## Water Main Disinfection and Bacteriological Sampling

Instructor: Mac Gifford, Ph.D., P.E.

Biography: Mr. Gifford is a water quality engineer in the regulatory compliance group of the Portland Water Bureau. His responsibilities include ensuring that PWB's disinfection practices follow state and industry standards. He has seven years of experience in the water industry. He was a post-doctoral researcher at the Southern Nevada Water Authority developing water reuse treatment technology, including ozone and biofiltration. He designed water infrastructure at an engineering consulting firm, developing experience in design and construction of water mains and services. He holds professional licensing as a civil engineer. He obtained his doctoral and master's degrees at Arizona State University in environmental engineering with a specialty in water quality and water processes. His undergraduate degree from the University of Arizona is in civil engineering.