



**AOCCS**

**Australasian Section  
Biennial Meeting**

**9–11 September 2015**

The Pier | Geelong, Victoria | Australia

**Looking Back, Thinking Forward**

Welcomes you to

**The 2015  
Infant Formula Lipids  
Workshop**

**Pelicans Landing Williamstown  
1 Syme Street, Williamstown, Victoria  
8th September, 2015 (tour of Nu-Mega production  
factory on the 9<sup>th</sup> September)**

## Welcome

On behalf of the committee of the Australasian section of the American Oil Chemists Society, I would like to welcome you to the first infant nutrition lipids workshop. In particular I welcome our international delegates who have travelled long distances to attend our scientific meeting and two pre-conference courses.

This is the first time we have looked at this important area of science. Due to the interest I think we are going to look to develop this program with feedback from you. Please get in contact with me or Glenn with your feedback as we hope to grow this workshop in future years. I want to give a big thank you to Glenn Elliot for putting this day together.

The conference is also in Geelong and this blurb is taken from there. This year we have taken a little time to navel-gaze and see just how far we have come. Unfortunately, you do not get too far reminiscing like this, so we are also targeting where we are heading in the future. This year's theme of "Looking back, thinking forward" originated in a book called Uncle Tungsten by Oliver Sacks, a must read for any chemists out there. I think there is a lot to be learnt from reflecting on how we got to where we are, and there is a lot of knowledge in our section that you can't just google. I encourage people to go and have a chat to some of the older statesmen/women about how much the industry and science has changed. If you buy them a beer I am sure they will tell you all the good stories.

I would like to personally congratulate Professor Andy Sinclair on his career and award. He thoroughly deserves this accolade and it is great that we can award it in Geelong where he lives, has taught and led science that is internationally recognised. Well done Andy.

We have been overwhelmed by the support from our sponsors. Without them we would not be able to support our keynote speakers, keep cost down to a reasonable level and ultimately make this event happen. Thank you for your generous support of this meeting. A big thank you goes to our major sponsors Deakin University, our Gold sponsors Graincorp and Cargill, our silver sponsors Bakels, Australian Oilseeds Federation, Malaysian Palm Oil Council (MPOC), Simplot (aka John West and all their brands), Perten and Cawthron, as well as our supporting sponsors CSIRO, Kemin and Bruker. Without their support this meeting would not have been possible, so please read the brochures and talk to the sponsor delegates. I would like to personally thank Lucky Inturrisi and Jacqui Adcock for their help in facilitating these sponsorships.

The Section first met in 1997 in Canberra and is now approaching 18 years old. Over the years we have continued to build the section by hosting successful meetings through generous sponsorship, offer student oral and poster awards and this year we have the second AAOCS Section Award. These achievements are all made possible through the hard work from the committee, but in particular our Treasurer Amy Logan and our two Secretaries, Jackie Adcock and Tim Nalder. The committee is a great bunch of people and it has been great working with you all to make this conference happen.

Finally, welcome to AAOCS 2015 in Geelong, Australia. I hope that you enjoy the meeting, the joint symposium, the short courses, networking and catching up with old friends as well as making new ones. I hope to see you at the next meeting in 2017.

Dr Matt Miller

President  
Australasian Section AOCs

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# Delegate and Speaker Information

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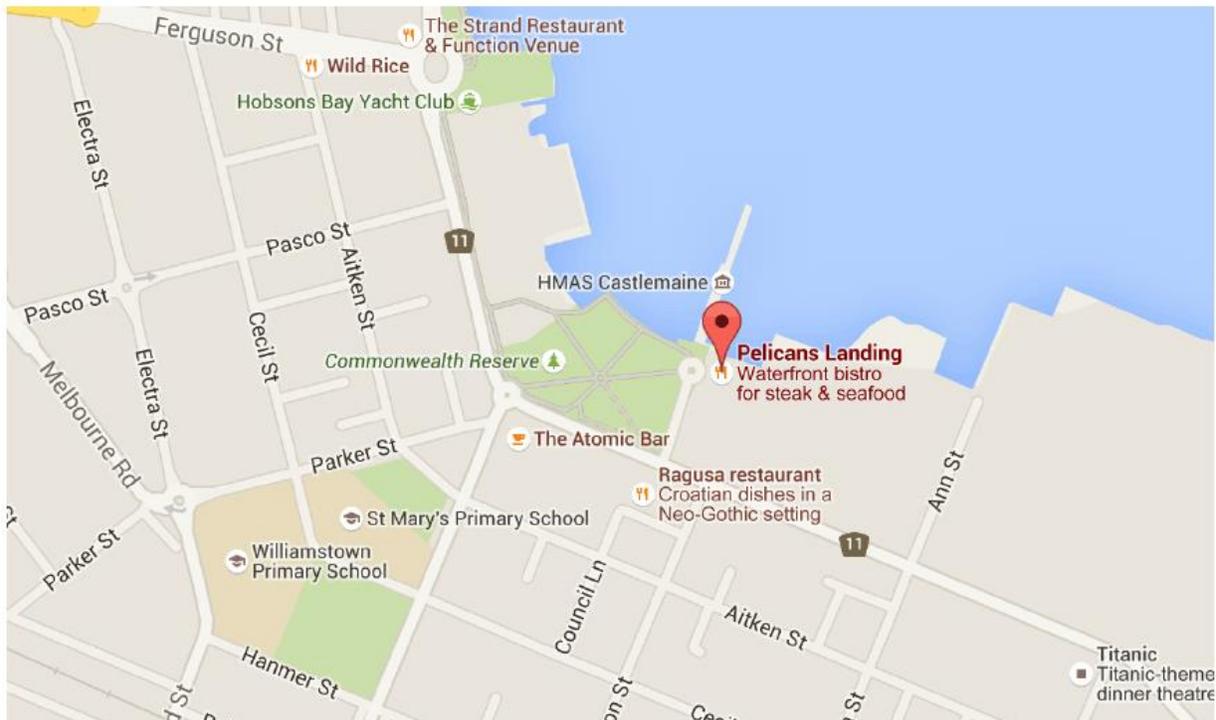
## Workshop venue

**Infant formula lipids workshop;** Pelicans landing, Williamstown. 1 Syme Street, Williamstown, Victoria. Date: 8th September, 2015



### Pelicans Landing

Quest Williamstown, 1 Syme St, Williamstown VIC 3016  
(03) 9397 0155



## Transport from Melbourne Tullamarine Airport

Taxis available from Airport to Williamstown which is 35km in distance and ~30 minutes travel time

## Parking

Multiple paid parking options available in Williamstown streets within close vicinity to Pelicans landing venue

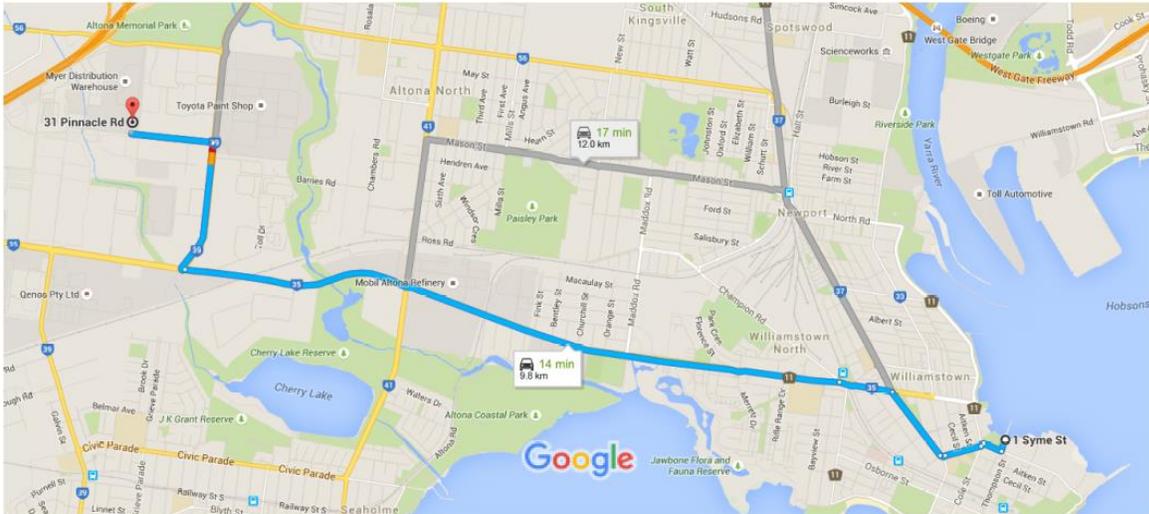
## Directions to Nu-Mega Production Plant (31 Pinnacle Road, Altona North)

- Free parking available within site car park
- Car-pooling available for those travelling onto Geelong for seminar



1 Syme St, Williamstown VIC 3016 to 31 Pinnacle Rd, Altona North VIC 3025

Drive 9.8 km, 14 min



Map data ©2015 Google 500 m



**31 Pinnacle Rd**

31 Pinnacle Rd, Altona North VIC 3025



## 2015 AAOCS Infant Formula Lipids Workshop Programme

This workshop will highlight the nutrition, production and chemistry of the lipids involved with the production of infant nutrition. This workshop will be hosted by international and local experts in the field. A tour of the Nu-Mega production factory will be included in this workshop.

A variety of international and local speakers will discuss the latest in science and technology in the lipid formula lipids while providing basic and practical information that is relevant to manufacturing, regulatory affairs, possible contaminants and the latest in innovation.

### Tuesday 8<sup>th</sup> September – Pelicans Landing, Williamstown

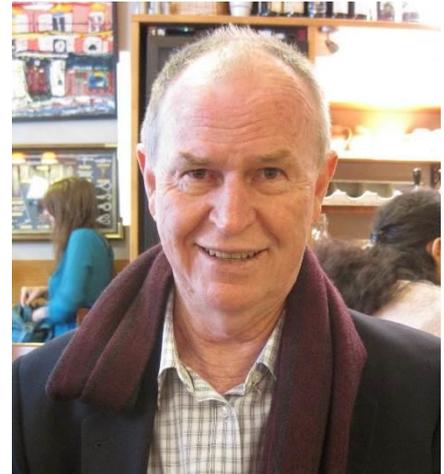
8:00	<b>Registration</b>	
8:45	Opening / Welcome	Matt Miller (AAOCS President)
9:00	Dietary Lipid Requirements for Infants	Prof Bob Gibson (Uni of Adelaide)
10:00	Infant Formula Manufacturing/ Formulating	Justin Peace (Director at Two Peaces Pty Ltd)
10:45	<b>Coffee Break</b>	
11:00	Regulatory Affairs	Glenn Elliott (Nu-Mega)
11:45	Infant Formula Oils and Contaminant Management	Hartati Simka (Infant Nutrition Manager Cargill)
12:30	<b>Lunch</b>	
13:30	Contaminates – A Kiwi perspective	Dr Paul McNabb (Cawthron)
14:15	Changing Regulatory Standards: The Physiological Importance of Docosahexaenoic Acid and Arachidonic Acid for the Health and Development of Infants and Young Children	Rashmi Uppal (DSM)
15:00	<b>Coffee Break</b>	
15:15	Infant Formula Lipid Innovation	Mrs Sigalit Zchut (Enzymotec)
16:00	Regiospecific analysis of triacylglycerols used in infant formula	Dr Mikhail Vyssotski (Callaghan Innovation, NZ)
16:30	Round table /Final discussion	Glenn Elliott (Nu-Mega)
17:00	Finish day 1	

### Wednesday 9<sup>th</sup> Nu-Mega Production Factory

	<b>Meet at Nu-Mega production factory 31 Pinnacle Rd Altona North VIC</b>	
10:00	Tour of the Nu-Mega Production Factory (followed by a light lunch)	Glenn Elliot (Nu-Mega)
19:00	AAOCS Award for Scientific Excellence in Lipid Research and Mixer	Waterfront Kitchen, Geelong

# Speakers for the Infant formula lipids workshop

**Robert A Gibson**, Senior NHMRC Research Fellow, Fellow of the Nutrition Society and Professor, Food Science and Nutrition, School of Agriculture, Food and Wine, University of Adelaide. Prof Gibson has been actively involved in nutrition research in cells, animals and humans for over 25 years and has published over 250 papers in this area. He has designed and conducted many randomised controlled trials involving nutrition interventions in the perinatal period. The trials were designed to test the effects of interventions with iron, selenium, probiotics, nucleotides and long chain polyunsaturated fatty acids (LCPUFA) on infant biochemistry, growth, physiology and developmental outcome. Two human trials have recently been published in JAMA - DINO: a National DHA-dose response study on mental development in 650 preterm infants and DOMInO: a National DHA in pregnancy study on postnatal depression and child development in 2500 women/infants. Prof Gibson established the Foodplus Research Centre <http://www.adelaide.edu.au/foodplus/>



**Rashmi Uppal** (DSM). A postgraduate in Food Technology & Marketing Management, Rashmi is a seasoned professional with 14 years of rich experience in the Food & Beverage industry. This includes product development across consumer product categories of health foods, confectionary and beverages followed up with Sales & Marketing roles in the Nutrition & Ingredient industry. She currently champions market & business development for the Infant Nutrition & Beverage segments in Asia Pacific through a compelling market strategy as well as strategic customer engagement initiatives for DSM's Human Nutrition & Health Business in Asia Pacific. Passionate about health & nutrition marketing, Rashmi has valuable expertise in establishing and building business across markets & customers in Asia Pacific, conceptualizing winning ideas for Brand extensions & new product ideas for Global, Regional & Country Specific customers.

**Justin Peace** has had a lifelong involvement in the food industry. Growing up on a dairy farm then going to work at the factory that collected the farms milk. He has had roles in quality, manufacturing and product development. He is in his 20<sup>th</sup> year of involvement in the Infant Formula industry. It is from the aspect of Infant Formula that Justin has had his experience with the food oil industry. The use of vegetable oil blends, LCPUFA's DHA and ARA and in more recent times OPO. He has had the unique opportunity to have been involved in the use of LCPUFA's as oils and powders as ingredients in infant formula and in the manufacture of encapsulated LCPUFA's. Having spent many years with Kraft Foods and then Murray Goulburn Justin has spent the past 18 months working as the Director of TWOPEACES a food industry consultancy focusing predominantly on formulation and product development of Infant Formula products.





**Dr Paul McNabb** has fifteen years of experience in analytical chemistry and has been at Cawthron for the last 10 years. He has expertise in most areas of analytical testing and a wide knowledge of technical aspects of food production. Paul has a special interest in natural toxins, publishing over 30 scientific papers, books and reports on the topic.

Paul is one of New Zealand's most experienced liquid chromatography–mass spectrometry (LC-MS) users and has been instrumental in establishing Cawthron as a world-leading provider of LC-MS testing services.

**Dr Sigalit Zchut** attained her Bachelor and Master degrees in Biochemistry from the Ben-Gurion University in Beer-Sheva,

Israel. Her Doctorate was attained from the Weizmann Institute of Science, where she studied the effect of cold acclimation on alga in the department of Biological Chemistry. She later moved to the USA to fill in a post-doctoral fellowship in the University of Massachusetts Medical School in Worcester and at Brown University in Providence, RI.

Dr. Zchut has been employed by Enzymotec for the past 7 years, where she has held multiple positions starting as Regulatory Manager, later becoming the Head of R&D - Bioactive Ingredient Division, and most currently as Product Manager Infant Nutrition in the Nutrition Division.

**Dr Mikhail Vyssotski** is a principal scientist and the Lipids team leader at Callaghan Innovation. After graduating in

1980 the chemical department of the Far-Eastern State University (Russia) he joined the top Russian lipid research laboratory in the Institute of Marine Biology of the Russian Academy of Sciences, Vladivostok. His post-doc research was in the famous Marine Lipids Laboratory of Hokkaido University (Japan). In 2003 he left his position of a Deputy Director (Research) of the Institute of Marine Biology to join the Industrial Research Limited in Wellington. He is working in the areas of advanced lipid analysis, extraction and modification of lipids; structure elucidation of novel fatty acids and complex lipids; and synthesis of bioactive lipids. His publications include 50 papers in international peer-reviewed journals, one book chapter, 31 presentations at the international conferences, and 4 patents. Dr Vyssotski

has co-supervised two successful PhD studies while in NZ.”

**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.



# AAOCS Award for Scientific Excellence in Lipid Research

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## Professor Andrew J. Sinclair

Andrew Sinclair is Emeritus Professor of Nutrition Science within the School of Medicine at Deakin University, Geelong, Australia. He has been a significant contributor to the AOCS and Australasian section of AOCS since 1995, as a chairperson, committee member and as an editorial board member.



Andy's initial degree was a Bachelor of Agricultural Science from the University of Melbourne in 1965 followed by a PhD in 1969.

After postdoctoral research with Michael Crawford in London, Andy worked in the Department of Agriculture Victoria, where he distinguished himself on numerous projects, moving to RMIT to become an academic researcher in the early 1980s. In 1988 he was seconded for 5 years to the newly established Deakin Institute of Human Nutrition at Deakin University Geelong to work with Professor Kerin O'Dea. In this period Andy produced many publications in new areas of human health and lipid research and supervised numerous research students, setting a standard envied by many as an outstanding supervisor, so much so that Deakin University awarded him in 1993 its inaugural award for excellence in postgraduate student research supervision.

On his return to RMIT University Andy was made one of its first professors and set up the Lipid Research Group within the newly formed Department of Food Science. What followed for the next 12 years was an amazing progression of publications and research student graduations. During this time Andy also worked closely with the haematology department of RMIT, establishing a potent synergy of research talent in the area of blood lipid science.

In 2006 Andy took up the offer to move to Deakin University Burwood as the head of Nutrition Science in the School of Exercise and Nutrition Science, later moving to the Geelong campus in the new Medical School, where he added a much needed research focus to the developing medical degree program.

Each decade of his career has been distinguished by 'novel discoveries' and many 'firsts' and he could quite easily be described as a mover and shaker in the lipid science field. In the sixties he was instrumental in proving, with Melbourne clinician Fred Collins, that adult humans required essential fatty acids in their diet; in the seventies he discovered that ALA and long chain PUFA were essential nutrients for primates and cats, respectively; in the eighties, he described the low-fat nature of lean Australian beef and lamb which has contributed to the advertising campaign for lean red meat which was initiated in Australia in the late-1980's; in the nineties he discovered lean red meat raised plasma omega-3 levels and that it was a significant source of omega-3 PUFA in humans and co-wrote the first report of the relationship between n-3 PUFA and depression; in the 2000's he discovered that omega-3 deficiency in the perinatal period disturbs brain zinc metabolism; in 2010 he reported that DHA and zinc have opposing effects on expression of histone H3 and H4 expression in human neuronal cells. One of his current research focuses is on studying the role of a docosapentaenoic acid, in rodents and in humans. This fatty acid is present in fish, lean red meat and the human brain, but its

role in biology and health has been neglected until now. He is also actively involved in studies aiming to achieve a greater understanding of the actual “bioavailability” of fatty acids as affected by their different molecular forms.

Andy is also well known for his pioneering work in:

- essential fatty acids relating to requirements for humans, primates and guinea pigs;
- the role of omega-3 in brain and visual function;
- the interaction between omega-3 and zinc in the brain;
- the effect of omega-3 deficiency on visual function and gene expression;
- the effects of diets rich in fish or meat on platelet function;
- the effect of arachidonic acid supplementation on synthesis of vasoactive eicosanoids;
- the lipidomic response of chylomicrons following consumption of diets rich in dairy or soy foods.

He has published extensively in the areas of:

- arachidonic acid content of the diet;
- the fatty acid content of the indigenous diet;
- the role of omega-3 in visual function;
- the anti-inflammatory properties of marine lipids;
- anti-thrombotic properties of polyphenols;
- and co-authored the development of a fatty acid database for quantifying dietary intake of fatty acids, a tool which is widely used today.

Andy has also served in numerous professional bodies, always recognised as providing stable and respected leadership. These roles have included state president of Nutrition Society of Australia for many years followed by a 3 year period as national chairperson of the NSA and Chair of the Australian Nutrition Trust.

AAOCS is not the first to recognise Andy’s excellence in lipid science. In 1999 he was awarded the Supelco-Nicholas Pellick AOCS Research Award, made a fellow of the Australian Institute of Food Science & Technology in 2001 and then made a Fellow of the NSA in 2003. In 2012 he was awarded the prestigious Alexander Leaf Distinguished Scientist Award for Lifetime Achievement in lipid research by the International Society for the Study of Fatty Acids and Lipids (ISSFAL), followed by election as an Honorary Fellow of the Australasian College of Nutritional and Environmental Medicine in the same year.

Andy’s career has also been about training and mentoring students and has supervised 21 PhD students and 22 Master of Science and Honours students, many of which have gone on to develop successful careers of their own following his guidance. In his 46 year career, he has published over 266 publications with over 10,300 citations and a *h*-index of 56. In the words of Bob Gibson, one of Andy’s life-long research collaborators and friends:  
“Andrew Sinclair is a giant on who’s shoulders we all stand”.

As outlined above, his sustained research efforts for nearly five decades highlights the outstanding contribution he has made to the field of lipid science. On behalf of the AAOCS community, we congratulate Andy for his lifetime achievements in lipid research.

**Nomination of Professor Andrew J Sinclair  
for AAOCS Award for Scientific Excellence in Lipid Research**

by

Karen Murphy, PhD, APD, *AAOCS Immediate Past President* and  
Neil Mann, PhD, *Professor (retired) of Human Nutrition*