

MAY 2019 NEWSLETTER

Perrins Peak by Tim Rynott



FOUR CORNERS GEOLOGICAL SOCIETY

OFFICERS OF THE SOCIETY

Past President:

Jim Corken

President:

Tim Rynott

President-Elect:

Sabina Kraushaar

Treasurer:

Tom Staatz

Secretary:

Newsletter Editors:

Kim Gerhardt

Tom Ann Casey

Website:

Tim Matthews

Rachel Medina

To contact an officer click:

<https://fourcornersgeologicalsociety.org/about/>

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*An Epic Avalanche
Season!* Pgs 5-7

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MAY DINNER MEETING

SPEAKER: Kurt Blair

SUBJECT: Expeditions to the World's Highest Mountains

A Special Friends and Family Event

DATE: Friday, May 10th

TIME: 5:00 pm Social & Bar Open on the Patio, Dinner @ 6:00 pm,
Talks & FCGS business @ 6:30 – 8:00 pm.

LOCATION: Fort Lewis College, Sitter Family Hall, Room 710
(The New Geology Building)

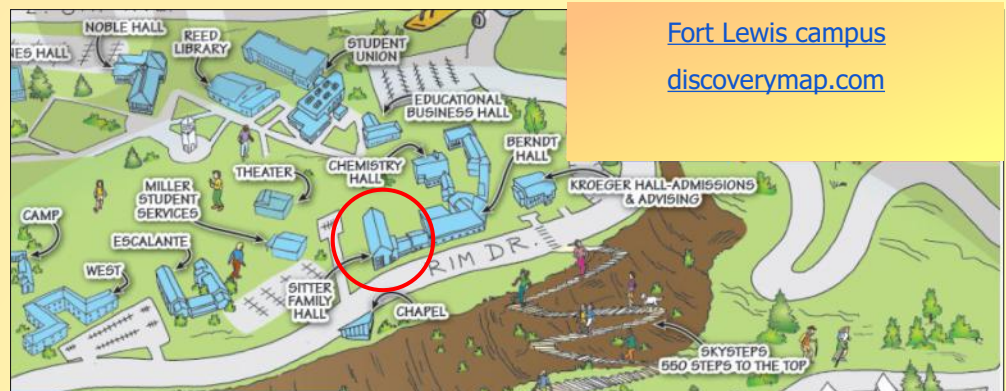
Social Hour in Courtyard outside the Wall of Time

COST: \$20/person w/RSVP by deadline. \$25 post deadline or at door
(while food lasts) \$2/person talk only

RSVP and pay online at: <http://www.fourcornersgeologicalsociety.org/> or

RSVP to Jim Corken at: rjcork@aol.com / [970-759-2567](tel:970-759-2567);

By Wednesday, MAY 8TH at noon. Those who are pre-paying and
members who just want to reserve a spot and pay at the door can all
register at this link: <http://www.fourcornersgeologicalsociety.org/>



ABSTRACT

Expeditions to the World's Highest Mountains



Kurt Blair

Kurt will share facinating stories and photographs from his travels througout the Himalayas: He has participated in four major expeditions to the world's highest mountains.

"I chronicle four different expeditions I have made to the Himalayas in Nepal and Tibet to attempt Ama Dablam in 2005, Cho Oyu in 2008, Everest in 2015 and Mera and Baruntse in 2016."

BIO:

Kurt grew up in Durango and learned how to climb from his father, Dr. Robert Blair Jr. starting when Kurt was about 8 years old. He has spent the past 40 years climbing in the world's greatest ranges including the Colorado Rockies, the Tetons, in the North Cascades, the Sierras, Alaska, Canadian Rockies, Alps, the Andes, and peaks in the Himalayas.

After spending 20 years at a career in Information Technology, he is now semi-retired as a full time climbing and ski guide working for San Juan Mountain Guides.



Save the Date!

May 11th: Field Trip:
*Hydrology and Methane Seeps
in the Durango Area.*

June 1-2nd: Field Trip:
Geology of the Ouray Area.

**August 25th: @ Junction
Creek Campground: FCGS
Summer Picnic.**



Image by lanur from Pixabay
pixabay.com/photos/tibetan-prayer-flags-flags-color-1384193





IMPORTANT FCGS BUSINESS



FCGS 2019-2020 Elections: Society Officers & Foundation Directors

It's that time of year again! Our 2019-2020 Dues are due soon! May 31st is now the end of our calendar year. Memberships for 2019 will expire at the end of May and dues paid this year will be good until the end of May 2020. Because this transition has been confusing, we will send you an email letting you know if you are paid through May 2020 or if your dues need to be paid soon. If you have any questions, please contact Tom Ann at talcgeo@gmail.com or through the FCGS website. There is a membership form on the last page of this newsletter if you wish to pay by mail.

AND

The Society needs to elect new officers for the coming 2019-2020 year.

We are also electing Directors for the reorganized Four Corners Geological Society Foundation.

The FCGS Constitution and Bylaws specify that the current president (**Tim Rynott**) automatically becomes the **Past-President** the following year and that the current **President-Elect (Sabina Kraushaar)** succeeds to the Presidency. These positions are therefore not on the ballot.

The nominations for new FCGS Officers are:

President Elect - Jonathan Harvey

Secretary - Jolin Cordalis

Treasurer - Tom Staatz

Newspaper Editors - Kim Gerhardt and Tom Ann Casey

The nominations for new FCGS Foundation Directors are:

Foundation Directors will choose among themselves to serve for 1, 2 or 3 years so terms become staggered and roughly 1/3 of these positions will be up for election in each future year.

Jeff Cary

Jim Corken

Jim Fasset

Mary Gilliam

Joe Hewitt

Link to Ballot: [Vote Here!](#)



"PREZ SEZ" by Tim Rynott



Greetings,

I still miss my dad a great deal. He passed not quite 7 years ago, but he made an indelible impression on me. As an insurance salesman most of his life, he had the gift of gab, which also led

to consuming many articles on self-awareness, and self-improvement. He often (snail-mailed) me articles, and being the pack rat that I am, I recently came across a fine piece written by Robert Hastings, published in approximately 1986. It's titled, **The Station**. Speaking from experience, it's too easy to fall prey to our domestic capitalistic frenzy of 'staying ahead of the pack', and letting life slip into the rearview mirror. Please enjoy.

Tucked away in our subconscious minds is an idyllic vision. We see ourselves on a long, long trip that almost spans the continent. We're traveling by passenger train, and out the windows we drink in the passing scene of cars on nearby highways, of children waving at a crossing, of cattle grazing on a distant hillside, of smoke pouring from a power plant, of row upon row of corn and wheat, of flatlands and valleys, of mountains and rolling hills, of biting winter and blazing summer and cavorting spring and docile fall.

But uppermost in our minds is the final destination. On a certain day at a certain hour we will pull into the station. There sill be bands playing, and flags waving. And once we get there so many wonderful dreams will come true. So many wishes will be fulfilled and so many pieces of our lives finally will be neatly fitted together like a completed jigsaw puzzle. How restlessly we pace the aisles, damning the minutes for loitering ... waiting, waiting, waiting, for the station.

However, sooner or later we must realize there is no one station, no one place to arrive at once and for all. The true joy of life is the trip. The station is only a dream. It constantly outdistances us.

"When we reach the station that will be it!" we cry. Translated it means, "When I'm 18, that will be it! When I buy a new 450 SL Mercedes Benz, that will be it! When I put the last kid through college, that will be it! When I have paid off the mortgage, that will be it! When I win a promotion, that will be it! When I reach the age of retirement, that will be it! I shall live happily ever after!"

Unfortunately, once we get it, then it disappears. The station somehow hides itself at the end of an endless track

"Relish the moment" is a good motto, especially when coupled with Psalm 118:24: "This is the day which the Lord hath made; we will rejoice and be glad in it." It isn't the burdens of today that drive men mad. Rather, it is regret over yesterday or fear of tomorrow. Regret and fear are twin thieves who would rob us of today.

So, stop pacing the aisles and counting the miles. Instead, climb more mountains, eat more ice cream, go barefoot oftener, swim more rivers, watch more sunsets, laugh more and cry less. Life must be lived as we go along. The station will come soon enough.

It's been an honor and a privilege to serve this society. I hope the FCGS is in better standing from whence I commenced, and I hope you also give serious consideration of "giving back". Whether it's your HOA, PTA, Church or professional society: what flows out always flows back. Whilst spreading the love, please give a big hug to any surviving parents.

I hope to see you Friday May 10th for another special night at the Fort - our speaker has a refreshing perspective on the specter of life.

Carpe diem my friends.

Tim



2019: An Historic Year for Avalanches

~ by Andy Gleason

Driving along Red Mt Pass in the spring of 2019, I stop at McIntyre Gulch, an avalanche path that I had never seen reach the highway since I came to Silverton, Colorado in 1995 to work as an avalanche forecaster for the Colorado Avalanche Information Center (CAIC). As you step out onto Highway 550 in the middle of towering walls of avalanche debris, the first thing that hits you is the smell of wood. There's acres and acres of trees strewn within the avalanche debris like a giant game of pick-up sticks. There's enough firewood to heat the town of Silverton for a heavy winter or two. The avalanche has taken out the aspen forest on either side of the avalanche path in a crisp line of fallen timber that we call the trim line. We use the age of trees along the trim line to determine return periods of avalanches, like return periods of floods. It looks like this one had about an 80 year recurrence interval. The trees will tell the story and mark the passage of the massive avalanche that ran in March of 2019. When an avalanche runs up the opposite side of valley from its path, it is called the run up zone. McIntyre Gulch has run up the other side of the valley almost to the historic Liberty Bell mine building. Nearby spruce trees are flagged (branches broken off) up to 35 feet high. The avalanche debris is difficult to walk on, but not because you sink into the snow. It is a frozen pile of mashed potatoes stirred by an angry whirling Dervish. There's so many broken trees and branches in the debris that it is easy to see why it took so long to open the pass after the winter storms of 2019.



Photo of avalanche debris with trees on the McIntyre Gulch slide path on the north side of Red Mt Pass. Photo by A. Gleason.



Avalanche debris from the Riley Boy avalanche path near Chattanooga on Red Mt Pass, April 12, 2019. Photo by A. Gleason.

The winter of 2018-2019 was an historic season for avalanches in Colorado. While this winter did not have the highest snowfall totals on record for the San Juan Mountains, it was close with the fourth highest total on Red Mt Pass since 1971 (Figure 1). This winter season did have the highest number of avalanches recorded by the Colorado Avalanche Information Center (CAIC) (Figure 2). Unfortunately, Colorado also had eight avalanche related fatalities which is above the



2019: An Historic Year for Avalanches cont.

average of six per season. Numerous avalanches ran beyond their current paths and extended the trim lines of the tracks and runout zones. There were more large scale avalanches of size D4, on a 1-5 scale, than any previous year in the San Juan Mountains (Figure 3). A D4 avalanche is defined as an avalanche that could destroy a railway car, large truck, several buildings or a substantial amount of forest. The avalanche debris on Red Mt Pass from the March 2019 avalanche cycle contained numerous trees that were destroyed by the large destructive slides. One of the reasons that it took over three weeks to open Red Mt Pass after the snow stopped was the large amount of trees in the avalanche debris. CDOT cannot use their large snow blower to clear avalanche debris if it contains trees, so all avalanche paths had to be slowly cleared with heavy construction equipment. There are reports of old growth forest that were destroyed in this year's avalanche cycle throughout the state of Colorado. An interesting study would be to travel around the state and conduct dendrochronology on the trees that were felled by avalanches this year to get an estimate of return periods for the avalanche paths.

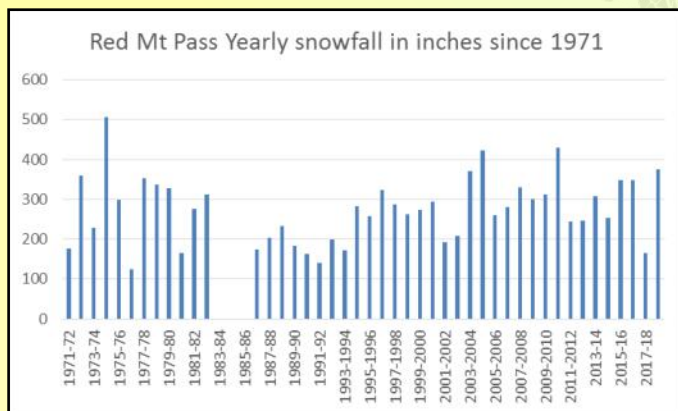


Figure 1. Snowfall totals for Red Mt Pass in inches. Data from the Colorado Avalanche Information Center (CAIC) chart by A. Gleason.

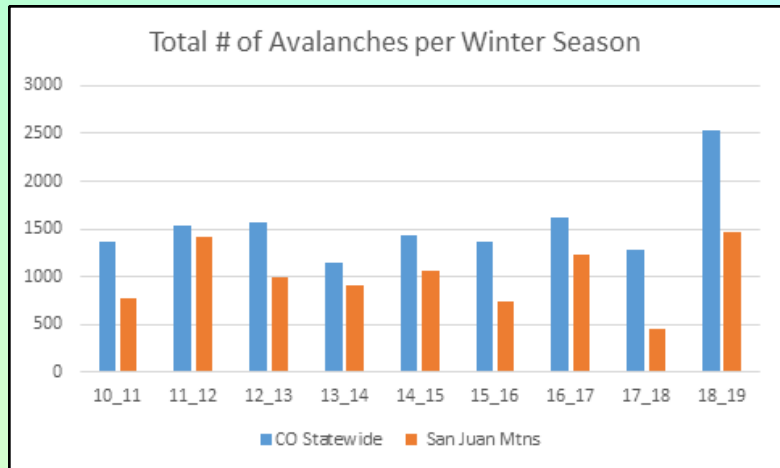


Figure 2. Total number of avalanches reported to the CAIC for the state of Colorado and the San Juan Mountains since 2010. Data provided by CAIC Mike Cooperstein and Chris Bilbrey, Chart by A. Gleason

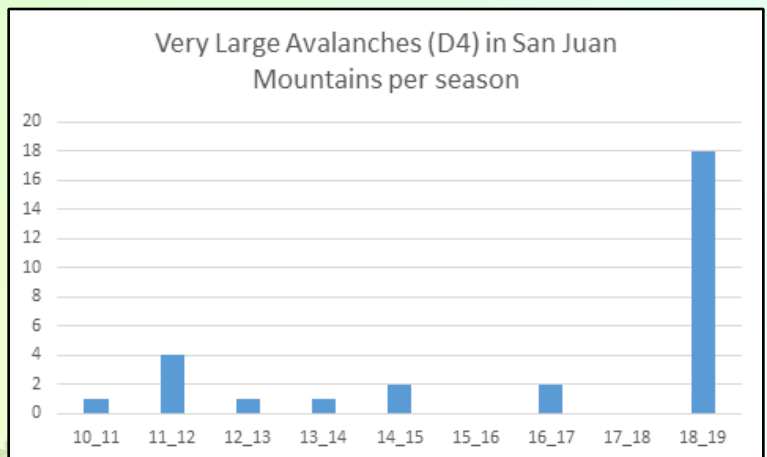


Figure 3. Number of very large (size D4) Avalanches in the San Juan Mountains since 2010. Data provided by CAIC Mike Cooperstein and Chris Bilbrey, Chart by A. Gleason



Image by Ignacio D. G. from Pixabay



2019: An Historic Year for Avalanches cont.

Looking up into the belly of the beast of the McIntyre Gulch avalanche starting zone from Red Mountain Pass, I think about what it must be like to be in that avalanche. The roaring sound of the powder blast and flowing debris would be accompanied by the loud crack of 20 inch tree trunks snapping like matchsticks. The amount of snow and rock and timber in the debris demonstrates what a large scale mass movement can do to humble and awe the mountain traveler. I realize that if caught in such a monster, I wouldn't survive, but it would be the most I would ever know about avalanches for maybe 15 seconds. Sometimes my curiosity gets the better of me and I think it would be worth it.



McIntyre Gulch on Red Mt Pass. Photo by A. Gleason

Thanks to the CAIC and Jerry Roberts for help with this article. Link to the CAIC website for more photos and videos of big avalanche this season.

A Huge Thank You to Andy Gleason for writing this special article on avalanches for the FCSG Newsletter!



FIELD TRIP UPDATES



2 FIELD TRIPS COMING THIS SPRING!!

MAY 11th: FRUITLAND METHANE SEEPS AND HYDROLOGY OF THE DURANGO AREA

*** Sold Out - contact Jim Corken for waitlist instructions ***

Leaders: Devin Hencman (LT Environmental) and David Schiowitz (SGM), Karen Spray (retired SUIT), Rick Ehat (Ehat Consulting, LLC) and Mike Demming (Retired USBR).

Description: Timing, in mid-May, coincides with spring high water tables that showcase bubbling methane seeps along the Fruitland coal outcrop that rims the northern San Juan Basin.

Participants will learn about Fruitland Formation geology, coal bed methane production, historic methane seeps, underground coal fires and how methane seeps are now detected, monitored and mitigated. They will also learn about related hydrology issues spanning Longhollow reservoir in the west to the Pine rivers to the east including Fruitland water rights, litigation and modeling.

Itinerary: Meet 7:40am at Office Depot parking lot to board vans. Stops (from west to east) include Long Hollow Dam, the Cinder Buttes underground coal fires, Valencia gap methane gathering system, lunch at Dallabetta Park, Moving Mountain, Lake Nighthorse Dam, Palmer Ranch seeps, the reverse French drain remediation system on Texas Creek and BP's history at Pine River Ranches. We should be back in Durango by 4:30pm. After the trip relax at Ska!

Number of Participants: 28.

Note - minimal hiking but wear boots or sturdy shoes.

Transportation: Vans. Note - no private vehicles allowed due to SUIT stipulations.

Fee: \$35pp. Includes transportation, snacks & permits. BYO lunch and refillable water bottle.

Handouts: Available in pdf format on our website. Download and print your own before the trip.

Registration: Open through the Four Corners Geological Society website. Must be a member.

Cancellation Deadline for Refund: May 1st.



Bubbling seep, S. Fork Texas Creek.



Location of Long Hollow dam abutment in Cliff House Fm. and Lewis Shale.

JUNE 1-2nd: GEOLOGY OF THE OURAY AREA

*** 8 Spots Left as of May 2nd ***

Leaders: David Gonzales, FLC, and Steve Cumella, Consulting geologist.

Description: This will be a 2-day trip run out of Ouray. Transportation to Ouray and lodging in Ouray are not included in the trip fee. Geologic highlights include Proterozoic basement history, the Pennsylvanian – Permian section, late Cenozoic magmatic events (San Juan volcanic field) and mineralization in the Ouray area.

Itinerary:

Pre-trip social hour May 31, 4:30-6:00pm on Ouray Brewery rooftop. Meet at 7:40am both mornings in Hot Springs parking lot at the north end of town. We will consolidate into carpools and non-drivers can leave their vehicles in the parking lot. We will provide make-your-own lunches and lunch beverages. Enjoy Saturday night dinner catered by Secret Garden. Guests welcome for dinner for additional fee! We will return each day by 5:00pm.

Please Note – moderate hiking so please wear hiking boots or sturdy shoes.

Number of Participants: 30 including trip leaders and drivers.

Transportation: Carpools

Handouts: Will be available in pdf format on our website. Download and print your own before the trip.

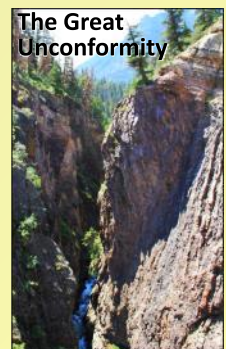
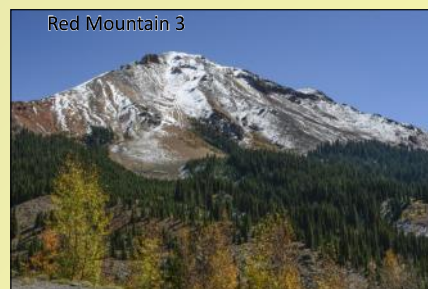
Lodging: Participants must find their own lodging.

Fee: \$85 Includes Dinner Saturday night.

Must be an FCGS Member.

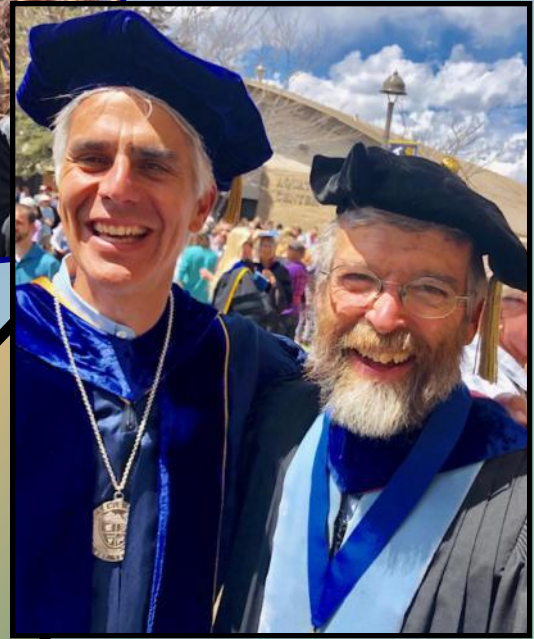
Registration: Is open on the FCGS website.

Cancellation Deadline for Refund: May 1st.





FCGS ROCKS



Big Thanks go out to Jon Harvey for the excellent article in last month's News on the Missionary Ridge Rockfall Complex!



2020 RMS-AAPG MEETING

GRAND JUNCTION COLORADO
SEPTEMBER 13 – 16, 2020



20/20 VISION

Turn Hindsight

to

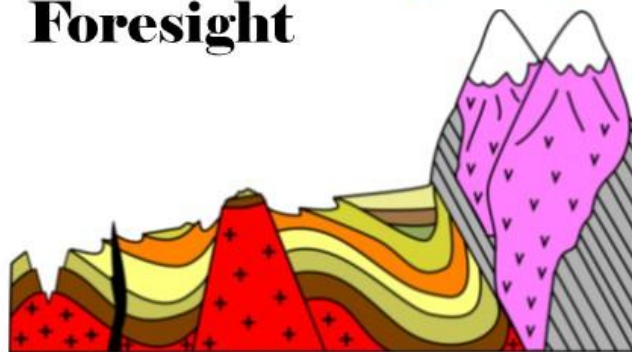
Foresight

SPONSORS
NEEDED!

Great Field Trips!
Awesome Location!
Amazing Geology!!
Great time of Year!!
Technical papers &
Short Courses to die for!

Co-Hosted by:

The Grand Junction Geological Society and
The Four Corners Geological Society



A WESTERN SLOPE COLLABORATION

THEME UNDER CONSTRUCTION

Need volunteers for the following tasks:

(Contact Kim Gerhardt, kim@mydurango.net)

- **SPONSORSHIP:** Solicit sponsors (using lists from past RMS meetings).
- **EXHIBITORS:** Solicit exhibitors & vendors (using lists from past RMS meetings & GEMs list).
- **FINANCE:** Budget & finance committee.
- **FIELDTRIPS:** Propose fieldtrips, find leaders, plan logistics, determine participant price.
- **TECHNICAL SESSIONS:** Propose technical sessions, find chairs, find subcontractor to process abstracts (AAPG contact)
- **SHORT COURSES:** Solicit short course instructors. Determine participant pricing.
- **SPEAKERS:** Recruit luncheon speakers (All Convention Luncheon, DPA).
- **AWARDS & JUDGING:**
 - Buy awards to give to last year's winners.
 - Recruit judges via registration form for this year, collect completed forms and determine winners. They will get awards at 2021 meeting.
- **WEBSITE:** Set up meeting website including links to registration & abstract submission.
- **PUBLICITY:** Publicity - use templates from other RMS meetings to make following. (Some help from GEM):



ON THE ROCKS FIELD TRIPS 2019

Book Cliffs - April 25-28/See rmag.org today!

Save the Dates for These Great Trips!

May 11, 2019

Northern Front Range
Location: Front Range, CO
Trip Limit 20

June 15, 2019

Dinosaur Ridge/Morrison NH Museum
Location: Morrison, CO
Trip Limit 25 - Family Trip

June 22-23, 2019

Fish Fossil Collecting
Location: Kemmerer, WY
Trip Limit 16

June 21-23, 2019

Green River Basin Trip
Location: Rock Springs, WY
Trip Limit 15 - Optional Fly Fishing 6/24!

July 13, 2019

RMNP Glacial Geology Hike
Location: Estes Park, CO
Trip Limit 12

August 17, 2019

Pennsylvanian Fossil Trip
Location: McCoy, CO
Trip Limit 30 - Family Trip

October 12, 2019

Hygiene Sandstone
Location: Boulder, CO
Trip Limit 20

October 14-18, 2019

Permian Basin Trip
Location: El Paso, TX & Carlsbad, NM
Trip Limit 20

Trip details, when available, pricing and registration information at:
www.rmag.org.

email: staff@rmag.org

1999 Broadway, Ste. 730, Denver, CO, 80202

fax: 888.389.4090

web: www.rmag.org

follow: @rmagdenver

f i n t w



**AAPG ROCKY MOUNTAIN SECTION
ANNUAL MEETING**

SEPTEMBER 15-18, 2019, CHEYENNE, WYOMING

CALL FOR PAPERS

DEADLINE MAY 31, 2019

The AAPG Rocky Mountain Section with the Wyoming Geological Association invite abstract submissions for the 2019 meeting in Cheyenne.

TECHNICAL SESSIONS

1. History of Exploration and Production in the Rockies
2. Carboniferous of the Northern Rockies
3. Seismic Application in the Rockies
4. Clastic Resource Plays of the Rockies
5. Exploration and Production in the Powder River Basin
6. Advances in Geologic Storage
7. Total Petroleum Systems
8. Mud Rocks in the Rockies – Lessons Learned and Recent Innovations
9. From Basins to Wells; Structural Geology and Geomechanics
10. Special Topic – A Tribute to Bill Cobban and his Contributions to Stratigraphy
11. Tight Oil Plays
12. Reservoir Characterization and Completions for Tight Plays

TECHNICAL CO-CHAIRS

Mike Bingle-Davis Stephen Whitaker
mikeb@kirkwoodcompanies.com swhitak2@uwyo.edu

Events Around the Region

DUG Rockies 2019

Where Business Meets Opportunity

May 14-15, 2019

Colorado Convention Center, 700 14th Street, Denver, CO 80202

Plays Covered: Powder River Basin, Bakken, Three Forks, Niobrara, Codell, Mancos, Parkman, Turner, Frontier

For more info or to register, go to <https://www.event.com/events/dug-rockies-2019/registration-9539add39e1241c691c6f07c7a0fd69b.aspx?r=63cae1ec-fefd-4350-b840-579984a8f560&refid=Main%20Path&fqp=true>

Extractive Metallurgy Chapter of Denver (EMCD) May Field Trip

Thursday, May 23, 2019 beginning at 9 AM

Edgar Mine of the Colorado School of Mines

To sign up we would like everyone to follow the link (<http://www.emcdonline.com/contact-us/events-sign-up-form>) and complete the sign-up form. If you have trouble with the form or would prefer not to use the form, feel free to RSVP by responding to this email or contacting: Erik Stepperud (720) 331-3222) stepperude@hazenresearch.com or Solly Zitron (720) 840-9203 zz@zzitron.com



Four Corners Geological Society, P.O. Box 1501, Durango, CO 81302
www.fourcornersgeologicalsociety.org



FOUR CORNERS GEOLOGICAL SOCIETY

P.O. Box 1501, Durango, CO 81302

MEMBERSHIP RENEWAL or APPLICATION: June 1, 2019 to May 31, 2020



*Name: _____

*Address: _____ City: _____ State: _____ Zip: _____

*Email: _____ Phone: _____

*Employer: _____

Please Identify a Membership Category:

Active Member	\$25	Any person engaged in the practice or teaching of geology or who holds a Bachelor's Degree in geological science from a college of acceptable academic standards. Degree requirement may be waived if applicant has adequate professional experience. *Highest Degree, Type and Year: _____ *College / University: _____
Associate Member	\$25	Any person who is a graduate of a college of acceptable academic standards with major studies related to, or associated with, geology. Degree requirement may be waived if applicant has adequate professional experience. *Highest Degree, Type and Year: _____ *College / University: _____
Student Member	Free	Any undergraduate or graduate student majoring in geology at a college of acceptable academic standards. *College / University: _____ *Year expected to graduate: _____
Emeritus Member	Free	An Active Member of 65 years old or older who has been a member for 25 years including time spent in military service. *Year emeritus status was awarded: _____
Honorary Member	Free	An Active Member who has contributed distinguished service to the profession of geology and to the betterment of the FCGS. Determination is made by the FCGS Executive Committee. *Year honorarium was awarded: _____

Other Professional Interests:

** Required information for new members. Current Members, please update.*

*Please check your interests:

- ☐ Sedimentology & stratigraphy
- ☐ Structure & tectonics
- ☐ Mineralogy, petrology, geochemistry
- ☐ Igneous geology, volcanology
- ☐ Ore geology and hard rock mining
- ☐ Other mineral extraction
- ☐ Petroleum geology
- ☐ Geophysics
- ☐ Geological engineering
- ☐ Geomorphology
- ☐ Quaternary geology
- ☐ Hydrology & water resources
- ☐ Environmental geology
- ☐ Geography / GIS
- ☐ Other interest (see box)

Please either print, complete and return this form with your check for dues made payable to: "Four Corners Geological Society" and mail to the address above or go online to fourcornersgeologicalsociety.org .