

Science Happenings

3rd Annual Festival of Science

October 3rd through the 7th, 2018 marks the 3rd Annual Festival of Science in Moab. The Festival Committee has organized a variety of fantastic and free events showcasing the wonders and value of science with a focus on science on the Colorado Plateau. The goal of the event is to connect and inspire citizens and visitors of southeastern Utah with the joy of science, the importance of our regional research, and the thrill of scientific discovery.

The Festival kicks off on Wednesday night (Oct. 3) with the film *Into the Inferno* – a timely documentary about our relationship to one of nature’s most violent wonders – volcanoes! The film starts at 6 PM at the Grand County Library.

On Thursday, Oct. 4th at 6 PM at the Moab Information Center, Dr. Jody Patterson will present on an incredible public archaeology project in Nine Mile Canyon where a team of 72 volunteers worked alongside archaeologists from the Bureau of Land Management (Price, UT), Arizona State University, Montgomery Archaeological Consultants, Utah State University (Eastern, UT), and the Colorado Plateau Archaeological Alliance. The presentation will focus on the excavation of half of a large pit structure at a Fremont site.

On Friday, Oct. 5 is one of our most popular activities and an event unique to the Festival of Science, a guided tour of the Uranium Mill Tailings Remedial Action (UMTRA) site; a U.S. Department of Energy cleanup of the former Atlas Mine site. Participants must be US citizens and at least 18 years old. Because space is limited, free tickets are required and starting in September will be available at the Moab Information Center and the Grand County Library. This may be the last year for this tour so be sure to get your free tickets early!

Come join regional educators, geologists, archaeologists, paleontologists, biologists, astronomers, and other scientists, and science aficionados at 5 PM on the Museum of Moab Lawn (Center St.) for the annual



Moab Mingle. Light refreshments will be provided. Immediately following the Moab Mingle is the Keynote Presentation at 7PM at Star Hall, hosted in conjunction with Utah Humanities. Nicole Walker, a well-known writer and professor at Northern Arizona University in Flagstaff will be discussing her book, *Sustainability: A Love Story*, released August 2018. Walker is a recipient of the National

Endowment for the Arts fellowship, the nonfiction winner of the Best of the Net, and a Best American Series notable essayist. In her talk, “Braiding a Broken World”, Walker will explore how the natural world shapes the way we tell our personal stories, how metaphors taken from images in the natural world help us understand ourselves, and how our work to write and revise our stories teaches us to revere and repair the natural world. Walker will speak to how nonfiction writing offers a way to re-see and revise our relationship to the planet and to ourselves.

At 9 AM on Saturday, Oct. 6th, come join National Park Service interpretive ranger Will Leggett on a geology walk and talk. Leggett and a group of up to 20 participants (FREE ticket required) will hike along Moab’s Old Mail Trail above Mill Creek (park at Powerhouse Lane) to discuss how geologic forces forged Moab’s unique landscape. At 11 AM at the Sun Court and City Gym, we are happy to host our annual STEMonstrations! This kid-focused science activities event will include, among other things, an opportunity to learn about what is living in those rare desert potholes, constellation viewing in an inflatable planetarium, hands-on sediment (that’s science-speak for dirt) tables, and elephant toothpaste with a side of bubbles!

At 5 PM on Saturday, join us for a fascinating eco-friendly, entrepreneurial adventure at Star Hall where James Rolin of Cowboy Cricket Farms will tell us why we should care about entomophagy and what is in those delicious Chocolate Chirp Cookies you are eating!

Saturday will close out with a Telescope Star Party with constellation tours. The Star Party will take place at the Brand Trails parking area off of UT-191 between 7:30 and 10 PM. Night sky-loving experts from the National Park Service and Utah State Parks will use their incredible telescopes to highlight some of the wonders of viewing the night sky from southeastern Utah. Because the number of telescopes available for the Star Party is limited, free tickets are needed and will be available at the Moab Information Center and the Grand County Public Library.

On Sunday, the final day of the Festival, start your morning with us at 9 AM to learn about plants and biological soil crusts along the Hidden Valley trail with US Geological Survey biologists. At 11 AM learn about dinosaurs at the newly discovered Mill Canyon Dinosaur Track site with a Bureau of Land Management paleontologist. At 2 PM, take a tour of the cultural landscape of lower Courthouse Wash and the American Indian Crossing of the Colorado River (aka “The Old Spanish Trail”) with NPS archaeologist Laura Martin, and at 4 PM, learn about Wildlife Rehabilitation, what it IS and what it ISN’T from Second Chance Wildlife Rehabilitation at Star Hall.



WEDNESDAY Oct. 3rd

6 PM Science Film: *Into the Inferno* @ Grand County Public Library

THURSDAY Oct. 4th

6 PM Public Archaeology and Citizen Science in Nine Mile Canyon, Dr. Jody Patterson @ Moab Information Center

FRIDAY Oct. 5th

10 AM * UMTRA Site Tour, US Dept. of Energy @ Lions Park

5 PM Moab Mingle with local scientists/educators @ Museum of Moab Lawn

7 PM Keynote: Nicole Walker, *Sustainability: A Love Story* @ Star Hall

SATURDAY Oct. 6th

9 AM * Geology Walk on Old Mail Trail with NPS Geologist @ Powerhouse Lane

11 AM STEMonstrations - Hands-on, Kid-friendly Activities @ Sun Court/Center St. Gym

2 PM Permaculture Walking Tour with USU Environment & Society Professor @ Sun Court to Tea Garden to USU (or meet at 3pm at USU)

5 PM Cowboy Cricket Farms Presentation by James Rolin @ Star Hall

7:30 PM * STAR Party with Night Sky Experts @ Brand Trails Parking lot

SUNDAY OCT. 7th

9 AM Plant and Soil Crust Walk with USGS Biologists @ Hidden Valley Trailhead

11 AM Dinosaur Walk with BLM Paleontologist @ Mill Canyon Rd. (Hwy 191)

2 PM Cultural Landscape Tour with NPS Archaeologist @ Lower Courthouse Wash

4 PM Raptor Talk with Second Chance Wildlife Rehabilitation @ Star Hall

* Attendance is limited, FREE tickets available at the Moab Info Center and Grand Co. Library

For more information and a complete schedule of events, please visit www.moab-scifest.org, facebook.com/moab.scifest/ or contact the organizers at moab.scifest@gmail.com.



Revealing Jurassic Femurs

Right here in Moab, you could be the one to free a sauropod femur (that’s a dinosaur thigh bone) from the rocky matrix that has encased it for 155 million years. The catch, you must be trained well-enough to be entrusted to do the work without damaging the fossil.

Your volunteer efforts can be tedious but gratifying. You are helping the professionals advance the science of paleontology. A fossil preparation laboratory was set up last year at the Museum of Moab. This “prep lab” was first proposed two years ago by Museum Director John Foster, a recognized expert in Cambrian and Jurassic paleontology and author of two paleontology books.

Prep labs aren’t cheap but Foster knew what was needed. He secured \$20,000 in grants from benefactors in Minnesota and Iowa to purchase most of the necessary equipment. Utah Friends of Paleontology (UFOP),



a non-profit that supports public education, science and preservation of paleo resources in Utah, provided another \$2,400 for purchase of a few more tools and supplies. The lab became operational in December and John trained six local members of UFOP to run it safely and properly.

So where do the fossils come from and how do they get to our prep lab? That brings up the case of the “Wiren femur.” This spring, Ms. Wiren was hiking near Capital Reef National. She noticed two strangely-shaped rocks eroding out of a hillside. As she neared she saw the two rocks seemed to be broken parts of a large fossil bone, each about eighteen inches long with an oval cross-section about ten inches across.

If you discover a meaningful fossil like this, you too can gain fame (and do the right thing) by reporting it to a local museum or agency paleontologist to make sure it is properly and legally recovered by experts. In this case, the site was reported to Carrie Levitt-Bussian of the Natural History Museum of Utah, who then alerted Bureau of Land Management officials, since the bone was discovered on federal land managed by that agency. Carrie also alerted Museum of Moab Director Foster who assembled a field crew of other experienced paleontologists to go retrieve the fossils. They found the site, thanks to directions from Ms. Wiren, and after two days of work were able to recover the remaining portion from the cliff face.

The fossil pieces turned out to be from a late Jurassic sauropod and John’s team had recovered the 85% of the entire femur, albeit in three pieces. The embedded portion



had to be covered at the site with a plaster and burlap “jacket” to protect it during transport to the prep lab. The proximal end, or portion that connects to the hip socket, had been broken off prior to the fossils discovery, and was not located.

You can see the Wiren femur being slowly revealed at the Museum of Moab on most Fridays, Saturdays and Mondays from 10 AM until noon when UFOP volunteers are usually working on the fossil to carefully remove the surrounding matrix from the fossil.

UFOP holds monthly meetings, January through October at 6 PM in Zions Bank, in downtown Moab. Members of the public are welcome to attend to hear presentations from paleontologists, many of whom do their field work in our area.

by Lee Shenton, 2018 State President, Utah Friends of Paleontology