

# Colorado Scientific Society

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

## *Paleolithic Whodunit! Neanderthals, Homo sapiens and the Human Revolution, in Italy*

by

*Dr. Julien Riel-Salvatore*

*Department of Anthropology*

*University of Colorado, Denver*



“Basically, I am rehabilitating Neanderthals,”  
said Riel-Salvatore. “They were far more  
resourceful than we have given them credit for.”



Thursday, September 15, 2011  
**Golden Hotel (The Golden Room)**

800 Eleventh Street, Golden, Colorado  
Social half-hour – 6:30 p.m. Meeting time – 7:00 p.m.

NEW  
location

# Paleolithic Whodunit! Neanderthals, Homo sapiens and the Human Revolution, in Italy

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The disappearance of Neanderthals has often been explained as the result of modern humans either exterminating or outcompeting them. This so-called human revolution, was said to be associated with new behaviors in Homo sapiens, including better toolmaking strategies, better hunting techniques, a broadening of their diet, the use of art and ornaments, and the development of far-flung social networks. Recent research in southern Italy upends this view by showing that some of these behaviors may have been developed independently by some of the last Neanderthals living in the area. This presentation will summarize this new evidence and explain what this means for current views of our relationship to Neanderthals in light of recent genetic and skeletal evidence. The conclusion that Neanderthals may not have been so different from us and its implications will close the presentation, along with an overview of ongoing field research.



## Speaker Bio

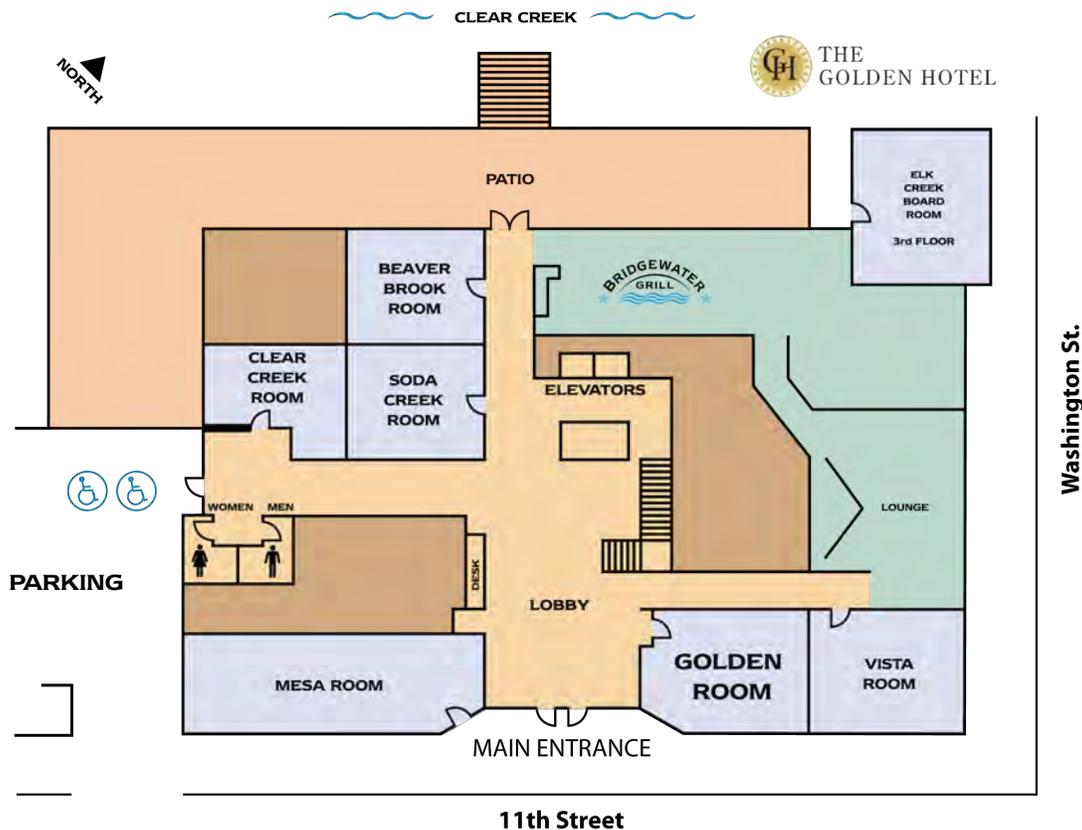
**Julien Riel-Salvatore** is Assistant Professor in the Department of Anthropology at the University of Colorado, Denver. He was born in Montréal, Canada, earning his BA (first class honors) from McGill University there before attending Arizona State University where he received his Ph.D. in 2007. Following this, he was a Postdoctoral Fellow of the Social Sciences and Humanities Research Council of Canada for two years at McGill University, where he also lectured in the Department of Anthropology. In 2009, he moved to his current position at UC Denver, from where he continues his research on Neanderthals and the Paleolithic archaeology of Italy.

His research focuses on Neanderthals and the earliest Homo sapiens settlement of Europe. He has conducted fieldwork in Spain, South Africa, Ethiopia and the U.S. Southwest, but since 2003 his research has taken place mostly in Italy, a country whose distinctive geography makes it a unique archaeological laboratory to study larger processes, such as the disappearance of Neanderthals. His research showing that Neanderthals were able to innovate independently of Homo sapiens influence has recently been featured in the New York Times, the BBC and the Washington Post, in addition to being published in scientific journals including the Journal of Archaeological Method and Theory, Current Anthropology, and American Antiquity. Since 2008, with several Italian colleagues, he has also been directing a large-scale international collaborative excavation project at the Caverna delle Arene Candide in northern Italy, where prehistoric art and early modern human levels have recently been identified. Every year, this ongoing project provides students and volunteers with the opportunity to experience archaeological research first-hand.

He also blogs about his research and current news in archaeology and paleoanthropology at, *A Very Remote Period Indeed*, part of his ongoing efforts to make research on human origins understandable and appealing to as wide an audience as possible.

Julien lives in Denver with his wife Alejandra and their newborn son, Mateo.

**Colorado Scientific Society**  
is meeting at a new venue this month:  
**The Golden Room in the Golden Hotel in Golden, Colorado!**  
(NW corner of 11th St. and Washington)  
You will find convenient parking behind the hotel on 11th St.



## President's Message from Lisa R. Fisher



Welcome back from the summer break! I hope you all had an enjoyable and successful field season—or other summer fun, as the case may be. The summer was a busy one for me, with time in the field and rush jobs in the office, with more to come.

I am looking forward to our September speaker, Dr. Julien Riel-Salvatore, who is presenting new research on Neanderthal. There has been quite an academic debate recently about our could-be ancestor; first that he was out-competed by *Homo sapiens*, but now apparently, Neanderthal DNA is showing up in our own gene pools. But we will just have to see on the 15th!

See May 2010 *Washington Post* article for more details:

<http://www.washingtonpost.com/wp-dyn/content/article/2010/05/06/AR2010050604423.html>

Many thanks to Cal Ruleman, our Field Trip Chair, for arranging the Fall Fieldtrip to the Western San Juans on Sept 30–Oct 2. Please see that announcement for details! I hope many of you can take advantage of this great-sounding trip.

Our Family Day will take place this fall, so look for the announcement after we work out the details.

I hope to see all of you at this month's meeting at the Golden Hotel!



**Still available! CSS glass mugs!!**

Receive a mug with your \$7.00 donation to CSS!

Mugs will be available at the September meeting, or from Lisa Rukstales in Building 20 at the Denver Fed. Ctr. (Beer *not* included.)

**Saturday, Sept. 10, 9 a.m. to 5 p.m.—  
Symposium on Minerals of Russia,**  
co-sponsored by the Friends of Mineralogy Colorado Chapter, Colorado School of Mines Geology Museum, and the Denver Gem and Mineral Show; to be held in Petroleum Hall, Green Center, Colorado School of Mines campus, 924 16th St., Golden, Colo. It is a series of lectures by visiting Russian mineralogists and others. Registration fee to attend is \$10. To register, please send a check to:  
Friends of Mineralogy, P.O. Box 5276, Golden CO 80401–5276, *or pay at the door.*



For more information please contact  
Pete Modreski:  
[pmodreski@usgs.gov](mailto:pmodreski@usgs.gov), 303–202–4766.



To see a fascinating video on how the Deepwater Horizon's Blow Out Preventer was supposed to work (and why it didn't), go to:

[http://www.deepwater.com/fw/main/Blow-Out-Preventer-\(BOP\)-1079.html](http://www.deepwater.com/fw/main/Blow-Out-Preventer-(BOP)-1079.html)



**Colorado Scientific Society Fall Field Trip  
to the Western San Juan Mountains, CO  
September 30 to October 2, 2011  
Leader: George Moore**

**Fall is here and it's time for the Annual Fall Colorado Scientific Society field trip! This year we will be looking at the Proterozoic to Pleistocene geology of the San Juan Mountains within the Ridgway-Silverton region of Colorado. (Details on next page.)**

**Details:** Departure will be on Friday morning, September 30, at 8:00 a.m. We will meet at the new Cold Springs Park-N-Ride on the west side of the Denver Federal Center, north of the new St. Anthony's medical complex. Vans will be provided. We arrive in Ouray at 3 p.m., and after a quick drive to an overlook, we will go back to Ouray to check-in to the hotel and go to the Jeep touring company to register, pay, and sign paperwork, after which you can roam Ouray or go for a soak in the Ouray Hot Springs Pool. Saturday morning we will depart at 8:00 a.m. for a full day of touring the caldera and mines. Please be ready for any kind of Colorado Rocky Mountain autumn weather, it might be chilly/snowy, but hopefully beautiful. We leave Ouray on Sunday morning and return to Denver by mid-afternoon.

**Lodging:** \$98.99/double room/night. All attendees must reserve their own rooms at the Best Western in Ouray (800-207-2700); a block of twenty rooms has been reserved. State that you are with the CSS field trip.

**Meals:** There are many restaurants to choose from in Ouray for Friday and Saturday nights. A complimentary breakfast is provided free of charge at the Best Western each morning. Lunch is provided by the tour company on Saturday afternoon, and drinks will be provided. Please bring "lunch food" for Friday on the way to Ouray and Sunday on the way back to Denver.

**Tour cost:** \$100/person, lunch included. (Please let us know if you prefer a vegetarian lunch when you pay upon arrival in Ouray.)

**Van fee:** \$50/person.

**Registration Deadline:** September 16, 2011. *Capacity: 40 people max.*

**Contact:** For reservations, payment info., or other questions contact Cal Ruleman, (303) 859-0911, or [cruleman@usgs.gov](mailto:cruleman@usgs.gov).

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**\*\*Student Scholarships Available\*\*** Scholarships from the Pillmore Fund to cover all or part of the expenses are available for qualifying students. Students need to complete application form, and send to: Lee Shropshire, [leeshrop@comcast.net](mailto:leeshrop@comcast.net), (970) 352-8778.



## Colorado Scientific Society Fall Field Trip to the Western San Juan Mountains, CO September 30 to October 2, 2011 Leader: George Moore

The field trip will concentrate on volcanic geology and ore emplacement, alpine glacial geology, historic mines and mills.

### Day 1. Arrival in Ouray

We will meet on Friday, Sept. 30, at 3:00 pm in the parking lot south of the tennis courts at the southeast corner of the Ridgway city park. (site of the hanging scene in the original True Grit movie). GPS reading: 38°02'22.4"N : 107°40'45.7"W From there we will drive to an overlook on Log Hill Mesa for an orientation stop. GPS reading: 38°10'54.2"N : 107°46'36.5"W

We will then return through Ridgway and drive up the Uncompahgre Valley to Ouray. When we reach Ouray, we will go to the tour company office to individually pay and sign releases for the next day's tour. Our costs will be \$100/person for the tour transportation with lunch included for Saturday. (Taxes are included.)



Ouray, known as the *Switzerland of America*, is a small Victorian mining town with a population of 800 nestled in the mountains at the head of the Uncompahgre Valley at an elevation of 7,800 feet. A short hike from the south edge of town is the famous exposure of the angular unconformity in Box Canyon Park. At the opposite end of town is the Ouray Hot Springs Pool. Surrounding cliffs exhibit colorful layers of Paleozoic and Mesozoic sedimentary and Tertiary igneous rocks. Historic buildings, shops, art galleries, and restaurants are clustered along Main Street and adjacent side streets, and numerous Victorian homes can be seen on a walking tour of town.

### Day 2. Uncompahgre Gorge, Silverton Caldera, and the Red Mountain, Upper Uncompahgre, Poughkeepsie Gulch, and Eureka Mining Districts

[*Mines, Mountain Roads, and Rocks—Geologic Road Logs of the Ouray Area (2004)*, provides detailed documentation of the geology, mining history, and scenery along most of the roads we will travel on Day 2.]

Departure from Ouray will be at 8:00 a.m. The first leg will be through the Precambrian quartzites of the Uncompahgre Gorge, to the caldera rim in Ironton Park and up Corkscrew Gulch to Corkscrew Pass for an overview of the caldera-related volcanics of the Uncompahgre-San Juan caldera complex and the structures and mineralization related to the Silverton caldera and its precursors. The second leg will be over Hurricane and California Passes with a descent into California Gulch. Next, we will travel up Placer Gulch along the Sunnyside fault to the Gold Prince mine, then across the Eureka graben, over Treasure Mountain Pass and down Picayune Gulch to the Animas River near Eureka. We will return to Ouray via Silverton on the Million Dollar Highway with potential stops at Red Mountain Pass, Red Mountain Town, and the National Belle Mine. (To see an archive photo of the mine, go to: <http://www.colorado.gov/dpa/doit/archives/mining/silverto.html>)

If road conditions or foul weather make parts of the high country unavailable, we will alter the route to cover as much of the caldera as is accessible.

We will be near 13,000 feet for part of Saturday. The sun is intense, mountain weather can vary suddenly, and snow showers are possible. Long-sleeves, jackets, hats, sunscreen, and drinking water are recommended. (tour vans are "open-air") We will be on irregular terrain, so sturdy shoes or boots are in order. Bring your hand lens and rock hammer. Don't forget your camera. And bring your bathing suit if you wish to enjoy the Ouray Hot Springs Pool.

#### Related Web sites:

**Ouray Chamber Resort Association**, [www.ouraycolorado.com/](http://www.ouraycolorado.com/)  
**Ouray County Historical Society**,  
[www.ouraycountyhistoricalsociety.org/](http://www.ouraycountyhistoricalsociety.org/)  
**Switzerland of America Jeep Tours**, [www.soajeep.com/](http://www.soajeep.com/)





## Earth Science Meetings and Talks

*Newsletter items must be received by the 25th of each month.*



Colorado Scientific Society's regular meetings are held the 3rd Thursday of the month at the Colorado School of Mines in Golden (unless otherwise advertised). Social time begins at 6:30 p.m. and talks start at 7:00 p.m. For more information, contact Lisa Fisher, at 303-215-0480, [lisa.fisher@escalantemines.com](mailto:lisa.fisher@escalantemines.com)

**CSM Geology Museum Annual Open House, Reception, and Silent Auction, Sept. 14, Wed.,** held during the week of the Denver Gem and Mineral Show; 6 to 9 p.m. at the Colorado School of Mines Geology Museum, 13th and Maple Streets, Golden. All are invited!

**Colorado School of Mines, Van Tuyl Lectures** Thursdays from 4–5 p.m. in Berthoud Hall room 241. **Sept. 15,** *Norbert T. Rempe, Principal Engineer, Waste Isolation Pilot Plant, Carlsbad, NM*, “Lessons from Planned and Unplanned Geologic Repositories.” **Sept. 22,** *Marsha French, Exxon Mobil Upstream Research Company*, “Low temperature porosity preserving microquartz from Upper Cretaceous sandstones of the Subhercynian Basin (Germany).” **Sept. 29,** *Gerard Demaison—TBA.* **Oct. 6,** *David Rogers – Missouri University of Science and Technology Joint Lecture with the Departments of Geophysics, Computer & Electrical, Civil & Environmental, and Economic & Business*, “New Orleans flood protection system and Hurricane Katrina.” [http://geology.mines.edu/calendar/Van\\_Tuyl.html](http://geology.mines.edu/calendar/Van_Tuyl.html)

**Colorado State University, Dept of Geosciences,** Rm 320 Warner College of Natural Resources Bldg., Mondays, 4:00 pm. 970-491-5661. **Sept. 12,** *Dr. Diane McKnight, University of Colorado*, “Impacts of acid mine drainage on streams in the Colorado Rockies under a changing hydrologic regime.” **Sept. 19,** “TBA.” **Sept. 26,** *Dr. Richard Hawkins, University of Arizona*, “WILDCAT5W for Windows, A Rainfall-Runoff Hydrograph Model.” **Oct. 3,** “TBA.” <http://warnercnr.colostate.edu/geo-training/>

**Café Scientifique Mon., Sept. 12,** *Ted Scambos, Natl. Snow and Ice Data Center*, “Antarctica!” Meets at Wynkoop Brewery Mercantile Room, LoDo, Denver, evening science talks at 6:30 p.m.. Arrive early to get a seat. Free, except for beer. <http://www.cafescolorado.org>

**Denver Region Exploration Geologists' Society (DREGS)** meets at the Colorado School of Mines, Golden, Berthoud Hall, Room 241. **Sept. 12,** *Craig Horlacher, Principal Geologist, Pincock Allen and Holt*, “Canadian Mining Code 101: Highlights of recent changes in the 43–101 regulatory framework.” Social 6:00–7:00 p.m. Presentation at 7:00 p.m. Meetings are normally scheduled for the first Monday of each month. For information contact Jim Piper, (303) 932-0137, or the website <http://www.dregs.org>

**September 16–18. Denver Gem and Mineral Show & Colorado Fossil Expo.** Denver Merchandise Mart, I-25 at 58th Ave., Denver CO. Featured theme, Minerals of Russia. The second largest gem and mineral show in the U.S. Combined with the Colorado Fossil Expo in the same building complex; a wholesale-only jewelry trade show also takes place in another section of the complex. Dealers, museum displays, lectures, club exhibits, and gold panning. Public welcome (admission charge; adults \$6, Seniors/ Teens \$4, children under 13 free with an adult); free parking. <http://www.denvermineralshow.com/>

**Friends of Dinosaur Ridge Sept. 10,** Dinosaur Discovery Day: Reading Really Rocks. Festivities will include a storytime for kids. Hands-on activities include gold panning and exploring for fossils. Expert guides stationed along the Ridge trail. Hike free or take the optional shuttle bus (\$3; 4 & 5 yrs. half price; 3 & under ride free). 10 am–2:30 pm. Free admission. Contact Beth Simmons at [cloverknoll@comcast.net](mailto:cloverknoll@comcast.net) for info. <http://www.dinoridge.org>.

**Univ. of Colorado, Boulder, Geol. Sciences Colloquium Sept. 7,** *Charles Stern, CU-Boulder*, “Subduction erosion; rates, causes and impact on crustal and mantle evolution.” **Sept. 14,** *Steve Reynolds, ASU*, “Perception, visualization, cognition, and learning in Introductory Geoscience Courses.” **Sept. 21,** *Murray Hitzman, CSM*, “Energy Critical Elements —RASEI lecture.” **Sept. 28,** *Alexis Templeton, CU-Boulder*, “Iron mineral transformations that drive deep subsurface biospheres.” **Oct. 5,** *Tom Ahlbrandt*, “Re-evaluating the Hubbert Curve: The global petroleum revolution: A New Era—RASEI lecture.” **Oct. 12,** GSA Convention — No Colloquium. Weds., 4:00 p.m., Benson Earth Sci. Auditorium, Rm. 180. Refreshments at 3:30 p.m. on the 3rd floor. <http://www.colorado.edu/geolsci/>

**Western Interior Paleontological Society Mon., Oct. 3,** “Annual Show & Tell Summer Field Trips & Fossils.” Doors open at 6:30 p.m., talk at 7 p.m., Ricketson Auditorium, Denver Museum of Nature & Science (all welcome, no admission charge). <http://www.westernpaleo.org/events.php>

Colorado Scientific Society  
P.O. Box 150495  
Lakewood, CO 80215-0495

<http://www.coloscisoc.org>



## OFFICERS

President: Lisa Fisher, EMI, 303-215-0480 (w), [lisa.fisher@escalantemines.com](mailto:lisa.fisher@escalantemines.com)  
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Field Trips: Cal Ruleman, USGS, 303–236–7804, [cruleman@usgs.gov](mailto:cruleman@usgs.gov)  
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History: Beth Simmons, [cloverknoll@comcast.net](mailto:cloverknoll@comcast.net)  
Hospitality: Ben Harrison, 303-417-9633, [benjh@earthlink.net](mailto:benjh@earthlink.net)  
Membership/Mentor: Mitchell Reese, 575-317-4864, [mreese83@gmail.com](mailto:mreese83@gmail.com); Liz Pesce, CSM, [epesce@mines.edu](mailto:epesce@mines.edu)  
Memorial Funds: Scott Minor, USGS, 303–236–0303, [sminor@usgs.gov](mailto:sminor@usgs.gov)  
Newsletter Editor: Lisa Rukstales, USGS, 303–236–5547, [lrukstales@usgs.gov](mailto:lrukstales@usgs.gov)  
Outreach: Sue Hirschfeld, 720–565–9302, [eqdoc@ix.netcom.com](mailto:eqdoc@ix.netcom.com)  
Pillmore Fund: Lee Shropshire, UNC, 970–352–8778, [leeshrop@comcast.net](mailto:leeshrop@comcast.net)  
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Publicity:  
Science Fair: Chuck Weisenberg, 303–238–8806, [cweisnrg@msn.com](mailto:cweisnrg@msn.com)  
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