

July 14-19, 2014



# Mammoth Cave Field Camp

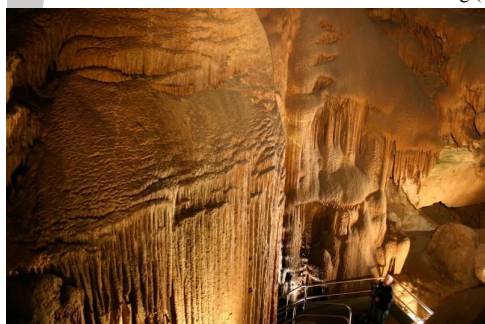
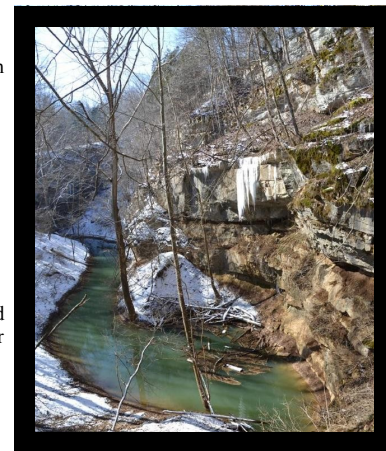
It is often said that the best geologists are the ones who spend time studying geology in the field and the same can be said for Earth science teachers. Field camps are designed to take teachers into the field for 3-5 days at an affordable cost which allows them to study geology first hand and learn new ways to incorporate field experiences into their lessons. During each field camp, teachers will have opportunities to collect mineral, rock and fossil samples to take back to their classrooms.

Join GSA as we explore the world's longest cave, Mammoth Cave and the surrounding area. We begin this trip by first examining the regional geology. On day one, we will analyze the stratigraphy of the Highland Rim Escarpment. We will collect several samples of sedimentary rocks and learn how the regional geology helped form conditions that allowed Mammoth Cave to develop. Day one ends with us counting bats and learning more about these important creatures. We begin day two by visiting Crump's Cave, which is owned by Western Kentucky University (WKU) and is a research cave that is closed to the public. We then will examine the sinkhole plain before exploring Mammoth Cave. If you have visited Mammoth Cave before, this trip will allow you to see it like you have never seen it before! The third cave that we will tour is Great Onyx Cave; a biological monitoring cave located in MCNP that is closed to the public for 11 months out of the year. We will examine cave features and map the interior of Great Onyx Cave on day three. The following day, we will measure stalagmites and calculate their ages before heading to the surface. We will map the surface features and connect them to the karst features that we mapped the previous day in Great Onyx Cave. We end day four by returning to Mammoth Cave to calculate water discharge for a research project conducted by the USGS and Tennessee State University.

On day four we will collect samples from a day trace that we started on day one. We will then head to Bowling Green and the WKU campus to analyze the samples. After lunch we will visit Lost River Cave to learn about urban karst environments and the impact of humans on those environments. Rock samples that you can collect during the week include shale, siltstone, sandstone, conglomerate, chert, and limestone. Several educational activities will be incorporated throughout the week for you to use in your classrooms.

Expect to hike on and off trail each day on this trip. While we do our best to keep hikes easy to accommodate various levels of ability, some hikes will be long and/or strenuous. Be prepared to hike several miles a day on rough, uneven terrain. If you have any concerns, consult your physician. Contact Davida Buehler if you have specific questions about the hikes.

Dr. Chris Groves from Western Kentucky University, Cheryl Messenger from Mammoth Cave National Park, and Shannon Trimboli and Rick Toomey from Mammoth Cave International Center for Science and Learning (MCICSL) will join us throughout the week. All four have extensive knowledge of Mammoth Cave and the geology in the area. GSA is excited to have them join us on our field camp and we know that they will help create an incredible learning experience for you.



*Pictures courtesy of the National Park Service.*

## Proposed Itinerary\*

**July 14-** Arrive by 2 at Hamilton Valley Research Center, introductions, rock exchange, orientation, MC Visitor Center

**July 15-** Dye Trace, Highland Rim Escarpment, Bats

**July 16-** Crumps Cave, Sinkhole Plain, Historic Tour (Mammoth Cave)

**July 17-** Great Onyx Cave mapping

**July 18-** Great Onyx Cave surface mapping, Water discharge study, MC Visitor Center

**July 19-** Analyze dye trace, Lost River Cave and human impact on karst

*\*Note: itinerary is subject to change as are the rock samples collected*

*\*\*If you are flying, you will need to fly into Louisville, KY airport. Your flight will need to arrive by noon if you want to be picked up and transported to Mammoth Cave. If you are flying from the west coast, plan on flying in on Saturday. We will pick you up at Louisville airport on Saturday. There are no shuttles from the airport to Mammoth Cave. Return flights should be made on Saturday after 10 am if you want a ride to the airport.*

## Field Camp Cost:

Program fee- \$700

GSA Members & their partners- \$600

\*\*\*Cost includes 6 nights lodging, transportation, park fees, and field guides\*\*\*

### The Fine Print

A \$100 deposit and the enrollment form are due by February 10, 2014 to hold your space on the trip. Final payments are due no later than April 14, 2014. Cancellations received less than 60 days prior to departure are non-refundable (May 14, 2014).

## Meet Your Trip Leaders

Originally from Va's Eastern Shore, **Rebecca Ludden** grew up boating and canoeing around the Chesapeake Bay. She is a graduate of James Madison University with 28 years of teaching experience at the middle and high school levels. Rebecca is endorsed in Special Education, Life Science, and Earth & Space Science and is currently teaching Advanced Earth Science and Earth Science II at Massaponax High School in Fredericksburg, VA. She has a passion for the outdoors and helping her students understand the world around them. She loves being outside (in any weather!) and she spends her free time hiking, camping, canoeing and exploring our State and National parks. Rebecca is the mother of 4 boys and wife of a high school football coach.

**Cathy Pritchett** has a wealth of science knowledge and teaching experience to bring to the field camp. She teaches Earth Science, Advanced Earth Science and Anatomy and Physiology. In past years, she has also taught all levels of Biology. Mammoth Cave has captivated Cathy's attention for years and her former students always remember the story of Floyd Collins. In her free time, Cathy enjoys helping others develop an appreciation for nature. She has been a naturalist for many years and often leads guided hikes and talks in the Fredericksburg, Virginia area.

**Davida Buehler** joined The Geological Society of America (GSA) in 2011 as the Teacher Advocate Program Officer. She is passionate about getting teachers out into the field to study geology and she has developed the field camp program. In addition to field camps, she runs workshops at various conferences and she creates classroom materials. Prior to working for GSA, Davida taught Earth Science at the K-12 level for over 8 years. She holds a B.S. in Education from Kent State University and a M.S. in Geosciences from Mississippi State University.

For more information contact Davida Buehler at: [dbuehler@geosociety.org](mailto:dbuehler@geosociety.org) or visit: [www.geoventures.org](http://www.geoventures.org)

**GSA Field Camps Presents:****Mammoth Cave Field Camp  
July 14-19, 2014****REGISTRATION:**

Program fee is \$700 per person. The program fee for GSA members and their partners is \$600. Deposit due upon registration is \$100 per person. This deposit is refundable up to May 14, 2014. Full payment of balance will be due April 08, 2014. Cancellation penalty after May 14, 2014 is loss of \$100. A \$100 deposit and the enrollment form are due by February 10, 2014 to hold your space on the trip. Final payments are due no later than April 08, 2014. Cancellations received less than 60 days prior to departure are non-refundable (May 14, 2014). We encourage you to take out travel insurance to cover the cost of the trip should an emergency arise after May 14, 2014. Contact Davida Buehler at [dbuehler@geosociety.org](mailto:dbuehler@geosociety.org) for more information.

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To register, please fill out the following below and mail this form with a deposit check/cc details of \$100 person.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY, STATE, ZIP \_\_\_\_\_  
PHONE \_\_\_\_\_ CELL PHONE \_\_\_\_\_  
EMAIL \_\_\_\_\_  
PREFERRED ROOMMATE \_\_\_\_\_

**Payment**      VISA    MasterCard    AMEX      Check

\_\_\_\_\_ Deposit (\$100)  
\_\_\_\_\_ Full Payment GSA Member (\$600)  
\_\_\_\_\_ Full Payment (\$700)  
\_\_\_\_\_ Balance (        )

Name on card: \_\_\_\_\_  
Card Number: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Card Code: \_\_\_\_\_      Expiration Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

**Make Check Payable to:** The Geological Society of America

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GSA Sales & Services  
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Boulder, CO 80301

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