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