

Laurie S. McNeill

Education

Ph.D. Civil Engineering, Virginia Polytechnic Institute and State University, 2000

M.S. Civil Engineering, University of Colorado at Boulder, 1996

B.S. Chemical Engineering, University of Colorado at Boulder, 1994

Academic Experience

2007 – 2008: Visiting Professor, An-Najah National University, West Bank – Palestine

2006 – Present: Associate Professor, Utah State University, Dept. of Civil and Environ. Eng.

2000 – 2006: Assistant Professor, Utah State University, Dept. of Civil and Environ. Eng.

Awards

2011 Virginia Tech College of Engineering Outstanding Young Alumna

2010 Carnegie Foundation for the Advancement of Teaching Utah Professor of the Year

2009 Utah State University Dept. of Civil and Environmental Engineering Outstanding Advisor

2007 Utah State University Eldon J. Gardner Teacher of the Year Award

2006 Utah State University College of Engineering Outstanding Teacher Award

2003 Virginia Tech Via Dept. of Civil and Environmental Engineering Outstanding Young Alumni

2001 American Water Works Association Academic Achievement Award (Ph.D.), First Place

2001 Universities Council on Water Resources (UCOWR) Ph.D. Dissertation Award, First Place

Courses Taught

Introduction to Environmental Engineering / Environmental Management (undergraduate)

Water Treatment (undergraduate)

Physical/Chemical Treatment Processes (graduate)

Environmental Process Lab (graduate)

Drinking Water Treatment (graduate)

Wastewater Treatment (graduate)

Solid and Hazardous Waste Management (graduate)

Current/Recent Research Projects

Sustainable engineering in developing countries

Occurrence and removal of heavy metals in drinking water

Corrosion in water distribution systems

Degradation of water treatment plant infrastructure

Environmental effects of rocket motor static tests

Peer Reviewed Publications

- McLean, J.E., **McNeill, L.S.**, Edwards, M., Parks, J.L., “Hexavalent Chromium Review: Part 1 - Health Effects, Regulations, and Analysis,” *Journal AWWA*, 104(6), E348-E357, 2012.
- McNeill, L.S.**, McLean, J.E., Parks, J.L., Edwards, M., “Hexavalent Chromium Review: Part 2 - Chemistry, Occurrence, and Treatment,” *Journal AWWA*, 104(7), E395-E405, 2012.
- McNeill, L.S.**, Almasri, M.N., Mizyed, N., "A Sustainable Approach for Reusing Treated Wastewater in Agricultural Irrigation in the West Bank – Palestine," *Desalination*, 248(1), 315-321, 2009.
- Almasri, M.N and **L.S. McNeill**, "Optimal Planning Of Wastewater Reuse Using The Suitability Approach: A Conceptual Framework For The West Bank, Palestine," *Desalination*, 248(1), 428-435, 2009.
- Anderson, R.D., **McNeill, L.S.**, Edwards, M., and S.C. Morton, “Evaluation of a New Field Measurement Method for Arsenic in Drinking Water Samples,” *Journal of Environmental Engineering*, 134(5), 382-388, 2008.
- Bundy, M.M., Doucette, W.J., **McNeill, L.S.**, and J.F. Ericson, “Removal of Pharmaceuticals and Related Compounds by a Bench-Scale Drinking Water Treatment System,” *Journal of Water Supply: Research and Technology—Aqua*, 56(2), 105-115, 2007.
- Lai, H. and **L.S. McNeill**, “Chromium Redox Chemistry in Drinking Water Systems,” *Journal of Environmental Engineering*, 132(8), 842-851, August 2006.
- Parks, J.L, **McNeill, L.S.**, Frey, M., Eaton, A.D., Haghani, A., Ramirez, L., and M. Edwards, “Determination of Total Chromium in Environmental Water Samples,” *Water Research*, 38(12), 2827-2838, July 2004.
- McNeill, L.S.** and M. Edwards, “Importance of Pb and Cu Particulate Species for Corrosion Control,” *Journal of Environmental Engineering*, 130(2), 136-144, February 2004.
- McNeill, L.S.** and M. Edwards, “Degradation of Drinking Water Treatment Plant Infrastructure from Enhanced Coagulation,” *ASCE Journal of Infrastructure Systems*, 9(4), 145-156, December 2003.
- Rushing, J.C., **McNeill, L.S.** and M. Edwards, “Some Effects of Aqueous Silica on the Corrosion of Iron,” *Water Research*, 37(5), 1080-1090, March 2003.
- McNeill, L.S.** and M. Edwards, “The Importance of Temperature in Assessing Iron Pipe Corrosion in Water Distribution Systems,” *Environmental Monitoring and Assessment*, 77(3), 229-242, August 2002.
- McNeill, L.S.** and M. Edwards, “Phosphate Inhibitor Use at US Water Utilities,” *Journal AWWA*, 94(7), 57-63, July 2002.
- Edwards, M., and **L.S. McNeill**, “Effect of Phosphate Inhibitors on Lead Release from Pipes,” *Journal AWWA*, 94(1), 79-90, January 2002.
- McNeill, L.S.** and M. Edwards, “Iron Pipe Corrosion in Water Distribution Systems,” *Journal AWWA*, 93(7), 88-100, July 2001.
- McNeill, L.S.** and M. Edwards, “Phosphate Inhibitors and Red Water in Stagnant Iron Pipes,” *Journal of Environmental Engineering*, 126(12), 1096-1102, December 2000.
- Chen, H-W., Frey, M., Clifford, D., **McNeill, L.S.**, and M. Edwards, “Arsenic Treatment Considerations,” *Journal AWWA*, 91(3), 74-85, March 1999.

- Edwards, M., Patel, S., **McNeill, L.S.**, Chen, H-W., Frey, M., Eaton, A.D., Antweiler, R.C., and H. Taylor, "Considerations in As Analysis and Speciation," *Journal AWWA*, 90(3), 103-113, March 1998.
- McNeill, L.S.** and M. Edwards, "Arsenic Removal During Precipitative Softening," *Journal of Environmental Engineering*, 123(5), 453-460, May 1997.
- McNeill, L.S.** and M. Edwards, "Predicting Arsenate Removal During Metal Hydroxide Precipitation," *Journal AWWA*, 89(1), 75-86, January 1997.
- McNeill, L.S.** and M. Edwards, "Soluble Arsenic Removal in Full-Scale Treatment Plants," *Journal AWWA*, 87(4), 105-113, April 1995.
- Middlebrook, A.M., Iraci, L., **McNeill, L.S.**, Koehler, B.G., Wilson, M., Saastad, O., Tolbert, M.A., and D. Hanson, "Fourier Transform-Infrared Studies of Thin H₂SO₄/H₂O Films: Formation, Water Uptake, and Solid-Liquid Phase Changes," *Journal of Geophysical Research: Atmospheres*, 98(11), 20473-20481, Nov. 20 1993.
- Koehler, B.G., Middlebrook, A.M., **McNeill, L.S.**, and M.A. Tolbert, "Fourier Transform-Infrared Studies of the Interaction of HCl with Model Polar Stratospheric Cloud Films," *Journal of Geophysical Research*, 98(6), 10563-10571, June 20 1993.
- Middlebrook, A.M., Koehler, B.G., **McNeill, L.S.** and M.A. Tolbert, "Formation of Model Polar Stratospheric Cloud Films," *Geophysical Research Letters*, 19(24), 2417-2420, Dec. 24 1992.

Other Publications

- Frey, M.M., Seidel, C., Edwards, M., Parks, J., **McNeill, L.S.**, Occurrence Survey of Boron and Hexavalent Chromium, American Water Works Association Research Foundation (AWWARF) Report No. 91044F, Denver, CO, 2004.
- Brandhuber, P., Frey, M., McGuire, M.J., Chao, P-F., Seidel, C., Amy, G., Yoon, J., **McNeill, L.S.**, Banerjee, K., Low-Level Hexavalent Chromium Treatment Options: Bench-Scale Evaluation, American Water Works Association Research Foundation (AWWARF) Report No. 91042F, Denver, CO, 2004.
- Edwards, M., Scardina, P., **McNeill, L.S.**, Enhanced Coagulation Impacts on Water Treatment Plant Infrastructure, American Water Works Association Research Foundation (AWWARF) Report No. 90997, Denver, CO, 2004.
- McNeill, L.S.**, Anderson, R.D., Edwards, M., and Morton, S.C., Field Measurement Methods for Arsenic in Drinking Water, American Water Works Association Research Foundation (AWWARF) Report No. 90994, Denver, CO, 2004.
- McNeill, L.S.**, Chen, H-W. and M. Edwards, "Aspects of Arsenic Chemistry in Relation to Occurrence, Health, and Treatment," Environmental Chemistry of Arsenic, W.T. Frankenberger, Jr. editor, Marcel Dekker Inc., New York, NY, 2002.
- Edwards, M., **McNeill, L.S.**, Holm, T.R. and Lawrence, M.C., Role of Phosphate Inhibitors in Mitigating Lead and Copper Corrosion, AWWARF Report No. 90823, Denver, CO, 2001.
- Amy, G., Edwards, M., Brandhuber, P., **McNeill, L.S.**, Benjamin, M., Vagliasindi, F., Carlson, K., and Chwirka, J., Arsenic Treatability Options and Evaluation of Residuals Management Issues, AWWARF Report No. 90771, Denver, CO, 2000.

Professional Presentations (Presenting author)

- “Trace Level Cr(VI) Occurrence and Analysis,” State of the Science of Hexavalent Chromium Webcast, Water Research Foundation, Denver, CO, October 2011.
- “Chromium Analytical Methods,” invited presentation at the Water Research Foundation Hexavalent Chromium Workshop, Los Angeles, CA, August 2011.
- “Integrating Technical Writing into the Environmental Engineering Curriculum,” invited presentation at the AEESP Education and Research Conference, Tampa, FL, July 2011.
- “Impacts of Enhanced Coagulation on Drinking Water Plant Infrastructure,” AWWA Water Quality Technology Conference, Seattle, WA, November 2002 (published in conference proceedings).
- “Trends in Phosphate Inhibitor Usage at US Water Utilities,” AWWA Annual Conference, Washington, DC, June 2001 (published in conference proceedings).
- “Conventional Arsenic Treatment Technologies,” invited presentation at the MWEA/MSAWWA Joint Conference, Butte, MT, April 2001.
- “Effect of Phosphate Inhibitors on Lead and Copper By-Product Release,” AWWA Water Quality Technology Conference, Salt Lake City, UT, November 2000 (published in conference proceedings).
- “Effect of Temperature and Silica on Iron Corrosion,” AWWA Annual Conference, Denver, CO, June 2000 (published in conference proceedings).
- “The Role of Phosphate Inhibitors in the Corrosion of Iron Pipe Under Stagnant Conditions,” invited presentation at AWWA International Distribution Research Symposium, Denver, CO, June 2000.
- “Optimizing Arsenic Removal During Conventional Drinking Water Treatment,” invited presentation at the AWWA-Minnesota section meeting, Minneapolis, MN, March 2000.
- “The Role of Phosphate Inhibitors in Drinking Water Distribution System Iron Pipe Corrosion,” 14th International Corrosion Conference, Cape Town, South Africa, September 1999 (keynote address and chair of that session, published in conference proceedings).
- “Arsenic Removal via Softening and Conventional Treatment,” AWWA Inorganic Contaminants Workshop, San Antonio, TX, February 1998 (published in conference proceedings).
- “Predicting Arsenate Removal During Metal Hydroxide Precipitation,” AWWA National Conference Universities Forum, Toronto, Canada, June 1996 (published in conference proceedings).
- “Arsenic Removal in Full-Scale Treatment Plants,” AWWA Water Quality Technology Conference, San Francisco, CA, November 1994 (published in conference proceedings).
- “Arsenic Removal by Precipitative Softening,” ASCE National Conference on Environmental Engineering, Boulder, CO, July 1994 (published in conference proceedings).

Professional Presentations (Contributing author)

- Minichiello, A.L., **McNeill, L.S.**, Hailey, C., “A Comparison of Engineering Student Use of Solution Manuals to Student and Faculty Perceptions of Academic Integrity,” American Society of Engineering Education (ASEE) Annual Conference, June 2012.
- Olsen, C., **McNeill, L.S.**, McLean, J.E., “Chromium Profiles in Conventional Drinking Water Treatment Plants,” AWWA Annual Conference, Dallas TX, June 2014.
- McNeill, L.S.**, Lambert, R.S., Whiting, B., Sharp, H., Lindheimer, T., “Engineers Without Borders at USU: Building Engineers by Building Communities,” invited keynote presentation to the Joint Conference for Utah APWA, ASCE, and UCEA, West Valley City, UT, October 2009.
- Almasri, M.N. and **McNeill, L.S.**, “Toward a Development Role of Wastewater Reuse: A Conceptual Perspective from Palestine,” invited presentation to the Conference on Water and Sanitation in International Development and Disaster Relief, Edinburgh, UK, May 2008.
- Ferrara, H., Hirschi, J., Nelson, C., Theurer, S., Wilde, J., **McNeill L.S.**, and Grenney, W., “Engineers Without Borders at Utah State University,” invited keynote address to the Engineers Without Borders International Conference, Houston, TX, February 2006.
- Seidel, C., Frey, M., Edwards, M., Parks, J., and **McNeill, L.S.**, “Final Results of the AwwaRF Occurrence Survey of Boron and Hexavalent Chromium,” AWWA Water Quality Technology Conference, San Antonio, TX, November 2004.
- Lai, H. and **McNeill, L.S.**, “Redox Chemistry of Chromium in Drinking Water,” AWWA Annual Conference, Orlando, FL, June 2004.
- Brandhuber, P., Blute, N., Chao, P-F., Seidel, C., Frey, M., **McNeill, L.S.**, Lai, H., Yoon, J., Amy, G., and Froelich, D., “Bench and Pilot Evaluations of Chromium VI Treatment Technologies,” AWWA Annual Conference, Orlando, FL, June 2004.
- Anderson, R.D., **McNeill, L.S.**, Morton, S.C., and Edwards, M., “Field Measurement Methods for Arsenic in Drinking Water,” AWWA Water Quality Technology Conference, Seattle, WA, November 2002.
- Anderson, R.D., **McNeill, L.S.**, Morton, S.C., and Edwards, M., “Field Measurement Methods for Arsenic in Drinking Water,” AWWA Inorganic Contaminants Workshop, San Diego, CA, February 2002.
- Edwards, M., **McNeill, L.S.**, and Chen, H-W., “Taming the Arsenic Juggernaut: Your Treatment Options for the New Regulation,” 52nd Annual Kansas State University Water Treatment Conference, Lawrence, KS, February 2002.
- Rushing, J.C., **McNeill, L.S.** and M. Edwards, “Effect of Silica on Iron Corrosion,” AWWA Annual Conference, Washington, DC, June 2001.
- Edwards, M., and **L.S. McNeill**, “Role of Phosphates in Soluble Pb Corrosion By-Product Release,” AWWA International Distribution Research Symposium, Denver, CO, June 2000.
- Edwards, M., Hidmi, L., and **L.S. McNeill**, “Role of Water Quality in Pb Corrosion By-Product Release,” 14th International Corrosion Conference, Cape Town, South Africa, September 1999.

Professional Activities

Faculty advisor, USU Chapter of Engineers Without Borders

Faculty advisor, USU Society of Environmental Engineering Students

Faculty co-advisor, USU Wastewater Design Team

Member, AWWA University Student Activities Committee

Member, AWWA Intermountain Section Research and Student Activities Committee

Participant, Utah Water Quality Alliance

Member, UT Rural Water Association Scholarship Committee (2006 - 2007)

Member, State of Utah Drinking Water Board (2002 – 2007)

Member, Project Advisory Committee for AWWARF Project 3101 “Unintentional pH Variation During Arsenic Removal” (2005 – 2006)

Peer Reviewer for Journals: *Journal of Environmental Engineering, Journal AWWA, Environmental Science and Technology, Water Environment Research, Journal of Water Supply: Research and Technology—AQUA, Soil and Sediment Contamination, Ground Water Monitoring & Remediation, Chemosphere, Applied Environmental Science and Public Health, Bioresource Technology, Microscopy and Microanalysis*

Peer Reviewer for Proposals: National Science Foundation, Southwest Consortium for Environmental Research and Policy, The Geochemical Society, Canadian Natural Science & Engineering Research Council, Chilean National Committee on Scientific and Technological Investigation