Introducing New Faculty

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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, 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 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. ●