



# AOCS Australasian Section Biennial Meeting

11–13 September 2017

Château Tanunda | Barossa Valley | South Australia

## Biotechnology, Lipidomics and Nutrition

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.

**Venue: Château Tanunda, Barossa Valley, SA**

**Date: 14<sup>th</sup> September 2017**

### Programme Highlights

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

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

**Registration for this workshop is \$350 (\$150 Student)**

[\(https://aaocs2017.wordpress.com/registration/\)](https://aaocs2017.wordpress.com/registration/)

*Glenn Elliott*  
Committee member  
[glenne@nu-mega.com](mailto:glenne@nu-mega.com)

*Dr Matt Miller*  
President  
[matt.miller@cawthron.org.nz](mailto:matt.miller@cawthron.org.nz)

*Dr Samaneh Fard*  
Organiser  
[samanehf@nu-mega.com](mailto:samanehf@nu-mega.com)

**This workshop is part of the larger biennial AAOCS meeting; Biotechnology, lipidomics and nutrition (11-13<sup>th</sup> September)**

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Thursday 14<sup>th</sup> September 2017, Château Tanunda, Barossa Valley, SA

8:30	<b>Registration</b>	
9:00	Opening / Welcome	Dr Matt Miller (AAOCS President)
9:15	Dietary omega-3 requirements for babies	Prof Bob Gibson (University of Adelaide)
9:45	Regulatory Affairs	Glenn Elliott (Nu-Mega Ingredients)
10:15	The Role and Value of Industry Associations in Policy and Regulation	Jan Carey (Infant Nutrition Council)
10:45	<b>Coffee Break (30 min)</b>	
11:15	Early feeding and obesity	Prof Karen Campbell (Deakin University)
11:45	High Value Nutrition – NZ National Science Challenge. Weaning foods for health – A Kiwi perspective	Assoc. Prof Clare Wall (Auckland University)
12:15	Manufacturing formulas & process consideration	Teguh Jodjaja (The a2 milk Company)
12:45	<b>Lunch (45 min)</b>	
13:30	Importance of maternal DHA for very early pregnancy	Prof Barbara Meyer (University of Wollongong)
14:00	Dietary DHA and arachidonic acid in early life – A public health perspective	Prof Stewart Forsyth (DSM)
14:30	Sialic acids and infant formulas	Prof Bing Wang (Charles Sturt University)
15:00	<b>Coffee Break (30 min)</b>	
15:30	Selecting beneficial protein components from all dairy animals for manufacturing next generation infant formulas.	Dr Jared Raynes (CSIRO)
16:00	The bioactive lipids in milk of human and NZ dairy animals – A Kiwi perspective	Dr Kirill Lagutin (Callaghan Innovation)
16:30	Expectations of perinatal trials with omega-3 fatty acids	Prof Maria Makrides (South Australian Health & Medical Research Institute, SAHMRI)
17:00	Finish	

## Speakers for the Infant Nutrition Workshop

**Robert Gibson**, Professor, Functional Food Science, School of Agriculture Food and Wine, University of Adelaide Director, FOODplus Research Centre, University of Adelaide.

Professor Gibson is a clinical biochemist/nutritionist who has published over 300 peer reviewed papers in a variety of paediatric, nutrition and biochemical journals. He has designed and conducted a range of randomised clinical trials involving nutrition interventions in the perinatal period. He has tested the effects of interventions with iron, selenium, probiotics, nucleotides and long chain polyunsaturated fatty acids (PUFA) on infant biochemistry, growth, physiology and developmental outcome. Prof Gibson is committed to linking Agriculture & Food production to the needs of improving human health. Professor Gibson was awarded the 2003 Nutrition Society of Australia, Research Medal and in 2004 was made a Fellow, Nutrition Society of Australia. In 2012 he was awarded the Alexander Leaf Distinguished Scientist Award for Lifetime Achievement and in 2016 made a Fellow of the International Society for the Study of Fatty Acids and Lipids (ISSFAL).

In 2009 he established the FOODplus Research Centre <http://www.adelaide.edu.au/foodplus/>



**Glenn Elliot** has 17 years' experience in the food industry within R&D, quality, regulatory positions. He has been with Nu-Mega Ingredients for the past 12 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.



**Jan Carey** is the CEO of the Infant Nutrition Council (INC), an organisation that represents the infant formula industry in Australia and New Zealand. She has been INC's CEO since it was founded in 2009 and was instrumental in its creation and the development of its strategic plan. Jan has developed INC into a strategic organisation giving it a regional identity and a focus on the broad sweep of issues and key priorities for the infant formula industry today. She has expanded the footprint and reputation of INC to foster trust and build the credibility of its members in the New Zealand, Australian and export markets. Prior to her appointment, Jan was responsible for driving the work of the not for profit organisation SIDS and Kids, Australia which is dedicated to saving the lives of babies and children during pregnancy, birth, infancy and childhood and supporting bereaved families.



**Karen Campbell** is the Professor of Population Nutrition in the School of Exercise and Nutrition Science and the Institute for Physical Activity and Nutrition (IPAN) at Deakin University. She also co-directs the national Early Prevention of Obesity in Childhood Centre for Research Excellence. She has developed a profile nationally and internationally for her work in early childhood, heading a program of research on early childhood nutrition. In this program, she leads work addressing early childhood obesity prevention; describing correlates of parenting and home environments on child lifestyle behaviours; and assessing complex interventions seeking to influence early childhood diet and lifestyle behaviours. These randomised controlled trials include interventions to promote development of healthy eating and active play from birth through to 5 years; interventions to reduce children's sodium intake; interventions to increase fruit and vegetable consumption; and interventions that seek to influence gestational weight outcomes. Public health utility is a key feature of Professor Campbell's research and is evidenced by the State level adoption of the largest of her intervention studies, The Infant Program. This NHMRC-funded randomised controlled trial intervention, on which she was Principal Investigator, tested the effectiveness of a healthy eating, active play intervention with first-time parents in existing social groups (first-time parent groups). The positive findings of this trial – including high levels of parent engagement, improved dietary outcomes for mothers and improved dietary and sedentary outcomes for young children, underpins the Victorian Department of Health's adaption of the Infant Program for use within the 14 local government areas.



**Clare Wall** is the Head of the Discipline of Nutrition and Dietetics at The University of Auckland, Medical School and Director of the MHS Nutrition and Dietetic Programme. After qualifying as a dietitian in the UK in 1984, she specialised in paediatric dietetics, working in both the UK and Australia. She has had many years of practical experience assisting parents, children and adolescents with nutrition advice and support. Clare is an active member of the nutrition community in New Zealand and serves on a number of national review panels and committees in the infant and childhood nutrition area. Claire's main research focus is the interrelationship between the determinants of nutritional status and health outcomes in the paediatric population. She is currently a collaborator on a number of research projects in pregnancy and early life including: Growing up in New Zealand; the Auckland Birthweight Collaborative Study; the SCOPE study; the HUMBA study, the Growing up Milk lite study and the High Value Nutrition, NZ National Science Challenge - Weaning foods for health.



**Teguh Jodjaja** worked for seven years as food technologist at Synlait Milk Limited, with 5 years specialized in formulation and development of nutritional product, primarily infant formula powder. Involved in various nutritional powder development project with various dairy companies, local and international. Currently working at a2 Milk Limited as technical application manager, which include NPD work and technical input for various nutritional products.



**Barbara Meyer**, after studying Biochemistry at Monash University in Australia, Barbara Meyer undertook her PhD at the Baker Medical Research Institute in Melbourne, Australia. Barbara's first academic appointment was in the Department of Biomedical Science at the University of Wollongong in 1992 and is now Professor in the School of Medicine. Her current research is in the field of lipid and fatty acid metabolism; notably the role of omega-3 fatty acids in health and disease including mental health, healthy and complicated pregnancies.



**Stewart Forsyth** was previously Consultant Paediatrician with responsibility for Neonatal Services in Tayside, Scotland. Held position of Clinical Group Director for Women and Children's Services and latterly appointed Medical Director in NHS Tayside. For several years was the National Advisor to the Scottish Government on Child Health Services. Has been an invited external reviewer of maternity, obstetrics and neonatal services by the UK and Scottish Governments. Has a longstanding research interest in infant and child nutrition and holds an Honorary Professorship from the University of Dundee, Scotland. Initial research focus was on parenteral nutrition for the sick preterm infant and the early and late health benefits of breast feeding and complementary feeding. For many years, has had a research interest in the role of long chain polyunsaturated fatty acids in infant and child health. More recently, has published on global aspects of policy, practice, and politics of infant and child nutrition.



**Bing Wang**, neonatologist, molecular biologist, animal physiologist and nutritionist received her Medical Doctor degree from Tianjin Medical University, China, and a Ph.D. in Nutritional Biochemistry from the University of Sydney, Australia. Currently Prof. Wang holds adjunct Professor at Xiamen University, P.R. China and a registered nutritionist in Australia. Professor Wang has led the Nutritional Neurodevelopment Research programs in both academia and industry before being recruited to Charles Sturt University in Dec. 2012. Her areas of expertise include molecular & cell biology, biochemistry, bioinformatics, neuroimaging (MRI & MRS) and nutritional intervention on cognitive function assessment in both animal and humans. She is well accomplished in translating basic science discovery to human clinical trials for the development of functional food products. She has made major contributions to the field of Nutritional Neurobiology and Glycobiology, and thus has emerged as an internationally recognized leader on the nutritional significance of human milk sialylglycoconjugates and brain cognitive development.



**Jared Raynes** completed his PhD in Biochemistry at the University of Canterbury, New Zealand, investigating proteins as bionanomaterials. Following on from a short postdoc at Callaghan Innovation he moved to CSIRO in Melbourne in 2012 to undertake an OCE postdoctoral fellow investigating the structure and function of the casein milk proteins, particularly the structure of the casein micelle. He is now a research scientist in the Food Structure group at CSIRO and his research areas include the use of advanced biophysical techniques such as small angle X-ray and neutron scattering to continue investigating the casein micelles of a variety of mammals, the use of genetic selection as a means to increase shelf-life stability and manufacture unique dairy products, including humanised infant formula and most recently using protein structuring to manipulate the digestion of foods and manufacture unique nanocarriers of bioactive compounds.



**Kirill Lagutin** is a Senior Research Scientist in the Lipid team of Integrated Biotechnology group (Callaghan Innovation) based in Wellington. He graduated from the Far Eastern State University (Vladivostok, Russia) in 2003 and moved to NZ in 2008 to work in Industrial Research Limited (now Callaghan Innovation) He completed his PhD in 2013 investigating novel lipids from extremophilic bacteria discovered in New Zealand geothermal areas. His interests include characterisation, enrichment and isolation of various beneficial lipids from a wide range of sources (meat, dairy, plant and seafood products), as well as development of analytical methods. He is also the Quality Manager of Lipid Analytical Services (LAS) within the Lipid team, which provides ISO 17025 accredited analysis of dairy phospholipids using  $^{31}\text{P}$ -NMR.

Callaghan Innovation is a government agency supporting hi-tech businesses in New Zealand. Integrated Biotechnology Group is a set of interconnected teams with a vast expertise in many fields including lipids, proteins, low-molecular-weight natural products, fermentation, downstream processing and others.



**Maria Makrides** is the Theme Leader for Healthy Mothers, Babies and Children at the South Australian Health and Medical Research Institute (SAHMRI) and leads the Child Nutrition Research Centre which is based at the Women's and Children's Hospital. As a research dietitian, Maria is committed to improving the nutrition and health of mothers and their babies through the conduct and translation of high quality research. She has over 210 peer reviewed publications including in the prestigious journals the Lancet, the New England Journal of Medicine, the Journal of the American Medical Association and the British Medical Journal. Maria's group has conducted some of the key intervention trials involving omega-3 supplements in perinatal nutrition, and has been recognised with a National Health Medical Research Council (NHMRC) Centre for Research Excellence in Foods for Future Australians.

<https://www.sahmriresearch.org/our-research/themes/healthy-mothers-babies-children/theme-leader-biography>

