Volunteer Association Newsletter



HEADS UP FROM THE VOLUNTEER MEMBERSHIP COMMITTEE

Paying dues

When you pay your museum dues, **please please** make a point of identifying yourself as a volunteer. Membership forms have a check box for you so that you can let folks in the Foundation Office know that part of your dues goes to the Volunteer Association. We really appreciate your support!

On another important subject....

Signing in

Some volunteers assume that signing in is an award-tracking vehicle and they aren't interested in receiving awards.

Tracking volunteer hours is crucial for grants and funding for the museum. If hours aren't tracked it's impossible to know how facilities are being utilized and if there is an adequate number of volunteers to staff various programs/events.

It's so very important for you to sign in and out either on a sign in sheet or on the computer in the Volunteer Office. If you are volunteering offsite please email Doug Simon so that he can have your hours entered into the database

There is also a volunteer directory printed periodically. If you're not signing in, we won't know to include your name in the directory.

Your assistance, as always, is greatly appreciated.

-Penny Goldstine Membership Committee Chairperson

FLORIDA BOUND

Two of our volunteers in the Naturalist Center, Elora and David Bruce, are Science Olympiad State Champs! Their mid-school team (Abq. Area Home Schoolers) and the High School team both took State and are going on to represent NM at Nationals in Orlando, Florida, on May 16-17.



Elora took 2nd in the Entomology and Crime Busters events and 3rd in Anatomy and David took 1st in Robocross and placed in Helicopter.

VOLUNTEER FIELD TRIP

A Volunteer Field trip to El Malpais with Jane Aubele and Larry Crumpler is planned for Tuesday, May 20, 2014. It will be an all-day trip with moderate to difficult walking. Further information will be on the bulletin board in the Volunteer Lounge and by Email.

CONTINUING EDUCATION

Tentative Schedule, 8 May 2014

Deb Novac: Happenings in the NMMNH&S

Mike Pierce: Really nice mineral/rock samples (visible & out of

sight) - their present situation and future role.

Jayne Aubele: Main speaker

The Geological Story of New Mexico's Minerals and Gems

New Mexico has an abundance of minerals that are used both for decorative gems and for economic purposes. Did you know that North America's oldest mining district is in New Mexico? And that the very first gold rush in North America was not in California but right here in New Mexico. From gold to copper to moonstones tomgarnets, this talk will explain the natural forces and general geology of our state that produced some of our most identifiable jewels and our most useful economic mineral deposits.

Post Script: The above talks provide an introduction to New Mexico's exceptional geological formations and unique rock and mineral outcrops. We have already covered Uranium and The Rio Grande Galena, Barite and Fluorite deposits in past seminars and plan more future detailed discussions of our geological heritage.

-John Throne



FIRST FRIDAY FRACTALS

Friday April 4, 6-10 pm (Time IN 5:30 pm)

Doug needs Volunteers for greeting, taking tickets, etc. Please sign up in Lounge or send him an Email.

doug.simon@state.nm.us

FRIENDS OF PALEONTOLOGY

The next two meetings of the Friends of Paleontology will be held in the Museum Multipurpose Room at the following dates and times:

Monday, 17 March 2014, 7:00 pm Speaker: Rickey Bartlett. Subject TBD

Monday, 21 April, 2014, 7:00 pm Speaker: Jason Moore. Subject TBD

-Dick Yeck, VP Programs, FOP

ICE AGES, THE ANCESTRAL ROCKY MOUNTAIN OROGENY AND LATE PALEOZOIC SEDIMENTATION IN NEW MEXICO

Part 1 of speaker Spencer Lucas' topic for the 20 January 2014 FOP meeting focused on the history of the Ancestral Rocky Mountain orogeny (ARM) during the complex history of the Gondwana and Laurasia land masses and the Pennsylvanian/Permian sedimentation of New Mexico. Orogeny was described as events leading to structural changes in the crust and mantle, or just plain, old fashioned mountain building. Two smaller orogenies, the Marathon and the Dugout, occurred in New Mexico during that timeframe.

Part 2 addressed glacial eustasy - the measurement of waxing and waning of sea levels and ice sheet cycles that may reflect a change in the quantity of water in an ocean, or a change in the shape and capacity of ocean basins. The Pennsylvanian and Permian periods had cold spells which led to overprinting by eustasy. Few glacial eustasy cycles are intermixed, and, to date, strata has typically been attributed to glacial eustasy, collected from US Mid-continent strata from a relatively quiet geologic history, and geologically different from New Mexico strata. The Mid-continent analysis process includes the Marincovich equations of earth and sun positions in 100k year cycles to calculate the cycle durations in the late Pennsylvanian period (some researchers regard the equations as orbital forcing).

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ICE AGES CONTINUED New research does not support glacial eustasy as the only method to define the Paleozoic sedimentation in New Mexico. During the early Permian the ocean experienced extensive glacial eustasy from the collapse of Gondwana ice sheets, which is interpreted to be too small to have affected global sea levels. There were many off and on cyclotherms of cold, and the glaciers may not have been big enough to affect sea levels. Late New Mexico Paleozoic stratum contains significantly fewer cycles than recorded by the Mid-continent, which can be seen at the mixed marine/non marine Carrizo Arroyo in the Lucero Uplift. Conodont ages indicate that the New Mexico strata have too few cycles to be compared to Mid-continent data. The Oscura Mountains late Pennsylvanian strata have mixed marine - non marine, fusulinid age markers and 8 -10 cycles versus the 73 recorded in the Mid-continent data. Also, the Bursum strata has better age control of marine conondonts for dating than does the Mid-continent.

-Dick Yeck, FOP VP for Programs

THE BEGINNING OF THE AGE OF ANIMALS IN NEW MEXICO

Tom Williamson, speaker for the 17 February 2014 FOP meeting, focused on the rapid rise and dominance of placental mammals beginning in the late Cretaceous/early Paleocene periods in the San Juan basin of New Mexico. As he put it:

"Paleocene mammals include the ancestors of us all."

During that time, in the absence of large herbivores and carnivores there was an explosion of mammal development of different types of animals including diggers, flyers, walkers and crawlers. Ancestral humans were in the placenta group, which also included a wide range of four legged animals. But before the Paleocene there were none. "They just popped up," Tom said.

Development was not smooth and continuous and occurred in three different phases: *Molecular Divergence* (Short Fuse, few animals, short lived), *Fossil* (Explosive, many animals, fossil evidence), and *New Molecular Divergence* (Long Fuse, more animals, long lived). Of the four other western states that

experienced the sea that covered much of the west during the Cretaceous, New Mexico has the best and most examined fossil record of this time. (The Rocky Mountains rain shade effect may have been a factor). There were no mammal ancestors in the Cretaceous, and the largest mammal to evolve in the Paleocene was the large, pig-like pantodont *Pantolambda* (about 300 lbs). Why so many mammals evolved in the Paleocene in New Mexico and other places in the world and then suddenly went extinct is an ongoing mystery.



Tom's team is also trying to better the ages of the rocks in the San Juan Basin that straddle the K-T boundary. The basin contains the latest Cretaceous vertebrate fossils, and is, therefore, one of the few places outside the Rocky Mountains to compare the latest Cretaceous terrestrial ecosystems. Studying the strata and the animals that were present just before the mass extinction will help us understand how terrestrial ecosystems were affected by the asteroid impact in the Yucatan peninsula.

-Dick Yeck, FOP VP for Programs

EVENTS

April-May, 2014

Museum Adult and Family Educational Programs

April

April 5 • STARTUP Studio Workshop

April 8 • Adult Class Geology of New Mexico

April 10 - 12 • Prehistoric Preschool Session 2 - First Classes

April 16 • Teacher Workshop Bosque Education Guide

April 14 • Starry Nights Lunar Eclipse

April 14-18 • Spring Break Camp

April 23 • Teen
Café Scientifique

April 22 • Science Day Earth Day

April 25 • Curator's Coffee Tree-ring Studies

May

May 9 • Adult Class
Creative Wire: Jewelry and Minerals

May 15 • Lecture Science and the Sandias

May 24 • Lecture
Escher and Crystallography



SCIENCE IN THE SANDIAS: FIRE, CLIMATE, AND WATER "Seeing the Forest and the Trees"

Dr. Craig Allen, USGS and Laura McCarthy, Nature Conservancy

Thursday, May 15, 2014 7:00 - 8:30 pm

Forests are the water towers of the west. When you think about what comes out of your faucet, look to the nearest mountain ridge line. For those of us in the greater-Albuquerque and East Mountain areas, that ridge line is the Sandia Mountains. This lecture is part of an educational series called *Science in the Sandias* funded by a U.S. Forest Service Collaborative Forest Restoration Program grant. The Museum is a partner for this research-based series that connects the natural role of fire in local ecosystems, wildfire hazard mitigation, and watershed health. Additional support for this event is provided by the Rio Grande Water Fund.

Dr. Craig D. Allen is a research ecologist with the U.S. Geological Survey, Fort Collins Science Center, fieldbased at Bandelier National Monument where he leads the Jemez Mountains Field Station. He is an expert on forest changes resulting from climate change and drought... He has authored more than 100 publications on landscape ecology and landscape change, and has appeared in science documentaries ranging from NOVA and the Discovery Channel to Australian public television. Allen conducted landscape change studies in the Jemez Mountains for his M.S. in biogeography (University of Wisconsin-Madison) and Ph.D. in forest ecology, landscape ecology, and conservation biology (University of California-Berkeley). He is a Fellow of the American Association for the Advancement of Science.

Laura McCarthy is Director of Conservation Programs at the Nature Conservancy in New Mexico. She is a forester and conservation practitioner with expertise in practical and policy strategies for large-scale restoration of fire adapted forests. She played a lead role in developing the Collaborative Forest Landscape Restoration Program,

securing the bill's passage by the U.S. Congress, and leading a broad coalition to advocate for full funding of the program. Laura is working with innovative tools such as "water funds," that create public-private partnerships between water users and providers. She earned a Master of Forestry degree (Yale University).

New Mexico Museum of Natural History & Science 1801 Mountain Rd. NW, Albuquerque, NM 87104 (505) 841-2800 Visit: www.nmnaturalhistory.org

\$6 (\$5 members, \$4 students)

Purchase in advance online to guarantee your seats, go to www.NMnaturalhistory.org (linked to BrownPaperTickets.com) or purchase tickets at the Admissions desk the night of event. Doors open at 6:15 pm.

Questions: August Wainwright Call: (505) 841-2861

Email: programs.NMMNHS@state.nm.us



Escher and Crystallography

Doris Schattschneider, Ph.D.

May 24, 2014 • 12 (noon) to 1 pm

Are you interested in the intersection of art and science? Come to this special, free lecture offered to the general public by one of the world's experts in M.C. Escher's art and its link to geometry.

Dr. Schattschneider holds a Ph.D. in mathematics from Yale University and is Professor Emerita of Mathematics at Moravian College, Bethlehem, Pennsylvania. Her primary interest is geometry. She has lectured and given workshops on more than 100 campuses, and at national and international meetings, on the topics of tiling and polyhedra, symmetry, dynamic geometry, geometry and art (especially M.C. Escher), and visualization in teaching. She is the author of more than 60 articles, and several books, including M.C. Escher: Visions of Symmetry (new edition) Abrams, 2004. She is currently an associate editor of the Journal of Mathematics and the Arts. In 1993 she received the national MAA Award for Distinguished Teaching of College or University Mathematics.

Held at New Mexico Museum of Natural History & Science, 1801 Mountain Rd. NW, Albuquerque, NM 87104 (505) 841-2800

Visit: www.nmnaturalhistory.org

Questions: August Wainwright Call: (505) 841-2861

Email: programs.NMMNHS@state.nm.us



Starry Nights opens the Museum's observatory for night viewing. One evening a month the observatory is open and special programs are offered for adults and families on a variety of space science topics. The evening may also include planetarium shows, special events, short talks, and hands-on activities.

Monday, April 14 - 10:00 pm - 2:30 am Mega Moon and Mars

See the moon during a full eclipse and observe Mars at one of its closest approaches to Earth!

This event starts at 10 pm, the lunar eclipse begins around midnight, and the total eclipse will be about 2 am.

Witness the first total lunar eclipse visible (weather permitting) from New Mexico in the past several years. See the moon and Mars from the Observatory (weather permitting). Planetarium shows will explain why eclipses occur and why Mars is so close right now.

NOTE: Event will be canceled if the sky is cloudy.

\$8 (\$6 members & Seniors, \$4 children)

Purchase in advance online at www.NMnaturalhistory.org (linked to BrownPaperTickets.com) or purchase at the Admissions Desk the night of the event.

Questions: August Wainwright Call: (505) 841-2861

Email: programs.NMMNHS@state.nm.us

CURATOR'S COFFEE

Join us for a casual discussion followed by a themed tour. Limited to 15 people and includes coffee, light refreshments, and Museum admission.

Tree-rings: Record of the Past Insights into the Future

Ellis Margolis, Ph.D. Research Associate, University of Arizona Tree-Ring Lab David Canyon, Cibola Forest Restoration Project

Friday April 25, 2014 • 9:30 - 11:00 am

Trees preserve incredible records of the environment in their growth rings. In New Mexico, very old trees have provided us with records of past fire and climate changes. Such records are crucial for understanding how these systems vary



through time, how humans have affected them in the past, and how they will affect us in the future.

Dr. Margolis will share some

interesting stories of fire, climate variability, forest change, and societal upheaval that have been translated from tree-rings. He will bring samples that demonstrate the stories written in the treerings.

Dr. Ellis Margolis is a tree-ring scientist with interests in fire ecology, climate change, and natural resource management. He has been using the amazing records preserved in trees to better understand and manage fire, forests, and water in the western U.S. for 15 years. He is one of the research scientists funded by a recent U.S. Forest Service grant for restoration work in the Cibola Forest, Sandia Mountains. The Museum is an education partner in this grant.

\$8 (10% discount for members and volunteers)

Pre-registration required. Limit 15 participants. To

guarantee your place, register online, go to www.NMnaturalhistory.org (linked to BrownPaperTickets.com) or register at the Admissions Desk the day of the event.

Questions: August Wainwright Call: (505) 841-2861 Email: programs.NMMNHS@state.nm.us

Introduction to New Mexico's Geology

Instructor: Jayne Aubele Tuesday, April 8 9:00 am - 12:00 noon

New Mexico is a textbook of geology, and every part of our state has an amazing geological story. This class will summarize the geological story and introduce you to the basics of where you live and why it looks the way it does. The class will include a section on the Albuquerque area and New Mexico's many volcanoes. No prior knowledge of geology is required.

Jayne Aubele is Educator/Geologist at the museum. She has mapped and researched the geology of New Mexico and the Southwest as well as the Moon, Mars and Venus. She has authored or co-authored many technical articles and popular books/chapters about N.M. geology, including the Field Guide to the Sandia Mountains; and was geologic technical advisor and oncamera geologist for the 2008 KNME-TV program, "The Sandias".

\$35 (10% discount for members and volunteers)

Pre-registration required. For more information or to guarantee your place in this class, register online, go to www.NMnaturalhistory.org (linked to

BrownPaperTickets.com)

Questions: August Wainwright

Email: programs@NMMNHS@state.nm.us

Call: 505-841-2861



CREATIVE WIRE: MINERALS AND JEWELRY

Camille Argeanas, Artist Jayne Aubele, Geologist

Friday, May 9 • 9:00 am - 12 (noon)

(NOTE: new 3 hour class with even more to learn)

Learn a few fun things about New Mexico's minerals from a geologist's perspective and then create your own handcrafted wire jewelry showcasing green colored minerals in honor of St. Patrick's Day. This class is geared for adults and older children, ages 12 and above. No prior experience required. The class fee includes all materials.



Camille Argeanas, a native New Mexican, is a nationally known wire wrapping artist and teacher who has virtually transformed the meaning of using wire to create unique and beautiful jewelry. She has taught regularly at the UNM's Division of Continuing Education for over twenty years.

Jayne Aubele is a Senior Educator/Geologist at the New Mexico Museum of Natural History and Science. Over the years, she has taught adult classes in all aspects of geology.

\$35 (10% member discount)

Pre-registration required. For more information or to guarantee your place in this class, register online; go to www.NMnaturalhistory.org (linked to BrownPaperTickets.com) Questions: August Wainwright Call: (505) 841-2861 or Email: programs.NMMNHS@state.nm.us



Sunday, April 6 and May 4 9:00 am - 5:00 pm

FREE Admission to the Museum for all New Mexico Residents

On the first Sunday of every month, the New Mexico Museum of Natural History and Science is FREE to all New Mexico residents. Bring NM ID or proof of residence. Regular admission fees are charged for

No Registration Required. For info, go to www.NMnaturalhistory.org

DynaTheater and Planetarium shows.

Guided Tour of the Museum Public Exhibits Every First Sunday • 1:30 - 2:30 pm

Take a free, fact-filled, fun, guided tour of the Museum exhibits.

Limited to 14 participants ages 13 and up. **No registration required.** Tours are first-come, first-served.



Celebrate Earth Day Tuesday, April 22 & Saturday, April 26 9:00 am - 4:00 pm

Come to the Museum for these special science celebrations, hands-on activities for all ages, and short talks.

FREE (with museum admission) For more information, go to www.NMnaturalhistory.org





Museum Exhibit Tours Every Monday • 1:30 - 2:30 pm

Take a docent-led, fact-filled, fun, guided tour of the Museum exhibits. Limited to 14 participants ages 13 and up. Meet in the Atrium at the stadium seating.

Free (with Museum Admission)

No registration required. First-come, first-served. **Questions:** August Wainwright Email: programs.NMMNHS@state.nm.us Call: (505) 841-2861





TEEN CAFÉ SCIENTIFIQUE NEW MEXICO

Wednesdays

Food, Fun, and Science for teens
April 23 • 7:00 pm - 8:30 pm

Teens explore, discuss, and debate the latest ideas in science and technology.

Hosted by the New Mexico Museum of Natural History and Science

Free No registration required.

For more information, go to http://cafenm.org/



Bosque Education Guide Workshop for Teachers

Wednesday, April 16 • 8:30 am - 4:30 pm

At the Rio Grande Nature Center State Park

Join other educators in getting to know this amazing hands-on, Elementary-12th Grade, interdisciplinary curriculum about the Middle Rio Grande bosque ecosystem.

For more information, visit the Bosque Education Guide website: http://www.nmnaturalhistory.org/bosque-education-quide.html

Pre-registration is required. To reserve a space call: 505-344-7240

Workshop is free. \$3 per vehicle day-use fee (exact change or check) for the RGNC. Curriculum and kit of materials included with full-day workshop. Workshop is held at the Rio Grande Nature Center State Park, 2901 Candelaria NW, Albuquerque, NM 87107 (505) 344-7240

CRYSTALLOGRAPHY: WORLD OF WONDERS

A One-day Workshop for Middle and High School Science Teachers

Saturday, May 24, 2014

Hosted by the New Mexico Museum of Natural History and Science

2014 is the International Year of Crystallography, a science that is applicable for teachers of physical science, earth science, and biological science. For more information, and to register, go to the American Crystallographic Association homepage at www.amercrystalassn.org/



::: STARTUP ::: Studio Workshops

For Families, Students, and Adults

Workshops are held in the Highlands Classroom at the Museum.

Instructor: Miles Tokunow, New Mexico Highlands University

Saturday, April 5 • 1 - 3 pm 3D Printing, Scanning, and Design

An introduction to the new world of 3D printing, with simple 3D design and an app called "123D catch" that makes 3D models from photographs.

Miles Tokunow is an artist and graduate student in Media Arts at NM Highlands University.

Pre-registration required. Go to

<u>www.NMnaturalhistory.org</u> (linked to BrownPaperTickets.com)

Questions: August Wainwright, Call: (505) 841-2861 or Email <u>programs.NMMNHS@state.nm.us</u>

\$15 (Members, 10% discount) for each class



Spring Break Camp

Junior Artist-Scientist Program: Where Art Meets Science

April 14 - 18 • 9 am - 4 pm each day

Class #1 for grades K-2nd Class #2 for grades 3rd-5th

Choose your favorite type of animal and make art and do science all day! Come for one day, several days, or the entire week! Monday April 14th Mammal Mayhem Tuesday April 15th Herp Hoopla Wednesday April 16th Arthropod Antics Thursday April 17th Bird Bonanza Friday April 18th Fossil Fandango

Experience Museum exhibits and Museum specimens with staff scientists and artists. Explore how and why animals look and live the way they do with studio time and outdoor explorations. Make animal art with reusable materials including collage and printmaking, sculpting with bottle caps and clay, and sketching and watercolors.

Cost is \$65/day. (\$58.50/day, members). Bring your own lunch. Sign up for all 5 for \$295 (10% discount for members).

Pre-registration is required. More information and registration is available online at http://www.nmnaturalhistory.org/young-explorers-spring-science-program.html Questions? Contact August Wainwright Email: programs.NMMNHS@state.nm.us Call: 505-841-2861

Prehistoric Preschool

Prehistoric Preschool is a Museum program for 3-to 5- year-olds and their adult companions to explore natural history topics in a supportive and fun atmosphere. All activities are child-centered, hands-on, and age appropriate. Classes include two hours of crafts, songs, games, puppet shows, investigating specimens from the Museum's collections, Museum visits, and a fun and healthy snack!

Choose either Thursday, Friday, or Saturday morning classes from 10 am to noon or Thursday or Saturday afternoon classes from 1 pm to 3 pm. There are 4 classes in each session with classes meeting every other week.

CONTINUED ON PAGE 10

All class participants must be accompanied by an adult. No more than two children per adult companion, and no more than two adult per child. Permission for attendance by siblings younger than 3 is made on a case-by-case basis with Early Childhood Educator. Maximum class size is 12 children and their adult companions. \$90 for the first child, \$81 for the second child in the same family. Museum members receive a 10% discount.

Note: Classes already in progress may still have openings. If you join a class already in progress, the cost will be prorated.

Preregistration is required. For class descriptions and to register www.NMnaturalhistory.org (linked to BrownPaperTickets.com)

Scholarships are available for families who qualify. To apply, download the Preschool Scholarship Application and instructions.

Event Questions? Contact: August Wainwright programs.nmmnhs@state.nm.us or (505)841-2861

Spring Session 2:

Museum Explorers

April 10 - May 24 First Classes begin April 10 - 12

Become a Junior Museum Curator! Experience the WHOLE museum in one session. Discover some of the creepiest creatures that roam New Mexico, light up the dark in the Hall of Stars, see what makes a computer work, and explore the dynamic dinosaurs of New Mexico.

Coming Up This Summer



FAMILY FUN ON A RIVER RUN!

Rafting the San Juan River June 22-25, 2014

TRIP LEADERS:

Tish Morris, Naturalist/Science Educator **Kristin Gunckel**, Ph.D., Geologist/Educator

Join us for a family rafting adventure this summer! We'll float 26 miles between Bluff and Mexican Hat, Utah. Learn about the natural history of this river ecosystem, and the plants and animals of the area through games, stories and other fun activities. There will be lots of time for playing in and on the water.

For children 7 years and over with parent(s), grandparent(s), aunt(s) or uncle(s)—no experience necessary. Complete itinerary available.

Cost: \$715 adults, \$690 child under 12 (\$695 adult/\$670 child, for members)

Includes all food from dinner Day 1 through Lunch Day 4, expert staff, river guides, group equipment and supplies. Families meet in Bluff, Utah on the evening of Sunday, June 22nd. Camping equipment may be rented.

Preregistration required. Space is limited. Go to www.NMnaturalhistory.org BEGINNING January 15 for information and registration.

Questions: August Wainwright Call: (505) 841-2861 Email: programs.NMMNHS@state.nm.us

Co-sponsored by Four Corners School of Outdoor Education

The VAN

The VAN is published bimonthly. There are six regular issues each year: February-March, April-May, June-July, August-September, October-November and December-January and an occasional Special Issue. The deadline for submitting articles or photographs for the next regular issue is always the fifteenth of the month prior to the publishing date of the next issue. The deadline for the JUNE/JULY issue, for example, will be MAY 15, 2014.

Please send items for the VAN to Louise Harris, VAN Editor, < louise@goingourway.net>, with a copy to Chris Sanchez DCA < chris.sanchez@state.nm.us> and Doug Simon DCA < Simon@state.nm.us

The VAN mission is to inform, engage, and enhance the experience of NMMNHS Volunteers by acting as a vehicle of **continuing education**, keeping volunteers informed about the Museum, and relaying news of volunteers and their activities.

Your articles pertaining to the museum are most welcome. Articles may be edited for clarity and space limitations.

Editor Request: Please put the word "VAN" in your email title.