



Australasian Section of AOCs

# Biennial Meeting 13 – 15 November 2023

Newcastle, NSW | Australia

## Future of Lipids: Health and Sustainability

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### Monday 13th November

16:00 Registration open

17:00 Welcome mixer

2023 AAOCS Section Award: Dr Laurence Eyres

### Tuesday 14th November – Day One

07:30 Registration open

08:10 Welcome to Country and Conference Welcome

#### 1st Session – Nutrition

08:30 Tom Brenna

University of Texas

**Keynote:** Arachidonic acid, the vegetarian gene, and personalized nutrition

09:20 Tony Hulbert

University of Wollongong

Omega balance: An important nutritional concept for health and fighting chronic diseases

09:40 Michael Macartney

University of Wollongong

Omega-3 status evaluation in female rugby league athletes: impact of ad libitum fish oil provision

10:00 Devanshi Seth

University of Sydney

Genetics of lipid biology in fatty liver diseases: Preclinical modelling in zebrafish

10:20

Break

#### 2nd Session – Alternative Oils

10:50 Matt Miller

Cawthron Institute

Musseling up: New clinical evidence of benefit Greenshell mussel oils and powders

11:10 Andrew MacKenzie

Callaghan Innovation

Minimising the Hydrolytic Degradation of Green Lipped Mussel Phospholipids

11:30 Paul Prenzler

Charles Sturt University

Sex and other effects on emu (*Dromaius novaehollandiae*) oil composition: A pilot study

11:50 Randy Adjonu

Charles Sturt University

Super high oleic acid safflower oil: A new frying oil

12:10 Adarsha Gupta

Flinders University

Exogenous compounds addition in Thraustochytrid fermentation to produce oil subjected to sulfur polymerization to achieve plant-oil like fatty acid profile

12:30

Lunch

#### 3rd Session – Omega 3 & Marine Oils

13:20 Ellen Schutt

GOED

**Keynote:** The EPA and DHA omega-3 market: A global overview

14:10 Xue-rong Zhou/Surinder Singh

CSIRO

Plant-based long-chain omega-3 oils: An update

14:30 Peter Nichols

CSIRO

Recent developments with Australian deep-water shark liver oils and their derived squalene: A new Australian Standard to assist with establishing provenance and ensuring sustainability for industry and other users

14:50 Nethravathy Uthaiiah

RMIT

Efficacy of eicosapentaenoic acid-rich *Nannochloropsis oceanica* biomass against CCl<sub>4</sub>-induced liver fibrosis in rats

15:10

Break

#### 4th Session – Lipidomics

15:30	<b>Stephen Blanksby</b> <i>Queensland University of Technology</i>	Lipids on the skin I'm in: Advances in mass spectrometry for characterizing the human skin lipidome
15:50	<b>Michael Gray</b> <i>Waters Australia</i>	The path to improved lipid analysis through the implementation of high performance surfaces; Acquity Premier UPLC technology
16:10	<b>Matthew Taylor</b> <i>CSIRO</i>	Chickpea lipid diversity for improved quality trait and selection of improved nutritional and techno-functional properties
16:30	<b>Puttandon Wongsomboon</b> <i>Queensland University of Technology</i>	Lipid mass spectrometry in a nutshell: Deep profiling of fatty acids in edible nuts
16:50	<b>Kevin Mitchell</b> <i>Callaghan Innovation</i>	Analytical supercritical fluid chromatography - mass spectrometry for lipid analysis – An overview and examples from our laboratory
17:10	<b>AGM</b>	
18:00	<b>Break</b>	
19:00	<b>Conference Dinner</b>	

### Wednesday 15th November – Day Two

07:00 Student breakfast

08:00 Registration open

#### 5th Session – Food Technology

08:30	<b>Silvana Martini</b> <i>Utah State University</i>	<b>Keynote:</b> The role of fat on chocolate production: Crystallization behavior and product quality
09:20	<b>Chamodini Thilakarathna</b> <i>Monash University</i>	Development of cocoa butter equivalent from Mahua oil - Palm stearin blend through two-stage solvent fractionation
09:40	<b>Graham Eyres, Amy Logan</b> <i>Otago University &amp; CSIRO</i>	Microfiltration of milk fat globules for particle size affects key sensory parameters of Cheddar cheese
10:00	<b>Malinda Garusinghe</b> <i>Monash University</i>	Spice oleoresin blending: The impact of different emulsifying agents and homogenization mechanisms
10:20	<b>Break</b>	

#### 6th Session – Industrial Applications

10:40	<b>David de Schaetzen</b> <i>Desmet</i>	Developments in Rapeseed processing for the production of high quality meal and oil
11:10	<b>Bogdan Zisu</b> <i>Fluid Air Spraying Systems Co</i>	Low temperature electrostatic spray drying to improve the oxidative stability of lipid rich powders
11:30	<b>Karin Luize Mazur</b> <i>Deakin University</i>	Microencapsulation of different commercial sources of astaxanthin for inclusion into aquaculture feeds
11:50	<b>Lucky Inturrisi</b> <i>Bunge Lodders Crokiaan</i>	Plant Better: A dairy fat alternative
12:10	<b>Billu Abraham</b> <i>RMIT</i>	Enhancing nutritional value: Development of curcumin and vitamin D3-enriched extruded snacks using a sunflower oil-based lignin-stabilized nano pickering emulsion
12:30	<b>Lunch</b>	

#### 7th Session – Sustainability, Biotechnology & Oxidation

13:00	<b>Colin Barrow</b> <i>Deakin University</i>	<b>Keynote:</b> Organic waste bioprocessing to promote a circular economy
13:20	<b>Renata Kostovska</b> <i>University College Cork</i>	Multispecies swards – A newly introduced, more sustainable cow diet, increases PUFA levels in Irish milk
13:40	<b>Munish Puri</b> <i>Flinders University</i>	Tuning oleaginous marine microbes for producing single-cell oils and high-value bioactives
14:00	<b>Jacqui L Adcock</b> <i>Deakin University</i>	Modelling lipid oxidation in a simple food oil system

14:20

Break

**8th Session – Sustainability, Biotechnology & Oxidation**

<b>14:40</b>	<b>Tharani T Dissanayake</b> <i>Deakin University</i>	Progression and correlation of lipid hydroperoxides and epoxides as primary and secondary oxidation products of pet food ingredient oils
<b>15:00</b>	<b>Naazneen Sofeo</b> <i>A*STAR, Singapore</i>	Sustainable production of lipids from side streams using oleaginous yeast
<b>15:20</b>	<b>Clare L Flakelar</b> <i>Australian Catholic University</i>	Identification of fatty acid isomers in bovine milk using liquid chromatography and derivatisation mass spectrometry
<b>15:40</b>	<b>Awards and Conference Close</b>	

**Posters – Viewing at all breaks**

<b>P1</b>	<b>Krishmali N Ekanayake</b> <i>Deakin University</i>	Valorisation of innovatively treated food waste residue for omega-3 fatty acids recovery in application of aquaculture feed ingredients development
<b>P2</b>	<b>Ryan Anthony</b> <i>University of Wollongong</i>	Algae is equivalent to fish in elevating omega-3: Microencapsulated supplement trial in endurance athletes
<b>P3</b>	<b>Jennifer Tran</b> <i>Deakin University</i>	Investigating the use of an automated analysis instrument (CDR FoodLab) for measuring lipid oxidation in pet food samples and ingredients
<b>P4</b>	<b>Kyle Howard</b> <i>Waters Australia</i>	Improved detection and identification of lipids using Xevo™ G3 QTOF mass spectrometer
<b>P5</b>	<b>Tharani T Dissanayake</b> <i>Deakin University</i>	Investigating derivatisation methods in fatty acid profiling