What’s in my drinking water?

Dr. Susan D. Richardson
Department of Chemistry & Biochemistry
University of South Carolina

While drinking water is likely safer than it was a few decades ago, due to regulations on disinfection by-products (DBPs) and other chemicals, issues remain. For example, only 11 DBPs are currently regulated in the U.S., but there are nearly 700 currently known, many of which are much more toxic than those regulated. Human epidemiologic studies have shown that exposure to DBPs can be associated with increased bladder cancer, miscarriage, and birth defects, yet most scientists believe that it is emerging, unregulated DBPs that are responsible. And, often these emerging, unregulated DBPs are inversely related to the regulated DBPs, such that when drinking water plants alter their treatment methods to minimize regulated DBPs, they often increase levels of these more toxic unregulated DBPs. Our source waters are also increasingly impacted by wastewater contaminants, including pharmaceuticals, perfluorinated compounds, pesticides, and other chemicals that are not completely removed in wastewater treatment. Some of these contaminants survive drinking water treatment and are found in our tap water, and others are transformed, some forming more toxic by-products when they react with chlorine or chloramines in treatment. Finally, while we generally have a good understanding of how to prevent high levels of lead and other heavy metals in our drinking water, we still have huge, unintended releases, as in Flint, MI, and in Washington, D.C. The challenge is how to remove or minimize these contaminants to achieve safe and sustainable drinking water. Current issues will be presented along with potential ways to remove these contaminants and make our water safer.

Date: Friday, January 19, 2018
Time: 11:00 a.m. to 12:00 p.m.
Location: DM–100, MMC (Live)
Marine Sciences Building Room 105 (MSB-105) – BBC (via Polycom)