

**Hamilton Undergraduate Scholarship Programme 2010**  
**PROJECT NO. 6**

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**Supervisors:** Timothy Sullivan

**Co-supervisors:** Prof. Fiona Regan & Dr. Brian Corcoran

**Project Title:** Testing the growth of biofilms on surfaces in flowing systems

**Duration of Project**

**From:** 7 June 2010

**To:** 13 August 2010

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**Project Description:**

Biofilms consist of bacteria and other organisms that adhere to surfaces, depositing protein-based polymers over time. Biofilms grow readily on surfaces in flowing systems and can cause problems of water quality or blockages, and can cover surfaces of sensing systems.

This project will involve the testing of how biofilms settle on surfaces in flowing systems. The rate of how the initial stages of biofilms form, their characteristics and what factors affect their adhesion will be studied. The influence of turbulence and flow on the adhesion of bacteria or biofilm forming species and the effect that temperature has on adhesion, will be investigated. The impacts of the study can benefit research on environmental e.g. marine biofouling, process in-line fouling and medical flow-through system fouling.

The project is a collaboration between the Schools of Chemical Sciences and Engineering.