biomineral that we are most intimately associated with. So we are also working on the growth of apatite on bioceramic silica surfaces used as prosthetic implants (artificial joints, dental implants, etc.). The neat aspect of this work is that the fundamental chemistry underlying this process is just as applicable to understanding how nodular phosphorite deposits are formed.

My research efforts this past semester have focussed mainly on setting up an aqueous geochemistry laboratory and a computer lab for theoretical geochemical modeling, and on writing research proposals. I am pleased to report that the laboratory renovations are already underway, and with any luck, should be completed by the end of the spring. We have also installed a four node eight-CPU PC cluster set up to run in parallel. This cluster gives us the computational muscle to wrestle with theoretical calculations for molecules involving organic and inorganic moities. A third project involves the development of a model for predicting the extent of ion adsorption on mineral surfaces, with an internally-consistent thermodynamic database. One of the applications is in understanding how toxic metals can be retarded along groundwater flow paths. I was pleased that five new papers related to these projects saw the light of publication this year and two more are in review.

I also invested a lot of time in preparing the Introductory Geochemistry course (and thoroughly enjoyed teaching it), and also the Crystal Chemistry course (which I am currently co-teaching with Prof. Jill Banfield).

Although I do not yet have graduate students of my own, I was involved in informal advising of some geomicrobiology graduate students from Prof. Banfield's group, and from the Chemistry and Civil Engineering departments.

I am very excited to have been invited to present a talk and a paper for a book at the prestigious NATO Advanced Research Workshop Series. The workshop is entitled "Seeking Answers for Fundamental Questions in Ion Adsorption at the Oxide/Electrolyte Interface", and will happen in fall 2001 in Dubrovnik (Croatia), known as the "Pearl of the Mediterranean." My research is interdisciplinary, and I expect that I will be collaborating with scientists both within UW and outside. In this light, I have been invited to collaborate with Prof. Dr. Glimcher of Harvard Medical School, using my theoretical calculations to help determine the reaction sequence by which bone grows in vertebrates. In the near future, I intend to build a research group, taking on graduate students, a post-doctoral research associate, and potentially, a motivated undergraduate student to work on some of these projects and on ideas of their own.

❖ Toni Simo

2000 was a productive year, both in the research and teaching fronts. It looks like I have imitated the cyclic nature of the carbonates I study and got seven publications in the top peer review journal, two guidebooks, advised six PhD, three MS, three undergraduate theses, one postdoc, and taught the largest number of classes in one year. I was also busy traveling with included with fieldwork, attending meetings/workshops, giving invited talks to different universities, and visiting my family in Barcelona. Departmental committee work was intense. I really enjoyed chairing the Museum Committee at a time of change and growth, and the Graduate Studies Committee. If cycles work in life as in rocks, next year should be a relaxing one in Barcelona during my partial sabbatical.

My research approach continues to be "problem solving" and these days I am integrating field, petrographic, geophysical work. My students and I are actively working through the geologic column (from Paleozoic to Recent rocks) in the US, Spain, Venezuela, Indonesia, and Australia. I am still working in sequence stratigraphy and sedimentology, in paleoceanography and paleoclimate, and in carbonate hydrostratigraphy. Work in hydrostratigraphy includes research continuous work in mechanical stratigraphy, retaking an old topic of arsenic contamination by naturally occurring mineralization in Wisconsin, and salt intrusion in deltas.

❖ Brad Singer

The Rare Gas Geochronology Laboratory was commissioned in April 2000 with considerable help from Lee Powell and Bill Unger. *(See a lab dedication article on page 33.)* We completed nearly 5000 argon isotope analyses during the remainder of the year focusing on several projects. Monica Relle discovered a new and very complete record of the 580 ka Big Lost Polarity Event during her MS thesis study of lavas on La Palma, in Spain's Canary Islands. Mike Smith, Alan Carroll and I collected samples of ash beds in the Green River Formation, Wyoming during the summer. Initial 40Ar/39Ar ages from several of these tuffs obtained by Mike for his MS thesis indicate that the ancestral lake Gosiute existed perhaps 3-4 million years earlier, and may have been much longer-lived, than previously thought. These results will reshape our understanding of climatic influences on the lake and may shake up global climate models for the earliest Eocene. Brian Jicha joined the group in the fall and commenced an MS thesis project aimed at determining magmatic processes responsible for 250 ka to recent lavas in the Aleutian Island arc. This will lay groundwork for a study using

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 Gillaspy** 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