MESTECH Research Project

Project Title: Development of novel methods for the determination of microbiological contamination of water

Project Researcher: Christina Doherty

Funding Body: Beaufort Marine Awards Internship Programme

Project Summary: Microbial contamination of public water resources represents serious health risk. Current approaches to monitoring of microbial water quality rely on culture growth methods and require at least 18-24 hours for analysis. This is not acceptable in cases where immediate action has to be taken. The work in this project evaluates several strategies for utilising surrogate measurements of water quality, such as turbidity, particle size and video sensing, as early warning systems for microbiological contamination, using parallel cell-based measurements for reference purpose. The initial field studies have shown promising results. In the longer term, a microfluidic system is planned that can provide a more specific determination of *E. coli* contamination and will be capable of remote sampling & analysis over extended periods of time.

Key Outputs: Water quality, bacterial contamination, rapid detection

Key Impacts: Analytical chemistry and/or microbiology

Any other relevant information: The successful candidate will join a well-resourced multidisciplinary team, the 'Adaptive Sensors Group' see www.dcu.ie/chemistry/asg located in the National Centre for Sensor Research (www.ncsr.ie) in Dublin City University and will work as part of a team to rapidly deliver interesting results.