

## 2019 PhD Proposal – CSC-NCD CRCC Joint Funding Programme

Information to be published on NZ-CFPN CRCC website if proposal is selected	
<b>Project title</b>	Fluorescence spectroscopy to detect bacteria in foods and food processing environments
<b>Supervisor title and name</b>	Drs Vanholsbeeck and McGoverin
<b>Department</b>	Physics
<b>School / Centre</b>	Faculty of Science
<b>University</b>	The University of Auckland
<b>Email contact address</b>	f.vanholsbeeck@auckland.ac.nz; c.mcgooverin@auckland.ac.nz
<b>Link to Supervisor's research page</b>	<a href="https://www.biophotonics-newzealand.com/copy-of-people">https://www.biophotonics-newzealand.com/copy-of-people</a>
<b>Project outline</b> 150-300 words (approx) describing a possible PhD project, which has a link with an existing or potential research partner in China	Identifying and monitoring bacteria accurately and rapidly is increasingly important to maintaining food safety. This PhD project will utilize our own proprietary fluorescence spectroscopy and microfluidics devices to develop novel methods to rapidly identify and quantify bacteria in a variety of matrices pertinent to the food industry (e.g. environmental samples from food processing factories, swab samples from food, water samples). The project will involve systematically evaluating and optimizing the photonic system to be able to detect key indicator bacteria in the various matrices. Therefore, it is desirable that the student have a strong background both physics and biology (preferably microbiology). The project will be based at the University of Auckland in the Biophotonics lab in the Department of Physics. This lab is well resourced with the state-of-the-art equipment needed for this study. The project will be undertaken in collaboration with food safety experts at ESR and Plant and Food Research in New Zealand. With potential research partners at Jiangnan University and Zheijiang University also contributing to the project.
<b>References for further reading (optional)</b>	
Additional information to be used in proposal selection process	
<b>NZCFPN CRCC priority area to which proposal is aligned (see list below)</b>	<ul style="list-style-type: none"> <li>Advanced diagnostic tools &amp; analytics</li> </ul>
<b>Brief outline of Supervisor's current research links with China or interest in developing them</b>	