the opportunity to visit the University of Idaho as part of a review team.

On the home front, my solar roof generated more electricity than I used in 2002. This may have partly been the result of my 4-week absence in August for a vacation safari in East Africa. This included a flight by small plane down the axis of the Kenyan portion of the rift valley and a climb up Ol Doinyo Lengai, an active carbonatite volcano in Tanzania.

Next year promises even more travel as the 2003 GSA Hydrogeology Division Birdsall-Dreiss Distinguished Lecturer. The opportunity provided by the lectureship to visit with researchers and students throughout the country made it an attractive way to spend the spring semester of my year-long sabbatical. I gave a "preview" lecture in Madison in November and am scheduled to visit about 40 institutions between January 6 and May 15 (see www.geology.wisc.edu/~jmbahr for abstracts of the talks and the schedule). Part of the tour will be by car, and that will be a good test of my hybrid Prius. I'm looking forward to seeing many of my former students and other UW alumni during these travels.

Phil Brown

The last couple of years have been busy and rewarding for my students, my family, and me. I apologize for missing last year's *Outcrop* and will try to catch up here.

Beginning in the fall of 2000, two graduate students **Stephanie Maes** and **John Marma** have been breathing life into the Economic Geology program. Stephanie came from New Mexico Tech and undertook a stable isotope study of tungsten mineralization in the Pine Creek area of the Sierra Nevada Mountains for her MS thesis. (Long-time readers of this newsletter will remember that I did my PhD thesis on the Pine Creek tungsten mine 25 years ago—this was a sentimental return to rocks near and dear to my heart.) This study was completed last summer and Stephanie has begun an exciting combined geochemical-petrologic-structural-geophysical study of a layered complex in South Africa (see the field trip report elsewhere in this *Outcrop*).

John Marma arrived in Madison via North Dakota and fresh from a Fulbright year in Austria and undertook a detailed microscopic/micro-probe study of precious metal mineralization in the Duluth Complex in Minnesota for his MS thesis. This work was completed last fall and is in publication. Happily for me he is also continuing on for a PhD and is also working in South Africa undertaking a geochemical-petrologic study of gold mineralization in the Barberton Greenstone belt.

That is the scientific good news—I personally have been deeply involved in University level committee work for the past 2.5 years. I am currently the Chair of the University Committee that is the executive committee of the Faculty Senate. The weekly multi-hour meetings are occasionally tedious but overall very satisfying as I know that this is a group that deals with important issues that are fundamental to maintaining the academic integrity and freedom of the faculty—two of the cornerstones of a great university.

The family is fine although milestones continue to creep up and pass by at an alarming rate. Kris is still the librarian at Memorial High School and couldn't ask for a better job. Jason is now a senior (!?!) at Carleton College and will graduate this spring as a Computer Science major. Peter is a freshman at Grinnell College also with a strong interest in computer sciences. Karin is a high school junior and the college search has begun. All three of these very 'unshort' young adults are still avid and successful swimmers and Kris and I have enjoyed traveling the Midwest to support them and their teams.

Best wishes to all and hopes for a peaceful and successful new year.

Charles W. Byers

In the spring, for the first time ever, I got to teach mineralogy and petrology, the soft-rock parts, anyhow. **Phil Brown, Brad Singer, Basil Tikoff,** and I all chimed in on the new majors course, Earth Materials. Minerals and rocks taught together, and with emphasis on those that students actually will encounter: Quartz Rules!

This year saw the completion of **Chris Ott's** Master's thesis and the beginning of **Steve Beyer's**. Chris analyzed a ceratopsian dino skull collected in the Hell Creek of Montana by UW Geology Museum field workers. It turned out to be a rare find, especially in terms of biogeography. Chris, who has worked in the museum throughout his college and grad career, identified the fossil as Leptoceratops gracilis, one of only a dozen or so known. All the other specimens are from highland paleoenvironmental settings, next to the rising Cordillera. The UW skull was deposited in lower alluvial plain/delta sediments near the Cretaceous Interior Seaway. Chris's dino-partner **Lisa Buckley** also completed her work this year, a senior thesis on vertebrate microfossil paleoecology (the second thesis project Lisa did as an undergrad). Chris and Lisa are off to South Dakota for more grad schooling in the land of Mesozoic reptiles.

Steve Beyer is doing a stratigraphic study of the Galena Formation in the vicinity of Decorah, Iowa, as part of our ongoing project on Ordovician carbonates. The Galena rocks are incredibly monotonous, scores of meters of burrowed wackestone, with the occasional reward of a shell bed or a Receptaculites to brighten the geologist's day. Steve's work will give us a framework for further studies of the geochemistry of the thin bentonite beds, as **Norlene Emerson** has recently completed (Simo PhD, '02) for the underlying Decorah.

At home, Becky and I passed the 20 year milestone this past fall. Last summer we took the kids out west to see Mesa Verde, Four Corners, Canyon de Chelly, Santa Fe, Sand Dunes, and the Front Range.

"Look, guys, it's the Dakota Hogback!"

"Sure, Dad. Could you turn the PlayStation back on?"

Alan Carroll

Last June I was officially voted to tenure by the UW Regents (the last step in a lengthy process), and during the fall semester I began my first sabbatical. I've chosen to spend most of my time so far in Madison (but mostly not in the department) catching up on writing, reading, and generally trying to do the things I never seemed to have time for previously. I'm also trying to continue riding herd on my somewhat unruly group of 8-9 graduate students, the majority of whom are working on PhDs. Another milestone last year was the graduation of my first PhD student, **Meredith Rhodes**, who began a job with BP in Houston. She promises not to forget her old friends in Madison as her new salary begins to roll in (we'll see!). Her dissertation was on the stratigraphy and Sr-isotopic composition of the Laney Member of the Green River Formation, and included a rewarding collaboration with **Clark Johnson** and **Brian Beard** of the UW Radiogenic Isotopes Laboratory. In addition to her duties involving the Gulf of Mexico, Meredith has already begun to establish herself as a company expert on lacustrine deposits. In late October Meredith, **Jeff Pietras**, and I led a GSA fieldtrip to the Green River Formation, focusing on the Laney and Wilkins Peak members. The trip enjoyed record attendance, and along with five presentations at GSA helped to cement our reputation as one of the leading research groups working on the Green River Formation. Despite the considerable weather risk involved with a late October trip in Wyoming, we were generally able to part the clouds and snow long enough for the participants to get a good look at each of the stops.

In addition to work on the Green River Formation, I am continuing to conduct research and/or supervise thesis projects on the paleoclimatic record of eolian dust in the Permian Phosphoria Formation, on synorogenic conglomerates in foothills of the Brooks Range, on the evolution of the East Java sedimentary basin, and on lacustrine sedimentary basins in China.

Chuck DeMets

The past year was hectic, with my time divided between teaching and managing five field projects in four countries. **Bill Unger** and **Neal Lord**, staff members in geophysics, invested many long hours working on these demanding field efforts, leaving me some free time to contemplate the meaning of the data they collected. Thanks to Bill and Neal, I also found time to make significant progress on a half-dozen modeling projects.

My most exciting new result, related to the present tectonics of Mexico, was done in collaboration with Prof. Bertha Marquez, a professor at the University of Guadalajara. Using geodetic data extending back to the early 1990s, we demonstrated that the Yucatan peninsula moves relative to the North American plate interior, contrary to geologic intuition. This surprising, but robust result will be published in 2003 as part of our unique view of the previously unknown neotectonic velocity field of the country of Mexico.

In the field, the highlight of my past year was a two-week trip to the remote and spectacular Mexican state of Oaxaca to build a new geodetic network. This project is a collaboration with Dr. Enrique Cabral and Francisco Correa-Mora, both at UNAM in Mexico City. Our long-term goal is to measure crustal deformation associated with subduction of the Cocos oceanic plate, with an emphasis on developing a better understanding of how strain accumulates and is released along the subduction fault. Our group not only installed and occupied 15 new GPS sites during our two-week visit, but installed and equipped five continuously operating GPS sites during multiple additional visits.

I also began two new research efforts in 2002. One project, a collaboration with **Basil Tikoff** and others, combines geodetic, structural, and paleomagnetic measurements to better understand deformation flanking the creeping segment of the San Andreas fault of central California. A second is a collaboration with Dr. R. K. Drolia of the National Institute of Oceanography in India to initiate new studies of the marine geophysics of the seafloor spreading centers in the Indian Ocean.

Finally, I also continued ongoing measurements in the Mexican states of Jalisco and Colima, in Jamaica, and in Honduras. These projects are providing a continual stream of new data that should be excellent fodder for my new students. **Stuart Schmitt** recently joined my research group to work on subduction zone neotectonics. Stu was introduced to my line of work by spending an exciting summer in Sioux Falls, South Dakota learning the ins-and-outs of 3-D finite element modeling as an apprentice to my former post-doc **Tim Masterlark**, who works at the USGS EROS data center.

Columnar basalts at Sheepeater Cliffs, Yellowstone National Park. These 500 ka lavas erupted after the massive, 1000 cubic kilometer Lava Creek tuff, which formed Yellowstone Caldera. Geology 916 students for scale, left to right: Aaron Cavosie, Cory Clechenko, Joyashish Thakurta, Beth Valaas, Melissa Harper, and Jade Star Lackey. (photo by John Valley)

John Fournelle

A highlight of 2002 for the Fournelle-Munaker family was a 2 1/2 week June vacation to visit old friends across the North Atlantic and see cool sights (and many rock sites)—Iceland, southern England, Northern Ireland and Paris. In Iceland we had an opportunity to stand in a fissure in the valley where the mid-Atlantic Ridge comes up on land (see fig. 1, next page), as well as soak in the hot geothermal waters at Blue Lagoon (ah...). I had an opportunity to visit an outcrop of hyaloclastite—a welded volcanic sediment, formed by eruption under a glacier—which finally explains to me a similar rock I found in the Aleutians. On the eve of the summer solstice (unintentionally) we found ourselves at Stonehenge, and a few days later, at the magnificant Giant's Causeway in Northern Ireland (see fig. 2, next page). And much more. Back in Madison, **Ryan Jakubowski's** senior thesis on vapor deposition of Pinatubo anhydrite was published in the *American Mineralogist* in August. I spent a good amount of energy transferring my probe class teaching materials into PowerPoint (helped by **Stephanie Maes**), which now resides at <www.geology.wisc.edu/~johnf/g777>.

Dana Geary

2002 was a year for me to remember my two paleontological mentors. Erle Kauffman (my MS advisor in Colorado) formally retired and my entire family traveled to Bloomington to celebrate this event with many old colleagues and friends. Sadly, my PhD advisor Steve Gould passed away in the spring. I can't imagine a more dynamic, interesting, wonderful pair of mentors than Erle and Steve. I cherish my ongoing relationship with Erle. I will miss Steve.

Jim Freiheit finished his MS degree on strombid gastropods from the Miocene of the Dominican Republic. Jim's taxonomic problems led us to a collaboration with Stephen Schellenberg exploring stable isotope and trace element ratios in various strombid morphs. In addition to providing the information on growth rates that we were looking for, we think we are getting useful