

Kevin A. Bierlein

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“When the well is dry, we know the worth of water” – Benjamin Franklin

Education:

Virginia Tech, Blacksburg, VA
Ph.D. Civil Engineering
M.S. Environmental Engineering

Michigan Technological University, Houghton, MI
B.S. Environmental Engineering, International Minor in German, Magna Cum Laude

Experience:

Environmental Engineer – Hydros Consulting, Inc., Boulder, CO (2015 – Present)

- Developed and applied two water-quality models using CE-QUAL-W2 to estimate water quality in two proposed reservoirs
- Assisted with development and application of a custom 1-D river water-quality model
- Analyzed data and prepared the 2014, 2015, and 2016 Annual Operational and Water-Quality Reports for the Three Lakes System in Colorado.
- Prepared proposals, budgets, and scopes of work for bidding on projects in response to RFPs and RFQs.

Ph.D. Candidate / Lake Management Researcher – Virginia Tech, Blacksburg, VA (2010 – 2015)

- Investigated the relationship between hypolimnetic oxygenation-induced turbulence and sediment oxygen demand in two lakes, comparing in-situ field data with existing physical models of interfacial flux.
- Fitted kinetic models for oxygen consumption to in-situ oxygen microprofiles in lake sediment.
- Calibrated and validated a coupled bubble-plume and 3-D hydrodynamic model in two lakes and modified the code to account for spatial variability in sediment oxygen demand as a function of turbulence.
- Planned, coordinated, and conducted three major field-sampling campaigns on a water supply reservoir in Virginia and a lake in Switzerland.
- Analyzed temperature, oxygen, velocity, and turbulence data collected during field campaigns.
- Created a computer model for simulating manganese removal from drinking water via adsorption to oxide-coated filter media and subsequent oxidation by free chlorine.
- Published scientific articles in peer-reviewed journals and a report for the Water Research Foundation.
- Assisted writing and preparing research grant proposals.

Water Operations Engineering Intern – Western Virginia Water Authority, Roanoke, VA (2010 – 2012)

- Managed hypolimnetic oxygenation systems in two water-supply reservoirs.
- Collected and analyzed data from reservoir water quality studies.
- Evaluated the performance of a mechanical surface mixer for controlling algae and cyanobacteria.
- Trained coworkers to use sampling equipment and interpret data.

Undergraduate Lake Research Assistant – Michigan Technological University, Houghton, MI (2008 – 2009)

- Conducted assays of labile carbon in lake sediments under aerobic and anaerobic conditions.
- Characterized lake sediments from a eutrophic lake in New York state.

Skills:

- Programming with Matlab, Fortran, R, Python, and Visual Basic.
- Spatial data analysis with ArcGIS.
- Use of field sampling equipment: microprofiler, CTD, ADCP, ADV, thermistors, weather stations.
- Other languages: Proficient German, basic Spanish.

Involvement:

- North American Lake Management Society (NALMS)
- Colorado Lake and Reservoir Management Association (CLRMA)

Interests:

- Fly fishing; Rock, ice, and alpine climbing; Photography; Guitar; Piano