

ISSFAL



ISSFAL 2012

**10TH CONGRESS OF THE
INTERNATIONAL
SOCIETY FOR THE STUDY OF
FATTY ACIDS AND LIPIDS**

MAY 26-30, 2012
VANCOUVER, CANADA



FINAL PROGRAM



MeadJohnson
PEDIATRIC NUTRITION
INSTITUTE

A Global Network Dedicated to the Nutrition Needs of Infants and Children Worldwide

The Mead Johnson Pediatric Nutrition Institute (MJPNI) helps to deliver nutrition solutions for pediatric populations through advanced research and technologies.

The advancement and application of pediatric nutrition science is made possible by a global network of scientists, scientific collaborations and technology centers around the world.

MJPNI is proud to play a role in pursuing the benefits of science-based nutrition on behalf of children today and tomorrow.

Please visit us at our exhibit booth to learn about recent developments in lipid research.



Contents

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10TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

Contents

Hotel Map	2
Welcome	3
General Information	4
Congress Sponsors	5
Area Map	6
Exhibits & Posters Room	7
Sponsors & Exhibitors	8
Achievement Awards	11
New Investigator Awards	13
Faculty	14
Final Program	21
Posters & Presenters	31

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Canada

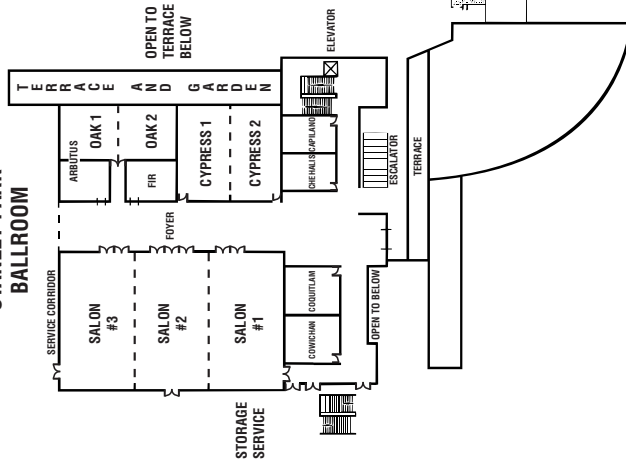
Phone (604) 687-3102
Toll Free 1-800-937-8461



Abstracts for all presentations
and posters are included on the
memory stick provided as part
of the registration package.

Hotel Plan

LEVEL TWO CONFERENCE FACILITIES STANLEY PARK BALLROOM



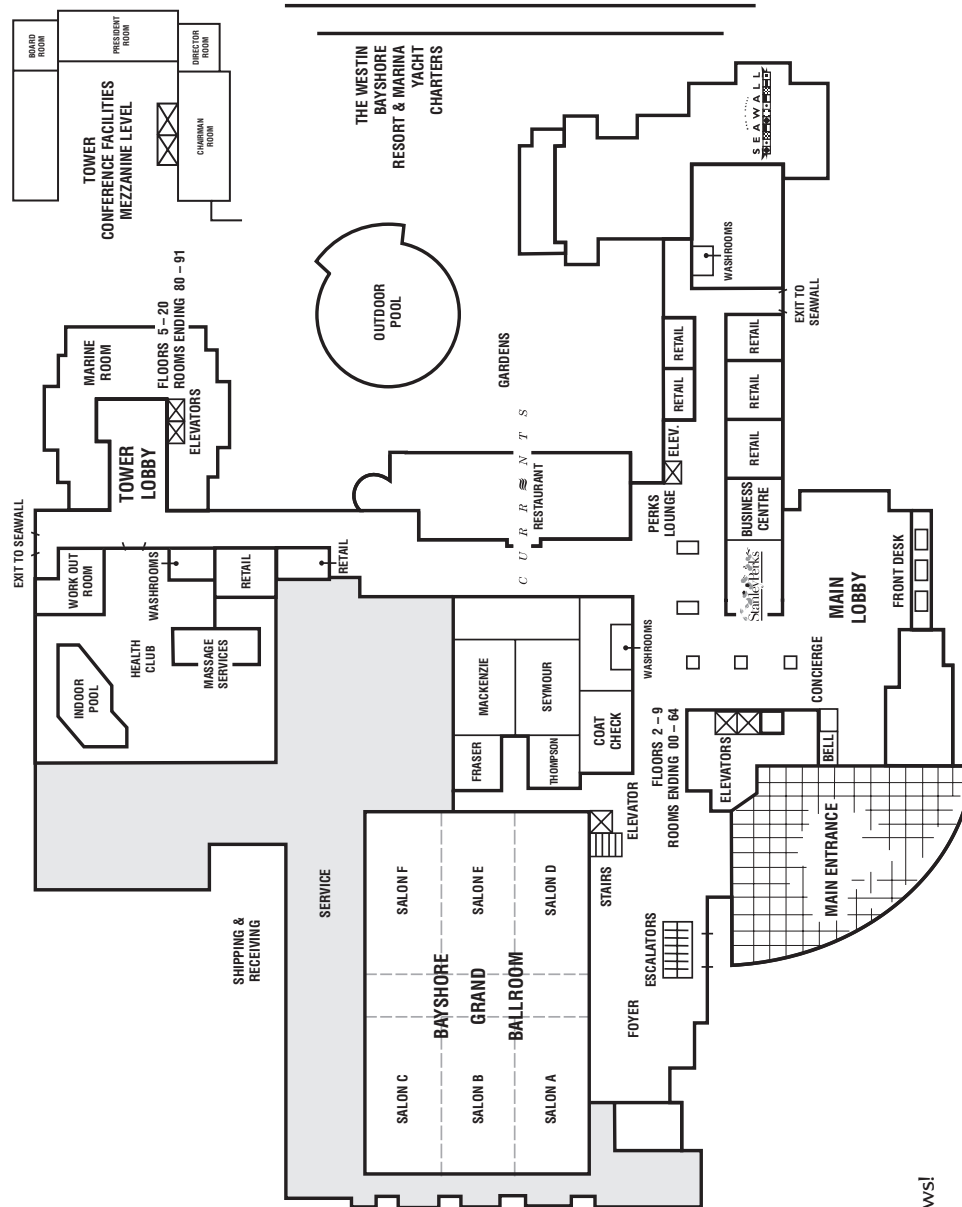
Grab a coffee and a snack on the go!



Located on spectacular Coal Harbour,
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C U R R ≈ N T S
at Bayshore

Experience Pacific Northwest Cuisine at its finest!



THE WESTIN BAYSHORE
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Vancouver

Welcome

On behalf of the organizing committee we welcome you to Vancouver and ISSFAL 2012 in the Westin Bayshore Hotel, which is located right on the water overlooking Stanley Park (the world's largest urban park), the North Shore Mountains and the Pacific Ocean.

ISSFAL 2012 follows a tradition of high-level conferences devoted to both fundamental and applied research on the biological effects of fatty acids and lipid metabolism in health and disease. The program is comprised of 12 plenary lectures and 32 concurrent symposia with a mixture of invited speakers and oral presentations of submitted abstracts. We have assembled an outstanding group of experts from around the world to present the plenary lectures. The three poster sessions and oral abstract presentations will showcase the 'cutting-edge' science in the lipid and fatty acid field.

Back by popular demand is the 'ISSFAL Dinner Debate'. This year two well known, erudite ISSFAL members will debate the question of "Who Listens to Dietary Recommendations?" while the audience enjoys a Cantonese dining experience at the Imperial Chinese Seafood Restaurant, located in the historical Marine Building.

The ISSFAL biennial meeting gives us the opportunity to recognize a scientist who has made major contributions to the field throughout their career and a young scientist who is well on their way to being a future leader. Recipients of Alexander Leaf Lifetime Achievement Award and the ISSFAL Early Career Award are both asked to present summaries of the work which has resulted in these awards to the broader conference audience.

The committee has also made some new additions to this year's ISSFAL program. Two Global Interest Lectures are scheduled that address topics of interest to all scientists in the lipid and fatty acid fields. We also have a new competition for our graduate students entitled the "Three Minute Thesis." Where students have just three minutes to demonstrate their ability to communicate their PhD research to a panel of judges.



ISSFAL

Consistent with this new competition, the Congress continues to place a major focus on highlighting the work of trainees and new investigators. We encourage you to visit the posters/oral presentations of the 44 new investigators, listed in the program. The best three judged posters from the top 11 New Investigators will be presented at lunch time on the final day of the conference.

We have strived to provide a strong networking environment for the scientific and industry communities to enable everyone to renew old acquaintances and establish new ones which hopefully will extend beyond our time together in Vancouver. Vancouver is a stunning multi-cultural city that is consistently voted one of the world's most livable cities. The city has a spectacular setting bounded by the Pacific Ocean and coastal mountains. We hope that after the scientific session you have the opportunity to enjoy this wonderful city.

Finally, we would like to thank the many sponsors and supporters who have contributed to making this year's conference both possible and successful.

We hope that you enjoy this year's academic and social program!

Yours Sincerely



Tom Clandinin




Peter Clough




Catherine Field




Sheila Innis





Delegate & Speaker Information

ISSFAL REGISTRATION DESK

★ Bayshore Grand Foyer (Lobby level)

The 2012 ISSFAL Desk will be open during the following times:

- Saturday, May 26 14:00 - 19:30
- Sunday, May 27 06:30 - 17:30
- Monday, May 28 06:30 - 17:00
- Tuesday, May 29 06:30 - 18:30
- Wednesday, May 30 07:30 - 10:00

NAME BADGE POLICY

Delegates are required to wear their name badge at all times and will not be granted access to the Congress session or events without it. There will be a \$50⁰⁰ reprint fee for any lost or misplaced badge. This is to ensure the access to the Congress is properly managed. Your badge grants you access to the ISSFAL 2012 Congress. Please handle it with care.

CERTIFICATE OF ATTENDANCE

A Certificate of Attendance will be distributed to each registered delegate while at the ISSFAL 2012 Congress. This is included in the delegate bag with Congress materials.

EXHIBIT HALL

★ Bayshore Grand D/E/F & Bayshore Grand Foyer (Lobby level)

Exhibits will be available for viewing at these times:

- Saturday, May 26 19:00 - 22:00
- Sunday, May 27 10:30 - 15:15
- Monday, May 28 10:30 - 15:30
- Tuesday, May 29 10:30 - 15:30

POSTERS

★ Bayshore Grand D/E/F (Lobby level)

There are three separate poster sessions during the ISSFAL 2012 Congress:

- Session I / Sunday, May 27 08:00 - 19:30
- Session II / Monday, May 28 08:00 - 17:30
- Session III / Tuesday, May 29 08:00 - 15:30

Poster presenters will be available by their posters at the times indicated in the programme and also at the afternoon coffee break of that day. Please refer to the Poster section in this program for details on posters displayed for each session.

Poster presenters are asked to refer to the guidelines that were previously distributed for details regarding format, size, content, set-up and tear-down times. Any material remaining after a designated session's tear-down time will be removed and discarded by Congress management.

SPEAKER READY ROOM

★ MacKenzie (Lobby level)

The Speaker Ready Room will be open at the following times:

- Saturday, May 26 14:00 - 19:00
- Sunday, May 27 07:30 - 16:30
- Monday, May 28 07:30 - 16:30
- Tuesday, May 29 07:30 - 17:00

An audio-visual technician will be available to assist speakers with checking their presentation. Please bring a copy of your presentation to the Speaker Ready Room on a flash drive/memory stick. Due to the large number of presentations in the program, speakers should visit the Speaker Ready Room no later than four (4) hours prior to the scheduled session, and preferably on the day prior to the presentation.

Scheduled Meals & Social Program

COFFEE BREAKS & LUNCHESES

★ Bayshore Grand D/E/F & Foyer (Lobby level)

ISSFAL 2012 Congress registration includes morning and afternoon coffee breaks on Sunday, Monday and Tuesday, May 27-29; and lunch on Sunday and Monday, May 27 and 28. Also included with full registration are the Welcome Reception, Poster Reception and Gala Dinner.

WELCOME RECEPTION

SATURDAY, MAY 26 / 19:00 - 22:00

★ Bayshore Grand D/E/F & Foyer (Lobby level)

Hors d'oeuvres and one host drink ticket will be provided. A cash bar will be available. Your name badge (for full congress registrations) and/or purchased ticket will be required to gain access.

POSTER SESSION & RECEPTION

SUNDAY, MAY 27 / 17:00 - 19:15

★ Bayshore Grand D/E/F & Foyer (Lobby level)

Wine and cheese will be served during Sunday evening's Poster Session. One host drink ticket will be provided and a cash bar will be available. Your name badge (for full congress registrations) and/or purchased ticket will be required to gain access.

DINNER DEBATE (Off-site)

MONDAY, MAY 28 / 19:30 - 22:00

★ Imperial Chinese Seafood Restaurant

Please meet in hotel lobby at 19:10. **Pre-registration is required and attendance is limited.**

GALA DINNER

TUESDAY, MAY 29 / 19:30 - 22:00

★ Bayshore Grand A/B/C (Lobby level)

Join fellow delegates at this gala night as we bid a fond farewell to Vancouver. A cash bar will be available. Your name badge (for full congress registrations) and/or purchased ticket will be required to gain access.

BREAKFAST WORKSHOPS

From 07:00 - 08:00 each day. **Pre-registration is required and attendance is limited.**

SUNDAY, MAY 27 ★ Stanley Park 3 (Level 2)

MONDAY, MAY 28 ★ Seymour (Lobby level)

TUESDAY, MAY 29 ★ Stanley Park 3 (Level 2)

Business Centre – The Business Centre at the Westin Bayshore is located in the main lobby across from Currents Restaurant. It is open 24 hours/day via guest room key access. Payment is via credit card.

Internet Access – ISSFAL guests staying at The Westin Bayshore will have complimentary guestroom internet use. This will also provide complimentary access in the "public" areas only of the hotel (lobby, restaurant(s), etc). Access within the conference and meeting rooms is subject to a fee.

Smoking – The Westin Bayshore is a non-smoking facility. Smoking is only permitted outside the hotel. This is the same policy for all local restaurants, bars and public buildings.

Lost Property – Please report any lost or unattended items immediately to the Congress staff. Should you lose anything while at the Congress, please enquire at the ISSFAL Registration Desk where any lost property will be held.

Acknowledgement

ISSFAL THANKS THE 10TH CONGRESS SPONSORS

PLATINUM



GOLD



SILVER



GALA DINNER



WELCOME RECEPTION



NEW INVESTIGATOR AWARDS



BREAKFAST WORKSHOPS

Sunday



Monday



Tuesday



SESSION SPONSORS



DELEGATE BAGS



LANYARDS



SATELLITE SYMPOSIA I

Maternal, Infant and Child Nutrition



MONDAY COFFEE BREAKS



Thank You!

The support that the ISSFAL 2012 Congress has received from sponsors, exhibitors and other supporters is critically important in keeping the cost of registration at a reasonable level, and also to enable the award of 40 free registrations (worth over U.S.\$ 20,000) to New Investigator Award winners, thus encouraging good investigators into, and to remain in, the field of fatty acid research.

The meeting organisers and the Society appreciate this support, and urge delegates to take every opportunity to express this appreciation to the representatives of sponsors, exhibitors and other supporters that they come into contact with during the meeting and afterwards.

Area Map



EQUAZEN eye qTM

The omega-3 & -6 product
with proven clinical efficacy¹⁻²



JOIN US AT OUR VIFOR
PHARMA BOOTH TO UPDATE
YOUR KNOWLEDGE ABOUT
EQUAZEN eye qTM

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1. Sinn N and Bryan J. Effect of Supplementation with Polyunsaturated Fatty Acids and Micronutrients on Learning and Behavior Problems Associated with Child ADHD. J. Dev. Behav. Pediatr. 2007; 28(2):82-91. 2. Richardson AJ and Montgomery P. The Oxford-Durham Study: A Randomized, Controlled Trial of Dietary Supplementation With Fatty Acids in Children With Developmental Coordination Disorder. Pediatrics 2005; 115(5):1360-1366.

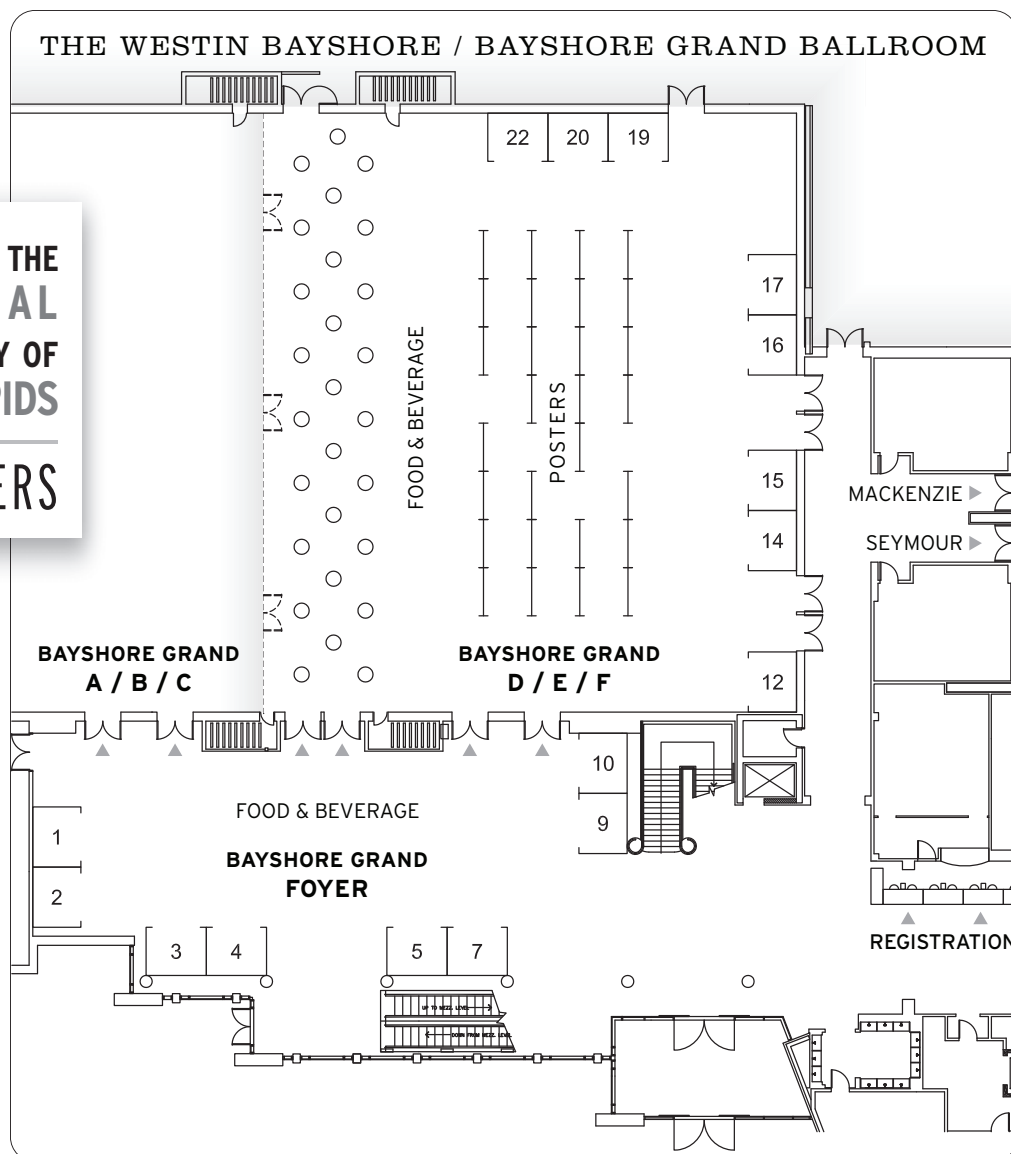
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EXHIBITS & POSTERS

SEE POSTER LISTINGS
AND SCHEDULE
ON PAGE 31



Exhibitors

DSM Nutritional Products	1 & 2
Bioriginal	3 & 4
Nordic Naturals	5
Minami Nutrition	7
Vifor Pharma	9 & 10
Croda Healthcare	12
Mead Johnson	14 & 15
OmegaQuant	16
California Walnut Commission	17
Carlson Labs	19
Equateq BASF Pharma (Callanish)	20
Amarin	22

Sponsors & Exhibitors

Aker BioMarine

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★ Gala Dinner Sponsor

Aker BioMarine is an integrated biotechnology company - uniquely positioned to create value krill derived biotech products. The company is supplying biomarine ingredients through an optimized value chain from raw materials to customer.

Kjetil Berge kjetil.berge@akerbiomarine.com

Alberta Livestock and Meat Agency (ALMA)

www.alma.alberta.ca

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ALMA is a provincial government agency established to help advance the Alberta Livestock and Meat Strategy – a roadmap designed to drive positive change within Alberta's livestock and meat industry. ALMA's programs stimulate innovation and encourage the adoption of best practices, develop new technologies and state-of-the-art processes. The agency's priority areas are market access, streamlining the regulatory burden, synergistic growth, domestic positioning and information flow.

Amarin Neuroscience Ltd.

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★ Welcome Reception Sponsor

Amarin is committed to improving the lives of patients suffering from central nervous system (CNS) and cardiovascular diseases. Our goal is to be a leader in the research, development and commercialization of novel drugs that address unmet patient needs.

Mehar Manku mehar.manku@amarincorp.com

American Pistachio Growers

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American Pistachio Growers is a voluntary agricultural trade association representing growers, processors and industry partners in California, Arizona and New Mexico. Governed by an 18-member Board of Directors, we're headquartered in Fresno, California. Pistachio nutrition research, government affairs, product development and market development are key activities conducted by the Association.

Becel Centre for Heart Health

www.becel.ca

★ Breakfast Workshop Sponsor

Becel has always believed in the importance of caring for your heart. That's the reason Becel margarine was made, and that's the reason we are dedicated to educating Canadians about the importance of heart healthy living. Everything we do, from new product development to consumer education, is based on scientific research in cardiovascular health and nutrition.

Maria Gustafsson maria.gustafsson@unilever.com

Bioriginal

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★ Silver Sponsor

Bioriginal is a world leader in the production and distribution of high-quality, innovative Essential Fatty Acid (EFA) solutions. Our EFAs are available in a full range of Omega-3, Omega-6 and Omega-9 actives from both marine and plant sources in various delivery formats.

Johan Kamphuis jkamphuis@bioriginal.nl

California Walnut Commission

www.walnuts.org

★ Session Sponsor

The California Walnut Commission, established in 1987, is funded by mandatory assessments of the growers. The Commission is an agency of the State of California that works in concurrence with the Secretary of the California Department of Food and Agriculture (CDFA). The CWC is mainly involved in health research and export market development activities.

Carol Berg Sloan cbsrd@verizon.net

Carlson Labs

www.carlsonlabs.com

★ Session Sponsor

Carlson Laboratories began with one vitamin E formula. Since then, the line has grown to become the most complete line of natural vitamin E products in the world. Carlson Laboratories product range has expanded through the years to meet the nutritional needs of our customers.

Kazia Bauer-Starz kazia@carlsonlabs.com

Child & Family Research Institute

www.cfri.ca

★ Session Sponsor

The Child & Family Research Institute (CFRI) is dedicated to world-class research spanning a wide range of children's and women's health concerns. It is the largest research institute of its kind in Western Canada.

Sheila Innis sinnis@cw.bc.ca

Croda Healthcare

www.croda.com

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Superior quality and purity makes Croda Health Care a supplier of choice in the nutritional, pharmaceutical, dermatological and animal health care markets across the globe. With a wide range of products including excipients, solubilizers, plant and marine lipid concentrates, proteins and biopolymers, Croda's health care portfolio is unsurpassed in excellence and designed to meet the most stringent customer demands.

Karen Chen karen.chen@croda.com

Dow AgroSciences

www.dowagro.com

★ Session Sponsor

Our products and services are designed to solve problems for our customers, boosting ag productivity to maximum sustainable levels to meet the needs of our world's expanding population. Our research focus is on game-changing technologies to provide better crops, better plant nutrition and more effective pest management solutions.

Rhonda Ryan RRyan2@dow.com



Sponsors & Exhibitors

DSM Nutritional Products

www.dsm.com

★ Platinum Sponsor

DSM - the Life Sciences and Materials Sciences Company. Royal DSM N.V. creates innovative products and services in Life Sciences and Materials Sciences that contribute to the quality of life. DSM Nutritional Products, a division of DSM, is the world's leading supplier of vitamins, carotenoids and other fine chemicals to the feed, food, pharmaceutical and personal care industries.

Norman Salem, Jr. norman.salem@dsm.com

Efamol Ltd.

www.efamol.com

★ Delegate Bag Sponsor

Efamol Ltd has for 30 years pioneered research, development, production and clinical testing of essential fatty acids. Current products are positioned for cognitive performance and decline, behaviour and learning skills, pregnancy/lactation and skin health. Products are sold in more than 30 countries worldwide.

Peter Clough honsecretary@issfal.org
Nancy Morse. nancy.morse@eastlink.ca

Epax

www.epax.com

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EPAX AS - world leading supplier of highly concentrated, marine-derived EPA/DHA Omega-3 oils to the global dietary supplement industry. Top-quality formulas with different EPA/DHA ratios and concentrations targeting specific health conditions. Extensively backed by clinical studies. GMP-certified for API products.

Atle Skattebol. atle.skattebol@epax.com

Equateq | BASF Pharma (Callanish)

www.equateq.com

★ Exhibitor

Equateq's cGMP-facility in Scotland manufactures all key fatty acids along the Omega-3 and Omega-6 pathways and novel derivatives at up to 99% purity. Equateq, now BASF Pharma (Callanish), delivers research and commercial quantities of lipids to the pharmaceutical, nutraceutical and food sectors.

Adrian Hughes. adrian@equateq.com
Adam Kelliher adam@equateq.com

Fresenius Kabi

www.fresenius-kabi.com

★ Session Sponsor

Fresenius Kabi is the leader in infusion therapy and clinical nutrition in Europe and in its most important countries of Latin America and Asia Pacific. Within I.V. generic drugs, Fresenius Kabi counts among the leading suppliers in the U.S. market.

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Heinrich Topp. heinrich.topp@fresenius-kabi.com

Malaysian Palm Oil Council

www.mpoc.org.my

★ New Investigator Awards Sponsor

The MPOC's mission is to promote the market expansion of Malaysian palm oil and its products by enhancing the image of palm oil and creating better acceptance of palm oil through awareness of various technological and economic advantages (techno-economic advantages) and environmental sustainability.

Kalyana Sundram kalyana@mpoc.org.my

Mead Johnson Pediatric Nutrition Institute

www.meadjohnson.com

★ Platinum Sponsor

The MJJNI connects innovative scientific technology and research with cutting-edge manufacturing and quality processes. We have established a growing global network of Mead Johnson research and development scientists, research laboratories and facilities that put us at the forefront of pediatric nutrition science.

Deborah Diersen-Schade deb.diersen-schade@mjn.com

Minami Nutrition

www.minami-nutrition.com

★ Silver Sponsor

Minami Nutrition are purveyors of the highest concentrated omega-3, fish oils supplement that are commercially available in the world. Ranging from 75% to 95% omega-3 concentrates, their oils are made with specific ratios of EPA:DHA that address specific health concerns. Minami does not use molecular distillation to make its oils, but rather uses a patented supercritical CO₂ distillation process - at low temperature with no use of harsh solvents like hexane.

Katlijn De Koninck katlijn@minami-nutrition.com

Nordic Naturals

www.nordicnaturals.com

★ Silver Sponsor

Nordic Naturals is dedicated to improving the overall health of our communities by providing awareness of the proper balance of essential fats, and stressing the importance of a healthy diet and lifestyle. Through our multi-patented manufacturing processes, accompanied by leading-edge technologies, we deliver fish oil with exceptional freshness, taste, and purity levels. All our fish oils are third party tested and show no detectable levels of environmental toxins. Nordic Naturals is committed to staying abreast with research in order to manufacture and provide the freshest and purest fish oils in the world.

Keri Marshall kmarshall@nordicnaturals.com

OmegaQuant

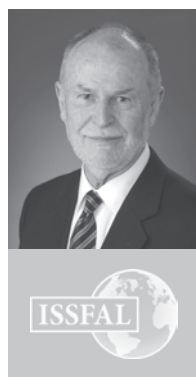
www.omegaquant.com

★ Silver Sponsor

OmegaQuant is North America's foremost, CLIA certified, omega 3 blood testing laboratory. The HS Omega 3 Index, OmegaQuant's proprietary test, is the result of 30 years of research by Dr. William Harris.

William Harris bill@omegaquant.com

Achievement Awards



Alexander Leaf Distinguished Scientist Award for Lifetime Achievement

Dr. Robert Gibson

Senior NHMRC Research Fellow and Director of the FOODplus Research Centre, University of Adelaide, Australia

Robert Gibson is a biochemist/nutritionist who has published over 190 peer reviewed papers in a variety of paediatric, nutrition and biochemical journals. He has been actively involved in fatty acid research in cells, animals and humans for 35 years. He has designed and conducted a range of randomised clinical trials involving nutrition interventions in the perinatal period. Dr. Gibson has tested the effects of interventions with iron, selenium, probiotics, nucleotides and long chain polyunsaturated fatty acids (PUFA) in maternal/infant biochemistry, growth, physiology and developmental outcome.

PRESENTING ON MONDAY, MAY 28:

Clinical Effects of Fats: Scaly Tales from Down Under

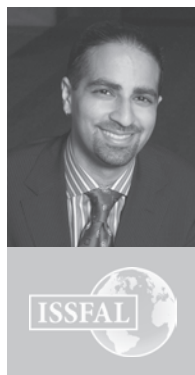
Clinical studies and observations were important in the early studies of essential fatty acids and they have remained an inspiration of Dr Robert Gibson and his team. Dr Gibson's first appointment in the Department of Paediatrics at the Flinders Medical Centre in Adelaide set the focus of much of his research career. While his early work was concentrated on the basic biochemistry of fatty acids in animal models, this clinical setting fostered a shift to peri-natal nutrition. After writing a seminal paper on the fatty acid composition of human breast milk Dr Gibson directed research in to the role of milks (breast and formula) on the fatty acid status and health of term infants. Together with his collaborators, Bob Gibson was the first to demonstrate that term infants receiving breast milk (naturally containing omega-3 fatty acids) had improved neural maturity and greater erythrocyte DHA relative to those fed formula (which at the time did not contain DHA and EPA). A subsequent randomised trial published in the Lancet was also the first to reveal in term infants that the disparity between breast and formula feeding could be corrected by the addition of fish oil, containing DHA, to infant formula. These findings, together with the report showing that breastfed infants had higher brain DHA concentrations than those fed formula that was published in AJCN provided compelling evidence for a role for dietary DHA in ensuring optimal infant development. These three seminal studies sparked in excess of 30 new randomised controlled trials world-wide, four of which were conducted by Dr Gibson and his group. Importantly, these findings have been pivotal in directing infant formula regulations, and as a result of this research n-3 LCPUFA are included in all commercial infant formulas.

Dr Gibson's research team moved into the large scale clinical trial arena when they received Australian federal government funding for the DINO trial that is still the largest randomised controlled trial (n=650 infants) investigating the role of DHA in preterm infants. The DINO trial demonstrated that a consistent benefit on the neurodevelopment of preterm infants was dependant on a level of DHA 3 times higher than current practice. The trial also demonstrated the beneficial effect of adequate DHA (1% of total dietary fats) on respiratory outcomes such as chronic lung disease. Most importantly the trial demonstrated the safety of adequate DHA as indicated by normal growth patterns in the treated infants. The primary paper was published in JAMA in 2009 and the study has led to 10 additional publications, most in high impact journals. The DINO cohort is being followed up at 7 years to determine whether the effects of DHA on neurodevelopment are sustained.

The Gibson team went on to conduct the DOMInO trial as the largest randomised controlled trial to date (n=2399) to investigate the impact of maternal DHA supplementation during pregnancy on the incidence of maternal depression and neurodevelopmental outcomes in the children. While there was no benefit on post-natal depression there was a significant reduction in the number of infants with mild cognitive delay at 18 months despite no change in the mean cognitive scores. An important secondary outcome from the DOMInO trial was that the incidence of early preterm birth was halved by DHA treatment in pregnancy. The primary paper was published in JAMA in 2010 and has set new international benchmarks for clinical trials of nutritional interventions in pregnancy. DOMInO has generated a number of follow-up studies, which will determine the impact of maternal DHA supplementation on various other important clinical outcomes, including allergy and asthma, body fat mass and insulin sensitivity in children. These studies have the potential to identify an intervention which could feasibly be applied to improve children's health on a population level.

Dr Gibson's research is demonstrating that omega-3 LCPUFA are proving to have clinical benefits commensurate with that of some pharmaceuticals, and offers new hope for many clinical conditions.

Achievement Awards



Early Career Award

Dr. S. Raza Shaikh

East Carolina University

Dr. S. Raza Shaikh will receive the 2012 ISSFAL Early Career Award in Vancouver at the 10th ISSFAL Biennial Congress. Dr. Shaikh will present the Early Career Award Lecture.

PRESENTING ON TUESDAY, MAY 29:

N-3 Fatty Acids and Membrane Microdomains:

From Model Membranes to Lymphocyte Function

Eicosapentaenoic (EPA) and docosahexaenoic (DHA) acid are bioactive n-3 polyunsaturated fatty acids abundant in fish oil. These fatty acids have emerging utility for the treatment of chronic inflammation; however, a major limitation toward translating EPA/DHA into the clinic is an incomplete understanding of their molecular mechanisms. One mechanism by which these fatty acids exert their functional effects is by disrupting the biophysical organization of plasma membrane lipid microdomains (i.e. signalosomes, rafts, caveolae). This mechanism is of significance since the plasma membrane regulates most downstream effects of EPA/DHA. We investigated how EPA/DHA target the molecular organization of lipid microdomains in several model systems (model membranes, cell culture, and animal studies) using a combination of spectroscopic, biochemical and quantitative imaging methods. Our initial model membrane studies established that the unique molecular structure of DHA, compared to other fatty acids, served to disrupt membrane microdomain organization by avoiding steric interactions with cholesterol. Subsequent studies using cell culture and mouse models showed DHA, but not EPA, increased the size and molecular order of B cell lipid microdomains, induced by cholera toxin cross-linking. DHA also disrupted the clustering of specific proteins on the micro- and nanometer size scales. Finally, we determined the downstream functional consequences of disrupting B cell lipid microdomains. B cells isolated from mice fed fish oil or treated with fatty acids in vitro suppressed antigen presentation to transgenic T cells, a potential therapeutic target in the inflammatory response. Taken together, our data suggest a model in which DHA, more than EPA, disrupts the size and order of lipid microdomains in order to modulate B lymphocyte function.

Dr. S. Raza Shaikh is an Assistant Professor in the Department of Biochemistry & Molecular Biology and a member of the East Carolina Diabetes and Obesity Institute at East Carolina University. He received his B.S. in Biology/Psychology from Purdue University in 1998. Raza joined the lab of Dr. Bill Stillwell in 1999 where he studied how n-3 fatty acids disrupted lipid microdomain organization in model membranes. He completed his Ph.D. in Biophysics from Indiana University in 2004 and pursued a postdoctoral fellowship in cellular immunology at The Johns Hopkins University from 2004-08. As a post-doctoral fellow, he established how different fatty acids suppressed the function of B cells by targeting plasma membrane molecular organization in the lab of Dr. Michael Edidin. Raza started his faculty position as an Assistant Professor in 2008. He has published a total of 23 research articles, 7 invited review articles, and co-authored 2 book chapters. He is currently funded by the NIH to determine how n-3 fatty acids suppress chronic inflammation by disrupting plasma membrane organization of antigen presenting cells. He is also funded by Stealth Peptides to study how Bendavia disrupts the molecular organization of the inner mitochondrial membrane in a diabetes model.

New Investigator Awards



New Investigators

We are pleased to announce the 44 New Investigator Award winners, which originate from nine different countries. NIA winners are awarded a free registration for this meeting, the opportunity to apply for an ISSFAL travel award and have received an invitation to a special New Investigator 'Meet the Professor' breakfast.

Twelve such travel awards were made for this Congress, as a result of the funding of U.S. \$12,000 provided by the ISSFAL Board of Directors. In addition to this, eleven New Investigator Award winners have been selected by a panel of judges prior to the meeting and will be awarded a prize in recognition for their outstanding contribution and their posters will be on display from Sunday till Tuesday. Three of the top 11 New Investigator Award winners will be selected by a panel of judges (who visit their poster sometime during the scheduled poster sessions) to present their work orally in the Awards Session on Tuesday.

The awards session will be held on Tuesday, May 29 from 11.30-12.00 h, just before the ISSFAL Membership Meeting. All of the 11 top New Investigators (or a surrogate) must be present to receive their awards.

Top New Investigator Award Winners

Eva-Maria Bachmair University of Aberdeen, UK
 Denovan Begg University of Cincinnati, USA
 Mariela Bernabe-Garcia Instituto Mexicano del Seguro Social, Mexico
 Camilla Damsgaard University of Copenhagen, Denmark
 Melissa Gregory Royal Adelaide Hospital, Australia
 Catherine Milte University of South Australia, Australia
 Suresh Mohankumar University of Manitoba, Canada
 Kelly Mulder University of British Columbia, Canada
 Zacharoula Nikolakopoulou Queen Mary University of London, UK
 Sarah Orr University of Toronto, Canada
 Kuan-Pin Su China Medical University Hospital, Taiwan

New Investigator Award Winners

Sarah Abbott University of Wollongong, Australia
 Timothy Abbott University of Illinois at Urbana-Champaign, USA
 Yeliz Angin Maastricht University, Netherlands
 Hildur Arnardottir Harvard Medical School, USA
 Isabelle Bauer Swinburne University of Technology, Australia
 Jeannine Baumgartner North-West University, South Africa
 Tormod Bjørckjær National Inst. of Nutrition & Seafood Research, Norway
 Chuck Chen University of Toronto, Canada
 Raphael Chouinard-Watkins Université de Sherbrooke, Canada
 Ahmed Daak London Metropolitan University, UK
 Leah Gillingham University of Manitoba, Canada
 Rachel Gow King's College London, UK
 Belinda Gray The University of Queensland, Australia
 Akiko Harauma Azabu University, Japan
 Brandon Hidaka University of Kansas Medical Center, USA
 Dianna Hughbanks-Wheaton Retina Foundation of the Southwest, USA
 Philippa Jackson Northumbria University, UK
 Bodil Larsen Alberta Health Services, Canada
 Chris McGlory University of Stirling, UK
 Carolina Moltó-Puigmartí Maastricht University, Netherlands
 Daniela Much Technical University Munich, Germany
 Nathalie Nicod IMDEA Food, Spain
 Rinat Ran-Ressler Cornell University, USA
 Nipun Saini University of Nebraska-Lincoln, USA
 Susan Scholtz University of Kansas Medical Center, USA
 Virginia Stone Peninsula College of Medicine and Dentistry, UK
 Marc-Olivier Trépanier University of Toronto, Canada
 Wei-Chun Tu University of Adelaide, Australia
 Cynthia Tyburczy U.S. Food & Drug Administration, USA
 Vanessa Vaughan Deakin University, Australia
 Flora Wang University of Alberta, Canada
 Annette West University of Southampton, UK
 Jinping Zhao University of Montreal, Canada

We offer congratulations to all NIA winners and look forward to their active participation in future ISSFAL meetings.

2012 Faculty



10TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

MAY 26-30 2012

2012 FACULTY



Plenary Speakers

1 Pathways for the Generation of Dysfunctional HDL Jay Heinecke, Professor, Medicine, University of Washington, USA



Dr. Heinecke earned his MD degree from Washington University in St. Louis in 1981 and then came to UW for a residency in internal medicine. He was also a postdoctoral fellow in the Division of Metabolism, Endocrinology and Nutrition and then a senior fellow in the UW Department of Biochemistry from 1987 until 1990. He was a faculty member at Washington University in St. Louis from 1991-2002, as a professor of medicine and professor of molecular biology and pharmacology. In 2002, he returned to UW to take his current position. He also directs the Mass Spectrometry Resource in the Department of Medicine and is an attending physician at UW Medical Center and a member of the Molecular and Cellular Biology Graduate Program. He holds the Karasinski Chair in Metabolic Research.

2 DHA and Retinal Function John Paul San Giovanni, Staff Scientist, NEI, National Institutes of Health, USA



John Paul San Giovanni has researched the role of fatty acids in health and disease of retina for over two decades. He earned his doctorate at the Harvard School of Public Health; prior to accepting his current appointment in the Clinical Trials Branch of the National Eye Institute at The U.S. National Institutes of Health in 2000, Dr. San Giovanni held positions at The Harvard Medical School, The International Nutrition Foundation, and The United Nations University.

3 21st Century Preventive Cardiology: Lipoprotein, Not Lipids: Biomarkers, Anthropometrics and Meaningful Motivation: The Way to Our Patients' Hearts Seth Baum, MD, Medical Director, Preventive Cardiology, Foundation for Preventive and Integrative Medicine, USA



Dr. Seth Baum is a graduate of Columbia College of Physicians and Surgeons. He has directed cardiac catheterization laboratories at Boca Raton and Northridge Hospitals, and worked extensively in integrative and preventive cardiology. He was board certified in clinical lipidology in 2005, and received fellowship in the National Lipid Association in 2009. Dr. Baum has a practice in Boca Raton Florida that is devoted largely to lipidology and cardiovascular disease prevention.

4 Novel PUFA-derived Mediators and Functionality Charles N. Serhan, Professor, Biological and Biomedical Sciences, Harvard University, USA



Professor Charles Serhan is the Director, Center for Experimental Therapeutics and Reperfusion Injury at Brigham and Women's Hospital, and Professor of Anaesthesia, Harvard Medical School, and Professor of Oral Medicine, Harvard School of Dental Medicine. Dr. Serhan has a BSc in biochemistry and PhD in medical sciences and experimental pathology from the NYU School of Medicine. He is renowned for contributions on resolution mechanisms in acute inflammation and reperfusion injury. His interest lies in the structural elucidation of protective mechanisms that promote resolution of inflammation. He has published over 397 papers and holds over 200 patents.

5 Fatty Acids and Regulation of Gene Expression James Ntambi, Professor, Biochemistry & Nutritional Sciences, University of Wisconsin-Madison, USA



Dr. James M. Ntambi is Professor in the Department of Nutritional Sciences at the University of Wisconsin-Madison. He received his BSc and MSc in biochemistry from Makerere University, Kampala, Uganda, and a PhD in Biochemistry from John Hopkins. Dr. Ntambi has made significant contributions to the regulation of stearoyl CoA desaturase, and the importance of this enzyme in disease states such as obesity, diabetes, atherosclerosis and inflammation. He has a distinguished career with over 140 peer reviewed publications.

2012 Faculty / continued

6 Nutrition, Lipids and Global Child Health

Andrew Prentice, Director, MRC International Nutrition Group, London School of Hygiene and Tropical Medicine, UK & MRC Keneba, The Gambia.



Professor Andrew Prentice heads the MRC International Nutrition Group (ING) at the London School of Hygiene and Tropical Medicine and the group's permanent West African field station at MRC Keneba in rural Gambia (www.ing.mrc.ac.uk). The major focus is on maternal and child health in sub-Saharan Africa. ING's stated mission is: *To gain novel insights into the basic mechanisms linking diet and disease in order to develop more effective community and clinical interventions*. Andrew was born in Uganda and schooled in Kenya prior to obtaining a BSc in Biochemistry and a PhD in Nutritional Biochemistry at University of Cambridge, England. He directed the MRC's Energy Balance and Obesity research programme at Addenbrooke's Hospital, before returning in 1999 to his first love - Africa. He has leadership roles within the American Society of Nutrition and sits on advisory boards for NIH, NICHD, the World Health Organisation, Wellcome Trust, Pepsico and the Bill & Melinda Gates Foundation where he is a member of the Discovery Expert Group in Global Health. He has received a number of international awards, most recently the EV McCollum International Lectureship 2011.

7 Cellular and Circuit Level Imaging During and After Stroke

Timothy Murphy, Professor in Psychiatry and Cellular and Physiological Sciences, University of British Columbia, Canada



Tim Murphy is Professor in Psychiatry and Cellular and Physiological Sciences at University of British Columbia. He is a world expert in high resolution imaging neurochemistry of individual synapses and sensorimotor circuits giving insight into mechanisms of initial stroke damage and recovery, as well as monitoring oxidative stress and ionic disturbances in vivo and testing of novel antioxidant treatments during stroke. He earned his PhD at John Hopkins University.

8 Membrane Lipid – Protein Function

Klaus Gawrisch, Chief, LMBB, NIAAA, Natl. Institutes of Health, USA



Dr. Gawrisch is a biophysicist/NMR spectroscopist who studies the properties of lipids and proteins in biological membranes with particular emphasis on the role of highly unsaturated lipids.

9 Fatty Acids and Cell Signalling

Robert Chapkin, Professor, Nutrition and Food Science, Texas A&M University, USA



Dr. Robert S. Chapkin is a biochemist in the Program in Integrative Nutrition, Center for Environmental & Rural Health at Texas A&M University. He received his BS in Nutrition and Biochemistry from the University of Guelph, Ontario, Canada; an MS in Nutrition from the University of Guelph, and a PhD in Nutrition and Physiology Chemistry from the University of California-Davis in 1986. After completing a postdoctoral fellowship in Cancer Biology in the School of Medicine at the University of California-Davis in 1988, he joined the faculty at Texas A&M University. Dr. Chapkin is currently a Regents Professor and University Faculty Fellow and during the past 25 years has published over 180 peer-reviewed articles in nutrition, cancer biology and immunology.

10 Triglyceride and Digestion and Transport

Patrick Tso, Professor, Pathobiology & Molecular Medicine, University of Cincinnati, USA



Dr. Tso is Professor of Pathology and Physiology at University of Cincinnati Medical Center. He has contributed significantly to our understanding of the mechanism and regulation of intestinal fat absorption and especially to the physiological function of apolipoprotein AIV, for which he was honored with the Distinguished Research Award by the American Physiological Society.

11 Fatty Acids and Immune Function

Parveen Yaqoob, Professor, Food & Nutritional Sciences, University of Reading, UK



Professor Yaqoob graduated with a BA in Physiological Sciences in 1990, and subsequently a DPhil in Biochemistry in 1994 from Oxford University (UK). She has held an academic post at the University of Reading, UK, since 1998, and is currently Professor of Nutritional Physiology and Director of Research for the School of Chemistry, Food & Pharmacy.

Professor Yaqoob's research interests encompass the influence of a wide range of dietary components on immune function, inflammation and vascular function. Current research projects include investigation of the effects of dietary fatty acids on vascular and endothelial function, effects of probiotics on the immune response to influenza vaccination, nutritional modulation of the ageing immune system, and the impact of whole grain on immunity and inflammation.

12 Genetics and Fatty Acid-Binding Proteins

Jan Glatz, Professor, Cardiac Metabolism, Maastricht University, The Netherlands



Jan F.C. Glatz is professor of Cardiac Metabolism and studies energy metabolism in the healthy and diabetic heart, with focus on lipid transport and transporters such as CD36 and cytoplasmic FABP.

2012 Faculty / continued



SUNDAY, MAY 27 / 13:00 - 14:00 > Bayshore Grand A/B/C

Innovations in Fats for Human Health

Brent D. Flickinger, Senior Manager, Nutritional Science, Archer Daniels Midland Company, USA



Dr. Brent Flickinger is the Senior Manager, Nutritional Sciences for the Archer Daniels Midland Company, Decatur, Illinois. He received has a BSc in chemistry and PhD in nutritional sciences from the University of Illinois, Urbana-Champaign. Dr Flickinger's repertoire includes scientific and regulatory support for food and dietary supplement ingredients. He has extensive experience relating to new ingredients, working with global regulatory agencies and label claims.

TUESDAY, MAY 29 / 13:15 - 14:15 > Bayshore Grand A/B/C

Fishless Future...**What Are We Doing to the Oceans**

Villy Christensen, Professor and Associate Director, Fisheries Centre, University of British Columbia, Canada



Dr. Christensen is an ecosystem modeler and Director of the long-term Nippon Foundation-UBC Nereus Predicting the Future Ocean Program. The Nereus program asks the question: *Will there be seafood and a healthy ocean for future generations to enjoy?* To answer this, involves a close cooperation across scientific disciplines to construct a global ocean data and modeling framework. The program thus evaluates alternative ocean management policies, in order to suggest how we can develop strategies that are resilient in the face of climate change. In the talk, he will give an overview of how life in the ocean has changed. Recognizing that policy makers need public support if changes are to be made, a major focus of the Nereus program is on public outreach, and he will demonstrate the use of 3D-gaming technology to present how the oceans may look in the future depending on our decisions.

Ph.D. Session

MONDAY, MAY 28 / 12:30 - 13:30 > Bayshore Grand A/B/C

Three Minute Thesis Competition

Robert Gibson, Senior NHMRC Research Fellow and Director, FOODplus Research Centre, University of Adelaide, Australia / Chair



This year, the organizers of ISSFAL's 10th Congress will conduct a special student challenge called the "Three Minute Thesis Competition." It is designed to provide a venue for research students who have submitted a thesis in 2012 to demonstrate their communications skills and to provide a stage for their research. Twelve students will present for three minutes each, followed by two minutes for questions from the judging panel. The winner and the runner-up will receive an ISSFAL cash prize.

Yan Chen, Univ. of Saskatchewan, Canada

Raphaël Chouinard-Watkins, Université de Sherbrooke, Canada

Jacqueline Gould, Univ. of Adelaide, Australia

Shengqi Li, Univ. of Kansas Medical Center, USA

Ge Liu, Univ. of Adelaide, Australia

Chris McGlory, Univ. of Stirling, UK

John Miklavcic, Univ. of Alberta, Canada

Sara Moukarzel, Univ. of British Columbia, Canada

Sarah Orr, Univ. of Toronto, Canada

Fatma Suliman, Univ. of Khartoum, Sudan

Marc-Olivier Trepanier, Univ. of Toronto, Canada

Rong Yu, Univ. of British Columbia, Canada

Meet the Professors Breakfast

TUESDAY, MAY 29

> International Suite

BY INVITATION ONLY

Richard Bazinet, Assistant Professor, Nutritional Sciences, University of Toronto, Canada / Chair

All **New Investigators Award Winners** are invited to this invitation-only breakfast to meet leading scientists, researchers and ISSFAL leadership.



BREAKFAST WORKSHOPS

From 07:00-08:00 each day. Pre-registration is required and attendance is limited.

SUNDAY, MAY 27 ★ Sponsored by **Becel Centre for Heart Health**

> Stanley Park 3

Constituents of a Heart Healthy Diet: Let Food Be Our Medicine and Science Be Our Guide

Peter Zock, PhD, Unilever Research & Development Vlaardingen, The Netherlands

Peter Jones, PhD, Professor and Canada Research Chair I, University of Manitoba, Canada

Cyril Kendall, PhD, Department of Nutritional Sciences, University of Toronto, Canada

Penny Kris-Etherton, PhD, RD, Distinguished Professor of Nutrition in the Department of Nutritional Sciences, Pennsylvania State University, USA

Heart disease and stroke are two of the three leading causes of death in Canada. Effective strategies to manage and lower cholesterol are now more important than ever. Attend this breakfast session to gain a better understanding of the:

- Science supporting the impact of substituting saturated fatty acids with PUFA and MUFA on cholesterol management and CVD risk;
- Efficacy of plant sterols in lowering cholesterol;
- Overview of the role of nuts, seeds and beta-glucan in lowering cholesterol; and
- Optimal healthy diet and food choices for cholesterol lowering and management.

MONDAY, MAY 28 ★ Sponsored by **VitalChoice**

> Seymour

High Throughput Fatty Acid Analyses

Ken Stark, Associate Professor, Kinesiology, University of Waterloo, Canada

France Cho, PhD, Senior Scientific Specialist, Food Chemistry, Maxxam Analytics, Mississauga, Canada

William S. Harris, PhD, Research Professor, Sanford School of Medicine, University of South Dakota, Sioux Falls, SD; Senior Scientist, Health Diagnostic Laboratory, Inc., Richmond, VA; President and CEO, OmegaQuant, LLC, Sioux Falls, SD

Rapid and cost effective fatty acid determinations can enable research examining the link between blood fatty acid levels with health and disease, and greatly improve the ability to monitor and report on the fatty acid composition and content of the food supply. Challenges in the application of high throughput fatty acid analytical techniques to food analyses and clinical blood samples will be examined. Topics to be examined will include the effect of sample matrix including water and fat content on analyses, targeting specific lipid classes and overcoming lipid content systems as encapsulation during analysis. In addition, progress on the clinical use of fatty acid testing and practical insights on sample volumes and throughputs will be examined.

TUESDAY, MAY 29 ★ Sponsored by **Pfizer**

> Stanley Park 3

Milk Triglycerides and Fatty Acids, Absorption and Beyond

Sheila Innis, Director, Nutrition and Metabolism Research Program, Child and Family Research Institute, Canada / Chair

The human mammary gland has unusual pathways for saturated fatty acid and triglyceride synthesis, yet many fatty acids in human milk are readily influenced by the lactating woman's diet. Experts will focus on the human milk triglyceride structure, medium chain fatty acids, and the impact of trends in fats and oils and human milk fatty acids. This workshop will emphasize unanswered questions and research frontiers in human milk triglycerides and fatty acids. In addition, the complex question of how to address infant fatty acids needs on the background of milk fatty acids that are sensitive to maternal diet will be examined.



2012 Faculty / continued

Symposia Chairs & Presenters

27 MAY / SUNDAY

Mono-unsaturated Fatty Acids, the Mediterranean Diet and CVD

Penny Kris-Etherton, Distinguished Professor of Nutrition, Department of Nutritional Sciences, Pennsylvania State University, USA / Chair
Emilio Ros, Professor & Head, Lipid Clinic, University of Barcelona, Spain
Peter Jones, Professor and Canada Research Chair I, University of Manitoba, Canada

PUFA and Lipid Mediators in the Skin

Anna Nicolaou, Professor, Biological Chemistry, University of Bradford, UK / Chair
Apostolos Pappas, Principal Scientist, Skin Research Centre, Johnson & Johnson, USA
James Ntambi, Professor, Biochemistry, University of Wisconsin - Madison, USA

DHA, Retina and Visual System Function

John Paul San Giovanni, Staff Scientist, NEI, National Institutes of Health, USA / Chair
Yves Sauvé, Assistant Professor, Physiology, University of Alberta, Canada
Martin-Paul Agbaga, Oklahoma University Health Science Center, USA
Przemyslaw Sapieha, Assistant Research Professor, Vision Health, University of Montreal, Canada

Stable Isotopes in Fatty Acid Research

Tom Brenna, Professor, Human Ecology, Cornell University, USA / Chair
Mélanie Plourde, Associate Professor, Université de Sherbrooke, Canada
Raphaël Chouinard-Watkins, Université de Sherbrooke, Canada
Chuck Chen, University of Toronto, Canada

Saturated Fats, Triglycerides and Cardiovascular Health

Robert Gibson, Senior NHMRC Research Fellow and Director of the FOODplus Research Centre, University of Adelaide, Australia / Chair
Kim Jackson, Senior Research Fellow, Food and Nutritional Sciences, University of Reading, UK
Brian Rodrigues, Division Chair, Pharmaceutical Sciences, University of British Columbia, Canada

Novel Milk Lipids

M. Thomas Clandinin, Professor Emeritus, Agriculture, Food and Nutritional Sciences, University of Alberta, Canada / Chair
Eek Park, University of California, San Diego, USA
John Miklavcic, University of Alberta, Canada
Qun Li, University of Alberta, Canada
Glen Shoemaker, University of Alberta, Canada

PUFA, Brain and Retina During Aging

Stephen Cunnane, Professor, University of Sherbrooke, Canada / Chair
Cécilia Samieri, INSERM, University Bordeaux, France
Martha Neuringer, Oregon Health and Science University, USA

Lipid Rafts

David Ma, Associate Professor, Human Health and Nutritional Sciences, University of Guelph, Canada / Chair
Catherine Field, Professor, Agricultural, Food and Nutritional Science, University of Alberta, Canada
Saame Raza Shaikh, Assistant Professor, Biochemistry and Molecular Biology, East Carolina University, USA
Patricia Kane, Neurolipid Research Foundation, USA
Aleix Sala-Vila, Hospital ClÀ-nic de Barcelona, Spain

Fatty Acids & Preventive Cardiology

Seth Baum, Medical Director, Preventive Cardiology, Foundation for Preventive & Integrative Medicine, USA / Chair
Rozenn Lemaitre, Depts. of Medicine and Epidemiology, University of Washington, USA
Gordon Francis, Professor of Medicine, Director, Healthy Heart Program, University of British Columbia, Canada
Kevin Maki, President and Chief Science Officer, Biofortis-Provident Clinical Research, USA

Expert Panel/Roundtable

Gordon Francis
Jay Heinecke
Kevin Maki
Rozenn Lemaitre
Penny Kris-Etherton

An extreme diversity of fats, proteins, and carbohydrates has been consumed by disparate cultures all boasting a low incidence of CVD. Thus, the question can be posed whether it is fair, rational, and scientific to pick isolated facets of different diets, apply them to diet recommendation for primary or secondary prevention. With this question in mind, let us discuss in a dialectic format the following questions:

1. How do we explain the Inuit's low incidence of CVD in view of their consumption of minimal n-6 polyunsaturated fats but high levels of cholesterol?
2. Recent popular books have pointed to the low incidence of CVD among vegan populations inspiring many (including President Clinton) to adopt vegan practices. The China Study by the TC Campbell, and Prevent and Reverse Heart Disease by CB Esselstyn represent the two most recent blockbusters. What do we tell patients who pointing to these diets throw away their olive and fish oil?
3. Will we ever be able to create a standard-setting randomized controlled outcome trial to determine what diet is best for all humans?



2012 Faculty / continued

Arachidonic Acid

Jay Whelan, Professor, Cellular Molecular Nutrition, University of Tennessee, USA / Chair

Nicolas Flamand, Professor, Medicine, University of Laval, Canada

Manabu Nakamura, Associate Professor of Biochemical and Molecular Nutrition, Food Science and Human Nutrition, University of Illinois, USA

Anne Barden, University of Western Australia, Australia

DHA: Cognition and Behavior in Adults

Norman Salem, Chief Scientific Officer, Martek Sciences Corp., USA / Chair

Isabelle Bauer, Swinburne University of Technology, Australia

Håvard Bentsen, Diakonhjemmet Hospital, Norway

Daniel Thor Johnston, U.S. Army, USA

Hiroshi Kawashima, Suntory Wellness Ltd., Japan

Catherine Milte, University of South Australia, Australia

Welma Stonehouse, Massey University, New Zealand

Kuan-Pin Su, China Medical University and Hospital, Taiwan

PUFA and Anti-oxidant Functions

Charles Serhan, Professor, Biological and Biomedical Sciences, Harvard University, USA / Chair

Alastair O'Brien, University College of London, UK

Bruce Levy, Biological and Biomedical Sciences, Harvard University, USA

Pedro Calderón Artero, University of Rochester Medical Center, USA

Stephanie Caligiuri, University of Manitoba, Canada

Trevor Mori, University of Western Australia, Australia

28 MAY / MONDAY**Fatty Acids and Metabolic Regulation**

Jan Kopecky, Professor, Adipose Tissue Biology, Academy of Sciences of the Czech Republic / Chair

Nathalie Bernoud-Hubac, INSERM, France

Anna De Boer, University of Guelph, Canada

Darshan Kelley, USDA-Agricultural Research Service, USA

Michel Narce, INSERM, France

Interesterified and Novel Fatty Acids Sources

Kalyana Sundram, Deputy CEO and Director, Science & Environment, Malaysian Palm Oil Council, Malaysia / Chair

Brent Flickinger, Senior Manager, Nutritional Science, Archer Daniels Midland Company, USA / Co-chair

Thomas Sanders, King's College London, UK

Lin Lin, University of Manitoba, Canada

Sebastiano Banni, Università degli Studi di Cagliari, Italy

Ralph Holsworth, Jr., Tahoma Clinic, USA

Fatty Acids & Early Development (1): Pregnancy

Susan Carlson, Professor, Dietetics & Nutrition, University of Kansas Medical Center, USA / Chair

Maria Makrides, Professor, Women's & Children's Health Research Institute, University of Adelaide, Australia / Co-chair

Elin Bjarnadottir, Naestved Hospital, Denmark

Bernadette Delplanque, INSERM, France

Robert Gibson, University of Adelaide, Australia

Jacqueline Gould, University of Adelaide, Australia

Anna Patten, University of Victoria, Canada

Fatty Acids in Clinical Practice

Birgitta Strandvik, Professor, Karolinska Institutet, Sweden / Chair

Aliye Uc, Associate Professor, Pediatric Gastroenterology, University of Iowa, USA

Berthold Koletzko, Professor, Metabolism and Nutrition, University of Munich, Germany

Ahmed Daak, The Institute of Brain Chemistry - London Metropolitan University, UK

Beth Levant, University of Kansas Medical Center, USA

Clinical Aspects of Fatty Acids and Cancer

Vera Mazurak, Assistant Professor, Human Nutrition, University of Alberta, Canada / Chair

Celeste Abrahams, South African Medical Research Council, South Africa

Brandon Hidaka, University of Kansas Medical Center, USA

Vanessa Vaughan, Deakin University, Australia

Shang-Jung Chang, National Taiwan University, Taiwan

Linoleic Acid: Roles in Human Health and Requirements

Joseph Hibbeln, Lead Clinical Investigator, NIAAA, National Institutes of Health, USA / Chair

Kevin Fritsche, Professor, Nutritional Immunology, University of Missouri, USA

Christopher Ramsden, NIH, USA

Fatty Acids & Early Development (2): Infancy

Maria Makrides, Professor, Women's & Children's Health Research Institute, University of Adelaide, Australia / Chair

Stefanie Brunner, EKFC for Nutritional Medicine, Germany

John Colombo, University of Kansas, USA

Dennis Hoffman, Retina Foundation of the Southwest, USA

Deolinda Scalabrin, Mead Johnson Nutrition, USA

Natural/Ruminant Trans Fatty Acids and Cardiovascular Health

Spencer Proctor, Associate Professor, Agricultural, Food & Nutritional Science, University of Alberta, Canada / Chair

Marianne Uhre Jakobsen, Associate Professor, Public Health, Aarhus University, Denmark

Jean-Michel Chardigny, National Institute for Agricultural Research (INRA), France

Flora Wang, University of Alberta, Canada

Eva Maria Bachmair, University of Aberdeen, UK

2012 Faculty / continued >



2012 Faculty / continued

DHA Mechanism of Action, Neural Function and Protection

Nicolas Bazan, Director, Neuroscience Center of Excellence, Louisiana State University, USA / Chair

Hee Yong Kim, Chief, LMS, NIAAA, National Institutes of Health, USA / Co-chair

Richard Bazinet, Assistant Professor, Nutritional Sciences, University of Toronto, Canada

Gunter Eckert, Associate Professor, Goethe University Frankfurt, Germany

Health-Related Benefits of Dietary Alpha Linolenic Acid: The Forgotten Omega-3 Fatty Acid

Grant Pierce, Professor, Physiology and Pharmacy, University of Manitoba, Canada / Chair

Paolo Di Nardo, Internal Medicine, University of Rome "Tor Vergata", Italy / Co-chair

Lindsay Brown, Associate Professor, Biomedical Sciences, University of Queensland, Australia

David Ma, Associate Professor, Human Health and Nutritional Sciences, University of Guelph, Canada

Fatty Acids and Child Health

Lotte Lauritzen, Associate Professor, Human Nutrition/Preventive Nutrition, University of Copenhagen, Denmark / Chair

Marius Smuts, Professor, North West University, South Africa / Co-chair

Frida Dangardt, Sahlgrenska Academy and University Hospital, Sweden

Ans Eilander, Unilever, Netherlands

Rachel Gow, Kings College London-Institute of Psychiatry, UK

Lipid-Protein Interactions

Klaus Gawrisch, Chief, LMBB, NIAAA, National Institutes of Health, USA / Chair

Sarah Veatch, Assistant Professor, Biophysics, University of Michigan, USA

Patricia Reggio, Professor, Chemistry and Biochemistry, University North Carolina, USA

Timothy Abbott, University of Illinois, Urbana-Champaign, USA

Andrea Kodde, Danone, France

Drake Mitchell, Portland State University, USA

29 MAY / TUESDAY

Fatty Acids and Cancer: Model Systems

Robert Chapkin, Professor, Nutrition and Food Science, Texas A&M University, USA / Chair

Yong Q. Chen, Professor, Cancer Biology, Wake Forest Baptist Medical Center, USA

Kathryn Hopperton, University of Toronto, Canada

Harvey J. Murff, Vanderbilt University, USA

Rafat Siddiqui, Indiana University Health-Methodist Research Institute, USA

Harmony Turk, Texas A&M University, USA

Fatty Acids in Translational Health: Infants

Sheila Innis, Director, Nutrition & Metabolism Research Program, Child & Family Research Institute, Canada / Chair

Peter Clough, Research Director, Efamol Ltd., UK / Co-chair

Mark Puder, Associate Professor, Children's Hospital Boston, USA

Fabiana Bar-Yoseph, Enzymotec Ltd., Israel

Bodil Larsen, Alberta Health Services, Canada

Designer and Novel Oils and Human Health

Catherine Field, Professor, Agricultural, Food and Nutritional Science, University of Alberta, Canada / Chair

Michael E.R. Dugan, Meat Lipid Scientist, Lacombe Research Center, Canada / Co-chair

Cécile Gladine, INRA, France

Renata Kostogryś, Agriculture University of Krakow, Poland

Tormod Bjørckjær, NIFES, Norway

Miriam Jacome-Sosa, University of Alberta, Canada

Rakesh Kapoor, Bioriginal Food and Science Corporation, Canada

Andrew Sinclair, Deakin University, Australia

Xiao Qiu, University of Saskatchewan, Canada

President's Hot Topics

Susan Carlson, Professor, Dietetics & Nutrition, University of Kansas Medical Center, USA / Chair

Rinat Ran-Ressler, Cornell University, USA

Adina Michael-Titus, Barts and The London School of Medicine and Dentistry, UK

Anne Marie Minihane, University of East Anglia, UK

Gregory Shearer, Sanford Research, USA

Takayuki Tsukui, Tokyo University of Technology, Japan

Sean Davies, Vanderbilt University, USA

Fatty Acids and Innate Immunity/Inflammation

Parveen Yaqoob, University of Reading / Chair

Ann Skulas-Ray, Ph.D., Nutritional Sciences, Penn State University, USA

Tim Hou, Texas A&M University, USA

Mojgan Masoodi, Medical Research Council, UK

Jennifer Monk, Texas A&M University, USA

Julie Nauroth, DSM Nutritional, USA

Fatty Acids in Translational Health: Children

Peter Clough, Research Director, Efamol Ltd., UK / Chair

Sheila Innis, Director, Nutrition & Metabolism Research Program, Child & Family Research Institute, Canada / Co-chair

Alex Richardson, Senior Research Fellow, University of Oxford, UK

Renate de Groot, Open University, Netherlands

Jeannine Baumgartner, The Institute of Food Science and Nutrition, Switzerland

Natalie Parletta, University of South Australia, Australia

Paul Montgomery, University of Oxford, UK

Novel Methods in Fatty Acid and Lipid Research

Luc Berthiaume, Professor, Cell Biology, University of Alberta, Canada / Chair

Bernd Keller, Assistant Professor, Pathology, University of British Columbia, Canada / Co-chair

Zsuzsanna Ament, University of Cambridge, UK

Giuseppe Astarita, Waters Corporation, USA

Todd Mitchell, University of Wollongong, Australia

Gene Polymorphism, Lipid Metabolism and Human Health

Jan Glatz, Professor, Cardiac Metabolism, University of Maastricht, Netherlands / Chair

Berthold Koletzko, Professor, Metabolism and Nutrition, University of Munich, Germany / Co-chair

Leah Gillingham, University of Manitoba, Canada

Carolina Moltó-Puigmartí, Maastricht University, Netherlands

Susan Scholtz, University of Kansas Medical Center, USA

Marie Standl, Helmholtz Center Munich, Germany


ISSFAL

10TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

MAY 26-30 2012
VANCOUVER, CANADA

PROGRAM AT-A-GLANCE



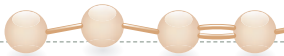
26 MAY | SATURDAY

13:00-15:00	ISSFAL EXECUTIVE MEETING
14:00-17:00	REGISTRATION OPENS
15:00-18:00	ISSFAL BOARD MEETING
19:00-22:00	WELCOME RECEPTION

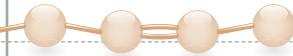

27 MAY | SUNDAY

7:00	Breakfast Workshop: Constituents of a heart healthy diet: Let food be our medicine and science be our guide			
8:00	PLENARY 1 Pathways for the generation of dysfunctional HDL		PLENARY 2 DHA & retinal function	
9:00	Mono-unsaturated fatty acids, the Mediterranean diet and CVD	PUFA & lipid mediators in skin	DHA, retina & visual system function	Stable isotopes in lipid and fatty acid research
10:00		< PARALLEL >		
	COFFEE BREAK			
11:00	Saturated fats, triglycerides and cardiovascular health	Novel milk lipids	PUFA, brain and retina during aging	Lipid rafts
12:00		< PARALLEL >		
13:00	LUNCH			
	GLOBAL INTEREST LECTURE Innovations in Fats for Human Health			
14:00	PLENARY 3: 21st Century Preventive cardiology: lipoprotein, not lipids		PLENARY 4 Novel PUFA-derived mediators & functionality	
15:00	COFFEE BREAK			
16:00	Fatty acids & preventive cardiology	Arachidonic Acid	DHA: cognition and behavior in adults	PUFA & antioxidant functions
17:00		< PARALLEL >		
18:00	POSTER SESSION (Wine & Cheese)			
19:00				
20:00	CORPORATE MEMBERS DINNER			
22:00				

28 MAY | MONDAY

Breakfast Workshop: High throughput fatty acid analyses			
PLENARY 5 Fatty acids and regulation of gene expression		PLENARY 6 Nutrition, lipids & global child health	
Fatty acids & metabolic regulation	Interesterified and novel fatty acid sources	Fatty acids and early development (1): Pregnancy	Fatty acids in clinical practice
< PARALLEL >			
COFFEE BREAK			
Clinical aspects of fatty acids and cancer	Linoleic acid: Roles in human health and requirements	Fatty acids and early development (2): Infancy	Natural/ Ruminant trans fatty acids and cardiovascular health
< PARALLEL >			
LUNCH		PH.D SESSION "3 Minute Thesis Competition"	
POSTER SESSION			
ALEXANDER LEAF AWARD LECTURE			
PLENARY 7 Cellular & circuit level imaging during & after stroke		PLENARY 8 Membrane lipid-protein function	
COFFEE BREAK / POSTER SESSION			
DHA mechanism of action, neural function and protection	Health-related benefits of dietary alpha linolenic acid	Fatty acids and child health	Lipid-protein interactions
< PARALLEL >			
			
DINNER DEBATE Who listens to dietary recommendations?			

29 MAY | TUESDAY

Breakfast Workshop: Milk triglycerides and fatty acids, absorption and beyond		Meet the Professors (by invitation only)	
PLENARY 9 Fatty acids & cell signaling		PLENARY 10 Triglyceride and digestion and transport	
Fatty acids and cancer: model systems	Fatty acids in translational health: infants	Designer and novel oils and human health	President's hot topics
< PARALLEL >			
COFFEE BREAK			
POSTER SESSION		Early Career Award	
		New Investigator Award Winners Present	
ISSFAL MEMBERSHIP MEETING			
LUNCH (ON YOUR OWN)			
GLOBAL INTEREST LECTURE Fishless future... What are we doing to the oceans			
PLENARY 11 Fatty acids & immune function		PLENARY 12 Genetics & fatty acid-binding proteins	
COFFEE BREAK / POSTER SESSION			
Fatty acids and innate immunity/inflammation	Fatty acids in translational health: children	Novel methods in fatty acid and lipid research	Gene polymorphism, lipid metabolism, & human health
< PARALLEL >			
CLOSING CEREMONY			
			
GALA DINNER			
			

30 MAY | WEDNESDAY

SATELLITE SYMPOSIA: ■ Maternal, Infant & Child Nutrition ■ Sterol & Isoprenoid Disorders: State of the Art

HiDHA® for high quality nutrition



DHA supports the normal physical development of the brain, eyes and nerves*

- A trusted source of DHA from HiDHA® tuna oils and microencapsulated ingredients
- Omega-3 DHA benefits in liquid or powder form
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- Superior nutritional expertise
- ISO 9001, HACCP, GMP accreditation
- Halal and Kosher products available
- Health Canada Novel Food approval for use in toddler soy- and milk-based nutritional supplements at a level of 16 mg DHA per serving

* in children under two years of age



FINAL PROGRAM



ISSFAL



10TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

26 May / SATURDAY

13:00 - 15:00	ISSFAL Executive Meeting	> Seymour
14:00 - 17:00	CONGRESS REGISTRATION OPENS	> Bayshore Grand Foyer
15:00 - 18:00	ISSFAL Board Meeting	> Seymour
19:00 - 22:00	Welcome Reception Sponsored by Amarin	> Bayshore Grand D/E/F

27 May / SUNDAY

7:00 - 8:00	Breakfast Workshop / Sponsored by Becel Centre for Heart Health Constituents of a Heart Healthy Diet: Let Food Be Our Medicine and Science Be Our Guide Peter Zock, PhD, Unilever Research & Development Vlaardingen, The Netherlands Peter Jones, PhD, Professor and Canada Research Chair I, University of Manitoba, Canada Cyril Kendall, PhD, Department of Nutritional Sciences, University of Toronto, Canada Penny Kris-Etherton, PhD, RD, Distinguished Professor of Nutrition, Department of Nutritional Sciences, Pennsylvania State University, USA	> Stanley Park 3
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8:00 - 8:45	Plenary Sessions / concurrent	
	1. Pathways for the Generation of Dysfunctional HDL Jay Heinecke, Professor, Medicine, University of Washington, USA	> Bayshore Grand A/B/C
	2. DHA and Retinal Function John Paul San Giovanni, Staff Scientist, NEI, National Institutes of Health, USA	> Stanley Park 1/2

9:00 - 10:30

Parallel Symposia / concurrent

> Stanley Park 1	> Stanley Park 2	> Stanley Park 3	> Cypress
Monounsaturated Fatty Acids, the Mediterranean Diet & CVD Penny Kris-Etherton / Chair	PUFA and Lipid Mediators in the Skin Anna Nicolaou / Chair	DHA, Retina and Visual System Function John Paul San Giovanni / Chair	Stable Isotopes in Fatty Acid Research Tom Brenna / Chair
Benefits of the Mediterranean diet patterns on CVD risk: The Predi-MED study Emilio Ros	Eicosanoids in skin inflammation: Lessons from the sunburn response Anna Nicolaou	DHA supplementation prevents age-related functional losses and A2E accumulation in the retina Yves Sauvé	Fatty acid and steroid metabolism revealed with natural and enriched stable isotopes Tom Brenna
Monounsaturated and high-linolenic acid oils, plasma lipids and fatty acid metabolism Peter Jones	Fatty acid metabolism in skin physiology; epidermal, sebaceous and subcutaneous involvements Apostolos Pappas	Retinal very long chain polyunsaturated fatty acids: There is more to them than we know Martin-Paul Agbaga	Imbalances in 13C-DHA metabolism in the elderly and in APOE4 carriers Mélanie Plourde
Nuts decrease chronic disease risk via multiple mechanisms Penny Kris-Etherton	Stearoyl-CoA desaturase-1 is essential for lipid homeostasis in skin James Ntambi	Identifying anti-angiogenic PUFAs; Implications for neovascular ocular disease Przemyslaw Sapieha	13C-DHA metabolism before & after EPA + DHA supplementation in humans Raphael Chouinard-Watkins
			Mitochondrial β -oxidation is necessary for the disappearance of 14C-EPA upon entry into the brain: An <i>in vivo</i> free-living intravenous infusion study / Chuck Chen

Congress Program / Sunday 27 May / continued

10:30 - 11:00 **Coffee Break** > Bayshore Grand D/E/F11:00 - 12:30 **Parallel Symposia / concurrent**

> Stanley Park 1	> Cypress	> Stanley Park 2	> Stanley Park 3
Saturated Fats, Triglycerides and Cardiovascular Health Robert Gibson / Chair	Novel Milk Lipids M. Thomas Clandinin / Chair	PUFA, Brain and Retina During Aging Stephen Cunnane / Chair	Lipid Rafts David Ma / Chair
Saturated fats: Guilty without trial? Robert Gibson	Gangliosides in the anti-pathological mechanisms of the gut Eek Park	Docosahexaenoic acid, brain aging and Alzheimer's disease: Reconciling the evidence Stephen Cunnane	DHA, lipid rafts and breast cancer Catherine Field
Postprandial lipaemia, APOE genotype and responsiveness to dietary fat manipulation Kim Jackson	Ganglioside increases infectivity of PC-3 prostate cancer cells to adenovirus <i>in vitro</i> John Miklavcic	Plasma long-chain omega-3 fatty acids and atrophy of the medial temporal lobe: a longitudinal study Cécilia Samieri	Fish oil enhances B cell activation accompanied by an increased membrane raft size and molecular order Saame Raza Shaikh
Lipoprotein lipase – master controller of fatty acid delivery to the heart after diabetes Brian Rodrigues	Dietary gangliosides decreased HBD-2 & IL-23 level in a caco-2 cell model of IBD by improving barrier function independent of NF-kB & sPLA2 activation / Qun Li	Xanthophylls, N-3 fatty acids and retinal aging Martha Neuringer	Disturbance of phospholipid membrane structure in neurological disease Patricia Kane
	Characterizing the ganglioside content of bovine milk using LC/MS Glen Shoemaker		Interplay between caveolin-1, mitochondrial-enriched membranes and lipid metabolism Aleix Sala-Vila

12:30 - 13:00 **Lunch** > Bayshore Grand D/E/F
13:00 - 14:00 **Global Interest Lecture** > Bayshore Grand A/B/C
Innovations in Fats for Human Health
Brent Flickinger, Senior Manager, Nutritional Science, Archer Daniels Midland Company, USA
14:00 - 14:45 **Plenary Sessions / concurrent**

> Bayshore Grand A/B/C	> Stanley Park 1/2
3. 21st Century Preventive Cardiology: Lipoprotein, Not Lipids: Biomarkers, Anthropometrics and Meaningful Motivation: The Way to Our Patients' Hearts Seth Baum, M.D., Medical Director, Preventive Cardiology, Foundation for Preventive and Integrative Medicine, USA	4. Novel PUFA-derived Mediators and Functionality Charles Serhan, Professor, Biological and Biomedical Sciences, Harvard University, USA

14:45 - 15:15 **Coffee Break** > Bayshore Grand D/E/F

Congress Program / Sunday 27 May / continued

15:15 - 17:00 **Parallel Symposia / concurrent**

> Stanley Park 1	> Cypress	> Stanley Park 2	> Stanley Park 3
Fatty Acids and Preventive Cardiology Seth Baum / Chair	Arachidonic Acid Jay Whelan / Chair	DHA: Cognition and Behavior in Adults Norman Salem / Chair	PUFA & Anti-oxidant Functions Charles Serhan / Chair
N-3 fatty acids and arrhythmias Rozenn Lemaitre	Dietary N-6 PUFA and their influence on tissue arachidonic acid content Jay Whelan	The differential effects of EPA and DHA omega-3 fatty acids on brain functioning Isabelle Bauer	Lipid-mediators in the resolution of inflammation Alastair O'Brien
Fatty acids, lipids and cardiovascular HDL Gordon Francis	Functional link between arachidonic acid and endocannabinoids in the regulation of inflammation Nicolas Flamand	Red blood cell omega-3 fatty acid levels and neurocognitive performance in deployed U.S. Servicemembers Daniel Thor Johnston	Pro-resolving mediators, resolvins and protectins in airway inflammation Bruce Levy
Hypertriglyceridemia and cardiovascular disease risk: Biology to bedside Kevin Maki	New insights into essential function of arachidonic acid (ARA) revealed with a Delta-6 desaturase null mice Manabu Nakamura	DHA supplementation improved memory and speed of memory in healthy young adults Welma Stonehouse	The effects of docosahexaenoic acid derived 17R- and 17S-resolvins D1 on platelet function in ex-vivo diabetic and non-diabetic platelets Pedro Calderón Artero
Expert Panel/Roundtable See description and panelists on page 18. (Note: this session will run until 17:15)	What is the role of cytochrome P450 epoxygenase metabolites of arachidonic acid in the metabolic syndrome? Anne Barden	Mind-body interface: Polyunsaturated fatty acids and somatic symptoms in major depressive disorder Kuan-Pin Su	Omega-3 fatty acid supplementation increases plasma resolvins and protectins in patients with chronic kidney disease Trevor Mori
		Serum level of arachidonic acid, EPA and DHA and risk of cognitive decline: Cross-sectional analysis of Japanese elderly in Nat'l Inst. for Longevity Sciences' Longitudinal Study of Aging Hiroshi Kawashima	Potential renoprotective effects of novel eicosanoids produced in diet-induced obese rats given α-linolenic acid rich diets Stephanie Caligiuri

17:00 - 19:15 **Poster Session & Reception** > Bayshore Grand D/E/F
Wine and cheese will be served. Your name badge (for full congress registrations) and/or purchased ticket will be required to gain access.

19:30 - 22:00 **Corporate Members Dinner**
/ By invitation only

Congress Program / continued

28 May / MONDAY

7:00 - 8:00	Breakfast Workshop / Sponsored by VitalChoice			> Seymour
	High Throughput Fatty Acid Analyses			
	Ken Stark, Ph.D., Associate Professor, Kinesiology, University of Waterloo, Canada			
	France Cho, Ph.D., Senior Scientific Specialist, Food Chemistry, Maxxam Analytics, Mississauga, Canada			
	William S. Harris, Ph.D., Research Professor, Sanford School of Medicine, University of South Dakota, Sioux Falls, SD; Senior Scientist, Health Diagnostic Laboratory, Inc., Richmond, VA; President and CEO, OmegaQuant, LLC, Sioux Falls, SD			
8:00 - 8:45	Plenary Sessions / concurrent			
	> Bayshore Grand A/B/C		> Stanley Park 1/2	
	5. Fatty Acids and Regulation of Gene Expression		6. Nutrition, Lipids and Global Child Health	
	James Ntambi, Professor, Biochemsitry, University of Wisconsin - Madison, USA		Andrew Prentice, Professor, London School of Hygiene & Tropical Medicine, UK	
9:00 - 10:30	Parallel Symposia / concurrent			
	> Stanley Park 1		> Cypress	
	Fatty Acids and Metabolic Regulation		Interesterified and Novel Fatty Acid Sources	
	Jan Kopecky / Chair		Kalyana Sundram / Chair	
			Brent Flickinger / Co-chair	
	Omega-3 fatty acids and metabolic syndrome		Does interesterification as a fat modification tool impact nutritional outcomes?: A review of the evidence	
	Jan Kopecky		Kalyana Sundram	
	Omega-3 polyunsaturated fatty acids and their oxygenated derivatives increased adiponectin secretion		Does palmitic acid in the sn-2 position have different effects on cardiovascular risk from that in the sn-1 and sn-3 positions?	
	Nathalie Bernoud-Hubac		Thomas Sanders	
	Dietary N-3 PUFA regulation of adipokines & inflammatory mediators in adipocyte-macrophage paracrine interactions <i>in vitro</i>		Modulation of plasma fatty acid ethanolamine levels and physiological parameters as a function of dietary fatty acid composition in healthy humans / Lin Lin	
	Anna De Boer			
	Effects of DHA supplementation on lipocentric and glucocentric markers of insulin resistance in hypertriglyceridemic men		Decrease of anandamide ratio between visceral & subcutaneous adipose tissues by dietary EPA & DHA phosphatidylcholine improves metabolic syndrome in obese Zucker rats / Sebastiano Banni	
	Darshan Kelley			
	Opposite effects of dietary N-6 and N-3 PUFA during metabolic syndrome on liver lipid biosynthesis and insulin sensitivity		Normalization of whole blood viscosity in cerebrovascular accidents with therapeutic application of phospholipid emulsion / Ralph Holsworth, Jr.	
	Michel Narce			
			> Stanley Park 2	
			Fatty Acids and Early Development (1): Pregnancy	
			Susan Carlson / Chair	
			Maria Makrides / Co-chair	
			The association between composition of whole blood fatty acids and lifestyle factors in pregnant women	
			Elin Bjarnadottir	
			Prenatal docosahexaenoic acid (DHA) and pregnancy outcomes	
			Susan Carlson	
			Protective effect of dairy fat on brain DHA levels of young rats born from ALA-deficient or ALA-rich mothers	
			Bernadette Delplanque	
			Effect of Omega-3 LCPUFA supplementation during pregnancy/lactation on infant cognitive & visual development: A systematic review & meta-analysis of randomised control trials / Jacqueline Gould	
			Failure of fish oil supplementation in pregnancy to reduce the risk of gestational diabetes or pre-eclampsia	
			Robert Gibson	
			Omega-3 fatty acid supplementation rescues learning and memory deficits associated with fetal alcohol spectrum disorders / Anna Patten	
			> Stanley Park 3	
			Fatty Acids in Clinical Practice	
			Birgitta Strandvik / Chair	
			Fat metabolism in cystic fibrosis	
			Aliye Uc	
			Omega-3 LC-PUFA supply and neurological outcomes in children with phenylketonuria (PKU)	
			Berthold Koletzko	
			Oxidative stress in homozygous sickle cell patients is not aggravated by supplenation with docoshexaenoic and eicosapentaenoic acids / Ahmed Daak	
			Effects of diet-induced decreases in brain DHA content on outcomes in a rat model of juvenile traumatic brain injury	
			Beth Levant	
10:30 - 11:00	Coffee Break / Sponsored by Solae			> Bayshore Grand D/E/F

Congress Program / Monday 28 May / continued

11:00 - 12:30 Parallel Symposia / concurrent

	> Cypress	> Stanley Park 1	> Stanley Park 2	> Stanley Park 3
	Clinical Aspects of Fatty Acids and Cancer Vera Mazurak / Chair	Linoleic Acid: Roles in Human Health and Requirements Joseph Hibbeln / Chair	Fatty Acids and Early Development (2): Infancy Maria Makrides / Chair	Natural/Ruminant Trans Fatty Acids and Cardiovascular Health Spencer Proctor / Chair
	Fish oil improves body composition and response to chemotherapy in patients with lung cancer Vera Mazurak	A century of change in linoleic acid: Endocannabinoids, obesity and addiction Joseph Hibbeln	DHA supplementation of preterm infants: the relevance of dose and timing Maria Makrides	Epidemiologic studies on the intake of ruminant trans fatty acids and the risk of CVD Marianne Uhre Jakobsen
	Potential use of dietary ω -6/ ω -3 fatty acid ratios as chemopreventive tools against colon cancer development Celeste Abrahams	Linoleic acid and inflammation: Evidence based research from clinical studies Kevin Fritsche	LCPUFA supplementation in infancy affects measures of childhood cognition John Colombo	Clinical impact of ruminant trans fatty acids Jean-Michel Chardigny
	Breast cancer risk biomarkers are associated with dietary intake and tissue content of N-3 polyunsaturated fatty acids Brandon Hidaka		Improved cognition in 4-year-old children who received dietary DHA and ARA during their first 12 months of life Dennis Hoffman	
	Eicosapentaenoic acid in the treatment of skeletal muscle wasting in cancer cachexia Vanessa Vaughan	Breaking science in linoleic acid intervention trials Christopher Ramsden	Impact of early nutrition on infectious and allergic symptoms and diseases in the first year of life Deolinda Scalabrin	Ruminant trans-11 vaccenic acid activates peroxisome proliferator-activated receptor-dependent pathways and improves cardiomyocyte hypertrophy associated with the metabolic syndrome / Flora Wang
	Arachidonic acid enhances TNF- α -induced NF- κ B signaling studied in human breast cancer cell line and rat mammary tumors / Shang-Jung Cheng		Breastmilk fatty acid profile in relation to infant fat mass during the first year of life – Results from the INFAT-study Stefanie Brunner	Effect of conjugated linoleic acid supplementation on the human platelet proteome Eva-Maria Bachmair

12:30 - 13:00	Lunch > Bayshore Grand D/E/F	Ph.D. Session Three Minute Thesis Competition Robert Gibson (Chair), Senior NHMRC Research Fellow and Director of the FOODplus Research Centre, University of Adelaide, Australia See a session description and list of participants on page 16.			> Bayshore Grand A/B/C
13:00 - 13:30	Poster Session > Bayshore Grand D/E/F				
13:30 - 14:15	Alexander Leaf Award Lecture Clinical Effects of Fats: Scaly Tales from Down Under Robert Gibson, Director, FOODplus Research Centre, University of Adelaide, Australia				> Bayshore Grand A/B/C

14:15 - 15:00 Plenary Sessions / concurrent

> Stanley Park 1/2	> Bayshore Grand A/B/C
7. Cellular and Circuit Level Imaging During and After Stroke Timothy Murphy, Professor in Psychiatry and Cellular and Physiological Sciences, University of British Columbia, Canada	8. Membrane Lipid-Protein Function Klaus Gawrisch, Chief, LMBS, NIAAA, National Institutes of Health, USA

Congress Program / Monday 28 May / continued

15:00 - 15:30 **Coffee Break & Poster Session** / Coffee break sponsored by Solae > Bayshore Grand D/E/F15:30 - 17:15 **Parallel Symposia** / concurrent

> Stanley Park 1	> Stanley Park 2	> Stanley Park 3	> Cypress
DHA Mechanism of Action, Neural Function and Protection Nicolas Bazan / Chair Hee Yong Kim / Co-chair	Health-Related Benefits of Dietary Alpha Linolenic Acid: The Forgotten Omega-3 Fatty Acid Grant Pierce / Chair Paolo Di Nardo / Co-chair	Fatty Acids and Child Health Lotte Lauritzen / Chair Marius Smuts / Co-chair	Lipid-Protein Interactions Klaus Gawrisch / Chair
DHA homeostasis and docosanoids bioactivity Nicolas Bazan	Bench to bedside to better living: Our journey from basic science to clinical trial discovery using flaxseed as an intervention for cardiovascular disease Grant Pierce	Omega-3 LCPUFA and insulin sensitivity in children Frida Dangardt	Cholesterol-induced domain formation and its implications for protein function Sarah Veatch
Molecular mechanisms for DHA acid-derived neuroprotection Hee Yong Kim	Therapeutic possibilities with Chia in obesity and arthritis Lindsay Brown	The emerging evidence for the interactions between n-3 fatty acids and iron Marius Smuts	A lipid pathway for ligand binding is necessary for a cannabinoid G protein-coupled receptor Patricia Reggio
Regulating brain PUFA concentrations: Uptake and rapid metabolism Richard Bazinet	Alpha linolenic acid modulates intracellular signalling promoting survival vs. apoptosis in cardiomyocytes Paolo Di Nardo	Omega-3 LCP and blood pressure in children Lotte Lauritzen	DHA deficiency impairs fusion protein organization and ultrastructural morphology in mouse spermatids Timothy Abbott
Fish oil improves mitochondrial function in brains of aged mice Gunter Eckert	Are there independent effects of ALA? Lessons from model systems David Ma	Effect of EPA+DHA supplementation on blood lipid profile of British children of a poor socio-economic background Ans Eilander	Physical properties of lipid droplets in the early diet affect adipose tissue development in C57Bl/6j mice Andrea Kodde
		An investigation into essential PUFA, event related potential assessments of brain function & behavioural measures in children & adolescents with & without ADHD Rachel Gow	Anomalous permeation through membranes with coexisting liquid ordered/liquid disordered phases Drake Mitchell

19:30 - 22:00 **Dinner Debate** (Pre-registration is required and attendance is limited) > Imperial Chinese Seafood Restaurant
Who Listens to Dietary Recommendations? (Please meet in hotel lobby at 19:10)
 Tom Brenna, Professor, Human Ecology, Cornell University, USA
 Robert Chapkin, Professor, Nutrition and Food Science, Texas A&M University, USA

Congress Program / continued

29 May / TUESDAY

7:00 - 8:00 Breakfasts / concurrent

Breakfast Workshop > Stanley Park 3
/ Sponsored by Pfizer
Milk Triglycerides and Fatty Acids, Absorption and Beyond
Sheila Innis (Chair), Director, Nutrition & Metabolism Research
Program, Child & Family Research Institute, Canada

Meet the Professors > International Suite (5th Fl.)
/ By invitation only
Richard Bazinet (Chair), Assistant Professor, Nutritional Sciences,
University of Toronto, Canada

8:00 - 8:45 Plenary Sessions / concurrent

9. Fatty Acids and Cell Signaling > Bayshore Grand A/B/C
Robert Chapkin, Professor, Nutrition and Food Science, Texas A&M
University, USA

10. Triglyceride and Digestion and Transport > Stanley Park 1/2
Patrick Tso, Professor, Pathobiology & Molecular Medicine, University
of Cincinnati, USA

9:00 - 10:30 Parallel Symposia / concurrent

> Stanley Park 1
**Fatty Acids and Cancer:
Model Systems**
Robert Chapkin / Chair

Polyunsaturated fatty acids
modify phospholipid structure
and AKT signalling in cancer
cells
Yong Q. Chen

Fatty acid desaturase activity
and prostaglandin E2
production in colorectal cancer
Harvey J. Murff

Docosahexaenoic acid and
curcumin induce synergistic
cellular and molecular effects in
breast cancer cells
Rafat Siddiqui

Why do cancer cells over-
express fatty acid synthase?
Kathryn Hopperton

Docosahexaenoic acid alters
EGFR localization and inhibits
signal transduction
Harmony Turk

> Stanley Park 2
**Fatty Acids in Translational
Health: Infants**
Sheila Innis / Chair
Peter Clough / Co-chair

Impact of human milk and
structured lipids on lipoprotein
lipids in infants
Sheila Innis

The role of omega-3 fatty acids
in the treatment of parenteral
nutrition associated liver
disease
Mark Puder

The effects of beta-palmitate
structural position on bone speed
of sound: A double blind, random-
ized control trial on infants
Fabiana Bar-Yoseph

Providing a novel lipid emulsion contain-
ing N-3 fatty acids decreases procalci-
tonin and lymphocyte concentration in
infants after cardiac surgery
Bodil Larsen

> Stanley Park 3
**Designer and Novel Oils and
Human Health**
Catherine Field / Chair
Michael E.R. Dugan / Co-chair

Optimized rapeseed oil naturally enriched
with healthy micronutrients: A relevant
nutritional approach to prevent cardio-
vascular diseases. Results of the
Optim'Oils randomized intervention trial
Cécile Gladine
Effect of pomegranate seed oil
on the lipid metabolism in
Wistar rat
Renata Kostogry

Increased omega-3 index but no group
difference after 6 weeks intake of 0.8 G
EPA+DHA daily from whale oil or fish oil
capsules in healthy volunteers
Tormod Bjørckjær

Ruminant trans-11 vaccenic acid decreases
fasting & post-prandial hypertriglyc-
eridemia by reducing both hepatic &
intestinal TG secretion & associated genes
in a rat model of the metabolic syndrome
Miriam Jacome-Sosa

Psychophysiological effects of
krill oil: a double blind clinical
trial
Rakesh Kapoor

Docosapentaenoic acid supple-
mentation study in humans
Andrew Sinclair

Metabolic engineering of very
long chain PUFA in plants:
accomplishment and challenge
Xiao Qiu

> Cypress
President's Hot Topics
Susan Carlson / Chair

Branched chain fatty acids reduce
the incidence of necrotizing ente-
rocolitis and alter gastrointestinal
microbiota in a neonatal rat
model / Rinat Ran-Ressler
Improved outcome after spinal
cord injury in transgenic mice
with high levels of endogenous
omega-3 PUFA
Adina Michael-Titus

Greater sensitivity of plasma
lipids and CRP to dietary fat
manipulation in APOE4 carriers:
insights from the SATgenE study
Anne Marie Minihane

Novel biosynthetic pathway
from alpha linolenic acid to EPA
through non-methylene inter-
rupted fatty acid in HepG2 cell
Takayuki Tsukui

Gut bacteria engineered to express
N-acyl-phosphatidylethanolamine
reduce weight gain in a high-fat
fed mice
Sean Davies

Disruption of lipoprotein oxylin-
ins in metabolic syndrome and
partial correction by omega-3
fatty acids
Gregory Shearer

Congress Program / Tuesday 29 May / continued

10:30 - 11:00	Coffee Break	> Bayshore Grand D/E/F
11:00 - 11:30	Early Career Award > Bayshore Grand A/B/C N-3 Fatty Acids and Membrane Microdomains: From Model Membranes to Lymphocyte Function Dr. S. Raza Shaikh, East Carolina University	Poster Session > Bayshore Grand D/E/F
11:30 - 12:00	New Investigator Award > Bayshore Grand A/B/C Winners (Oral Presentations) Sponsored by Malaysian Palm Oil Council	
12:00 - 12:30	ISSFAL Membership Meeting	> Stanley Park 1/2
12:30 - 13:15	Lunch / On your own	
13:15 - 14:15	Global Interest Lecture > Bayshore Grand A/B/C Fishless Future... What Are We Doing to the Oceans? Villy Christensen, Professor and Associate Director, Fisheries Centre, University of British Columbia, Canada	
14:15 - 15:00	Plenary Sessions / concurrent <div> 11. Fatty Acids and Immune Function Parveen Yaqoob, Professor, Food & Nutritional Sciences, University of Reading, UK </div> <div> 12. Genetics and Fatty Acid Binding Proteins Jan Glatz, Professor, Cardiac Metabolism, University of Maastricht, Netherlands </div>	> Stanley Park 1/2
15:00 - 15:30	Coffee Break & Poster Session	> Bayshore Grand D/E/F



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Congress Program / Tuesday 29 May / continued

15:30 - 17:00 Parallel Symposia / concurrent

> Stanley Park 1	> Stanley Park 2	> Cypress	> Stanley Park 3
Fatty Acids and Innate Immunity/Inflammation Parveen Yaqoob / Chair	Fatty Acids in Translational Health: Children Peter Clough / Chair Sheila Innis / Co-chair	Novel Methods in Fatty Acid and Lipid Research Luc Berthiaume / Chair Bernd Keller / Co-chair	Gene Polymorphism, Lipid Metabolism and Human Health Jan Glatz / Chair Berthold Koletzko / Co-chair
Human endotoxemia as a research model for studying the effects of fatty acids on induced inflammation Ann Skulas-Ray	The importance of omega-3 for child behavior and learning: an overview of the evidence and its implications Alex Richardson	Myristoylated and palmitoylated proteins in regulation of apoptosis and metabolism revealed through proteomics Luc Berthiaume	Polyunsaturated fatty acids and child health: diet or genes? Berthold Koletzko
N-3 PUFA suppress phosphatidylinositol-(4,5)-bisphosphate dependent actin remodeling during CD4+ T cell activation Tim Hou	Eating the right amount of fish: Inverted u-shape association between fish consumption and cognitive performance and academic achievement in Dutch adolescents / Renate de Groot	Measurement of protein palmitoylation by advanced mass spectrometry Bernd Keller	Modulation of plasma fatty acid composition & conversion of 13C- α -linolenic acid to long-chain fatty acids by dietary high-oleic canola & flaxseed oils & genetic variants of FADS1 & FADS2 Leah Gillingham
Investigating the role of bioactive lipids in inflammatory bowel disease Mojgan Masoodi	Effects of iron and N-3 fatty acid supplementation, alone and in combination, on cognition: A randomized, double-blind, placebo controlled intervention in South African school children Jeannine Baumgartner	Organelle lipidomics coupled to proteomics: the lipid-LOPIT approach Zsuzsanna Ament	FADS2 gene variant influences the proportion of DHA in human milk Susan Scholtz
N-3 polyunsaturated fatty acids antagonize Th17 cell biology during experimental colitis Jennifer Monk	Effects of fish oil supplementation on learning and behaviour in indigenous children from remote community schools Natalie Parletta	Real time fatty acid profiling using ion mobility separation coupled to mass spectrometry Giuseppe Astarita	FADS gene variants are associated with plasma total & HDL cholesterol in 2-year-old children from the KOALA birth cohort study Carolina Moltó-Puigmartí
DHA algal oil reduces arthritis severity and inflammation more effectively than fish oil in preclinical models of arthritis Julie Nauroth	Blood Omega-3 concentrations, reading, working memory and behaviour in healthy children aged 6-10 years Paul Montgomery	Novel mass spectrometry techniques for the full structural characterisation of molecular lipids Todd Mitchell	FADS1 FADS2 gene cluster, PUFA intake and blood lipids in children. Results from the GINIplus and LISAPLUS studies Marie Standl

17:15 - 17:45	Closing Ceremony	> Stanley Park 1/2
19:30 - 22:00	Gala Dinner Sponsored in part by Aker Biomarine and Croda Healthcare	> Bayshore Grand A/B/C

Satellite Symposia

30 May / WEDNESDAY

SATELLITE SYMPOSIA I & II / Concurrent

**Maternal, Infant and Child
Nutrition and Development:
With Emphasis on LCPUFA Exposure**

> Stanley Park 1

Co-sponsored by Mead Johnson Nutrition and DSM Nutritionals

The focus of this symposium is on infant and child development following nutritional interventions with lipids during fetal and neonatal life and in childhood. As in past workshops, the emphasis is on discussion of topics. Participants should have a clearer understanding of concepts and controversies at the workshop conclusion.

Moderators

Susan E. Carlson, University of Kansas Medical Center
Maria Makrides, Women and Child Health, Australia)
Robert Gibson, University of Adelaide

08:30	Registration/Coffee (preregistration required)
09:00-10:30	Highlights of the Main Meeting and Structured Discussion of What We Know and Don't Know for Maternal, Preterm Infant, Term Infant and Children Chair: S.E. Carlson, PhD; Discussants: L. Lauritzen, PhD; C.M. Smuts, PhD
10:30	Coffee Break
11:00-12:30	Clinical Trial Design and Conduct Issues – How to get into high impact journals Chair: M. Makrides, PhD Discussant: D. Bier
12:30	Lunch
13:20-15:00	Are There Upper Levels for Omega-3 LCPUFA Intakes? Chair: R. Gibson Discussants: R. Bazinet, J. Colombo, M. James
15:30-17:00	Hot Topics and Where to Next - Challenges for the Future. Harmonization of studies? Panel: S.E. Carlson, L. Lauritzen, M. Makrides, C.M. Smuts, R. Gibson
5:00	Close and BC Wine Tasting

This symposia is supported in part by:


**Sterols, Isoprenoids and
Rare Diseases: State of the Art**

> Stanley Park 2

Supported by NIH STAIR Consortium

The focus of this symposium is on sterols, isoprenoids and their contribution to the field of rare diseases. Experts will give updates on our current understanding of the pathophysiology of sterol and isoprenoid-related diseases, present on-going clinical research studies to identify novel biomarkers and develop new therapeutics, and report on new disease discovery.

Moderators

Peter Jones, Ph.D., University of Manitoba, Canada
Jean-Baptiste Roullet, Ph.D., Oregon Health & Science University, USA

08:15-08:30	Sterol and Isoprenoid Diseases: An Overview J.B. Roullet, Ph.D.
08:30-09:00	Smith-Lemli-Opitz Syndrome: From Bench to Bedside and Back R. Steiner, M.D.
09:00-09:30	Sterol Metabolism and Sitosterolemia S. Myrie, Ph.D., P. Jones, Ph.D.
09:30-10:00	The Biochemical Pathogenesis of Sjögren-Larsson Syndrome W. Rizzo, M.D.
10:00-10:15	Coffee Break
10:15-10:45	Pathophysiology in Murine Hyper IgD Syndrome (HIDS): B7 Coreceptor Molecules as Relevant Biomarkers for Clinical Trials K.M. Gibson, Ph.D.
10:45-11:15	Orphan Drug/Rare Disease Drug Discovery & Development Through Drug Repurposing/ Repositioning: A Case Study for Niemann Pick Type C N.L. Wiech, Ph.D.
11:15-11:45	SC4MOL Deficiency: A New Inborn Error of Sterol Metabolism G. Vockley, M.D., Ph.D.
11:45-12:00	Concluding remarks & questions to the panel of speakers



This symposium is supported in part by the Sterol and Isoprenoid Diseases (STAIR) consortium, a part of the NIH Rare Diseases Clinical Research Network (RDCRN) (www.rarediseasesnetwork.org/stair). Funding and/or programmatic support for STAIR have been provided by U54HD061939 from the NICHD and the NIH Office of Rare Diseases Research (ORDR).

Poster Sessions & Presenters

N.I.A. TOP 11 ALL THREE DAYS

Eva-Maria Bachmair	01
Effect of Conjugated Linoleic Acid Supplementation on the Human Platelet Proteome	
Denovan Begg	02
Thirst Deficits in Aging are Reversed by Dietary Omega-3 Fatty Acids or Cyclooxygenase Inhibition	
Camilla Damsgaard	03
The Effects of N-3 Long-Chain PUFA on Bone Formation and Growth Factors in Adolescent Boys	
Melissa Gregory	04
Elongase Reactions as Control Points in Long-Chain PUFA Synthesis	
Catherine Milte	05
Improvements in Childhood Learning and Behaviour Accompany Increases in Omega-3 Status	
Suresh Mohankumar	06
Molecular Mechanisms Underlying Conjugated Linoleic Acid-Induced Skeletal Muscle Glucose Transport	
Kelly Mulder	07
Evidence of Inadequate DHA During Prenatal Development Contributes to Loss of Developmental Potential in Canadian Infants	
Zacharoula Nikolakopoulou	08
The Effect of Omega-3 Polyunsaturated Fatty Acids on Oral and Epidermal Squamous Cell Carcinoma	
Sarah Orr	09
Chronic and Acute Increases in Unesterified DHA are Protective in a Mouse Model of Neuroinflammation	
Kuan-Pin Su	10
Mind-Body Interface: Polyunsaturated Fatty Acids and Somatic Symptoms in Major Depressive Disorder	
Mariela Bernabe-Garcia	11
Enteral DHA Reduces the Need of Buprenorphine Dose in Surgical Neonates at the Neonatal Intensive Care Unit	

POSTER SESSION I: 27 MAY / SUNDAY

Mariela Bernabe-Garcia	12
Evidence of Beneficial Effects of Enteral Docosahexaenoic Acid on Cytokine Production and Clinical Outcomes in Surgical Neonates	
Sarah Abbott	13
Arachidonate Content of Membrane Lipids Determined More by Balance of Dietary PUFA Than by Amount of PUFA in Diet	
Sarah Abbott	14
Application of an Improved High-Throughput Lipid Extraction Method for the Analysis of Changes in Brain Lipid Species in Parkinson's Disease	
Valgerdur Edda Benediktsdóttir	15
The Effects of Dietary N-3 Polyunsaturated Fatty Acids on Fatty Acid Composition and Location of Proteins in Rat Heart Lipid Rafts	
Gurjit Kaur Bhatti	16
Protective Effects of Vitamin E on Lipid Symmetry of Erythrocyte Membrane Against Ethion Induced Toxicity	
Siddhartha Dalvi	17
Arachidonic Acid Modulates Permeability of Human Brain Microvessel Endothelial Cells	
Shane Ellis	18
Lipid Characterization of Cells by Liquid Extraction Surface Analysis Mass Spectrometry	
Ge Liu	19
A New Blood Spot Method for Determining the Fatty Acid Status of Individuals: Contamination and Oxidation	
Michio Hashimoto	20
Effects of Long-Term Administration of Arachidonic Acid on Spatial Cognition in Aged Rats	
Tom Brenna	21
$\Delta 4$ -Desaturation Coded by FADS1 Mediates the Last Step in Docosapentaenoic Acid (22:5n-6) Synthesis in Human Cells	

Kumar Kothapalli	22
An Intron 1 Insertion/Deletion (Indel) Polymorphism in The Fatty Acid Desaturase 2 (FADS2) Gene is Associated With HUFA Synthesis in Cancer Cell Lines	
Karen Massey	23
Green Tea Catechins Attenuate the Production of 12-HETE in Human Skin Following Exposure to Ultraviolet Radiation	
Trevor Mori	24
Measurement of Resolvins and Protectins Using Liquid Chromatography-Tandem Mass Spectrometry: Comparison of Plasma and Serum Levels in Humans	
Masanori Nakakuki	25
Eicosapentaenoic Acid Prevents Cytokine Production Induced by Palmitate via Modulating Long-Chain Acyl-CoA Synthetase-1 Expression in Human THP-1 Macrophages	
Sarah Norris	26
Investigating Cellular Membrane Changes in Human Brain Tissue During Ageing Using Shotgun Tandem Mass Spectrometry and 2D Gel Electrophoresis	
Inger Ottestad	27
Effect of Oxidized Fish Oil on Oxidative Stress Markers and Plasma Lipidome Profile: A Randomized Controlled Trial in Healthy Subjects	
Amit Ringel	28
Dietary PUFA Reductions Decrease Non-Enzymatic Oxidative Stress Biomarkers in Humans	
Benjamin Drew Rockett	29
N-3 PUFAs Increase Cholera Toxin Induced Lipid Raft Size In Vitro and Ex Vivo	
Scott Shaffer	30
Neuroactive Steroids Measured by a Novel Mass Spectrometry Platform	
Cynthia Tyburczy	31
Covalent Adduct Hybrid Chemical Ionization (CAHCI) Mass Spectrometry for High Sensitivity Structural Analysis of Fatty Acid Methyl Esters	
Jay Whelan	32
Tissue Arachidonic Acid Content is Influenced by Dietary G-Linolenic Acid and Arachidonic Acid, But Not Linoleic Acid	

Posters / continued >

Poster Sessions & Presenters / continued

Mandana Amir Shaghghi. 33	William Harris. 45	Anne Marie Minihaue. 56
Water Dispersible Plant Sterol Shows Improved Lipid Lowering Efficacy Compared to Plant Sterol Ester	Red Blood Cell Fatty Acid Levels Improve GRACE Score Prediction Of 2-Year Mortality in Patients with Myocardial Infarction	The Leptin Receptor Gln223Arg Polymorphism (Rs1137101) Mediates the Postprandial Lipaemic Response in Adult Males
Marc Dubourdeau. 34	William Harris. 46	Toru Moriguchi. 57
Atherosclerosis: Assessment of Inflammation and its Resolution on a Primary Human Macrophage-Derived Foam Cells Model	Red Blood Cell Omega-3 Fatty Acid Levels and Markers of Accelerated Brain Aging: The Framingham Heart Study	Supplementation of N-3 Fatty Acid Improved the Symptoms of Dry Eye Syndrome
Rene Braeckman. 35	Laurine Harsløf. 47	Meera Penumetcha. 58
Effects of AMR101, a Pure EPA Omega-3 Fatty Acid, on the Fatty Acid Profile in Plasma and Red Blood Cells in Patients With Very High Triglycerides (Results From the MARINE Study)	Effects of Fish Oil on Blood Pressure and Plasma Lipid Profile in a Randomized Controlled Intervention in Healthy Danish Infants	Estimated Intake of Dietary Oxidized Lipids Based on NHANES 2003-2006: Higher Intakes are Associated with Lower Markers of Adiposity
Catherine Calzada. 36	Ralph Holsworth Jr. 48	Hemant Poudyal. 59
Increased Oxidative Stress in LDL and HDL From Patients with the Metabolic Syndrome or Type 2 Diabetes: Impact on Platelet Aggregation	Normalization of Whole Blood Viscosity in Cerebrovascular Accidents With Therapeutic Application of Phospholipid Emulsion	Comparative Effects of ALA, EPA, and DHA in Diet-Induced Obese Rats
Inar Castro. 37	Masashi Hosokawa. 49	Berthold Koletzko. 60
Effect of Red Wines With Different Antioxidant Activity on the Oxidative Stress of Rats Submitted to a Hyperlipideamic Diet	Combined Effects of Fish Oil and Taurine or Soy Protein on Hyperglycemia And Hypercholesterolemia in Mice	NEFA Determination in Human Plasma: Comprehensive UPLC-MS/MS Quantitation
Zhen-Yu Du. 38	Kim Jackson. 50	Volker Richter. 61
Eicosapentaenoic Acid Moderates MeHg-Induced Metabolic Abnormalities Via COX-2 Inhibition in C57Bl/6J Mice Fed High Fat Diet	Dietary Fat Manipulation has a Greater Impact on Postprandial Lipid Metabolism than the Apolipoprotein E (Epsilon) Genotype - Insights from the SATgen Study	Fatty Acid Intake and Factors of Cardiovascular Risk in Adolescence and Young Adulthood
Irina Fedorova-Dahms. 39	Jan Kopecky. 51	Emiko Saito. 62
The Hypolipidemic Effect of an Ethyl Ester of Algal-Docosahexaenoic Acid in Dogs	Differential Effects of Rosiglitazone and Pioglitazone in the Combination Treatment With N-3 Fatty Acids in Mice Fed a High-Fat Diet	Fatty Acid Desaturase Indices, Metabolic Syndrome Components and Insulin Resistance in Children
Pavel Flachs. 40	Marie Kunesová. 52	Laura Sellick. 63
Long-chain N-3 Polyunsaturated Fatty Acids of Marine Origin Reduce Fat Cell Proliferation in Dietary Obese Mice	Fatty Acid Composition of Adipose Triglycerides as Markers of Weight Loss and Maintenance: Diogenes Project	Mechanisms of the Relationship Between Essential Fatty Acid Blood Status, Cognitive Performance and Cardiovascular Function in Young Adults
Cheryl Gammon. 41	Sebastien Lacroix. 53	Gudrun Valgerdur Skuladottir. 64
Green Kiwifruit: Effects on Plasma Lipids and APOE Interactions	Impact of a Single Mixed Mediterranean-Type Meal Compared to a High-Fat Meal on Postprandial Endothelial Function and Metabolic Markers	Postoperative Atrial Fibrillation in Relation to DHA and AA Levels in Plasma Phospholipids and Red Blood Cell Membranes
Cécile Gladine. 42	Karen Fuenzalida. 54	William Stanley. 65
Atheroprotective Effects and Peroxidation of Docosahexaenoic Acid: Is There a Direct Link?	Docosahexaenoic Acid (DHA) Protection in Cortical Neuron Toxicity: Induction of 18-HEPE Biosynthesis as an Alternative Pathway to Protection	Treatment with Docosahexaenoic Acid, but not Eicosapentaenoic Acid Improves Mitochondrial Function in Genetic Cardiomyopathy
Belinda Gray. 43	Jane McKenzie. 55	Ken Stark. 66
Long Chain Omega-3 Polyunsaturated Fatty Acids: Effects on Plasma Adipokine Levels in Obese, Non-Diabetic Humans	Post-Prandial Effects of a Meal Rich in Long-Chain Omega-3 Fatty Acids on Indicators of Cardiovascular Risk	The Infusion of Docosahexaenoic Acid During Reperfusion After Ischemia has Dose Dependent Effects in Isolated Perfused Rat Hearts
Kevin Hadley. 44		Miyoung Suh. 67
Reversal of Fatty Liver and Hepatocellular Injury by a Docosahexaenoate Ethyl Ester and N-Acetylcysteine in Rats Fed a High Fat Diet		Abnormal Rod and Pigment Epithelium Cell Activity in ELOVL4 Transgenic Mice are Associated with Decreased Retina Levels of Docosahexaenoic Acid and Very Long Chain Fatty Acids (C24-C36)

Poster Sessions & Presenters / continued

Carel Thijs 68	Kei Hamazaki 80	Daisuke Nishi 90
Maternal Plasma HDL Cholesterol Level and Childhood Overweight: The KOALA Birth Cohort Study	Fatty Acid Composition in the Postmortem Entorhinal Cortex of Patients with Schizophrenia, Bipolar Disorder and Major Depression	Fish Oil Plus Psychoeducation Versus Psychoeducation Alone for Attenuating Posttraumatic Stress Symptoms Among Rescue Workers After the Great East Japan Earthquake: A Randomized Controlled Trial
Paula Urquhart 69	Akiko Harauma 81	Janina Willers 91
Prostamides PGE ₂ -EA and PGF _{2a} -EA are Found in Rabbit Cornea	Dietary N-3 Fatty Acid Deficiency Enhances Anxiety Induced By Chronic Mild Stress In Mice	Enhancing Cognitive Functions in Mild Cognitive Impairment with Omega-3-Fatty Acid or Resveratrol Supplementation in Combination with Exercise and Cognitive Training - Proof of Concept and Mechanisms
Michelle Weech 70	Philippa Jackson 82	Maria das Graças Tavares do Carmo 92
Habitual Intake of Dietary Total and N-3 Polyunsaturated Fatty Acids are Associated with 24-Hour Ambulatory Blood Pressure in a Population with Increased Risk of Cardiovascular Disease	Investigation of the Effects of DHA-Rich Fish Oil and Eflex Active 50+ on Cerebral Haemodynamics in Healthy Adults Aged 50-70 Years Reporting Subjective Memory Deficits: Preliminary Results	N-3 Polyunsaturated-Rich Diets During the Perinatal Period Alter the Fatty Acid Profile and Status of Zn and Fe in the Hippocampus with Impact on Locomotor Activity, Memory and Depression in the Offspring
Marc-Olivier Trepanier 71	Yuanrong Jiang 83	Hisanori Tokuda 93
The Anticonvulsant Properties of Docosahexaenoic Acid in Rodents	The Potential of Omega-3 Polyunsaturated Fatty Acids on Delaying Cognitive Decline in Elderly People	Age-Related Decrease in Hippocampal Neural Stem/Progenitor Cells is Ameliorated by Arachidonic Acid Ingestion in Rats
Lieke van den Elsen 72	Saki Kakutani 84	Karin Yurko-Mauro 94
Dietary N-3 LCPUFA Reduce Blood Pressure and Improve Endothelial Function in Spontaneously Hypertensive Rats	Supplementation of Arachidonic Acid-Enriched Oil Increases Arachidonic Acid Contents in Plasma Phospholipids, But Does Not Increase Their Metabolites and Clinical Parameters in Japanese Healthy Elderly Individuals: A Randomized Controlled Study	Aging Does Not Affect Plasma DHA Levels or Response to Supplementation
Chris Butt 73	Rakesh Kapoor 85	Jacqueline Gould 95
Very Long Chain Polyunsaturated Fatty Acids (VLC PUFAS) Protect Both Neural- and Retinal-Derived Cells From Age-Related Damage	Effect Of Krill Oil On Learning and Memory and Brain Biochemistry	Does Maternal Supplementation with DHA During Pregnancy Enhance Child Development of Attention or Working Memory and Inhibitory Control at 2 Years of Age: Results of a Randomised Control Trial
Rob Winwood 74	Michael Lewis 86	Fatma Suliman 96
Do Saturated Fats Really Damage Your Cardiovascular Health or Just Your Wealth (If You're Danish)?	Omega-3 Fatty Acids and Traumatic Brain Injury	Homozygous Sickle Cell Patients Supplemented With DHA and EPA Have Reduced Urinary Albumin
Ryuta Yonezawa 75	Yutaka Matsuoka 87	Chathyan Pararasa 97
The Characteristics of HDL in Late Preterm Infants	Attenuating Posttraumatic Stress Symptoms With Omega-3 Polyunsaturated Fatty Acids Among Rescue Workers After the Great East Japan Earthquake: Feasibility of a Filed Randomized Controlled Trial	Palmitate Induces Phenotype Changes in Monocytes via de Novo Ceramide Synthesis
Jinping Zhao 76	Robert McNamara 88	
Suboptimal Docosahexaenoic Acid Intrauterine Accretion in Gestational Diabetic Pregnancies may Mediate the Adverse Metabolic Impact on Fetal Insulin Sensitivity	Omega-3 Fatty Acid Deficiency During Development Lead to Structural Alterations in the Adult Rat Limbic Forebrain: An in vivo Magnetic Resonance Imaging Study	
Jeannine Baumgartner 77	Robert McNamara 89	
Effects of N-3 Fatty Acid and Iron Depletion and Repletion, Alone and in Combination, on Brain Monoamines and Spatial Working and Reference Memory in Rats	Adolescents with Major Depressive Disorder Exhibit Reversible Erythrocyte Omega-3 Fatty Acid Deficits: Associations with Mood Symptoms and Functional Cortical Activity	
Lena Burri 78		
Krill Oil Attenuates Left Ventricular Dilatation and Hypertrophy after Myocardial Infarction in Rats		
Chih-Chiang Chiu 79		
The Effects of Omega-3 Fatty Acids Supplementation on Lipid Profiles and Insulin Sensitivity in Patients with Schizophrenia: A Randomized Double-Blind Placebo-Controlled Study		

Posters / continued >

Poster Sessions & Presenters / continued

**POSTER SESSION II:
28 MAY / MONDAY**

Constance Ahowesso 12	James Pottala 24	Takayuki Inoue 35
Characterization of Novel Synthetic Fatty Acid Analogues in HepG2 Cells	The Effects of Aliquot Size and Time at -20°C on Erythrocyte Fatty Acid Content	Effect of Chronic Administration of Arachidonic Acid on Skeletal Muscle Lipids in Aged Rats
Pauline Beguin 13	Beate Hiller 25	Elena Maltseva 36
Retro-Conversion of Docosahexaenoic Acid in Caco-2 Cells	Expression Patterns of Lipid Metabolism Associated Genes and Gene Products Indicate That Liver and Omentum are the Key Responders to a Dietary Fatty Acid Manipulation of Lactating Dairy Cows	Polymodal Dose-Effect of Alfa-Tocopherol on the Lipid Structure of Cell Membranes in Vitro
Spinnler Benade 14	Beate Hiller 26	Eric Park 37
Disappearance of Long Chain Omega-3 Fatty Acids From Human Red Blood Cells (RBC) In Vivo After Supplementation With Salmon Oil	Dietary Intervention with Different PUFA Affects Lipid Metabolism and Lipid Profile of Different Tissues of German Holstein Bulls and Cows	Stearidonic Acid (SDA) From Soybeans Affects the EPA Levels in Red Blood Cells
Fumiaki Beppu 15	Petr Hlavaty 27	Nipun Saini 38
Inhibitory Effect of Fucoxanthin, Brown Seaweed Carotenoid, on Hepatic Stearoyl-CoA Desaturase 1 (SCD1) in Mice	Effect of Serum Fatty Acid Binding Protein 4 on Anthropometrical and Metabolic Parameters and Adipocyte Fatty Acid Composition	Inhibitors of FATP-Mediated Fatty Acid Uptake Have Different Activities in Cells that are Tissue-Specific Models for Fat, Liver, Muscle, Intestine and Pancreas
Kjetil Berge 16	Peter Howe 28	Jan Philipp Schuchardt 39
Differential Effects of Krill Oil and Fish Oil on the Hepatic Transcriptome in Mice	High Plasma Phospholipase A2 Activity is Associated with Low Levels of Eicosapentaenoic Acid and Docosahexaenoic acid Incorporation in Erythrocytes Following Fatty Acid Supplementation	North-South-Disparity in Omega-3-Index of Subjects From Different Cities of Germany
Tormod Bjørkkjær 17	Dianna Hughbanks-Wheaton 29	Jan Philipp Schuchardt 40
Stability of Blood Specimens in Biobanks: Influence of Storage Conditions on Fatty Acid Stability	Association of Fatty Acids in Cheek Cells, Red Blood Cells (RBCs) and ω 3 Dietary Intake in Children and Adults	No Correlation Between Omega-3 Index Increase and Triglyceride Decrease in Hypertriglyceridemic Patients After Fish Oil Supplementation: Results From a Randomized Controlled Trial
Anita Burgher 18	Ahamed Ibrahim 30	Virginia Stone 41
Method Validation for the Measurement of Fecal Fatty Acid Soaps in Infants Fed Either Human Milk or Formulas Containing Unmodified Palm Oil	Partial Replacement of Dietary Linoleic Acid With Alpha Linolenic Acid Attenuate Colonic Inflammation in a Rat Model of Inflammatory Bowel Disease	Study of the Role of GPR120 in Pancreatic Beta-Cells
Jonathan Curtis 19	Sheila Innis 31	Maggie Strable 42
The Development of a Universal Method to Quantify the Choline-Containing Compounds in Foods, Tissue and Extracts	Postprandial Metabolism of N-3 Fatty Acids Following a Single Meal with Different Vegetable Oils	Role of Hepatic Monounsaturated Fatty Acid Synthesis in Metabolic Regulation
Adriana Esteves 20	Motoi Kikusato 32	Mami Yamada 43
Zebrafish FABP1b and FABP2 Regulation and Their Functional Role in Intestinal Lipid Absorption	Olive Oil (Refined)-Enriched Diet Upregulates Avian Uncoupling Protein Expression and Proton Leak in the Skeletal Muscle Mitochondria	Differences in Serum Fatty Acid Composition Between Body Regions of Young Japanese Women
Kathleen Glover 21	Into Laakso 33	Heather Teague 44
Effects of Feeding Different Sources of Omega 3 Polyunsaturated Fatty Acids on Liver, Internal Fat and Muscle Fatty Acid Composition in the Lactating Ewe	Competitive and Metabolic Steps of Polyunsaturated Fatty Acids Reflected in Plasma Phospholipids During Fat Substitution	DHA-Labeled Fluorophore is Sensitive to Membrane Phase Behavior and Ordered Domains
Aryati Ahmad 22	Yuhong Lin 34	Wei-Chun Tu 45
Role of Liver Fat as a Determinant of the Response of Plasma Triglyceride to Dietary Extrinsic Sugars	Microwave Irradiation Accelerated Fatty Acid Analysis and its Application in Finger-Pricked Whole Blood Samples of Deploying Soldiers	Barramundi has Limited Ability to Convert Dietary ALA To Omega-3 Long Chain PUFA
Jason Polreis 23		Wei-Chun Tu 46
Assessment of the HS-Omega-3 Index and Breast Milk DHA Using Dried Samples Collected on Filter Paper		Correlations Between Blood and Tissue Omega-3 LCPUFA Status Following Dietary ALA Intervention in Rats
		Keb Ghebremeskel 47
		Adrenal Gland Fatty Acid Composition and Steroid Hormone Biosynthesis in Cyclic Ewes is Modified by Alpha-Linolenic Acid (ALA) Rich Diet



Poster Sessions & Presenters / continued

Jay Whelan 48	Rafat Siddiqui 60	Carol Lammi-Keefe 72
Dose Translation Of Dietary Polyunsaturated Fatty Acids From Rodents To Humans	An Analysis of Plasma Triglycerides and Tissue Levels of Fatty Acids, Tocopherols, and Sterols in Guinea Pigs After Parenteral Lipid Emulsion Infusion	Identification of the Endocannabinoid Metabolome in Breast Milk at 2 Weeks of Lactation
Lina Mustafa Elbashir 49	Sebastiano Banni 61	Alicia Leikin-Frenkel 73
C-Reactive Protein Concentration and Total White Blood Cell Count in Homozygous Sickle Cell Disease are Not Influenced by Omega-3 Fatty Acid Supplementation	Conjugated Linoleic Acid as Dietary Therapeutic Strategy for the Treatment of Neurodegenerative Disorders	Fatty Acids Quality, Developmental Nutrition and The Origins of Health or Disease in Adult Offspring
Christian Degen 50	Julia Boettcher 62	Kathleen Gustafson 74
Metabolism of Conjugated Fatty Acids (CLA and CLnA) in Human Colon Cell Lines With Different Stage of Transformation: Challenges and Chances	Docosahexaenoic Acid (DHA) and Arachidonic Acid (ARA) in Breast Milk of Brazilian Women in the First Six Months of Lactation	Docosahexaenoic Acid Supplementation During Pregnancy Results in Higher Fetal Heart Rate Variability at 36 Weeks Gestation
Naser Ibrahim 51	Fátima Lúcia de Carvalho Sardinha 63	Martine Luxwolda 75
Differential Effects of Dietary Fish Oil and Soy Protein on Renal Disease and Eicosanoids in Chronic Kidney Disease	Association Between the Levels of Arachidonic Fatty Acid in Human Milk and Weight Gain in Exclusively Breastfed Children	Motor Development is Positively Related to DHA Status in Breastfed African and Dutch Infants
Kevin Jacobson 52	John Colombo 64	Alison McAfee 76
Dietary Fish Oil Decreases Inflammatory Infiltrate and Epithelial Proliferation in Mice with C rodentium Induced Colitis	LCPUFA Supplementation in Infancy Affects Measures of Childhood Cognition	Associations Between Maternal PUFA Status, MeHg Exposure and Telomere Length in Seychellois Mothers and Children
Masanori Katakura 53	Flávia Fernandes 65	Barbara Meyer 77
Conjugated Linolenic Acid Controls Neuronal Differentiation of Cultured Neural Stem Cells by Alternating MRNA Levels of bHLH Transcription Factors and Cell Cycle	Effects of the Quality of Dietary Lipid During Early Pregnancy in Rats on Fatty Acid Composition of Adipose Tissue, Colostrum and Milk, and Repercussions on Pup's Development	Maternal Lipid and Fatty Acid Changes in Early Pregnancy
Katrin Kuhnt 54	Flávia Fernandes 66	Deborah Diersen-Schade 78
Vegetable ALA and SDA-Rich Echium Oil Effectively Increased EPA and DPA in Blood Fractions and Decreased Serum Triacylglycerols in Humans	Changes in the Composition of Dietary Maternal Fatty Acids on Levels of Fatty Acids in Adipose Tissue of Rats During the First Half of Pregnancy	Preterm Infant Long-Chain Polyunsaturated Fatty Acid (LCPUFA) Consumption Via Human Milk Improves Plasma Docosahexaenoic Acid (DHA) Levels
Adina Michael-Titus 55	Jose Maria Fernandez-Calleja 67	Daniela Much 79
A Multi-Nutrient Composition with Neuroprotective Properties in Spinal Cord Injury	Lipid Profile of Infant and Young Children Formulas Marketed in Mexico with Emphasis on Trans Fatty Acids	Maternal Fatty Acid Profile in Relation to infant Fat Mass During the First Year of Life - Results From the INFAT-Study
Adina Michael-Titus 56	Moncef Feki 68	Beverly Muhlhauser 80
Peripheral Nerve Injury has a Significantly Improved Outcome in Fat-1 Mice	Very High Prevalence of Vitamin A, E and D Deficiencies in Very Low Birth Weight Tunisian Infants	Cord Blood Omega-3 LCPUFA Concentration Increase with Advancing Gestation Independent of Maternal Omega-3 Supplementation in Late Pregnancy
Carla Taylor 57	Moncef Feki 69	Hui-Min Su 81
Dietary Supplementation of Trans-11 Vaccenic Acid Reduces Adipocyte Size But Neither Aggravates Nor Attenuates Obesity-Mediated Insulin Resistance in fa/fa Zucker Rats	Semen Abnormalities are Associated with Decreased Docosahexaenoic Acid and Increased Oleic Acid Contents in Human Spermatozoa	Exposure to a Maternal N-3 Fatty Acid-Deficient Diet During Brain Development Provokes Excessive Hypothalamic-Pituitary-Adrenal Axis Responses to Stress and Mental Disorders in Male Rat Offspring Later in Life
Nathalie Nicod 58	Karin Jonsson 70	Yiqun Wang 82
Conjugated Linoleic Acid Stimulates the Production of Functional HDL by Intestinal Cells	Distinct Fatty Acid Profile in Diet and Breast Milk of Farming Women	The Nile Fish Species, Bulti, Dabs and Gargour, Contain Adequate Amounts of DHA and AA To Help Support Pregnancy and Lactation
Christopher Ramsden 59	Juliana Vaz 71	
Metabolic and Clinical Effects of Low N-6 And Low N-6 Plus High N-3 Dietary Interventions in Chronic Daily Headache Patients	Omega-6 Fatty Acid Status and Current Suicide Risk in Early-Pregnancy: A Prospective Cohort Study of Low-Income Women of Rio de Janeiro, Brazil	

Posters / continued >



Poster Sessions & Presenters / continued

Jian Zhang 83
Comparison of Maternal and Umbilical Plasma and Erythrocyte N-3 and N-6 Fatty Acid Status on River/Lake, Coastal and Inland Regions of China

Maria das Graças Tavares do Carmo 84
Functional Capillary Density and Inflammatory Status in Adult Offsprings of Dams Fed with Trans and Interesterified Fats

POSTER SESSION III: 29 MAY / TUESDAY

Yeliz Angin 12
Interactions Between Membrane Fatty Acid Transporter CD36 and Ca²⁺ Signaling in Cardiomyocytes

Alvin Berger 13
Biological Properties of Sciadonic (5,11,14 20:3) and Juniperonic (5,11,14,17 20:4) Fatty Acids

Sebastiano Banni 14
Dietary Triacylglycerols with Palmitic Acid in the 2-Position Modifies Endocannabinoid and Congener Profile in Rat Visceral Adipose Tissue

Tom Brenna 15
A Novel Fatty Acid Desaturase 1 (FADS1) Isoform Potentiates FADS2-Mediated Production of Eicosanoid Precursor Polyunsaturated Fatty Acids

Tom Brenna 16
Identification of a Specific Splicing Regulator, Polypyrimidine Tract Binding Protein That Modulates Splicing of FADS2 Alternative Transcript 1

Kumar Kothapalli 17
Identification of an Insertion-Deletion Polymorphism in FADS2 Intron 1 Associated With SREBP Binding That Upregulates FADS1 and Mediates Enhanced HUFA Biosynthesis in Response to Simvastatin and LXR Agonists

Kumar Kothapalli 18
FADS2 Function Loss at the Cancer Hotspot 11q13 Locus Diverts Lipid Signaling Precursor Synthesis to Unusual Eicosanoid Fatty Acids

Rene Braeckman 19
Pharmacokinetics of Eicosapentaenoic Acid in Plasma and Red Blood Cells After Multiple Oral Dosing with AMR101 (Ethyl-Eicosapentaenoic Acid) in Healthy Subjects

Satyendra Prasad Chaurasia 20
Concentration of Docosahexaenoic Acid (DHA) from Tuna Fish Oil by Lipase Catalyzed Hydrolysis and Selective Esterification

Alexandra Heaton 21
The Effects of High Dose Fish Oil Supplementation During Infancy and FADS1 & 2 Genetic Polymorphisms on Neurocognitive Outcomes at 6 Years

Samuel Hoile 22
Fat Content of Maternal Diet Alters Both Male and Female Offspring Fatty Acid Status Through Epigenetic Regulation of FADS2

Yuanrong Jiang 23
Stability Blended Oil Enriched with DHA & EPA in Different Cooking Methods

Lilik Kartikasari 24
Omega-3 Enrichment and Sensory Properties of Eggs of Two Strains of Laying Hens Fed High alpha-Linolenic Acid Diets

Yael Lifshitz 25
High Beta-Palmitate Fat Benefits the Intestinal Inflammatory Response and Reduces Intestinal Damage in Muc2 Deficient Mice

Susanne Lager 26
Effects of Oleic Acid on Trophoblast Amino Acid Uptake and mTOR Signaling

Duo Li 27
Erythrocyte Phospholipids Fatty Acids are Associated With Genetic Variants in the FADA Gene Cluster In Chinese Type 2 Diabetes

Kathleen Glover 28
Effects of Feeding Different Sources of Omega 3 Polyunsaturated Fatty Acids on Gene Expression of Key Enzymes and Molecular Regulators of Lipid and Carbohydrate Metabolism in the Liver of Lactating Ewe

Maria das Graças Tavares do Carmo 29
Palm Oil and Biodiversity in Amazon Area Represented by Wide Differences in Fatty Acid Composition

Anna Nudda 30
Meat From Suckling Lamb: A Useful Dietary Source of Essential Fatty Acids

Maretha Opperman 31
Analysis Of Omega-3 Fatty Acid Content Of South African Fish-Oil Supplements

Rinat Ran-Ressler 32
Structural Characterization of Saturated Branched Chain Fatty Acid Methyl Esters by Collisional Dissociation of Molecular Ions Generated by Electron Ionization

Rinat Ran-Ressler 33
Branched Chain Fatty Acid Content of United States Retail Cow's Milk and Implications for Dietary Intake

Aditi Sharma 34
Lipase Catalyzed Synthesis of DHA Rich Free Fatty Acids From Salmon Fish Oil

Yiqun Wang 35
Farmed Tilapia Are Good Source of Linoleic Acid (LA) But Not of Docosahexaenoic (DHA) or Eicosapentaenoic (EPA) Acid

Annette West 36
Post-Prandial Incorporation of Marine Omega-3 Fatty Acids into Plasma Triacylglycerol and NEFA When Consumed in Different Chemical Forms

Petro Wolmarans 37
Effect of Omega-3 Rich Eggs and Fish on the Proportion of Highly Unsaturated Fatty Acids in Red Blood Cell Membrane Phosphatidylcholine and Phosphatidylethanolamine of Human Subjects

Samuel Yeboah 38
Characterization and Structural Studies of Selected Seed Oils from East Africa

Yan Chen 39
Molecular Cloning and Biochemical Characterization of a Cholinephosphotransferase from *Phytophthora Infestans*

Hildur Arnardottir 40
Dietary Fish Oil Delays Neutrophil Recruitment Early During Endotoxin-Induced Inflammation but Enhances Their Recruitment Later in the Inflammation

Malin Barman 41
High Levels of Long Chain Polyunsaturated Fatty Acids in Cord Serum Predict Allergy Development in Childhood

Rong Yu 42
Milk Fatty Acids as Determined by Maternal Diet Alter Gene Expression and Metabolic Profiles in Developing Liver



Poster Sessions & Presenters / continued

Alison Colquhoun..... 43	Carolina Paras Chavez..... 54	Flavia da Silva Lima Dias 65
Importance of Cyclooxygenase Activity for the Expression of Multiple Drug Resistance Proteins (MDRPs) In Human Glioma	The Role of Nuclear Factor κ B on the Synthesis of Lipid Inflammatory Mediators on THP-1 Derived Macrophages	Fast Foods Consumed by Brazilian College Students are Rich in Saturated and Trans Fatty Acids
Alison Colquhoun..... 44	Yongsoon Park 55	Riitta Freese 66
Modifying Prostaglandin Metabolism Alters Proliferation, Apoptosis and Migration in the T98G Human Glioma Cell Line	Effect of Omega-3 Fatty Acid Supplementation in Patients With Rheumatoid Arthritis: A 16-Week, Double-Blind, Placebo Controlled Study	Linoleic Acid Status of Adolescent Girls in Central Mozambique - ZANE-Study
Nicolas Flamand..... 45	Ramil Sapinoro..... 56	Mitsuhiko Hara 67
Functional Link Between Arachidonic Acid and Endocannabinoids in the Regulation of Inflammation	The Role of Omega-3 Polyunsaturated Fatty-Acids in Programming Inflammation-Resolution	Fatty Acid Composition and Estimated Desaturase Activities in Serum Lipids of Obese Children With and Without Multiple Cardiovascular Risk Factors
Kevin Fritsche 46	Julia Schumann 57	Marius Smuts 68
A Search for a Better Animal Model: Pigs may Prove to be a Superior Model Over Mice for Investigating Immune Modulation by Dietary Fish Oil (i.e. Omega-3 Fatty Acids)	The Impact Of Membrane Lipid Composition On Macrophage Activation In The Immune Defense Against Rhodococcus Equi And Pseudomonas Aeruginosa	Effects of Iron and N-3 Fatty Acid Supplementation on Spontaneous Motor Activity and ADHD-Related Behaviour in Iron-Deficient Primary School Children in South Africa
Herbert Fuhrmann 47	Meg Schwarcz Hoffmann 58	Linda Malan..... 69
N-3 And N-6 Polyunsaturated Fatty Acids Have an Impact on Macrophage Respiratory Burst Against Rhodococcus Equi and Pseudomonas Aeruginosa	Serum Fatty Acid Synthase (FASN) From Breast Cancer Patients and its Association with Nutritional Status and Fatty Acid Consumption	Effects of Iron and N-3 Fatty Acid Supplementation on the Fatty Acid Composition of Peripheral Blood Mononuclear Cells and Absenteeism in Iron-Deficient Primary School Children in South Africa
Brandon Hidaka 48	Gudrun Valgerdur Skuladottir 59	Paul Montgomery..... 70
Impact of N-3 Supplementation on Fatty Acid Composition of Erythrocytes, Plasma, and Breast Tissue in Women at Increased Risk for Breast Cancer	Relationship of Inflammatory Mediators to N-6 and N-3 Long-Chain Polyunsaturated Fatty Acids in Plasma Phospholipids and Red Cell Membrane Lipids Following Open Heart Surgery	Blood Omega-3 Concentrations are Associated with Reading, Working Memory and Behaviour in Healthy Children Aged 6-10 Years
Jun Kunisawa 49	Frank Thies 60	Maria Mulhern 71
Degradation Pathway of Sphingosine 1-Phosphate Preferentially Mediates Mast Cell Trafficking in the Development of Intestinal Allergic Responses	Lycopene Modulates Inflammatory Cytokines Production and Treg Cell Population in Mitogen-Activated Peripheral Mononuclear Cells	LCPUFA Status and Body Composition in 5 Year Olds and 19-20 Year Olds Living in The Republic of Seychelles
Maria Makrides..... 50	Lieke van den Elsen 61	Alex Richardson 72
Effect of N-3 Long Chain Polyunsaturated Fatty Acids (LCPUFA) Supplementation in Pregnancy on Infant Allergies in the First Year of Life: A Randomised Controlled Trial	Dietary N-3 Polyunsaturated Fatty Acids Reduce Allergic Sensitization in a Mouse Model for Cow's Milk Allergy	The DHA Oxford Learning and Behaviour (DOLAB) Study: A Randomised Controlled Trial of DHA Supplementation in Healthy Children
John Miklavcic..... 51	Katharina Widenhorn-Mueller 62	Rob Winwood..... 73
Detailed Characterization of Gangliosides in Prostate Cells Using LC/MS	The Effect of EPA/DHA Supplementation on Children with Attention-Deficit / Hyperactivity Disorder: A Randomized Double-Blind, Placebo-Controlled Study	Nutrition and Health Claims in the European Union in relation to Omega 3 Fatty Acids - existing and possible future effects on New Product Launches
David Mutch..... 52	Yuriko Abe 63	Shengqi Li 74
Enzymatic Activity and Genetic Variation in SCD1 Modulate the Relationship Between Fatty Acids and Inflammation	Association Between the Changes in Body Fatness and Fatty Acid Composition of Plasma Phospholipids During the Early Pubertal Period	Docosahexaenoic Acid (DHA) Supplementation During Pregnancy Increases the DHA Content in Human Milk at Early Lactation
Chris McGlory 53	Berthold Koletzko 64	Sara Moukarzel..... 75
Time Course of Lipid Composition Changes in Blood and Skeletal Muscle During a 4 Week Period of Fish Oil Ingestion in Humans	Reversed Phase LC/MS/MS Method for Targeted Quantification of Glycerophospholipid Molecular Species in Plasma	Contribution of Dietary Intake and Altered Handling to Alterations in Omega-6 And Omega-3 Fatty Acids in Cystic Fibrosis
		Giuseppe Astarita..... 76
		Complete Fatty Acid Profiling Using a Single LC-MS Based Lipidomic Approach



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Stockholm, Sweden

28 June – 2 July, 2014

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	SATURDAY 28 JUNE	SUNDAY 29 JUNE	MONDAY 30 JUNE	TUESDAY 1 JULY	WEDNESDAY 2 JULY
Morning		Scientific Sessions	Scientific Sessions	Scientific Sessions	SATELLITE SYMPOSIA 
Mid-Day		Lunch & Exhibition	Lunch & Exhibition	Lunch & Exhibition Members Meeting	
Afternoon	ISSFAL Executive Committee & Board of Directors Meetings	Scientific Sessions	Scientific Sessions Open Afternoon	Scientific Sessions	
Evening	Welcome Reception	Dinner Debate	Open Night	Gala Dinner	

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