**Project Title:** Assessing the anti-inflammatory compound, 4-Methoxy TEMPO in attenuating experimental colitis  

**Code:** SoMS2

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<th><strong>Host School/ Institute</strong></th>
<th><strong>Address:</strong> Charles Perkins Centre, The University of Sydney, Camperdown NSW 2006</th>
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**Project Type:** Laboratory based

**Project Category:** Immunology & Infection, Inflammation, Molecular biology

**Project Keywords:**
1. Experimental colitis
2. Inflammation
3. Antioxidant
4. REDOX biology
5. Inflammatory Bowel Disease

**Project Description:**

The cyclic nitroxide family of antioxidants has previously been demonstrated to be safe and present low toxicity during chronic administration. Inflammation-associated oxidative damage is the chief cause of irreparable tissue damage in patients with chronic inflammatory disorders, particularly those affected by Inflammatory Bowel Disease (IBD). It has previously been demonstrated that nitroxides can attenuate inflammation-associated oxidative in disease models.

My research will assess the efficacy of the nitroxide derivative, 4-methoxy TEMPO in attenuating oxidative damaged in DSS-induced colitis. Findings from this study will be considered translational to human inflammatory diseases, particularly in IBD. C57BL/6 mice will be given DSS in drinking water over a period of 9 days to induce colitis. Treatment groups will receive either a vehicle or 4-methoxy-TEMPO during the course of DSS-induced colitis. Following sacrifice, histo- and immunohistochemistry will be employed to assess the parameters of histopathology within the intestines. Various biochemical assays will be used to assess the redox status within tissues and to elucidate the anti-inflammatory mechanisms of 4-methoxy-TEMPO.