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EXPERIENCE

- 2007-Pres. Assistant Professor of Soil Biogeochemistry, Department of Soil Science
North Carolina State University, Raleigh, North Carolina
- 2010 Visiting Professor, Department of Environmental Geosciences
University of Vienna, Vienna, Austria
- 2003-2007 Postdoctoral Scholar, Division of Ecosystem Sciences
University of California, Berkeley, California

EDUCATION

- Ph.D.** *Engineering and Applied Sciences, 2003*
Harvard University, Cambridge, Massachusetts
- M.S.** *Environmental Sciences and Engineering, 2000*
University of North Carolina, Chapel Hill, North Carolina
- B.S.** *Chemistry and Geology, cum laude, 1997*
College of William and Mary, Williamsburg, Virginia

RESEARCH INTERESTS

- Interactions between microbes, aqueous species, and mineral surfaces
- Biogeochemical cycling of nutrients and contaminants in soil and aqueous environments
- The role of aqueous and surface speciation in environmental processes
- Connecting microscale observations to laboratory and field observations

SUMMARY OF SCHOLARY ACTIVITIES

Refereed Journal Articles	22	Invited Presentations	25
Contributed Presentations	34	Funded Extramural Grants	4

PEER-REVIEWED PUBLICATIONS

1. Saal, L.B., and **Duckworth, O.W.** (2010) Synergistic Dissolution of Manganese Oxides as Promoted by Siderophores and Small Organic Acids, *Soil Sci. Soc. Am. J.*, **74**, 2021-2031.
2. Bi, Y., Hesterberg, D. L., and **Duckworth, O.W.** (2010) Siderophore-Promoted Dissolution of Cobalt from Hydroxide Minerals, *Geochim. Cosmochim. Acta*, **74**, 2915-2925.
3. Kim, D., **Duckworth, O.W.**, and Strathmann, T.J. (2010) Reactions of aqueous iron-DFOB (desferrioxamine B) complexes with flavin mononucleotide in the absence of strong iron(II) chelators, *Geochim. Cosmochim. Acta*, **74**, 1513-1529.
4. Smits, M.M., Herrmann, A. M., Duane, M., **Duckworth, O.W.**, Bonneville, S., Benning, L., and Lundström, U. (2009) The fungal-mineral interface: Challenges and considerations of micro-analytical developments, *Fungal Bio. Rev.*, **23**, 122-131.
5. **Duckworth, O.W.**, Bargar, J.R., and Sposito, G. (2009) Coupled Biogeochemical Cycling of Iron and Manganese as Mediated by Microbial Siderophores, *BioMetals*, **22**, 605-612.

6. **Duckworth, O.W.**, Bargar, J.R., Jarzecki, A.A., Oyerendi, O. Spiro, T.G., and Sposito, G. (2009) An Exceptionally Stable Cobalt(III)–Desferrioxamine B Complex, *Mar. Chem.*, **113**, 114-122.
7. Kim, D., **Duckworth, O.W.**, and Strathmann, T.J. (2009) Hydroxamate Siderophore-Promoted Reduction of Nitroaromatic Contaminants by Iron(II), *Geochim. Cosmochim. Acta*, **73**, 1297-1311.
8. **Duckworth, O.W.**, Holmström, S.J.M., Peña, J., and Sposito, G. (2009) Biogeochemistry of Iron Oxidation in a Circumneutral Freshwater Habitat. *Chem. Geo.*, **260**, 149-158.
9. **Duckworth, O.W.**, Bargar, J.R., and Sposito, G. (2009) Quantitative-Structure Activity Relationships for Aqueous Metal-Siderophore Complexes, *Environ. Sci. Technol.*, **43**, 343–349.
10. **Duckworth, O.W.**, Bargar, J.R., and Sposito, G. (2008) Sorption of Ferric Iron from Ferrioxamine B to Synthetic and Biogenic Layer Type Manganese Oxides, *Geochim. Cosmochim. Acta*, **72**, 3371-3380.
11. Peña, J., **Duckworth, O.W.**, Bargar, J.R., and Sposito, G. (2007) Dissolution of Hausmannite in the Presence of the Trihydroxamate Siderophore Desferrioxamine B. *Geochim. Cosmochim. Acta*, **71**, 5661-5671.
12. **Duckworth, O.W.** and Sposito, G. (2007) A Siderophore-Promoted Dissolution of Synthetic and Biogenic Layer Type Mn Oxides. *Chem. Geo.*, **242**, 500-511.
13. **Duckworth, O.W.**, and Sposito, G. (2005) Siderophore-Manganese(III) Interactions I. Air-Oxidation of Manganese(II) Promoted by Desferrioxamine B. *Environ. Sci. Technol.*, **39**, 6037-6044.
14. **Duckworth, O.W.**, and Sposito, G. (2005) Siderophore-Manganese(III) Interactions II. Manganite Dissolution Promoted by Desferrioxamine B. *Environ. Sci. Technol.*, **39**, 6045-6051.
15. Perry, T.D., **Duckworth, O.W.**, Kendall, T.K., Martin, S.T., and Mitchell, R. (2005) Chelating Ligand Alters the Microscopic Mechanism of Mineral Dissolution. *J. Am. Chem. Soc.*, **127**, 5744-5745.
16. Perry, T.D., **Duckworth, O.W.**, McNamara, C.J., Martin, S.T., and Mitchell, R. (2004) The Effects of the Biologically Produced Polymer Alginic Acid on Macroscopic and Microscopic Calcite Dissolution Rates. *Environ. Sci. Technol.*, **38**, 3040-3046.
17. **Duckworth, O.W.**, Cygan, R.T., and Martin, S.T. (2004) Linear Free Energy Relationships between Dissolution Rates and Molecular Modeling Energies of Rhombohedral Carbonates. *Langmuir*, **20**, 2938-2946.
18. **Duckworth, O.W.**, and Martin, S.T. (2004) Dissolution Rates and Pit Morphologies of Rhombohedral Carbonate Minerals. *Am. Min.*, **89**, 554-563.
19. **Duckworth, O.W.**, and Martin, S.T. (2004) Role of Molecular Oxygen in the Dissolution of Siderite and Rhodochrosite. *Geochim. Cosmochim. Acta.*, **68**, 607-621.
20. **Duckworth, O.W.**, and Martin, S.T. (2003) Connections between Surface Complexation and Geometric Models of Mineral Dissolution Investigated for Rhodochrosite. *Geochimica et Cosmochimica Acta*, **67**, 1787-1801.
21. **Duckworth, O.W.**, and Martin, S.T. (2001) Surface Complexation and Dissolution of Hematite by C₁-C₆ Dicarboxylic Acids at pH = 5.0. *Geochim. Cosmochim. Acta.*, **65**, 4289-4301.
22. Martin, S.T., Schlenker, J.C., Chelf, J.H., and **Duckworth, O.W.** (2001) Structure-Activity Relationships of Mineral Dusts as Heterogeneous Nuclei for Ammonium Sulfate Crystallization from Supersaturated Aqueous Solutions. *Environ. Sci. Technol.*, **35**, 1624-1629.