## **CSS November Meeting – Fall Newsletter**



## The rock that cried silver tears – The Early Jurassic Springdale Sandstone and its unusual precious metal mineralization at Silver Reef, UT, revisited Thursday, November 19, 2020, 7:00 pm

Uwe Kackstaetter, Ph.D., Metropolitan State University

This CSS lecture is an online Zoom meeting and presentation. 6:45 Join meeting and social time; 7:00 Presentation

Link to Join CSS November Zoom Meeting

Click to Join CSS Zoom Meeting from PC, Mac, Linux, iOS or Android

Password for meeting, if needed: 729598

Zoom meeting details

Topic: **CSS November Meeting** Time: Nov 19, 2020; 06:45 PM Mountain Time (US and Canada)

Join from PC, Mac, Linux, iOS or Android: https://mines.zoom.us/j/95594143315?pwd=UzVXenp5UEIGOXk2V2szU3k2REJIdz09 Password: 729598 Or iPhone one-tap: 16699006833,95594143315# or 12532158782,95594143315#,/p>

Or Telephone: Dial: +1 669 900 6833 (US Toll) or +1 253 215 8782 (US Toll) Meeting ID: 955 9414 3315 International numbers available: https://mines.zoom.us/u/aeqmZxfcJE

Or a H.323/SIP room system: H.323: 162.255.37.11 (US West) or 162.255.36.11 (US East) Meeting ID: 955 9414 3315 Password: 729598

SIP: 95594143315@zoomcrc.com Password: 729598

**Abstract:** The Early Jurassic Springdale Sandstone Member of the Moenave Formation at Leeds, UT, is one of the most unusual precious metal deposits in the world. Void of any recognizable hydrothermal activity, this sheet-like, 30 m thick, fluvial sandstone contains the rare minerals cerargyrite (AgCl; Horn Silver), bromargyrite (AgBr), and iodargyrite (AgI) in mineable quantities. Because mineralization is finely disseminated in an otherwise unaltered sedimentary rock, it was initially considered a hoax following its discovery in 1866. However, the Silver Reef mining district produced over 7 million ounces of Ag between 1875 to 1909 at a value close to \$8,000,000. Later, the same rocks were mined for uranium during the cold war period.



Section with Springdale SandstoneShinarump Conglomerate hills below Dinosaur Canyon Moenave slope below Springdale Sandstone red cliff below Kayenta Formation under Navajo Sandstone The first scientific investigation of the deposit was completed in 1953 by the late Paul Dean Proctor. Subsequent studies yielded multiple hypothesis for the unusual ore mineralization, but no compelling genetic model. Since then, sophisticated instrumentation, such as portable X-ray fluorescent (XRF) spectroscopy and scanning electron microscopy (SEM) with in-situ EDS microanalysis, have created novel possibilities for geochemical reevaluation. Mineralization in the Springdale Sandstone has been revisited through a series of undergraduate research projects at the Department of Earth & Atmospheric Sciences at Metropolitan State University of Denver. This presentation will pay homage to Paul D. Proctor's work while introducing the audience to some of the exciting undergraduate research projects on this most unusual deposit.



#### Uwe Kackstaetter, PhD

Dr. Uwe Richard Kackstaetter received his B.A. in Geology from the University of Northern Colorado, his M.S. in Geology from BYU, Provo and his Ph.D. in Applied Geology and Mineralogy from the University of Würzburg, Germany. His professional expertise on two continents ranges from environmental testing and geohydrologic investigations to minerals and igneous petrology. He has taught earth science at college and secondary levels and lead national and international geological field courses. Dr. Kackstaetter's current interests are applying advanced tools to geoscience problems, including field specific-gravity testing, automated percolation testers, wavelength-dependent night prospecting tools, improved processes of rock and mineral thin sectioning, field portable cation chromatography and clay-mineral analytical processing and computations. He currently works as Full Professor of Geology at Metropolitan State University of Denver where he is an advocate for undergraduate research that

involves students in meaningful geoscience studies in both in Europe and the United States.



Silver ore in Springdale Sandstone

### **Quick Introduction to Zoom**

Zoom is a video-conferencing software that can be used from a desktop or laptop (Windows or Mac), tablet, or smart phone.

To transmit a video of yourself in a meeting, you need to install Zoom. (There is a free version of Zoom.) You do NOT have to create an account to join a meeting.

If you are not familiar with using Zoom, we recommend that you review the helpful instructions and video tutorials available on their website. You can also join a "Test Meeting" from the Zoom website to practice and make sure that your video and audio are working properly. **YouTube Video introductions to Zoom**How to Join a Meeting (quick intro.): <u>https://support.zoom.us/hc/en-us/articles/201362193</u>

Joining a Zoom Call for the First Time; Fun and Easy Online Connection (with more details): <u>https://www.youtube.com/watch?v=9isp3qPeQ0E</u>

Zoom for Dummies (on a Mac): <u>https://www.youtube.com/watch?v=iagJnvy6lLY</u> Meeting Controls: <u>https://www.youtube.com/watch?v=ygZ96J\_z4AY&feature=emb\_rel\_end</u>

CSS Annual Business Meeting, Announcement of New Officers, and Presidential Address

# Pleistocene water-table fluctuations in Black Hills aquifers linked to subglacial recharge in southern Canada? Evidence from speleothems in Wind Cave National Park

Thursday, December 17, 2020

Dr. James B. Paces, United States Geological Survey

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Save the date, and we'll have more info in the next email/newsletter! You can also read more already posted on our website, <u>https://coloscisoc.org/</u>.

Recent CSS presentations are recorded on Zoom. Follow the links below for each presentation to see abstracts, biographies of the speakers and video recordings of our meetings. [Note: Please ignore the "Transcript". It is wrong too often. Just listen to the video!]