



PhD Project: Microbial Indicators of Plastic Pollution

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The ecological impacts of the eight million tonnes of plastic entering our oceans each year is easy to witness, clogging the guts of marine animals with plastic detritus. Far harder to quantify however, is the ecological impact of poorly visible waste such as micro plastics and xenobiotic chemicals that leach from plastic products. Plasticizers such as bisphenol A (BPA) impact the reproduction and development of aquatic animals at environmentally relevant concentrations. We seek to address this problem by devising DNA-based indicators of freshwater health, assessing the abundance of microbial genes associated with plastic contamination and degradation rates. The successful candidate will screen for novel biomarkers of plastic pollution and attempt to isolate putative plastic degrading bacteria, providing opportunities for the development of novel treatment systems for plastic waste.

Our project aims and outputs are to:

1. Confirm the abundance of putative plastic degrading bacteria, or associated genes as a reliable indicator of the presence and toxic potential of plastic pollution in New Zealand waterways.
2. Isolate and culture putative plastic degrading bacteria in our laboratory and test these organisms ability to degrade a range of plastic-associated compounds under a broad range of conditions.

This PhD position is funded by the George Mason Charitable Trust. Interested candidates should email a curriculum vitae and cover letter to Dr. Gavin Lear (g.lear@auckland.ac.nz). The deadline for applications is 15/03/2018. The successful candidate will not start this position until mid 2018.