

BIGHORN BASIN DINOSAUR PROJECT



2016 Field Expedition

INFORMATION & REGISTRATION





Check out the
Bighorn Basin Dinosaur Project

on:





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INTRODUCTION

Dear friend,

Thank you for your interest in the **Bighorn Basin Dinosaur Project**. The **Project** offers an exciting opportunity to work alongside scientists in fossil-rich landscapes and we are glad that you are interested in joining us for this unforgettable experience!

Please read the information contained in this packet and feel free to contact me if you have any questions. If you would like to join us in this adventure, please complete all of the attached forms and return them to the address listed below. Completion of all forms is required before your participation can begin.

Once again, thank you for your interest, and we look forward to seeing you this summer!

Sincerely,

A handwritten signature in blue ink that reads "Jason P. Schein". The signature is fluid and cursive, written over a light blue rectangular background.

Jason P. Schein
Assistant Curator of Natural History

New Jersey State Museum
PO Box 530
Trenton, NJ 08625

P: (609) 292-7660

F: (609) 292-7636

Jason.Schein@sos.nj.gov



CONTACT INFORMATION

Mail for each of these individuals can be sent to their attention at the following address:

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PO Box 530
Trenton, NJ 08625

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GENERAL INFORMATION

Since 2001 the New Jersey State Museum has conducted field research in Montana and Wyoming in an area that was the site of many famed expeditions by Princeton University researchers in the early and mid-20th century. In addition to reviewing classic sites, new opportunities for research and collecting exhibition specimens have been identified. This year, survey and excavation work will continue by permit of the U.S. Department of the Interior, Bureau of Land Management.

The **Bighorn Basin Dinosaur Project 2016 Field Expedition** will consist of finding, excavating, and documenting the fossilized remains of dinosaurs, crocodiles, turtles, fish, and mammals, as well as invertebrates and plants, from continental rocks of Jurassic, Cretaceous, and Paleogene age. We may also find fossil ammonites in rocks of marine origin, and will continue a field project focusing on the Devonian marine sediments of beautiful Beartooth Butte, in northern Wyoming.

Keep in mind that this expedition is more than a simple sightseeing field trip – by participating you will gain knowledge of geology, paleontology, and general natural history, while helping the museum to continue its decades-long research projects.

This amazing experience is open to almost everyone.

REQUIREMENTS

Age: Anyone at least 12 years old or older may attend, but those age 12 – 17 years of age must be accompanied by an adult.

Activities include both leisurely and strenuous tasks and participants should be in good physical condition.



EXPEDITION LEADERS

Jason P. Schein, *Assistant Curator of Natural History*, New Jersey State Museum

Jason Schein is the co-founder of the **Bighorn Basin Dinosaur Project**, and will co-lead the expedition. He has extensive field experience throughout much of North America and Argentina, and this will be his 7th season co-leading the BBDP field expeditions.



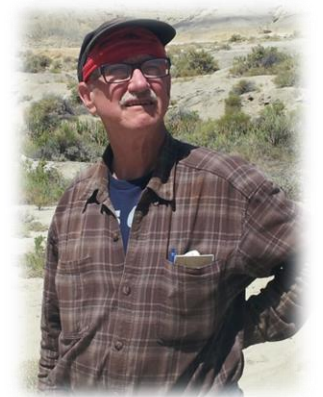
Jason C. Poole, *Manager*, Dinosaur Hall, Academy of Natural Sciences of Drexel University

Jason Poole is the co-leader of the **Bighorn Basin Dinosaur Project**, as well as the Expedition's Crew Chief and an Instructor. This will be his 5th year contributing to the **BBDP Field Expeditions**. He has very wide-ranging experience in field paleontology, laboratory preparation, natural history education and illustration, and anatomy.



David C. Parris, *Curator of Natural History*, New Jersey State Museum

David Parris is the patriarch of the New Jersey State Museum's research activities in the Bighorn Basin. He has been conducting field work in this area since the 1960s and is intimately familiar with not only the geology and paleontology, but also the cultural and natural history of the region. There is no better guide for this trip than Dave.



Bill Shankle, *Field Assistant*, Bighorn Basin Dinosaur Project; and *Research Assistant*, Bureau of Natural History, NJSM

Bill Shankle has helped to organize and lead the BBDP field expeditions since 2013. He is an accomplished avocational paleontologist, President of the Delaware Valley Paleontological Association, and the BBDP's resident expert on invertebrate and trace fossils.



Brittany L. Malinowski, *Assistant Crew Chief*, Bighorn Basin Dinosaur Project

Brittany Malinowski joined the **BBDP Field Expeditions** in 2012 and has worked her way up from novice to a true expedition leader. She is presently a M.S. student in Applied Anatomy at Case Western Reserve University in Cleveland, OH, and is extremely competent in the field setting.



Rick Schmidt, Ed.D., *Instructor*, Bighorn Basin Dinosaur Project; and *Research Associate*, Bureau of Natural History, NJSM

Dr. Rick Schmidt is an award-winning high school geoscience teacher in suburban Philadelphia. He joined the **BBDP Field Expeditions** in 2012 and has put his talent and resources to good use, becoming one of our primary instructors, and resources in the field.



WHAT WILL WE BE LOOKING FOR?

The **Bighorn Basin Dinosaur Project 2016 Field Expedition** is not just a fossil collecting trip. Attendees will participate in a decades-long research project to fully document the region's ancient organisms, which allows us to better understand these paleoenvironments.

Our field expeditions will focus primarily on latest Cretaceous (68 – 65 million year old) and Paleocene (65 – 50 million year old) rocks deposited near the edge of the retreating Western Interior Seaway. These rocks were deposited in continental environments, so the majority of the organisms we find are terrestrial or aquatic – dinosaurs, crocodiles, turtles, fish, and mammals. Occasionally we also collect marine animals, such as ammonites.

In 2015 we began collecting dinosaurs from the famous Jurassic Morrison Formation (~145 mya). These sites have yielded great quantities of material in a short time, and we plan to include this area into our traditional collecting localities.

Finally, we will be collecting Devonian-age (416 – 360 million years ago) marine animals, such as primitive fish and arthropods, and the earliest land plants, at our newest and perhaps most scenic field site – Beartooth Butte, in northern Wyoming.



Suuwassea emilieae.
Artwork by Jason C. Poole



CAN I TAKE FOSSILS HOME WITH ME?

Much of our field work will be conducted on public (Bureau of Land Management, or U.S. Forest Service) lands, and there are very strict rules governing the collection of fossils from these areas. For a review of fossils on public lands and the rules concerning their collection, click [HERE](#). These rules **MUST** be adhered to – revocation of our collecting permits may result if these rules are violated.

There will be plenty of opportunities to collect fossils for your personal collection. However, since this is primarily a research project, all materials collected for personal use must first be approved by the **BBDP** Expedition leaders.

WHAT TO EXPECT

We will be conducting all manner of paleontological field activities in rugged and potentially hazardous terrain. Many of these activities involve long hikes over steep and loose hillsides and escarpments. Large excavations require heavy lifting and repetitive movements. All activities are conducted at high altitudes (over 5,000 feet).

Participants must be in good physical condition to participate in the Bighorn Basin Dinosaur Project. Potential participants should consult their physicians' advice before registering.

All participants must complete the Waiver of Liability Statement and submit it along with the completed Registration Form, Medical Release Form, proof of medical insurance, and a 10% registration deposit.



ACCOMMODATIONS

Bighorn Basin Dinosaur Project participants will stay at the Yellowstone-Bighorn Research Association (YBRA) in Red Lodge, Montana. Located on the edge of the front range of the Beartooth Mountains overlooking Red Lodge, the field station is a comfortable facility with cabins, home-style cooking, and spectacular views. Pets are not allowed.

There are no laundry facilities in camp. However, if time is available, trips to the laundromat in Red Lodge can be arranged.

Detailed information about the field camp can be found here: <http://www.ybra.org/>.

Lodging and meals are covered by the tuition fees.



Additional Notes About Food:

- A) The kitchen staff at YBRA makes every effort to accommodate people who prefer to maintain a vegetarian diet. However, they cannot accommodate all of the other food-related issues people may have. If you have other dietary preferences or requirements – whether medical or religious – you may be required to bring or purchase your own food.

B) If you store any food in your cabin, it must be in sealed, odorless packaging. *You do not want to have a bear come into your cabin at night. If they find food once, they will not stop coming back.*

INFORMATION FOR TEACHERS

The New Jersey State Museum is a registered Professional Development Provider for the New Jersey Department of Education Professional Standards Board (#2241). Teachers Professional Development Courses fulfill the requirements for continued certification on a credit/hour basis.

We also offer professional development credits to teachers in Pennsylvania and Delaware.

WEATHER

Base camp is located at approximately 6,800 feet in elevation. As a result, weather conditions are often cool during the day and can be chilly or cold at night.

Most of our field sites are at approximately 5,000 feet elevation, and are significantly hotter and more arid than in camp. Conditions here are often hot, sunny, windy, and very dry.

Average high and low temperatures are below. Please note: *it is not uncommon for daytime temperatures to approach 100° at our field sites, and nighttime temperatures to dip into the 30s.*

	Powell, WY	Red Lodge, MT
Average High	84°	79°
Average Low	53°	49°



ITINERARY

The following is a general daily itinerary. The schedule each day and week is highly flexible, dependent on a number of factors, and subject to change upon short notice.

Day 1 (Sunday): Arrive in Billings/Red Lodge, MT. (If flying, a staff member will collect you as a group and drive you to the base camp – Yellowstone-Bighorn Research Association (YBRA) – in Red Lodge. There may be time in the afternoon for a visit to downtown Red Lodge.

Following dinner there will be an orientation in one of the classrooms giving a basic summary of camp and field safety protocols, local history, etc. *If you are driving, please plan to arrive in camp no later than 3pm.*

Day 2 – 6: Following breakfast, we will depart YBRA each morning no later than 7:45AM and head out to our field sites. Throughout the week we will be orienting you to the local geology, paleontology, and geography throughout the Bighorn Basin.

Monday – Wednesday evenings we will be hosting lessons on local geology, paleontology, anatomy, fossil preparation, etc. By the end of this week, you will be familiar with the landscape that existed in this area 150 – 50 million years ago, including its inhabitants. And, of course, you will have personally collected dozens of dinosaur and other fossils for the NJSM’s research, exhibition, and education programs.



After dinner on Thursday, weather permitting, we will take a scenic drive up to the top of the Beartooth Pass – 11,000’ elev. Dress warm!

Following dinner on Friday, you will have the opportunity to enjoy the famous pig races at the historic Bear Creek Saloon.

Day 7 (Saturday): After breakfast, we will transport you to the Billings airport, if needed. Please schedule your flight home for an early to mid-afternoon departure so that no one is rushed for time. *If your only departure option requires you to leave early Saturday morning, you may have to stay in a hotel room in Billings Friday night.*

FIELD GEAR & PACKING LIST

This list of required and recommended items is based on our own experiences, and is not intended to be comprehensive. You will have limited opportunities to pick up anything you need at local stores.

Weather conditions change quickly and unexpectedly throughout the field areas. Participants should be prepared for a range of weather conditions each day, regardless of the forecast.

Required Every Day

- **Field Book:** Other than personal safety equipment, this is the ***MOST*** important item. The BLM requires that we submit copies of field notes from every participant.
- Hat(s): to protect you from the *very strong* sun & to keep your head warm and dry in the event of rain or wind.
- Loose-fitting, light-weight, light-colored clothing
- Sun screen: preferably a high SPF and waterproof
- Sturdy and comfortable hiking or work boots
- Water bottle(s): there may not always be plenty of water available, so you need to carry at least 3 liters of water with you each day.
- Personal First Aid kit
- Backpack
- Sleeping bag and pillow. Cabins at the Yellowstone-Bighorn Research Association camp are dormitory style (*i.e.*, bunks w/ springs & mattresses, but you will need a sleeping bag or bed roll arrangement).
- Whistle (preferably one with a compass)
- Compass
- Sharpies (or any kind of permanent pen/marker that will write on just about any surface.

Suggested

- Tweezers
- Jacket or coat: it can get cool at night
- Rain gear
- Long work pants or jeans: at least two pairs
- T-shirts
- Work shirts/sweatshirts: enough to create layers
- Headband or bandanna
- Light & heavyweight socks

- Work gloves
- Chap stick (with SPF)
- Insect repellent
- Eyeglasses (contact lenses are not recommended)
- Sunglasses
- Kneepads or cushion: a lot of sitting and/or crouching on the ground is possible
- Personal items: such as toiletries, towel, *etc.*
- Flashlight & batteries: for reaching your cabin or the wash house at night
- Flip-flops / water shoes for the wash house.
- Camera/binoculars/notebook: This trip will provide some exciting moments that you will want to remember and share. In addition to dinosaurs, Montana has a variety of wildlife that may be found near our site – pronghorn antelope, mule deer, coyote, black bear, prairie rattlers, golden eagles, *etc.*, as well as spectacular mountain and desert scenery.

**Hand tools will be provided.



TRAVEL INFORMATION & ITINERARY

Remember that *you* are responsible for your own transportation to Montana. A member of our staff will meet you at the airport and transport you to the camp. Please inform the **BBDP** staff of your travel plans as soon as possible by completing the on-line form linked here: <http://goo.gl/forms/oJmF1mJ9Xu>

Please don't forget to contact us with any last-minute changes.

Participants should plan to arrive no later than early Sunday afternoon. Departures should be scheduled for no earlier than midday the following Saturday.

How to get to Red Lodge, Montana

By plane: There is no scheduled air service directly to Red Lodge. Arrange to fly into the Billings International Airport (BIL). Participants who arrive by plane will be met at BIL and transported as a group to the Yellowstone-Bighorn Research Association camp, which is just south of Red Lodge. At the end of the week's expedition, a similar return leg will be provided for those traveling by plane.

By car: Red Lodge is located approximately 1 hour south of Billings. The Yellowstone-Bighorn Research Association camp is just south of Red Lodge on the Beartooth Highway (U.S. 212). The camp is high up on the hillside to the east (left) of the highway. As you leave town and enter the Rock Creek Valley, you will pass a large gray rock formation on the right. About 100 yards beyond this is Howell Gulch Road. Howell Gulch Road crosses Rock Creek over a small bridge and climbs steeply about a mile to the camp. The road to the camp is steep and very rough, but can be reached by regular automobile in good weather. If lost, call the camp lodge at (406) 446-9949 or (406) 446-1333. *The latter number has an answering machine. Please plan to arrive in camp no later than 3pm.*

Nearby Points of Interest

- Yellowstone National Park (about two hours west, if the Beartooth Highway is open, 2-3 hours southwest through Cody, WY).
- Little Bighorn Battlefield National Monument (two hours east).
- Pompey's Pillar National Monument (30 minutes east of Billings)
- Buffalo Bill Historical Center and Museum (one hour south in Cody, Wyoming).





EXPEDITION CREW MEMBER REGISTRATION FORM

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

Phone Number: _____
(Cell) (Home)

Current Address: _____
(Street) (City, State, Zip)

E-mail Address: _____

I wish to participate in week(s) (please circle all that apply):

July 10 - 16, 2016

July 17-23, 2016

July 24 – 30, 2016

Fees: \$1,275/week NJSM Foundation Members; Total: _____
\$1,350/week Non-Foundation Members
Make checks payable to the New Jersey State Museum Foundation

A 15% deposit (non-refundable) is enclosed. 15% \$ _____
50% of the balance is due May 15th, 2016.
Final Payment due June 15th, 2016.
All payments must be in U.S. dollars.

Please note: The deposit is non-refundable, and NO refunds will be made after June 15th.

Signature: _____

Date: _____



PARTICIPANT WAIVER OF LIABILITY AND TERMS

(must be signed and returned as part of your registration)

I, _____ (print your name) accept and understand the following:

- 1) I/we have voluntarily applied to participate in the New Jersey State Museum's (NJSM) Bighorn Basin Dinosaur Project (BBDP) Field Expeditions. I acknowledge the risks and the potential risks of participation in this program. I am aware that there are inherent risks which occur as a result of physical activity. I/we understand the conditions in the field may at times be hazardous and that some of the following situations may exist or be encountered while participating in the BBDP Field Expedition:
 - a. The weather may be extremely hot and there is little shade, so be prepared for the hot sun. It may also be very cool.
 - b. Some work may be along steep slopes where there is a risk of slipping and falling.
 - c. Excavation work may at times be strenuous and difficult. All physical limitations will be taken into account.
 - d. Rattlesnakes, scorpions, and other types of hostile wildlife may be encountered.
 - e. There are large cacti, rocks, and extremely hard soils. Protective footwear and gloves should be worn.

- 2) I/we realize the nature of the conditions outlined and others not listed above may exist, but agree to accept full responsibility for any injuries or hazards encountered for any family members and myself. I/we agree not to hold the BBDP leadership, or their relatives, the NJSM Foundation, the NJSM, or the State of New Jersey, the landowners, or any participating academic institution or museum and its personnel liable for any injuries that I or my family members may incur as a result of my/our participation in the scheduled activities of this Field Expedition.

- 3) I represent that I am in good health and suffer from no physical impairment, which would limit my participation in the BBDP Field Expeditions. I/we agree to notify the BBDP Expedition leadership, prior to my arrival, of any pre-existing medical conditions which could be exacerbated by the rigors of the outdoor activities. These may include, but are not limited to, asthma, heart conditions, allergies, or other pre-existing conditions. I further understand that I/we should carry our own first aid supplies as the BBDP will not provide them for the attendees. Furthermore, all of the personal medical information provided in this document is accurate and complete.

- 4) I represent that I carry full and complete medical insurance coverage. I acknowledge that the NJSM Foundation, the NJSM, or the State of New Jersey, has not and will not render any medical services including medical diagnosis of my physical condition. I understand the BBDP does not provide any type of medical or liability insurance to cover any possible injuries and accidents while I, (and/or my family members), are participating in this field expedition and/or the scheduled activities. I/we agree to be responsible for carrying my/our own medical and liability insurance for myself and my family members participating in these activities. I agree to provide my/our own liability and medical insurance. I will provide proof of my/our self-insurance to the leadership of the BBDP Field Expedition if required.
- 5) I/we understand the BBDP does not provide any insurance for my/our vehicle. In the event of any vehicle trouble or accident, I/we agree to assume all responsibility and will not hold the BBDP leadership, or their relatives, the NJSM Foundation, the NJSM, or the State of New Jersey, the landowners, or any participating academic institution or museum and its personnel liable for any injuries that I (or my family members) may incur as a result of travels to and from this field expedition activity or for anything that may happen to my/our vehicle.
- 6) I/we understand that the pre-registration deposit is not refundable and that the tuition fees are not refundable after June 30. I/we understand the registration will cover the costs of the meals and lodging, course materials, necessary equipment needed for the scheduled activities, and transportation to/from the airport and to all field sites. I/we understand that these fees do not cover the costs of transportation from your home to the Billings, MT airport or vice versa.
- 7) I/we will be responsible for bringing (as an attendee) my own gear such as: a canteen or water bottle, backpack, personal first aid kit, proper clothing, and anything deemed necessary for the harsh environmental conditions that may be encountered. Each individual must transport all of these items during the scheduled activities. **THESE ITEMS ARE MANDATORY FOR ALL ATTENDEES.**
- 8) I/we understand that the activities of the BBDP and its leadership, are important scientific studies and my participation is a privilege. There will be no collecting of fossil specimens for my personal use unless otherwise authorized by the BBDP leaders. Camera equipment may be brought to the field activities and used by the attendees if they wish. As such, I/we agree that the locations, scientific information, and other data that is



gathered are the proprietary property of the NJSM Foundation and the BBDP leadership. I/we will not disclose any information pertaining to the sites without expressed written consent of the BBDP leadership or the landowner of the property upon which we are working. I/we agree not to write any press releases or articles about the activities of the BBDP without written consent and approval by the NJSM Foundation, the NJSM, or the State of New Jersey. I/we fully understand and agree not to utilize any information obtained by my/our participation in the BBDP for personal monetary gain.

- 9) I/we agree that as parent(s) or guardian of children under the age of 18 years of age participating in this BBDP, that I/we will be required, at all times, to supervise my child and insure that the child will not disrupt the activities of the BBDP.
- 10) I/we will allow the NJSM Foundation to utilize any picture or video containing my/our image as a promotional product for present or future paleontological activities sponsored by the museum.
- 11) I/we agree not to litter or deface the area in which we are working or staying.
- 12) The overall leadership role for the BBDP lies with the instructors; Mr. David Parris and Mr. Jason Schein are the individual's assigned decision making authority for the BBDP. Should they determine that the removal of certain individual(s) is warranted for the best interest of the BBDP, they may do so at any time with just cause. Should this action occur, these individual(s) will be asked to leave and will subsequently not receive any reimbursement for the unused portion of their registration fees.
- 13) I/we agree and fully understand the terms of this agreement and liability waiver in my/our attendance in the Bighorn Basin Dinosaur Project. By signing below, I/we fully accept these terms for both myself and my family members in attendance.
- 14) I acknowledge that in consideration of being permitted by the NJSM Foundation to participate in its Bighorn Basin Dinosaur Project Field Expedition, I hereby, intending to be legally bound for myself, my heirs, and assigns, executors or administrators and/or guardian of my son/my daughter/my ward specially agree that the NJSM Foundation, the NJSM, or the State of New Jersey, shall not be liable for any claim, demand, cause of action of any kind whatsoever for, or on account of death, in any activity associated with the Bighorn Basin Dinosaur Project, and I agree to hold the above-mentioned parties harmless from same. I hereby waive any and all claims for any and all injuries I may suffer under any circumstances, including but not limited to those claims arising from the negligence of the NJSM Foundation, the NJSM, or the State of New Jersey, its



employees, agents, servants, invitees, co-members, contractors, or sub-contractors, employees or otherwise.

Participant Signature: _____

Date: _____

Parent/Guardian's Signature: _____

Date: _____

THE ENTIRE SIGNED AND COMPLETED WAIVER OF LIABILITY AND TERMS AGREEMENT MUST BE RETURNED IN ITS ENTIRETY ALONG WITH THE COMPLETED REGISTRATION FORM.



MEDICAL INFORMATION & RELEASE

(must be signed and returned as part of your registration)

Note: All medical information will be confidential.

IMPORTANT: Daily activities involved with the Bighorn Basin Dinosaur Project can be strenuous and undertaken in harsh conditions. Extended hiking on steep and loose mountainsides and heavy lifting are common, as well as 90+ degree temperatures. You *must* be able to complete these and similar tasks regularly to participate, and you *must* have full medical insurance to participate.

Potential participants should consult their physicians' advice before registering for this experience.

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

Age: _____ Sex: _____

Date of Birth: _____ Height: _____

Weight: _____

Emergency Contact Information

Name: _____
(Last) (First)

Relationship: _____

Phone Number: _____
(Daytime) (Evening)

Medical History

List any allergies you have and the medications (if any) you take for them.

Medical History, cont'd: _____

List any conditions for which you are currently, or have been recently treated for.

List any medications (prescriptions and over-the counter) that you are currently taking and the condition for which it is intended.

Medication	Condition
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Medical Insurance

Insurance Company: _____ Policy #: _____ Group #: _____

I certify that all of the personal medical information provided in this document is accurate and complete.

Participant Signature: _____
 Date: _____

Parent/Guardian's Signature: _____
 Date: _____