Using Service Learning to Address Local Water Quality Issues Across Multiple Disciplines

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In 2011, the Orono-Veazie Water District, where the University of Maine flagship campus is located, identified the presence of trihalomethanes (THMs), in local drinking water. In response to this, a group of faculty and staff developed an innovative cross-disciplinary service learning project that was implemented in four courses in biology, earth science, economics, and education at both the undergraduate and graduate levels. Faculty partnered with community members and water board trustees to design several projects which both assessed the water quality and community concerns related to THMs. Two undergraduate geochemistry courses as well as an independent study student collected tap water samples that were analysed for TTHMs in Spring 2015, Fall 2015, and Spring 2017. Results from the first two years of sampling events showed several homes whose total THM levels neared or exceeded EPA MCLs. However, results from 2017 showed a dramatic drop in total THMs at many locations. Results were presented to the water board and the public. Courses in other disciplines developed learning modules for a local middle school, collected data on local attitudes from community members, developed an Orono-Veazie Water District website, and implemented laboratory experiments in which undergraduate biology students studied the effect of tap water on development of animal cells.