



# Colorado Scientific Society

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

**November Meeting, Thursday, Nov. 17, 2016, 7:00 p.m.**  
Shepherd of the Hills Presbyterian Church, 11500 W. 20<sup>th</sup> Ave., Lakewood CO  
Social time beginning at 6:30; meeting & program at 7:00

## **Relict Dinosaurs of Madagascar: New Discoveries from Treasure Island**

**Dr. Joe Sertich, Denver Museum of Nature & Science**



Abstract: Ongoing fieldwork on the island of Madagascar over the past 23 years has revealed a stunningly preserved assemblage of dinosaurs and other animals from the Cretaceous, arguably one of the best dinosaur ecosystems ever collected from the southern hemisphere. Historic expeditions, together with recent fieldwork in 2015, have uncovered a fantastic new story of isolation and bizarre evolution on the island landmass.

Despite the many trials and pitfalls of mounting expeditions to Madagascar, one of the most remote and biodiverse places on Earth, paleontologists continue to be rewarded with spectacular fossils of bizarre crocodiles, strange birds, giant frogs, and dinosaurs. New and continuing work to uncover the origins of these beasts, together with the move of these fossils and research responsibilities to the Denver Museum of Nature & Science, have placed Colorado at the center of paleontological investigations into the island of Madagascar.



Biography: Joe Sertich is Curator of Dinosaurs at the Denver Museum of Nature & Science. He received his B.S. in from Colorado State University in 2004, his M.S. at the University of Utah in 2006, and his Ph.D. from Stony Brook University in 2011. His research focuses on dinosaurs, crocodiles, and flying reptiles, and their ecosystems, during the Late Cretaceous. His field-based research is split between the Gondwanan continents of the southern hemisphere and western North America. He is one of the primary researchers on the Madagascar Paleontology Project exploring the latest Cretaceous of Madagascar and has

expanded the search for dinosaurs to older deposits across the island. He is also working on several projects searching for the first latest Cretaceous dinosaurs of Africa, including work in northern Kenya and Egypt. In North America, he leads the Laramidia Project, currently leading work to uncover a lost world of dinosaurs in the Cretaceous of Grand Staircase-Escalante National Monument, Utah, northwestern New Mexico, and northwestern Colorado.

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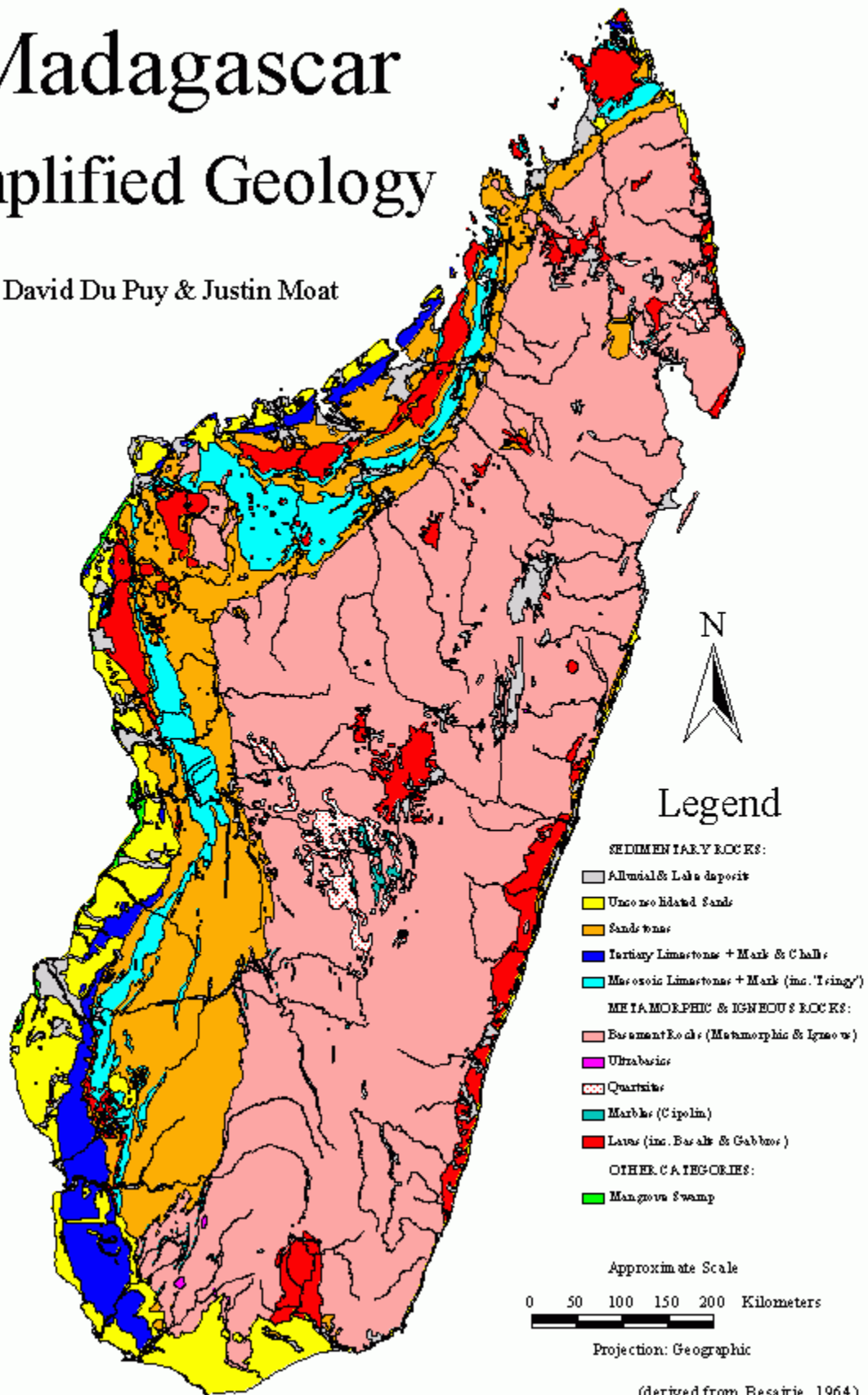


From Dr. David Krause, PastTime, Episode 1 Field Guide, Finding Fossils in Madagascar  
<http://www.pasttime.org/2013/06/episode-1-field-guide-finding-fossils-in-madagascar/>

# Madagascar

## Simplified Geology

David Du Puy & Justin Moat



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**President’s message, from Peter Barkmann, November, 2016:**

**Is Science Dead?**

(Or does it just smell funny?)



to

I read with interest, and dismay, the *Science Alert* article about Peter Higgs that Lisa Fisher shared with us last week about how uninspiring the current climate for research must seem to young scientists. The link the article is pasted below. The world of scientific research has evolved into a high-stress environment where quantity counts more than quality, where more time is spent on seeking money or administering projects than direct research. Time in the lab (or field) has taken second seating to time at the desk, on phone calls or in meetings securing funding. I can certainly understand why many young scientists-in-waiting would get discouraged and turn to other fields that may be more lucrative, even when those alternate paths do not kindle their passion.

On top of this is the way science is perceived and used (or miss used) by the public and policy makers. Just listen to the politicians rant and rave about “junk science” and “Chinese manufactured hoaxes”, asserting claims without really knowing what they are talking about. Then there are the ones who pick and choose findings and data, cafeteria-style, that meet their agendas and preconceived conclusions. Then, government agencies hush up science if it threatens their towers of power (remember Flint Michigan?). Why would anyone want to get wrapped up in this environment?

I am drawn to my cynic side when I dwell on where science appears to be heading. It can be disheartening but the article about Dr. Biggs does offer some hope. First, the community is stirring and seeking remedies. Researchers seek ways to facilitate and nurture young scientists. Right here, I see glimmers of hope. An example is our very own Student Paper night in September where we saw a group of energetic and very creative students present excellent talks and posters. The energy and level of intelligent effort directed at original research by these rising stars reminded me that young people still feel the spark. I felt the same energy at the annual GSA meeting later in the month. What I also became aware of more than before is the value of Colorado Scientific Society to be an active part of keeping science alive and well. With our grant program and Student Paper night we are there to help, and the local academic community seems to appreciate that. I would also like to see us become more involved with local universities and invigorate our mentoring activities.

Not ready for CPR yet!

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Here is the link to the story from ScienceAlert that Lisa Fisher shared with some of us last month:  
<http://www.sciencealert.com/peter-higgs-says-he-wouldn-t-have-predicted-the-higgs-boson-in-today-s-academic-climate>

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**Next CSS meeting:**

**December 15**—Potluck dinner, Annual Meeting, and President’s Address

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**Do you remember, “Where is this Rock?”** It’s time to ‘fess up and reveal the source of the two pictures I posted here back in May. Yes, as I think some guessed, it’s a salt mine, one picture underground, the other of the piles of salt brought to the surface. These are taken from “Venture Into a Surreal Salt Mine 2,000 Feet Below Lake Erie”, from Wired, May 3, 2016;

<https://www.wired.com/2016/05/venture-surreal-salt-mine-2000-feet-lake-erie> .

It’s the Morton Salt mine, at Fairport Harbor, OH, 30 miles east of Cleveland. (Seeing all those surface heaps of salt, I might have guessed it was from an arid sub-equatorial site in Africa or Asia!)

---Pete Modreski, CSS editor



And here is a new “Where is this rock?” for November. In this case I guess the question for you is more of a “What?” than a Where?, because the whereabouts of the rock are variable (a colleague brought it to show me; his grandson found it, so the rock itself is traveling about, and we have only kind of a general idea of where it

was found; it was in Colorado though). But we are pretty sure of what it is. Let’s see who can best guess that, and, perhaps give your best guess as to where it likely came from, too!



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**Colorado Scientific Society dues** are \$20 for regular members, \$10 for corresponding members (outside the Colorado Front Range area) and only \$5 for students. Mail a check to the CSS or pay with a credit card using PayPal on the CSS website. Contact CSS Treasurer Don Sweetkind at 303-236-1828 or [dsweetkind@usgs.gov](mailto:dsweetkind@usgs.gov) if you are uncertain of your dues and membership status. Extra payments to contribute to our Memorial Funds or Endowment Fund are always most welcome; you’ll see a list of them on the membership form, or see our website at <http://www.coloscisoc.org/membership/dues.html>.

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

### *Calendar of upcoming events*

**Sat.-Sun., Nov. 12-13, 37th annual New Mexico Mineral Symposium**, at New Mexico Institute of Mining & Technology, Socorro, NM; Always a very interesting and worthwhile weekend program and rendezvous for mineral collectors, mineralogists, geologists, and rockhounds; it includes a day and a half of lectures, a Sat. evening banquet, Sunday afternoon silent auction, mineral dealers, and some optional field trips on Thursday and Friday. See <https://geoinfo.nmt.edu/museum/minsymp/home.cfml> for full program and registration information.

**Mon., Nov. 14, 11:30 a.m.**, at the weekly meeting of the Denver Mining Club, “**The Chase Gold Mine, Gilpin County, Colorado: Part I, Crowd-funding and financing**”; by Suellen Barnhard, G.O.L.D. Corp. Golden Corral Buffet & Grill, 3677 S. Santa Fe Drive, Sheridan, CO (Purchase of buffet lunch required).

**Thurs., Nov. 17, 7:00 p.m. Colorado Scientific Society** November meeting, **Relict Dinosaurs of Madagascar: New Discoveries from Treasure Island**, by Joe Sertich, DMNS. Shepherd of the Hills Presbyterian Church, 11500 W. 20th Ave., Lakewood CO. All welcome. "Dr. Joseph Sertich is a vertebrate paleontologist who looks at the effects of global changes, like climate and shifting continents, on the evolution of dinosaurs and crocodiles. During the Mesozoic, shifting continents and fluctuating sea levels created a dynamic global system, influencing the distribution of animals and the evolution of terrestrial ecosystems. New fossil discoveries in western North America, Madagascar, and Africa are the focus of his research."

**Thurs., Nov. 17, 7:30 p.m., Friends of Mineralogy, Colorado Chapter** bimonthly meeting, Denver Museum of Nature and Science, VIP Room, **Barite-Bearing Concretions near the Book Cliffs Area of Grand Junction, Mesa County, Colorado: Genesis, Mineralogy and Collecting**, by Daniel Kile. See <http://friendsofmineralogycolorado.org/> for an abstract (with pictures) about the presentation. All are welcome.

**Fri., Nov. 18, Colorado Science Teachers Conference** (full title, Colorado Science Conference for Professional Development), at the Denver Mart, sponsored by the Colorado Association of Science Teachers and other science education organizations. For full program and registration information see <http://www.coloradoscienceconference.org/>. An excellent source of ideas and networking for formal or informal science educators; one can choose from among 100 or more different presentations about teaching science, many of which are hands-on demonstration and participation activities, at this one-day conference.

**Fri.-Sat.-Sun., Nov. 18-20, Gem and Mineral Show** at the Jefferson County Fairgrounds, Exhibit Building, sponsored by Denver Area Gem and Mineral Dealers. 10-5 Fri., 10-6 Sat., 11-4 Sun. Free admission.

**Sat., Nov. 19, 11 a.m. – 4 p.m., Silent Auction**, held by the **Littleton Gem and Mineral Club**. All are welcome. Columbine Hills Church, 9700 Old Coal Mine Avenue, Littleton, CO. “Setup 11 a.m., silent auction starts at noon, verbal auction starts at 1 pm, checkout starts at 3:30 pm.”

**Mon., Nov. 21, 11:30 a.m.**, at the weekly meeting of the Denver Mining Club, “**The Chase Gold Mine, Gilpin County, Colorado: Part II, Mine Operations, Past, Present, and Future**”, by Arlo Smith, Chase Mine. Golden Corral Buffet & Grill, 3677 S. Santa Fe Drive, Sheridan, CO (Purchase of buffet lunch required).

**Sat., Nov. 26, 10 a.m. and 1 p.m., Western Museum of Mining & Industry, *The Gold Assay Process: Magic or Chemistry?*** Seminar on the basics of gold ore assaying. WMMI, 225 North Gate Blvd., Colorado Springs, CO. For more information, see the web site: [www.wmmi.org](http://www.wmmi.org) .

**Sun., Nov. 27, 1:15 p.m.**, at the monthly meeting of the **Florissant Scientific Society**, Steve Veatch will give a presentation on “**Paleontology around Pikes Peak**” at the Woodland Park Library, 218 E Midland Ave., downstairs meeting room. “Steve's topic will cover new advances, recount old stories, and regale us in tales of

legendary sites in and around the Pikes Peak area.” Lunch prior to the meeting will be at the Casa Grande Restaurant in Woodland Park, 520 Manor Court, at 12:00.

**Mon., Dec. 5,** 7:00 p.m. (social hour at 6:00), **DREGS 2016 Distinguished Lecture**, Dr. Murray W. Hitzman, “**Mud, Malaria and Mining: 18 Years of Geological Research in the Central African Copperbelt**”. At Colorado School of Mines, Berthoud Hall room 241. All are welcome.

**Tues., Dec. 6,** 3:00 p.m., Earth Sciences Colloquium at the Denver Museum of Nature & Science, **Pterosaur paleobiology: Insights from photogrammetric Ichnology**, by Brent Breithaupt and Neffra Matthews, BLM.. In the VIP Room. All are welcome, museum admission is not required.

**Wed., Dec. 7,** 4:00 p.m., **CU Geology Colloquium, Colorado’s geothermal resources and thermal springs: a simple groundwater flow model**, by Paul Morgan, Colorado Geological Survey. Benson Earth Sciences Building, Auditorium (Room 180), CU Boulder campus. All are welcome; refreshments at 3:30 on the 3<sup>rd</sup> floor. See <http://www.colorado.edu/geolsci/colloquium.htm> for the full colloquium schedule.

**Sat., Dec. 10,** 4 p.m., **Western Interior Paleontological Society – Holiday Auction** (Silent and Verbal). At Lutheran Church of the Master, 14099 West. Jewell Avenue, Lakewood. “The auction is a fundraiser for WIPS grants and scholarships. All are welcome to come and bid on auction items or donate items for the auction. You must be a WIPS member to sell (50% of proceeds benefit WIPS/50% to seller). More information will be available at [www.westernpaleo.org](http://www.westernpaleo.org). All are welcome to attend.

**Fri-Sun., Dec. 9-11, Gem and Mineral Show/”Rocks and Rails”**, sponsored by the Flatirons Gem and Mineral Club; together with the Boulder Model Railroad Club; at the Boulder County Fairgrounds, Main Exhibit Building, 9595 Nelson Rd., Longmont, CO. 10 a.m. – 5 p.m. daily.

**Thurs., Dec. 15, CSS Potluck dinner, Annual Meeting, and President’s Address**

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***Special museum exhibits:***

The “**Critical Materials**” exhibit continues at the Colorado School of Mines Geology Museum. It highlights critical materials and rare-earth elements - including the minerals these elements can be derived from - essential to the development of advanced technology and energy. The exhibit is a joint project of the Critical Materials Institute at the School of Mines and the Colorado School of Mines Geology Museum. The exhibit focuses on the elements Li, Y, Te, Nd, Eu, Tb, Dy, their minerals, and their uses in technology. You’ll find the exhibit downstairs in the museum, which is open daily, 9-4 Mon.-Sat., 1-4 Sun., no admission charge; see [http://www.mines.edu/Geology\\_Museum](http://www.mines.edu/Geology_Museum) .

**Unearthed: Ancient Life in the Boulder Valley**, on exhibit at the University of Colorado Museum of Natural History (Henderson Building; in the Anthropology Hall), CU campus, Boulder. Featuring a collection of 80+ stone tools known as The Mahaffy Cache that was found in a Boulder backyard in 2007. The artifacts were studied by CU Boulder Professor of Archaeology Doug Bamforth, Ph.D. He dates the tools to 13,000 years ago at the end of the last ice age. The exhibit includes interactive elements and video, as well as replicas of the tools that visitors can pick up and hold.” The museum is open daily, no admission charge. See <https://cumuseum.colorado.edu/> .

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***For more lecture series during the year see:***

**Colorado Café Scientifique in Denver**, monthly lectures on science topics held either at Blake Street Station or Brooklyn's, Denver; open to the public, no charge other than refreshments you may choose to purchase; see <http://cafescicolorado.org/>.

**CU Geological Science Colloquium** (Wednesdays, 4 p.m.) see <http://www.colorado.edu/geolsci/colloquium.htm>

**CSU Dept. of Geoscience Seminars** (Fridays, 4 p.m.), see <http://warnercnr.colostate.edu/geo-news-and-events/department-seminars>

**Van Tuyl Lecture Series, Colorado School of Mines**, (Tuesdays, 4 p.m.): [http://inside.mines.edu/GE\\_Lecture-Series](http://inside.mines.edu/GE_Lecture-Series)

**Denver Mining Club** (Mondays, 11:30), see <http://www.denverminingclub.org/>

**Denver Region Exploration Geologists Society** (DREGS; 1<sup>st</sup> Monday, 7 p.m.), <http://www.dregs.org/index.html>

**Florissant Scientific Society** (FSS); meets monthly in various Front Range locations for a lecture or field trip; meeting locations vary, normally on Sundays at noon; all interested persons are welcome to attend the meetings and trips; see <http://www.fss-co.org/> for details and schedules.

**Rocky Mountain Map Society** (RMMS; Denver Public Library, Gates Room, 3<sup>rd</sup> Tuesday, 5:30 p.m.), <http://rmmaps.org/>

**Western Interior Paleontology Society** (WIPS; Denver Museum of Nature & Science, 1<sup>st</sup> Monday, 7 p.m.), <http://westernpaleo.org/>.

### **2016 CSS Elected Officers**

President.....Peter Barkmann, 303-384-2642, barkmann@mines.edu  
President Elect.....Marith Reheis, 303-277-1843, marith16@gmail.com  
Past President..... Paul Morgan, 303-384-2648, morgan@mines.edu  
Secretary.....Lisa Fisher, 303-215-0480, lisa.fisher@alumni.mines.edu  
Treasurer.....Don Sweetkind, 303-236-1828, dsweetkind@usgs.gov

### **Councilors**

2014-2016: Celia Greenman, celia.greenman@earthlink.net  
2014-2016: Chris Morrison, chris-morrison@comcast.net  
2015-2017: Bruce Geller, bgeller@mines.edu, 303-273-3823  
2015-2017 Pete Modreski, pmodreski@usgs.gov, 303-202-4766  
2016-2018: Linda Barton Cronoble, lbarton1611@gmail.com, 720-338-1237  
2016-2018: Melissa Foster, melissa.ann.foster@gmail.com, 707-498-2484

### **Committee Chairpersons**

Database Manager: Don Sweetkind, 303-236-1828, dsweetkind@usgs.gov  
Field Trip Chair: Cal Ruleman, 303-236-7804, cruleman@usgs.gov  
GSA Meeting Co-chairs, Lisa Fisher & Libby Prueher  
History Chair: Beth Simmons, cloverknoll@comcast.net  
Hospitality Chair: Linda Barton Cronoble, 720-338-1237, lbarton1611@gmail.com  
Membership Chair: open  
Newsletter Editor: Pete Modreski, 303-202-4766, pmodreski@aol.com or pmodreski@usgs.gov  
Outreach Chair: open  
Past Presidents' Best Paper Award, Marith Reheis, 303-277-1843, marith16@gmail.com  
Program Chair: Thom Fisher, thom.fisher@esclantemines.com, 303-674-1233  
Publicity Chair: open  
State Science Fair: Chuck Weisenberg, 303-238-8806, cweisnbg@msn.com  
Student Programs Chair: Melissa Foster, Melissa Foster, melissa.ann.foster@gmail.com, 707-498-2484  
Student Research Grants Chair: Paul Morgan, 303-384-2648, morgan@mines.edu  
Webmaster: Barb Warden, 303-278-2701, bwarden@tablemtn.com