

Curriculum Vita of Barry R. Bickmore - January, 2000

*Department of Geological Sciences
University of Colorado at Boulder
Boulder, Colorado 80309*

Education

- 8/88 to 4/89 and 8/91 to 8/94 - Received BS in geology from Brigham Young University.
 - GPA 3.93
- 8/94 to 9/99 – Received Ph.D. in geological sciences, specializing in mineral surface geochemistry, from Virginia Polytechnic Institute and State University.
 - GPA 3.97
 - Dissertation title: “Atomic Force Microscopy Study of Clay Mineral Dissolution”.

Employment

- 1/00 to present – Postdoctoral Research Associate for Prof. Kathryn L. Nagy, Department of Geological Sciences, University of Colorado at Boulder.

Honors

- Presidential Scholarship (full tuition) from Brigham Young University, renewed for a total of four years.
- George Hansen scholarship, Dept. of Geology, Brigham Young University, 1992
- Outstanding Second-Year Undergraduate, Dept. of Geology, Brigham Young University, 1992
- Outstanding Third-Year Undergraduate, Dept. of Geology, Brigham Young University, 1993
- Outstanding Fourth-Year Undergraduate, Dept. of Geology, Brigham Young University, 1994
- Barry Goldwater Scholarship, Barry Goldwater Foundation, 1993
- Graduated Magna Cum Laude from Brigham Young University, 1994
- National Science Foundation Graduate Fellowship, 1994-1997
- American Federation of Mineralogical Societies Scholarship, 1996-1998

Research Publications

Hochella MF Jr., Rakovan J, Rosso K, Bickmore B, Rufe E. (1998) New directions in mineral surface geochemical research using scanning probe microscopy. In *Mineral-Water*

Interfacial Reactions: Kinetics and Mechanisms, ACS Symposium Series Vol. 715 (ed. Sparks DL, Grundl TJ). Washington, DC, 37-56.

Bickmore BR, Hochella MF Jr., Bosbach D, and Charlet L. (1999). Methods for Performing Atomic Force Microscopy Imaging of Clay Minerals in Aqueous Solutions. *Clays and Clay Minerals*, 47, 573-581.

Bickmore BR, Rufe E, Barrett SD, and Hochella MF, Jr. (1999) Measuring discrete feature dimensions in Atomic Force Microscopy Images with Image SXM. *Geological Materials Research*, 1, no. 5. This journal can be accessed at <http://gmr.minsocam.org>

Bosbach D, Charlet L, Bickmore BR, Hochella, MF, Jr. (2000) The dissolution of hectorite: *In-situ*, real-time observations using Atomic Force Microscopy. *American Mineralogist*, in press.

Bickmore BR, Bosbach D, Hochella MF, Jr., and Charlet L. (2000) *In situ* Atomic Force Microscopy study of Hectorite and Nontronite dissolution: Implications for phyllosilicate edge structures and dissolution mechanisms. *American Mineralogist*, submitted.

Bickmore BR, Bosbach D, Hochella MF, Jr., and Charlet L. (2000) *In situ* atomic force microscopy study of 2:1 phyllosilicate dissolution in HCl: Edge surface area normalized dissolution rates of biotite and montmorillonite. In preparation, to be submitted to *Geochimica et Cosmochimica Acta*.

Barrett SD, Bickmore BR, Rufe E, Hochella MF Jr., Torzo G, and Cerolini D. (2000) The use of macros in AFM image analysis and image processing. *Journal of Computer Assisted Microscopy*, in press.

Invited Lectures

Bickmore BR, Hochella MF Jr. (1997) The particle-specific nature of mica weathering: Real-time observation of K⁺ exchange in clay-sized mica particles using fluid cell TMAFM™. In *Seventh Annual V.M. Goldschmidt Conference*, pp. 27-28, LPI Contribution No. 921, Lunar and Planetary Institute, Houston. (invited talk)

Bickmore BR, Bosbach D, Charlet L, and Hochella MF Jr. (1999) Real-time observation of smectite dissolution: Rates and mechanisms. Euroclay 1999, Conference of the European Clay Groups Association, Program with Abstracts, 64.

Other Lectures

Bickmore BR, Hochella MF Jr. (1997) Real-time observation of K-exchange in clay-size phlogopite particles: A fluid cell TMAFM study. *Abstracts with Programs, Geological Society of America Annual Meeting* 29:26.

Bickmore BR, Bosbach D, Hochella MF Jr., and Charlet L. (1999) Acid dissolution rates of 2:1 phyllosilicate clay minerals measured with in situ Atomic Force Microscopy. In *Ninth Annual V.M. Goldschmidt Conference*, pp. 28-29, LPI Contribution No. 971, Lunar and Planetary Institute, Houston.

**Some of the above papers and abstracts may be downloaded at:
<http://www.geocities.com/Athens/Parthenon/2671/preprint.html>