

Barbara Keller, Ph.D.

Chair and Associate Professor of Chemistry & Environmental Sciences
Lake Superior State University
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EDUCATION:

Ph.D. Analytical/Inorganic Chemistry, Montana State University, 1995
B.S. Chemistry, Idaho State University, 1986
B.S. Medical Technology, Idaho State University, 1978
B.S. Microbiology, Idaho State University, 1977

EXPERIENCE:

Chair and Associate Professor of Chemistry & Environmental Sciences, Lake Superior State University, Sault Ste. Marie, MI August 1999 to present.

- Department chair beginning the fall of 2002
- Currently teaching undergraduate courses in Environmental Chemistry and Analytical Chemistry
- Advisor for undergraduate student environmental research projects and senior thesis projects
- Currently conducting research in environmental/analytical chemistry

Analytical Division Chief and Assistant Research Professor, Montana Bureau of Mines, and Geology, (MBMG) Montana Tech of the University of Montana, Butte, MT, May 1996 -August 1999.

- Supervisor of the Analytical Division, MBMG, including a State/EPA certified laboratory
- Researched and developed novel techniques to monitor, treat and remediate drinking water contaminants in public water supplies and environmental contaminants in watersheds, groundwater, and surface water

Principal Scientist, Parsons Engineering Science, Idaho National Engineering and Environmental Laboratory (INEEL), Idaho Falls, ID, 1995 - 1996.

- Worked with engineers to design treatment options for remediating hazardous contaminants from the Snake River Plain Aquifer and other locations within the INEEL.

Supervisor/Research Chemist, Environmental Analysis Group, Westinghouse Idaho Nuclear Company, INEEL, Idaho Falls, ID May 1981 to July 1991.

- Supervised six environmental radiochemists, reduced and reported analytical data, prepared detailed budgets, interfaced with customers.
- Researched and developed new methodologies and instrumentation for analyzing and monitoring unusual chemicals and radionuclides in environmental samples.

Clinical Chemist/Microbiologist Idaho Fall Consolidated Hospitals, Idaho Falls, ID June 1978 to May 1981.

- Worked as a certified medical technologist in the clinical chemistry department analyzing blood, urine and tissue samples.

HONORS & MEMBERSHIPS:

LSSU Distinguished Teacher of 2001/2002

Member of the Technical Advising Committee for the LSSU Aquatic Research Laboratory

Member of the American Chemical Society

Member of the Binational Public Advisory Committee for the St. Marys River, Sault Ste. Marie, MI

Member of International Association for Great Lakes Research

Member of the State of Michigan's Advisory Panel for the Biomonitoring Initiative

Advisor to the Chippewa County Water Guardians, a citizen based environmental monitoring group

RECENT PUBLICATIONS:

Back, R.; Keller, B. *Current Sediment Quality of the St. Marys River AOC(MI:US)* writing in progress for submission to *Journal of Great Lakes Research*

Back, R.; Keller, B. "Current Sediment Quality of the St. Marys River AOC (MI:US)" *Final Report for USEPA-GLNPO grant #GL2002-054*, November 2005

Keller, B. J.; Hurst, S.K., Dunham, S.O., Spangler, L., Abbott, E.H., Peterson, E.S., "Solution Equilibria Leading to the Formation of Metal-Metal Bonds in Partially Oxidized Bis(oxalate)platinate (II) Systems". *Inorganica Chimica Acta*, 357, 853-858, 2004

Keller, B.; Wicks, G.; Ribant, M.; Sinkovich, M.; "Biological Contamination Investigation in Surface Waters Near the Les Cheneaux Islands Area" *EPA Final Report, EPA Assistance ID No. NE-97586701-0*, June 2003

Keller, B.; Wicks, G.; Ribant, M.; Dale, B.; Dorcy, K.; "An Evaluation of the Munuscong River Watershed" *EPA Final Report, EPA Assistance ID No. NE-97525901-0*, May 2001

Abdo, G.; Keller, B.J. "Evaluation of the Effectiveness of UV Disinfection given Variable Water Quality Characteristics in Small Montana Public Water Systems" *Montana Bureau of Mines and Geology Open File Report 400-B*, February 2001

Keller, B.J.; Abdo, G.; Rupp, G. "Use of Aeration to Control Copper Corrosion in a Small Montana Water System," *Proceedings, JAWWA, Annual Conference*, June 1999

Abdo, G.; Keller, B.J.; Rupp, G.; "An Investigation of Flushing and a Point-of-Use Device to Control Corrosion in Two Small Montana Public Water Supplies," *Proceedings, JAWWA, Annual Conference*, June 1999

RECENT PRESENTATIONS:

May 23, 2006 – R. Back and B. Keller, "Current Sediment Quality of the St. Marys River Area of Concern" presented at the International Association of Great Lakes Research (IAGLR) 49th Annual Conference, Windsor, Ontario

June 3, 2006 – A. Moerke, M. Werner, H. Potter, B. Keller, B. Evans, J. Westrick, and G. Zimmerman, "Patterns of Coastal Wetland Fish Communities in the St. Marys River, MI" presented at North American Benthological Society Annual Meeting, Ankorage, AK.

December 2006 - A. Moerke, M. Werner, H. Potter, B. Keller, B. Evans, H. Potter, J. Westrick, and G. Zimmerman, "Factors Influencing Coastal Wetland Fish Communities in the St. Marys River, MI" Midwest Fish and Wildlife Conference, Omaha, NE.

Nov 4, 2005 – R. Cristello and B. Keller, "Determination of hydrogen sulfide concentration levels by the ion-selective method to address bacterial gill disease at the Thompson State Fish Hatchery" presented at the 16th Annual Argonne Symposium for Undergraduates in Science, Engineering and Mathematics & the Central States Universities, Incorporated.

November 30, 2004 – B. Keller "St. Marys River Sediment Quality" presented to the Binational Public Advisory Committee for the St. Marys River, Sault Ste. Marie, Ontario

October 6 – 7, 2001: K. Dorcy and B. Keller "Evaluating the Impact of Flowing Wells on the Munuscong River" Midwest Environmental Chemistry Workshop, Minneapolis, MN

GRANTS:

2004-2007: \$715,300 for “Biotic Integrity and Habitat Assessment Within the St. Marys River AOC” from the U.S. Environmental Protection Agency Great Lakes National Program Office, Co-PIs Marshall Werner, Greg Zimmerman, Barb Evans

2004: \$52,096 for “Water Quality Survey of the Charlotte River and Ashmun Creek” from the Michigan Department of Environmental Quality’s Clean Michigan Initiative, Co-PI Dave Szlag

2002: \$86,285 for “Current Sediment Quality in the St. Marys River AOC (MI:USA)” from the U.S. Environmental Protection Agency Great Lakes National Program Office, Co-PI Rick Back

2002: \$5,000 for "Biological Contamination Investigation in Surface Waters Near the Les Cheneaux Islands Area" from the U.S. Environmental Protection Agency Environmental Education Program

2001-2003: \$192,922 for “Acquisition and Incorporation of Inductively Coupled Plasma Mass Spectroscopy into Undergraduate Research Instruction and Environmental Research in the Upper Great Lakes Region” from the National Science Foundation MRI program, Co-PI Rick Back

2001: \$5,000 for "Biological Contamination Investigation in Surface Waters Near the Les Cheneaux Islands Area" from the U.S. Environmental Protection Agency Environmental Education Program

2000: \$5,000 for “An Evaluation of the Munuscong River Watershed” from the U.S. Environmental Protection Agency Environmental Education Program

1999: \$74,800 for “Effects of Groundwater Quality on UV Disinfection of Drinking Water,” from Montana Water Center/EPA Drinking Water Assistance Program

1998: \$46,400 for “Verification Testing of an Electrochemical Process for Removing Nitrates from Water,” from U^PScale Water Technologies, Inc./Montana Water Center

1997: \$118,000 for “Lead and Copper Corrosion Control in Small Montana Public Water Supplies,” from the Montana Water Center/EPA Drinking Water Assistance Program