



## MESTECH Research Project



**Project Title:** Project Development of genetically engineered, highly stable and specific biorecognition ligands for detection of marine contaminants

**Project Researcher:** Edwina Stack

**Funding Body:** Beaufort Marine Research Awards

**Project Summary:** This research will develop recombinant antibodies genetically tailored to significantly enhance, specificity, sensitivity and stability, capable of incorporation into immuno-, sensor and lateral flow detection formats. They will also be used to generate highly stable extraction columns for water and matrix treatment/cleanup and for extraction of specific target contaminants prior to analysis.

### Key Outputs:

- Specific antibodies to key contaminants (microbial, toxin and organic pollutants)
- Reagents with greater specificity/sensitivity/stability than conventional antibodies
- Sensor, ELISA and Lateral flow assays
- Extraction/treatment columns for contaminant removal

### Key Impacts:

- Systems offer greater specificity and are capable of being altered /improved as required.
- Generic technology with potential application to many different targets
- Reagents can be integrated into detection systems of other partners in consortium
- Capacity for integration into wireless monitoring systems
- Could be used to develop early warning systems