

# Geosciences Program

## NEWSLETTER

For alumni and friends of the geosciences program  
**Autumn 2017**



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## A YEAR ON SABBATICAL — LA DOLCE VITA

I returned to CMU this fall rested, relaxed, and ready after being on sabbatical for the past year. Rather than relocating, I chose to “commute” to the field, laboratories, and my collaborators’ home institutions to conduct my sabbatical research. My goal was to document the long-term evolution of the Colorado River system with an emphasis on the upper Colorado and Green Rivers. Ultimately, I would like to better understand what factors drive long-term river incision in the Rocky Mountains-Colorado Plateau regions. This represents a continuation of the work that I’ve been involved with during the past several years with collaborators at University of New Mexico, New Mexico Tech, CU-Boulder, U.S.G.S., Exxon-Mobil, and the Utah Geological Survey. Specifically, my sabbatical research involved:

- a) Identifying ancient deposits of the Colorado and Green Rivers in Colorado, Wyoming, and Utah, and collecting samples. Having time to spend in the field was an absolute joy!
- b) Learning (U/Th) He apatite thermochronology to better understand the erosional histories of these river basins. Samples were collected along the Colorado River between Grand Junction and Rifle, Colorado, and lab work was completed at CU-Boulder in the thermochronology lab. Results are consistent with rapid exhumation of the upper Colorado River basin in the late Miocene. Whether or not this pulse of exhumation is linked to Colorado River integration through Grand Canyon remains to be determined. Rachael Lohse will complete a senior thesis modelling the apatite helium data.
- c) Learning detrital mineral dating techniques to better constrain the timing of river incision. Samples were collected at a variety of locations in the upper Colorado and Green River basins, and were analyzed in Matt Heizler’s Argon Geochronology lab at New Mexico Tech in Socorro. Results are still in progress, but they suggest that regional incision involving ancient rivers draining the San Juan Mountains was underway 20-16 Ma, the ancestral Colorado River was draining the central Rocky Mountains by 11 Ma, and the Green River was captured and integrated through Lodore Canyon in northwestern Colorado sometime between 8 and 2 Ma. Kathleen Dykstra will complete a senior thesis working on detrital sanidine data.

I was also able to travel and participate in several conferences including a wonderful trip to Bogota and Medellin, Columbia where I gave a lecture on mantle dynamics and landscape



*Professor Aslan revisits the Franz Josef glacier in New Zealand 32 years later. Inset: Dr. Aslan in the same place in 1985.*

evolution in the western U.S. I also attended the 2016 GSA meeting in Denver where I gave a talk and led a four-day field trip through southwestern Wyoming, northeastern Utah, and northwestern Colorado. Four of my research students (Donald Jarrin, Jaron Ragsdale, Rachael Lohse and Kathleen Dykstra) also gave presentations at GSA. Donald Jarrin (DJ) and I published his senior thesis on luminescence dating of outwash terraces near Ridgway, Colorado, and we are presenting this research at the upcoming New Mexico Geological Society Field Conference in Ouray, Colorado. I also have a new paper coming out in *Geosphere* later this fall that summarizes detrital zircon and sanidine data, which constrain Oligocene-Miocene landscape evolution in the Uinta Mountains region. This work provides a framework for the eventual capture and integration of the Green River through Lodore Canyon.

Lastly, I did have some fun as well. In February, I went on a two week trek across the South Island of New Zealand. As a geologist, this adventure was especially thrilling. I started in Christchurch, crossed the southern Alps, traveled south along the west coast, and eventually made my way to Queenstown. This was my second tour of New Zealand – I visited previously in 1985 at the end of my undergraduate study abroad in Australia. A special moment for me during this trip was revisiting the Franz Josef glacier. This glacier has a well-documented history, and when I visited it the first time in 1985 the glacier was in retreat. Subsequently, the glacier advanced from roughly 1985-2003, and since that time, it has resumed its retreat up-valley to a point several hundred meters from where I saw the terminus in 1985. On my trip in February, I had a copy of a photograph of me standing in front of the Franz Josef glacier in 1985, and it was a real thrill to take a picture of the glacier and myself 32 years later! La Dolce Vita! •

~ Andres Aslan, PhD

## FACULTY PROFILE

### Dr. Larry Jones, Instructor of Geology

Fort Lewis College (BS), Northern Arizona University (MS),  
University of Wyoming (PhD)

Lawrence S. (Larry) Jones followed a highly sinuous path to reach his current position of Instructor of Geology at Colorado Mesa University. During junior high and high school, he spent hours in the basement of Penrose Library in Colorado Springs reading early (ca 1900) USGS publications on various Colorado mining districts. Weekends would often find him collecting minerals at localities around the Pikes Peak area. After graduating from high school, he briefly attended the University of Colorado, then switched to a career in the construction business in Summit County, Colorado. For the next 12 years, he drove trucks, operated heavy equipment, built houses, ran a remodeling and snow removal business, and was shop foreman for the Summit County Road and Bridge Department.

Larry eventually returned to college and received his BS at Fort Lewis College, his MS at Northern Arizona University, and his PhD from the University of Wyoming. After working five years as a project geologist in the oil and gas industry, Larry transitioned into teaching. He was an Instructor of Geology at CMU from spring 2002 through spring 2006. Larry then moved to Montana to take another teaching position, and returned to CMU as an instructor in the fall of 2013.

Larry's course offerings tend to vary somewhat from year to year. He normally teaches some mix of Colorado Geology, Weather and Climate, Principles of Physical Geology Lab, Field-Based Introduction to Physical Geology, Geomorphology Lab, Field-Based Depositional Systems, and Subsurface Methods. Last year he filled in for Dr. Aslan, who was on sabbatical (see page 2), and also taught Field Methods, Geomorphology Lab, and Senior Seminar. He gets along well with the students although his red ink markups on their attempts to write papers have become legendary. Larry considers helping and mentoring students to be the most enjoyable and satisfying of his many careers. He particularly likes to integrate classroom theory with field experience, and of course, western Colorado is an ideal place to do so.

**Larry was an Instructor of Geology at CMU from 2002 to 2006 and returned to CMU as an instructor in the fall of 2013.**

**Larry considers helping and mentoring students to be the most enjoyable and satisfying of his many careers.**



Larry Jones at the summit of Twin Peaks above Ouray in September 2017.

Larry has a wide variety of research interests. His MS research with Ron Blakey involved documenting and understanding eolian (for the most part, wind-blown sand dune) deposition in a Jurassic marginal marine setting. He continues to find eolian deposition fascinating, and he can often be found hiking (and pondering) in the nearby Entrada and Wingate sandstones of Colorado National Monument. His PhD research at University of Wyoming focused on the depositional processes of rivers and their architecture at the channel and larger scales, and was honored to be able to work with the late, world-renowned scientist Dr. Stan Schumm of Colorado State University. He continues to try to understand the controls on channel-stacking patterns in nearby fluvial units like the Cutler, Morrison, Dakota, and Wasatch Formations. From 2005-2007, Larry joined with other CMU faculty to work on a National Science Foundation Research Experience for Undergraduates grant. His most recent publication on fire frequency and sedimentation in nearby Gibbler Gulch was a direct result of this work and is a topic of ongoing interest.

Larry has many interests in addition to geology. He is an avid hiker and a common sight on many local trails year-round. He normally scales several "fourteeners" every summer. This year he made it to the 13,800' mark on Castle Peak, but had to turn back because his companion dog was unable to scale a particularly steep section. A few weeks later he (and the dog) summited Quandary Peak and so has hiked at least one 14er every year he has lived in Grand Junction. He often hikes Serpent's Trail, Mount Garfield, and other local trails. Late afternoons and early evenings often find him playing racquetball. He likes to tinker with mechanical devices, particularly old farm tractors and antique pocket watches, which he collects and restores. •

## COORDINATOR'S CORNER

### 2016-2017 Updates and Information

#### Program Activities – Big news!

The Geosciences program is in the initial stages of developing a non-thesis MS degree program. Drs. Larry Jones and Cassie Fenton have spearheaded the effort to date, and the administration is currently reviewing the proposal. Briefly, the aim of the proposed program is to provide recent graduates from CMU and geology programs elsewhere the opportunity to complete a MS degree in as little as one and a half years. This "fast-track" approach will take full advantage of all the fabulous field opportunities this area has to offer. We are in the early stages of developing the program, and we would certainly like feedback from alumni and friends regarding this program initiative. We hope we can count on your support!

On a sad note, long-time faculty member Jonathan Cooley (photo right) resigned his instructor position at CMU this fall. Jonathan has been an integral part of the Geosciences program providing expertise on dinosaurs and paleobiology, leading geology raft trips, and bringing fun and excitement to our Field-based Physical Geology course. Jonathan is still teaching a few classes at CMU, but his full-time presence is sorely missed.



#### Student awards

Numerous students received program as well as school-wide awards this year. **Anthony Seuga-Duncan** received the prestigious RMAG Neal J. Harr award, and **Adam Nawacki** was awarded the Richard D. Dayvault Endowed Memorial Scholarship. **Ian Shafer** received the William C. Hood student research award, and **Evan Pellowski** received the Verner C. Johnson Geology/GIS award. The Association of Women Geoscientists award went to **Rachael Lohse** and **Alexandra Williams**. The GJ Gem & Mineral Club Scholarships (\$500 each) were awarded to **Laura Moran** and **Anthony Seuga-Duncan**. GJ Geological Society Field Camp Scholarships (\$500 each) were awarded to **Nick Cholas**, **Evan Pellowski**, and **Alexandra Williams**. **Anthony Seuga-Duncan**, **Evan Pellowski**, and **Ian Shafer** received Best Student Presentation awards at the April meeting of the GJ Geological Society, which features student research presentations

Thank you to everyone for your continued interest and support of the CMU Geosciences program. We hope everyone is well and that we see you soon! •

~ **Andres Aslan**, Geology Program Coordinator

## CLUB ACTIVITIES

The American Association of Petroleum Geologists (AAPG) Student Chapter at Colorado Mesa University is looking forward to another full year. Students are back on campus and have already had their first meeting. Goals for this semester include a field trip for fall semester, and a membership drive to draw in new geology students and increase AAPG's visibility at Colorado Mesa University.

Last April, many of our members participated in the Science Fair at Lincoln Park. The fair followed the March for Science through Grand Junction, which was held to promote support for science.

At the end of spring semester, an election was held to replace several seniors who graduated. Congratulations to our new Treasurer, Evan Pellowski, and our new CAB Representative, Timothy Bowers. Congratulations also go out to our graduates and new Geosciences alumni! Don't forget to stay in touch!

#### Speakers needed

Our Chapter is interested in hosting speakers, particularly those who would like to talk about local geology or who can provide job-finding guidance to geology graduates. The Chapter would also be interested in hearing from geologists who would like to take students on local field trips. Interested individuals should contact AAPG Student Chapter President Kathleen Dykstra at [kadykstra@mavs.coloradomesa.edu](mailto:kadykstra@mavs.coloradomesa.edu). •



American Association of  
Petroleum Geologists

@  
COLORADO MESA  
UNIVERSITY

#### GOALS FOR FALL SEMESTER:

- Field trip
- Membership drive
- Increase in AAPG visibility

## Alumni Facebook Page

### Colorado Mesa University Geology Alumni

Did you know Colorado Mesa University Geology Alumni have a Facebook page? You can access it by logging in to Facebook and searching "Colorado Mesa University Geology Alumni" or by going to [facebook.com/CMUgeology](https://www.facebook.com/CMUgeology).



## STUDENT SPOTLIGHT

### Kathleen Dykstra, senior

**K**athleen Dykstra (expected graduation May '18) is wrapping up her career at CMU in the Geosciences Program in a flurry of activity. Kathleen is the first recipient of the newly endowed (thank you contributors!) Geosciences Tuition Scholarship. Kathleen is from Colorado Springs and arrived at CMU intending to pursue a degree in geology. Kathleen is not only an excellent student, but she is also the current president of the student chapter of AAPG and is continuing her summer internship this fall at Navarro Engineering. Kathleen has also worked on research projects at CU-Boulder and New Mexico Tech the past two summers, and is working towards completion of a senior thesis using detrital sanidine dating to constrain the age of ancient river terraces in the Colorado and Green River basins. After graduation, Kathleen would like to work in the private sector and perhaps attend graduate school in a couple of years. •



Kathleen Dykstra looking for detrital sanidine grains in the lab at New Mexico Tech.



Alumnus Jeff Hrcir addressing NMGS Field Trip attendees in the San Juan Mountains, September 2017.

## MAVERICK GEOLOGISTS

### Alumni News

**Keegan DePriest** (BS, 2016) has been accepted to the MS program at Southern Illinois University and received a scholarship to help cover tuition. Congratulations, Keegan!

**Mike Feil and Adam Trumbo** (both BS, 2016) are currently still in Grand Junction and working as wellsite geologists for Field Geo Services. Our understanding is that both are working in the San Juan Basin, New Mexico.

**Tyanna Eaton** (BS, 2016) worked for Kaart Group in Grand Junction after her graduation, then moved to Montana. There, "I ended up getting an awesome job serving in Americorps through the Montana Conservation Corps!"

Young students/grads can work the full summer with the Conservation Corps or even up to a full year with other Americorps programs. They give their 'service members' housing and

food allowance as well as a minimum 'living wage' which I believe is a little over \$1,000/mo. The work is incredibly rewarding, as you are truly helping out and being part of the community AND you get a generous education grant at the end of your term. (Mine is about \$3,000 for six months). I am also meeting tons of BLM, USFS, Parks and Rec and other good connections who will hopefully offer me a job when I am done here.

Just figured I would pass along the info. I think it's a great opportunity for their students especially those considering furthering their education. (I think they have CCs in every state?)

Thanks for the update, Tyanna! We always like to hear from our former students. If you can, please drop by or send an email and let us know what you are doing! •

## MAVERICK SPOTLIGHT

### Jeff Hrcir (BS, 2014)

**J**eff Hrcir has the Midas touch. Jeff has always been interested in mineral exploration, and he is currently completing his MS degree specializing in (you guessed it!) gold mineralization and regional tectonics at the University of New Mexico. As a senior at CMU, Jeff gave an award-

**Jeff gave an award-winning presentation and received financial support from investors to develop gold prospects.**

winning presentation to the Grand Junction Geological Society, and from that presentation, Jeff received financial support from investors to develop gold prospects in the Black Hills of South Dakota and the San Juan Mountains of Colorado. Jeff has developed novel ideas for gold exploration in these areas and will continue his exploration activities following his graduation this winter. Jeff returned to Colorado this fall as a participant on the 2017 New Mexico Geological Society Field Conference in Ouray, Colorado and he shared his expertise on mineralization in the region. Way to go, Jeff! •



Students from Dr. Livaccari's Geology 113 class ponder the mysteries of Unaweep Canyon.



Alumnus Joe Jones and current student Timothy Bowers with large smoky quartz crystal that Joe found and donated to the school.

## Spring 2017 Field Trip

### Unaweep Canyon

The Spring Field Trip to Unaweep Canyon led by Dr. Rick Livaccari with assistance from alumni Mike Feil and Adam Trumbo was a great success! Several dozen students and alumni attended and were enlightened about a number of heretofore unrecognized (and mineralized) faults in the walls of Unaweep Canyon. The group also accessed several pegmatites, and a variety of specimens were collected. One massive smoky quartz crystal found by alumnus Joe Jones (B.S., 1983) was given to the geosciences program and is currently on display in the far east showcase in the second floor, south wing of Wubben Science building. Thanks, Joe!

### Spring 2018 field trip

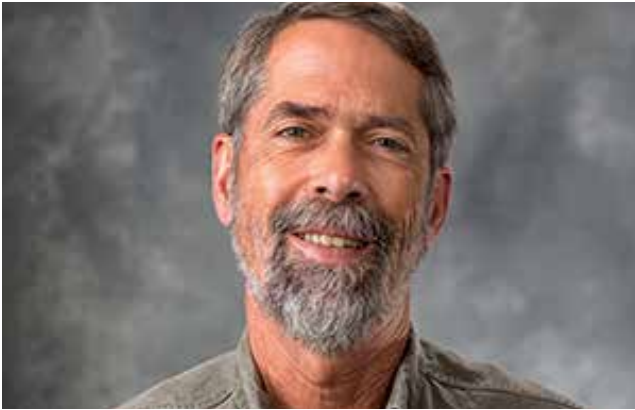
Another alumni field trip is planned for this coming spring, and all alumni and students are invited. Dr. Rick Livaccari will be trip leader, and the location will be Ryan Park, Utah. The tentative date is Saturday, April 7, 2018, so please mark your calendars and plan to join us! Details will be included in the Spring 2018 issue of this newsletter. •



Lando, the dog of cataclasis and 2017 Spring Field Trip mascot, gets a drink from his human Mike Feil (BS, 2016).



Eclipse from near Casper, Wyoming, August 21, 2017. Courtesy CMU geology student J.D. King.



## From the Editor

Welcome to the fall, 2017 issue of the Colorado Mesa University Geosciences Newsletter. At the risk of sounding like a broken record, "Alumni – please let me know what you're up to!" We and your fellow alumni are interested. I would especially like photographs! Current pics, or from the past, but please send me some images related to your time here or your career. I don't care if you graduated 30 years ago, or last year, please send an update. Please be sure to include your name, year of graduation. You can contact me directly at [lajones@coloradomesa.edu](mailto:lajones@coloradomesa.edu). •

Keep on Rockin'!

~Larry Jones, Newsletter Editor

## Thanks for the generous donations!

The Geosciences Program and students greatly appreciate the strong financial support provided by the following alumni and friends of the program.

### Richard D. Dayvault Endowed Memorial Scholarship

Richard and Cathy Barkley

### Mark Garman Scholarship

Garman Family Trust

### Geology Field Camp Scholarship

Jack Roadifer

### Geosciences Department

Chris Muhr

### Geosciences Tuition Scholarship

W. T. Cohan & Associates

Junichi Funayama

Delbert W. Jones, Jr.

The Petroleum and Mining Club

Patricia Powell

### Geology Equipment

Vincent Abeyta

Barbara Borst

Ken Johnson

Cynthia Pemberton

Holly Teal

Russ Walker