

## **Biofilm growth on marine environments**

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### **Project Location:**

University of Rhode Island-Kingston

### **Project Description:**

Biofilm formation on instrumentation deployed in the marine environment is one of the biggest challenges of long-term monitoring activities. It is well known that microbial diversity determines the biomechanical and physicochemical properties of biofilm as well as response to antibiofilm strategies. As part of the RI C-AIM sensor development effort, microfluidics-based devices are currently in development. These devices are not larger than a couple of centimeters and some of their features (microchannel and microwells) are in the order of tenths of microns. Biofilm formation studies have been performed using different size samples up to 6 cm, however to our knowledge only small size ranges (less than 5 mm) have evaluated the effect of sample size on composition and biodiversity of biofilm. We will use multimodal imaging to assess biofilm growth on materials used for the manufacturing of microfluidics sensors to be deployed in marine environments and biofouling agents common to Narragansett Bay.

*This project involves **both field & lab/computer work***

### **Required/preferred skills for student applicant:**

Chemical and biological laboratory experiences.

### **Student transportation needed for project?**

Yes