Andrew N. Quicksall

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CURRICULUM VITAE

EDUCATION

PhD in Earth Science June 2009
Dartmouth College – Hanover, NH
Dissertation: *Mineralogical Transformations in the Fe-S-H_2O System: Implications for Trace Metal Dynamics*

Master of Science in Geology May 2000
Washington State University – Pullman, WA
M.S. Project: *Mapping and Structural Analysis of the Marble Creek Area, Northern Idaho*

Bachelor of Science in Environmental Sciences August 1998
Texas Christian University – Fort Worth, TX
Senior Thesis: *Substrate Impact on the Spatial Distribution of Nodalittorina interupta on Rocky Jetties of the Texas Coast*

TEACHING & RESEARCH EXPERIENCE

University of Notre Dame – South Bend, IN 8/08-present
Visiting Assistant Professor,
Environmental Molecular Sciences Institute Postdoctoral Fellow,
Materials Science of Actinides Energy Frontiers Research Center Postdoctoral Scholar

Dartmouth College – Hanover, NH 9/04-8/08
Dartmouth Fellow, Teaching Assistant, Research Assistant

University of Texas at Arlington – Arlington, TX 8/02-8/04
Director of Student Affairs, Honors College
Adjunct Instructor, College of Science

Tarrant County College– Fort Worth, TX 2002
Adjunct Instructor

Mansfield Independent School District – Mansfield, TX 8/01-8/02
High School Science Teacher

The Wyman Center – Eureka, MO 5/00-8/01
Program Director for Summer Camp & After School Programs
Associate Program Director of Education

Washington State University – Pullman, WA 8/98-5/00
Teaching Assistant, Peer Teacher

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PEER-REVIEWED PUBLICATIONS:

Quicksall, AN; Bostick, BC; & Sampson, M. Linking organic matter deposition and iron mineral transformations to groundwater arsenic levels in the Mekong delta, Cambodia. *Applied Geochemistry*. Vol. 23**,** Issue 11, pp. 3088-3098, Nov 2008.

Papacostas, N; Bostick, BC; **Quicksall, AN**; & Landis, JD. Geomorphic Controls on Groundwater Arsenic Distribution in the Mekong River Delta, Cambodia. *Geology*. Vol. 36, Issue 11, pp. 891-894**,** Nov 2008.

Meyer, EE; Burgreen, BN; Lackey, H; Landis JD; **Quicksall, AN**; & Bostick, BC. Evidence for Basin Restriction During Syn-Collisional Basin Formation in the Silurian Arisaig Group, Nova Scotia. *Chemical Geology*. Vol. 256, Issue 1-2, pp. 1-11, Oct. 30, 2008.

deLemos, JL; Bostick, BC; **Quicksall, AN**; Landis, JD; George, CC; Slagowski, NL; Rock, T; Brugge, D; Lewis, J; & Durant, JL. Rapid Dissolution of Soluble Uranyl Phases in Arid, Mine-Impacted Catchments near Church Rock, NM. *Environmental Science and Technology*. Vol.42, pp.3951-3957, May 2008.

Meyer, EE; Bostick, BC; **Quicksall, AN**; Landis, JD; & Link, PK. Ocean Overturn Initiates Microbial Bloom and the Deposition of a Late Sturtian Cap Carbonate. *Chemical Geology*. (In Review)

Meyer, EE; Bostick, BC; Theissen, K; & **Quicksall, AN.** Reduced Depositional Environments of a Neoproterozoic synglacial carbonate in the Kingston Peak Formation, Southern Death Valley Region, CA. *Geology.* (In Review)

Alessi, DS; Forbes, TZ; **Quicksall, AN**; Sigmon, GE; Burns, PC; & Fein, JB**.** Highly non-ideal effects of ppm-level substitution on solid-phase solubility. *Nature.* (In Review)

Quicksall, AN & Bostick BC. Effect of Parallel Iron and Sulfate Reduction on Transient Aqueous Lead and Zinc Concentrations in Contaminated Wetland Soils from the Coeur d'Alene River, ID. *Applied Geochemistry*. (Submitted)

Quicksall, AN & Bostick, BC. Variable Rates of Microbially-Mediated Iron and Sulfate Reduction: Impact on Aqueous Arsenic Levels. *Geochimica et Cosmochimica Acta*. (Submitted)

Quicksall, AN; Bostick, BC; & Landis, JD. Iron Mineralogical Transformations and Associated Arsenic Behavior under Progressive Sulfidization. (In Prep)

Quicksall, AN; Siegfried, MR; Webb, SM; & Bostick BC. Real-time Synchrotron Wide Angle X-ray Scattering Analysis of Mineralogical Transformations from Ferrihydrite Sulfidization. (In Prep)

Quicksall, AN; Barton LE; Kosel, TH; & Maurice, PA. Size-Driven Structural Changes in Hematite Nanoparticles. (In Prep)

Hunter EL; **Quicksall, AN**; Haack, EA; Johnston, CT; & Maurice, PA. Lead - Siderophore Co-Sorption into the Interlayer of Montmorillonite. (In Prep)

Quicksall, AN; Hunter EL; Haack, EA; Mishra, B; Bunker, BA; & Maurice, PA. Characterization of Pb sorption complexes to montmorillonite in the presence of the bacterial siderophore DFOB. (In Prep)

MEETING ABSTRACTS

Quicksall, AN; Saalfield, SL; Renshaw, CE; & Bostick, BC. Coupling sulfide production and arsenic release in dynamic systems. *Goldschmidt 2005*. Geochimica et Cosmochimica Acta, vol.69, no.10, Suppl., pp.463, May 2005

Saalfield, SL; **Quicksall, AN**; Renshaw, CE; & Bostick, BC. Reductive mechanisms of arsenic mobilization from contaminated sediments. *Goldschmidt 2005*. Geochimica et Cosmochimica Acta, vol.69, no.10, Suppl., pp.617, May 2005

Quicksall, AN & Bostick, BC. Arsenic Behavior Under Microbially Stimulated Iron & Sulfate Reduction in Mine Waste Impacted Soils. *AGU 2005.*

*(Invited)***Quicksall, AN**; Saalfield, SL; & Bostick, BC. Arsenic Retention Under Static and Dynamic Flow Conditions During Acitve Iron and Sulfate Reduction. *EPA Science Forum 2006.*

Meyer, EE; Bostick, BC; **Quicksall, AN**; & Theissen, K. Trace Element Geochemistry of Neoproterozoic Low Latitude Glacial Strata in Death Valley Region, CA. *Dartmouth Graduate Student Poster 2006.*

Quicksall, AN & Bostick, BC. Lead behavior Under Microbially Stimulated Iron and Sulfate Reduction in Mine Waste Impacted Soils. *Dartmouth Graduate Student Poster 2006.*

Meyer, EE; Bostick, BC; **Quicksall, AN**; & Theissen, K. Paleoredox Conditions During Deposition of Neoproterozoic Low Latitude Glacial Strata of the Death Valley Region, CA. *AGU 2006.*

Quicksall, AN & Bostick, BC. Reductive Mineralogical Transformations in the Fe-S-H_2O System. *NEGSA 2007.* Abstracts with Programs – Geological Society of America, vol.39, no.1, pp.40, Mar 2007.

Quicksall, AN; Bostick, BC; & Webb, SM. Real-Time, *In-Situ,* WAXS Analysis of Mineralogical Transformations from Iron (Oxy)Hydroxide Sulfidization. *SSRL/LCLS Users Meeting 2007.*

Meyer, EE; **Quicksall, AN;** Link, PK; & Bostick, BC. Trace Element Geochemistry of a Sturtian Cap Dolostone in the Scout Mountain Member of the Pocatello Formation, Idaho: Evidence for Ocean Anoxia Following Low Latitude Glaciation. *GSA 2007.*

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Quicksall, AN; Bostick, BC; & Sampson, M. Stratigraphically and Temporally Resolved Iron Mineralogical Transformations in the Mekong Delta: Implications for Arsenic Sequestration and Release. *GSA 2007.*

Meyer, EE; **Quicksall, AN;** & Bostick, BC. Iron Speciation using X-ray Absorption Spectroscopy of Neoproterozoic Cap Carbonates from the Pocatello Formation (Idaho). *AGU 2007.*

Quicksall, AN; Bostick, BC; & Landis JD. Iron, Sulfur, and Arsenic Dynamics During Sulfidization of Arsenic-Doped Iron (Oxy)Hydroxides. *Clay Minerals Society/American Chemical Society 2008.*

Bostick, BC; & **Quicksall, AN**. Effect of Organic Matter Quality on Iron and Sulfate Reduction and Expression of Groundwater Arsenic. *Goldschmidt 2008.*

Bostick, BC; **Quicksall, AN**; Saalfield, SL; & Sampson, ML. Factors Affecting the Precipitation of Authegenic Arsenic Sulfides and the Limits They Place on Groundwater Arsenic Levels. *Northeast Regional Meeting of the American Chemical Society 2008.*

Quicksall, AN; Bostick, BC; & Siegfried, MR. Quantifying Mineralogical Transformations of Ferrihydrite Sulfidization in Microcapillary Columns by Rietveld Refinements using *In Situ* Synchrotron-Based WAXS. *GSA 2008.*

Quicksall, AN; Barton LE; Kosel, TH; & Maurice, PA. Size-Driven Structural Changes in Hematite Nanoparticles. *Clay Minerals Society 2009.*

Hunter EL; **Quicksall, AN**; Haack, EA; Johnston, CT; & Maurice, PA. Siderophore-Pb Mutual Sorption in the Interlayer of Na-Saturated Montmorillonite. *Clay Minerals Society 2009.*

Maurice, PA; Haack, EA; **Quicksall, AN**; Hunter, EL; & Johnston, CT. Sorption of Pb and Desferrioxamine to Montmorillointe. *Goldschmidt 2009.*

Hunter EL; **Quicksall, AN**; Haack, EA; Johnston, CT; & Maurice, PA. Siderophore-Pb Mutual Sorption in the Interlayer of Na-Saturated Montmorillonite. *Midwest Institute for Nanoelectronics Discovery Poster Session 2009.*

Barton, LE; Grant, KE; **Quicksall, AN**; Kosel, TH; Maurice, PA. Chemical Reactivity of Hematite Nanoparticles: Effects of Particle Size and Morphology. *Midwest Institute for Nanoelectronics Discovery Poster Session 2009.*

Schafer, R; Li, F; **Quicksall, AN**; Maurice, PA; Tanner, CE; Ruggiero, ST. Nanoparticle Studies Using Laser Transmission Spectroscopy. *Midwest Institute for Nanoelectronics Discovery Poster Session 2009.*

Quicksall, AN; Barton LE; Kosel, TH; & Maurice, PA. Size-Driven Structural Changes in Hematite Nanoparticles. *GSA 2009.*

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WORKSHOPS

Workshop on Synchrotron X-ray Scattering Techniques in Materials and Environmental Sciences: Theory and Application. Stanford Synchrotron Radiation Laboratory. 2006

Clay Surface Redox Processes and Characterization Techniques. Clay Mineral Society-American Chemical Society National Meeting. 2008

COURSES TAUGHT

INSTRUCTOR

University of Notre Dame

Field Course (*planned*)	2010
Mineralogy & Optical Mineralogy	2008

Dartmouth College

Montana Graduate Student Field Trip	2008

University of Texas, Arlington

Honors Study Abroad: The Natural History of Scotland	2004
Earth Resources	2003, 2004
Environmental Resources	2003, 2004
Honors Freshman Seminar	2002, 2003

Tarrant County College

Physical Geology	2002
Physical Geology Lab	2002

Mansfield High School

Chemistry	2001-2002
Physical Science	2001-2002

TEACHING ASSISTANT

Dartmouth College

Mineralogy	2005, 2007
Soil Chemistry	2006
Molecular Paleontology & Archeology	2006
Geology of New England	2006
Field Camp	2005
Geochemistry	2005
Physical Geology	2005
Natural Disasters	2005

Washington State University

Structural Geology	2000
Quantitative Geology	1999
Physical Geology	1998, 1999

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INVITED GUEST LECTURER

UNIVERSITY OF NOTRE DAME

Environmental Geosciences — 2009

DARTMOUTH COLLEGE

Courses

Mineralogy	2005, 2006, 2007, 2008
Contaminant Hydrogeology	2007
Earth History	2007
Molecular Paleontology & Archeology	2006
Natural Disasters	2005

Geolunch Brown Bag Series

Arsenic Dynamics Under Iron and Sulfate Reduction	2005, 2007, 2008
Siccar Point, James Hutton, and the Roots of Geology	2007

WASHINGTON STATE UNIVERSITY

Quantitative Geology — 1999

STUDENT THESIS COMMITTEES SERVED ON

Erin Hunter *PhD student*	2008-present
Lauren Barton *MS student*	2009-present
Brian Fisher *MSE student*	2009-present

STUDENT MENTORING IN RESEARCH

Erin Hunter *PhD student*	2008-present
Lauren Barton *MS student*	2009-present
Matthew Siegfried *Research Assistant/Junior Year Research* *Attended 2007 SSRL trip*	2006, 2007
Katrin Kabral *Women in Science Program (WISP) Intern*	2007
Catherine Pierce *WISP Intern*	2006
Elizabeth Lane *WISP Intern*	2005
Laura Nielsen *WISP Intern*	2005

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GRANTS AND AWARDS

Clay Mineral Society Best Student Oral Presentation, 2009	Award Winner
Dartmouth College, Department of Earth Sciences	
Gary Malone ’70 Award for Outstanding Graduate Student, 2008	Award Winner
Dartmouth College Alumni Grant Award, 2006	Grant Recipient
Dartmouth College School of Arts & Sciences	
Graduate Poster Session, 2006	Award Winner
American Geophysical Union Annual Meeting	
Student Paper in Biogeosciences, 2005	Award Winner
United States Geological Survey, Spokane, WA, 1999	Grant Recipient
Murphy Undergraduate Research Grant, TCU, 1998	Grant Recipient

MEMBERSHIPS

Geological Society of America	Soil Science Society of America
Mineralogical Society of America	Geochemical Society
American Geophysical Union	The Clay Minerals Society

ACADEMIC VOLUNTEER EXPERIENCE

Earth Sciences Student Association, WSU	Founder, President
Graduate and Professional Student Association, WSU	Representative
Multicultural Student Services, WSU	Tutor
Elementary Mentoring Project, Ft. Worth, TX	Mentor

SIGNIFICANT FIELD EXPERIENCE

Death Valley Area (*planned*)	2010
Montana Geology	2008
Cambodia, Sediment Collection and *in situ* Geochemical Measurements	2006
Death Valley Area, Stratigraphic Analysis, Mapping and Sampling	2006
California, Field Camp	2005
Northern Idaho, Soil Sampling	2005
Scotland, Bedrock Geology	2004, 1998
Northern Idaho, Bedrock Mapping	1999
Southwestern Montana, Field Camp	1998

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REFERENCES

Benjamin C. Bostick, PhD
Adjunct Associate Research Scientist
(PhD Advisor)
Division of Geochemistry
Lamont-Doherty Earth Observatory
Columbia University
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Samuel M. Webb, PhD
Research Associate
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Carl E. Renshaw, PhD
Professor and Chair
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Hanover, NH 03755
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Peter C. Burns, PhD
Massman Chair and Professor
Department of Civil Engineering &
Geological Sciences
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Patricia A. Maurice, PhD
Professor and Associate Dean for
Research
Department of Civil Engineering &
Geological Sciences
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