

**Proposed Advisor: Dr. Christopher M. Spillmann**

**Lab Location: NRL (Washington DC)**

**Research Description:** The objective of this research is to understand the surface cleaning material secreted from barnacles. Biofouling is a persistent nuisance to marine infrastructure; means to control and mitigate the accumulation of hard biofoulers would result in a significant reduction in maintenance cost. Efforts for this program include employing techniques to collect, understand and mimic aspects of barnacle secretions, understanding the effect of substrate surface chemistries, and developing tools to challenge and manipulate marine microbial films. Characterization techniques include a variety of in situ microscopies and spectroscopies. A variety of chemical analytical tools will also be employed to understand the composition of barnacle secretions.

**Keywords:** biointerface; biofouling; microbial marine biofilms; confocal microscopy; IR/Raman spectroscopy

**Contact Information:**

Shannon Koonce  
1818 N St. NW  
Suite 600  
Washington DC 20036  
s.koonce@asee.org