



## **Fall Seminar Series**

**Thursday, November 17 @ 3pm**

**Room 200, Oceanography & Physics Building**

**Or Via Zoom**

**Dr. Blake Schaeffer**

**Environmental Protection Agency**

### **Satellite uses for water quality and connections to socio-economic benefits.**

The use of water is an essential element of life on Earth. The quality of water is important for intended uses such as recreation, consumption, or industrial applications. Water quality can sometimes be taken for granted until, one day, you may not be able to use the water because of either a recreational health advisory, do not drink order, or beach closure. Oil spills and harmful algal blooms are two examples that pose environmental, economic, and human health concerns across waters of the United States. However, monitoring accurate changes in the quality of water, or emergency events, at broad spatial and temporal scales remains difficult and many times with sporadic coverage. Satellite technologies have advanced rapidly within the past few years to include new commercial satellites, hyperspectral sensors, and geostationary platforms. These new technologies provide opportunities to monitor broad spatial areas at high frequency with detailed spectral responses for identification of more indicators, and higher spatial resolution relevant to ecological endpoints such as harmful algal blooms and surface oil slicks. PlanetScope flock constellations of CubeSats provide ~5 meter resolution and near daily coverage of the coastal and inland waters. The recently approved Geostationary Littoral Imaging and Monitoring Radiometer (GLIMR) geostationary satellite will constantly keep watch over US waters with hyperspectral capabilities. Finally, the Cyanobacteria Assessment Network (CyAN) uses satellites to detect cyanobacterial harmful algal blooms. CyAN supports the environmental management and public use of U.S. lakes, reservoirs, and estuaries. As a result of applying these satellite technologies to protect water quality, socio-economic benefits have been quantified supporting human health from early satellite detection of cyanobacteria, housing price improvements with reduction in events, and potential avoided costs associated with increased satellite remote sensing of ecologically relevant indicators.

**To Join Zoom Meeting** Please email [oesadmin@odu.edu](mailto:oesadmin@odu.edu) for link