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**Professional Employment:**

2012-present Professor and Chair, Chemistry Department, Wheaton College, Norton MA  
2007-2012 Associate Professor, Chemistry Department, Wheaton College, Norton, MA  
2001-2007 Assistant Professor, Chemistry Department, Wheaton College, Norton, MA  
2000-2001 Clayton Fellow, Princeton Environmental Institute, Princeton University  
1997-2000 EPA Star Graduate Fellow, Chesapeake Biological Laboratory, The University of Maryland, College Park, MD  
1995-1997 Graduate Research Fellow, Chesapeake Biological Laboratory, The University of Maryland, College Park, MD  
1992-1995 Senior Research Specialist, Water Chemistry Program, The University of Wisconsin, Madison, WI  
1990-1992 Research Assistant II, Department of Marine Sciences, The University of Connecticut, Groton, CT  
1987-1990 Graduate Research Assistant, Department of Marine Sciences, The University of Connecticut, Storrs, CT

**Education:**

Ph.D. The University of Maryland, College Park, MD, 2000,  
Marine, Estuarine and Environmental Science  
M.S. The University of Connecticut, Storrs, CT, 1990,  
Oceanography  
B.A. Connecticut College, New London, CT, 1985,  
Major in Botany, Minor in Chemistry

**Teaching Experience:**

The courses I've taught in the Wheaton College Chemistry Department core curriculum include General Chemistry (Chem 153, *Chemical Principles*), Analytical Chemistry (Chem 232, *Aqueous Equilibria*), and *Instrumental Analysis* (Chem 332). I have developed lab exercises and taught lab sections in all of these courses. I've also regularly taught *Current Problems in Environmental Chemistry* (Chem 303), a core course in the Environmental Science major. My contributions to the general curriculum include *Chemistry and Your Environment* (Chem 103), an environmentally-themed introductory course for non-science majors, and First-Year Seminar (FYS). I am Co-coordinator of the Environmental Science Program.

## Research Grant Awards:

Mars Faculty/Student Summer Research Award (Wheaton College). 2012. Biomarkers for Oxidative Stress induced by Mercury Toxicity. J.M. Benoit and J. Campbell '14, Co-principal Investigators. (Collaborative project with M. Kirkpatrick who was funded separately).

The Consortium for High Achievement and Success. 2009-2011. SPEC and Lab Buddies: Creating a Community of Learners in Chemistry. J.M. Benoit, L.J.Muller and E. Pastra-Landis, Co-principal Investigators.

Arnold Award (Wheaton College). 2009. Student-Portfolio Assessment of the Chemistry Department's Communication Plan. J.M. Benoit, Principal Investigator. (Collaborative project with L.J. Muller who was funded separately).

MIT Sea Grant. 2006-2008. Effects of Macrofauna on Monomethyl Mercury Transport in Marine Coastal Sediments. J.M. Benoit, Principal Investigator; D.H Shull, Western Washington University, Associate Investigator.

MIT Sea Grant. 2003-2005. Rates and Mechanisms of Mercury Methylation in Marine Coastal Sediments. D.H. Shull, Western Washington University, Principal Investigator; J.M. Benoit, Associate Investigator.

The Center for Environmental Bioinorganic Chemistry. 2002-2003. An Investigation of the Microbial Ecology of Mercury Methylation using Sediment Microcosms. J.M. Benoit, Principal Investigator.

## Publications: (Wheaton student names are underlined)

Benoit, J.M., D.A. Cato, K.C. Denison, and A.E. Moreira. 2013. Seasonal Mercury Dynamics in a New England Vernal Pool. *Wetlands*. 33:887-894.

Benoit, J.M., D.H. Shull, R.M. Harvey and S.A. Beal. 2009. Effect of bioirrigation on sediment-water exchange of methylmercury in Boston Harbor, Massachusetts. *Environmental Science and Technology*. 43:3669-3674.

Shull, D.H., J.M. Benoit, C. Wojcik, and J.R. Senning. 2009. Infaunal burrow ventilation rates and pore-water transport in muddy sediments. *Estuarine, Coastal and Shelf Science*. 83:277-286.

Benoit, J.M., D.H. Shull, P. Robinson and L.R. Ucran. 2006. Infaunal burrow densities and sediment monomethyl mercury distributions in Boston Harbor, Massachusetts. *Marine Chemistry*. 102:124-133.

Ekstrom, E.B., F.M.M. Morel and J.M.Benoit. 2003. Mercury methylation independent of the Acetyl-CoA Pathway in sulfate-reducing bacteria. *Applied and Environmental Microbiology*. 69:5414-5422.

- Benoit, J.M., C.C. Gilmour, A. Heyes, R.P. Mason and C.L. Miller. 2003. Geochemical and biological controls over methylmercury production and degradation in aquatic ecosystems. In: *Biogeochemistry of Environmentally Important Trace Elements*, Y. Cai and O.C. Braids, Eds., American Chemical Society Symposium Series 835, pp 262-297.
- Lamborg, C.H., W.F. Fitzgerald, A.W.H. Damman, J.M. Benoit, P.H. Balcom, and D.R. Engstrom. 2002. Modern and historic atmospheric mercury fluxes in both hemispheres: Global and regional mercury cycling implications. *Global Biogeochemical Cycles*. 16:1104-1114.
- Benoit, J.M., R.P. Mason, Gilmour, C.C. and G.R. Aiken. 2001. Constants for mercury binding by dissolved organic matter isolates from the Florida Everglades. *Geochimica Cosmochimica Acta*. 65:4445-4451.
- Benoit, J.M., C.C. Gilmour, and R.P. Mason. 2001. Aspects of bioavailability of mercury for methylation in pure cultures of *Desulfobulbus propionicus* (1pr3). *Applied and Environmental Microbiology*. 67:51-58.
- Benoit, J.M., R.P. Mason and C.C. Gilmour. 2001. The influence of sulfide on solid-phase mercury bioavailability for methylation by pure cultures of *Desulfobulbus propionicus* (1pr3). *Environmental Science and Technology*. 35:127-132.
- Benoit, J.M., C.C. Gilmour, R.P. Mason, and A. Heyes. 1999. Sulfide controls on mercury speciation and bioavailability to methylating bacteria in sediments pore waters. *Environmental Science and Technology*. 33:951-957.
- Benoit, J.M., R.P. Mason, and C.C. Gilmour. 1999. Estimation of mercury-sulfide speciation in sediments pore waters using octanol-water partitioning and implications for availability to methylating bacteria. *Environmental Toxicology and Chemistry*. 18:2138-2141.
- Benoit, J.M., W.F. Fitzgerald, and A.W.H. Damman. 1998. The biogeochemistry of an ombrotrophic bog: Evaluation of use as an archive of atmospheric mercury deposition. *Environmental Research*. 78:118-133.
- Benoit, J.M., C.C. Gilmour, R.P. Mason, G.F. Riedel and G.S. Riedel. 1998. Behavior of mercury in the Patuxent River estuary. *Biogeochemistry*. 40:249-265.
- Gilmour, C.C., G.S. Riedel, M.C. Ederington, J.T. Bell, J.M. Benoit, G.A. Gill and M.C. Stordal. 1998. Methylmercury concentrations and production rates across a trophic gradient in the northern Everglades. *Biogeochemistry*. 40:327-345.
- Krabbenhoft, D., C.C. Gilmour, J. Benoit, J. Hurley and A. Andren. 1998. Methylmercury dynamics in littoral sediments of a temperate seepage lake. *Canadian Journal of Fisheries and Aquatic Sciences*. 55:835-844.
- Hurley, J.P., J.M. Benoit, C.L. Babiarz, M.M. Shafer, A.W. Andren, J.R. Sullivan, R. Hammond, and D.A. Webb. 1995. Influences of watershed characteristics on mercury levels in Wisconsin rivers. *Environmental Science and Technology*. 29:1867-1875.
- Krabbenhoft, D.P., J.M. Benoit, C.L. Babiarz, J.P. Hurley, and A.W. Andren. 1995. Mercury cycling in the Allequash Creek watershed, northern Wisconsin. *Water, Air, and Soil Pollution*. 80: 425-433.

- Benoit, J.M., W.F. Fitzgerald, and A.W.H. Damman. 1994. Historical atmospheric mercury deposition in the mid-continental United States as recorded in an ombrotrophic peat bog. In: *Mercury Pollution: Integration and Synthesis*. C.J. Watras and J.W. Huckabee, Eds., Lewis Publishers, Boca Raton, pp. 187-202.
- Zillioux, E.J., D.B. Porcella, and J.M. Benoit. 1993. Mercury cycling and effects in freshwater wetland ecosystems. *Environmental Toxicology and Chemistry*. 12:2245-2264.
- Benoit, J.M., T. Torgersen and J. O'Donnell. 1991. An advection/diffusion model for Rn-222 transport in near-shore sediments inhabited by sedentary polychaete. *Earth and Planetary Science Letters*. 105:463-473.

**Conference Presentations: (Wheaton student names are underlined)**

- Kirkpatrick, M, J. Benoit, W. Everett, J. Gibson and M. Rist. 2013. The effect of methylmercury exposure on biomarkers of oxidative stress and locomotor behaviors in adult mice. 11<sup>th</sup> International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland, July 2013.
- Muller, L., and J.M. Benoit. 2012. SPEC & Lab Buddies: Creating a Community of Learners in Chemistry. ACS Biennial Conference of Chemical Education, University Park, PA, July 2012.
- Benoit, J.M. 2012. Visual Communication in 200- and 300-Level Chemistry Courses. (Part of the panel: Teaching Visual Communications Across the Chemistry Curriculum). 11<sup>th</sup> International Writing Across the Curriculum Conference, Savannah, GA, June 2012.
- Benoit, J.M., K.C. Denison and N. Sacha. 2011. Seasonal Mercury Cycling in a New England Vernal Pool. 10<sup>th</sup> International Conference on Mercury as a Global Pollutant, Halifax, Nova Scotia, Canada, July 2011.
- Benoit, J.M. and D.H. Shull. 2009. Impact of Bioirrigation on Benthic Methylmercury Flux from Coastal Marine Sediments. American Chemical Society, Washington, DC, August 2009. (Invited speaker).
- Benoit, J.M., D.H. Shull, R. Harvey, and S. Beal. 2008. The Effect of Bioirrigation on Sediment-Water Exchange of Methylmercury in Boston Harbor, Massachusetts, USA, Geological Society of America Joint Annual Meeting. Houston, Texas, October 2008.
- Benoit, J.M., D.H. Shull, R. Harvey, and S. Beal. 2007. Sediment bioturbation and sediment-water flux of methylmercury in Boston Harbor, Massachusetts, USA. American Society of Limnology and Oceanography Summer Meeting, St. John's, Newfoundland, Canada, June 2007.
- Benoit, J.M., D.H. Shull, P. Robinson, and L.R. Ucran. 2006. The influence of irrigated infaunal burrows on sediment monomethyl mercury accumulation in Boston Harbor, Massachusetts. Eighth International Conference on Mercury as a Global Pollutant, Madison, WI, August 2006.
- Baron, G. and J.M. Benoit. 2006. Mercury Concentrations in Hair of Autistic and Typical Young Adults and the Relationship with Fish Consumption Levels. Eighth International Conference on Mercury as a Global Pollutant, Madison, WI, August 2006.

- Bonzagni, A., H. Magruder and J.M. Benoit. 2006. Mercury Uptake from Fish Fertilizer by Spinach Plants. Eighth Annual Northeast Student Chemistry Research Conference (NSCRC), Cambridge, MA, April 2006.
- Benoit, J.M. 2004. Mercury Transport and Transformations from the Terrestrial to the Marine Environment. Northeastern Ecosystem Research Cooperative Annual Meeting, Durham, NH, November 2004.
- Benoit, J.M. and D. H. Shull. 2004. Patterns of Bioturbation, Infaunal Abundance and Methyl Mercury Accumulation in Boston Harbor Sediments. Eighth Annual International Estuarine Biogeochemistry Symposium, Solomons, MD, May 2004.
- Morgan, T., R. Fontaine and J.M. Benoit. 2003. Mercury in Wheaton's Vernal Pool. Society for Environmental Toxicology and Chemistry Northeast Regional Meeting, Mystic, CT, Apr 2003.
- Green, K., C. English and J.M. Benoit. 2002. Mercury Vapor Levels in the Air of Wheaton's Science Center. The Undergraduate Environmental Research Symposium at Bridgewater State College, Bridgewater, MA, Nov 2002.
- Ekstrom, E.B., J.M. Benoit and F.M.M. Morel. 2002. The Role of the Acetyl-CoA Pathway in Mercury Methylation in Sulfate-reducing Bacteria. American Society of Limnology and Oceanography Summer Meeting, Victoria, British Columbia, Jun 2002.
- Benoit, J.M., E.B. Ekstrom and F.M.M. Morel. 2001. The Metabolic Pathway of Mercury Methylation in Sulfate-reducing Bacteria. American Chemical Society Annual Meeting, Orlando, FL, Apr 2001.
- Benoit, J.M., R.P. Mason, C.C. Gilmour and G.R. Aiken. 2000. Mercury Binding Constants for DOM Isolates from the Florida Everglades. AGU/ASLO Ocean Sciences Meeting. San Antonio, Texas. Jan. 2000.
- Benoit, J.M., R.P. Mason and Gilmour. 1999. The Partitioning and Bioavailability of Sediments Mercury for Methylation. Fifth International Conference on Mercury as a Global Pollutant. Rio de Janeiro, Brazil. May 1999.
- Benoit, J.M., R.P. Mason and C.C. Gilmour. 1998. Octanol-Water Partitioning of Hg-Sulfide Complexes and the Bioavailability of Hg for Methylation. Eighth Annual Meeting of SETAC-Europe. Bourdeaux, France. Apr. 1998.
- Benoit, J.M. and C.C. Gilmour. 1997. Mercury Speciation Controls on Bacterial Methylation. ASLO Aquatic Sciences Meeting. Santa Fe, New Mexico. Feb. 1997.
- Benoit, J.M., C.C. Gilmour, R.P. Mason, G. Riedel and K. Sullivan. 1996. Mercury and Methylmercury Budgets for the Patuxent River, a Sub-estuary of Chesapeake Bay, USA. Fourth International Conference on Mercury as a Global Pollutant. Hamburg, Germany. Aug 1996.
- Benoit, J.M., A.W. Andren, C.L. Babiarz, M.M. Shafer, J.P. Hurley, and D.P. Krabbenhoft. 1994. Total Mercury and Methylmercury Cycling at the Sediment-Water Interface in Two Seasonally Stratified Seepage Lakes in Wisconsin. Third International Conference on Mercury as a Global Pollutant. Whistler, British Columbia. Jul 1994.