

Coming Right Up! The Second Annual Oklahoma Evolution Road Trip!

Last summer we had the First Annual Oklahoma Evolution Road Trip, with ten participants and two instructors. Well, we have a Second Annual Oklahoma Evolution Road Trip scheduled for *April 26-27 in Tulsa*.

The Oklahoma Evolution Road Trips are open to anyone who is interested in learning more about evolution and the evidence for it that can be seen right here in Oklahoma. (Last year we included Texas as well.) You don't need a science background, just a willingness to observe and learn. It is specifically intended for science teachers, who can receive a certificate of professional development credit. *Registration cost is \$95. Online registration is now open at <http://www.oklahomascienceteachersassociation.org/?p=5628>.*

Because this is a serious learning experience, young children are not encouraged to participate, although there can always be exceptions. This sounds like the kind of trip I would have loved when I was twelve years old, but that few other twelve-year-olds would have appreciated.

The \$95 cost covers transportation during the trip, refreshments on both mornings, and lunches on both days. It does not include accommodations (which most participants will not require) or the evening meal for those who wish to participate in it. Participants who need accommodations can let me know as soon as possible and, if there are enough of you, I will try to get a group discount.

Last summer, the trip was longer and more expensive because it was in a location more distant from Oklahoma metropolitan areas. I believe we would have had more teachers in the group had the cost and location been more convenient. Well, we have solved that problem for 2014.

The two instructors will be myself (Dr. Stanley Rice), a biology professor at Southeastern Oklahoma State University, and Cora James, the science curriculum director for Putnam City Schools and a good amateur geologist. I am the author of four nationally and internationally published science books, two of which are about evolution. Both instructors bring a lot of experience with how to make science, and especially evolution, interesting and relevant to the school classroom in such a way as to highlight the positive learning experiences rather than to create tension and conflict.



The Second Annual Oklahoma Evolution Road Trip now has *four* professional organizations sponsoring it! The sponsors are:

- Society for the Study of Evolution (Education Committee)
- Oklahomans for Excellence in Science Education
- Oklahoma Science Teachers Association
- Oklahoma Academy of Science

The first of the organizations is one of the leading scientific societies in the world and has sponsored and provided financial support for this trip through a competitive grant. The other three organizations are the major professional organizations for science education in the state.

Here are the things we are going to do on this trip:

Saturday morning, April 26. We will meet at the Martin Regional Library in Tulsa (2601 S. Garnett) for a discussion about what the participants know, and what they want to know, about evolution, including: the rapid evolution that is now going on in viruses and bacteria; the new DNA evidence for the evolutionary ancestry of organisms, including humans; and the ongoing discovery of geological evidence (especially fossils) for evolution. We will also learn about the geological history of what is now Tulsa, right up to the last Ice Age, and how fossils form.

Saturday afternoon, April 26. After a catered light lunch, we will get into vans to go find our own fossils. (Participants can leave their vehicles at the library.) Bring plastic bags for collecting fossils (the instructors will have some for you also). We will go out rain or shine, unless the weather is actually dangerous. Individual vehicles are discouraged because of limited parking in some places. Our two destinations are:

1. Lake Skiatook. At one location on this lake maintained by the Army Corps of Engineers, there are numerous fossils of crinoids and brachiopods. Brachiopods have been rare for the last 250 million years but were common during the Ordovician period. They looked a lot like mollusks. Fossil collecting is also allowed here.



2. Arkansas River. The bed of the Arkansas River, usually mostly dry, contains a lot of things washed in from surrounding places; you can never be sure where they have come from. Most of it is garbage, but once in a while you can find coal, or even fossils such as this crinoids that got washed downstream from some unknown source. Of course, you can keep whatever you find.



For those who wish to continue discussion on Saturday evening, we can meet at a restaurant. (The registration fee does not cover this cost.)

On Sunday morning, April 27, we will meet again at the parking lot of the library (which will be closed at that time), but where participants can leave their vehicles. We will go by van out to Red Bud Valley northeast of Tulsa where we will walk around most of the morning on the bluff trails.

If you know where to look, you can find fossils, such as this amazing brachiopod fossil I found last summer. Collecting is not permitted here, although if you find something interesting the visitors' center will be happy to get it for their displays.

We will also learn about tree adaptations. There are many, many different evolutionary adaptations, each one appropriate for its own set of conditions. For cottonwoods, living in flood plains, this means rapid growth, cheap wood, and a short life. For oaks, living in stable forests, this means slow growth, strong wood, and a long life. Tree ranges also shift during evolutionary time, and in Red Bud Valley there are some trees, such as sugar maples, smoke trees, and blue ashes, that were very common in Oklahoma thousands of years ago but have mostly died off—except in this little sheltered spot [photo]. You see, evolution is not just something that happened in the past and that you can study with fossils; it is ongoing, and you can see it in the trees around you.



During a catered light lunch in the shaded parking lot at Red Bud Valley, we can discuss what we have seen, and then go back to the library parking lot. Participants will be able to leave by 3:00 at the latest on Sunday afternoon.

A word about next year's Third Annual Oklahoma Evolution Road Trip: Plans are underway for this trip to be offered for college credit through the Oklahoma Scholar Leader Enrichment Program (OSLEP) during Spring Break 2015, housed (like the 2013 trip) at the University of Oklahoma Biological Station on Lake Texoma. Depending on the success of this year's trip, we hope to offer the cheap and short version of the trip on alternate years, so the next two-day trip in an Oklahoma metropolitan area should take place in 2016.

Please watch this spot for announcements about online registration, which we hope to begin (along with public radio announcements) about March 17.