

**School of Health Sciences  
Honours Research Project**

**Title**

**Understanding Lipid Structure: Potential Role in Peroxidation**

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**Project Details**

This project will explore the concept that phospholipid structure can affect the rate of peroxidation within membranes. As a result of our previous work we know that a balance exists between the number of saturated and unsaturated fatty acids in membrane phospholipid and that either a saturated or monounsaturated fatty acid is normally coupled ('handcuffed') to any polyunsaturated fatty acid. In fact of the 120 kidney and 66 brain phospholipid species we have recently described in mammals there are virtually no PUFA:PUFA combinations (only 0-1%). We propose that the coupling of saturated and monounsaturated fatty acids to polyunsaturated fatty acids acts to slow the rate of peroxidation via a non-steric hindrance mechanism that provides time for membrane antioxidant systems to operate. This project will explore this new concept.

**Number of Students:** 1

**Special requirements** (*eg early starts, late finishes, lab skills, body composition assessment, good interviewing/communication skills*)

**Some experiments will require commitment to long periods of time.**

**Skills required** (*eg computer skills, laboratory skills, etc*)

Good organisational skills, good lab skills.