



AOCS  **Australasian Section
Biennial Meeting**

11–13 September 2017

Château Tanunda | Barossa Valley | South Australia

Biotechnology, Lipidomics and Nutrition

Lipid Analysis and Oxidation Short Course

The lipid analysis and oxidation short course will highlight novel lipid analytical capability and present the fundamentals of lipid oxidation by experts in the field.

Venue: Château Tanunda, Barossa Valley SA

Date: 11th September 2017

Programme Highlights

A variety of international and local speakers will discuss the latest in science and technology in the analysis of lipids and oxidation while providing basic and practical information that is relevant to manufacturing, regulatory affairs and analysis of edible oils.

Gerard Bannenberg and Adam Ismail from the GOED (Global Organization for EPA and DHA) will be the highlight of the workshop with two presentations on the methods and compliance with the GOED monograph. They will delve into the recent NZ fish oil problems and GOED response. They will further highlight GOED initiatives around oxidation and lessons on how to best deal with negative media attention. These presentations would be vital viewing for all omega 3 producers, manufacturers and marketers.

Further, there will be a series of presentations covering new analytical methods of oil that will cover edible oils (such as grain and olive oils), new developments using Raman spectroscopy and measuring lipid mediators which is a growing area of research in the biomedical/lipidomic fields. Finally, a very practical look at measuring oxidation and oxidation through refining of edible oils.

A program outline is listed below. * Please note that this schedule is tentative and subject to change.

[Registration for this workshop is \\$300 \(\\$100 Student\)](#)

**This workshop is part of the larger biennial AAOCS meeting:
Biotechnology, Lipidomics and Nutrition
Monday, September 11, 2017 - Wednesday, September 13, 2017
([More info here](#))**

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Monday 11th Château Tanunda, Barossa Valley SA

10:30	Registration	
11:00	Opening / Welcome	<u>Matt Miller</u> (AAOCS President)
	The biggest mistakes I have seen in the analysis of lipids over 50 years	<u>Laurence Eyres</u>
	<ul style="list-style-type: none"> - The GOED monograph - The methods we suggest to our members - Randomized testing - Compliance with various monographic and regulation limits 	<u>Gerard Bannenberg</u> - GOED
	The analysis and compliance of lipids for infant formula AOCs proficiency programme	<u>Glen Elliot</u> – Nu Mega
	Lunch	
	<ul style="list-style-type: none"> - The accepted- the new publication on New Zealand fish oil quality (May 2017) - GOED initiatives around oxidation - GOED lessons on how to best deal with negative media attention 	<u>Adam Ismail</u> - GOED
New method of lipid analysis		
	New advances in the analysis of bioactive compounds in edible oils	<u>Clare Flakelar</u> - Charles Sturt University
	Raman spectroscopy analysis of oil	<u>Dan Killien</u> - Plant and Food Research
	Lipid mediator analysis	<u>Jacqui Adcock</u> - Deakin University
	Application of QTOF-MS techniques to study flavour and aroma compounds in olive oil	<u>Paul D. Prenzler</u> - Charles Sturt University
	Coffee Break	
Oxidation of oils		
	Measuring lipid oxidation	<u>Matt Miller</u> - Cawthron Institute
	Lipid oxidation through refining	<u>Lucky Intrussi</u> - Mewah Oils
5:00pm	Finish	

Times will be available closer to the event

Speakers for the Lipid Analysis and Oxidation short course



Adam Ismail has served as the Global Organization for EPA and DHA Omega-3's (GOED) first executive director for ten years and oversees the execution of the organization's mission to increase consumption of EPA and DHA to sufficient levels worldwide. Since being named Executive Director in March 2007, Mr. Ismail has led GOED from 12 members to 215 and has worked on establishing multiple health claims in Europe, recommended intakes in Europe and China, a large consumer education campaign in the US, and reversing multiple regulations around the world that have blocked consumer access to EPA and DHA products.

Glenn Elliot has 15 years' experience in the food industry within quality and regulatory positions. He has been with Nu-Mega Ingredients for the past 10 years where he manages the regulatory affairs department for the company which is a market leader in the manufacture and supply of DHA and ARA ingredients into infant formula. Glenn is well connected within the global infant formula industry and has coordinated several successful regulatory submission and petitions involving the application of DHA



into infant and children foods.

Daniel Killeen works for the NZ Institute for Plant and Food

Research in Nelson. In this role he works closely with the marine fisheries industry. Research interests include rapid analytical methods, bioactive natural products and vibrational spectroscopy of marine oils. He graduated in 2005 from The National University of Ireland, Galway with a BSc (Hons) in Chemistry and Analytical Chemistry before working for five years as an analytical chemist with Allergan Pharmaceuticals. In that role he gained experience working in a quality control setting, where he was extensively involved in analytical method development and reference standard qualification.

Daniel's PhD research investigated Raman spectroscopy as a tool for rapid analysis of natural products in commercially important NZ plants. His 2015 theses was recognised as

"Exceptional in the Division of Sciences".

Gerard Bannenberg is current Director of Compliance and Scientific Outreach at the Global Organization for EPA and DHA (GOED). He received a doctorate in Molecular Toxicology at the Institute for Environmental Medicine at the Karolinska Institute, Stockholm, Sweden, and his undergraduate degree at the Centre for Bio-Pharmaceutical Sciences at Leiden University, The Netherlands. He is an affiliate member of the Center for Experimental Therapeutics and Reperfusion Injury, Brigham & Women's Hospital, Boston, MA, USA. Previously he was scientific officer at Solutex, a high-technology company producing EPA and DHA concentrates. He has also served as a board member of GOED.





Laurence Eyres runs his own contracting / consulting business for the Food Industry specializing in oils and fats, product and business development. He is also Chairman of the NZIC Oils and Fats Specialist Group.

He has been in the NZ Food Industry for around 45 years and during that time has worked as Chief Chemist and Technical Manager in the edible oils industry, the snack food and dairy industries and has also spent periods in academia with Massey and Auckland Universities. He is a member of the FoodInc group of consultants He is a regular contributor to Food NZ with Oils and Fats News.

Matt Miller is a lipid chemist working for the Cawthron Institute in Nelson, NZ. Dr Miller has over a decade of research experience looking into the chemistry and novel sources of marine oils, in particular omega 3. Dr Miller received his PhD at the Uni of Tasmania (UTAS) with collaboration from the CSIRO Food Futures Flagship in 2007. His thesis was awarded a Dean Commendation prize and he was part of the team awarded the 2010 CSIRO medal for research achievement. Matt is the principal investigator for the program, “Musseling up: high-value Greenshell™ mussel foods”, which is a part of the high value nutrition national science challenge and involves basic and clinical researchers, food scientists, chemists and mathematical modellers. Dr Miller is the president of the Australasian section of the American Oil Chemists’ Society (AAOCS) and is a member of the NZ fats and oil group.



Jacqui Adcock is an ARC DECRA Fellow at Deakin University



investigating the synthesis of novel lipid compounds using enzymatic reactions, and developing chromatographic methods for the analysis of these compounds. Her work is specifically focused on omega-3 fatty acids and the anti-inflammatory compounds. Dr Adcock completed her PhD in Analytical Chemistry at Deakin University in 2008. She then worked as a postdoctoral fellow on a joint project between RMIT University and Firmenich (the world’s second largest flavour and fragrance company). For the last eight years, her research has focused on lipid analysis, including the development of new chromatographic methods for the analysis of common lipid types, such as fatty acids, sterols and tocopherols. These separations have been applied to a range of samples including fish, food oils, infant formula and blood.

Lucky Inturrisi is Technical Director, Mewah Oils.

Previously he was the Technical Services Director for Cargill Refined Oils Asia Pacific. He holds a Bachelor of Engineering (Hons) from Monash University, Australia and a MBA from Deakin University, Australia. Lucky’s experience in fats and oils extends over 30 years, working in a variety of roles including: Process and Project Engineering, Operations and Technology Management, Product Development and Technical Services. He has had the opportunity to interact with many well-known global customers in the food industry such as: PepsiCo/Fritolay, Campbell’s / Arnott’s, Masterfoods, Nestle, Sara Lee, McDonald’s, KFC, Ferrero, Simplot, McCain, Kraft and Krispy Kreme. Lucky has been a member of American Oil Chemists’ Society (AOCS) for 30 years; 15 years as a member of the local Australasian



executive, including a term as President. He has also been involved in organising a number of fats and oils conferences and symposiums, including several Biennial AAOCS Meetings, the World Congress and Expo on Oils and Fats that was held in Sydney in 2009 and the International Plant Lipid Symposium held in Cairns in 2010, Frying, Lipid Oxidation and Margarine Workshops. Lucky has authored two book chapters in “Australasian Handbook of Lipids” and “AOCS Sunflower: Chemistry, Production, Processing, and Utilization.”

Dr Paul Prenzler is an Associate Professor in Chemistry at Charles Sturt University



in Wagga Wagga. He completed a BSc(Hons) and PhD at the University of Queensland, where he researched platinum anti-cancer compounds. He then spent several years as a postdoctoral fellow at various institutions including: the Advanced Research Laboratory of Hitachi, in Japan; the Research School of Chemistry ANU; and the School of Chemistry, University of Melbourne. He was appointed lecturer in Chemistry at CSU in 1997, where his research interests diversified to encompass projects aligned with CSU's location in rural Australia. Typically these involve the application of different analytical techniques to solve chemical problems that have significance to the region, including the

study of flavour and aroma compounds in olive oil and bioactive constituents in canola oil.

Clare Flakelar completed a BSc(Hons) in analytical chemistry in 2013 at Charles Sturt University (CSU), Wagga Wagga. She began a PhD with CSU in 2014 under the supervision of A/Prof Paul Prenzler, investigating several classes of bioactive compounds in canola seed and crude canola oil, and the agronomic and oil processing impacts on these compounds. Clare's PhD project is funded by the Grains Research Development Corporation (GRDC), and the Graham Centre for Agricultural Innovation (a joint collaboration between Charles Sturt University and Department of Primary Industries). So far, the research has



been presented at 7 national and 3 international conference's, including directly to industry at an Australian Oilseeds Federation Annual General Meeting, and at the AOCS meeting in Florida 2017, where she was awarded a student excellence award in the processing division. The research has included the development of a new analytical method for the quantification of fat-soluble bioactives in canola oil, which was published in Food Chemistry, and has since been presented in an article in AOCS Inform magazine. Clare is preparing her thesis for submission in 2017.