Australian National University

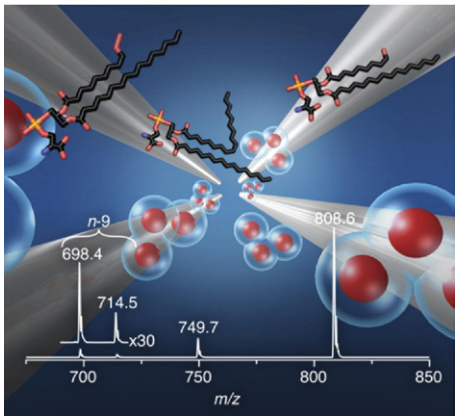
PUBLIC LECTURE

I spy with my fat eye something beginning with 'L'

Thursday 8 August 2013 1 – 2pm

Dr Todd Mitchell School of Health Sciences, University of Wollongong

Slatyer seminar room R.N. Robertson Building (Bldg. 46), Linnaeus Way, ANU



The term lipid encompasses a broad range of structurally diverse molecules with varied physical and chemical properties. Such diversity provides a significant analytical challenge. To overcome this, many of the traditional analytical techniques analyse lipids as a class (e.g., the analysis of phospholipid classes by thin layer chromatography) or break down lipids into more simple molecules (e.g., gas chromatography of fatty acid methyl esters). While these and similar techniques have provided great insight into lipid biochemistry over the decades, molecular level information is lost and structural diversity underestimated.

Modern mass spectrometry techniques allow us to delve much deeper into lipid molecular structure affording a greater level of understanding of the role of lipids in cellular function and as such have become methods of choice in modern lipidomic analysis. Nevertheless, mass spectrometry is purely a measure of mass and charge and therefore suffers limitations in its ability to distinguish many structural isomers commonly found among lipids. In this talk I will discuss some of the novel mass spectrometry-based approaches we have been developing to overcome these limitations and how we have been combining these with more traditional techniques to understand the role of lipids in age-related visual decline.

Dr Todd Mitchell received he PhD from the University of Wollongong (UOW) in 2005. Following postdoctoral training at UOW, AstraZeneca (Gothenburg, Sweden) and the Univeristy of New South Wales he joined the newly established Illawarra Health and Medical Research Institute (IHMRI) at UOW in 2008. He is currenlty an ARC Future Fellow and Associate Professor in the School of Medicine at UOW and the lipidomics group leader in IHMRI. His research focuses on the role of lipids in the development of various pathologies with a particular interest in ophthalmic disorders and the development of new mass spectrometry based methods for the characterisation of molecular lipids.

Presented by

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