

ISSFAL



2014

11TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS



AT "THE BREWERY" – MÜNCHENBRYGGERIET



Stockholm Visitors Board:
Foto: Jeppe Wikström



NOBEL LAUREATE LECTURE BY
Prof. Bengt I. Samuelsson
Karolinska Institutet, Sweden

Stockholm SWEDEN
28 JUNE – 2 JULY



SPECIAL EVENT HIGHLIGHTS

SATURDAY 28 JUNE

Welcome Reception

At Stockholm City Hall

Hosted by the Stockholm City & County Councils



SUNDAY 29 JUNE

Dinner Debate/Social*

At Nalen Restaurang



MONDAY 30 JUNE

New Investigator's Mixer*

Aboard The Lady Patricia

TUESDAY 1 JULY

Gala Dinner

At Vasa Museum



ONE-DAY PRE-CONGRESS PROGRAMME

SATURDAY 28 JUNE

Lipid Update Seminar* p. 17

In collaboration with Karolinska Institutet

ONE-DAY SPONSORED PROGRAMME

WEDNESDAY 2 JULY

Satellite Symposia* p. 30

At Artipielag



Congress Programme

*Please note that a separate registration is required to attend selected events.



MeadJohnson
PEDIATRIC NUTRITION
INSTITUTE

Visit Us at Booth #1

Learn about our latest research on lipids,
human milk, and the gut-brain axis.

Advancing Pediatric Science. Improving Children's Nutrition.

OUR PASSION



Early-life nutrition builds a foundation for lifelong health. Our only purpose is to be at the forefront of this unique and critical area of science.

OUR MISSION



We advance and apply the latest breakthroughs in nutrition science to benefit pediatric populations around the world.

OUR FOCUS



Our researchers, together with other world-leading experts, pioneer new discoveries that improve the health and well-being of children.

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ISSFAL Headquarters

Graham S. Hauck
Administrator

Molly Shevlin
Membership & Meeting Coordinator

1025 Thomas Jefferson Street NW
Suite 500 East
Washington, DC 20007, USA
+1 (202) 521-6725 | Fax +1 (202) 833-3636
admin@issfal.org
www.issfal.org





Thank You!

The support that the ISSFAL 2014 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 \$20,000 USD) 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.

PLATINUM



SILVER



BOXED LUNCH & COFFEE BREAK



DINNER DEBATE



DELEGATE BAGS



DELEGATE LANYARDS



MONDAY WORKSHOPS



SATELLITE SYMPOSIA



EXHIBITORS



WELCOME ISSFAL



Välkommen

Welcome to Stockholm, the capital of Sweden and host city for the ISSFAL 2014 Biennial Congress! For the first time in the 20 year history of ISSFAL, the meeting will be in Sweden and, as a matter of fact, this is the first time we have met in any Nordic country. You are among the record number of attendees at this Congress, over 600!

ISSFAL 2014 Local Advisory Committee

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Adelaide, Australia

This meeting will provide a unique occasion for the exchange of scientific results in the lipid area. It will facilitate interactions between old and new members and invited guests. The program covers three major topics: Biochemistry and Metabolism of Fatty Acids; Lipids in Health and Disease; and Lipids in Nutrition. These major themes will encompass all aspects of lipids, from cholesterol and its metabolites to metabolites of essential fatty acids and the interactions, and lipidomics and metabolomics, which are important complements to proteomics in understanding human physiology and pathophysiology. Presentations from basic research to translational research to clinical studies will be of interest to a diverse audience of basic researchers, physicians, and nutritionists. Evidence about the impact of lipids in different clinical diseases is increasing rapidly as is our understanding of the role that dietary lipids can play at all ages in preventing diseases related to lifestyle.

As is typical of our biennial ISSFAL meetings, we encourage you to take advantage of the many opportunities to strengthen cooperation among international researchers and clinicians. In addition to the plenary lectures and oral presentations chosen from over 400 abstract submissions, poster presentations and wonderful social occasions will offer opportunities for interaction among all participants.

Stockholm, one of the most beautiful capitals in the world, is built on 14 islands connected by 57 bridges. The beautiful buildings, the greenery, the fresh air and the proximity to the water are distinctive traits of this city. With its 750 year history and rich cultural life, Stockholm offers a wide selection of world-class museums and attractions. As a city built on 14 islands, it offers marvelous views over the water, and if 14 islands aren't enough, Stockholm offers a wonderful archipelago with 30,000 islands, islet rocks and skerries.

Stockholm has excellent transportation within the city that caters to making the most of everything the city has to offer. Details of the Congress venues and transportation are in the following pages as well as a detailed schedule of events.

Whether you are a long standing member or friend of ISSFAL and the conference, or this is your first time to take part, we assure you that we will work extremely hard to make sure that we meet your key objectives. Please do not hesitate to contact any of the ISSFAL staff or leadership on any matter for which we might be of assistance.

Welcome and enjoy the Congress!

Best regards,



Birgitta Strandvik
*Chair of the Local
Advisory Committee*



Susan Carlson
President of ISSFAL



2014

11TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS 28 JUNE – 2 JULY | STOCKHOLM, SWEDEN AT "THE BREWERY" — MÜNCHENBRYGGERIET



NEW INVESTIGATOR AWARDS

We are pleased to announce the fifty **New Investigator Award winners**, which originate from 18 different countries. NIA winners are awarded a free registration for this Congress, the opportunity to apply for an ISSFAL travel award, and have received an invitation to a special New Investigator 'Meet the Professor' breakfast.

Travel awards were made for this Congress as a result of the funding of \$12,000 USD of Society funds allocated by the ISSFAL Board of Directors. In addition, ten New Investigator Award winners (selected by a panel of judges prior to the meeting) will be awarded a prize in recognition for their outstanding contribution. Their posters will be on display Sunday to Tuesday. Three of the top New Investigator Award winners will be chosen by a panel of judges (who will visit the poster hall sometime during the scheduled poster sessions) to present their findings.

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

Arnardottir, Hildur	Harvard Institute of Medicine/Brigham and Women's Hospital	United States of America
Bachmair, Eva-Maria	University of Aberdeen	United Kingdom (Great Britain)
Baumgartner, Jeannine	North-West University	South Africa
Bidu, Céilia	UMR-INSERM/University of Burgundy	France
Caligiuri, Stephanie	University of Manitoba	Canada
Chang, Jane	China Medical University Hospital	Taiwan
Chiu, Chih-Chiang	Taipei City Psychiatric Center, Taipei City Hospital	Taiwan
Choque, Benjamin	Laboratoire de Biochimie et Nutrition Humaine	France
Chouinard-Watkins, Raphael	Université de Sherbrooke, Sherbrooke	Canada
Conway, Valérie	University Institute of Geriatrics of Sherbrooke	Canada
Corsetto, Paola Antonia	University of Milan	Italy
Coventry, Krista	University of Guelph	Canada
Daak, Ahmed	University of Khartoum	Sudan
De Boer, Anna	University of Guelph	Canada
Domenichiello, Anthony	University of Toronto	Canada
Freund-Levi, Yvonne	Karolinska Institutet	Sweden
Gibert, Yann	Deakin University	Australia
Gibson, Deanna	University of British Columbia Okanagan	Canada
Gould, Jacqueline	Women's and Children's Health Research Institute	Australia
Hahn, Ki Baik	CHA University School of Medicine	Republic of Korea
Hanley, Anthony	University of Toronto	Canada
Hedengran, Anne	University of Copenhagen	Denmark
Hidaka, Brandon	University of Kansas Medical Center	United States of America
Hopiavouri, Blake	University of Oklahoma Health Sciences Center	United States of America
Hopperton, Kathryn	University of Toronto	Canada
Kitson, Alex	University of Toronto	Canada
Lee, Kerry	University of Auckland	New Zealand
Mahboubi, Sinda	Université d'Auvergne	France
Mason, Julie	University of Toronto	Canada
Molto-Puigmartí, Carolina	Maastricht University	Netherlands
Muhlhausler, Bev	The University of Adelaide	Australia
Na, Hye-Kyung	Sungshin Women's University	Republic of Korea
Richter, Marilize	North-West University	South Africa
Rodrigo, Valenzuela	University of Chile	Chile
Rosqvist, Fredrik	Uppsala University	Sweden
Salem, Nicholas	National Institutes of Health	United States of America
Santaren, Ingrid Dominique	University of Toronto	Canada
Slim, Kenna	University of East Anglia	United Kingdom (Great Britain)
Souza Junior, Alcione	Universidade de São Paulo	Brazil
Su, Kuan-Pin	China Medical University	Taiwan
Svobodova, Michaela	Institute of Physiology Academy of Sciences	Czech Republic
Terrando, Niccolo	Karolinska Institutet	Sweden
Trépanier, Marc-Olivier	University of Toronto	Canada
Vetri Villalan, Sharmila	University of Kansas Medical Center	United States of America
Voggt, Alessandra	Ludwig-Maximilians-University	Germany
West, Annette	University of Southampton	United Kingdom (Great Britain)
Wickramasinghe, Vithanage Pujitha	University of Colombo	Sri Lanka
Wood, Katie	The University of Adelaide	Australia
Zhang, Jiyao	Cornell University	United States of America
Zouhar, Petr	Institute of Physiology Academy of Sciences	Czech Republic



Prof. Bengt I. Samuelsson

Karolinska Institutet, Solna, Sweden

▀ Sunday 29 June

Progress in eicosanoid research

Dr. Bengt Samuelsson is a Professor of Physiological Chemistry at the Karolinska Institute. Dr. Samuelsson's research led to the discovery of various prostaglandins and related substances. Of particular interest are the thromboxanes which are involved in such common, severe thrombotic diseases as strokes and coronary infarcts. He also discovered the leukotrienes, substances that play a role in inflammation and asthma and other allergic diseases. For his discovery of prostanoids and leukotrienes he was awarded the Nobel Prize in Physiology or Medicine in 1982.

Dr. Samuelsson was born in Halmstad, Sweden in 1934. He obtained his Doctor of Medical Science degree in biochemistry and later, his M.D. degree, from the Karolinska Institute. He spent a year as a research fellow in the Department of Chemistry at Harvard University, Cambridge, Mass., USA. In 1972, Dr. Samuelsson was appointed professor at the Karolinska Institute. In 1973–1983, he was Chairman of the Department of Chemistry; in 1978–1983, Dean of the Medical Faculty and in 1983–1995, President of the Karolinska Institute.

In 1985–1988, he was a member of the Swedish Government Research Advisory Board and in 1987–1990, a member of the Swedish National Commission on Health Policy. Dr. Samuelsson has been a member of the Nobel Assembly and the Nobel Committee for Physiology or Medicine at the Karolinska Institute and in 1993–2005, he was Chairman of the Nobel Foundation in Stockholm.

In 1994–1997 Dr. Samuelsson was a member of the European Science and Technology Assembly (ESTA) and in 1995–1997 a special advisor to the Commissioner for Research and Education in the European Commission.

In addition to the Nobel Prize, Dr. Samuelsson has received a number of worldwide awards and honorary academic degrees. These include the Louisa Gross Horwitz Award, the Gairdner Foundation Award, the Albert Lasker Basic Medical Research Award and the Abraham White Distinguished Science Award. He holds honorary doctoral degrees from University of Chicago, Louisiana State University and University of Illinois, USA; University of Buenos Aires, Argentina; University of Rio de Janeiro, Brazil; Norman Bethune University of Medical Sciences, Changchun, China; Complutense University of Madrid, Spain, University of Milan, Italy and University of Uppsala, Sweden.

Dr. Samuelsson is a honorary member of the American Academy of Arts and Sciences, the American Society of Biological Chemists and the Association of American Physicians. He is a Foreign Associate of the US National Academy of Sciences and a Foreign Member of the Royal Society, London. He is a member of the Royal Swedish Academy of Sciences, the Royal National Academy of Medicine, Spain, the French Academy of Sciences and the Institute of Medicine, USA.



WALKING

Some Congress delegates may find a number of ISSFAL 2014 locations to be quite accessible on foot – and scenic panoramas abound along the way.

See suggested routes and relative distance between select points on this area map, or feel free to follow your own way. Just wear comfortable shoes, have your camera ready, and enjoy the magnificent views.

Dinner Debate at Nalen Restaurang
SUNDAY 29 JUNE
19:00-21:00 (BY INVITATION)

T-Bana: Hötorget
Green Line: T17, T18 or T19 Trains

20-30 min
2.3 km

**Central Station (Trains)
& Arlanda Express**
T-Bana: T-Centralen

**Opening Reception at
Stockholms Stadshus
“City Hall”**
SATURDAY 28 JUNE
19:00-21:00

CONGRESS VENUE



**Münchenbryggeriet
“The Brewery”**
28 JUNE – 2 JULY

10-20 min
1.5 km

**New Investigator’s Mixer
Aboard The Lady Patricia**
MONDAY 30 JUNE
19:00-21:00 (BY INVITATION)

SEE ENLARGED AREA AT RIGHT

**Hilton
Slussen**

T-Bana: Slussen



TAXI INFORMATION

There are several taxi companies to choose from in Stockholm. Approved taxis with metered fares always bear yellow number plates. Credit cards are readily accepted.

Sweden does not regulate prices; they may vary greatly. It is the customer's responsibility to check prices beforehand. Check the price on the yellow label (pictured at right), which is usually on the rear door window, before entering the vehicle. The price

on the yellow label is based on a 10 km, 15-minute journey. The price indicated on the taximeter is in Swedish kronor (SEK, or kr).

The highest unit price of most taxis is between SEK 290-390. For trips to and from Stockholm Arlanda Airport the major taxi companies have fixed prices of between SEK 450-500. Always ask the driver beforehand.

In addition to the major taxi companies there are several independent firms; caution is advised.

You can easily get hold of a taxi by calling a taxi company, hailing one on the street or by taking a one from a rank, e.g. at NK on Hamngatan. There is a manned taxi centre at Central Station that can help you with finding the right service, e.g. if you need child seats in the vehicle.

Several of the big Stockholm taxi companies have a very high proportion of eco-vehicles. A new rota system gives priority to cabs with low carbon emission levels.

TAXI 020

020-20 20 20 20

www.taxi029.se

TAXIKURIR

08-30 00 00

www.taxikurir.se

TAXI STOCKHOLM

08-15 00 00

www.taxistockholm.se

Source: www.visitstockholm.com/en/Travel/In-Stockholm/Tips-In-Stockholm/Taxi/



Gala Dinner at
Vasamusset
"Vasa Museum"
TUESDAY 1 JULY
19:00-23:00

ISSFAL 2014 PLACES

MÜNCHENBRYGGERIET

– THE BREWERY –

Torkel Knutssonsgatan 2 | 118 25 Stockholm
+46 8-658 20 00

HILTON STOCKHOLM SLUSSEN

Guldgränd 8 | 104 65 Stockholm
+46 8-517 353 00

STOCKHOLMS STADSHUS

– CITY HALL –

Hantverkargatan 1 | 111 52 Stockholm
+46 8-508 290 58

NALEN RESTAURANG

Regeringsgatan 74 | 111 39 Stockholm
+46 8-505 292 00

THE LADY PATRICIA

Söder Mälarstrand Kajplats 19 | 118 25 Stockholm
+46 8-743 05 70

VASAMUSSET – VASA MUSEUM

Galärvarvsvägen 14 | 115 21 Stockholm
+46(0)8-519 548 00

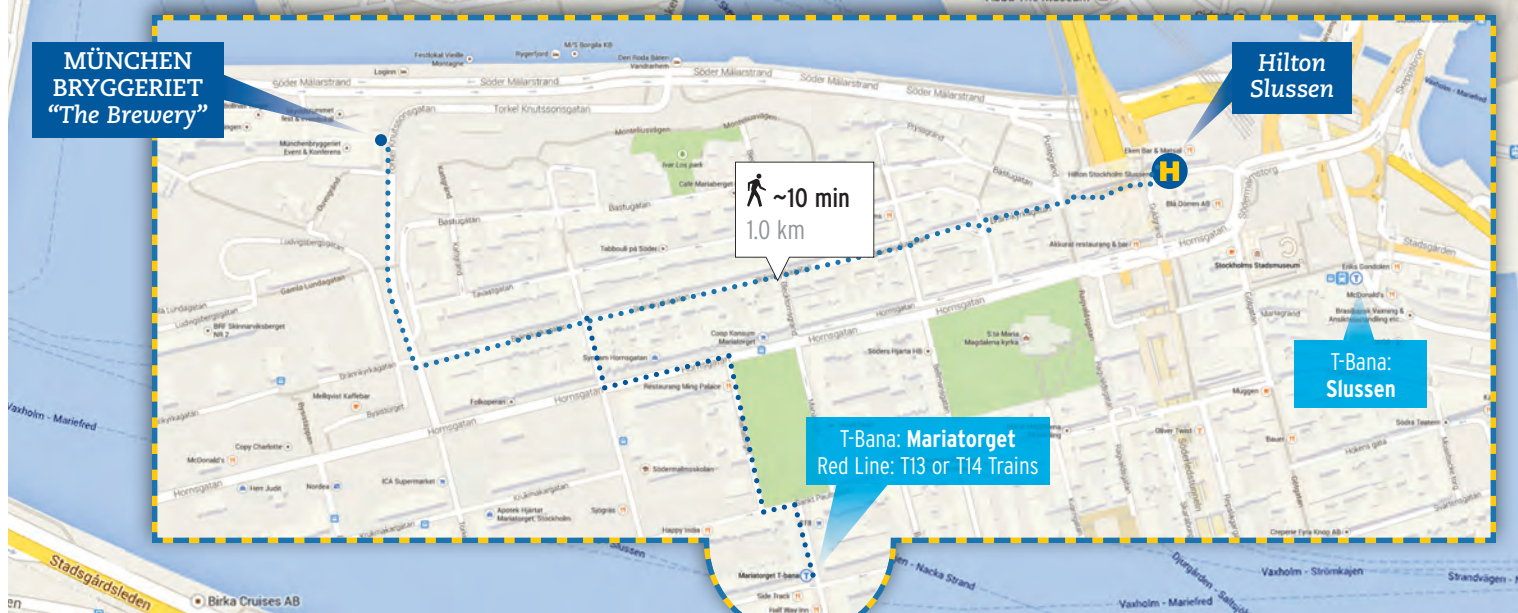
MÜNCHEN
BRYGGERIET
"The Brewery"

Hilton
Slussen

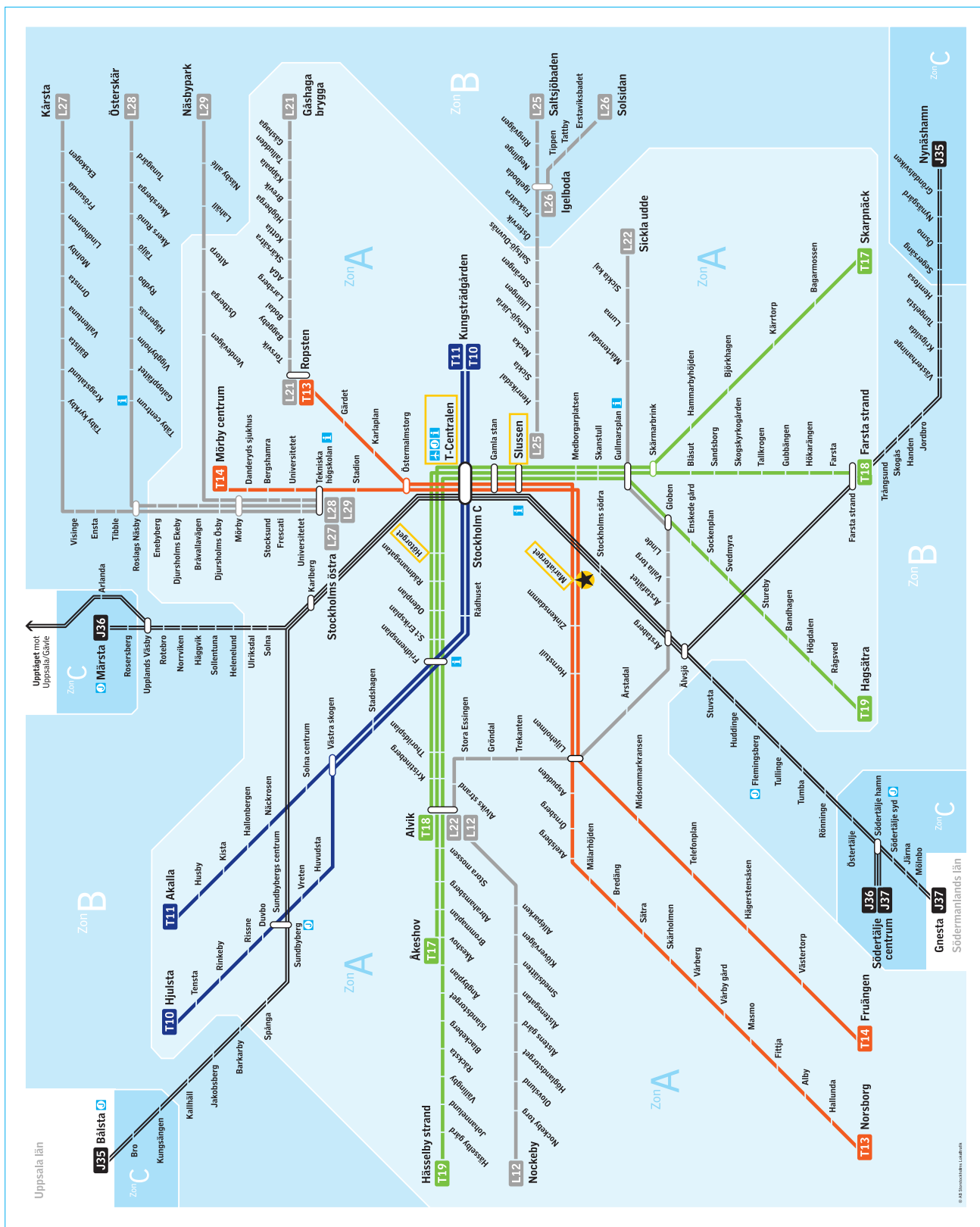
~10 min
1.0 km

T-Bana: Mariatorget
Red Line: T13 or T14 Trains

T-Bana:
Slussen



Nalen Restaurang:
Hötorget



Delegate & Speaker Information

■ ISSFAL REGISTRATION DESK / THE BREWERY - MAIN ENTRANCE FOYER

The ISSFAL Registration Desk is conveniently located **just inside the main entrance of the Brewery** (see floor plan on p. 12). Be sure to check-in at the Registration Desk to pick up your Congress materials, event tickets and name badge. Desk hours are as follows:

Saturday, 28 June 10:00 – 18:00
 Sunday, 29 June 07:30 – 18:00
 Monday, 30 June 07:30 – 18:00
 Tuesday, 1 July 08:00 – 18:30
 Wednesday, 2 July* 08:00 – 12:30

***Note:** On Wednesday, July 2, the ISSFAL Registration Desk will relocate to the **HILTON SLUSSEN HOTEL LOBBY** to assist those attending the Satellite Symposia at Artipelag.

■ EXHIBIT & POSTER HALL / THE BREWERY - MÄLARSALEN

See the floor plan on the next page and look for signage on site. The Exhibit and Poster Hall will be open for viewing throughout the day during the following times:

Sunday, 29 June 10:00 – 16:15
 Monday, 30 June 09:15 – 16:30
 Tuesday, 1 July 09:45 – 16:30

All posters will be displayed throughout the Congress; however, formal presentation of posters will take place during lunch on the day specified in the chart on page 9. Please refer to the Poster section of this program for details on the posters displayed. 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 that remains after a designated session's teardown time is subject to removal and disposal by Congress management.

SCHEDULED EVENTS:	MORNING BREAK	LUNCH	AFTERNOON BREAK
Sunday, 29 June	10:00-10:40	12:00-13:30	15:30-16:15
Monday, 30 June	09:15-10:00	12:20-13:45	15:45-16:30
Tuesday, 1 July	09:45-10:30	12:05-13:45	15:45-16:30

■ SPEAKER READY ROOM / THE BREWERY - ABOVE MÄSSTORGET

Please identify yourself as a Congress presenter to the ISSFAL Registration Desk staff and you will be directed to the Speaker Ready Room. Speaker Ready Room hours are as follows:

Saturday, 28 June 14:00– 17:00
 Sunday, 29 June 08:00 – 16:30
 Monday, 30 June 08:00 – 16:30
 Tuesday, 1 July 08:00 – 14:00

Due to the large number of presentations in the program, **speakers are urged to 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. An audio-visual technician will be available to assist speakers with pre-flighting their presentation. Please bring a copy of your presentation to the Speaker Ready Room on a flash drive/memory stick.

■ **BUSINESS CENTRE** – The Business Centre at The Brewery is located by the ISSFAL Registration Desk. Payment via credit card may be required.

■ **INTERNET ACCESS** – ISSFAL attendees will have complimentary internet in all areas of The Brewery. Wi-fi Network: **issfal2014** Password: **lipid2014**

■ **SMOKING** – The Brewery is a non-smoking facility. Smoking is only permitted outside the Brewery. This is the same policy for all local restaurants, bars and public buildings.

■ **LOST PROPERTY** – Please report any lost or unattended items immediately to Congress staff. Should you lose anything while at the Congress, do enquire at the ISSFAL Registration Desk where any found property will be held.

NAME BADGE POLICY

Your badge grants you access to the ISSFAL 2014 Congress. Please handle it with care. **Delegates are required to wear their name badge at all times and will not be granted access to the Congress sessions or social events without it.** A reprint convenience fee of \$50⁰⁰ USD will be assessed for any lost or misplaced badge. This is to help ensure that access to the Congress is properly managed.

CERTIFICATE OF ATTENDANCE

A Certificate of Attendance will be distributed to each registered delegate while at the ISSFAL 2014 Congress. This is included in the delegate bag with Congress materials.

Scheduled Meals & Social Program

■ **BREAKFAST:** As is customary in most European hotels, your room rate likely includes breakfast daily. As such, ISSFAL will not provide breakfast for delegates during Congress dates.

■ COFFEE BREAKS & LUNCHES

THE BREWERY - MÄLARSALEN

ISSFAL 2014 Congress registration includes morning and afternoon coffee breaks and lunch on Sunday, Monday and Tuesday, June 29-July 1.

■ WELCOME RECEPTION AT CITY HALL

SATURDAY, JUNE 28 / 19:00 – 21:00

Hosted by the City of Stockholm and the Stockholm County Council. Hors d'oeuvres and beverages will be provided. **It is strictly enforced by the City Hall that ONLY those attendees who registered for the congress PRIOR TO JUNE 13 may be allowed to attend this special event.** You will receive your invitation card (not transferrable) when you pick up your Congress materials from the Registration Desk at The Brewery on Saturday, 28 June, between 10:00-18:00. We regret any inconvenience; however, invitations are not transferrable and late or on-site registrations are not allowed.

■ GALA DINNER AT VASA MUSEUM

TUESDAY, JULY 1 / 19:00 – 23:00

Formal dinner in the main hall of the museum alongside the infamous ship.



Exhibitors

BOOTH #

AAK.....	6
AlaskOmega.....	11
BASF.....	10
DSM Nutritional Products.....	8
Efamol.....	7
GC Reiber.....	2
Larodan.....	5
MeadJohnson Nutrition.....	1
Nordic Naturals.....	4
OmegaQuant.....	3
RIMFROST.....	12
Smartfish.....	9

Poster Presentations

Posters will be presented in three halls at the upper floor of The Brewery – **Nobelterrassen (N)**, **Mälarsalen (M)** and **Strindbergssalongen (S)**. Here you will also find the Exhibit Hall, where Coffee Breaks and Lunch will also be served on Sunday, Monday and Tuesday (breakfast is on your own).

Posters will be available for review during all three full days of the Congress. Since we have a very full oral programme, it is important that all attendees have ample opportunity to see the Posters throughout the Congress.

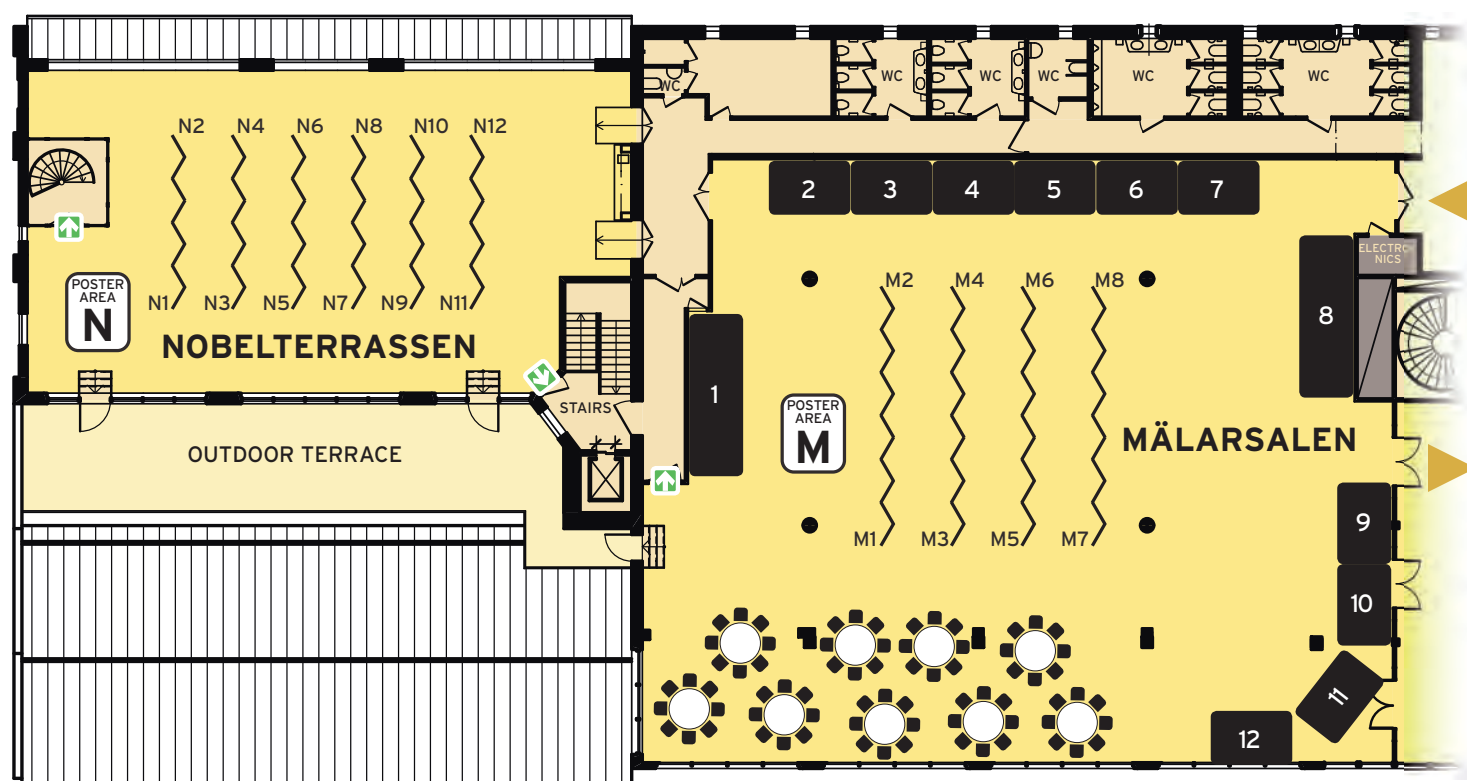
We have created a schedule whereby you will be able to see presentations formally on **one day only during the lunch break**, to facilitate discussion with those interested and also make it possible for you to be able to meet other presenters of topical interest to you.

VIEWING POSTERS

Posters have been given a number for easy identification by delegates. This number has three parts:

- The initial letter refers to the "Poster Area" (there are three) where the Poster will be presented (see floor plan below and table at right).
- The next number refers to the designated screen row.
- The second number after the decimal refers to the specific screen within the designated row.

This identification number will be found on the specific location as described above. The number will also appear wherever the corresponding Abstract is listed in the Program and online.






POSTER DISPLAY AREAS / PRESENTATION SCHEDULE

ATTENTION PRESENTERS:

You will formally present your Poster *during lunch*, on the day indicated for your row — which corresponds to the first two numbers of your new Poster Number.

For the complete Poster listings please see p. 41.

POSTER AREA	TOPIC	SUNDAY	MONDAY	TUESDAY
NOBELTERRASSEN 	Nutrition/Food/Diary/Formula	N1 N4	N2	N3
	Programming/Epigenetics	N7	N5	N6
	Placenta/Pregnancy/Neonatology	N10	N8	N9
	Neurodevelopment/Neuroscience	–	N11	N12
MÄLARSALEN 	Metabolism/Endocannabinoids	M1	–	–
	Metabolism/Oxidation	–	M2	M3
	Metabolism/Transformation	M4	M5	–
	Metabolism/Oxylipins	–	–	M6
	Cancer	M7	–	–
	Immunology/Clinical Diseases	–	M8	–
STRINDBERGSALONGEN 	Exercise	S1	–	–
	Obesity/ Diabetes mellitus	–	S2	S3
	Vitamin D	S4	–	–
	Cardiovascular diseases/Cholesterol	S7	S5 S8	S6
	Neuropsychiatry	–	–	S9
	Alzheimer/Apo E	S10	–	–
	Aging/Pain	–	S11	S12
	Methodology	S13	–	–
	Bioavailability	–	S14	–
	Common Topics	–	–	S15





2014

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FOR THE STUDY OF FATTY ACIDS AND LIPIDS**
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AT "THE BREWERY" — MÜNCHENBRYGGERIET



SPONSORS & EXHIBITORS

AAK

BOOTH 6

AAK is the first choice for healthy vegetable oil solutions, in the fields of for example, confectionery, dairy, infant nutrition and bakery. AAK has a global supply chain in which food safety and quality are top priorities.

Aker BioMarine

Aker BioMarine is an integrated biotechnology company dedicated to the sustainable harvest of krill and development of krill-derived biotech products. Aker BioMarine's Superba™ Krill products are provided with 100% traceability from sea to shelf. The uniqueness of Superba™ Krill is that EPA and DHA are provided in phospholipid form.

AlaskOmega

BOOTH 11

AlaskOmega® is produced from wild-caught Alaska Pollock oil sourced from the Bering Sea that is certified sustainable by the Marine Stewardship Council. AlaskOmega® is available in ultra-high purity ethyl ester and triglyceride concentrates up to 80% EPA and DHA content.

BASF

BOOTH 10

BASF is a global market leader for omega-3 fatty acids offering a full range from low to medium to high-concentrate omega-3 fatty acids for pharmaceuticals, dietary supplements and clinical nutrition – derived from nature, enhanced by science.

BAXTER

Baxter International Inc. through its subsidiaries, develops, manufactures and markets products that save and sustain the lives of people with hemophilia, immune disorders, infectious diseases, kidney disease, trauma, and other chronic and acute medical conditions.

B. Braun Melsungen AG

B. Braun Melsungen AG is a family owned company with 50,000 employees in 61 countries. Through exchanging knowledge, B. Braun helps to improve the medical environment and to increase the safety of patients and healthcare professionals alike. For more information: please see www.bbraun.com.

Carlson Laboratories

Founded in 1965, Carlson Laboratories began as a family owned and operated business dedicated to providing only the highest quality nutritional supplements. Their award-winning fish oil products are renowned for their purity and great taste.

DSM Nutritional Products

BOOTH 8

DSM - Bright Science. Brighter Living.™ Royal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competences in Life Sciences and Materials Sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders simultaneously. DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM's 24,500 employees deliver annual net sales of around 10 billion. The company is listed on NYSE Euronext. More information can be found at www.dsm.com.

Efamol Ltd

BOOTH 7

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. These products are sold in more than 30 countries worldwide.

Fresenius Kabi

Fresenius Kabi is a global health care company specializing in lifesaving medicines and technologies for infusion, transfusion and clinical nutrition. The products and services help to care for critically and chronically ill. Product portfolio: I.V. generic drugs, infusion therapies, clinical nutrition and related medical devices, products for whole blood and blood components collection and processing and transfusion medicine.

GC Rieber

BOOTH 2

GC Rieber Oils has been a leading supplier of refined fish oil since 1965. GC Rieber Oils modern refining technologies guarantee a high and consistent quality, with state-of-the-art cleaning technologies that according to each specification can remove or reduce environmental pollutants, cholesterol and oxidation products. The company is fully approved under ISO 9001 with HACCP certification.

GOED

GOED is a proactive and accountable association of the finest manufacturers, marketers, and supporters of EPA and DHA omega-3s, working to educate consumers, government groups, and the healthcare community, while setting high ethical and quality standards for our business sector.

Golden Omega

Golden Omega is a direct to the source solution for companies requiring a deodorized, concentrated omega-3 fish oil. Located right next to the fishery in northern Chile, we offer a full range of products from 50–85 % EPA and DHA.

Lactalis

Lactalis is a multi-national dairy products corporation, owned by the Besnier family and based in Laval, Mayenne, France. It is the largest dairy products group in the world, and is the second largest food products group in France, behind Danone.

Larodan

BOOTH 5

Larodan develops, manufactures and market high quality research grade Lipids for the international laboratory market. Our products are used in a number of fields within research, product development and industrial processes. Larodan also provides select other Research Chemicals to the Nordic market, in collaboration with international principals that are as dedicated to their fields as we are. We focus on stable and radioactive isotopes, NMR consumables and biochemicals as well as environmental and forensic standards.

Mead Johnson Pediatric Nutrition Institute

BOOTH 1

The Mead Johnson Pediatric Nutrition Institute is a global network dedicated to advancing and applying the latest breakthroughs in nutrition science to benefit infants and children worldwide. Our only purpose is to be at the forefront of pediatric nutrition research.

Mylnfield Lipid Analysis

Mylnfield Lipid Analysis is an independent analytical laboratory specialising in the analysis of oils and fats. We are approved by the MHRA for both GMP and GCP analyses and by the FDA for GMP analyses.

Nordic Naturals

BOOTH 4

Nordic Naturals is a leading manufacturer of omega-3 fish oils and essential fatty acid supplements. With a complete line of omega oils for adults, children, and pets, Nordic Naturals promotes a lifetime of optimal health.

Nutegrity

Nutegrity's mission is to provide pure, sustainable nutrition products that support healthy living. We provide pure ingredients from sustainable land and sea sources by controlling quality through vertical integration and traceability programs, while working to protect the longevity of product supply.

Nutrogenics/WHC

WHC supplies the most environmentally friendly and unique Omega supplements, selected on the basis of the highest possible quality, eco-management, purity and safety requirements, via Nutrogenics. We guarantee 'the best of the best' when it comes to Omega-3 supplements, as demonstrated by their pharmaceutical quality and highest Omega-3 concentration. WHC Omega supplements are available from pharmacies, therapists and via Nutrogenics online.

Omega Protein Corporation

Omega Protein Corporation is a nutritional ingredient company dedicated to delivering healthy products to the animal and human nutrition industries. Omega Protein is the United States' leading vertically integrated producer of sustainable omega-3 fish oil and specialty fish meal products.

OmegaQuant Analytics

BOOTH 3

OmegaQuant Analytics partners with academic and corporate researchers to provide a full range of fatty acid analytical services. We also consult in study design and assist in data interpretation.

RIMFROST

BOOTH 12

Olympic Seafood, the company behind RIMFROST and the management of Juvel, a specialized krill-collecting vessel, focuses exclusively on Antarctic krill ingredients for consumer applications. Our operations aim for low emissions, low energy usage and climate impact. We guarantee 100% traceability.

Smartfish

BOOTH 9

Smartfish is a Norwegian company developing synergistic omega 3 based pharmaconutrition products. The patented technology is basis for the product range of orally applied liquid emulsions. Smartfish' emulsions are characterized by its high EPA & DHA content. The EPA & DHA fatty acids enter the cell membrane effectively without carrying oxidative products and with a taste/tolerance providing superior compliance.

Suntory

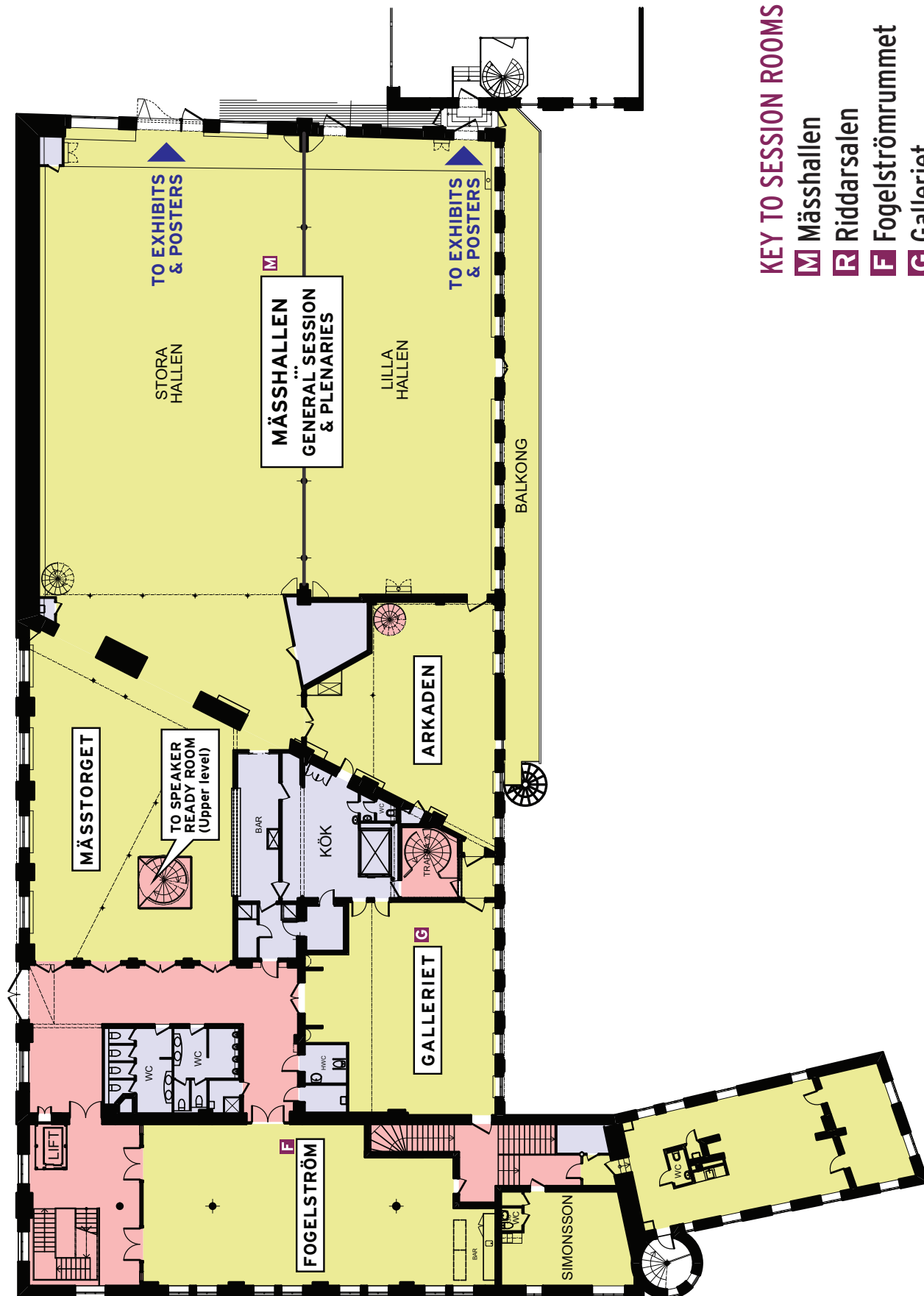
Suntory Group offers food services and alcoholic beverages to achieve our mission "In Harmony with People and Nature." As part of Suntory Group, Suntory Wellness is making an innovative business for health care. Institute for Health Care Science is the center for research based on science and tradition.

Unilever

Unilever is one of the world's leading consumer goods companies with products sold in over 190 countries. Our ambition - Unilever Sustainable Living Plan - is to help more than 1 billion people improve their health and wellbeing by 2020.

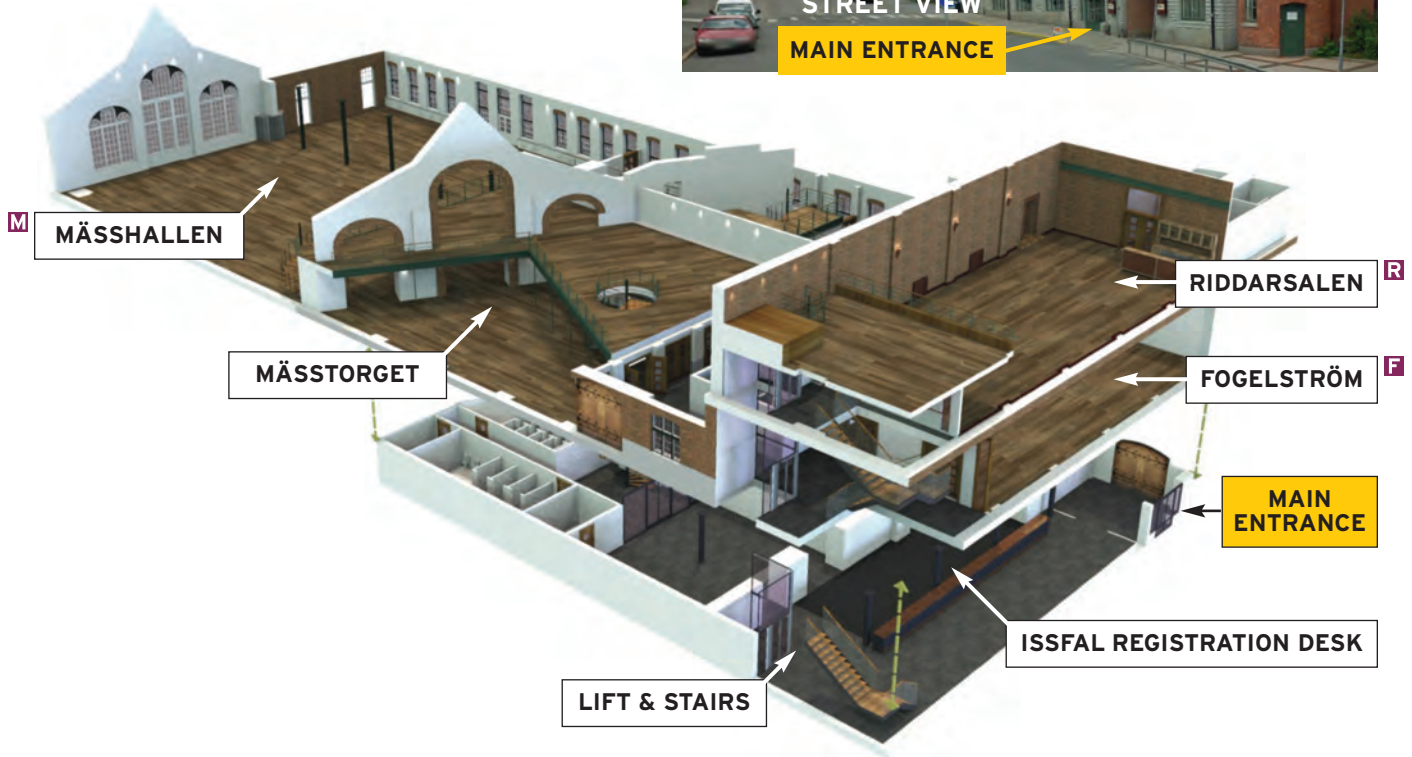
Vifor Pharma / Equazen

Equazen offers a range of nutritional supplements with specific combinations of EPA, DHA, and GLA. Equazen products have been tested in clinical trials and demonstrated efficacy in supporting cognitive function of children and adolescents. Vifor Pharma is dedicated to furthering the scientific understanding of PUFAs and their health benefits.



MÜNCHENBRYGGERIET "THE BREWERY"

Torkel Knutssongatan 2
118 25 Stockholm



TRANSPORTATION

Opening Reception at Stockholm City Hall

Saturday, 28 June / 19:00–21:00 (INVITATION ONLY; NON-TRANSFERRABLE)

Hosted by the City of Stockholm and the Stockholm County Council

Transportation to City Hall is on your own (please refer to the Area Map on page 4). The City Hall is about a 10 minute walk from the Hilton Slussen, 15 minutes from The Brewery, and a short taxi ride from any point in Stockholm Center City. **PLEASE BE SURE TO HAVE YOUR OFFICIAL INVITE CARD TO GAIN ACCESS TO THE RECEPTION.** The Invite will be given to you at the ISSFAL Registration Desk at the Brewery on Saturday, 28 May.

Dinner Debate at Nalen Restaurang

Sunday, 29 June / 19:00–21:00 (BY INVITATION)

Transportation to the Dinner Debate is on your own. We suggest referring to the map on page 4 for walking details and/or taxi information. The restaurant is about a 20-30 minute walk from the Slussen (Hilton). The closest T-Bana Station is **Hötorget** (via the Green line T17, T18 or T19 trains).

Gala Dinner at Vasa Museum

Tuesday, 1 July / 19:00–23:00

Transportation to the Gala Dinner is on your own. Please see the map on page 4 for walking details and/or taxi information. the Vasa Museum is a little over 30 minute walk from the Slussen (Hilton). You may also use the excellent public transportation options in Stockholm:

- **TRAM:** The easiest way to get to the museum is by tram. From the city centre (by Sergels Torg Square, on Hamngatan street) take tram number 7 towards Waldemarsudde.
- **BUS:** Bus 44 to bus stop Nordiska museet/Vasamuseet. Bus 69 and 76 to bus stop Djurgårdsbron.
- **METRO (T-BANA):** Red line to station Karlaplan. From there a 10 minute walk or bus 44 to bus stop Nordiska museet/Vasamuseet.

Satellite Symposia at Artipelag

Wednesday, 2 July / 9:30–17:30

Buses for the morning Satellites will depart at 08:30 from the Hilton Slussen. Buses for the afternoon satellites will depart from the Hilton Slussen at 11:30. Buses returning from Artipelag after the morning Satellites will depart after Lunch, at 13:30. A boat will take all remaining attendees at the end of the day back to Stockholm (boat trip is 90 minutes). If you have signed up for this event, please see your final confirmation email for the Satellites.

NOTES



2014

**11TH CONGRESS OF THE INTERNATIONAL SOCIETY
FOR THE STUDY OF FATTY ACIDS AND LIPIDS**
28 JUNE – 2 JULY | STOCKHOLM, SWEDEN
AT "THE BREWERY" — MÜNCHENBRYGGERIET



PRE-CONGRESS PROGRAMME

Separate registration
is required to attend

Lipid Update Seminar In collaboration with Karolinska Institutet

The **Lipid Update Seminar** on Saturday will present a comprehensive overview of the most important clinical aspects related to the studies of dietary fatty acids. All the presenters are leading, internationally recognized researchers and experts in their respective fields, which is the requirement for being invited by the Karolinska Institute.

This one-day seminar will cover the most discussed and developing areas of essential fatty acid research. **Prof. Artemis Simopoulos** is well-known for introducing the discussion about the importance of the balance between the omega 6 and omega 3 fatty acids for metabolism and health; **Prof. Michael Crawford** has stressed the importance of DHA for the superiority of the human in the evolution; **Prof. Daan Kromhout** is one of the world's foremost researchers in the field of the importance of the fatty acid balance for cardiovascular health and disease prevention. **Prof. Nicolas Bazan** is a prominent figure in the importance of DHA and lipid mediators for brain and retinal function; and **Prof. Robert Gibson** is a leading researcher regarding the importance of DHA during fetal and postnatal period for the development of the infant.

This program is designed to give a good introduction for those who want to learn about the importance of fatty acids in health and disease. It will be valuable both for those already in the field, who want a state-of-the-art overview, but also for those who have a new interest in the field. It will thus turn to both basic researchers and for clinicians not only in the fields covered by the speakers but also for those generally interested in fatty acid metabolism. Fatty acid metabolism is fundamental in all cells in the body and influence most functions and has attained more interest in recent years as lipidomics has been recognized as important as proteomics. It is of importance for all involved in care of patients and especially for those involved in nutrition, like nutritionists, dieticians and nurses. Students are also welcome to learn about these fundamental aspects of the relation between food and health.

28 JUNE 2014 | AT THE MÜNCHEN BREWERY, STOCKHOLM |
09.45–17.00

09.15–09.45 COFFEE SERVED

09.45–10.00 WELCOME TBD

10.00–11.00 **Professor Artemis Simopoulos (Bethesda, Washington DC, USA)**
The Clinician's Guide to Long Chain Fatty Acids

- The biochemistry of fatty acids – learning to speak the language
- The omega-3 and omega-6 relationship
- What happens to omega-3s when we ingest them – where do they end up, and what roles do they play?

11.00–12.00 **Professor Michael A.A. Crawford (London, UK)**
Fatty acids in evolution, past, present and future

- Theories behind evolution
- DHAs irreplaceable role throughout neural evolution

12.00–13.00 LUNCH

13.00–14.00 **Professor Daan Kromhout (Wageningen, The Netherlands)**
Cardiovascular Diseases – The Role of Omega-3 Fatty Acids

- Fish consumption and cardiovascular diseases in prospective cohort studies
- Omega-3 fatty acid supplementation and indicators of endothelial function, inflammation and arrhythmias in RCTs
- Omega-3 fatty acid supplementation and cardiovascular diseases in RCTs

14.00–15.00 **Professor Robert Gibson (Adelaide, Australia)**
Essential fatty acids for Pediatricians and Obstetricians

- Why pregnant and lactating women need omega-3s
- How much DHA is appropriate and in what form should it be given?
- Does DHA play a role in brain development after infancy?

15.00–15.30 COFFEE BREAK

15.30–16.30 **Professor Nicolas G Bazan (New Orleans, USA)**
Omega-3 fatty acids in CNS ischemia and neurodegenerative diseases

- Neuroprotective properties of the DHA metabolites
- Fatty acids in Alzheimer and Parkinsons diseases
- Fatty acids and CNS injury

16.30–17.00 DISCUSSION AND CONCLUSION

19.00– WELCOME RECEPTION at the City Hall (By invitation of Stockholm City Council)

ISSFAL 2014 PRE-CONGRESS PROGRAMME | JUNE 28

In collaboration with Karolinska Institutet

Lipid Update Seminar Faculty



Nicolas Bazan, MD, PhD
School of Medicine, LSUHSC, USA

Born in Tucuman, Argentina, Dr. Bazan studied molecular principles of early responses to disease underlying Alzheimer's, stroke, epilepsy, traumatic brain injury and retinal degenerations. Trained at Columbia University P&S in New York and Harvard Medical School, Bazan was appointed faculty at age 26 at the University of Toronto, Clarke Institute of Psychiatry, where he conducted seminal studies on docosahexaenoic (DHA) and arachidonic acids early brain responses to experimental seizures and ischemia. In the 1970s, he established a research institute in Argentina. In 1981, Bazan joined the faculty of LSUHSC, where he later established and now heads the Neuroscience Center of Excellence.

His laboratory has uncovered molecular principles of the retention/conservation of DHA and contributed to the understanding of cell survival signaling in retinal pigment epithelial (RPE) cells, photoreceptors and brain. He and his colleagues discovered the cell survival mediator neuroprotectin D1 (NPD1). Under conditions of uncompensated oxidative stress, NPD1 is made on demand from DHA when disruptors of homeostasis evolve and the initial inflammatory response needs to be modulated to protect neural cell integrity. NPD1 is the first biologically active mediator of the novel docosanoid family. His laboratory found that neurotrophins are agonists for the synthesis of this mediator, that 15-lipoxygenase-1 (15-LOX-1) is the enzyme that catalyzes its synthesis, that it targets protein phosphatase 2A (PP2A) to regulate anti-/pro-apoptotic proteins during oxidative stress, and that it regulates proteostasis. They also identified transcription of pro-inflammatory genes as a target of NPD1 and discovered that the CA1 hippocampal area from short-post mortem, early-stage AD patients displays a 25-fold loss of NPD1 as well as of the enzyme for the synthesis of this lipid mediator. A central theme of his laboratory is to understand early responses to oxidative stress and conditions that recapitulate Alzheimer's and other neurodegenerative diseases aiming to gain insight into the mechanisms that could contribute to preventing, ameliorating and eventually contributing to curing these diseases. A common thread of concepts includes neuroinflammatory signaling, DHA and bioactive lipid mediators. Because the essential omega-3 fatty acid DHA is enriched and avidly retained in the central nervous system, including photoreceptor cells, they postulated and then demonstrated that, as AA generates eicosanoids (20 C: prostaglandins, etc.), DHA generates docosanoids (from 22 C: DHA).

He is a Senate Member (2009-2015) for Deutsches Zentrum für Neurodegenerative Erkrankungen (DZNE) in der Helmholtz-Gemeinschaft, a nationwide research program on Alzheimer's disease in Germany, Member of the Biology of the Visual System Study Section, NIH (2010-2015), and Chairman of the Board of Governors for the Association for Research in Vision and Ophthalmology (ARVO) Foundation (2011-2014). Among Dr. Bazan's awards are the Javits Neuroscience Investigator Award from the National Institute of Neurological Diseases and Stroke (1989); elected to the Royal Academy of Medicine, Spain (1996); elected fellow of the Royal College of Physicians of Ireland, Dublin (1999); President, American Society for Neurochemistry (1999-2001); Doctor Honoris Causa, Universidad de Tucuman, Argentina (1999); Endre A. Balazs Prize, International Society of Eye Research (2000); the Proctor Medal, ARVO (2007); the Alkmeon International Prize (2011); the Chevreul Medal, Paris, France (2011); the Excellence Award, Annual European Association for Vision and Eye Research, Nice, France (2013); and the Mossakowski Medal, Polish Academy of Sciences, Warsaw, Poland (2013).

His civic and artistic community involvement includes being a patron of the New Orleans Opera, and authoring *Una Vida: A Fable of Music and the Mind*, produced currently as a feature film; as well as *The Dark Madonna: A Fable of Resiliency and Imagination*—both novels exploring his lifelong intellectual quest to understand the interface between science, art and music. His goal with both novels, and others in the planning stages is to share this exploration for a better understanding of the deep beauty and complexity of human experience.



Michael Angus Crawford, PhD, FSB, FRCPath
Chelsea & Westminster Hospital at Imperial College, UK

A graduate of Edinburgh he gained his PhD at the Royal Post Graduate Medical School, Hammersmith Hospital then part of London University. During his work there with Malcolm Milne he uncovered the genetic cause of Hartnup Disease. Michael and his family moved in 1960 to Makerere Medical School, Uganda to establish chemical pathology and teach biochemistry. He set up a research group with funding from the MRC and Cancer Research UK on the role of nutrition in tropical heart disease and cancer in East Africa. He described the background aetiology to endomyocardial fibrosis, and the volvulus which was the commonest surgical emergency in Buganda. He reported the connection between aflatoxin and primary carcinoma of the liver.

In 1963, he participated in the establishment of the Muhimbili Medical School in Dar-es-Salaam. In 1965 he returned to the UK as head of Biochemistry at the Nuffield Institute of Comparative Medicine, while continuing the research in East Africa until 1972. He was a Wellcome Trust Visiting Research Fellow, to Professor Ernst Baranay, Department of Pharmacology, University of Uppsala, Sweden and held a Special Chair in Biochemistry at the University of Nottingham. In 1972 his research with Andrew Sinclair led to the identification of omega 3 docosahexaenoic acid (DHA) as a major determinant of brain growth and a plausible role in evolution of the human brain. He recently put forward a quantum mechanical theory for the exclusive conservation of DHA in neural signalling membranes over the 600 m.y. of animal evolution.

As Director of the Institute of Brain Chemistry and Human Nutrition at the Queen Elizabeth Hospital for Children he established the Hackney project with Wendy Doyle which described the role of maternal nutrition during pregnancy as an independent determinant of being born small for gestational age. He has been a consultant to WHO, FAO and the three joint FAO/WHO consultations on dietary lipids 1978, 1994 and 2010. Michael has been awarded several international prizes and medals for his work, which included election to the Hall of Fame at the Royal Society of Medicine in London in 2010, an award from the University of Louisiana - for Neuroscience and Medicine in the same year - and was elected Brain of the Year in 2013 by the Brain Trust, UK. He serves as a trustee for four medical research charities and is an advisor to the Research Council of the Government of Oman.

He is presently at the Division of Reproductive Biology, Obstetrics and Gynaecology, Chelsea and Westminster Hospital at Imperial College, London, UK. Working with colleagues in Africa, China and the USA his present research is on neurogenesis and neurodevelopmental disorder. He has published over 300 peer reviewed papers and three books. A fourth is on the way.



Prof. Robert Gibson
University of Adelaide, Australia

Professor Gibson is a clinical biochemist/nutritionist who has published 300 peer reviewed papers in a variety of paediatric, nutrition and biochemical journals. He has designed and conducted a range of randomised clinical trials involving nutrition interventions in the perinatal period. He has tested the effects of interventions with iron, selenium, probiotics, nucleotides and long chain polyunsaturated fatty acids (PUFA) on infant biochemistry, growth, physiology and developmental outcome.

Professor Gibson was awarded the 2003 Nutrition Society of Australia, Research Medal and in 2004 was made a Fellow, Nutrition Society of Australia. In 2012 he was awarded the Alexander Leaf Distinguished Scientist Award for Lifetime Achievement. He recently established FOODplus Research Centre. www.adelaide.edu.au/foodplus



Daan Kromhout, MSc, PhD, MPH
Royal Netherlands Academy of Arts and Sciences,
Wageningen University, The Netherlands

Fields of interest: Human nutrition, cardiovascular epidemiology and public health. Present positions: Academy professor, Royal Netherlands Academy of Arts and Sciences, 2010-present. Professor of Public Health Research, Wageningen University, The Netherlands, 1994-present. Adjunct professor, Division of Epidemiology and Community Health, University of Minnesota, Minneapolis, USA, 2007-present. Vice-president of the Health Council of the Netherlands 2005-present.

Career & professional Appointment: Director Nutrition and Consumer Safety Division, National Institute of Public Health and the Environment, Bilthoven, The Netherlands, 2002-2005. Director, Division of Public Health Research, National Institute of Public Health and the Environment, Bilthoven, The Netherlands, 1991-2001. Head, Department of Epidemiology, National Institute of Public Health and the Environment, Bilthoven, The Netherlands, 1988-1991. Nutrition Foundation Professor of Nutrition and Epidemiology, Leiden University, The Netherlands, 1984-1994. Associate Professor, Dept. of Social Medicine, Leiden University, The Netherlands, 1982-1988. Assistant Professor, Dept. of Social Medicine, Leiden University, The Netherlands, 1977-1982. Ph.D. student, Dept. Human Nutrition Agricultural University Wageningen, The Netherlands, 1974-1978. Research Assistant, Dept. Hematology, Karolinska Hospital, Stockholm, Sweden, 1972.

Special Experience: Co-chair of the Coordinating Team of the Seven Countries Study, 2006-present. Principal Investigator of the Alpha Omega Trial on secondary prevention of cardiovascular diseases by N-3 polyunsaturated fatty acids, 2001-present. Principal Investigator of the HALE project on diet, lifestyle and healthy ageing in 11 European countries, 2001-2004. Member of the Evaluation Committee of the Robert Koch Institute, Berlin, Germany, 1997. Member of the Evaluation Committee of the National Institute of Public Health, Helsinki, Finland, 1995 and 2007. Temporary Advisor of the WHO study group on "Diet, nutrition and prevention of non-communicable diseases", 1989. Principal Investigator of the scenario project on chronic diseases, 1988-1992. Principal Investigator of the Monitoring Project on Cardiovascular Diseases in the Netherlands, 1987-1991. Visiting Professor University of Helsinki, 1987. Member Executive Committee of the Seven Countries Study, 1986-2006. Member Executive Committee of the INTERSALT Study, 1982-1988. Principal Investigator of the Zutphen Study, 1978-present.

Academic & Scientific Honours: Kritchevsky lecture, American Heart Association Council on Nutrition, Physical Activity and Metabolism, Atlanta, USA, 2011. Academy Professor, Royal Netherlands Academy of Arts and Sciences, 2009. Award of the Netherlands Federation of Medical Scientific Societies for his contributions to research on diet and coronary heart disease in the Zutphen and Seven Countries Study, 1999. Population Sciences Lecture and Silver Medal, European Society of Cardiology, Vienna, Austria 1998. Honor award of excellence, Oldways Preservation & Exchange Trust, Boston, USA for research on the health effects of the Mediterranean diet, 1997. Fellow European Society of Cardiology, 1994. Keynote lecture, Tercentenary Charter Celebration, Royal College of Physicians of Ireland, Dublin, 1992. Annie B. Cunniff Lecture, Royal Australasian College of Physicians, Melbourne, 1990. Liga Nutrition Award, Netherlands Nutrition Foundation, 1989. Travel Grant Netherlands Organization for Scientific Research for one-year stay at the Laboratory of Physiological Hygiene University, Minnesota, USA, 1980.

Committees & Offices: Chairman Committee Healthy Nutrition ZonMW, 2010-2013. Member committee of cardiovascular risk management in the Netherlands, 2003-2011. Chairman of Program Committee for a national research program on weight control. Dutch Heart Foundation, 2001-2007. Member Governing Council IARC, Lyon, France, 2001-2005. Member Health Council of the Netherlands 1999-present. Member Council for Health Research, 1999-2001. Chairman of Scientific Committee on Epidemiology and Prevention. Dutch Heart Foundation, 1998-2006. Member Standing Committee on Nutrition. Netherlands Health Council, 1996-2005. Member Scientific Council International Agency for Research on Cancer (IARC) WHO, Lyon, France, 1994-1998. Secretary & Chairman, Working group Nutrition of the Netherlands Organization for Research, 1991-1995. Chairman Committee Nutritional Surveillance, Nutrition Council, 1988-1992. Member & Vice-Chairman, Committee Socio-economic Health Differences, 1987-1993. Member Nutrition Council, 1984-1995. Chairman Foundation Quality Control Chemical Analyses, 1986-1990. Member Committee on Diet and Cancer, Nutrition Council, 1982-1986. Member Committee on Diet and Coronary Heart Disease, Nutrition Council 1979-1982.



Artemis P. Simopoulos, M.D.
Center for Genetics, Nutrition and Health, USA

Artemis P. Simopoulos, M.D. is the Founder and President of the Center for Genetics, Nutrition and Health, a nonprofit educational organization in Washington, D.C. since 1990. A graduate of Barnard College, Columbia University, with a major in Chemistry, and a graduate of the Boston University School of Medicine, she is a pediatrician and endocrinologist whose research at the National Institutes of Health (NIH) was on the nutritional aspects of genetic and endocrine disorders; evolutionary aspects of diet and fatty acids; and the importance of a balanced ratio of omega-6/omega-3 fatty acids in health and disease and in growth and development.

Dr. Simopoulos was chair of the Nutrition Coordinating Committee at the National Institutes of Health (NIH) that coordinated all Nutrition Research of the Federal Government in the U.S. in the Office of Science and Technology Policy at the White House. She was consultant to the Office of Consumer Affairs at the White House. Prior to that she was the Executive Secretary of the Division of Medical Sciences at the National Academy of Sciences (NAS) during which time she directed the Asilomar Conference on Recombinant DNA technology. While at the NAS she directed the Committee that developed the report Genetic Screening: Programs, Principles, and Research.

Dr. Simopoulos is a Founding Member of the International Society for the Study of Fatty Acids and Lipids (ISSFAL) in 1991, Secretary/Treasurer of ISSFAL from 1991 to 1998, and a member of the Editorial Board of the ISSFAL Newsletter from 1994 to 2000. She is the Founder of the International Society of Nutrigenetics/Nutrigenomics (ISNN) and was Past President of ISNN from 2005-2009. She is the author of The Omega Diet (HarperCollins, 1999) and has edited over 50 books and journal supplements, in addition to publishing over 350 scientific papers. She was the editor of the Karger series World Review of Nutrition and Dietetics from 1989-2011.



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2014

11TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS 28 JUNE – 2 JULY | STOCKHOLM, SWEDEN AT "THE BREWERY" — MÜNCHENBRYGGERIET

Programme at-a-Glance



KEY TO BREWERY SESSION ROOMS

M Mässhallen R Riddarsalen F Fogelströmrummet G Galleriet

SATURDAY 28 JUNE

10:00–18:00 REGISTRATION DESK OPEN

09:15–17:00 **LIPID UPDATE SEMINAR** See agenda
In collaboration with Karolinska Institutet on page 17

14:00–17:00 **ISSFAL BOARD MEETING**

19:00–21:00 **WELCOME RECEPTION IN CITY HALL**
Hosted by City of Stockholm & Stockholm County Council

SUNDAY 29 JUNE

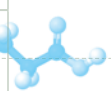
REGISTRATION DESK OPEN 07:30–18:00

08:00	OPENING CEREMONY M			
09:00	NOBEL LAUREATE LECTURE M Prof. Bengt Samuelsson Progress in eicosanoid research			
10:00	BREAK / POSTERS & EXHIBITS MÄLARSALEN			
11:00	1. Lipid mediators, the new generation M	2. DHA in brain function – from molecule to physiology F	3. Maternal and infant nutrition, Part I R	
12:00	<– PARALLEL SYMPOSIA –>			
13:00	LUNCH / POSTERS & EXHIBITS MÄLARSALEN			
14:00	PLENARY 1 – Prof. Georg Kunos, MD M Endocannabinoids in the regulation of energy homeostasis in health and disease			
15:00	4. Lipidomics – an expanding field G	5. Fatty acids in psychiatry M	6. Lipid membrane composition R	7. Fatty acids and diabetes F
16:00	<– PARALLEL SYMPOSIA –>			
17:00	8. Brown fat metabolism and function R	9. Lipids in skin G	10. Modulation of lipids in food M	11. Fatty acids and lipid mediators F
18:00	<– PARALLEL SYMPOSIA –>			
19:00	DINNER DEBATE / SOCIAL NALEN RESTAURANG It is time to update saturated fat recommendations!			

MONDAY 30 JUNE

REGISTRATION DESK OPEN 07:30–18:00


REGISTRATION DESK OPEN 07:30-18:00

PLENARY 2 – Prof. Guenther Daum, PhD M Lipids and mitochondrial function				
BREAK / POSTERS & EXHIBITS MÄLARSALEN				
12. Desaturases and elongases F	13. Fatty acids in host defence G	14. Fatty acids and aging R	15. Maternal and infant nutrition, Part II M	
< – PARALLEL SYMPOSIA – >				
ALEXANDER LEAF LECTURE M Prof. Andrew J. Sinclair				
LUNCH / POSTERS & EXHIBITS MÄLARSALEN				
PLENARY 3 – Prof. Erich Gulbins, MD M Ceramides, new actors in cell signaling				
16. The role of oxysterols and lipids for brain function G	17. Fatty acids and the eye F	18. Fatty acid metabolism in obesity M	19. Neuroscience R	
< – PARALLEL SYMPOSIA – >				
BREAK / POSTERS & EXHIBITS MÄLARSALEN				
WORKSHOP 1 Conducting omega-3 clinical trials F	WORKSHOP 2 Dairy fat in infant nutrition R	SPECIAL EVENT DSM Science & Technology Award Europe 2014 M		
< – PARALLEL – >				
				
NEW INVESTIGATOR'S MIXER / THE LADY PATRICIA				
CORPORATE MEMBERS DINNER (By invitation)				

TUESDAY 1 JULY

REGISTRATION DESK OPEN 08:00–18:30

REGISTRATION DESK OPEN 08.00-18.30

BREAKFAST / MEET THE PROFESSORS			
EARLY CAREER AWARD LECTURE M Dr. Alexander Bartelt Brown Fat in the Center of Metabolic Health			
BREAK / POSTERS & EXHIBITS MÄLARSALEN			
20. New aspects of lipid metabolism F	21. Lipid oxidation and disease R	22. Fats and cardiovascular disease M	
< - PARALLEL SYMPOSIA - >			
LUNCH / POSTERS & EXHIBITS / MÄLARSALEN			
ISSFAL MEMBERS MEETING M			
PLENARY 4 - Prof. Chris Ramsden, MD M Dietary modulation of nociceptive mediators and physical pain			
23. Lipids and insulin homeostasis F	24. Fatty acids and cancer M	25. Gut microbiota and fatty acids R	
< - PARALLEL SYMPOSIA - >			
BREAK / POSTERS & EXHIBITS MÄLARSALEN			
PLENARY 5 - Dr. Prof. Michail Gladyshev M Aquatic ecosystems as the main source of essential lipids for humans			
CLOSING CEREMONY / Welcome to South Africa M			
GALA DINNER & NEW INVESTIGATOR AWARD PRESENTATIONS VASA MUSEUM			
			

WEDNESDAY 2 JULY AT ARTIPELAG

REGISTRATION DESK OPEN 08:00–12:30 (LOCATED AT HILTON SLUSSEN)

22:00	SPONSORED SATELLITE SYMPOSIA See agenda on page 30	MORNING PARALLEL	1. LCPUFA in maternal, infant and child nutrition	2. Use of lipids in intravenous nutrition: Rationale & reality
23:00		AFTERNOON PARALLEL	3. Research update on DPA: An essential omega-3 fatty acid for health	4. Effects of a Specific EPA/DHA/GLA Combination on ADHD and Cognition



2014

11TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

28 JUNE – 2 JULY | STOCKHOLM, SWEDEN
AT "THE BREWERY" — MÜNCHENBRYGGERIET



FINAL PROGRAMME

All ISSFAL 2014 events will take place at the brewery unless otherwise indicated.

Saturday 28 June

10:00 – 18:00 REGISTRATION DESK OPEN / THE BREWERY - MAIN ENTRANCE FOYER

9:15 – 17:00 **LIPID UPDATE SEMINAR** / THE BREWERY - RIDDARSALEN (Separate registration required; see agenda on p. 13)
In collaboration with Karolinska Institutet

14:00 – 17:00 ISSFAL BOARD MEETING / THE BREWERY

19:00 – 21:00 **WELCOME RECEPTION IN CITY HALL** (Invitation only; non transferrable)
Hosted by the City of Stockholm and the Stockholm County Council



Sunday 29 June

07:30 – 18:00 REGISTRATION DESK OPEN / THE BREWERY - MAIN ENTRANCE FOYER

08:30 – 09:00 **OPENING CEREMONY** / MÄSSHALLEN

09:00 – 10:00 **NOBEL LAUREATE LECTURE** Progress in eicosanoid research
M Prof. Bengt Samuelsson

10:00 – 10:40 **BREAK / POSTERS & EXHIBITS** / MÄLARSALEN

10:40 – 12:00 **PARALLEL SYMPOSIA (CONCURRENT)**

1. Lipid mediators, the new generation / M

Novel Pro-Resolving Mediators in Inflammation: Resolvins, Protectins and Maresins
Charles Serhan, PhD, DSc (hc),
Harvard Medical School & BWH, USA

The Good, the Bad and the Ugly: Diversity of airway actions of eicosanoids may be used to improve the treatment of asthma
Sven-Erik Dahlén (Sweden)

Inhibitors against Microsomal Prostaglandin E Synthase-1 – Where do we stand?
Per-Johan Jacobsson (Sweden)

15-Lipoxygenase: a novel drug target for treatment of respiratory inflammatory diseases
Hans-Erik Claesson (Sweden)

2. DHA in brain function – from molecule to physiology / F

Omega-3 fatty acid-derived neurodevelopment and neuroprotective function
Hee-Yong Kim, PhD, National
Institutes of Health, USA

Coordinated transcriptional regulation of arachidonic and docosahexaenoic acid cascade enzymes during human brain development and aging
Rapoport S. (USA)

Providing male rats deficient in iron & n-3 fatty acids with iron & alpha-linolenic acid alone affects brain serotonin & cognition differently from combined provision
Baumgartner J. (South Africa)

Docosahexaenoic Acid And Brain Pathology
Michael-Titus A. (UK)

Maintaining brain polyunsaturated fatty acid concentrations: Uptake and rapid metabolism.
Bazinet R. (Canada)
Early Career Award 2008

3. Maternal and infant nutrition, Part I / R

Maternal and infant nutrition
Maria Makrides, University of
Adelaide, Australia

LCPUFA supplementation in infancy improves response inhibition in childhood
Gustafson K. (USA)

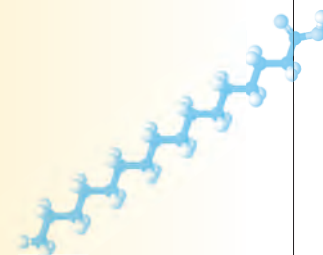
Four Year Follow-up of Children Born to Women in a Randomized Controlled Trial of DHA Supplementation during Pregnancy
Gould J. (Australia)

FADS SNPs Are Associated with Behavioral Outcomes in Children in a Gender-Specific Way
Lauritzen L. (Denmark)

Maternal but not fetal FADS gene variants modify the association between maternal DHA intake in pregnancy and birth weight
Thijs C. (Netherlands)

KEY TO SESSION ROOMS

M Mässhallen
R Riddarsalen
F Fogelströmmrummet
G Galleriet



SUNDAY, 29 JUNE (continued)12:00 – 13:30 **LUNCH / POSTERS & EXHIBITS / MÄLARSALÉN**

13:30 – 14:15

PLENARY 1**Endocannabinoids in the regulation of energy homeostasis in health and disease****Prof. Georg Kunos, MD, National Institutes of Health, USA****M**

Obesity and its metabolic complications are associated with increased activity of the endocannabinoid/CB1 receptor (CB1R) system, as indicated by the beneficial effects of CB1R antagonists. However, neuropsychiatric side effects halted the therapeutic development of this class of compounds. As these side effects are due to blockade of CB1R in the CNS, whereas blockade of CB1R in peripheral tissues contribute to metabolic improvements, limiting the brain penetrance of CB1R antagonists may be a way out of this conundrum. We have tested a novel, peripherally restricted CB1R inverse agonist, JD5037, in mice with diet-induced obesity/insulin resistance (DIO mice). Chronic treatment of DIO mice with JD5037 or its brain-penetrant parent compound SLV-319 was equieffective in reducing food intake and adiposity and reversing hepatic steatosis and insulin resistance. The JD5037-induced appetite and weight reduction, but not the improvements in steatosis or glycemic control, are due to resensitizing DIO mice to endogenous leptin. This is secondary to the rapid reversal of hyperleptinemia via inhibition of leptin production in adipocytes and facilitation of leptin clearance by the kidney. We next tested the effects of JD5037 in a rat model of overt T2DM. Young ZDF rats have compensated insulin resistance, which progresses to uncompensated hyperglycemia due to beta-cell failure. β -Cell failure in ZDF rats is associated with CB1R-activation of the Nlrp3-ASC inflammasome in M1 macrophages infiltrating pancreatic islets. These effects are replicated in vitro by incubating human or rodent macrophages but not macrophages from CB1R^{-/-} or Nlrp3^{-/-} mice with the endocannabinoid anandamide (AEA). Peripheral CB1R blockade, in vivo depletion of macrophages or macrophage-specific knockdown of CB1R prevents these changes, and restores normoglycemia and glucose-induced insulin secretion. We conclude that in diet-induced obesity peripheral CB1R blockade not only improves cardiometabolic risk, but also has antiobesity effects by reversing leptin resistance. Peripheral CB1R blockade also has weight-independent beneficial effects in overt T2DM by preventing β -cell loss due CB1R-mediated inflammasome activation in macrophages that infiltrate the pancreatic islets. These findings highlight the therapeutic potential of peripheral CB1R blockade in both the metabolic syndrome and in overt T2DM.

■ Supported by intramural NIH funds.

14:15 – 15:30 **PARALLEL SYMPOSIA (CONCURRENT)****4. Lipidomics – an expanding field / G**

Lipidomics – an expanding field. The example of fluxolipidomics
Michel Lagarde, PhD, DSc,
INSA/INSERM, France

5. Fatty acids in psychiatry / M

Dietary patterns of pregnancy and childhood and risk of early onset addictions in the ALSPAC cohort
Capt. Joseph Hibbeln, MD, National Institutes of Health, USA

6. Lipid membrane composition / R

Milk membrane lipid composition
Christelle Lopez, INRA, France

7. Fatty acids and diabetes / F

Reversal of CLA-induced Non-Alcoholic Fatty Liver Disease (NAFLD) and Insulin Resistance (IR) by DHA in a mouse model
Darshan Kelley, PhD, UC Davis, USA

14:35

Targeted Lipidomics using a Novel Integrated Microfluidics-Mass Spectrometry Technology
Astarita J. (USA)

Polyunsaturated fatty acids levels and initial presentation of somatic symptoms induced by interferon-alpha therapy in patients with chronic hepatitis C viral infection
Chang J. (Taiwan)

Alternative transcripts in the human milk fat globule proteinogenic RNA transcriptome and a novel FADS2 transcript
Kothapalli K. (USA)

Pentadecanoic Acid (15:0) is a Biomarker of Dairy Food intake and is inversely associated with incident type 2 diabetes in the IRAS cohort
Santaren I. (Canada)

A lipidomic biosignature associated with the healthful phenotype of fat-1 transgenic mice
Astarita J. (USA)

Omega-3 fatty acids in the prevention of interferon-alpha-induced depression: a randomized placebo-controlled trial
Su K. (Taiwan)

TLR4 and CD14 co-localization in lipid rafts: impact of stimulation status and membrane fatty acid pattern
Schumann J. (Germany)

Regulation of energy homeostasis and glycerolipid metabolism in the phospholipid gene deficient mouse ETKO
Bakovic M. (Canada)

Lipidomic analysis during vertebrate embryonic development
Gibert Y. (Australia)

Baseline omega-3 index correlates with aggressive and attention deficit behaviours in adult prisoners
Meyer B. (Australia)

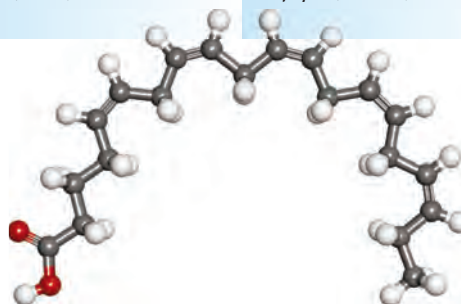
A diet rich in DHA prevents visual and spatial memory loss in 12 months old mice carrying the human apolipoprotein E epsilon 4 allele
Chouinard-Watkins R. (Canada)

Very high rates of smoking, low-HDL cholesterol and renal disease among Indigenous Australian adults with poorly controlled diabetes: Implications for primary care and CV risk – **McDermott R. (Australia)**

Lipid mediators and receptors of resolution in Alzheimer's disease – *in vivo* and *in vitro* studies
Schultzberg M. (Sweden)

Blood and brain fatty acid contents in aged rats supplemented with n-3 long-chain polyunsaturated fatty acids
Buaud B. (France)

Relationships between fatty acid status and cardiometabolic health in obese individuals with type 2 diabetes.
Murphy K. (Australia)

**KEY TO SESSION ROOMS**

M Mässhallen **R** Riddarsalen **F** Fogelströmmrummet **G** Galleriet

15:30 – 16:15 **BREAK / POSTERS & EXHIBITS / MÄLARSALEN**16:15 – 17:30 **PARALLEL SYMPOSIA (CONCURRENT)**

16:35

8. Brown fat metabolism and function / R	9. Lipids in skin / G	10. Modulation of lipids in food / M	11. Fatty acids and lipid mediators / F
Brown fat metabolism and function Jan Nedergaard, University of Stockholm, Sweden	Lipid mediators of cutaneous inflammation Anna Nicolaou, PhD, University of Manchester, UK	Manipulation of lipids in animal-derived foods: Can it contribute to public health nutrition? Ian Givens, University of Reading, UK	Liver X-receptor β = a multifunctional ligand activated transcription factor Jan-Ake Gustafsson, University of Houston Texas, USA
Brown adipose but not white adipose accumulate DHA in cultured cells provided with alpha-linolenic acid Qin X. (USA)	Molecular structure determination <i>in situ</i> in native tissues using CEMOVIS combined with electron microscopy simulation Norlen L. (Sweden)	Toxic salmon membranes? Potential effects on biomembranes of polyaromatic hydrocarbons studied using model systems Liland N. (Norway)	Urinary LTE4 is a new strong predictor of TH2-driven asthma: Initial data from the Pan-European U-BIOPRED IMI project Kolmert J. (Sweden)
Enhancement of brown fat thermogenesis using chenodeoxycholic acid in mice Zouhar P. (Czech Republic)	Levels of circulating sphingolipids increase with disease severity in psoriasis patients Xu N. (Sweden)	Use of high-EPA oil from transgenic <i>Camelina sativa</i> in feeds for aquaculture Betancor M. (UK)	Effect of short-term N-3 fatty acid supplementation and aspirin on circulating resolvins in healthy volunteers Mori T. (Australia)
A validation of proposed brown, brite and white adipose marker genes de Jong J. (Sweden)	Inflammation induced by solar radiation and facial preadipocytes Pappas A. (USA)	Potential for production of Atlantic salmon families with improved capacity for EPA and DHA production Berge G. (Norway)	The Novel Lipid Mediator PD1n-3 DPA: Structural Elucidation, Biosynthesis, Bioactions and Total Organic Synthesis Hansen T. (Norway)
Induction of oxidative phosphorylation in white adipocytes: A key to lean phenotype Kopecky J. (Czech Republic)	California Sea Lions Have Vernix that Deliver Branched Chain Fatty Acids to the Fetal Gut Ran-Ressler R. (USA)	Heterologous synthesis of omega-3 long chain polyunsaturated fatty acids in transgenic plants via iterative metabolic engineering: a terrestrial source of fish oils Napier J. (UK)	Non-redundant Transcriptional Target for Cell Survival of the Essential DHA derived Mediator Neuroprotectin D1 Bazan N. (USA)

17:30 – 19:00 **DAY 1 ADJOURNS**

19:00 – 21:00

DINNER DEBATE / SOCIAL AT NALÉN RESTAURANG**IT IS TIME TO UPDATE SATURATED FAT RECOMMENDATIONS!**

Separate registration required - \$100 USD per person

The **Dinner Debate** is fast becoming a tradition at ISSFAL meetings. Following a good meal in good company, a "hot topic" in the field is debated in a sometimes heated, but always good natured manner by invited speakers and the audience at large.

The 2014 debate Chair will be **Connie Diekman**, Director of University Nutrition at Washington University in Saint Louis (USA), under whose guidance the motion, **"It is Time to Update Saturated Fat Recommendations!"** will be proposed by **Philippe Legrand**, Professor and Chairman of the Laboratory of Biochemistry and Human Nutrition in the Agronomic University of Rennes (Agrocampus) (France), and opposed by **Ronald P. Mensink**, Professor of Molecular Nutrition at Maastricht University (The Netherlands).

The ISSFAL 2014 'Dinner Debate' is organized and supported by IEM, the International Expert Movement on the Health significance of fat quality in the diet (www.theiem.org). The IEM mission is "to disseminate sound scientific information about food & nutrition, especially fat quality in the diet, amongst professionals and the general public in actionable ways, in order to promote and advance nutritional improvement focusing on the quality of diets."

International activities of the IEM are held under the auspices of the International Union of Nutritional Sciences (IUNS) and funded by an unrestricted educational grant from Unilever.



Nalén boasts a remarkable history and many great headliners from around the globe have performed there. For those who are looking to discover Swedish food, Nalén Restaurang is among the city's best.

Monday 30 June

07:30 – 18:00 **REGISTRATION DESK OPEN / THE BREWERY MAIN ENTRANCE FOYER**

08:30 – 09:15

PLENARY 2

Lipids and mitochondrial function

M

Prof. Guenther Daum, PhD, Graz University of Technology, Austria

Mitochondria are only partially autonomous organelles. The vast majority of their components, among them proteins and lipids need to be imported from other organelles. However, a small set of proteins and phospholipids, i.e. cardiolipin and phosphatidylethanolamine, are synthesized within mitochondria. In our laboratory the assembly of phospholipids into mitochondrial membranes has been studied in long term projects. As an experimental system for these investigations we employ the yeast *Saccharomyces cerevisiae* as a model system. Making use of molecular biological, cell biological and biochemical methods we were able to obtain a view of lipid traffic between organelles. Mitochondria play an important role in this process especially through their contribution to the pathway of aminoglycerophospholipid synthesis. The first lipid component of this pathway, phosphatidylserine, is formed in the endoplasmic reticulum; decarboxylation of phosphatidylserine by Psd1p, the major phosphatidylserine decarboxylase of the yeast, occurs in mitochondria; and further conversion of phosphatidylethanolamine to phosphatidylcholine by methyltransferases is localized to the endoplasmic reticulum. Thus, intense crosstalk of organelles is required for this pathway. Recently, we focussed on the molecular role and properties of the mitochondrial phosphatidylserine decarboxylase Psd1p. Biogenesis of this enzyme as well as defects in mitochondrial membranes caused by deletion of PSD1 and depletion of phosphatidylethanolamine were studied. These investigations demonstrated the important role of phosphatidylethanolamine as a mitochondrial lipid and revealed interesting counteracting effects of phosphatidylethanolamine with the mitochondria specific cardiolipin.

■ Supported by the Austrian Science Fund (FWF)

09:15 – 10:00 **BREAK / POSTERS & EXHIBITS / MÄLARSALÉN**

10:00 – 11:35 **PARALLEL SYMPOSIA (CONCURRENT)**

10:20

12. Desaturases and elongases / F	13. Fatty acids in host defence / G	14. Fatty acids and aging / R	15. Maternal & infant nutrition, Part II / M
Desaturases and elongases Tom Brenna, PhD, Cornell University, USA	A role for the group-II secreted phospholipase A2 in the establishment of lung microbiome in patients with cystic fibrosis Lhoussine Touqui, PhD, Institut Pasteur, France	Aging changes omega-3 fatty acid homeostasis; implications and challenges Stephen Cunnane, PhD, University of Sherbrooke, Canada	Maternal DHA supplementation during pregnancy & body composition in childhood: Results of the 3 & 5 year follow-up of children born to women in a randomized controlled trial of DHA supplementation during pregnancy – Bev Muhlhauser, Univ. of Adelaide, Australia
A low omega-6 polyunsaturated fatty acid (n-6 PUFA) diet increases omega-3 (n-3) long chain PUFA status in plasma phospholipids in humans Wood K. (Australia)	Short chain fatty acids (SCFAs) modulate immune response to anaerobic bacteria Vinolo M. (Brazil)	Telomere shortening in elderly individuals with mild cognitive impairment may be attenuated with n-3 fatty acid supplementation Parletta N. (Australia)	Maternal response to DHA supplementation during pregnancy and language performance of mother and child Shaddy J. (USA)
Transgenic mice convert carbohydrates to essential fatty acids: Implications for modern health epidemics Kang J. (USA)	Eicosapentaenoic and docosahexaenoic acid differentially enhance humoral immunity in murine diet-induced obesity Shaikh S. (USA) <i>Early Career Award 2012</i>	Effects of n-3 polyunsaturated fatty acid supplementation on recurrence prevention in patients with late-life depression: a 48-week randomized double-blind placebo-controlled study – Chiu C. (Taiwan)	Gender differences in associations between dietary fatty acids and blood lipids: the PURE study South Africa Richter M. (South Africa)
Dietary supplementation with fish or olive oil induces altered DNA methylation at specific CpG loci in FADS2 in adult humans with renal disease Burdge G. (UK)	Effect of omega-3 fatty acids supplementation on expression of NF-κB gene and blood cells integrins in patients with homozygous sickle cell disease Daak A. (Sudan)	Resolvins in Alzheimer disease patients supplemented with omega-3 fatty acids Fiala M. (USA)	Consumption of bioactive molecules from human milk and relationship to intestinal maturity in premature neonates Armand M. (France)
FADS polymorphisms and fatty acid composition in blood at age 2, 6 and 10 years. Standl M. (Germany)	Fatty Acid and Glycerophospholipid Metabolism in Human T Cells Robichaud P. (Canada)	Can DHA enriched Omega 3 fatty acids affect APOE4-positive patients cognition better in mild to moderate Alzheimer's disease? The Omeg AD study Freund-Levi Y. (Sweden)	Effect of maternal DHA supplementation on body composition of 5-year-old children Vetri Villalan S. (USA)
Fish oil and krill oil supplementation differentially regulate lipid metabolism in the mouse Alexson S. (Sweden)	Postprandial regulation of toll-like receptors (TLRs) by omega-3 fatty acids in obese and normal weight subjects Paras-Chavez C. (UK)	Effect of a whole diet intervention and FADS2 genotype on fatty acid status in the elderly O'Neill C. (UK)	Nervonic acid in early plasma samples from premature infants correlates with birth size and mental and motor development up to 18 months corrected age Ntoumani E. (Sweden)

KEY TO SESSION ROOMS

M Mässhallen **R** Riddarsalen **F** Fogelströmrummet **G** Galleriet

11:35 – 12:20

ALEXANDER LEAF AWARD LECTURE**M****Prof. Andrew J. Sinclair,**
Deakin University, Australia

The Alexander Leaf Distinguished Scientist Award for Lifetime Achievement was established by the Society in 2002, both to honour the work of Dr. Alexander Leaf and his support for ISSFAL, and to create a means to recognise and reward excellence in the areas of research of relevant to ISSFAL core interests.

12:20 – 13:45 **LUNCH / POSTERS & EXHIBITS / MÄLARSALEN**

13:45 – 14:30

PLENARY 3**M****Ceramides, new actors in cell signaling****Prof. Erich Gulbins, MD,** University of Duisburg-Essen, Germany

Although ceramides belong to the most hydrophobic molecules in a cell and are water insoluble, they are critically involved in many signalling pathways, in particular upon application of stress stimuli. Thus, activation of acid sphingomyelinase, which converts sphingomyelin to ceramide, is triggered by diverse receptors including those for CD95, TNF, IL-1, and PAF, and by cellular stress such as oxidative stress, chemotherapeutic agents or infection with bacterial and viral pathogens. We have introduced the concept that these stimuli trigger fusion of specialized secretory lysosomes with the plasma membrane, resulting in surface exposure of acid sphingomyelinase and generation of ceramide in the anti-cytoplasmic leaflet of cell membranes. Therein ceramide molecules spontaneously self associate to form small ceramide-enriched membrane domains that fuse to become large ceramide-enriched membrane platforms. These platforms serve to cluster cognate receptors and other signaling molecules to greatly amplify initial signal density, thereby mediating transmembrane effects of receptor activation or stress. Clustering of receptors seems to be mediated by the length and the amino acid composition of the transmembrane domain. We applied these insights to cystic fibrosis and pulmonary infections with *Pseudomonas aeruginosa*. We have demonstrated that ceramide accumulates in tracheal and bronchial epithelial cells of cystic fibrosis mice and humans. In contrast, sphingosine is almost absent in these cells of cystic fibrosis mice and patients, while present in control mice and healthy individuals. Sphingosine very efficiently kills *P. aeruginosa* and prevents infection. Thus, cystic fibrosis mice and patients suffer from two defects of the sphingolipid metabolism, i.e. an increase of ceramide and a decrease of sphingosine that results in the marked sensitivity of cystic fibrosis animals and patients to develop *P. aeruginosa* infections. These insights may serve to develop novel strategies to prevent and treat pulmonary infections with *Pseudomonas aeruginosa*.

14:30 – 15:45 **PARALLEL SYMPOSIA (CONCURRENT)**

14:50

16. The role of oxysterols and lipids for brain function / G	17. Fatty acids and the eye / F	18. Fatty acid metabolism in obesity / M	19. Neuroscience / R
Oxysterols and the brain Ingemar Björkhem, MD, PhD, Karolinska Institutet, Sweden	Fatty acids and the child's eye Ann Hellström, Sahlgrenska Academy, Sweden	Fatty acid metabolism in obesity Antonio Vidal-Puig, University of Cambridge, UK	Transfer of Omega-3 FA across the blood-brain barrier after dietary supplementation with a docosahexaenoic acid (DHA)-rich Omega-3 FA preparation in patients with Alzheimer's disease: The OmegaAD study – Jan Palmblad, Karolinska Institutet, Sweden
A novel role for very long chain fatty acids in brain function Hopiavuori B. (USA)	Dietary omega 3 long chain polyunsaturated fatty acids and metabolic syndrome in the rat retina: consequences on retinal functionality and complications Thierry M. (France)	Association between metabolic syndrome and erythrocyte fatty acid profile in Mexican adolescents: a trans fatty acid approach Maldonado-Hernández J. (Mexico)	The role of endocannabinoid signalling in the divergent effects of EPA & DHA in neural stem cell fate Dyall S. (UK)
Full hydrogenation suppresses life-span shortening activity of canola oil in SHRSP Tatematsu K. (Japan)	Dietary fatty acids and the prevention of Age-related Macular Degeneration: retinal incorporation and beyond Bretillon L. (France)	Benefits of purified long chain omega-3 fatty acids in non-alcoholic fatty liver disease (NAFLD): Results from the WELCOME study Calder P. (UK)	Fatty acids and sleep in UK children: Subjective and pilot objective sleep results from the DOLAB study – A randomized controlled trial Richardson A. (UK)
Omega-3 fatty acids (Omegaven) protect from mitochondrial dysfunction in a MCAO mouse model of stroke Eckert G. (Germany)	DNA sequence variation in lipid-associated signaling pathway constituents, drug targets, and age-related macular degeneration SanGiovanni J. (USA) <i>Early Career Award 2010</i>	Impact of long chain n-3 PUFA and flavanols on non-alcoholic fatty liver disease Minihane A. (UK)	AT-RvD1 modulates synaptic plasticity and prevents neuroinflammation in a mouse model of surgery-induced cognitive decline. Terrando N. (Sweden)
The influence of a single nucleotide polymorphism in the CYP4F2 gene on epoxyeicosatrienoic acid and platelet aggregation Barden A. (Australia)	Molecular Principles for Retinal Pigment Epithelial Cell/Photoreceptor Survival Targeting the NALP3 Inflammasome by Lipid Mediators Bazan N. (USA)	N-3 polyunsaturated FA reduce metabolic endotoxemia and prevent metabolic disorders associated to obesity: A Fat-1 transgenic mouse and Caco-2/TC7 cell study Bidu C. (France)	The role of polyunsaturated fatty acids mediators in the resolution of neuroinflammation Trépanier M. (Canada)

15:45 – 16:30 **BREAK / POSTERS & EXHIBITS / MÄLARSALEN**

MONDAY, 30 JUNE (continued)16:30 – 17:45 **SPONSORED PARALLEL WORKSHOPS & SPECIAL EVENT (CONCURRENT)**

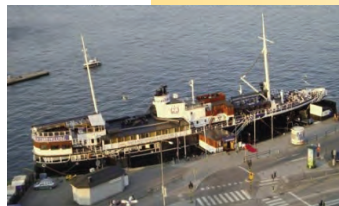
Workshop 1 / F	Workshop 2 / R	Special Event / M
Conducting Omega-3 Clinical Trials Chair: Harry Rice, PhD	Dairy Fat in Infant Nutrition Chair: Prof. P. Legrande	DSM Science & Technology Award 2014 – Europe (See programme below)
Sponsored by: 	Sponsored by: 	Sponsored by: 

17:45 **DAY 2 ADJOURNS**

19:00 – 21:00

SPECIAL EVENT**FIRST BIENNIAL NEW INVESTIGATOR'S MIXER ABOARD 'THE LADY PATRICIA'**

(Separate registration is required to attend)



Meet other graduate students and postdoctoral fellows in a casual atmosphere aboard **The Lady Patricia**. Relax and enjoy drinks, hors d'oeuvres and the beautiful view of the Stockholm harbour with other new investigators!

The Lady Patricia is docked only 5 minutes walking distance from the conference venue. Originally commissioned as a transport vessel during World War II, this boat now serves as a popular restaurant and night club.

This event is open to graduate students and postdoctoral fellows only. Admission is \$25.00 USD per person and there are only 70 spots available, so RSVP quickly to ensure your place at this exciting inaugural event! Each registered guest will receive tickets for 2 drinks, and hors d'oeuvres will be served throughout the evening. A cash bar will also be available. Payment can be made on-site when you board, through ISSFAL staff. Credit Card preferred.

19:30 – 21:00 **CORPORATE MEMBERS DINNER (BY INVITATION)**

DSM Science & Technology Award 2014 – Europe

The DSM Science & Technology Award seeks to recognize and reward outstanding young researchers (PhD students and those who have recently obtained their PhD) for innovative research that has clear application potential.

This year the chosen field is **"Polyunsaturated fatty acid (PUFA) nutrition and related topics."** From the total number of nominations received from all over the world, four candidates have been selected for the final judging round. These four candidates are invited to present their research in a short lecture during a special DSM-ISSFAL Symposium to be held at the 11th Congress of the International Society for the Study of Fatty Acids and Lipids in Stockholm, Sweden on June 30, 2014 (see programme at right). A judging committee of leading scientists will select the winner.

The award will be presented during the plenary session of the ISSFAL 2014 congress on July 1, 2014, by **Dr. Marcel Wubboldts**, Chief Technology Officer of DSM.

The winner will receive a cash prize of EUR 5,000 and each of the three runners-up will receive a cash prize of EUR 1,000. Travel expenses will also be paid for the four winners.

For further information on the award, please visit: www.dsm.com/awards



DSM Science & Technology Award 2014 – Europe

DSM-ISSFAL SYMPOSIUM PROGRAMME

Outstanding PhD thesis work in PUFA Nutrition

JUNE 30, 2014 / 16.30 – 18.20 / **M**

- 16.30 – 16.40 Welcome and introduction by
Dr. Marcel Wubboldts, Chief Technology Officer, DSM
- 16.40 – 17.05 A novel role for very long chain fatty acids in brain function
● **Blake Hopiavuori**, University of Oklahoma, US;
Health Sciences Center, Neuroscience
PhD Supervisor: **Prof. Robert Eugene Anderson MD, PhD**
- 17.05 – 17.30 Omega-3 fatty acids exert protective actions in obesity-related metabolic complications
● **Christina López Vicario**, Hospital Clinic/University of Barcelona, Spain; Department of Biochemistry and Molecular Genetics
PhD Supervisor: **Joan Clària, PhD**
- 17.30 – 17.55 Brain uptake and metabolism of eicosapentaenoic acid in rodents
● **Chuck T. Chen**, University of Toronto, Canada;
Department of Nutritional Sciences, Faculty of Medicine
PhD Supervisor: **Associate Prof. Richard P. Bazinet, PhD**
- 17.55 – 18.20 Polyunsaturated Ganglioside Catabolism is Elevated in IBD: Importance of Dietary Ganglioside Intake
● **John Miklavcic**, University of Alberta, Canada;
Agricultural, Life and Environmental sciences
PhD Supervisor: **Prof. Dr. M. Tom Clandinin**

The winner of the DSM Science & Technology Award 2014 – Europe, will be announced on Tuesday, July 1, by Dr. Marcel Wubboldts. We look forward to welcoming you!

Tuesday 1 July

08:00 – 18:30 **REGISTRATION DESK OPEN / THE BREWERY MAIN ENTRANCE FOYER**

08:00 – 09:00 **BREAKFAST / Meet the Professors**

09:00 – 09:45

EARLY CAREER AWARD LECTURE

Brown Fat in the Center of Metabolic Health

M

Dr. Alexander Bartelt, Harvard School of Public Health, USA

Whereas white adipose tissue (WAT) serves mainly as an energy reservoir and endocrine organ, brown adipose tissue (BAT) is able to dissipate high-caloric nutrients such as carbohydrates and fatty acids to produce heat in order to defend the body against cold. Until 2011, the mechanistic details of fatty acid delivery as fuels for BAT thermogenesis were insufficiently understood. Moreover, the detailed contribution of BAT to systemic metabolism in terms of lipid and glucose homeostasis was not known. In a series of in vivo experiments, combining classical radioactive fatty acid tracer studies with state-of-the-art nanocrystal-based lipoprotein imaging techniques, we were able to demonstrate that BAT in quantitative terms controls plasma triglyceride and glucose metabolism. Activating BAT by overnight cold exposure reduced plasma triglyceride levels drastically, even in postprandial conditions. Furthermore, we identified a novel lipoprotein pathway involving lipolysis by lipoprotein lipase (LPL) and fatty acid uptake by CD36 into brown adipocytes. BAT consumed nearly as much as 50% of a meal in obese and lean animals, ameliorating glucose intolerance and insulin resistance. Beyond dissipating nutrients, BAT activation and also stimulating adipose tissue "browning" has a profound impact on systemic fatty acid fluxes and cholesterol homeostasis. BAT possesses high capacity for de novo lipogenesis, producing significant amounts of monounsaturated fatty acids. We were able to show that BAT-derived fatty acids can be used as markers of HDL turnover along with the discovery that BAT modulates HDL metabolism to facilitate cholesterol excretion. Our studies place BAT in the center of metabolic health, carrying great therapeutic potential for fighting obesity, insulin resistance and atherosclerosis.

09:45 – 10:30 **BREAK / POSTERS & EXHIBITS / MÄLARSALÉN**

10:30 – 12:05 **PARALLEL SYMPOSIA (CONCURRENT)**

10:50

20. New aspects of lipid metabolism / **F**

Bile acids and lipid metabolism

Bo Angelin, MD, PhD, Karolinska Institutet, Sweden

Serum triglyceride to HDL ratio and its relationship to insulin resistance among 5-15 year old Sri Lankan children

Wickramasinghe V. (Sri Lanka)

Association of erythrocyte long-chain omega-3 fatty acids and long-term clinical outcome - The Ludwigshafen risk and cardiovascular health study

von Schacky C. (Germany)

Apolipoprotein E epsilon 4 genotype and Docosahexaenoic acid metabolism: data from mice and humans

Plourde M. (Canada)

Increases in whole body cholesterol synthesis and plasma clearance rates in sitosterolemia patients treated with ezetimibe

Othman R. (Canada)

Ethyl ester vs. triglyceride formulations of long chain omega-3 fatty acids: effect on nonfasting triglycerides in moderate hypertriglyceridemia

Hedengran A. (Denmark)

21. Lipid oxidation and disease / **R**

Roles of some endogenous lipid mediators in cellular defense against oxidative stress-induced carcinogenesis

Young-Joon Surh, PhD, Seoul National University College of Pharmacy, Korea

Docosahexaenoic acid (DHA) mixed with extra virgin olive oil significantly reduces liver oxidative stress in high fat-induced liver steatosis in mice

Rodrigo V. (Chile)

Leptin induces in vitro and in vivo a lipid peroxidation and an inflammatory response, in neoplastic mammary epithelial cells

Mahbouli S. (France)

Lipid peroxidation and its relevance to pheromone production in marine fish under oxidative stress

Lee J. (Hong Kong)

Fatty acid and oxylipid predictors of platelet function in adults with diabetes mellitus

Block R. (USA)

Lipid profiling following intake of the omega-3 fatty acid DHA identifies the peroxidized metabolites F4-neuroprostanes as the best predictors of atherosclerosis prevention

Gladine C. (France)

22. Fats and Cardiovascular Disease / **M**

Mediterranean diet, carotid plaque progression ALA, long chain n-3 and all cause mortality

Aleix Sala Vila, Hospital Clinic, IDIBAPS- Endocrinology & Nutrition, Spain

Role of milk fat globule membrane (MFGM) for modulating atherogenic plasma lipoproteins in humans: a randomized trial

Rosqvist F. (Sweden)

EPA and DHA in whole-blood are differentially and sex-specifically associated with cardio-metabolic risk markers in 8-11-year-old children

Damsgaard C. (Denmark)

Docosahexaenoic fatty acid favorably alters inflammatory pathways and macrophage polarization in the aorta of atherosclerotic mice

Gladine C. (France)

Association of trans fatty acids and clinical long-term outcome - The Ludwigshafen risk and cardiovascular health study

von Schacky C. (Germany)

The omega-3 index in heart failure patients: associations with clinical data, comorbidities and prognosis

von Schacky C. (Germany)

KEY TO SESSION ROOMS

M Mässhallen **R** Riddarsalen **F** Fogelströmrummet **G** Galleriet



TUESDAY, 1 JULY (continued)12:05 – 13:45 **LUNCH / POSTERS & EXHIBITS / MÄLARSALÉN**13:00 – 13:45 **ISSFAL MEMBERS MEETING / M**

13:45 – 14:30

PLENARY 4**M****Dietary modulation of nociceptive mediators and physical pain****Prof. Chris Ramsden, MD, National Institutes of Health, USA**

Many patients with chronic pain continue to experience substantial pain and impaired quality of life despite taking numerous pain-related medications. It is therefore essential to investigate novel mechanisms and alternative approaches to manage pain. As major components of immune, myelin, glial, and neuronal cell membranes, n-3 and n-6 fatty acids can be endogenously converted to several families of bioactive lipid autacoids with pro- or antinociceptive properties (eg, endovanilloids, eicosanoids, endocannabinoids, resolvins).

With a few notable exceptions, mediators derived from n-6 linoleic (LA) and arachidonic (AA) promote nociception, while mediators derived from n-3 eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) promote anti-nociception. Thus, an imbalance of mediators derived from n-3 and n-6 fatty acids is a plausible mechanism underlying initiation and perpetuation of chronic pain disorders including headaches. In a small randomized trial in 67 patients with chronic headaches, we found that increasing dietary n-3 with concurrent reduction in n-6 fatty acids (the H3-L6 diet) produced statistically significant reductions in headache frequency and severity. These clinical improvements were accompanied by increases in pathway precursors for n-3 derived lipid mediators of anti-nociception, and reductions in n-6 derived mediators of nociception in circulation. Therefore, targeted alterations in dietary n-6 and n-3 fatty acids may be able to modulate nociceptive lipid mediators to reduce physical pain. However, current understanding of the molecular pathways and specific lipid autacoids linking diet to physical pain is limited. In this presentation I will review emerging preclinical and clinical evidence and highlight key evidence gaps along the proposed causal chain linking dietary n-3 and n-6 fatty acids to the etiology of chronic pain.

14:30 – 15:45 **PARALLEL SYMPOSIA (CONCURRENT)****23. Lipids in insulin homeostasis / F****Lipid membranes and insulin signaling**

Jin-ichi Inokuchi, PhD, Tohoku Pharmaceutical University, Japan

24. Fatty acids and cancer / M**Prostaglandin E2 pathway in inflammation-associated cancer development**

Masanobu Oshima, Kanazawa University, Japan

25. Gut microbiota and fatty acids / R**Gut microbiota and fatty acids**

Tore Midtvedt, MD, PhD, Karolinska Institutet, Sweden

14:50

Dose-dependent effects of thiazolidinediones in dietary obese mice
Svobodova M. (Czech Republic)

Delta-6 desaturase as a novel anti-cancer target
Kang J. (USA)

Lipid hydrolysis products characteristic for breast milk increase the relative abundance of Bifidobacterium and Lactobacillus in microbiota isolated from infant fecal samples after *in vitro* fermentation
Bennike R. (Denmark)

A diet rich in omega-6 polyunsaturated fatty acids (omega-6 pufa) reduces spontaneous activity in mice
Ghosh S. (Canada)

Fat-1 transgenic mice producing n-3 PUFA prevented Helicobacter pylori-induced gastric carcinogenesis; the efficacy and novel mechanism
Hahn K. (Korea)

Fish oil attenuates omega-6 polyunsaturated fatty acid-induced dysbiosis and infectious colitis but impairs LPS dephosphorylation activity causing sepsis.
Gibson D. (Canada)

Asian and Caucasian type 2 diabetes have different response to n-3 polyunsaturated fatty acids
Li D. (China)

Novel statistical method using nutrients to define a food-based dietary pattern that distinguishes women with and without a short-term risk biomarker of developing breast cancer - **Hidaka B.** (USA)

Milk lipids in infant formulas modifies the proteolysis, microbiota and intestinal physiology in neonatal piglets
Le Hueron-Luron I. (France)

Lower serum non-esterified eicosapentaenoic acid (EPA) is associated with insulin resistance in the PROspective Metabolism and ISlet Cell Evaluation (PROMISE) Cohort
Johnston L. (Canada)

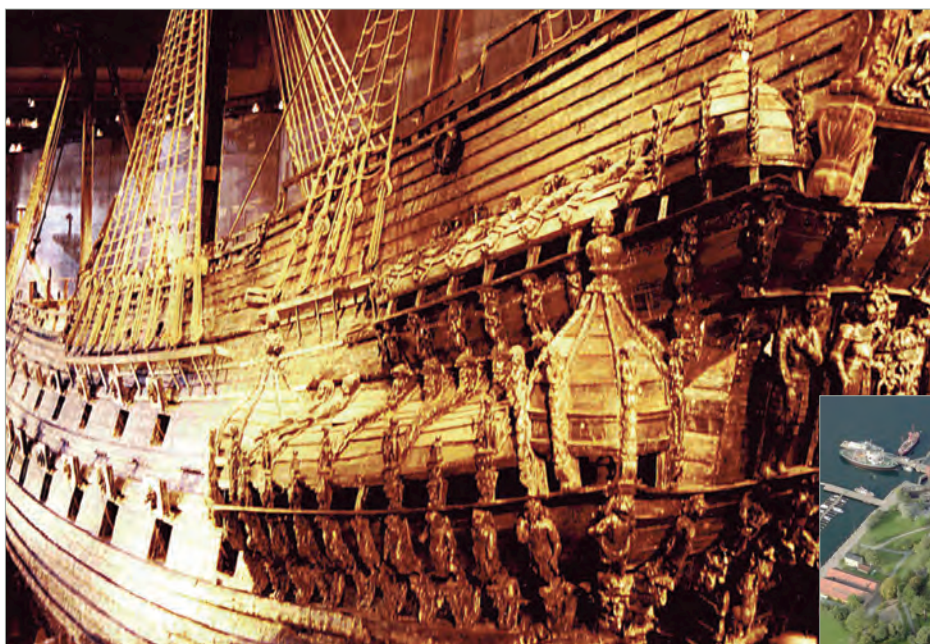
DHA alters lipid raft organization and cholesterol metabolism in cancer cells
Corsetto P. (Italy)

Elevated tissue omega-3 fatty acid status prevents chronic low-grade inflammation by altering gut microbiota
Kang J. (USA)

**KEY TO SESSION ROOMS****M** Mässhallen **R** Riddarsalen **F** Fogelströmrummet **G** Galleriet

15:45 – 16:30 **BREAK / POSTERS & EXHIBITS / MÄLARSALEN**16:30 – 17:15 **PLENARY 5****Aquatic ecosystems as the main source of essential lipids for humans****M****Dr. Prof. Michail Gladyshev**, Siberian Branch of the Russian Academy of Sciences, Russia

Humans and most other animals need food sources of physiologically important highly unsaturated fatty acids (HUFA), such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), because their own synthesis of these HUFA can cover only around 5% of their physiological requirements. Among all organisms only some microalgae, diatoms, cryptophytes and dinophytes can synthesize de novo high amounts of EPA and DHA. HUFA, synthesized by microalgae, are transferred through trophic chains to organisms of higher levels, invertebrates and fish. Thus, aquatic ecosystems play the unique role in the Biosphere as the principal source of EPA and DHA for most animals, including inhabitants of terrestrial ecosystems and humans. HUFA are transferred from aquatic to terrestrial ecosystems through riparian predators, shore drift, emergence of amphibiotic insects and water birds. These essential nutrients are transferred through trophic chains with about twice higher efficiency than bulk carbon. Thereby, HUFA are accumulated, rather than diluted in biomass of organisms of higher trophic levels, e.g., in fish. Humans withdraw from aquatic ecosystems through fish catch ~180 106 kg y⁻¹ of EPA+DHA. However, global average personal daily consumption of EPA+DHA is only about 0.1 g, while healthy personal intake is 0.5 – 1.0 g day⁻¹. Thus, humankind face with a deficiency of the physiologically important HUFA in diet. Potential ways to increase HUFA consumption are discussed. Aquaculture is based on forage, obtained from wild catch and thereby cannot substitute fishery. Microbial biotechnology – single cell oil production is cost-prohibitive. Thereby, natural fish production of aquatic ecosystems will remain the main sources of the essential PUFA for humans. Aquatic ecosystems differ significantly in HUFA production of microalgae and thereby various fish species, getting PUFA from microalgae through trophic chains, differ in EPA and DHA contents in their biomass in two orders of magnitude. Ways to increase HUFA production in natural aquatic ecosystems are discussed. Data on quantity of various fish products to be consumed for obtaining the recommended appropriate intake of EPA+DHA for humans are given.

17:15 – 17:45 **CLOSING CEREMONY / WELCOME TO SOUTH AFRICA 2016 / M**17:45 **DAY 3 ADJOURNS**19:00 – 23:00 **GALA DINNER AT VASA MUSEUM & NEW INVESTIGATOR AWARD PRESENTATIONS****About Vasa Museum:**

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2014

11TH CONGRESS OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF FATTY ACIDS AND LIPIDS

28 JUNE – 2 JULY | STOCKHOLM, SWEDEN
AT "THE BREWERY" — MÜNCHENBRYGGERIET



SATELLITE SYMPOSIA



ISSFAL will host four **Sponsored Satellite Symposia** on Wednesday, 2 July, following the Congress. This programme will be held at **Artipelag**, a unique museum facility set among the archipelago just outside Stockholm. A separate registration is required to attend. The fee includes lunch, transportation, and admission to any of the symposia. If you have signed up for this event, please see your final confirmation email for the Satellites. **The ISSFAL Registration Desk will be located at the HILTON SLUSSEN HOTEL LOBBY** on Wednesday to assist those attending the symposia.

TRANSPORTATION: Buses for the morning Satellites will depart at 08:30 from the Hilton Slussen. Buses for the afternoon satellites will depart from the Hilton Slussen at 11:30. Buses returning from Artipelag after the morning Satellites will depart after lunch, at 13:30. A boat will take all remaining attendees at the end of the day back to Stockholm (boat trip is 90 minutes).

Wednesday 2 July — ALL DAY AT ARTIPELAG

09:30 – 12:30. **SPONSORED SATELLITE SYMPOSIA – MORNING (CONCURRENT)**

1. LCPUFA in Maternal, Infant and Child Nutrition

Organizers: **Marius Smuts**, North West University, South Africa
Renate de Groot, Open Universiteit Nederland, Netherlands

Reasons for Variability in Status and Outcomes

LCPUFA are nutrients with widely variable intakes both among cultures and to a lesser extent within cultures. The workshop will focus on LCPUFA as a nutrient during earliest development (intrauterine, infancy) and at ages after development (childhood, adolescence, young adulthood). The implications of this variability and other variables for the results of observational and supplementation studies and the kinds of studies needed to make decisions about what is a safe and adequate amount of LCPUFA for individuals and populations will be discussed/debated. The workshop will result in a summary of promising directions for future translational research on LCPUFA that address this and other questions about these nutrients.

Attendees are warmly invited to participate in the below mentioned discussion topics. Of course you can bring in your own points/remarks at any moment during the discussion. But there is also an alternative possibility; in case you want to have something brought in you can send the organizers of this satellite (Marius.Smuts@nwu.ac.za or Renate.deGroot@ou.nl) from now on an email with your statement or 1 or 2 slides. The organizers take care that the speaker of the session or the facilitator will mention the points raised by you.

Detailed Program:

Welcome & Introductions: Speakers will have 10-15 min for presentations to set the scene for discussions that will last for about 45 min per session.

Session 1: LCPUFA supplementation and long-term outcomes
Speaker: **Susan Carlson** / Facilitator: **Renate de Groot**

Session 2: LCPUFA and body composition
Speaker: **Bev Muhlhauser** / Facilitator: **Lotte Lauritzen**

Session 3: Interactions with nutrients and others factors
Speaker: **Jeannine Baumgartner** / Facilitator: **Marius Smuts**

Overall Summary and Closing remarks
Facilitator: **Alex Richardson**

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2. Use of Lipids in Intravenous Nutrition: Rationale and Reality

Chairs: **Prof. Philip Calder**, University of Southampton
Konstantin Mayer, University of Giessen, Germany

Lipids have been in clinical use as components of intravenous nutrition for over 50 years. Nevertheless, the field is rife with controversy. Some clinicians question whether lipids should even be used, while others argue that the profile of the most widely used lipids is not optimal and may compromise patient outcome. Over the last 15 years new lipids that include olive oil and/or fish oil have been introduced with some remarkable findings seen when these new lipids replace the more traditional ones. This session will bring together leading global authorities in the area of intravenous lipids to debate and discuss the latest findings in the field, from pre-clinical research to the most recent clinical trials. Lipid functionality and utility in pediatric, adult surgical and critically ill patients will be covered with the aim of developing a clearer picture of the current situation. The Symposium will appeal equally to basic scientists, to clinical researchers and to clinical practitioners and will serve to provide significant advances in the knowledge and understanding of delegates.

Speakers & Topics:

Philip Calder (Southampton, UK): Lipids available for intravenous nutrition – composition, metabolism and functional effects

Mark Puder (Boston, USA): Use of fish oil containing lipids to prevent and to treat liver disease in pediatric patients

Loris Pironi (Bologna, Italy): Which lipids for those on long term home parenteral nutrition?

Lucy Norling (London, UK): Pro-resolving lipid mediators – a strategy to control inflammatory responses

Adina Michael-Titus (London, UK): Omega-3 fatty acids for treating brain and spinal cord injury

Ashley Dennison (Leicester, UK): Use of intravenous lipids in surgical patients with cancer and sepsis

Konstantin Mayer (Giessen, Germany): Preclinical and clinical studies of intravenous lipids in sepsis and tissue injury

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12:30 – 14:00 LUNCH

14:00 – 17:30 **SPONSORED SATELLITE SYMPOSIA – AFTERNOON (CONCURRENT)****3. Research Update on DPA: An Essential Omega-3 Fatty Acid for Health**

Chairs: **Edward Dennis**, University of California, USA
Andrew Sinclair, Deakin University, Australia

It is well established that Omega-3s are important in neural development and function, and in preventing various health conditions with inflammatory or immune components. Most health benefiting studies on Omega-3s were performed using fish oil, which are mixtures of various fatty acids, and the positive effects were often attributed to eicosapentaenoic (EPA) and docosahexaenoic acids (DHA). The significance of docosapentaenoic fatty acid (DPA), an elongated version of EPA, is only now starting to be better understood. For example, several large studies have demonstrated that blood levels of DPA are independently and positively correlate with reduced risk of cardiovascular disease to the same or greater extent than EPA and DHA. Additionally, studies on purified DPA in animal and cell cultures showed that DPA has potential to improve various aspects of human health. The Symposium will bring together the leading scientists from universities and industry. Its goal is to increase the understanding of biological effects of this important Omega-3 on lipid metabolism in health and disease.

Speakers & Topics:

Doug Bibus (Lipid Technologies): Blood and tissue levels of DPA: what is nature trying to tell us

Andrew Sinclair (Deakin University): What is known about the biological roles of DPA

Bruce Holub (University of Guelph): Docosapentaenoic acid: a long-chain Omega-3 fatty acid with unique metabolism and potential health effects

Edward A. Dennis (University of California): DPA and other omega-3 fatty acids cause dramatic changes in TLR4 and purinergic eicosanoid signaling

Kaisa Linderborg (University of Turku): Postprandial lipidomics in response to DPA and EPA rich meals

Michael Ballou (Texas Tech): Effects of DPA_n3 compared to EPA and DHA on inflammation in various tissues

Samuel Fortin (SCF Pharma): Omega-3 docosapentaenoic monoglyceride for inflammation resolution and cancer treatment

Marina Lynch (Trinity College): DPA exerts neuroprotective effects in age

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4. Effects of a Specific EPA/DHA/GLA Combination on ADHD and Cognition

Chair: **Philip Calder**, University of Southampton, UK

Accumulating evidence from epidemiological, biochemical and interventional studies indicate that dietary intakes of the omega-3 polyunsaturated fatty acids (PUFAs) eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) may influence cognitive development, reading performance, learning and behavior. Different mechanisms have been proposed to explain these effects including increased hippocampal acetylcholine levels, anti-inflammatory effects, or increased neuroplasticity. Nevertheless it has to be emphasized how little is still known about the effects of various PUFAs and their interactions with each other in the context of brain health and functioning.

Given the plethora of omega-3 products with different mixtures now available, the issue of the optimal dosage, PUFA ratio and bioavailability of the different PUFAs is often questioned by the health care professionals and generate confusion for the consumer. The aim of this symposium is to be updated by experts about the current clinical evidence in the field of cognition and ADHD in children, and particularly about the effects of a specific EPA/DHA/GLA combination on ADHD and cognition.

Speakers & Topics:

Mats Johnson (Sweden): Polyunsaturated fatty acids in ADHD and cognition: does the product composition matter?

Philip Calder (UK): Bioavailability of different forms of fatty acids

Natalie Parletta (Australia): Omega-3/6 fatty acids: The scientific experience in ADHD and mainstream children in Australia

Eduardo Barragan (Mexico): Efficacy and safety of Omega-3/6 fatty acids, methylphenidate, and a combined treatment in children with ADHD

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About Artipelag: In the year 2000, Björn Jakobson, founder of the well-known company, “BabyBjörn”, was struck with the idea of creating a beautiful building for art and cultural experiences somewhere in the Stockholm archipelago. Maybe he considered it a means of, after many profitable years in Swedish business, manifesting his own deep interest in nature and combining that with his wife Lillemor’s background in art and design. Maybe he wanted to repay something of all that he had, throughout a long life in the archipelago and during numerous sailing and skiing trips, been able to experience. Whichever the case, now everyone can enjoy the results of his vision at the wonderful Hålludden by Baggen’s Bay in Värmdö.

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2. GLA from evening primrose oil
3. Phospholipids
4. Vitamin D₃



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DISTINGUISHED FACULTY

Plenary Speakers



Prof. Georg Kunos, MD
National Institutes of Health, USA

1 Endocannabinoids in the regulation of energy homeostasis in health and disease ■

Dr. Kunos received his M.D. degree in 1966 from Semmelweis University in Budapest and his Ph.D. in 1973 from McGill University in Montreal where he worked with Mark Nickerson on adrenergic receptors. In 1974 he joined the faculty in Pharmacology and Medicine at McGill University and then in 1987 joined the NIAAA as Chief of the Laboratory of Physiologic and Pharmacologic Studies. Dr. Kunos moved to the Medical College of Virginia in 1992 to Chair the Department of Pharmacology & Toxicology. In 2000 he returned to NIH as Scientific Director of NIAAA. He is an elected fellow of the High Blood Pressure Research Council of the American Heart Association and a foreign member of the Hungarian Academy of Sciences. He is recipient of the Mechoulam Award of the Intl. Cannabinoid Research Society and the NIH Director's Award. Dr. Kunos' laboratory is studying the role of endocannabinoids in neuroendocrine, metabolic and cardiovascular regulation.



Prof. Günther Daum, PhD
Graz University of Technology, Germany

2 Lipids and mitochondrial function ■

Günther Daum studied Chemistry, Biochemistry and Biotechnology at the Graz University of Technology, Austria, where he also received his PhD. During his scientific career he spent several years abroad as Post Doc at the Biocenter Basel, Switzerland, in the lab of G. Schatz, and as a visiting researcher at the UC Berkeley, CA, USA, in the lab of R. Schekman. Back to the Graz University of Technology he became Group Leader of the Cell Biology Group at the Institute of Biochemistry. The main subjects studied in Günther Daum's laboratory are synthesis and intracellular dynamics of lipids in the yeast with a focus on lipid assembly into organelle membranes and lipid storage. For his scientific work he received the Normann Medal of the Deutsche Gesellschaft für Fettforschung (German Society of Lipid Research) in 2011. As career related activities he has been President of the International Conference on the Bioscience of Lipids (ICBL). Currently, he is Chairman of the Yeast Lipid Conference, Board Member of the Austrian Science Fund (FWF) and Director of the Doctoral School Molecular Biosciences and Biotechnology at the Graz University of Technology.



Prof. Erich Gulbins, MD
University of Duisburg-Essen, Germany

3 Ceramides, new actors in cell signaling ■

Dr. Gulbins received his M.D. degree in 1992 at the Institute of Physiology of the University of Heidelberg, Heidelberg, Germany. He habilitated for Physiology in 1996 and Immunology 1999. From 1992-1994 he worked as postdoctoral fellow at the La Jolla Institute for Allergy and Immunology, La Jolla, California, USA. 1994-2000 he worked as Assistant Professor at the Institute of Physiology at the University of Tübingen, Tübingen, Germany, from 2000-2002 as Associate Professor at the Department of Immunology, St. Jude Children's Research Hospital, Memphis, Tennessee, USA. Since 2002 he is full Professor and Chair of the Institute Molecular Biology, University of Duisburg-Essen, Essen, Germany. Since 2011 Dr. Gulbins is

also Adjunct Professor at the Dept. of Surgery, University of Cincinnati, Cincinnati, USA. He is member of the German National Scholarship Foundation since 1986 and Member of the National Academy of Sciences Leopoldina since 2011. Dr. Gulbins studies the biomedicine of sphingolipids with a special focus on the role of sphingolipids in bacterial infections, cystic fibrosis, lung diseases and major depression.



Prof. Christopher Ramsden, MD
National Institutes of Health, USA

4 Dietary modulation of nociceptive mediators and physical pain ■

Dr. Ramsden is a Clinical Investigator in the Laboratory of Membrane Biophysics and Biochemistry at the National Institute on Alcohol Abuse and Alcoholism, NIH. He is a Lieutenant Commander in the US Public Health Service, and an Adjunct Assistant Professor at the University of North Carolina-Chapel Hill. After completing residency training in Physical Medicine and Rehabilitation at Northwestern/Rehabilitation Institute of Chicago, he was a postdoctoral fellow at UNC-Chapel Hill before joining the National Institutes of Health in 2009. Dr. Ramsden's research is directed toward elucidation of molecular mechanisms linking fatty acids and their bioactive derivatives to physical pain, and to translation of these findings into novel therapeutic interventions that can provide clinically meaningful pain relief. He has been principal investigator on collaborative human trials assessing the clinical and biochemical effects of altering dietary omega-6 and omega-3 fatty acids. He is also involved in animal and in vitro studies evaluating the bioactivities of endogenous lipid mediators.



Dr., Prof. Michail Gladyshev
Russian Academy of Sciences, Russia

5 Aquatic ecosystems as the main source of essential lipids for humans ■

Dr. Prof. Gladyshev graduated from Krasnoyarsk State University (now Siberian Federal University, Krasnoyarsk, Russia) in 1981 and got a position of Senior Laboratory Fellow in the Institute of Biophysics (Krasnoyarsk), where at present he is Vice-Director and Head of Laboratory of Experimental Hydroecology. He is also Professor of Siberian Federal University (Chair of Aquatic and Terrestrial Ecosystems). He is member of Presidium of the Central Council of Russian Hydrobiological Society. He is recipient of the SCOPUS Award Russia. His Laboratory of Experimental Hydroecology studied production and transfer of essential biochemicals, including fatty acids, in trophic webs of natural aquatic ecosystems.



Award Winner Lectures

ALEXANDER LEAF AWARD



Prof. Andrew J Sinclair
Deakin University, Australia

Andrew Sinclair is Professor of Nutrition Science, School of Medicine at Deakin University. AWARDS: Honorary Fellow of the Australasian College of Nutritional and Environmental Medicine, 2012; Elected Fellow of the Nutrition Society of Australia, 2003; Elected Fellow of the Australian Institute of Food Science & Technology, 2001; Supelco/Nicholas Pellick AOCs Research Award, 1999. HONORARY POSITIONS: *British Journal of Nutrition*, Deputy Editor, 2013; British Nutrition Foundation, Editorial Board, 2012, Adjunct Professor, Department of Nutrition and Dietetics, Monash University, 2012; Chair of the Australian Academy of Science, National Nutrition Committee, 2011-2013; ILSI Australasia, (ILSI), 2008-2011, President; Nutrition Society of Australia (NSA), 2008-09 President; American Oil Chemists' Society, Senior Associate Editor, Lipids, 2006-2009; Editorial Board, *Prostaglandins, Leukotrienes & Essential Fatty Acids*, 2005- to date. CURRENT RESEARCH INTERESTS: Essential fatty acids in brain development (pre- and post-natal nutrition, the role of omega 3, polyunsaturated fatty acids in brain and retina on neural function); Food Science (composition of food), Nutrition (fatty acid metabolism in man and animals); Functional foods (omega3 PUFA, lycopene, olive oil, polyphenols, stearic acid); Professor Sinclair has more than 260 publications in peer-reviewed journals.

EARLY CAREER AWARD



Dr. Alexander Bartelt
Harvard School of Public Health, USA

Dr. Alexander Bartelt is currently a Postdoctoral Research Fellow at the Department of Genetics and Complex Diseases, Harvard School of Public Health in Boston, MA, USA. His research is dedicated to understanding the molecular basics of lipid and lipoprotein metabolism and related pathologies such as obesity, atherosclerosis and osteoporosis. He received his Diploma in Biochemistry and Molecular Cell Biology from University of Hamburg, Germany in 2007 with honors. During his PhD at University Medical Center Hamburg-Eppendorf he pioneered brown adipose tissue metabolic research with Prof. Joerg Heeren. Dr. Bartelt is also interested in the relationship of lipid and bone metabolism. In his postdoctoral studies he investigates metabolic adaptations of adipose tissue in extreme conditions such as cold or obesity. Dr. Bartelt's contributions to the general understanding of systemic nutrient homeostasis have been recognized by national and international awards, fellowships and honors. His work has been funded by the Schering Foundation, the European Atherosclerosis Society and the German Research Foundation DFG.

Parallel Symposia Keynote Speakers



Bo Angelin, MD, PhD
Karolinska Institutet, Sweden

20 Bile acids and lipid metabolism ■

Bo Angelin is Professor of Clinical Metabolic Research at Karolinska Institutet and Consultant at the Department of Endocrinology, Metabolism & Diabetes (Head 1993-2011) at Karolinska University Hospital, where he has also served as Director of Research. He is studying mechanisms for regulation of lipid and cholesterol metabolism with special emphasis on humans, and how this knowledge can be used for development of new forms of diagnostics and treatments.

Prof. Angelin's major scientific contributions include: Discovery of regulation of hepatic triglyceride synthesis by bile acids and its disturbance in monogenic familial hypertriglyceridemia; Elucidation of how estrogen and growth hormone interact in the regulation of hepatic cholesterol metabolism; The finding that reduced cholesterol elimination explains the normal increase in plasma LDL with age; Demonstration that thyroid hormone exerts distinct effects on hepatic and intestinal cholesterol metabolism and that drugs that combine selectivity for the thyroid hormone receptor beta and specific uptake by the liver can promote cholesterol excretion from the body; Discovery that cholesterol excretion from the body is enhanced after infusion of recombinant apoA-I; Discovery that hormone-sensitive lipase activity is reduced in adipose tissue of patients with familial combined hyperlipidemia; Demonstration that mutations in the COPII-associated Sar1b cause chylomicron retention disease; Discovery of posttranslational, cholesterol non-dependent regulation of hepatic LDL receptors and its explanation by hormonal regulation of PCSK9; Description of increased LDL catabolism through malignant cells; and Characterization of a different diurnal rhythm in bile acid synthesis in humans compared to rodents and of how fibroblast growth factors 19 and 21 are involved in its regulation.

Prof. Angelin has had many commissions of trust at Karolinska Institutet, the Swedish Foundation for Strategic Research, the Swedish Research Council and the Heart-Lung Foundation. He has a vast experience of international research evaluations, participates in the Nobel Committee work since 1993 (chair, 2003) and is a member of the Royal Academy of Sciences. He has also research co-operations with several drug and biotech companies, and has served as a board member of AstraZeneca PLC.



Ingemar Björkhem, MD, PhD
Karolinska Institutet, Sweden

16 Oxysterols and the brain ■

Present positions: Professor Emeritus since 2008, Senior professor since Jan 2012, Division of Clinical Chemistry, Department of Laboratory Medicine, Karolinska Institutet, Karolinska University Hospital Huddinge

Education, Training, Professional Appointments & Degrees: Medical studies at the Karolinska Institutet, 1961-1969; Dissertation at the Karolinska Institutet 1969; Assistant Professor & MD, 1969; Specialist in Clinical Chemistry, 1981; Prof. in "Biochemical Research on Atherosclerosis", 1986-2008; Member of the Nobel Assembly, 1989-2008; Head of the Dept. of Clinical Chemistry, Karolinska Institutet, Huddinge Hospital, 1987-1993; Head of the Division of Clinical Chemistry, Dept. of Laboratory Medicine, Huddinge, 1994-2008; Head of Clinical Research Centre, Karolinska; Institutet, Huddinge Hospital, 1993-2000.

Awards & Honorary Appointments: Adolf Windaus prize for "Outstanding contributions in the field of bile acid research", Freiburg, Germany 1986; Astrup Legat (second prize), Denmark, 1984; Honorary Professor, Institute of Microcirculation, Chinese Academy of Medical Sciences, Beijing, China, 1993; Honorary Professor University of Qindao and University of Taian, China, 2008; Member of the Norwegian Academy of Science, 2000; Doctor medicinae honoris causa, University of Oslo, 2000; The Schroepfer Award, 2006.

Author or co-author of more than 500 published articles (of which about 470 are original contributions). In 2012 my papers had got more than 17,000 citations and the H-index was 67. Emphasis has been put on mechanism of biosynthesis of bile acids, regulatory mechanisms in connection with cholesterol homeostasis in liver and brain, role of oxysterols, atherogenic mechanisms and role of antioxidants. During the last decade I have focussed on cholesterol homeostasis in the brain and the role of this homeostasis in neurodegeneration. Participated as formal tutor in the supervision of 36 students who have defended PhD thesis and 4 students who have defended licentiate thesis, 1970-2010.



Tom Brenna, PhD
Cornell University, USA

12 Desaturases and Elongases ■

Tom (J. Thomas) Brenna is Professor of Human Nutrition, of Chemistry & Chemical Biology, and of Food Science & Technology at Cornell University in Ithaca, New York, USA. He is also Adjunct Professor in the Dept. of Public Health Sciences at University of Rochester (NY) School of Medicine and Dentistry. In 2013, he received the annual Robert Herman Award for Clinical Nutrition from the American Society for Nutrition and was appointed jointly by President Obama's Secretary of Health and Human Services Kathleen Sebelius and Secretary of Agriculture Tom Vilsack to the Dietary Guidelines Advisory Committee advising on food policy for the 2015 U.S. Dietary Guidelines for Americans.

His interdisciplinary research group focuses on studies of fatty acid nutrition in the perinatal period, especially polyunsaturated fatty acids (PUFA) and their role in neural and retinal development. Their studies of the efficacy of highly unsaturated PUFA as structural components of the central nervous system have helped to define the mechanism by which these fats support optimal visual and neural function. He has developed tracer methods based on stable isotopes and uses them extensively in metabolic studies. More recently he has been interested in the nutritional role of saturated branched chain fatty acids (BCFA) and their possible influence on the early development of the fetal and newborn gastrointestinal tract. His research is supported by numerous private and public grants, including the competitive grants from the National Institutes of Health (NIH) continuously since 1991.

Professor Tom Brenna's research couples Nutrition and Chemistry in a broadly interdisciplinary program. He is a member of graduate fields in Cornell's four large colleges: Nutrition (CHE and CALS), Food Science and Technology (CALS); Chemistry and Chemical Biology (Arts); Geological Sciences (Engineering and CALS), and in a long-standing collaboration with a prominent former member of Cornell's College of Veterinary Medicine. His research group has been funded by institutes/centers at the NIH (NIGMS, NEI, NICHD, NCR) and has included at least one active R01 continuously since 1992. These grants have supported fundamental work in the nutrition of polyunsaturated fatty acids, and development of advanced mass spectrometry instrumentation and techniques.

Most of the work of the Brenna Lab is translational, tying basic research to biomedicine and human nutrition. Some studies are designed with particular, topical human health questions in mind, and these studies have occasionally had immediate implications. The most prominent examples of this work are animal studies to evaluate the efficacy, safety, and metabolism of food sources of polyunsaturated fatty acids. This work often employs stable isotope tracer techniques and molecular or isotope ratio mass spectrometry to probe metabolism. Other projects, particularly those that develop instrumentation and methods for mass spectrometry techniques, have a longer term payoff. They are sometimes undertaken for the challenge of making measurements that have never been possible previously, with an eye toward eventual applications. An example of this area is the development of a novel gas phase reaction for derivatization of polyunsaturated fatty acids for facile determination of double bond structure, which has found applications associated with safety of edible oils, including detection of trans fatty acids. More recent research is on nutrition of saturated branched chain fatty acids, a neglected class of dietary fatty acids. Recent work involves development of methods for more precise and rapid detection of endogenous performance enhancing drugs, particularly testosterone, as well as methods for detecting exogenous drugs. - See more at: <http://www.human.cornell.edu/bio.cfm?netid=jtb4#sthash.519ou7NC.dpuf>



Stephen Cunnane, PhD
University of Sherbrooke, Canada

14 Aging changes omega-3 fatty acid homeostasis; implications and challenges ■

Stephen Cunnane obtained a PhD in Physiology at McGill University in 1980, followed by post-doctoral research on nutrition and brain development in Aberdeen, London, and Nova Scotia. He was a faculty member in the Department of Nutritional Sciences, University of Toronto (1986-2003), where his research was in two overlapping areas - (i) the role of omega-3 fatty acids in brain development and human health, and (ii) the relation between ketones, the very high fat ketogenic diet and brain development. In 2003, Dr. Cunnane was awarded a senior Canada Research Chair at the Research Center on Aging and became a full professor in the departments of Medicine and Physiology & Biophysics at Université de Sherbrooke. The main themes of his current research are to use brain imaging techniques

to study changing brain fuel metabolism and cognitive function during aging, and to understand how and why omega-3 fatty acid homeostasis changes during aging. He has published over 280 peer-reviewed research papers and was elected to the French National Academy of Medicine in 2009. Dr. Cunnane has published five books including two on flaxseed in human health and two on nutritional and metabolic constraints on human brain evolution - *Survival of the Fattest: The Key to Human Brain Evolution* (World Scientific 2005), and *Human Brain Evolution: Influence of Fresh and Coastal Food Resources* (Wiley, 2010).



Ian Givens
University of Reading, UK

10 Manipulation of lipids in animal-derived foods: Can it contribute to public health nutrition? ■

Professor Ian Givens has background training in biochemistry and nutrition and is currently Professor of Food Chain Nutrition and Director of the Food Production and Quality Research Division in the Faculty of Life Sciences, University of Reading. His research interests focus on food chain nutrition with emphasis on the relationship between consumption of animal-derived foods, nutrient supply and chronic disease outcome with particular emphasis on vascular disease and saturated, trans and n-3 fats. Current work focuses on lipids and proteins in milk and dairy products and their influence on cardiovascular disease. It also includes the use of animal nutrition to modify the lipid composition of these foods along with development of valid markers of chronic disease risk associated with consumption of normal and modified foods.



Jan-Åke Gustafsson, M.D., Ph.D.
University of Houston Texas, USA

11 Liver X-receptor β = a multifunctional ligand activated transcription factor ■

Jan-Åke Gustafsson is a leading scientist in the field of steroid hormone receptors/nuclear receptors. Several of his achievements have led to true paradigm shifts in the field and represent breakthrough discoveries. He was first to show that a nuclear receptor, the glucocorticoid receptor, is composed of three separate structural and functional domains, a ligand binding domain, a DNA binding domain and a third domain identified by its immunogenic properties. Furthermore, the Gustafsson laboratory was first to purify a nuclear receptor, the glucocorticoid receptor, to homogeneity and thereby to show that it represents a single molecular species rather than a complex of multiple smaller subunits. At the time, this was an especially important finding since the literature was muddled with misconceptions based on impure and/or partially proteolyzed receptor preparations. Also, access to a homogeneous nuclear receptor made it possible for Gustafsson to demonstrate specific DNA binding of glucocorticoid receptor to a glucocorticoid sensitive gene, the murine mammary tumor virus. This theretofore impossible achievement spurred a new, mechanistic era in nuclear receptor research, since in follow-up studies, Gustafsson et al. could show that the specific glucocorticoid binding sites also represent glucocorticoid response elements, able to confer hormone responsiveness onto nearby genes. It is essential to point out that all of the above seminal discoveries were made prior to the cloning of nuclear receptors.

Furthermore, Gustafsson et al. cloned the first (partial) cDNA of a nuclear receptor, the glucocorticoid receptor; the unique probes making this possible were the poly- and monoclonal antibodies against the glucocorticoid receptor developed by the Gustafsson laboratory. Another important milestone was the structure determination of the DNA-binding domain of the glucocorticoid receptor, the first ever nuclear receptor structure to be deciphered. During recent years, Gustafsson has continued to be responsible for paradigm shifts in the field of nuclear receptor research. It was Gustafsson who first identified physiological ligands for a so-called "orphan receptor", namely fatty acids for the peroxisome proliferator activated receptor (PPAR), thereby integrating fatty acids into molecular endocrinology. Furthermore, Gustafsson discovered OR-1, later renamed LXRBeta, an oxysterol-activated nuclear receptor of paramount significance in the regulation of cholesterol homeostasis and brain function. Finally, and most importantly, Gustafsson and colleagues made the completely unexpected discovery of estrogen receptor beta, a second estrogen receptor, which has turned out to have functions far outside reproductive physiology, and to be a very promising target in pharmaceutical development of novel drugs.



Ann Hellström
Sahlgrenska Academy, Sweden

17 Fatty acids and the child's eye ■

Ann Hellström is Professor in Paediatric Ophthalmology, at the Sahlgrenska Academy at Göteborg University.

Academic career: 1984-1986, Amanuensis, Department of Pathology, Medical Faculty, Göteborg University; 1986, University Medical degree, Medical Faculty, Göteborg University; 1996-1998, Research position, Medical Faculty, Göteborg University; 1997, PhD, Institute of Clinical Neuroscience, Department of Ophthalmology; 1999, Docent, Göteborg University; 1999-2004, Junior research position at the Swedish Medical Research Council (VR); 2004, Professor in Paediatric Ophthalmology

Clinical career: 1985, Resident, Department of Internal Medicine, Sahlgrenska University Hospital (SU), Gbg; 1986, Internship, Sahlgrenska University Hospital, Göteborg; 1986-1990, Maternal leave and abroad, 1993-1994 Maternal leave; 1990-1992, Internship, Sahlgrenska University Hospital, Göteborg; 1992-1996, Resident, general practitioner; 1993-1997, PhD studies; 1997-2002, Resident at the Department of Paediatric Ophthalmology, SU/Östra; 2002-2004, Resident at the Department of Ophthalmology, SU/Mölndal, Göteborg; 2004, Specialist Ophthalmology

Research Supervisor: 9 PhD students, fulfilled 7 PhD & 1 Med Lic

Post Doc Research Supervisor: Chatarina Löfqvist, molecular biologist, GP/GRC, Göteborg, 2001 and onwards; Gunnel Hellgren, molecular biologist, GP/GRC, Göteborg, 2001 and onwards; Doctor Yahua Chen, Dep of Ophthalmology, Institute of Clinical Neuroscience, 1994-97; Two students, 6 points research project, Biomed Cell Biology, Med Faculty, Göteborg, 1998.

Five medical students, 10 points research project, Medical Faculty, Göteborg, 1999, 2007 and 2008. Two ophthalmologists (W Wonenberg & A Seyed-Honorvar) doing their research project (6 months) during ST, Medical Faculty, Göteborg 2008-10.

Arranging international meetings: Ahrnbergssymposium, Göteborgs Medical Society, February 2000; Berzeliusssymposium, Swedish Medical Society "Perinatal brain injury", September 2003. Nordic Pediatric Ophthalmology Group, Göteborg September 2013; Invited speaker at national meetings approximately 75 times and at international meetings approximately 100 times.

Journals that continuously consult the applicant as an expert reviewer: *JAMA*, *PNAS*, *JCEM*, *PLOS One*, *Pediatrics*, *Pediatric Research*, *Acta Paediatrica*, *IOVS*, *Acta Ophthalmologica*, *Eye*, *British Journal of Ophthalmology*, *Archives of Ophthalmology*.

Board member: "PhD evaluation" at >40 dissertations; Institute of Clinical Neuroscience August 2001-July 2003; Medical Faculty, Sahlgrenska Academy, June 2003-July 2005; Academic appointment committee at the Sahlgrenska Academy, 2004-2006; Institute of Clinical Neuroscience and Physiology February 2006 - 2012; "Biobanksrådet", region of Western Sweden, from January 2006; Swedish national register for retinopathy of prematurity (SWEDROP) 2006; ALF evaluation in the Skåne region 2005-2009; Board member of The Swedish Research Council application evaluation 2007-2009; Board member of Kronprinsessan Margaretas fond för synskadade, Lilla Barnets Fond and Ögonfonden research application evaluation groups 2011 and ongoing; chairman for



Neurosciences at Vetenskapsrådet 2010 & 2012 and 2013; orking member of The Royal Society of Arts and Sciences in Gothenburg 2013

Awards: Knut & Alice Wallenbergs stiftelse for promising female researchers 1997 (200.000 SKR); Marianne Bernadottes pris för framstående barnögonforskning 2006 (50.000 SKR); SOE grant for excellent ophthalmologic research 2009 (50.000 SKR); Pfizer Ophthalmologistipendium 2011 (100 000 SKR); Synskadades Riksförbunds Ögonvårdspris 2011 (30 000 SKR); Athenapriset (the most prominent prize for clinical research) provided by Dagens Medicin, Lif, Sveriges Kommuner och Landsting, Sweden Bio, Swedish Medtech and Vetenskapsrådet 2012 (150 000 SKR); THE ROBERT McCance Lecture 2012 - ROP pathogenesis, diagnosis & therapies (today's and future), The Neonatal Society, Great Britain.



Jin-ichi Inokuchi
Tohoku Pharmaceutical University, Japan

23 Lipid membranes and insulin signaling ■

Jin-ichi Inokuchi received a Ph.D. degree in 1984 from the Department of Biochemistry, Faculty of Pharmaceutical Sciences, Fukuoka University. In 1985 he moved to the Mental Health Research Institute, University of Michigan as a postdoctoral fellow with Fulbright scholarship (the late Prof. Norman Radin), and in 1992, became the head of the Glycolipid Section, Tokyo Research Institute, SEIKAGAKU CORPORATION. In 1998 he moved to Hokkaido University as an associate professor. In 2006, he became a professor at the Institute of Molecular Biomembranes and Glycobiology, Tohoku Pharmaceutical University. His current research is focused on the pathophysiological roles of glycosphingolipids in metabolic syndrome, immune function and hearing function with a specific focus on membrane microdomains (lipid rafts) and on the development of novel diagnosis and therapeutic intervention based on the discovery in his laboratory.



Capt. Joseph Hibbeln, MD
National Institutes of Health, USA

5 Dietary patterns of pregnancy and childhood and risk of early onset addictions in the ALSPAC cohort ■

Joseph R. Hibbeln, MD, is Acting Chief of Section of Nutritional Neurosciences, Laboratory of Membrane Biophysics and Biochemistry, National Institute on Alcohol Abuse and Alcoholism at the National Institutes of Health, Bethesda, Maryland, USA.

A psychiatrist and lipid biochemist by training, Dr. Hibbeln is now one of the world's leading experts on the importance of dietary fats for human brain development and function. His work is focused on translating basic neuroscience on the omega-3 essential fatty acids docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) (found in fish and seafood) into direct clinical applications, and he has published more than 80 peer-reviewed scientific papers to date. His research interests range from severe pathological states, including suicide and psychosis, through depression and antisocial behaviour, to normative personality in adulthood and early development. He believes that a substantial proportion of emotional distress in modern society might be reversed by adequate intakes of omega-3 fatty acids.

He has extensive international collaborations for clinical trials of omega-3 fatty acids for the prevention of suicide, postpartum depression, and violence. He is a primary collaborator in the Avon Longitudinal Study of Parents and Children, Bristol, UK, examining the residual effect of nutritional insufficiencies in pregnancy in childhood neurodevelopmental outcomes and relevant gene-nutrient interactions. Joe was one of the very first investigators to draw attention to the importance of omega-3 fatty acids in psychiatric disorders (he organized a key international conference on this theme at NIH in 1998), and he is frequently sought out to communicate scientific findings in this field through major public media.

His numerous honours include the TL Cleave Award from the McCarrison Society, London, United States Public Health Service (USPHS), Outstanding Service medal, three USPHS Crisis Response Awards, the Gerald Klerman award from the National Association for Research in Schizophrenia and Depression, Independent Investigator and Young Investigator awards from NARSAD and Eagle Scout, BSA. Dr Hibbeln received a BA with special honours from the University of Chicago in 1983 and an MD from the University of Illinois at Chicago in 1988. He is a board certified physician in psychiatry and serves as a Captain in the USPHS.

**Darshan S. Kelley, PhD**Western Human Nutrition Research Center, ARS, USDA,
and University of California, Davis, CA, USA**7 Reversal of CLA-induced Non-alcoholic Fatty Liver Disease (NAFLD) & Insulin Resistance (IR) by DHA in a mouse model ■**

Dr. Kelley obtained an M. Sc. degree in Biochemistry from Punjab Agricultural University in Ludhiana, India and then received his Ph. D. degree in Biochemistry in 1974 from the University of Oklahoma, under the mentorship of Dr. B Connor Johnson. Here, he compared the effects of high fat and high carbohydrate diets on the regulation of hepatic lipid synthesis and the mechanisms involved. Dr. Kelley worked as a research associate in the laboratory of Dr. Van R Potter at McArdle Laboratory for Cancer Research, at the University of Wisconsin (UW) 1975-1980. Research conducted by Dr. Kelley at UW contributed to an understanding of hormonal and nutritional regulation of amino acid transport in normal and malignant hepatocytes. Dr. Kelley then served on the faculty of West Virginia University for 3 years before starting his career with the USDA, ARS, Western Human Nutrition Research Center (WHNRC) as a research chemist in 1983. He served as the Research Leader for the Bioenergetics Research Unit of WHNRC from 1990-1996, and as the Lead Scientist for the project on Dietary Fat and Health from 1990-2008. Within the ARS, Dr. Kelley's research initially focused on the effects of the amount and type of dietary fats on immune status, but he also examined the effects of energy intake, vitamins and minerals on immune response. His research showed that a reduction in fat intake enhanced several indices of immune response in human subjects. Increased consumption of omega-6 and trans fatty acids increased inflammatory response, while increased intake of omega-3 fatty acids decreased the production of inflammatory cytokines and eicosanoids. Subsequent studies of Dr. Kelley dealt with the effects of individual dietary fatty acids (docosahexaenoic acid, arachidonic acid, and conjugated linoleic acid) on risk factors for cardiovascular disease (CVD), non-alcoholic fatty liver disease (NAFLD) and insulin resistance, and an understanding of the mechanisms involved. DHA supplementation of the diets decreased several risk factors for CVD in human subjects and prevented NAFLD and insulin resistance induced by CLA in the mouse model. Dr. Kelley's laboratory demonstrated the CLA induced NAFLD progresses to nonalcoholic steatohepatitis (NASH) and shares many characteristics of human NASH. Dr. Kelley has also investigated the health effects of phytonutrients (polyphenols and limonoids) in human subjects. Results from his study with Bing sweet cherries demonstrated that cherry consumption decreased the circulating biomarkers for several inflammatory diseases. His study with purified citrus limonin glucoside (LG) indicated LG supplementation improved several biomarkers for liver health in overweight human subjects. A US patent has been filed by USDA regarding these findings. In addition to his employment with ARS, Dr. Kelley has also been an adjunct professor in the Department of Nutrition at the University of California Davis since 1999.

**Hee-Yong Kim, PhD**

National Institutes of Health, USA

2 Omega-3 fatty acid-derived neurodevelopment and neuroprotective function ■

Dr. Hee-Yong Kim is Chief of the Laboratory of Molecular Signaling, National Institute on Alcohol Abuse and Alcoholism (NIAAA) of the National Institutes of Health (NIH). Dr. Kim is internationally recognized for her research contributions concerning the mechanistic role of n-3 essential fatty acids, especially docosahexaenoic acid (DHA), in brain development and function. Her laboratory investigates the effects of DHA on neuronal membrane remodeling, membrane-protein interaction, biomediator formation and related signaling processes leading to cell survival and differentiation as well as neuroprotection. To this end, her laboratory develops novel biochemical, cell and molecular biological approaches, and modern mass spectrometric techniques for lipidomic, proteomic and metabolomic analyses. Her findings have provided fundamental new insight into the effects of lipid nutrition on the central nervous system. Although many of her studies are performed using animal models and cultured cells, the results are directly applicable to some of the pressing questions concerning the effects of dietary lipids on human health. She publishes in competitive peer-reviewed biomedical journals and has written many invited chapters and scholarly reviews.

**Michel Lagarde, PhD, DSc**

INSA/INSERM, France

4 Lipidomics – an expanding field. The example of fluxolipidomics ■

Starting to work at Pasteur Institute in Lyon on 1972 as Research Assistant • Research Scientist at INSERM (French MRC) (1976-1986) • University Professor in Biochemistry & Molecular Biology (1987-) • Doctorate in Biochemistry (1974), Doctorate ès-Sciences (1979), Doctorate in Human Biology (1983) • Post-doctoral fellow at the Department of Biochemistry, Royal College of Surgeons (RCS) of England (London, 1980) • Short sabbaticals at RCS (1981, 1982, 1983); Dept. Pharmacology at University of Illinois (Chicago, 1984); Dept. Biochemistry at Michigan State University (East Lansing, 1993); Depts. Biochemistry & Chemistry at University of California (San Diego, 2006) • Former president of GERLI (1994-2001), ICBL (2006-2010), ISSFAL (2006-2009) • Director of an INSERM research unit from 1988 to 2006 • Founder of the Institute for Multidisciplinary Biochemistry of Lipids (IMBL) and president (2002-2012) • Co-founder of the "Lipids for Industry and Safety & health" (LISA) Carnot institute, and research director (2007-2012) • Research topics on the metabolism of PUFA of nutritional value, especially oxygenated metabolism, in blood and vascular cells, in pathophysiological situations (co-author of 360 articles according to PubMed, H index 44).

**Christelle Lopez**

INRA, France

6 Milk membrane lipid composition ■

In 33 years, Christelle Lopez already has 36 international scientific publications. Responsible for research within the Unité mixte de recherche Inra/Agrocampus Western Science and technology of milk and the egg, centre Inra in Rennes, Department characterization and development of products of agriculture, Christelle participates in several research programs and coordinates an important project supported by the national agency of research (ANR), rarely function as early in the career of a researcher.

**Maria Makrides**

University of Adelaide, Australia

3 Maternal and infant nutrition ■

As a research dietitian, Maria is committed to improving the nutrition and health of mothers and their babies through the translation of high quality research. She has published widely and her work has been recognised nationally and internationally with a number of prestigious awards and appointments. She currently serves on the Board of Directors of the International Society for the Study of Fatty Acids and Lipids (ISSFAL) and is a member of the Nutrition Committee, Australian Academy of Science. Maria currently leads 4 national large-scale trials in the area of perinatal nutrition funded by the NHMRC.





Tore Midtvedt, MD, PhD
Karolinska Institutet, Sweden

25 Gut microbiota and fatty acids ■

GRADUATE & POSTGRADUATE TRAINING: Faculty of Medicine, Univ. of Oslo, Norway, 1952-1956 • Faculty of Medicine, Univ. of Bergen, Norway 1956-1958 • Board of Health, Licence, Norway 1959 • Doctor of Medicine, Karolinska Institute, Stockholm, Sweden, 1968 • **ACADEMIC APPOINTMENTS:** Lecturer in Medical Microbiology, Dept. of Bacteriology, Faculty of Medicine, Univ. of Oslo, 1961-1963 • Visiting scientist, Dept. of Germfree Research, Karolinska Institute, 1963-1966 • Lecturer in Bacteriological Pharmacology, Faculty of Medicine, Univ. of Oslo, 1966-1969 • Associated Professor in Medical Microbiology, Univ. of Oslo, 1973-1982 • Prof. in Medical Microbiology, Univ. of Oslo, 1982-1983 • Prof. and Chairman, Dept. of Medical Microbial Ecology, Cell and Molecular Biology, Karolinska Institute, 1983-1999 • Professor emeritus, Karolinska Institute, since 1999 • Doctor Med Vet Honores Causae, Norw Sch Vet Med, Oslo, 2010 • **MEMBERSHIPS:** Member of several domestic and international societies in Antibiotics, Gnotobiology, Infectious Diseases, Microbiology, Pharmacology. Member of New York Academy of Sciences. Past President, International Assn. for Gnotobiology and Society for Medical Microbial Ecology • **SCIENTIFIC PUBLICATIONS:** More than 355 publications cited in PubMed in Antibiotics, Ecology, Gnotobiology, Infectious Diseases, Microbiology, Pharmacology. More than 500 articles, abstracts, book chapters, etc. • **OTHER ACTIVITIES:** Editor-in-chief for the journal *Microbial Ecology in Health & Disease* • Member of editorial board in 3 intl. journals; reviewer for several more journals. • Opponent at several PhD dissertations in 6 countries, supervisor or co-author for more than 50 PhD students. Member of committees for evaluation of position as professor in 5 countries; evaluated applications for scientific councils in 7 countries.



Bev Muhlhauser, PhD
Univ. of Adelaide, Australia

15 Maternal & infant nutrition, Part II ■

Dr Muhlhauser graduated from her PhD in August 2006. She is a physiologist and molecular biologist who has a long standing interest in obesity and metabolic health, with a particular focus on the role of maternal and infant nutrition in determining the future metabolic health of the child. In her PhD, Dr Muhlhauser demonstrated that prenatal exposure to an increased nutrient supply resulted in increased expression of adipogenic and lipogenic genes in fat cells before birth, which permanently increased their capacity for fat storage (Muhlhauser et al, *Endocrinology*, 2007a and 2007b). This led Dr Muhlhauser to the hypothesis that altered development of the adipocyte was the primary event through which prenatal nutritional excess resulted in an increased propensity to obesity and diabetes in the child, and a subsequent search for potential nutritional interventions that could be applied during pregnancy or early infancy to optimize the future metabolic health of the child (Muhlhauser et al, *Trends Endocrinol Metabol*, 2009). This search led Dr Muhlhauser the omega-3 LCPUFA - and in recent years, Dr Muhlhauser's research has focused on the potential for increased supply of omega-3 LCPUFA in the maternal/infant diet to inhibit excess fat accumulation and improve insulin sensitivity early in life, and therefore reduce an individual's subsequent risk of obesity and diabetes in adult life.

Dr Muhlhauser has published 12 original research articles in the past 5 years which have investigated the role of the omega-3 LCPUFA in the maternal diet on offspring outcomes in animal models, which have systematically evaluated the (currently relatively limited) literature base which has attempted to address whether maternal/infant n-3 LCPUFA supplementation can reduce obesity risk in the child. Her work has provided novel insights into the role that the balance of lipids in the maternal and early infant diet play in determining long term metabolic health, and has led to 5 invited reviews/commentaries in this area in the past 2 years.

For the past 5 years, Dr Muhlhauser has led a follow-up of the DOMInO randomized controlled trial in Adelaide investigating the hypothesis that maternal omega-3 supplementation in the second half of pregnancy results in reduced BMI z-score and percentage body fat mass in children at 3 and 5 years. This study was awarded competitive funding from the leading funding body for Medical Research in Australia, the National Health and Medical Research Council of Australia, and involved detailed assessments of growth, body composition and metabolic status in over 1500 children at 3 and 5 years of age. Data collection for the study was completed in October 2013, with a follow-up rate of >85%. Dr Muhlhauser's 2014 ISSFAL presentation will be the first presentation of the primary results of this study, which are expected to provide the most robust data to date as to the potential for mater-

nal omega-3 LCPUFA supplementation to improve metabolic health in human children.

As a physiologist and molecular biologist, Dr Muhlhauser has a long-standing interest in understanding the biological mechanisms through which omega-3 fatty acids act to influence development. She has led studies in animal models to investigate the impact of different fatty acid classes (in particular omega-3 and omega-6 PUFA) on the expression of key metabolic genes, and demonstrated the lipogenic effect of the omega-6 PUFA in adults. More recently, Dr Muhlhauser has extended her mechanistic work to human studies, and is currently undertaking epigenetic analyses of DNA samples collected from the DOMInO children at 5 years of age, in order to determine whether maternal omega-3 LCPUFA supplementation is associated with altered DNA methylation of the genome, and whether these changes could explain the phenotypic effects of the intervention.



Jan Nedergaard
University of Stockholm, Sweden

8 Brown fat metabolism and function ■

Jan Nedergaard is professor of physiology at The Department of Molecular Biosciences, The Wenner-Gren Institute, Stockholm University. Since 1975, his scientific efforts have concentrated on the understanding of the function and physiological significance of brown adipose tissue. In recent years, he has played a significant role in the establishment of new concepts in brown adipose tissue research: - that brown adipocyte precursors are principally different from white adipocytes in that they display a myogenic gene expression phenotype (2007); - that the absence of brown adipose tissue is sufficient to cause or aggravate obesity (2009); - that existing radiological data implied that brown adipose tissue is present and active in adult humans (2007), - and that the gene expression profile observed in UCP1-expressing cells in white adipose depots is so distinct from that of classical brown adipocytes that these cells/depots should be considered to be of a different nature ("brite adipocytes") (2010). Jan Nedergaard was dean of biological sciences at Stockholm University 2002-2008.



Anna Nicolaou, PhD
University of Manchester, UK

9 Lipid mediators of cutaneous inflammation ■

Anna Nicolaou is Professor of Biological Chemistry in the Manchester Pharmacy School. Prof Nicolaou received her BSc in Chemistry and PhD in Biological Chemistry from University of Athens and trained as postdoctoral fellow at the School of Pharmacy, University of London. Prof Nicolaou joined the Bradford School of Pharmacy in 1997 and was awarded a personal chair in Biological Chemistry in 2008 before moving to University of Manchester in 2013. Her main research focus has been the molecular mechanism of action of bioactive lipids using mass spectrometry-based lipidomics, with emphasis on the role of fatty acids and their metabolites in cutaneous inflammation, the cardiovascular system, neuroinflammation and ocular health. Her work has been supported by research councils, charities and industry. Prof Nicolaou is co-chair of the lipidomics division of European Federation for the Science and Technology of Lipids, and associate editor for *Prostaglandins Leukotrienes and Essential Fatty Acids*, and the *European Journal of Lipid Science and Technology*.



Masanobu Oshima
Kanazawa University, Japan

24 Prostaglandin E2 pathway in inflammation-associated cancer development ■

Masanobu Oshima is Professor, Genetics Division, and Director of the Cancer Research Institute at Kanazawa University in Kanazawa, Japan. His research interest is a molecular pathogenesis of gastrointestinal tumorigenesis and malignant progression by using unique mouse models. Professor Oshima explains, "We previously investigated the role of COX-2 in intestinal tumorigenesis by construction of genetic models. Recently, we have constructed gastric cancer model, *Gan* mice, by transgenic activation Wnt signaling and PGE2-associated inflammatory responses. Using *Gan* mice, we have been studying the role of PGE2 and inflammatory cytokines in gastric tumorigenesis."



Jan Palmblad, MD, PhD
Karolinska Institutet, Sweden

19 Transfer of omega-3 FA across the blood-brain barrier after dietary supplementation with a docosahexaenoic acid (DHA)-rich omega-3 FA preparation in patients with Alzheimer's disease: the OmegaAD study ■

Prof. Jan Palmblad obtained his MD in 1969 and PhD 1977 from the Karolinska Institute (KI), Stockholm, Sweden, and was appointed Associated Professor of Medicine in 1982 and full Professor of Medicine and chairman of the Dept of Södersjukhuset at KI in 1995. In 1998 he was appointed to the chair of Medicine and as Chief of Dept. of Medicine at Huddinge University Hospital, KI, Stockholm; he stepped down from the latter position in Dec 2004. In 1982-1983 he was Visiting Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD, USA.

He is a member of several societies (incl. being an Honorary Emeritus Member of the American Society of Hematology, European Hematology Association, American Federation of Medical Research), has served as a council or board member of The International Immunocompromised Host Society and several national societies, is a member of the Severe Chronic Neutropenia International Registry, and has been on several national and international advisory committees and editorial boards.

His areas of research interest are in essential fatty acids and lipoxygenase products, particularly in relation to phagocyte and endothelial cell function as well as Alzheimer disease, acute and chronic neutropenias, angiogenesis in haematological, particularly myeloproliferative, diseases, and infections and nutritional state in hematological patients. He has also been engaged in research relating stress and sleep deprivation to inflammatory and immunological reactions. PubMed lists 280 of his totally >400 publications. He has been the tutor for 21 PhD students (out of the 23, presenting PhD thesis from the Center for Hematology and Inflammation Research, founded in 1974 by JP).

Six relevant papers: (1.) Palmblad J, Malmsten CL, Udén AM, Rådmark O, Engstedt L Samuelsson B: Leukotriene B4 is a potent and stereospecific stimulator of neutrophil chemo-taxis and adherence. *Blood* 1981;58:658-661. (2.) Feinmark SJ, Udén AM, Palmblad J, Malmsten CL: Leukotriene biosynthesis by PMN from two patients with chronic granulomatous disease. *J Clin Invest* 1983;72:1839-1843. (3.) Lerner R, Lindström P, Berg A, Karlman G, Ro-sendahl K, Palmblad J: Development and characterization of essential fatty acid deficiency in human endothelial cells in culture. *Proc Natl Acad Sci, USA* 1995;92: 1147-1151. (4.) Klein C, Grudzien M, Appaswamy G, Germeshausen M, Sandrock I, Schäffer AA, Rathinam C, Boztug K, Schwitzer B, Rezaei N, Bohn G, Malin M, Carlsson G, Fadeel B, Dahl N, Palmblad J, Henter JL, Zeidler C, Grimbacher B, Welte K. Deficiency of HAX1 causes autosomal recessive severe congenital neutropenia (Kostmann disease). *Nature Genetics* 2007;39:86-92. (5.) Qui H, Johansson A-S, Sjöström M, Wan M, Schröder O, Palmblad J, Haegström JZ. Differential induction of BLT receptor expression on human endothelial cells by lipopolysaccharide, cytokines and leukotriene B4. *Proc Natl Acad Sci, USA* 2006;103:6913-8. (6.) Freund Levi Y, Cederholm T, Eriksdottir-Jönhagen M, Basun H, Faxén Irving G, Garlind A, Tysén-Backström A, Vedin I, Vessby B, Wahlund L-O, Palmblad J. Omega-3 fatty acid supplementation delays the cognitive decline in patients with very mild Alzheimer's disease - a 1-year randomised placebo-controlled study of 174 patients. *Arch Neurol*, 2006; 63:1402-08.



Aleix Sala-Vila
Hospital Clinic, IDIBAPS- Endocrinology & Nutrition, Spain

22 Mediterranean diet, carotid plaque progression ALA, long chain n-3 and all cause mortality ■

Aleix Sala-Vila received his BSc in Pharmacy (1999), BSc in Food Science and Technology (2002) and PhD in Biomedical Sciences (2004) from the University of Barcelona. He was a post-doctoral fellow with Professor Philip Calder at the University of Southampton (2005-2007). In January 2008 he joined the team led by Emilio Ros at the Hospital Clínic de Barcelona and pursued clinical studies of the influence of dietary n-3 fatty acids of either marine or vegetable origin on atherosclerosis as assessed by non-invasive imaging techniques. His whole scientific career has focussed on investigating how the intake of foods and nutrients characteristic of the Mediterranean diet (n-3 fatty acids in particular) can help protect from chronic diseases. His main research interests are atherosclerosis development, plaque stability, myocardial salvage after acute myocardial infarction, neurodegeneration and healthy aging. He has been involved in specific projects within the PREDIMED (PREvención con Dieta MEDiterranea) study, for which the group directed the nutritional intervention. These projects deal with the effects of PREDIMED diets on: blood pressure as assessed by 24-h ambulatory monitoring (sub-cohort); age-related cognitive decline after intervention for 4 y (sub-cohort); changes in carotid plaque by ultrasound and magnetic resonance imaging after intervention for 2 y (sub-cohort); 5-y incidence of dementia (whole cohort); and consumption of alpha-linolenic acid and mortality (whole cohort). He is also a co-investigator of the randomized controlled trial WAHA (Walnuts for Healthy Aging - <http://www.clinicaltrials.gov/NCT01634841>) aimed at studying the effect of a diet enriched with walnuts (15% of energy) for 2 y in comparison with a control diet on age-related cognitive decline and macular degeneration in 700 cognitively healthy older persons.



Charles N. Serhan, PhD, DSc (hc)
Harvard Medical School & BWH, USA

1 Novel Pro-Resolving Mediators in Inflammation: Resolvins, Protectins and Maresins ■

Since 1995, Prof. Serhan is Director of the Center for Experimental Therapeutics and Reperfusion Injury at Brigham and Women's Hospital in Boston. He is the Simon Gelman Professor of Anaesthesia (Biochemistry and Molecular Pharmacology) at Harvard Medical School and Professor of Oral Medicine, Infection and Immunity at HSDM Harvard University. Professor Serhan received his Bachelor of Science Degree in biochemistry from Stony Brook University, New York, and went on to receive his doctorate in experimental pathology and medical sciences from New York University (NYU) School of Medicine. From 1981-86, he was a visiting scientist at the Karolinska Institutet, Stockholm and post-doctoral fellow with Professor Bengt Samuelsson. In 1996, he received an honorary degree from Harvard University.

Dr. Serhan was awarded an NIH MERIT Award (2000), the MacArthur Research Service Award in 2003, and the Outstanding Scientist Award in Inflammation Research at BioDefense, 2004. He delivered the 2005 NIH Kreshover Lecture and received the LSU Chancellor's Award in Neuroscience in 2006 and in 2007 the Dart/New York University Biotechnology Outstanding Achievement Award. In 2008, he delivered the Sir John Vane Memorial Lecture and received the 2008 William Harvey Outstanding Scientist Medal. In 2010, he delivered the Kern Lecture "in recognition of outstanding research on lipids" and received the Society for Leukocyte Biology 2010-Bonazinga Award for "excellence in leukocyte research, SLB's highest honor". Dr. Serhan was elected Fellow of AAAS in 2011, delivered the Lawrence Tabak NIH-Lectureship for excellence in Oral Biology and the 2011 American College of Rheumatology Hensch Lecture awarded by the Mayo Clinic Hensch Society, and was named Honorary Fellow from Queen Mary University London. He was also NIH/NCI Distinguished Lecturer STARS in Nutrition and Cancer (2012) and the NIH STEPS lectureship. He received the 2013 Journal of Lipid Research Lectureship Award and Mériex Research Grants, 2013 Laureate.

He also received the Honorary Degree of Doctor of Science, University College of Dublin, Ireland and the 2013 Oh Dang International Prize from the Korean Pharmaceutical Society "in recognition of an internationally recognized scholar who has had a major impact on pharmaceutical research and related areas of life sciences."

Charles is a member of several scientific advisory boards including recent appointments (2013) to the Scientific Advisory Board of the Pasteur Institute, France and was appointed to the NIH Board of Scientific Counselors for the intramural research program of NIAAA, Rockville, MD. Author of >460 publications, 4 books and >348 awarded patents.



Young-Joon Surh, PhD
Seoul National University College of Pharmacy, Korea

21 Roles of some endogenous lipid mediators in cellular defense against oxidative stress and inflammation ■

Dr. Young-Joon Surh is a Professor of Biochemistry at the College of Pharmacy, Seoul National University, South Korea. He currently serves as Director of Tumor Microenvironment Global Core Research Center Research Center (GCRC), which is supported by the National Research Foundation of Republic of Korea. Prof. Surh graduated from Seoul National University with BS (Pharmacy) and MS (Biochemistry) and earned his PhD degree at the McArdle Laboratory for Cancer Research, University of Wisconsin-Madison, USA. He had postdoctoral training at the Massachusetts Institute of Technology (MIT). In 1992, he was appointed as a tenure-track Assistant Professor at Yale University School of Medicine. Since relocating to Seoul National University in 1996, Prof. Surh has been investigating the molecular mechanisms of cancer prevention with natural products, with special focus on redox modulation of antioxidant and anti-inflammatory signaling molecules as prime targets. Served as a member of the editorial board member of more than 30 international journals, including Carcinogenesis, International Journal of Cancer, Molecular Carcinogenesis, Cancer Letters, Cancer Prevention Research, Mutation Research, Life Sciences, Molecular and Cellular Biochemistry, Free Radical Research, Food and Chemical Toxicology, Biofactors, Genes and Nutrition, Molecular Nutrition and Food Research, etc. He is also editor of the following books: Oxidative Stress, Inflammation and Health (CRC Press), Molecular Targets and Therapeutic Use of Curcumin (Springer-Verlag), and Dietary Modulation of Cell Signaling Pathways (CRC Press). Prof. Surh has published more than 250 papers in peer-reviewed international journals and more than 70 invited editorials, reviews and book chapters. The total number of citations of his publications is more than 10,000 (excluding self-citations). He received numerous awards including Elizabeth C. Miller and James A. Miller Distinguished Scholar Award from Rutgers University (2011), McCormick Science Institute Award from American Society for Nutrition (2009), Merit Award from the International Society of Nutraceuticals and Functional Foods (2010). He published a seminal review article, titled cancer chemoprevention with dietary phytochemicals, in Nature Reviews Cancer which has been highly cited (more than 1,000 times).



Lhousseine Touqui, PhD
Institut Pasteur, France

13 A role for the group-II secreted phospholipase A2 in the establishment of lung microbiome in patients with cystic fibrosis ■

Present position: Research Director, Institut Pasteur and Leader of the team "Roles of TLRs and phospholipases in lung infectious and inflammatory diseases".

Member of Scientific Instances: Scientific Council of the French Foundation of Cystic Fibrosis, ABCF proteins; Expert for the International Foundation For Science; Expert for the Canadian Cystic Fibrosis Foundation; Expert for Ministère de la Recherche, Mission Scientifique, Technique et Pédagogique; Consultant for the Pharmaceutical Company "Galderma"; Co-fonder of an European Network for new strategies to eradicate multi-resistant bacteria; Member of the Committee for Scientific Evaluation (COMESP) in Pasteur Institute

Informations and Communications (since 2005): Organisation of the EuroConference Infections & Lung Diseases (Paris, June 2006); Organisation of the Shanghai International Symposium on Respiratory Diseases (Shanghai, October 2008); Organisation of the Third European Workshop on Lipid Mediators (Paris, June 2010); Organisation of the Fourth European Workshop on Lipid Mediators (Paris, June 2012); Organisation of 2 Pasteur Department Meetings, in 2009 and 2010 "Le point sur les thérapies antibactériennes" on antibiotic resistance and possible "alternative" therapeutic strategies.

Invitation to scientific meetings as a speaker since 2005: 15th Congress of the Asia Pacific Association for Respiratory Care (Shanghai, October 2005); 1st Mediterranean Clinical Immunology Meeting (Evora, October 2006); 3rd International Conference on Phospholipases and Lipid Mediators (Naples, May 2007); 2nd Mediterranean Clinical Immunology Meeting (Antalya, October 2008); European Cystic Fibrosis Congress (Tavira, April, 2009); European workshop "Molecular and Cellular aspects of Chronic Lung Disease" (Rotterdam, June 2009); 3rd European Workshop on Lipid Mediators (Paris, June 2010); The 35th European Cystic Fibrosis Society Conference (Dublin, June 2012); ECFS conference - New Frontiers in Basic Science of Cystic Fibrosis (Malaga, March 2013)



Antonio Vidal-Puig
University of Cambridge, UK

18 Fatty acid metabolism in obesity ■

Research Interests – Molecular Mechanisms of Energy Balance: Our program of research explores the molecular mechanisms involved in controlling energy expenditure, fat deposition, and the mechanisms controlling the partition of energy towards oxidation or storage. Specifically we are interested in the following interrelated questions: A. How the expansion of adipose tissue typically associated with obesity relates to the development of the Metabolic Syndrome. More specifically we are exploring whether lipotoxicity and/or changes in adipokines secreted by adipose tissue affect insulin sensitivity in other organs (skeletal muscle, heart, liver, brain, beta cells and macrophages). B. Whether modifications in adipogenesis and remodeling of adipose tissue may be good strategies to ameliorate the metabolic effects associated with obesity. C. The molecular mechanisms that control energy expenditure and brown fat activation. D. Whether modulation of partitioning of nutrients towards fatty acid oxidation in skeletal muscle and away from storage in adipose tissue may prevent the devastating metabolic effects of obesity.

To address these challenges is a daunting task that requires the modulation of highly integrated and complex mechanisms of energy homeostasis designed to prevent negative energy balances. According to this integrated concept of energy homeostasis, my laboratory is using an Integrated Physiology approach that relies greatly upon the generation and detailed in vivo phenotyping of genetically modified organisms. Together with Systems Biology approach integrating transcriptomic and lipidomic analysis, using bioinformatics to identify organ specific lipid metabolic networks relevant for insulin resistance and metabolic disease.

Our research is funded by the Wellcome trust, MRC, Diabetes UK, British Heart Foundation, EU FP6 HEPADIP, EU FP7 MITIN, EU FP7 Etherpaths and BBSRC.





2014

**11TH CONGRESS OF THE INTERNATIONAL SOCIETY
FOR THE STUDY OF FATTY ACIDS AND LIPIDS**
28 JUNE - 2 JULY | STOCKHOLM, SWEDEN
AT "THE BREWERY" — MÜNCHENBRYGGERIET

Poster Sessions

Poster Sessions

Posters listed in the following pages are indexed by location and also organized by the day on which the presenter will present their Poster, alphabetized by last name of the presenter. **A floor plan of the Poster Hall is on page 10.**

Posters will be presented in three halls at the upper floor of The Brewery – **Nobelterrassen (N)**, **Mälarsalen (M)** and **Strindbergssalongen (S)**. Here you will also find the Exhibit Hall, where Coffee Breaks and Lunch will also be served on Sunday, Monday and Tuesday (please note that breakfast is on your own).

Posters will be available for review during all three full days of the Congress. Since we have a very full oral programme, it is important that all attendees have ample opportunity to see the Posters throughout the Congress.

We have created a schedule whereby you will be able to see presentations formally on **one day only during the lunch break**, to facilitate discussion with those interested and also make it possible for you to be able to meet other presenters of topical interest to you.

VIEWING POSTERS

Posters have been given a number for easy identification by delegates. This number has three parts:




- The initial letter refers to the “Poster Area” (there are three) where the Poster will be presented (see the floor plan on page 10 and the table below).
- The next number refers to the designated screen row.
- The second number after the decimal refers to the specific screen within the designated row.

This identification number will be found on the specific location as described above. The number will also appear wherever the corresponding Abstract is listed in the Program and online.

POSTER DISPLAY AREAS / PRESENTATION SCHEDULE

ATTENTION PRESENTERS:

You will formally present your Poster **during lunch**, on the day indicated for your row — which corresponds to the first two numbers of your new Poster Number.

POSTER AREA	TOPIC	SUNDAY	MONDAY	TUESDAY
NOBELTERRASSEN 	Nutrition/Food/Diary/Formula	N1 N4	N2	N3
	Programming/Epigenetics	N7	N5	N6
	Placenta/Pregnancy/Neonatology	N10	N8	N9
	Neurodevelopment/Neuroscience	–	N11	N12
MÄLARSALEN 	Metabolism/Endocannabinoids	M1	–	–
	Metabolism/Oxidation	–	M2	M3
	Metabolism/Transformation	M4	M5	–
	Metabolism/Oxylipins	–	–	M6
	Cancer	M7	–	–
	Immunology/Clinical Diseases	–	M8	–
STRINDBERGSALONGEN 	Exercise	S1	–	–
	Obesity/ Diabetes mellitus	–	S2	S3
	Vitamin D	S4	–	–
	Cardiovascular diseases/Cholesterol	S7	S5 S8	S6
	Neuropsychiatry	–	–	S9
	Alzheimer/Apo E	S10	–	–
	Aging/Pain	–	S11	S12
	Methodology	S13	–	–
	Bioavailability	–	S14	–
	Common Topics	–	–	S15

POSTER INDEX BY LOCATION

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M1.06 Sabour
M1.07 Banni
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M1.09 Chen
M1.11 Gawrisch
M1.12 Lin
M2.01 Martins
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M4.01 Piotrowitz
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POSTER LISTINGS BY DAY *(Alphabetized by last name of the presenters)*

POSTER SESSION I: 29 JUNE / SUNDAY

- Samia S. Al-Ghannami S4.06
The effect of omega 3 fatty acid supplementation on plasma vitamin D status of school children
- Eva-Maria Bachmair S7.06
Differing response of platelet function in healthy male and female subjects at cardiovascular risk supplemented with a 9c,11t-rich conjugated linoleic acid blend
- Dattatreya Banavara N4.03
Role of fat globule size and structure on in-vitro digestion of fat in milk/formula
- Sebastiano Banni M1.05
Dietary triacylglycerols with palmitic acid in the sn-2 position modulate levels of endocannabinoids and congeners in rat tissues
- Sebastiano Banni M1.07
Krill Oil supplementation modifies endocannabinoid congeners profile in cachectic advanced cancer patients
- Valgerður Edda Benediktsdóttir M4.10
Phospholipid composition of lipid rafts from rat heart.
- Delplanque Bernadette N7.03
Dairy fat or ALA-rich rapeseed diets for dams and mice offspring are similarly protecting against anxiety observed with low-ALA-palm diet
- Bodil Bjorndal M4.03
Hyperhomocysteinemia and altered metabolites along choline oxidation and tryptophan catabolic pathways in relation to tetradecylthiopropionic (TTP)-induced fatty liver in mice
- Claire Bourlieu N4.04
An insight into the interfacial composition and susceptibility to digestion of model infant formulas stabilized by milk polar lipids
- Susan Carlson N4.05
LCPUFA supplemented term infant formula and maternal smoking and child growth
- Susan Carlson N10.01
The increased length of gestation caused by dietary n-3 LCPUFA is mainly driven by a reduction in early preterm births in a sub-set of women
- Patricia Casas-Agustench N7.05
Dietary lipids modulate the expression of miRNAs
- Chuck Chen M1.09
The Contribution of Unesterified DHA to Total Brain DHA Uptake: A Kinetic Study in Rats
- Raphael Chouinard-Watkins S10.06
Interaction between diet and APOE genotype on relative enrichment of plasma lipids with DPA and total saturated fatty acids.
- John Colombo N4.06
No effect of maternal prenatal DHA supplementation on MacArthur-Bates and Bayley Scales at 18 months
- Alison Colquhoun M7.10
Eicosanoid metabolism, multiple drug resistance and novel therapeutic targets in brain tumours
- Valérie Conway S10.07
Human apolipoprotein E epsilon 4 genotype disrupts fatty acids distribution in organs of transgenic mice
- Valérie Conway S10.08
Postprandial omega-3 fatty acids in lipoproteins: Lack of an interaction with apolipoprotein E epsilon 4 genotype
- Maria Fernanda Cury-Boaventura S1.06
Effect of DHA-rich fish oil supplementation on the plasma lipid metabolites in marathon runners before and after acute exercise
- Alberto Dávalos N7.07
Docosahexaenoic acid modulates the expression of microRNAs involved in lipid metabolism
- Janneke Dijck-Brouwer N4.01
The current upper limit of 0.5 g% docosahexaenoic acid (DHA) in formulas for term infants is too conservative.
- Anne-Laure Diné N7.01
Impact of lipid quality in perinatal period on inflammation and cognition
- Simon C. Dyall S1.05
Blood DHA levels predict walking performance in older females
- Ahlam ElShikieri M7.08
Association between fatty acid intake and breast cancer in Sudan: A case-control study
- Alexander Fauland S13.01
Lipid profiling of murine hepatocytes-derived lipid droplets by reversed phase chromatography online-coupled to Fourier transform mass spectrometry
- Alexander Fauland S13.05
A comprehensive LC/MS/MS method for lipid mediator quantification
- Moncef Feki S1.02
Low vitamin d status in athletes living in a sunny country (tunisia)
- Moncef Feki S4.08
Plasma 25-hydroxy vitamin d is dramatically reduced in tunisian pregnant women
- Jarlei Fiamoncini M4.02
Dietary n-3PUFA increase peroxisomal oxidation of fatty acids in mice, generating medium-chain, dicarboxylic acylcarnitines as marker metabolites
- Catherine Field M7.07
Stearidonic acid reduces growth of MDA-MB-231 breast cancer cells both in vitro and in vivo
- Agnieszka Filipiak-Florkiewicz N1.06
Lipid profile of egg yolks from laying hens fed diets supplemented with pomegranate seed oil
- Manjula Fischer S1.07
Effects of n-3 LC-PUFAs EPA and DHA on physical activity, BMI and body weight among eight year old children
- Helena Fisk S10.05
Effect of Apolipoprotein-E genotype on plasma omega-3 fatty acid response to high dose fish oil intervention
- Magdalena Franczyk-Zarow N1.07
Effect of dietary pomegranate seed oil on serum lipid profile and blood morphology parameters in broiler chickens
- Klaus Gawrisch M1.11
2-Arachidonylglycerol location, structure and dynamics in membranes and its interaction with cannabinoid type II receptors
- Pieter Giesbertz S4.04
Acylcarnitine profiling in plasma and tissues in mouse models of type I and type II diabetes
- Karlheinz Grillitsch M4.12
Characterization of Pichia pastoris Golgi and plasma membrane
- Stine Grimmer N1.08
Cellular effects of bioactive lipids of vegetable origin
- Harald S. Hansen M1.04
The PPARalpha agonist, fenofibrate decreases levels of anorectic N-acylethanolamines in the small intestine of mice
- Akiko Harauma S1.01
Influence of chronic administration of arachidonic acid on motor behavior in adult mice
- William Harris N4.07
DHA and Trans Fatty Acid Levels in Breast Milk from Mothers in Bangladesh and Malawi: Analysis of Liquid vs. Dried Milk Spots
- Joseph Hibbeln N7.02
Vegetarian dietary patterns during pregnancy and risk of early onset substance abuse among offspring
- Samuel Hoile N7.04
Age and species differences in the methylation of the FADS2 promoter in rats and humans

- Kathryn Hopperton S10.02
Amyloid- β induced inflammation and its resolution by omega-3 polyunsaturated fatty acids in a mouse model of Alzheimer's Disease
- Giorgis Isaac S13.08
Fast and Simple Free Fatty Acid Analysis Using Sub-2- μ m Particle CO₂ Based Supercritical Chromatography
- Suzu Iwanaga S10.01
n-3 fatty acid deficiency accelerated the impairment of mouse brain function induced by stored amyloid beta protein
- Jitcy Joseph S1.03
Exercise induced Calmodulin dependent protein kinase (CaMK)-II activation regulate total cholesterol and insulin sensitivity in rat skeletal muscle
- Saki Kakutani M7.01
Arachidonic acid and cancer risk: a systematic review of observational studies
- Galina Kalachova N1.02
Effect of way of cooking on content of essential polyunsaturated fatty acids in filets of zander
- Alex Kitson M4.04
Estrogen receptor α -knockout mice do not exhibit altered hepatic docosahexaenoic acid levels or $\delta 5$ - or $\delta 6$ -desaturase expression compared with wild-type
- Kristina Klizaitė M1.08
The Role of LPCAT1 and LPCAT2 in Regulation of Lipid Droplets
- Anna Kock M7.06
Characterization of Prostaglandin Signaling in Primary Neuroblastoma
- Sophie Layé N10.07
N-3 polyunsaturated fatty acid nutritional deficiency alters microglial cells activity in the developing brain
- Jetty Lee M4.07
Fish oil supplementation in CCl₄ injured rodents exclusively suppressed enzymatic and non-enzymatic lipid peroxidation of DHA and EPA
- Duo Li M4.05
N-3 polyunsaturated fatty acids modulate homocysteine metabolism
- Duo Li M7.09
Effect of ximenynic acid on apoptosis of HepG2 cells
- Duo Li S7.07
Docosapentaenoic acid is responsible to mean platelet volume
- Lin Lin M1.02
Regulation of fatty acid ethanolamides by dietary fatty acids and genetics
- Yu-Hong Lin M1.12
Quantification of Endocannabinoids in Animal Organs and Human Fluids by Triple Quadrupole Gas Chromatography/Mass Spectrometry
- Mads Vendelbo Lind N7.06
Oral fish oil administration of infants modifies DNA methylation profiles in mononuclear cells
- Ge Liu S13.06
Stabilisation of long chain polyunsaturated fatty acids in human dried blood spots
- Ge Liu S13.07
Clinical validation of a dried blood spot method for measuring fatty acid status
- Linda Ljungblad M7.02
Medulloblastoma growth inhibited by LCPUFA DHA and EPA
- Olesia Makhutova N1.04
Evaluation of different fish products as a source of essential PUFAs, and benefit-risk ratio of fish intake in human nutrition.
- Julie Mason M7.12
 α -linolenic acid reduces the growth of HER2-overexpressing breast cancer cells that are sensitive or resistant to trastuzumab (TRAS) and prevents TRAS resistance development
- Peter McLennan S1.08
Resistance to muscle fatigue with low dose dietary fish oil supplement and membrane incorporation of DHA.
- John Miklavcic M1.03
IBD intestine is characterized by gangliosides with fewer unsaturated bonds
- Magdalene Montgomery S4.01
Unique changes in hepatic sphingolipid species after high-fat feeding in BALB/c mice correlate with protection from diet-induced glucose intolerance
- Shin-ya Morita M4.09
Efflux and compositional changes of cellular phospholipids mediated by ABCB4 localized in canalicular nonraft membranes
- Hye-Kyung Na N7.08
15-Deoxy- $\Delta^{12,14}$ -prostaglandin J₂ Upregulates the Expression of 15-Hydroxyprostaglandin Dehydrogenase through DNA Methyltransferase 1 Inactivation
- Razieh Niazmand N1.03
Fatty acids composition and oxidation kinetic parameters of purslane (*Portulaca oleracea* L) seed oil
- Laureane Nunes Masi S4.03
Effects of fish oil supplementation on inflammation and insulin resistance in mice fed a balanced or high fat diet
- Anu Nuora N1.05
The effects of two different cooking methods on the lipid oxidation of beef steaks and on the postprandial lipid response and oxidative stress state in humans
- Noriko Osumi N10.05
Impact of polyunsaturated fatty acids and fatty acid binding protein on neurogenesis
- Jan Palmblad S10.03
Effects of omega-3 fatty acid supplementation on plasma fatty acids profiles in relation to gender and cognition in Alzheimer patients. The OmegaAD study.
- Kira Piotrowitz M4.01
Click-based method to trace lipid metabolism in primary hepatocytes under various metabolic conditions
- Robert Purcell S7.01
Cytoprotective actions of postprandial EPA and DHA-enriched triglyceride-rich lipoproteins on human aortic endothelial cells
- Robert Purcell S7.02
Oxylipin profiling of postprandial human plasma after EPA and/or DHA-enriched high fat meals and identification of direct endothelial actions in vitro
- Harry Rice S7.03
Influence of EPA and DHA on Blood Pressure: A Meta-Analysis of Randomized Controlled Trials
- Valenzuela Rodrigo N4.02
Modification of α -linolenic acid and docosahexaenoic acid composition of milk from Chilean lactating women who received pre- and postpartum α -linolenic acid intake from chia oil
- Hadis Sabour M1.06
Is Omega 3 fatty acid effect on leptin and adiponectin ?
- Nicholas Salem M4.06
Rat Whole Body Distribution of Omega-6 and Omega-3 Polyunsaturated Fatty Acids
- Linda Samuelsson N1.01
Digestion-resistant carbohydrates induce changes in the serum lipidome of rats
- Concepción Sánchez-Moreno S7.04
Positive effects on lipid metabolism in Wistar rats of hypercholesterolemic diets enhanced by onion intake
- Svanhild Schønberg M7.03
Anticancer properties mediated by PUFAs - DHA-induced stress response in human colon cancer cells
- Gudrun Skuladottir S4.07
Association of plasma phospholipid docosahexaenoic acid and vitamin D subtypes on the risk of postoperative atrial fibrillation

Ken D. Stark N10.03
Phosphatidylethanolamine Methyltransferase, $\Delta 6$ Desaturase and Palmitoyldocosahexaenoyl Phosphatidylcholine are increased in Rats during Pregnancy

Xiao Su M7.05
Krill oil inhibits proliferation of human colorectal cancer cells

Hui-Min Su M7.11
DHA inhibit pAKT signaling for the expression of SREBP1 and FASN and cell proliferation in human breast cancer cell line

Hui-Min Su N10.08
Effects of docosahexaenoic acid deficiency on neuronal protein expression in the developing rat

Yoshitaka Tatebayashi N10.06
Development and Application of a Novel Statistical Analysis of Postmortem Human Brain Fatty Acid Composition – Abnormal Fatty Acid Composition in the Frontopolar Cortex of Affective Disorders

Carla Taylor S4.05
High fat diets induce tissue-specific changes in critical nodes of insulin resistance in obese-prone rats

Kim-Tiu Teng S7.08
Palmitic acid in the sn-2 position does not alter thrombogenic responses postprandially in mild type 2 diabetes mellitus

Veronika Tillander M4.08
Tetradecylthioacetic acid (TTA) - effect on liver and intestinal lipid metabolism.

Hans Van Rooijen N4.08
High-potency EPA increases omega-3 index and mental health score in healthy subjects

Marianela Vara-Messler M7.04
Era expression is associated to antitumoral activity of chia oil enriched diet

Alessandra Voggt S7.05
Heart Rate Variability and Omega-3 Index in Euthymic Patients with Bipolar Disorders

Clemens von Schacky S1.04
The Omega-3 Index in 106 German Athletes – A pilot study

Tingting Wei S13.03
Analysis of phospholipid species and triglyceride species by LC/MS/MS in crude algal oil

Suzan Wopereis S4.02
Biomarkers for phenotypic flexibility as evaluated in healthy and diabetic subjects

Hidetoshi Yamada M1.01
Hydroxylation of eicosapentaenic acid at the C-8 or C-9 position increases ligand activity for PPARs.

Hong Yang S13.02
Quantification and Classification of Corn, Soybean and Palm olein oils as Adulterants in Sesame oil Using Chromatography and Chemometrics

Alison Yeates N10.02
A systematic review of biomarkers of polyunsaturated fatty acid status among pregnant and non-pregnant women of reproductive age

Shlomo Yehuda S10.04
Olfactory bulbectomy as a putative model for Alzheimer's: The protective role of essential fatty acids

Jiyao Zhang M4.11
Fatty acid desaturase 3 (Fads3) null mouse biochemical phenotype

Jinping Zhao N10.04
The absolute amount of plasma DHA increased significantly during pregnancy in healthy pregnant women but did not in women with gestational diabetes

Chuan Zhou S13.04
Determination of 16 phthalate esters in edible vegetable oils by GC-MS/MS with QuEChERS

POSTER SESSION II: 30 JUNE / MONDAY

Samia S. Al-Ghannami N11.03
Fish consumption for a short period of time improves cognitive ability of healthy Omani school children

James Astwood S14.01
Unique composition of an algal oil that contains eicosapentaenoic acid (EPA, 20:5n-3) and palmitoleic acid (16:1n-7)

James Astwood S14.02
Safety of a unique algal oil that contains eicosapentaenoic acid (EPA, 20:5n-3) and palmitoleic acid (16:1n-7)

James Astwood S14.03
Acute toxicological evaluation of an algal oil that contains eicosapentaenoic acid (EPA, 20:5n-3) and palmitoleic acid (16:1n-7)

Harold Aukema M5.10
Amelioration of disease progression and oxylipin abnormalities in pcy mouse kidneys by dietary flax oil demonstrates that α -linolenic acid can be sufficiently converted to docosahexaenoic acid (DHA) to maintain DHA oxylipins levels

Harold Aukema S2.06
Modulation of Adipogenesis by Oxylipins – Differential Effects on Lipid Droplet Formation and Adipokine Production

Karina Barros S11.06
Effect of supplementation with fish oil-based lipid emulsion in critically ill elderly patients on cortisol, insulin and antioxidant enzymes

Daniela Barros Mucci N8.01
Is maternal intake of ALA from Flaxseed neuro-protective against neonatal hypoxic-ischemic brain injury?

Mariela Bernabe-Garcia M5.04
Docosahexaenoic acid reduces the catabolic effect of sepsis on nutritional status of critically ill neonates

Delplanque Bernadette N5.03
Brain dha restoration in young-deficient rat is better with pure or blended dairy-fat diets compared to similar ala-content vegetable blends

Delplanque Bernadette N5.04
Protective effect of dairy fat on brain dha levels of young rats born from ala-deficient or ala-rich mothers

Elín Bjarnadóttir N11.06
Fish Oils Supplementation During Pregnancy and Child Neurodevelopment

Stephanie Caligiuri S8.04
A Novel Soluble Epoxide Hydrolase Inhibitor: Flaxseed Alters the Plasma Oxylipin Profile and Reduces Blood Pressure in a Randomized, Double-Blinded, Placebo Controlled Clinical Trial

Antonio Checa M8.09
Sphingolipid levels in cerebrospinal fluid serve as markers of disease progression in multiple sclerosis

Benjamin Choque M5.09
Conversion of alpha-linolenic acid to longer chain n-3 fatty acids: competition with linoleic and oleic acids for the delta-6 desaturase

Benjamin Choque M5.12
Reassessment of the linoleic acid requirement in presence of alpha-linolenic acid in the growing rat

M Tom Clandinin M5.06
The influence of ARA intake and FADS SNPs on ARA and DHA level in infant plasma

Krista Coventry S5.03
High-DHA Fish Oil Improves Fasting Lipoprotein Profiles in Adults Taking Statin Medication

Ahmed Daak M5.08
Omega 3 fatty acid supplementation down-regulates the expression of FADS1 (delta 6 desaturase) and FADS2 (delta 5 desaturase) genes in homozygous sickle cell patients

Albert de Graaf S2.08
Metabolic Syndrome simulator for personal nutritional advice

Baukje de Roos N2.07
Health effects of consuming 2 portions per week of Scottish farmed salmon raised on different feeding regimes – the FISH DISH study

- Ashish Dhyani S8.03
The IDOL N342S gene variant is not associated with plasma lipid profile and pre-clinical carotid atherosclerosis in an Italian free living population
- Pawel Dobrzyn S5.01
Lipid-induced cardiac remodeling and left ventricle steatosis depend on the degree of saturation of fatty acids in dietary fats
- Anthony Domenichiello N11.08
Whole body synthesis rates of DHA from alpha-linolenic acid are greater than brain DHA accretion and uptake rates in adult rats
- Marc Dubourdeau S5.06
Development of a primary human macrophage-derived foam model to study statin on pro-resolving mediators issued from arachidonic, eicosapentaenoic and docosahexaenoic acids
- Simon Dyall S11.08
The effects of Efalex Active 50+, an omega-3 fatty acid enriched supplement, on measures of frailty in the older adult - a case study
- Naser Estuty N2.01
Effects of dietary fat source on the rump muscle composition, n-3 PUFA content in Suffolk rams
- Samaneh Ghasemi Fard S14.08
A comparative gender study on fish oil vs krill oil bioavailability
- Martin Giera M8.12
The presence of lipid mediators in human synovial fluid of arthritis patients
- Renata Gorjão M8.05
Inhibitory effect of palmitoleic acid on human lymphocyte function
- Melissa Gregory M5.11
Molecular basis for differential elongation of omega-3 docosapentaenoic acid by the rat elongases Elovl5 and Elovl2
- Kathleen Gura N8.08
Intravenous Fish Oil Does Not Appear to Increase the Risk of Burr Cell Anemia
- Kevin Hadley N2.08
Arachidonic acid: Potential new treatment for schistosomiasis in school-age Egyptian children
- Kevin Hadley S11.07
Effects of microbial DHA on cognitive functions in a canine model of brain aging
- Wendy L. Hall S14.05
Differential effects of n-3 PUFA-containing fish and algal oils on postprandial lipaemia and oxidative stress in healthy men
- Duaa Hammoda S8.01
Omega 3 fatty acid s reduces the risk of cardiovascular disease in diabetics (Randomized trial)
- Duaa Hammoda S8.02
Low dietary intake of marine omega 3 fatty acids increases the risk of cardiovascular disease
- Ingibjorg Hardardottir M8.02
Dietary fish oil reduces the acute inflammatory response but enhances resolution and the adaptive immune response in antigen-induced peritonitis in mice
- Michio Hashimoto S11.04
Improvement of age-related cognitive decline by prescription n-3 fatty acids, but not EPA alone, is associated with increases of DHA-derived docosanoids and decreases of ARA-derived eicosanoids in rat brain
- Erisa Hatanaka N11.07
A novel method for the study of arachidonic acid function during early development: artificial rearing of delta-6-desaturase null mice.
- Gunnel Hellgren N8.04
Effect of Preterm Birth on Postnatal Apolipoprotein and Adipocytokine Profiles
- Olle Hernell N5.05
Supplementation of an infant formula with bovine milk fat globule membranes improves cognitive function and reduces the incidence of otitis media in formula-fed term infants
- Kristina Hofmann S8.06
A novel alkyne cholesterol to trace cellular cholesterol metabolism and localization
- Bruce Holub N2.03
Direct comparison of omega-3 phospholipid levels in krill oil supplements and omega-3 eggs
- Robert Hudek M8.11
Shoulder orthopaedics and the omega 3 index: Is there an association to rotator cuff tendinopathy?
- Yukihiko Ito S8.05
Rice bran-derived acylated steryl glucoside fraction decreases high serum LDL cholesterol level in obese Japanese men
- Kim Jackson M2.11
Greater impact of apolipoprotein E (epsilon) genotype on postprandial apoB-48 than apoB-100 responses to dietary fat manipulation - insights from the SATgene study
- Yuanrong Jiang S2.04
Effect of MLCT on preventing obesity and liver fat accumulation in mice
- Corinne Joffre N5.07
Effect of maternal dairy fat-enriched diet on maternal milk fatty acid composition. consequences on brain fatty acid composition and inflammation
- Peter Jones M2.06
Effects of high oleic canola oil-rich feeding on in vitro LDL proteoglycan binding affinity in individuals with at least two criteria for metabolic syndrome
- Sachiko Juman M8.04
Effects of long-term oral administration of Arachidonic acid and Docosahexaenoic acid on the immune functions of young rats
- Setsushi Kato S11.03
Effects of docosahexaenoic acid intervention on cognitive function and mental health in Japanese oldest-elderly with dementia
- Gunveen Kaur N5.01
Composition of post-prandial polar lipids in response to dairy and soy breakfasts: a lipidomic approach
- Emma Kjellberg N8.02
Essential fatty acid pattern during infancy predisposes impaired insulin sensitivity in pre-school ages
- Renata B. Kostogrys N2.06
Dietary pomegranate seed oil had no effect on liver function in broiler chickens
- Kamil Kozinski M2.08
Wnt signaling increases rate of fatty acid oxidation in pancreatic beta-cells through specific activation of PPARalpha pathway
- Salome Kristensen M8.10
The effect of n-3 polyunsaturated fatty acids on risk markers for cardiovascular disease and inflammation in patients with psoriatic arthritis
- Federica Laguzzi S8.08
Dietary fat and serum cholesterol fatty acids in a cohort of 60 years old men and women.
- Kerry Lee N11.04
Can fish oil supplementation influence 8-13 year olds' school achievement?
- Myoungsook Lee S5.02
Impact of TT mutant homozygote in CDH13 genes on adiponectin level in patients with statin treatment
- Duo Li S14.07
Bioavailability and bioactivity of Conjugated linolenic acids
- Lei Liu N8.05
Phosphatidylcholine docosahexaenoic acid (DHA) is a more efficient vector for brain DHA accretion than triacylglycerol DHA in piglets
- Chatarina Löfqvist N8.03
Adiponectin mediates protective effects of omega3-long-chain-polyunsaturated fatty-acid against retinopathy of prematurity
- Cristina López-Vicario S2.07
The role of omega-3 fatty acid epoxides in obesity-induced adipose tissue inflammation and liver autophagy
- Jessica Magnusson M8.01
Dietary intake of omega 3 and 6 in relation to allergic rhinitis up to age 16 years

- Rashudy Mahomedradja N5.08
Oxidized linoleic acid products in foods, a literature review
- Linda Malan M8.03
Fatty acid composition of immune and red blood cell membranes differs between allergic and non-allergic rural South-African primary school children.
- Asim Maqbool M8.08
Dietary and Clinical Implications of FA Status in Children with Cystic Fibrosis
- Franca Marangoni S5.05
Blood polyunsaturated fatty acids and cardiovascular risk
- Justine Marchix M2.04
Dietary linoleic acid increases tumor necrosis factor alpha in adult rat plasma
- Amanda R Martins M2.01
Influence of fish oil supplementation on skeletal muscle oxidative stress and mitochondrial function in insulin resistant mice
- Toru Moriguchi M2.09
The alteration of dietary polyunsaturated fatty acids in young and adult delta-6-desaturase null mice
- Emmanuel Mukwevho M2.03
Evaluation of the influence of thiosemicarbazone-triazole hybrids on genes implicated in lipid oxidation and accumulation as potential anti-obesity agents
- Razieh Niazmand N2.05
Comparative Fatty Acids Composition and oxidative stability index of Black cumin, Coriander and Dill Seeds oil
- Tone-Kari Østbye M2.12
Cellular responses to oxidized marine lipids
- Hui Gyu Park M5.02
4-Desaturation of 7,10,13,16-22:4 To 4,7,10,13,16-22:5 (Adrenic Acid -> Osbond Acid) Mediated by FADS2 in Human Cells
- Hui Gyu Park M5.07
Human breast cancer cells stably expressed FADS2 synthesize sapienic acid (16:1n-10) from palmitic acid (16:0)
- Anna Maria Pauter S2.02
DHA supplementation abolished resistance of weight gain in Elovl2 ^{-/-} mice.
- Anna Petroni N5.02
Unsaturated fatty acids esterified with androgens as active and safer compounds for androgen-required therapy
- Natasa Petrovic S2.01
In humanized mice, Cidea improves metabolic profile through expansion of adipose tissue
- Jason Polreis S14.04
Development of a liquid-based method for the analysis of unesterified EPA and DHA in plasma
- David Pu M5.01
Polymorphism rs174583 in the FADS2 interacts with dietary fat consumption to modulate plasma fatty acid profiles in individuals with risk of metabolic syndrome
- Danuta Radzioch M8.07
Correcting the polyunsaturated fatty acid imbalance in cystic fibrosis with fenretinide
- Marie Sannes Ramsvik M2.05
A Phospholipid-Peptid Complex from Krill reduces plasma triacylglycerol mainly due to reduced lipogenesis and not mitochondrial oxidation in low-fat fed rats
- Amalie Ribel-Madsen S2.05
The effect of a short-term high-fat overfeeding on plasma levels of amino acids in young, healthy men with low or normal birth weight.
- Alex Richardson N11.05
Randomised Controlled Trials of Omega-3 LC-PUFA for Child Behaviour and Learning: Theoretical and Practical Considerations
- Vincent Rioux M5.05
Identification of FADS3 (Fatty Acid Desaturase 3) as a trans-vaccenate D13-desaturase in mammals
- Patrizia Rise N5.06
Effects of an eight-week consumption of milk enriched with Omega 3 fatty acids on lipid profile in adult healthy volunteers
- Hosana Rodrigues M5.03
n-3 fatty acids modulate the wound closure in mice
- Adrien Rossary M2.10
Modulation of oxidative status in human mammary epithelial cells by leptin is dependent of neoplastic status.
- Irina Shabalina M2.07
Fatty acids as regulators of mitochondrial uncoupling protein 1: structural requirements and coactivator demands
- Karen Simmer N8.06
Efficacy and safety of a novel fish oil based emulsion (SMOF®) compared with olive oil based lipid emulsion (Clinoleic®) in term and near-term (>34 weeks)surgical neonates - A randomised controlled trial.
- Karen Simmer N8.07
Choice of Parenteral Lipid Emulsion to maintain DHA status in Very Preterm Infants - Evidence from RCTs
- Eleni Sioriki S5.08
Structure and cardioprotective functions of polar lipids of olive pomace-enriched and conventional gilthead sea bream (*Sparus Aurata*) and their fish feeds
- Cornelius M Smuts N2.04
Red blood cell fatty acid status and dietary intake of children and their caregivers from three distinct communities in South Africa
- Louise B. Sørensen N11.02
n-3 LCPUFA-status is associated with cognition and school performance in 8-11 year old Danish children
- A.V. Sorokin S11.05
Dietary omega-3 polyunsaturated fatty acids plus minus aspirin impact on atherogenesis and inflammation in apoE-deficient mice
- Alcione Souza Junior S5.07
Pretreatment with fish oil protects heart from ischemia injury
- Flávia Spreafico Fernandes M8.06
The effects of fish oil supplementation on the fatty acid composition of erythrocytes in children and adolescents with cystic fibrosis.
- Toshiaki Sueyasu S11.01
Effect of long-chain polyunsaturated fatty acid on mood state in elderly Japanese men
- Miyoung Suh S2.03
High oleic acid provided in the diet reduces prostate enlargement by decreasing lipolysis in diet-induced obese rats
- Maria das Graças Tavares do Carmo N2.02
Fatty acid content of biscuits commercialized in Brazil
- Noemi Tejera S8.07
Impact of dietary anthocyanins on long chain n-3 fatty acid status: Studies in cells, rodents and humans
- Hisanori Tokuda S11.02
Effect of long-chain polyunsaturated fatty acid on cognitive function in elderly Japanese men
- Inge van der Wurff N11.01
Food2Learn: Randomized control trial investigating influence of krill oil supplementation on learning, cognition, and behaviour in healthy adolescents. Design presentation
- Clemens von Schack S5.04
Trans Fatty Acids in Erythrocytes from 17 European countries
- Anna Walczewska M2.02
Docosahexaenoic acid attenuates oxidative stress and increases the mitochondrial membrane potential in human gingival fibroblasts.
- Annette West S14.06
Incorporation of omega-3 fatty acids into plasma phosphatidylcholine when consumed in different structural forms

POSTER SESSION III: 1 JULY / TUESDAY

- Mohammad Abdullah S15.01
Economic Benefits of Mediterranean-Style Diet Consumption: Estimation of Healthcare Savings in Canada
- Samia S. Al-Ghannami S3.06
Low dose omega 3 fatty acids reduce fat mass and systolic blood pressure in school children
- Eric Allain M6.03
5-lipoxygenase and its delta-13 isoform occupy different subcellular compartments and delta-13 inhibits leukotriene biosynthesis independently of FLAP or CLP
- Ali Arabi Arabani N3.08
The effects of pretreatment processes on oil extraction from tomato wastes
- Martine Armand S6.05
Effect of a supplementation in dha provided by avian glycerophospholipids in pulmonary arterial hypertension and cardiac insufficiency in rats
- Hildur Arnardottir M3.03
Resolution of peritonitis is delayed in aged mice: DHA, Resolvins and Maresins shorten resolution in vivo
- Narcisa Bandarra S6.08
Effects of n-3 PUFA, ALA, SDA, EPA and DHA, on prevention of cardiovascular disease
- Jeannine Baumgartner N3.05
N-3 fatty acid status affects peripheral and neuronal iron status and vice versa in rats
- Gordon Bell N3.02
Salmon products purchased from UK retailers in 2013: a survey of oil and fatty acid compositions
- Guy Ben Zvi N12.02
The Omega Protocol- Fish Oil Treatment for Neuropsychiatric Disorders as a Substitute for Drugs
- Delplanque Bernadette S12.05
Impact of denutrition and lipid quality for renutrition on plasma fatty acids and inflammatory markers in old rats
- Ulrika Birberg Thornberg N6.07
Does LCPUFA supplemented to mothers during pregnancy and breast-feeding enhance cognitive performance in children at age eight years? An RCT study.
- Daniel Bittner S6.02
Correlation between Coronary Calcification Quantified by Dual Source Computed Tomography and Erythrocyte Fatty Acid Composition
- Robert Block M6.09
Circulating levels of EPA and DHA potentially modulate the effects of aspirin on lysolipids
- Benjamin Buaud S9.04
Effects of dietary supplementation with n-3 long-chain polyunsaturated fatty acids and vitamin A on the spatial memory in aged rats
- Patricia C. De Velasco N6.01
Fatty acid profile and brain inflammatory status in adult offspring of dams fed with different lipid composition diets
- Stephanie Caligiuri M6.10
Dietary linoleic acid (LA) does not alter renal phospholipid arachidonic acid (ARA) but does significantly alter oxylipins in renal tissue of obese rats
- Marta Citelli N9.05
Polyunsaturated fatty acid transfer across the placenta of adolescent mothers
- Alison Coates S9.05
Relationship between erythrocyte content of long chain omega-3 polyunsaturated fatty acids and depression in patients with ischemic heart disease or heart failure
- Alexandre Courchesne-Loyer S12.03
Effects of homogenization on ketone production and side effects of medium-chain triglycerides in humans.
- Alexandre Courchesne-Loyer S12.04
Stimulating ketogenesis with a combination of bezafibrate and MCT in humans.
- Dirk Dannenberger M3.07
High fat diets rich in n-3 or n-6 polyunsaturated fatty acids have distinct effects on lipid profiles and lipid peroxidation in mice selected for either high body weight or leanness
- Anna De Boer S3.07
n-3 PUFA decrease M1 macrophage polarization and inflammatory mediator secretion in an in vitro and ex vivo murine adipocyte macrophage co-culture model
- Herbert Fuhrmann M3.05
Arachidonic acid promotes the release of mast cell mediators by effecting both PLD isoforms
- Jean-Marie Galano S6.04
Novel Anti-Arrhythmic Compounds Originate from Non-Enzymatic Peroxidation of DHA
- Kebreab Ghebremeskel N12.05
High functioning autistic and Asperger's syndrome children have an abnormal plasma fatty acid profile
- Kebreab Ghebremeskel S3.04
Erythrocyte palmitoleic acid correlates positively with fat mass and plasma triglycerides in normal weight school children
- Sanjoy Ghosh S6.06
Dietary excess of linoleic acid stiffens the obese heart: A novel pathway for cardioprototoxicity of n-6 PUFA
- Rachel V. Gow N12.06
The Neuroimaging Omega-3 Reward in Adults with ADHD (NORAA) Clinical trial
- Kei Hamazaki S9.06
A Case-control Study for Fatty Acid Composition of the Postmortem Prefrontal Cortex from Patients with Schizophrenia
- Lars Hellgren N6.08
Exposure to a high-caloric diets in utero reduces fatty acid metabolic flexibility through hampered hepatic capacity for PUFA metabolism in the adult rat when fed a high-fat diet.
- Marie Hennebelle S12.01
A Western-style diet compromises the benefit of energy restriction on metabolite and lipid profiles in aged rats
- Marie Hennebelle S12.02
Flaxseed oil supplementation increased plasma eicosapentaenoic acid proportion, but did not stimulate ketogenesis in healthy young and older adults
- Brandon Hidaka M3.11
Erythrocyte DHA content is the most stable indicator of long-chain n-3 polyunsaturated fatty status in circulation
- Helena Idborg M6.06
Effect of mPGES-1 targeting on lipid metabolism in human cells
- Nicola Irvine M3.10
Polyunsaturated fatty acid synthesis de novo is required for calcium release in vascular smooth muscle
- Thomas Jansson N9.03
Transcriptional regulation of lipid metabolism and transport by mTOR signaling in primary human trophoblast cells
- Peter Jones N3.01
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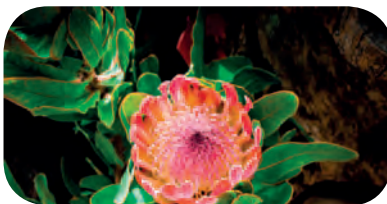
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