

JEANETTE K. JERZ

Department of Geology and Geography • DePauw University • Greencastle, IN 46135

CAREER INTERESTS

- Developing undergraduate students into earth science professionals
- Use of geochemistry to solve to environmental and other applied problems
- Use of geochemical kinetics to understand fundamental reactions and mechanisms in natural systems
- Geochemistry of acid mine drainage
- Geochemistry of the weathering environment

EDUCATION

- PH.D. 05/02 VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Dissertation Title: Geochemical Reactions in Unsaturated Mine Wastes
Dissertation Advisor: J. Donald Rimstidt
GPA: 3.94/4.00
- M.S. 12/98 COLORADO SCHOOL OF MINES
Thesis Title: Mechanisms of Acid and Metal Release from a Fluvial
Tailings Deposit
Thesis Advisors: Wendy J. Harrison and Donald Macalady
GPA: 4.0/4.0
- B.S. 5/95 BUCKNELL UNIVERSITY
Concentration in Environmental Geology
Undergraduate Research Advisor: Carl Kirby
GPA: 3.0/4.0

HONORS AND AWARDS

- Geological Sciences Departmental Service Award (2001)
- Faculty Teaching Excellence Award (2000)
- Waste Policy Institute Graduate Fellowship (2000)
- Virginia Tech Graduate Student Assembly Research Grant (1997 & 1999)
- David R. Wones Geoscience Scholarship (1998 & 1999)
- Colorado Fellowship (1997)
- Colorado Mountain Club Scholarship (1996)
- National Honor Society (1991)

PROFESSIONAL SOCIETIES

- The Geochemical Society
- Mineralogical Society of America

TEACHING EXPERIENCE

VIRGINIA POLYTECHNIC AND STATE UNIVERSITY • *GRADUATE TEACHING ASSISTANT*

Independently taught a variety of laboratory sections, listed below. Teaching involved both lecture and one-on-one instruction of students. Asterisk indicates extensive course development; parentheses indicates number of times course was taught.

Upper Level (class size 20-40):

Mineralogy*, Ore Deposits Geology*(3), Non-metallic Resources (2)

Introductory Level (class size 20-30):

Physical Geology (3), Resources Geology (3)

COLORADO SCHOOL OF MINES • *GRADUATE TEACHING ASSISTANT*

Introductory Level (class size 20-25):

Earth System Science (required of all students)

RESEARCH EXPERIENCE

VIRGINIA POLYTECHNIC AND STATE UNIVERSITY • *GRADUATE RESEARCH (1997-2001)*

Designed and built reactors to determine the rate of mineral oxidation in air.

-Generated rate law for pyrite oxidation in humid air as a function of P_{O_2}

Determined paragenesis of iron-sulfur minerals in acid mine drainage environments

-Collected and identified a numerous field samples

-Analyzed chemical composition of soluble minerals

-Created topology diagram and paragenesis sequence diagram that can be applied to other acid mine drainage field sites

COLORADO SCHOOL OF MINES • *GRADUATE RESEARCH FELLOW (1995-1997)*

Investigated geochemical reactions responsible for the creation of highly acidic, metal-laden leachate from mine tailings.

-Collected large diameter cores of mine waste material and identified mineralogy

-Performed leaching experiments and analyzed water chemistry

-Modeled system with EQ3/6

RESEARCH EXPERIENCE (CON'T)

BUCKNELL UNIVERISTY (1991-1995)

Laboratory Assistant

Responsible for maintaining Bucknell's geochemical laboratory.

Specialized in acid mine drainage analyses.

*Undergraduate Senior Thesis**

Investigate the change in water chemistry along a PA stream due to lithographic changes, with an emphasis on the role of water chemistry on karst development.

*NATIONAL SCIENCE FOUNDATION/ RESEARCH EXPERIENCE FOR UNDERGRADUATES**

“Genesis and diagenesis of Oolitic Ironstones in the Mahantogo Formation (Middle Devonian) of the Susquehanna Valley Region in Pennsylvania”.

*Both projects involved extensive field work, including aqueous analyses and mapping.

ARGONNE NATIONAL LABORATORY • *RESEARCH INTERN* (1994)

Used SEM to investigate mineralogical changes in materials designed for radionuclide containment after leaching.

TECHNICAL SKILLS

- Instrumental Analyses: AAS-flame, AAS-graphite furnace, IC, GC, ICP-AES, SEM, XRD, electron microprobe, standard geochemical field equipment
- Computer Programs: WATEQ4F, EQ3/6, standard word processing, spreadsheets, graphing, and graphics software
- Wet chemical laboratory experience
- Geochemical sampling and field experience

OTHER RESEARCH AND PROFESSIONAL ACTIVITIES

- Organized Virginia Tech Graduate Student Research Symposium (2000)
- Graduate Student Liaison Committee (VT, 1999-2000)
- Geological Science Representative to Graduate Student Assembly (VT, 1998-1999)
- Geological Science Seminar Committee (VT, 1997-1998)
- Treasurer of Graduate Student Association (CSM, 1996-1997)

OTHER RESEARCH AND PROFESSIONAL ACTIVITIES

- Department of Geology Representative to Graduate Student Association (CSM, 1995-1996)
- Resident Advisor (Bucknell, 1993-1995)
- Officer in Kappa Alpha Theta, sorority (Bucknell, 1993-1995)

PUBLICATIONS

Smith, K.S., S. Stutley, P. Briggs, A. Meier, K. Walton-Day, J. Ranville, and J. Jerz (1998) Trends in water-leachable lead from a fluvial tailings deposit along the upper Arkansas River, Colorado *in* Blakema, A.A. et al. (1998) Proceedings of the Fifth International Conference on Tailings and Mine Waste 1998 pp. 763-768.

Jerz, J.K. and Rimstidt, J.D. (2000) A novel reactor to determine pyrite oxidation in air, *in* Proceedings from the fifth International Conference on Acid Rock Drainage 2000 pp. 55-60.

Jerz, J. K. and Rimstidt, J.D. (in prep) Pyrite oxidation in humid air. *Geochimica Cosmochimica Acta*

Jerz, J.K., Rimstidt, J.D., (in prep) Efflorescent Sulfate Salts: Paragenesis, Relative Stability, and Environmental Impact. *American Mineralogist*

PRESENTATIONS & ABSTRACTS

Jerz, J.K. (1994) Genesis and diagenesis of oolitic ironstones in the Mahantango Formation (Middle Devonian) of the Susquehanna Valley region in Pennsylvania Geological Society of America, Northeastern Section, 29th annual meeting. Abstracts with Programs - Geological Society of America: Geological Society of America (GSA), Boulder, CO, United States v. 26, n. 3, p. 26.

Walton-Day, K., Jerz, J. K., Ranville, J. F., Evens, J. B., and Smith, K. S. (1996) Effect of fluvial tailings deposits on the quality of surface and ground water at a site on the upper Arkansas river basin, Colorado. Abstracts with Programs 1996 Annual Meeting, Geological Society of America, v. 28, n. 7, p. 466.

PRESENTATIONS & ABSTRACTS

Jerz, J.K., Ranville, Harrison, W.J., and Macalady, D. (1997) Laboratory leaching of a river fluvial tailings deposit, Leadville, Colorado. in Wanty, R.B, Marsh, S.P, and Gouph, L.P., eds., 4th International Symposium on Environmental Geochemistry Proceedings: United States Department of the Interior Geological Survey Open-File Report OF97-496, 100pp.

Smith, K.S., Jerz, J.K., Ranville, J.F., Walton-Day, K., Sutley, S.J, Meier, A.L., and Briggs, P.H. (1997) Geochemical characterization of a fluvial tailings deposit along the Arkansas River, Colorado, USA. in Wanty, R.B, Marsh, S.P, and Gouph, L.P., eds., 4th International Symposium on Environmental Geochemistry Proceedings: United States Department of the Interior Geological Survey Open-File Report OF97-496, 100pp.

Jerz, J.K. and Rimstidt, J. D (1999) A Novel Reactor to Determine the Rate of Pyrite Oxidation in Air in *Ninth Annual V.M. Goldschmidt Conference*, p. 139. PLI Contributions No. 971, Lunar and Planetary Institute, Houston.

Jerz, J.K. and Rimstidt, J.D. (1999) Pyrite Oxidation Rate in Air in Abstracts with Programs 1999 Annual Meeting, Geological Society of America.

Jerz, J.K. and Rimstidt, J.D. (2000) Copiapite: Environmental Impact in Abstracts with Programs 2000 Annual Meeting, Geological Society of America.

Jerz, J.K. and Rimstidt, J. D (2001) Pyrite Oxidation in Humid Air in *Eleventh Annual V.M. Goldschmidt Conference*, Abstract #3334. PLI Contributions No. 1088, Lunar and Planetary Institute, Houston (CD-ROM).

Jerz, J.K., Rimstidt, J.D. Hammarstrom, J.M., and Piatak, Nadine (2001) Paragenesis of Efflorescent Sulfate Mineral in Abstracts with Programs 2001 Annual Meeting, Geological Society of America.