



A pair of giant banners now adorn the outside of Weeks Hall, identifying the location of the Geology Museum. The images are of specimens in our collections.

Preserving the Past

The Geology Museum filled a new staff position in July with the hire of **Carrie Eaton** as its curator in charge of collections and exhibits. Carrie received her master's degree from the department in 2004 studying ice sheet motion and Norwegian glaciers. She warmed up to the curator job quickly and already has upgraded several museum displays and converted a storage area into a workroom for the management of our collections. She supervised student interns from a campus museum studies class this fall. They cataloged and photographed hundreds of minerals to help with digitizing our collections and performed visitor surveys as part of an evaluation of museum exhibits in development.

The new three-year curatorial position is supported entirely with gifts to the museum and we hope to build an endowment that will enable this essential position to become permanent.

Pitching Astrobiology

On June 5th the Geology Museum, in collaboration with the Wisconsin Astrobiology Research Consortium, sponsored "Astrobiology Night at the Ballpark", an effort to inject science into an unconventional venue. Just inside the Madison Mallards Park gates, interactive stations were staffed by **Professors Johnson, Roden, Sahai, Valley and Xu**, along with many departmental scientists and museum volunteers. There, 6,250 fans who attended the game could learn about astrobiology

Trading cards featuring extremophiles were passed out to the first 1,000 fans—the cards highlighted the bizarre and hostile places that some microbes live. At the beginning of the game, a rover delivered the ball to geomicrobiologist Eric Roden who threw out the first pitch. Later, frisbees highlighting important discoveries in astrobiology were flung into the crowd. Thanks to the researchers, students and volunteers who helped put this event in orbit.

Field Notes

Museum personnel returned to Wyoming this past summer in search of vertebrate fossils from the Chugwater Group. This unit of rock was deposited during the Triassic Period and is known for its distinctive red color. Prior to this field season fewer than a dozen vertebrate specimens had been discovered in the Triassic rocks of Wyoming. Our team set forth under the leadership of **Dave Lovelace** whose doctoral research focuses on the Chugwater Group. The crew was rewarded with a great find—a rock slab containing the tracks of a large crocodile-like animal. In addition, ten isolated elements (four bones and six teeth) from various extinct reptiles were collected. These finds doubled the number of vertebrate specimens known from the Triassic strata of Wyoming, and set the stage for an even more productive field season in 2010.

In November, **Rich Slaughter** and three undergraduates sampled bone deposits in Cave of the Mounds, a large commercial cave discovered in 1939, about thirty miles southwest of campus. It was believed that vertebrates had negligible access to the cave before 1939 when blasting at a nearby quarry revealed the main cavern. Surprisingly, there is sediment in the cave that is loaded with the bones of small mammals, mostly bats and

rodents. The collected remains will be studied this spring and the most interesting specimens will be radiocarbon dated. This project formed the basis of a senior thesis for each of the three students involved. We are grateful to the staff at Cave of the Mounds for granting our research team access to the site.

13,601 people received an hour-long guided tour of the museum in 2009.

Swamped With Outreach

- Our annual Open House featured fossils from the Mazon Creek, a site in Illinois that provides the best glimpse of what life was like 300 million years ago. Rich Slaughter spoke on the swamp-dwelling plants and animals typical of this locality. At interactive tables visitors could see ferns, dragonflies, horseshoe crabs, and other extinct biota from the Mazon Creek. They could also play a choose-your-own-adventure game involving different modes of preservation.

- Students **Lisa Lesar** and **Liz Percak-Dennett** developed an interactive presentation on astrobiology for elementary school students. Lisa and Liz delivered this presentation to more than 500 people at ten school science nights.
- At the end of the school year, Rich went to Pope Farm Park for two days of teaching Middleton fourth graders about the animals of the Ice Age with specimens and stories about the giant beaver, mastodon and muskoxen
- Museum Story Time continues to thrive on first and third Thursdays. Several local



Drawer by drawer, new collections curator Carrie Eaton has been taking stock of the specimens housed in our repository.

Introducing New Faculty

Stephen R. Meyers

Science was a big part of my childhood largely due to my father being a physicist. Going to the playground merry-go-round meant a lesson about centrifugal and centripetal forces. On our kitchen table, we would attempt to topple a gyroscope so deftly defying gravity. Not many other kids were building a crystal radio set in the basement with their dads. Those memories made a strong impression that would survive my teenage years, when science was the last thing on my mind.

I found my way back as a freshman in college, driven by a strong curiosity about the natural environment. It dawned on me that science provided a means to understand the trails, woods, rocks and streams that I'd always enjoyed exploring. A native of Northern Ohio, I spent my youth hiking amidst cliffs of late Devonian black shales, the ancient Catskill Delta, and glacial moraines. How did this varied and complex landscape come to be? I wanted to know.

Nineteen years later I arrived in Madison, after completing a B.S. at Antioch College, a Ph.D. at Northwestern University, a postdoctoral fellowship at Yale University, and a few years as an assistant professor at the University of North Carolina-Chapel Hill. While an undergraduate student at Antioch, curiosity led me to Brazil where I studied the Quaternary geology of the Paranaguá Bay Estuary. This experience resulted in my first foray into stratigraphic research and scientific publication. At Northwestern my work focused on the development of new cyclostratigraphic and biogeochemical methods,



Photo © Gigi Cohen

which I applied to investigate Oceanic Anoxic Event 2, one of several enigmatic episodes of organic matter burial during the Middle Cretaceous (~94 Ma). After graduation in 2003, I was awarded the Gaylord Donnelley Environmental Fellowship at Yale University, which gave me an opportunity to investigate new geochemical and statistical methodologies for constraining paleoclimate variability.

As an assistant professor, my research program has focused on three primary topics: the mechanisms of climate change, the controls on the global carbon cycle, and the measurement of geologic time. These subjects are fundamentally interrelated, as there are linkages between climate and the carbon cycle, and the establishment of reliable chronologies

is essential for determining rates of climatic and biogeochemical change in Earth's past. My interdisciplinary approach to investigating these topics integrates data (primarily geochemical, sedimentologic and stratigraphic) with novel modeling and statistical techniques, to unravel the history of the climate system, oceans and geosphere.

Although my appointment at UW just started in January 2010, numerous collaborative projects have already begun with Geoscience faculty. One example is a recently funded NSF project to develop an integrated radioisotopic and astrochronologic timescale for the Cretaceous with **Brad Singer**. This project will utilize a new X-ray Fluorescence (XRF) core scanning facility that I am presently establishing at UW. The

XRF scanning technique enables continuous non-destructive elemental profiles (aluminum to uranium) of rock and sediment cores, at resolutions as fine as 100 microns. The facility will open up the deep-time stratigraphic record to a whole new range of scientific questions.

I'm grateful to have the opportunity to join this vibrant program, with such a strong history of excellence in sedimentary geology. The faculty, staff and students have been warmly welcoming during these first days in the department, and I have already had many occasions to appreciate the diverse and highly-engaging academic environment. I look forward to pursuing research and teaching here at UW-Madison, and in doing so, I also hope to inspire the same curiosity that led me to become an Earth scientist. ●

(Geology Museum, continued)

preschools have this program on their calendars, which can mean a full lobby of eager kids.

Collections Corner

The museum received many new specimens this year thanks to generous donors: Paleozoic fossils from Wisconsin; six rough diamonds; fluorescent minerals; a large opal from Nevada; a large ammolite; an iridescent gemstone that forms from the shells of Cretaceous ammonites; a fine marcasite specimen; two exceptional specimens of millerite, a nickel sulfide mineral, and The

Friends acquired a remarkable slab of turtle shells from Mongolia that was excavated in the 1930's. The fossil shells are from the Cretaceous Period, and some even have bite marks from having been munched on by crocodiles.

Fan Club

Becoming a fan of the Geology Museum on Facebook is one way to keep tabs on upcoming events and happenings at the museum. To show your museum love, go to: facebook.com/uwgeologymuseum You do not have to be a Facebook member to visit this site.

Going Ape for Science

Expanding Your Horizons, a program for middle school girls interested in science, hit the 50 year mark in 2009. **Brooke Norsted** is the co-chair of this one-day conference which annually exposes hundreds of girls to science careers and female scientists. A special gala was held and Dr. Amy Vedder, a wildlife ecologist and UW-Madison alumna, talked with the girls about her conservation work and adventurous research on mountain gorillas in Africa. ●