

40Ar/39Ar and U-Th isotope disequilibrium to examine magma transport and residence times in arcs with Clark Johnson and Brian Beard. Visiting PhD student, Thao Ton-That, and I presented a paper at Spring AGU on 40Ar/39Ar dating of a 41 ka tephra in the Mediterranean Sea as a means to better calibrate the O-isotope proxy record of past climate. Thao won an Outstanding Student Paper award from the Biogeosciences Section of AGU. Honors student Alissa Naymark, together with Gordon Medaris and I used the 40Ar/39Ar laser probe to discover that hydrothermal alteration of the Baraboo Quartzite is a consequence of the emplacement and cooling the Wolf River batholith 1460 Ma. Alissa's senior thesis explores the implications of this potentially widespread low-T metamorphism underfoot in Wisconsin. I have also geared up for renewed geologic and geochronologic studies of glaciations in the Patagonian Andes. PhD student Danny Douglass, Weeks Post-doctoral Fellow Mike Kaplan and I traveled to southern Argentina late last year to map the many moraines and sample them for cosmogenic surface exposure dating (Mike's research is described on page 30).

The activity in my research group was matched at home. In May, my wife, Teri Boundy, accepted a faculty position in the geology department at UW-Milwaukee. We moved to Delafield, on the famous Kettle Moraine, west of Milwaukee in June. Daughter Zoe turned six and loves exploring by canoe the lakes and rivers that surround us. Though the commuting for both of us is tiresome, it is the first time in a decade that we all inhabit the same home!

❖ Clifford Thurber

The year 2000 was the epitome of the long haul. There was challenge after challenge, starting with the editing and camera-ready production of an entire 275-page book in January and February, then dealing with a herniated disk in my lower back in April, then orchestrating the pull-out of a 29-station seismic array in Hawaii in June followed immediately by handling the permitting and siting and initiating the installation of a 15-station seismic network in Parkfield, CA, in July, then losing one post-doc to a job in Europe in July and then a second post-doc the same way in August, dealing with the start-up of three new grad students in the fall to replace three grad students that left over the summer, and, well, you get the picture. On top of this, a full teaching load combined with a year full of faculty search efforts has left me rather burned out. On the plus side, I am deeply pleased with the growth of my research program. I have a good set of externally funded projects right now, and I consider four of them

to be truly exciting and cutting edge—Kilauea East Rift Zone seismic imaging, high-resolution study of volcano seismicity, San Andreas fault zone imaging at Parkfield, and regional-scale imaging of faults and basins in the Los Angeles region (LARSE project). With new post-doc Charlotte Rowe now on board, I expect even greater things in 2001.

❖ Basil Tikoff

The highlight of 2000 was being awarded the Donath (young scientist) medal from the Geological Society of America. The award was given at the annual meeting in Reno, Nevada. In terms of highlights, not far behind the award, Sara Hotchkiss was hired by the Botany department at Madison. I am very pleased with the progressive attitude at the University of Wisconsin, and am very thankful for the people who worked to make that happen.

Last spring, I enjoyed putting together a new course, called Mountain Belts, with **Clark Johnson**. It is essentially a review of orogeny through time, from active tectonics through the Archean. Needless to say, with Clark co-teaching, I learned a lot of geochemistry. My summer itinerary consisted of Wyoming, Australia, Idaho, Washington, and Norway. In Australia, I attended the Geological Society of Australia meeting and presented work on rock fabric and competency contrast that I am working on with Laurel Goodwin (New Mexico Tech). In fall, I took a semester of research leave and worked at the Institute of Rock Magnetism at the University of Minnesota. Working with Paul Kelso (Lake Superior State University), we tried to use high field anisotropy of magnetic susceptibility techniques to determine rock fabric. As usual, after three months of work, we only got the technique working 24 hours before I had to return to Madison.

In other good news, **Matri Venkat-Ramani** finished her Master's dissertation on transtension folding and submitted a manuscript to the Journal of Structural Geology. **Cheryl Waters** started her PhD project in central Australia on the granulites of the Arunta block. **John Gillaspay** finished a very nice senior project on deformation in the western Idaho shear zone and gave an oral presentation at the annual Geological Society of America meeting.

I continue to enjoy talking and interacting with the emeritus professors. Personally, I think they are certainly having more fun and probably doing more science than the younger faculty (which leaves me wondering when I get to retire). **Gordon Medaris** and I co-led a fieldtrip to Norway in August, to look at the Caledonian orogeny from Devonian basins to ultra-high pressure rocks. It was a really excellent fieldtrip, and

we were led in the field by both Haakon Fossen (University of Bergen) and Haakon Austrheim (Geology Museum, Oslo).

The structure laboratory is finally over the major remodeling efforts and it seems that there are enough people around talking about structural geology and tectonics that the first floor is just exciting to be around. This is in no small part due to the structural geology graduate students. Three new students started in fall 2000: **Scott Giorgis**, **Eric Horsman**, and **Sarah Titus**. Sarah was awarded a graduate student fellowship from the National Science Foundation. In addition, two new postdoctoral fellows will be joining the structural geology group in 2001. **Eric Ferre**, who has worked extensively with the anisotropy of magnetic susceptibility technique, is arriving from France via South Africa. **Sarah Tindall** has also decided to come to Madison after a one year teaching job in Middlebury College. She has worked on block uplifts on the Colorado plateau, and will continue with field research and physical modeling while at the University of Wisconsin.

On a complete aside, the isolation ward is actually becoming THE place to be, at least on Wednesday mornings. All the people stuck here get together for the donuts at this time, with our loose adage coined by ex-isolationist Ron Schott, "Join us for a donut moment in splendid isolation."

❖ John W. Valley

In January 2000, Andrée, and David and I packed a trailer and left Madison two days ahead of a snowstorm for a six-month sabbatical. I was the guest at Caltech of Prof. **John Eiler** (PhD 1994) and **Nami Kitchen** (MS 1995) working with innovative new techniques for continuous-flow mass-spectrometry and laser sputtering. I also worked in labs at UCLA and Stanford, evaluating new ion microprobe techniques for oxygen isotope analysis of vanishingly small samples.

We were visited in Pasadena by UW grad-student **Liz King** who is also collaborating with scientists at Caltech, and who arranged a special family tour of my favorite building, the Gamble house, built by Greene and Greene in 1908 for Liz's great grandfather. I also saw **Julie O'Leary** (BS 2000) who was successfully wooed by Caltech as the first Samuel Epstein graduate fellow. We also saw a lot of our Pasadena neighbors, **Jean Morrison** (PhD 1988) and **Lawford Anderson** (PhD 1975), and we just missed seeing **Scott Sitzman** (MS 1996) and **Mary-Ann Kelly** (MS 1994) who bought the house next door to Jean and Lawford, but only realized their luck when they later saw "Badgers Make Better Geologists" proudly displayed on Jean's bumper.

In March, I cross-country skied around the tree-kill area in Long Valley caldera where magmatic CO₂ is

actively out-gassing. This is one of three calderas where UW post-doc **Ilya Bindeman** and I are studying magmatic evolution, and it is in the shadow of **Jade Star Lackey's** (MS 2000) field area in the high Sierras.

Although we enjoyed cheap unregulated electricity, and did not experience earthquakes or mudflows, we left LA in June, days ahead of a smog-bank and the Republican Convention.

Back in Madison, **William Peck** (PhD 2000) and I completed two papers on early Archean detrital zircons from Western Australia, reporting discovery of the oldest piece of the Earth that has been identified (4.404 Ga). (*See a research article on page 23.*) These papers conclude that continental crust was already differentiating from the mantle less than 150 m.y. after coalescence of the Earth. The high oxygen isotope ratio of the oldest crystal suggests early surface processes mediated by liquid water and the presence of oceans at 4.4Ga. These results contrast with the common view that early meteorite bombardment heated the Earth and vaporized the oceans to a Venus-type atmosphere. A group at UCLA working with a younger zircon has already confirmed this conclusion. These results fuel speculation about when life first evolved, how many times, and if the first life was fully extinguished by meteorite impacts during the first billion years. On Jan. 11, 2001, the first paper was published in *Nature* and reported on the front page of the *N.Y. Times*. That led to my Jan. 13 appearance on National Public Radio's *Whad'Ya Know* with Michael Feldman. To learn more: see *Zircons are Forever* at: <http://www.geology.wisc.edu/zircon>.

The fall term was taken up with teaching "Introductory Physical Geology" and graduate Metamorphic Petrology, preparing for the 2001 MSA-sponsored Stable Isotope short course that I will run and editing/writing the accompanying book. The Petrology grad-students and I took a field trip to the Adirondack Mountains, including a visit with **Cory Clechenko** to wollastonite skarns that are his thesis area.

❖ Herb Wang

In May I had the pleasure of escorting Dave Hart and Tim Masterlark at the commencement ceremony. Dave's PhD thesis dealt with laboratory measurements of poroelastic properties of rock and Tim's with poroelastic modeling of the postseismic deformation following the 1992 Landers earthquake in southern California. Dave is doing a postdoc with Nik Christensen and Tim is doing likewise with Chuck DeMets.

My book *Theory of Linear Poroelasticity with Applications to Geomechanics and Hydrogeology* was on display at the Princeton University Press booth at GSA in Reno. That was the first time I saw the pub-