected categories of winners. Members, please submit questions and ideas, and solicit prize items, and volunteer if you’d like to help out.
2013 CSS Elected Positions

President: Matt Sares, 303-866-3581 x8290, matt.sares@state.co.us
President Elect: Scott Lundstrom, 303-917-2849, pslundstrom@msn.com
Treasurer: Don Sweetkind , 303-236-1828, dsweetkind@usgs.gov,
Secretary: Lisa Fisher, 303-215-0480, lisa.fisher@escalantemines.com
Past President: Pete Modreski, 720-205-2553, pmodreski@aol.com.

We are still seeking volunteers or nominations to fill several vacant posts. They are:

- Outreach Chair
- Publicity Chair

We will also gladly accept volunteers to serve on any and all of our standing committees.
If you have any questions regarding the duties of these positions, please call your favorite officer, councilor, or chair.

Please consider volunteering—many hands make lighter work and we would love to have
a larger pool of ideas and contacts!

COUNCILORS
2013–2015: Marieke Dechesne, mdechesne@usgs.gov
2013–2015: Liz Pesce, pesce.e@gmail.com
2011–2013: Celia Greenman, celia.greenman@earthlink.net
2011–2013: Ben Harrison, 303–417–9633, benjh@earthlink.net
2012–2014: Paul Morgan, 303–866–2611, paul.morgan@state.co.us
2012–2014: Rebecca Flowers, 303–492–5135, rebecca.flowers@colorado.edu

COMMITTEE CHAIRPERSONS
Best Paper Award: Pete Modreski, 720-205-2553, pmodreski@aol.com
Database Manager: Emily Taylor, 303–236–8253, emtaylor@usgs.gov
Field Trips: Cal Ruleman, 303–236–7804, cruleman@usgs.gov
History: Beth Simmons, cloverknoll@comcast.net
Hospitality: Ben Harrison, 303-417-9633, benjh@earthlink.net
Membership/Mentor: Liz Pesce, epsce@mines.edu
Memorial Funds: Pete Modreski, 720-205-2553, pmodreski@aol.com
Newsletter Editor: Linda Barton, 720-338-6201, lbarton1611@gmail.com
Outreach: Open
Program: Open
Publicity: Open
State Science Fair: Chuck Weisenberg, 303–238–8806, cweisnbrg@msn.com
Webmaster: Barb Warden, 303-278-2701, bwarden@tabletn.com

Colorado Scientific Society
P.O. Box 150495
Lakewood, CO 80215-0495
http://www.coloscisoc.org
Colorado Scientific Society

Application and Membership Update

Date __________

Dues and Funds Contributions

New Member ________  Renewing Member ________

(email address)  (Telephone)

(Last Name)  (First Name)  (Initial)

(Address)

The success of most Society activities depends on volunteer help. Please circle any activities for which you can provide assistance. We will pass your name on to the appropriate Committee Chairperson.

<table>
<thead>
<tr>
<th>Field Trips</th>
<th>History</th>
<th>Outreach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund Raising</td>
<td>Newsletter</td>
<td>Program/Talks</td>
</tr>
</tbody>
</table>

Annual Dues (January – December)

Regular Members $20
Corresponding Members $10
Student Members $5

Memorial Funds: These funds support research grants to graduate students in the Earth Sciences throughout the nation. Please note if contribution is made in the memory of an individual.

- Ogden Tweto Memorial Fund
- Steven Oriol Memorial Fund
- Edwin Eckel Memorial Fund
- Bill Pierce-Heart Mountain Fund
- George Snyder Memorial Fund
- Chuck Pillmore Memorial Fund

Endowment Fund:
This fund is used to support the Society’s monthly meetings and newsletter, field trips, family night, annual Emmons Lecture, invited speaker honorarium, and special activities.

TOTAL CONTRIBUTIONS (DUES AND FUNDS):

Please make your checks payable to the:
Colorado Scientific Society
Send this form & your check to:
Colorado Scientific Society
P.O. Box 150495
Lakewood, CO 80215-0495

Or register and pay on-line using PayPal at:
http://www.coloscisoc.org/membership/duespaypal.htm