

Andrew Walker Miller

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Education

- 8/06-Present** **Colorado School of Mines** **Golden, CO**
Ph.D. Candidate in Environmental Science and Engineering
Laboratory for Applied and Environmental Radiochemistry (LAER)
Anticipated Graduation Date: December 2009
- 8/04-5/06** **Colorado School of Mines** **Golden, CO**
Masters of Environmental Science and Engineering
Focus in Treatment of Acid Mine Drainage
Graduation Date: May 2006
- 8/97-5/01** **Truman State University** **Kirksville, MO**
B.S. Chemistry (ACS Certified)
Graduation Date: May 2001

Research Experience

- 8/06-Present** **Doctoral Research (Advisor: Dr. Bruce Honeyman)** **Golden, CO**
Examining factors related to uranium migration in contaminated soil and groundwater
Work is proceeding at the "intermediate level" (between bench and field scales) with a
contaminated soil from the Naturita UMTRA site
- 1/05-5/06** **Master's Thesis Research (Advisor: Dr. Linda Figueroa)** **Golden, CO**
Designed and performed experiments on secondary metal removal in limestone based
treatment of acid mine drainage
Field work with a pilot scale pulsed limestone bed treatment system at Argo Tunnel,
Idaho Springs, CO
- 1/05-5/06** **Graduate Research Assistant (Advisor: Dr. Linda Figueroa)** **Golden, CO**
Field and lab work related to implementation of a passive bio-reactor for acid mine
drainage treatment including column design, sampling and long-term monitoring
- 08/00-05/01** **Undergraduate Research Assistant (Advisor: Dr. John Rutter)** **Kirksville, MO**
Method development for chemical separation and quantitation of neurotransmitter levels
in rats that had been chronically dosed with methamphetamine
Results presented as an oral presentation at the Undergraduate Research Symposium

Skills

Analytical: ICP-AES, ICP-MS, AA, TOC, UV/Vis Spectrophotometry, HPLC, Liquid Scintillation Counting

Computer Models: PHREEQC, MPNE1D, P-Flow

Relevant Coursework:

Principles of Environmental Chemistry	Hazardous Waste Site Remediation
Water and Wastewater Treatment	Surface Water Quality Modeling
Microbiology and the Environment	Environmental Pollution: Fate and Transport
Microbiology of Engineered Environmental Systems	Nuclear and Isotopic Geochemistry
Environmental Law	Subsurface Contaminant Hydrology
Solid Waste Minimization and Recycling	Environmental Chemical Kinetics
	Aquatic Surface Chemistry

Professional Experience

03/03-07/04 **US Ecology Idaho** **Grand View, ID**
Lab Supervisor

- Oversaw daily operations of laboratory staff
- Departmental liaison with Sales and Customer Service to determine treatment avenues for incoming wastes
- Made regulatory decisions related to the disposition of wastes both pre- and post-treatment

09/02-03/03 **US Ecology Idaho** **Grand View, ID**
Chemist

- Designed waste treatment methods for incoming wastes
- Developed “Quick-spin” methodology to maintain high waste throughput while also maintaining a high level of treatment success (>97%)
- Troubleshoot/maintained several laboratory instruments while adhering to strict EPA quality control mandates
- Worked with Operations department to help achieve a zero reportable incident safety record

03/02-09/02 **US Ecology Idaho** **Grand View, ID**
Lab Technician

- Performed TCLP extractions on pre- and post-treated wastes
 - Screened incoming waste and compared to acceptance criteria
 - Learned analytical methods related to metals and total carbon analyses
 - Gained working knowledge of RCRA and TSCA Regulations
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Teaching Experience

- Instructor: Principles of Environmental Chemistry Laboratory, Fall 2006
 - Guest Lecturer:
 - Introduction to Environmental Engineering, Spring 2007, Fall 2007
 - Principles of Environmental Chemistry Laboratory, Fall 2007
 - Introduction to Mass Spectrometry, Fall 2008
 - Principles of Environmental Chemistry, Spring 2008
 - Subsurface Contaminant Hydrology, Spring 2008
 - LAER Outreach Program- 2006-2007
 - HAZWOPER- Chemical Safety and Waste Treatment on the Industrial Scale, US Ecology Idaho, 2002-2004
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Field Experience

- UMTRA Site, Naturita, CO: Monitoring and sampling of a bromide tracer test- May 2007
 - UMTRA Site, Naturita, CO: “The Big Dig”; Soil procurement, sieving, and sampling- June 2006
 - National Tunnel, Central City, CO: Helped install pilot scale bioreactors- Summer 2006
 - Argo Tunnel, Idaho Springs, CO: Operation of pilot scale acid mine drainage treatment system- Summers of 2005 and 2006
 - Clear Creek Watershed, CO: Sampling and water collection at abandoned mine sites throughout the watershed- Periodically 2005-2006
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Publications

Miller, A. W. (2006). Processes of Zinc and Nickel Removal in Oxidic Limestone Systems and the Application to Metal Mine Drainages. Master’s Thesis, Environmental Science and Engineering Division, Colorado School of Mines.

Conference Proceedings and Presentations

A.W. Miller, D.R. Rodriguez, B.D. Honeyman; Connecting soil pores to the field: Uranium transport experiments at the intermediate scale. American Geophysical Union Fall Meeting, San Francisco, California, December, 2007.

- A.W. Miller, D.R. Rodriguez, B.D. Honeyman; Upscaling of uranium(VI) transport in contaminated soil and groundwater. Earth Sciences for Society, 2007 Geological Society of America Annual Meeting, Denver, Colorado, October, 2007.
- A.W. Miller, D.R. Rodriguez, B.D. Honeyman; Upscaling of uranium(VI) desorption and transport: Experiments at the intermediate scale. Poster Presentation at the 11th International Conference on Chemistry and Migration Behavior of Actinides and Fission Products in the Geosphere, Migration 2007, Munich, Germany, August 2007.
- A.W. Miller, P.L. Sibrell, T.R. Wildeman; Comparison Of Sludge Characteristics Between Lime And Limestone/Lime Treatment Of Acid Mine Drainage. 24th Annual ASMR Conference Proceedings, Gillette, WY, June 2007.
- A.W. Miller, L.A. Figueroa, T.R. Wildeman; Zinc and nickel removal in oxic limestone treatment of acid mine drainage. Poster Presentation at Rocky Mountain Regional SETAC Meeting, Golden, CO, March 2007.
- A.W. Miller, D.R. Rodriguez, B.D. Honeyman; Upscaling of uranium(VI) desorption and transport: Experiments at the intermediate scale. Poster Presentation at Rocky Mountain Regional SETAC Meeting, Golden, CO, March 2007.
- A.W. Miller, P.L. Sibrell, T.R. Wildeman; Optimization Of A Pulsed Limestone Bed Reactor At The Argo Tunnel In Idaho Springs, Colorado. Poster Presentation at the US EPA Hard Rock 2006 Conference on Sustainable Modern Mining, Tucson, AZ, November 2006.
- A.W. Miller, P.L. Sibrell, T.R. Wildeman; Demonstration Of A Pulsed Limestone Bed System for the Treatment of AMD. 10th Billings Land Reclamation Symposium, Billings, MT, June 2006.
- A.W. Miller, L.A. Figueroa, T.R. Wildeman; Zinc and Nickel Removal in Oxic Limestone Treatment of Acid Mine Drainage. Poster Presentation at the 3rd WEF/AWWA Student Conference, Rocky Mountain Region. Fort Collins, CO, May 2006.
- A.W. Miller, L.A. Figueroa, T.R. Wildeman; Mechanisms Of Heavy Metal Removal In Oxic Limestone Systems And The Application To Metal Mine Drainages. 7th International Conference of Acid Rock Drainage Proceedings, St. Louis, MO, March 2006.
- A.W. Miller, P.L. Sibrell, T.R. Wildeman; Optimization Of A Pulsed Limestone Bed Reactor At The Argo Tunnel In Idaho Springs, Colorado. Poster Presentation at the 2007 International Conference of Acid Rock Drainage. St. Louis, MO, March 2006.
- A.W. Miller, L.A. Figueroa, J. Bolis; Oxic Limestone Drains for Metal Mine Drainage. Poster Presentation at the 22nd Annual ASMR Conference, Breckenridge, CO, June 2005.
- A.W. Miller, L.A. Figueroa; Oxic Limestone Drains for Metal Mine Drainage. Poster Presentation at the 2nd WEF/AWWA Student Conference, Rocky Mountain Region. Laramie, WY, May 2005.
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Honors and Awards

- 3rd Place Poster Presentation: Rocky Mountain Regional AWWA meeting-2008
 - Outstanding Graduate Student- Colorado Hazardous Waste Management Society- 2008
 - Environmental Remediation Sciences Program (DOE) Travel Fellowship- 2008
 - Colorado School of Mines Travel Grant Recipient- 2007
 - 3rd Place Student Presentation Award: Rocky Mountain Regional SETAC Meeting- 2007
 - 2nd Place Student Presentation Award: 10th Billings Land Reclamation Symposium- 2006
 - 1st Place Student Poster Award: 7th International Conference of Acid Rock Drainage- 2006
 - ASMR Memorial Scholarship Recipient- 2006
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Professional Affiliations

- American Society of Mining and Reclamation (ASMR): 2005-Present
 - American Geophysical Union (AGU): 2007-Present
 - Society for Environmental Toxicity and Aquatic Chemistry (SETAC): 2007-present
 - Geological Society of America (GSA): 2007-Present
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