

developed a better appreciation for the diversity and innovative approaches of the individuals who make Week's Hall their home away from home. By this time next year, I plan to be inviting you all to tour the new Structure facilities and giving you a timeline for availability of the new and versatile SEM.

### DAVE MICKELSON

Last spring was the second semester of sabbatical and I made the most of it, starting with a research trip to Patagonia in January. Before getting to the field areas of **Brad Sleeth** and **Richard Becker**, Jim Bockheim from Soils, Vin and I drove to Ushuaia, which is on the Beagle Channel, with **Jorge Rabassa**. An interesting and educational trip! **Danny Douglass** is also continuing his PhD work there. We came home to catch up on emails and to finish a manuscript, then left for a two-month stay in the UK. I was very pleased to be hosted by Andy Russell, Peter Knight, and Richard Waller at Keele University in the Midlands. We saw quite a bit of cool and rainy England as I gave talks at five places. I also used the time to catch up on writing projects. The Europe stay ended with three days in Nice (we finally got warm!) to give a paper at the EGU meeting. **Jessica Darter** and **Carrie Moeller** finished their MS theses in summer on reconstructing ice thicknesses and glacier modeling in Norway that **Cornelia Winguth** and I have been working on for three years. **Lindsay Anderson** finished her MS in geology and Water Resources Management, and has taken a NOAA Traineeship in New Hampshire.

In June, I flew to Beijing, where I gave a talk at the Academy of Science and visited with Xiaoping Yang, then to Lhasa where I met Zhou Shangzhe and graduate students from Lanzhou University. We drove two days east of Lhasa to collect boulders on moraines for cosmogenic dating glacial events in the humid area. That was followed by trips to Utah to work with **Ben Laabs**, who finished in December, and to New England. Then the Modern Glaciers of Iceland course was offered again. We had a great class and I enjoyed having former students **John Chapman**, **Steve Brown**, **Sue Rodenbeck-Brauer** join 13 others for the trip.

Back to teaching in fall, I co-taught a course in coastal geomorphology for the first time. It was a little disorganized, but I learned a lot. We are planning another field season in the Uintas, with **Kurt Refsnider** beginning an MS project there. **Betty Socha** and I submitted the Manitowoc and Calumet County report, and **Anders Carlson**, **Sarah Principato**, **Dawn Chapel** and I submitted Sheboygan County. **Steve Kostka** is writing up St. Croix County. I still have an active research program, with proposals pending for projects in Argentina, the Great Lakes area and Tibet. I enjoyed talking with alumni at the Quat reunion at GSA in Denver. Photos of the event are at: [http://www.geology.wisc.edu/news\\_events/QUAT\\_GSA04/index.html](http://www.geology.wisc.edu/news_events/QUAT_GSA04/index.html).

Hope to see many former Quats at GSA this May in Minneapolis or in Philadelphia next fall.



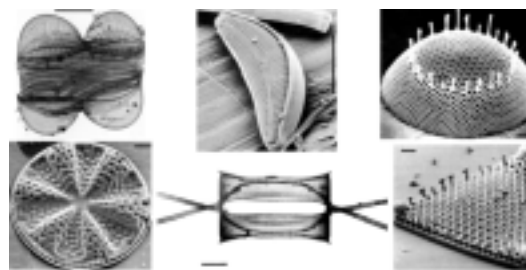
*Dave Mickelson with Zhou Shangzhe, back row, second and third from right, and graduate students and colleagues from Lanzhou University, in the field near Lhasa.*

### NITA SAHAI

Excellent graduate students, supportive faculty colleagues, and a friendly and efficient office staff—sound like heaven? No, it's Weeks Hall!

I have to begin, again, this year by acknowledging the contributions of my students to our program. **Katya Delak**, like myself, is in her fifth year at UW and has significant results for understanding the chemical mechanisms that underlie the process by which organisms such as sponges and diatoms convert dissolved silicon from oceanwater into intricate nanoporous opaline silica (Fig. 1). Using  $^{29}\text{Si}$  NMR spectroscopy, Katya has shown that the process is catalyzed by amines where the conversion rate is faster for the more acidic amines and the longer polyamines (Fig. 2). These results may explain why sponges use histidine and diatoms use polylysine chains in their enzymatic catalysis for producing nanoporous silica. Katya's two manuscripts are in review at *Chemistry of Materials*, and *Inorganic Chemistry*.

Meanwhile, **Tim Oleson** is working on understanding the thermodynamic basis for why biological cell-membranes self-assemble or rupture when put in contact with different mineral surfaces. Tim has made remarkable research progress in only his second year at UW, by successfully developing protocols for measuring bulk adsorption isotherms and enthalpies of adsorption of cell-membrane phospholipids at mineral surfaces. This work has implications for the early cellular



*Fig. 1. Nanoporous diatom silica.*