

Florissant Fossil Beds Field Seminars 2014

It is the goal of the Friends of the Florissant Fossil Beds, Inc. and the staff at the Monument to provide high quality, entertaining, educational programs for the general public and educators. These programs endeavor to further the public's understanding of the geology, history, paleontology, and ecology of the Monument and the Pike's Peak Region.

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Friends of the Florissant Fossil Beds, Inc.

The Friends of the Florissant Fossil Beds, Inc. is a non-profit organization comprised of people just like yourself who are strongly dedicated to supporting Florissant Fossil Beds National Monument through a number of dynamic, innovative, and creative programs. All proceeds assist the Monument in protecting the world-class fossils and educating the public about their significance. A vital aspect of the partnership between the Monument and the Friends organization is that of promoting educational opportunities through field-based, experiential seminars. These seminars feature outstanding instructors who are recognized experts in their fields. We invite you to join us and take part in a lifelong process of learning and discovery.

The opinions and views represented in the seminar series are not necessarily that of the National Park Service or the Friends of the Florissant Fossil Beds, Inc.

Seminar Descriptions 2014

Making and Using Journals

Toni Ratzlaff

Thursday, June 12, 2014, 9:00AM - 5:00PM

This seminar will give you an opportunity to make several journals from common, readily available materials. We will make journals and talk about their various uses. We will take a guided hike with a ranger during which and after we will use the journal to show in some way what we experienced on the hike. We will discuss what can be added to the journals in addition to drawings and words. This seminar shows how we can introduce recycling items to our students/friends. We will learn how to create fun books for journals, photo albums, memory books and gifts.

Settlers, Scientists, and Saving the Fossils

Herb Meyer

Saturday, June 14, 2014, 9:00AM - 5:00PM

The fossil deposits at the Florissant fossil beds have inspired a close human connection to the Florissant valley over the past fourteen decades. Many stories about homesteaders, ranchers, scientists, environmental activists, lawyers, and members of the U.S. Congress were all inspired by this rich fossil heritage. Our seminar will explore this history from the settlement and scientific exploration of the valley, through the long era of commercial tourism at the petrified forests, to the establishment and operation of the national monument. A highlight of this story centered on the threat of real estate subdivision over the fossil beds in 1969, which catalyzed scientists and citizens into action to save the fossil beds. As lawyers took their lively plea into the federal courthouse and as women readied themselves to sit in front of bulldozers, Florissant became a landmark case during the inception of environmental law. The history of human connection continues today as scientific research provides new information that advances knowledge about the fossil beds. This seminar will include presentations about the characters who made this history as well as walks to some of the nearby sites of historic interest

Nature Drawing

Toni Ratzlaff

Wednesday, June 18, 2014, 9:00AM - 5:00PM

Everybody takes pictures of what they see, but haven't you always wished you could draw it instead? Come learn about how to draw using negative space, shadows, and basic shapes. Try different drawing styles and enjoy the experience! We will draw both inside and outside using pencils and crayons. If we have time, we might add a bit of color, as well. Bring your favorite sketchbook and pencils, or use what is provided.

Wildfire in Colorado's Ponderosa Pine – Dominated Forests: Friend or Foe to Plants?

Paula Fornwalt

Friday, June 20, 2014, 9:00AM - 5:00PM (at Manitou Experimental Forest)

It's hard to believe that twelve years have passed since the Hayman Fire charred nearly 140,000 acres on the Pike National Forest. In this talk, Paula will provide us with an overview on her research examining how plant communities within the fire perimeter have changed during the first post-fire decade. She will also discuss how attributes of some common plant species (for example, ability/inability to sprout from belowground parts, ability/inability to disperse seeds long distances on the wind) in these communities influenced their post-fire

Seminar Descriptions 2014 (continued)

response.

From Planets to Quasars: Our Place in the Universe

Shane Burns

Tuesday, June 24, 2014, 4:00PM - 12:00AM

For centuries, humans have looked up at the heavens and wondered about the origin and fate of the universe. Did the universe have a beginning? If so, how old is the universe? In the last 75 years we have learned the answers to many of these questions. The universe seems to have begun 13.7 billion years ago and has been expanding ever since. However, the answers to these questions have inspired new questions. Will the universe expand forever or will gravity someday stop the expansion and reverse it—leading to a “big crunch?” We think we know the answer to this question as well. In 1998 two rival teams of astronomers discovered that the expansion is actually accelerating! We know how the universe is expanding but we don’t understand why. The 2011 Nobel Prize was awarded to the leaders of these teams for their discovery. The “stuff” that causes accelerated expansion has been dubbed dark energy. Understanding the nature of dark energy is likely to shake the very foundations of our conception of the physical world. During our time together, we will see the latest images and data from the Hubble Space Telescope, the Wilkinson Microwave Anisotropy Probe and other modern telescopes and discuss what we know about the universe and what is still a mystery.

Discovering South Park’s Native American Past

Susan J. Bender

Thursday, June 26, 2014, 9:00AM - 5:00PM

Join with archaeologist, Dr. Susan Bender of the South Park Archaeology Project, to learn how ongoing archaeological research is revealing the story of Native American settlement in the area. Participants will learn the outlines of this intriguing history, as well as have the opportunity to ask questions, handle artifacts, and visit an archaeological site that is at least 5,000 years old. Issues of how to protect South Park’s fragile archaeological legacy will be discussed, and an opportunity to join the cadre of volunteers who are active in uncovering and protecting South Park’s archaeology will be offered. Dr. Bender will be joined by two long-term project volunteers.

The Natural History and Ecology of Flammulated Owls

Brian Linkhart

Thursday, July 10, 2014, 5:00PM - 1:00AM

Flammulated Owls, tiny raptors that hide in the shadows of ponderosa pines by day and fly as silently as a breeze on starlit summer evenings, were little known for more than a century. The results of more than 30 years of study have shed light on the ecology and habitat of the sensitive owl, with the aim of assisting in the development of conservation plans for forest ecosystems containing this and other sensitive animals. Participants in the field-based course will learn about the natural history and ecology of the owl, and will participate in a nocturnal adventure into territories of owls in an attempt to hear whispers of its territorial song, observe its nesting behaviors, and possibly attempt captures of adult owls. Participants should be prepared to take short to moderate hikes over steep, forested terrain, in a landscape illuminated only by soft starlight (and your headlamp), and may have the opportunity to experience close encounters with several forest creatures, including owls. Previous

knowledge of ecology and bird identification is helpful but not mandatory. This course is especially suitable for science teachers or those with an interest in ornithology, ecology, or field biology.

Seminar Descriptions 2014 (continued)

Fens, Forests, and Flowers

Doug Coleman

Friday and Saturday, July 11-12, 2014, 9:00AM - 5:00PM

The flora and ecosystems of the South Park Valley and the Florissant region show many fascinating connections with cool late Pleistocene climate and glacial distribution. Neither does one have to venture far to find species from warmer climates on dry south facing slopes and rock faces. With adequate snow fall creating much needed moisture, this year's wildflower bloom promises to be spectacular, likely yielding bloom that has not been seen in recent years. Native trees, shrubs and wildflowers associated with their natural community types will be the class theme. This is a two day seminar. Day 1 will be primarily at Florissant Fossil Beds. Day 2 will be a trip to the Fen in the South Park near Fairplay. If participants can only do 1 day, the first day is recommended.

Follow a Fossil: Behind the Scenes of the Paleontology Program at Florissant Fossil Beds National Monument

Herb Meyer

Saturday, July 19, 2014, 9:00AM - 5:00PM

Florissant Fossil Beds National Monument has maintained an active paleontology program since the early 1990s. Participants in this seminar will gain an understanding about the fossil and geologic resources of the monument and the function of the monument's paleontology activities.

We will begin with an overview of Florissant's geologic setting to explain how the fossils formed and why they are so significant. You will then go into the field and behind the scenes of the paleontology lab and collections area in the Monument's new facility. The seminar will showcase current projects that monitor fossil sites in the field, maintain the fossil collection, make excavations for new research, and provide concepts for new exhibits. You will be able to see some of the prize objects in the Monument's collection. Participants will have opportunities for creative or hands-on interaction in new projects to produce a geologic trails map, stabilize delicate shale fossils, and monitor or excavate fossil sites.

From Pikes Peak to South Park : Mid-tertiary Volcanism and the Shape of the Land

Bud Wobus

Sunday, July 20, 2014, 9:00AM - 5:00PM

Late Eocene volcanic activity of vastly different styles produced a variety of products and landforms between Pikes Peak and South Park. They mantled and modified the landscape which had been developed on the Precambrian basement rocks more than a billion years older. Pyroclastic flows from the Sawatch Range blasted across a surface of low relief 36 million years ago, filling valleys with the resistant Wall Mountain Tuff. Lava flows, mudflows, and ash from the Guffey volcanic center created and then buried Lake Florissant about 2 million years later. This seminar begins with an introductory overview at the Monument followed by a 3/4-day field trip to the Guffey area and back via two different routes to visit the rocks produced during these volcanic episodes.

Seminar Descriptions 2014 (continued)

School in the Woods: Lessons Learned from Creating a Nature Based School

Jonathan Wuerth and Carol Stansfield

Thursday, July 24, 2014, 8:00AM - 4:30PM

Description: The two teachers who created Academy School District #20's School in Woods will share learning experiences inspired by nature which teachers can implement in their classrooms, on their school grounds, or on field trips. Activities will be integrated with state standards in Science, Reading, Writing, and Social Studies. Participants should come prepared to spend an active day outdoors. Please wear appropriate outdoor clothing (no sandals).

Instructor Biographies 2014

Susan Bender

Dr. Bender received her PhD from the University at Albany (NY) in 1983, where her doctoral work centered on analysis of American Indian high altitude settlements in Wyoming's Grand Teton Mountains. Currently Professor emerita at Skidmore College (in Saratoga Springs, NY) and Research Director of the South Park Archaeology Project, she has spent the last twelve years conducting archaeological research in South Park, and in that time introduced many field school students and local volunteers to this fascinating subject. She has successfully nominated the Threemile Gulch area as an Archaeological District to the National Register of Historic Places and received, in 2012, a Park County Historic Preservation Award.

Shane Burns

Dr. Burns has been a professor of physics at Colorado College since 2003. He is a member the Supernova Cosmology Project, one of the two teams that discovered accelerated expansion, the work that earned the 2011 Nobel Prize in Physics. He has worked with 2011 Nobel Laureate. Dr. Burns received his undergraduate degree from UC San Diego and his graduate and doctorate from the University of California, Berkeley. He is currently working on a textbook on particle physics and cosmology.

Doug Coleman

Doug Coleman is the founder and Current Executive Director of The Wintergreen Nature Foundation. Doug received an undergraduate degree in biology from Bridgewater College in 1973. He conducted graduate courses on Phytoecology of the Southern Appalachians (UNC Highlands Biological Station 1985), Environmental Institution Management (U of Delaware-1988)(Advanced classes in Ecology and Statistics-UVA.1985-7). He is the Designer of the Wintergreen mountain Community's environmental policies and natural sciences programs since near inception of the community in 1975. He has 37 years of experience dealing with issues in conservation within development, and forest management on Wintergreens 11,000 acres as well as consulting in other areas in the Mid Atlantic region.

He is the founder of the 30 year old Spring Wildflower Symposium Event at Wintergreen.

Paula Fornwalt

Dr. Fornwalt got her BS in Environmental Science from the University of Delaware in 1996, her MS in Forestry from Colorado State University in 1999, and her PhD in Ecology from Colorado State University in 2009. She currently works as a Research Ecologist for US Forest Service Rocky Mountain Research Station in Fort Collins, Colorado. Her research examines how natural and human disturbances impact plant populations and communities in Rocky Mountain forests. She is currently working on projects that explore the consequences of ongoing insect and disease epidemics, wildfire, and forest management practices on forest understories and overstories.

Brian Linkhart

Dr. Brian D. Linkhart is Associate Professor of Biology at Colorado College, where he teaches several field courses in ornithology, ecology, and field biology. He was a seasonal research biologist for the U.S. Forest Service for 18 years, and has taught summer field seminars on forest ecology since 1986. Over the past 30 years, Brian has conducted research on the ecology of several sensitive, threatened, and endangered birds in grassland and forest ecosystems. Since 1981, he has been supervising research crews studying the demography and habitat of Flammulated Owls on the Manitou Experimental Forest in central Colorado. This study, one of the longest running investigations of population ecology of birds in the U.S., is providing insight into how Flammulated Owls may be affected by environmental changes due to factors such as habitat alteration and climate change.

Herb Meyer

Dr. Herb Meyer has been the Paleontologist for Florissant Fossil Beds National Monument since 1994. He is the author of *The Fossils of Florissant*, and the author with Estella Leopold of *Saved in Time: The Fight to Establish Florissant Fossil Beds National Monument*. He received his doctoral degree in Paleontology from the University of California at Berkeley. He is Adjunct Faculty with the University of Colorado at Boulder, a Research Associate at the Denver Museum of Nature & Science, and the Instructor of Record at Adams State University for the seminars sponsored by The Friends of the Florissant Fossil Beds.

Toni Ratzlaff

Toni Busch Ratzlaff is the Art teacher at Summit Elementary School in the Woodland Park School District in Divide, Colorado. Originally from Augusta, Kansas, she has a B.A. in Elementary Education and Art from Ottawa University, Ottawa, Kansas. She has a Colorado Teaching license with endorsements in K-12 Art and Elementary Education. She has received additional credit hours in Art Education through Adams State College, University of Colorado, and Arapahoe Community College. In addition to teaching at Summit for the past 15 years, she was the Executive Director of the Manitou Springs Arts Academy. She has taught many classes for adults, including continuing education workshops for the Colorado Art Education Association, Kennedy Center Imagination Celebration, and the Woodland Park School District. Volunteer positions have included Chair of the Mountain Arts Council, Mountain Artists, and the Mountain Arts Festival. As an artist, her current interests include masks and books. Other interests include sewing, history, geology, and kayaking.

Carol Stansfield

Carol co-founded the School in the Woods with Jonathan Wuerth in 1999. She received her Masters of Education in Outdoor and Environmental Education in 1976 from Penn State University. She was the Co-lead Teacher of the School in the Woods from 1999 - 2007. She has over 30 years of classroom teaching and outdoor education teaching experience. She has been an active trainer in the field of outdoor and environmental education.

Jonathan Wuerth

Jonathan co-founded the School in the Woods with Carol Stansfield in 1999. He has received two Master's Degrees. One in Educational Leadership and one in Integrated Science Education. He received the Outstanding Educator of the Year for Academy District 20. He is now the Coordinator of the School in the Woods in District 20, which is a School of Choice Program within Academy District 20. The school integrates the natural sciences with other aspects of the district's fourth grade established curriculum and has become highly respected winning state and regional awards.

Reinhard "Bud" Wobus

Dr. Wobus again joins us for our seminar series. He is at present the Edna McConnell Clark Professor of Geology at Williams College in Williamstown, Massachusetts where he is responsible for courses and laboratories in mineralogy, petrology, mineral resources and introductory physical geology. Dr. Wobus received his B.A. from Washington University, his MA in Geology from Harvard University and is PhD from Stanford University.

Registration Information

How to Register...

The following list will guide you through the registration process:

1. The first step is to decide which course(s) you want to take, noting the fees for each seminar. See course descriptions for more information about each seminar.
2. You can receive discounts on seminars if you are a member of the Friends of the Florissant Fossil Beds, Inc. Are you a current member of the Friends group? Do you need to renew your membership? Would you like to join the Friends for the first time? If you are interested in getting immediate discounts, you can join the Friends with your registration.
3. Are you a teacher? Will you be taking this course for graduate and/or undergraduate credit through Adams State University and/or recertification credit through BOCES? For each seminar that you want to receive graduate credit (or undergraduate) from Adams State, you must fill out and submit a separate Adams State graduate (or undergraduate) credit form that are available at the end of this brochure by mailing the form or bringing the completed form to the seminar.
4. Once you have decided which course(s) you would like to take, what credits, if any, you would like to receive, and whether or not you want to join the Friends group, you are ready to register by one of the following methods:

Fill out the registration form at the end of the brochure and mail it with your payment. (you can pre-register by calling (719) 748-3253, ask for extension 109 and leave a message. Your phone reservation will be held for 10 days. Receipt of payment confirms your space in the seminar)

Register on-line by going to www.fossilbeds.org and selecting 'Seminars' from the main menu, and following the registration and payment instructions there.

Please remember that for each seminar you want to take for graduate (Undergraduate) credit from Adams State University, you must fill out a separate graduate credit registration form that is at the end of this brochure.

Also note that you may not repeat a seminar for credit if you have previously taken and received credit for that seminar. Check titles and content carefully since one or two repeated classes may have a new title or description. Call us if you're in doubt. Adams State College tuition or BOCES recertification fee must be included with seminar registration and fees.

Fees and Tuition

Friends' Seminar Fees

\$25.00 fee for each 1 day seminar

\$15.00 discounted fee for current member of Friends, 1 day

Adams State University Graduate Credit Tuition and Adams State University Undergraduate Credit Tuition

\$27.50 tuition for 1/2 credit per 1 day, 7.5 hour class

Please note that you must attend the entire 7.5 hour day to get credit.

BOCES Recertification Tuition

\$15.00 recertification credit through the Pike's Peak BOCES of Colorado Springs

Call For Details (719) 748-3253 ext. 109

Please note that you must attend the entire 7.5 hour day to get credit.

Refund and Cancellation

We reserve the right to cancel any seminar if minimum enrollment is not met. We will make every effort to place participants in another seminar of their choosing or will return the registration fee and ASU tuition/BOCES fee. If you cancel your enrollment for any reason, the following policy will apply: refunds will be given for cancellations received up to one week prior to the seminar, minus a \$5.00 processing fee. No refund is given for cancellation less than a week prior to the seminar.

Disclaimer

•The seminars are educational in nature. In any educational environment, all sides of various issues need to be examined and some of these may prove to be controversial. Views expressed are not necessarily those of the National Park Service, the staff, or Friends of the Fossil Beds, Inc., nor are they responsible for their content.

•In most cases, books recommended will be available for purchase at the seminar, or the Rocky Mountain Nature Association bookstore at the Monument.

Things You Need to Know Once You are Registered

How to get here:

- The Monument is reached from I-25 in Colorado Springs by taking State Highway 24 west approximately 35 miles to the town of Florissant. Turn south (left) on Teller County Road #1, proceeding about 2 miles to the entrance of Florissant Fossil Beds. Proceed to the visitor center area. The seminars will be held in the Yurt (30 foot circular tent) at the south end of the picnic area unless otherwise stated.
- All seminars begin at the Yurt at 9 am and end at 5 pm UNLESS OTHERWISE NOTED. PLEASE READ ALL INFORMATION CAREFULLY in the seminar description. Several seminars may begin at a different time or will meet elsewhere. You are responsible for your transportation in reaching the starting point.
- Allow approximately 1-hour drive from the west side of Colorado Springs, at least 2.5 hours from Denver. Seminars will begin on time. We ask that you arrange to arrive about 15 minutes before the start time to allow for check-in. Allow yourself plenty of time for a stress-free arrival.

What to bring and how to prepare:

- Most seminars will be outdoors for a large portion of the class and may require hiking. Be prepared for changeable mountain weather with layered clothing, rain gear, comfortable hiking shoes, hat, sunglasses and sunscreen. Insect repellent is a good idea. Meals are not provided, so bring a sack lunch, snacks, ample drinking water, and a plastic sack to carry away any refuse from your day. Bring a notebook and pen. You may wish to bring binoculars, camera, field lens, or any other items that would enhance your experience.



Friends of the Florissant Fossil Beds, Inc.

Join the Friends of the Florissant Fossil Beds, Inc. and help support Florissant Fossil Beds National Monument. Receive an immediate discount on your seminar fees!

Friends Membership Form

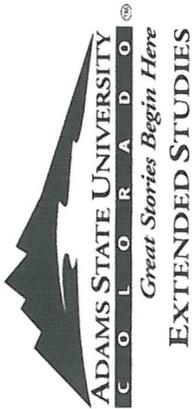
Membership Categories

Individual	\$15.00	Name_____
Individual (2 year)	\$27.00	Street_____
Family	\$25.00	City_____
Family (2 year)	\$40.00	State_____
Corp/ Business	\$100.00	ZIP_____
Lifetime (Old Fossil)	\$300.00	Phone_____
Contribution_____		Email_____
Total _____		

Seminar Registration Form

Teacher graduate credits are \$27.50 for 1/2 credit (7.5 hours)					
Course Number	Seminar Title	Seminar Fee	Adams State Tuition \$27.50	BOCES \$15.00	Total amount this seminar
ED 589					
ED 589					
ED 589					
ED 589					
ED 589					
ED 589					
			Membership Dues		
			Subtotal		
			Total		

Mail completed forms with payment to:
 Friends of the Florissant Fossil Beds
 PO Box 185
 Florissant, CO 80816



ADAMS STATE UNIVERSITY
 208 Edgemont Blvd., Suite 3000 Alamosa, CO 81101
EXTENDED STUDIES REGISTRATION FORM
 Toll Free: 1-800-548-6679 or (719) 587-7671 FAX: (719) 587-7974
 Website: <http://lexstudies.adams.edu>

Date _____ Social Security Number _____ / _____ / _____ Birthdate _____ / _____ / _____ E-Mail Address _____

Full Name: _____ (Last) _____ (First) _____ (Middle) _____ Previous Name _____

Mailing Address: _____ (Street - P.O. Box) _____ (State) (ZIP) + 4 _____ New Address?: Yes _____ No _____

Sex: M F Home Phone: _____ Work Phone: _____ School District: _____

Are you a Colorado Resident? Yes No (Non-Resident)
 I have lived in Colorado since: _____

The following Selective Service question must be answered to comply with Colorado State Law: If you are a male born after December 31, 1957, are you registered with the Selected Service? Yes No

Course Prefix & Number: _____

Course Title: _____

Date: _____

Credit Hours/CEUs: _____

Instructor of record: _____

****I understand that if an incomplete grade is awarded, the incomplete grade will change to an "F" grade exactly one year from the registration date unless an earlier date is specified by my instructor.****
 I understand that if I have registered for hours in excess of 20 within this term, I must acquire Extended Studies approval prior to registration for this course. I understand that I must fulfill the residence requirement in effect for any special degree or certificate. I understand that if this class is to be used in a degree program, approval must be secured from the student's assigned academic advisor. I hereby request admission to Adams State University as an Extended Studies (non-certificate or non-degree bound) student. I understand that if I wish official admission to a degree program, I must submit a regular application. I certify that all information (including Selective Service) I have provided is true.

- Ethnicity: (Mark any that apply. Not required.)
- American Indian or Alaskan Native
 - Black, not of Hispanic origin
 - Hispanic
 - Asian or Pacific Islander
 - Caucasian/White, not of Hispanic Origin
 - Do not wish to provide this information

Credit, Tuition and Payment Information:
ASU Tuition = 0.50 Credit Hours - \$27.50

(Additional instructor fees may apply, please consult your instructor)

- Mastercard Discover
- Visa Check (payable to Adams State University)

Account number (16-digits) _____

_____ CID number (3 digit number on back of credit card)

Expiration date (month/year) _____

Signature: _____ Date: _____

An Official Transcript will be sent to your mailing address at no additional cost when a final grade for this course(s) has been posted. To request additional transcripts, please visit <http://www.getmytranscript.com>.