



International Society for Nutraceutical and Functional Foods

ISNFF Newsletter

Volume 2, Issue 1

July 2009

The 2008 Annual Meeting of the ISNFF, held in Taichung, Taiwan, attracted some 530 participants from 21 countries. The exhibition part of the meeting was also quite attractive, with participation of several multi-national companies, suppliers, service providers as well as publishers. Several student awards were presented to those with outstanding posters and oral presentations.

The ISNFF's 2009 Short Course entitled *Functional Food Ingredients, Nutraceuticals and Dietary Supplement: Fundamentals, Applications and Methodologies* was held prior to the 12th International Flavor Conference of the American Chemical Society (ACS) in Skiathos, Greece, May 25 and 26, 2009. The event attracted participants from 11 countries and was very fruitful. Meanwhile, the official journal of the ISNFF published by Elsevier, *Journal of Functional Foods*, has coined a special place in the literature.

The 2009 Annual Conference of the ISNFF will be held November 1-4, 2009 in Golden Gateway Holiday Inn in San Francisco, CA. This will be preceded by pre-conference events on *Antioxidants* (Track A) and *Omega 3s and Beyond* (Track B). There will be a graduate student paper competition as well as fellowship (*i.e.*, Fereidoon Shahidi Fellowship) and other awards. The main conference itself has over 20 confirmed sessions, and on Monday November 2, 2009 the Amino Up Company will sponsor the luncheon. Nutrilite, Business Access Group is the Gold sponsor of the event and bags are being sponsored by Omega Protein. Ocean Nutrition Canada and Marine Tech Company (Japan) are Bronze sponsors. The Almond Board of California, POS Pilot Plant, and Bunge as well as Dow AgroScience are sponsors for coffee breaks. Several other companies are in the process of providing sponsorship. The conference will be complemented with an exhibition which is expected to include Pavilions from several countries Korea, Taiwan, and Japan, among others.

The ISNFF Executive Board, International Advisory Board, and the Local Organizing Committee are welcoming you to this international event. Titles received so far for presentation are from 17 countries. If you are not a member of ISNFF, please join the society in order to receive special member privileges and registration discount. Please make your hotel reservation early, at the conference hotel (Golden Gateway Holiday Inn) and receive the reduced rate by mentioning ISNFF.

Executive Board of ISNFF

Omega 3s in Food

Adam Ismail, Global Organization for EPA/DHA Omega 3s (GOED)

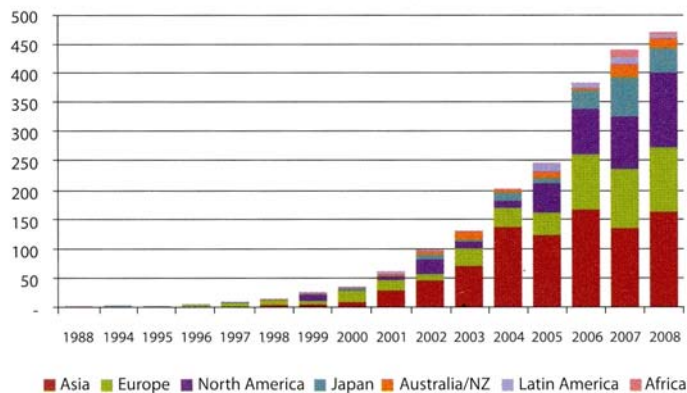


The EPA and DHA omega-3 functional food market has grown rapidly in recent years, but is still relatively small and in its infancy. Importantly, the fundamentals exist for strong continued growth in the future, even though economic woes are affecting product development in the food industry.



While the market for foods fortified with EPA and DHA goes back more than twenty years, it was not until 1994 when the real growth started. In fact, the number of products launched has increased every year since, and as of today more than 2200 EPA and DHA omega-3 foods have been launched. The US has actually lagged other regions in its maturity, and in fact the developing countries of Asia have launched more of these products than any other region. However, omega-3s are becoming more of a driver in the food industry as they become an accepted nutritional requirement. (See Figure 1 below).

**EPA/DHA Food Launches
By Year and Region**

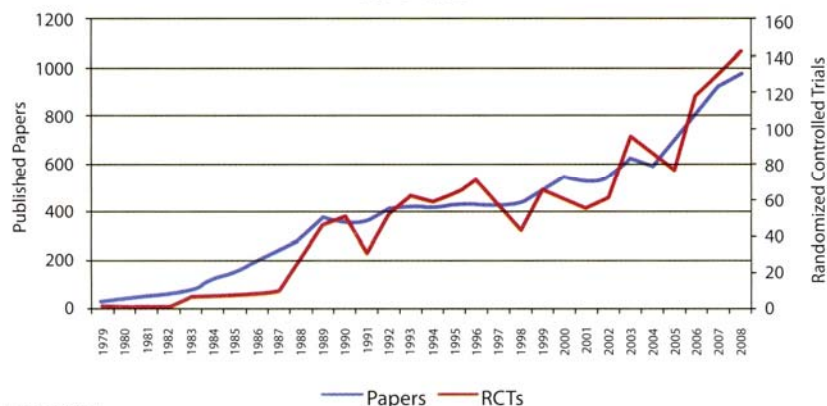


Source: GOED Database

Much of this acceptance is being driven by the growth in the body of science. Like product launches, the growth in published papers has been quite rapid. (See Figure 2 on next page). In fact in 2009, there is an average of seven new papers on EPA and DHA published every day. This has created a tremendous amount of publicity and credibility with consumers & the healthcare professionals who influence consumers. One of the challenges, however, is communicating these benefits accurately to consumers, because when they hear about all of the different health conditions omega-3s benefit, many will start to think it is not believable. GOED has recently interviewed omega-3 marketers around the world, and one area where there is consensus is that the most successful omega-3s products focus on a single, simple message. And in fact more than 20% of the products being launched in recent years have focused on general wellness messages that encompass all of the benefits into a single message.

Another driving factor is the growing awareness of omega-3s worldwide. In most developed countries, awareness of omega-3s is between 70% and 100%, but only five years ago these levels were under 40%. While these levels are quite high, the market still has the potential to

New Studies Published on EPA/DHA
1979-2009



Source: PubMed

double and triple in size just through consumer education because only 30-50% of aware consumers in these countries believe in the benefits. If the industry continues to market effectively and be supported by the science, then the credibility of omega-3s in the consumer mind should be able to grow at a similar rate as awareness.

One of the many initiatives underlying this consumer education is the increasing number of intake recommendations being adopted by health authorities and scientific groups around the world. EFSA recently issued a landmark opinion for the EU that consumers should be consuming 250mg of EPA and DHA per day, and GOED is working to have recommendations established in the US. Recommendations generally range from 150mg to 4g of EPA and DHA consumption per day, depending on whether the intent of the recommendation is shoring up nutritional deficiencies or is for treatment of a specific health condition. There is in fact still a significant amount of disagreement in the scientific community as to what the optimal intake levels are today, but there is a definite and clear consensus that consumers need more EPA and DHA in their diets.

Consumers do actually respond well to foods fortified with EPA and DHA. Traditionally, 90% of food products fail within a year of launch, but omega-3 foods have had incredibly long lives. As of the end of 2008, 84% of the EPA- and DHA-fortified foods are still on the market, so the addition of omega-3s may actually reduce the risk in new product launches because they provide benefits consumers want. In fact, another interesting indication of the attractiveness of including EPA and DHA in food products is that 42% of all the companies who have launched these foods, follow it up with at least a second product. In the US, the figure is even higher at 55%. More products worldwide have exceeded the equivalent of \$50 million and \$100 million in US retail sales in this category than almost any other specialty functional food ingredient, including categories like milks, juices, spreads, cooking oils, yoghurts and processed meats.

Ultimately, the foundations for continued strong growth of EPA and DHA omega-3 foods are all in place, with growing consumer education, a growing body of science, increasing recognition by authoritative bodies, and proven success and benefits for the companies launching these products.

Note: The figures in this article are derived from the database of omega-3 products that GOED maintains for its members and from a report on the omega-3 functional food market that GOED is currently writing.

The Truth about ALA

Kelley Fitzpatrick, NutriTech Consulting



Food manufacturers increasingly seek to improve the nutrient value of their products through the inclusion of omega-3 fatty acids from flax oil and fish oil. Flax contains the omega-3 fatty acid α -linolenic acid (ALA). Fish oils are sources of the long-chain omega-3s eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).



Along with the positive attributes expounded for the category, and omega-3s increasing presence in the marketplace, there is confusing messaging around the health effects of the specific omega-3s, in particular the physiological significance of ALA 'vs' fish-based EPA and DHA. Recent headlines have warned consumers not to confuse the benefits of these omega-3s and have downplayed the significance of ALA for health. However, ALA has an important role in reducing chronic disease through conversion to EPA and DHA, as well as through its own unique metabolic activities. Also, what many fail to understand is the critical need for both plant- and fish-based omega-3s, especially considering the predominance of omega-6 fatty acids in the diet.

ALA and its counterpart omega-6 essential fatty acid, linoleic acid (LA), are converted to longer-chain fatty acids by a series of alternating desaturations & elongations. Conversion is dependent upon a number of factors. Estimates of the amount of ALA converted to EPA range from 0.2 to 8% (Burdge & Calder 2005, *Reprod Nutr Dev* 45:581-597) with young women showing a conversion rate as high as 21% (Burdge & Wootton 2002, *Br J Nutr* 88: 411-420). Conversion of ALA to DHA appears to be limited in humans, with most studies showing a conversion rate of about 0.05%, although one study reported a figure of 4%; and a conversion rate of 9% was reported in young women (Burdge & Wootton, 2002, *Br J Nutr* 88: 411-420). The large differences in the rates of ALA conversion reflect major differences in methodologies used.

The impact that LA has on reducing ALA's health benefits is often overlooked. Diets rich in LA can reduce the conversion of ALA to EPA and DHA. For example, in a study of 22 healthy men funded in part by Flax Canada 2015, an LA-rich diet reduced the EPA content of plasma phospholipids significantly after four weeks compared with a low-LA diet, even though both diets contained the same amount of ALA (Liou *et al.* 2007, *J Nutr* 137:945-952). The absolute amounts of ALA and LA in the diet also effect ALA conversion. Decreasing the intake of LA has been found to increase the proportion of dietary ALA converted into EPA, while increasing ALA intake can increase the absolute amount of DHA synthesized (Goyens *et al.* 2006, *Am J Clin Nutr* 84:44-53).

Increasingly, research indicates that ALA consumption may reduce the risk of heart disease and other inflammatory diseases by reducing inflammatory compounds called cytokines and

eicosanoids. LA is converted to longer-chain omega-6 fatty acids, in particular, arachidonic acid (AA). AA is the precursor of eicosanoids, several of which promote blood platelet aggregation, the clotting of blood within blood vessels (thrombosis) and inflammatory reactions. ALA dampens inflammation by blocking the formation of the compounds that promote it. Inflammation is a feature of many chronic diseases such as heart disease, type 2 diabetes, metabolic syndrome, obesity, cancer and Alzheimer's disease. Secondly, ALA interferes with the conversion of LA to AA – acting as a 'nutritional brake' to block further synthesis of AA to its pro-inflammatory eicosanoids.

In a study of healthy men who consumed 1.75 tbsp of flax oil daily for four weeks, the TXB₂ (an inactive metabolite of TXA₂) concentration in immune cells decreased by 30% (Caughey *et al.* 1996, *Am J Clin Nutr* 63:116-122). TXA₂ is one of the most potent promoters of both inflammation and platelet aggregation known. Similarly, concentrations of the pro-inflammatory cytokines TNF- α and IL-1 β in immune cells decreased 26 and 28%, respectively. Another study (Zhao *et al.* 2007, *Am J Clin Nutr* 85:385–391) in which serum levels of TNF- α decreased by 43% and the production by immune cells of TNF- α and IL-1 β , decreased between 18 and 22% in 23 people with high cholesterol levels who consumed a diet rich in ALA compared with the average American diet, supports the anti-inflammatory aspects of ALA.

Epidemiological studies and, increasingly, clinical work is supportive of a beneficial effect of ALA in minimizing the risk of heart disease and for anti-inflammatory effects. ALA is the main, if not only, omega-3 in the diet of at least one billion vegetarians worldwide – despite not consuming fish, vegetarians do not have a higher prevalence of chronic diseases than nonvegetarians. There is no doubt that EPA and DHA are beneficial – these fatty acids have been the subjects of thousands of clinical trials. In September 2004, the United States Food and Drug Administration (FDA) approved a qualified health claim (QHC) for reduced risk of coronary heart disease on conventional foods that contain EPA and DHA. This claim, however, does not extend to ALA, because ALA was not a part of the petition process. The FDA has never assessed nor denied a QHC for ALA.

It is unfortunate that in the "omega-3 debate", there are those that choose to downplay the importance of ALA in the diet and simply ignore the omega-6 side of the metabolic equation. The typical North American diet is "deficient" in omega-3 fatty acids and overly rich in omega-6 fatty acids. The n-6/n-3 ratio may be as high as 17:1 in some Western diets. In the Women's Health Study, some women ate diets with a ratio of 33:1 (Miljanović *et al.* 2005, *Am J Clin Nutr* 82: 887-893). The n-6/n-3 ratio recommended by international nutrition agencies ranges from 4:1 to 10:1 (Gebauer *et al.* 2006, *Am J Clin Nutr* 83: 1526S-1535S). Improving one's n-6/n-3 ratio can be achieved by decreasing the intake of omega-6 fats, increasing the intake of omega-3 fats or, most importantly, doing both.

The current intakes of ALA, EPA and DHA in North America are well below the levels recognized for optimal health. To bridge this "nutritional gap" will require increasing the intakes of all the omega-3s –ALA, EPA, and DHA– in whole foods, flax, fortified foods and supplements, and decreasing the intakes of omega-6s.



**ISNFF Short Course Series
International Forum and Practical Short Course on**

**Antioxidants: Methodologies, Assessments,
Applications, and Health**

**Golden Gateway Holiday Inn, Van Ness Avenue,
San Francisco, CA
October 31 and November 1, 2009**

Registration is Now Open!

Program

Day 1, Saturday, October 31, 2009

- 8:25 Welcome and Opening Remarks
- 8:30 Antioxidants and Oxidation Control: How to Move Towards a Unified Assessment System for Antioxidant Measurement, Dr. Ed Frankel, UC Davis, USA
- 9:00 Antioxidants and Health: How to Perform Clinical Trials, Mr. Anthony Almada, IMAGINutrition, USA
- 9:30 Antioxidants and the ORAC Scale, Dr. Ron Prior, USDA, USA
- 10:00 Assessment of Antioxidants *in vitro* and *in vivo*, Dr. Rui-Hai Liu, Cornell University, USA
- 10:30 Nutrition Break & Free Discussion**
- 11:00 Sampling and Extraction of Antioxidants: Critical Issues, Dr. Dave Luthria, USDA, USA
- 11:30 Antioxidants from Citrus and Other Agricultural By-Products, Dr. Chi-Tang Ho, Rutgers University, USA
- 12:00 Antioxidants and Inflammatory Diseases, Dr. John Finley, Louisiana State University, USA
- 12:30-2:00 Lunch Break and Free Discussion**
- 2:00 Antioxidants from Spices and Herbal Products in Cancer Chemoprevention, Dr. Young Joon Surh, Seoul National University, Korea

2:30 Antioxidant Absorption and Metabolism, Dr. Paul Kroon, Norwich Institute of Health, UK

3:00 Free Radical Quenching by Antioxidants, Dr. Leif Skibsted, University of Copenhagen, Denmark

3:30 Nutrition Break & Free Discussion

4:00 Lutein and Other Carotenoid Antioxidants, Dr. Rong Tsao, Agriculture and Agri-Food Canada, Canada

4:30 How to Commercialize Novel Antioxidant Formulations, Dr. William Franke, Rutgers University, USA

5:00 Dietary Supplements with Antioxidant Effect, Dr. Joe Betz, NIH, Office of Dietary Supplements, USA

Day 2 – Sunday, November 1, 2009

8:30 Antioxidant Measurement: Pitfalls, Dr. Karen Schaich, Rutgers University, USA

9:00 Antioxidant Measurements: *In vitro* Assays and Harmonization Challenges, Dr. Darryl Sullivan and Dr. Wayne Ellefson, Covance, USA

9:30 Anthocyanins: Antioxidants and Beyond, Dr. Ron Wrolstad, Oregon State University, USA

10:00-10:30 Nutrition Break & Free Discussion

10:30 Antioxidants and Gene Expression, Dr. Lester Packer, University of Southern California, USA

11:00 Antioxidants for Berries and Small Fruits, Dr. Joe Vinson, Scranton University, USA (TBC)

11:30 Antioxidants from Pomegranate and other High Power Fruits, Dr. David Herber, UCLA, USA (TBC)

12:00 Antioxidants in Cognition and Mental Health, Dr. Jim Joseph, Tufts University, USA

12:30-2:00 Lunch Break and Free Discussion

2:00 Antioxidants from Alcoholic and Non-Alcoholic Beverages, Dr. Andrew Waterhouse, UC Davis, USA (TBC)

- 2:30 Isoflavones as Antioxidants and Beyond in Health Promotion and Disease Risk Reduction, Dr. Stephen Barnes, University of Alabama, USA
- 3:00 Antihypertensive Effects of Phenolic Antioxidants, Dr. Zhen-Yu Chen, The Chinese University of Hong Kong, China
- 3:30 Antioxidants and Metabolic Syndrome, Dr. Debasis Bagchi, InterHealth USA, USA
- 4:00 **Concluding Remarks**

Registration

Please visit the website <isnff.org> for details and the registration form.

Registration Fee:
Before September 4, 2009; \$495 (members)
\$595 (non-members)
Students and Dietitians \$395

For further information please contact:

Peggy Ann Parsons at

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Fax: (709) 737-4000

E-mail: pparsons@mun.ca

We reserve the right to change speakers or make other necessary changes, as required.



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- 8:25 Welcome and Opening Remarks
- 8:30 The Fats of Life: Omega-3 Oils in Health and Disease, Dr. Fereidoon Shahidi, Memorial University, Canada
- 9:00 Nutritional Biochemistry of Omega-3 Oils from A to Z, Dr. Mohammed Moghadasian, CCARM & St. Boniface Hospital, University of Manitoba, Canada
- 9:30 Omega-3 Oils: How to Source Omega-3 Oils, Commercialization Challenges and Rewards, Mr. Robert Orr, Ocean Nutrition Canada, Canada
- 10:00 How to Obtain Health Claim Approval for Omega-3 Oils in your Products, Ms. Lina Paulionis, Cantox, Health Science International, Canada
- 10:30 Nutrition Break and Free Discussion**
- 11:00 Novel Omega-3 Fatty Acids from Plant Sources via Bioengineering and Breeding, Dr. Joseph Cornelius and Dr. David Stark, Monsanto, USA (TBC)
- 11:30 Algal Oils with Omega-3 Fatty Acids and Beyond, Mr. Philip Fass, Martek Biosciences, USA
- 12:00 Supplementation of Tilapia with Algal DHA – Not all Fish are Equal, Dr. David Kyle, USA
- 12:30-2:00 Lunch Break and Free Discussion**

- 2:00 Alpha-Linolenic Acid: The Often Forgotten Omega-3 from Flax, Ms. Kelley Fitzpatrick, NutriTech Consulting, Canada
- 2:30 Customized Production of Specialty Omega-3 Oils for Food and Supplement Application, Dr. Udaya Wanasundara, POS Pilot Plant Corp., Canada
- 3:00 Oxidation Challenges in Functional Omega-3 Oils and Products Thereof: Preservation and Protection Techniques, Dr. Charlotte Jacobson and Anna Frisenfeldt, Technical University of Denmark, Denmark
- 3:30 Nutrition Break and Free Discussion**
- 4:00 Shelf-Stable Omega-3 Oils and Products, Dr. Roland Verhé and Ms. Vera Van Hoed, Ghent University, Belgium
- 4:30 Novel and Complex Omega-3 Formulations with Multiple Health Benefits, Dr. Jaroslav Kralovec, Ocean Nutrition Canada, Canada
- 5:00 Omega-3 Oils in Synergy in Multi-Component Systems and in Bakery Products and Pastas: Dr. Kazuo Miyashita, Hokaido University, Japan

Day 2 – Sunday, November 1, 2009

- 8:30 Omega-3 Oils: Markets, Products, and Regulatory Issues, Mr. Adam Ismail, GOED, USA
- 9:00 Application of Omega-3 Oils in Dairy Products and Beverages, Ms. Sharon Spurvey, Ocean Nutrition Canada, Canada
- 9:30 Application of Omega-3 Oils in Foods and Emulsified Products, Mr. Brian Connolly, Denomega, USA
- 10:00 Omega-3 Oils in Dietary Supplements and Infant Formulas, Dr. Colin Barrow, Deakin University, Australia
- 10:30 Nutrition Break and Free Discussion**
- 11:00 Application Techniques for Omega-3 Oils in Snack Foods, Cereal Products and Nutritional Supplements, Dr. Ernesto Hernandez, Omega Pure, USA
- 11:30 Omega-3 Oils and Phytosterols in Product Development with Added Health Benefits, Dr. Jerzy Zawistowski, University of British Columbia, Canada
- 12:00 Mr. Douglas Brown, Omega-3 Supplements, DSM, USA. (TBC)

12:30-1:30 Lunch Break and Free Discussion

- 1:30 Omega-3 Oils in Health Care Cost Reduction, Dr. Bruce Holub, University of Guelph, Canada
- 2:00 Omega-3's and their Enzymatic Concentrates in the Prevention of Inflammatory Mediated Diseases, Dr. Colin Barrow, Deakin University, Australia
- 2:30 Omega-3 Oils and their Role in Kidney Disease, Dr. Bruce Watkins, Purdue University, USA
- 3:00 Closing Remarks**

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International Society for Nutraceutical and Functional Foods



International Society
for Nutraceuticals & Functional Foods

2009 Annual Conference

**Nutraceutical, Functional Foods, and Dietary Supplements:
Science, Methodologies and Applications**

November 1-4, 2009

Holiday Inn-Golden Gateway Hotel

1500 Van Ness Avenue

San Francisco, CA, USA 94109

Conference Symposia

- Anti-aging nutraceuticals and brain health
- Nutraceuticals for arthritis and inflammatory diseases
- Nutraceuticals for Type-2 diabetes
- Nutraceuticals for cardiovascular disease and cancer
- Nutraceuticals for obesity and weight control
- Omega-3 and other specialty nutraceutical oils
- Marine nutraceuticals
- Nutraceutical and functional beverages
- Pro-, pre-, and synbiotics
- Protein hydrolysates and biopeptides
- Phytochemicals: Polyphenols, carotenoids, etc.
- Delivery systems for nutraceuticals and functional food ingredients, including nanotechnology
- Absorption, metabolism & action mechanism of nutraceuticals, & functional food ingredients
- Nutrigenomics, proteomics, and metabolomics
- Nutraceuticals and functional food ingredients from co-products and by-products
- Global regulations for nutraceuticals, dietary supplements, and functional foods
- Analytical methodologies and quality assurance for nutraceuticals, dietary supplements, and functional food ingredients
- Import-export issues for nutraceuticals and functional foods
- Inventor-investor and business-to-business
- Bioactives and minor components
- Traditional foods and health promotion
- Nuts and dried fruits: Products, health, and well-being
- Herbal and medicinal plants in health promotion and disease risk reduction
- Voluntary papers (oral and poster)

ISNFF 2009 Partial List of Presenters

Colin J. Barrow, Deakin University (Australia)
Dilip Ghosh, NutriConnect (Australia)
Luz Sanguansri, CSIRO (Australia)
Frank Sherkat, RMIT University (Australia)
Armand Christophe, Ghent University (Belgium)
Roland Verhe, Ghent University (Belgium)
Mamdouh Abu-Zaid, Agriculture and Agri-Food
Canada (Canada)
Rotimi Aluko, University of Manitoba (Canada)
Trust Beta, University of Manitoba (Canada)
Rong Cao (Tsao), Agriculture and Agri-Food Canada
(Canada)
Ahmed El-Soheby, University of Toronto (Canada)
Michael Eskin, University of Manitoba (Canada)
Stephen Ewart, Institute for Marine Bioscience, NRC
(Canada)
Kelley Fitzpatrick, NutriTech Consulting (Canada)
Sarwar Gilani, Health Canada (Canada)
Bruce Holub, University of Guelph (Canada)
David Jenkins, University of Toronto (Canada)
Peter Jones, University of Manitoba (Canada)
Cyril Kendall, University of Toronto (Canada)
David Kitts, University of British Columbia (Canada)
Jaroslav Kralovec, Ocean Nutrition Canada (Canada)
Eunice Li-Chan, University of British Columbia
(Canada)
Chantal Matar, University of Ottawa (Canada)
Giuseppe Mazza, Agriculture and Agri-Food Canada
(Canada)
Yoshinori Mine, University of Guelph (Canada)
Mohamed Moghadasian, University of Manitoba
(Canada)
Alister Muir, Agriculture and Agri-Food Canada
(Canada)
Marian Naczka, St. Francis Xavier University (Canada)
Robert Orr, Ocean Nutrition Canada (Canada)
Lina Panlioni, Cantox Health Science Int. (Canada)
Amy Pronlx, Agriculture & Agri-Food Canada
(Canada)
Monica Purnama, University of British Columbia
(Canada)
Martin Reaney, University of Saskatchewan
(Canada)
H.P. Vasantha Rupasinghe, Nova Scotia Agricultural
College (Canada)
Anusha Samaranyake, University of British
Columbia (Canada)
Fereidoon Shahidi, Memorial University (Canada)
Sharon Spurvey, Ocean Nutrition Canada (Canada)
Udaya Wanasundara, POS Pilot Plant (Canada)
Jianping Wu, University of Alberta (Canada)
Rickey Yada, AFMNet, University of Guelph
(Canada)
Yvonne Yuan, Ryerson University (Canada)
Jerzy Zawistowski, University of British Columbia
(Canada)
Charlotte Jacobsen, DTU (Denmark)
Leif Skibsted, University of Copenhagen
(Denmark)
Jarkko Hellstrom, University of Turku (Finland)
Hannu J. Korhonen, MTT Agrifood Research
Finland (Finland)
Anne Mattila, MTT Agrifood Research Finland
(Finland)
Anne Pihlanto, Food Research Institute (Finland)
Stephen Chen, University of Hong Kong (Hong
Kong)
Zhen-Yu Chen, Chinese University of Hong Kong
(Hong Kong)
Hanny Wijaya, Bogor Agricultural University
(Indonesia)
Marcello Duranti, Milano University (Italy)
Koichi Aizawa, (Japan)
Lekh R. Juneja, Taiyo Kagaku Co., Ltd (Japan)
Mitsutaka Kohns, Fuji Oil Company (Japan)
Kazuo Miyashita, Hokkaido University (Japan)
Michiaki Murakoshi, Lion Corporation (Japan)
Kenji Sato, Kyoto Prefectural University (Japan)
Yusuke Ushida (Japan)
S. Wada, Kyoto Prefectural University (Japan)
Se-Kwon Kim, Pukyong National University (Korea)
Hyong Joo Lee, Seoul National University (Korea)
HyunKyung Shin, Hallym University (Korea)
Yong-Joon Surh, Seoul National University (Korea)
Petras Venskutonis, Kaunas University of
Technology (Lithuania)
Amin Ismail, University Putra Malaysia (Malaysia)
Emilie Alvarez Parrila, Universidad Autonoma de
Cindad Juarez (Mexico)

Elhadi M. Yahia, Universidad Autonoma de Queretaro (Mexico)
 Ryszard Amarowicz, Polish Academy of Sciences (Poland)
 Han-Hsin Chang, Chung Shan Medical University (Taiwan)
 Wan-Ling Cheng, NPUST (Taiwan)
 Yuan-Soon Ho, Taipei Medical University (Taiwan)
 Chia-Feng (Fannie) Kuo, Shih-Chian University (Taiwan)
 Shu-Lin Lee, Shih-Chian University (Taiwan)
 Hsin-Ping Ou, Shih-Chian University (Taiwan)
 Min-Hsiung Pan, National Kaohsiung Marine University (Taiwan)
 Szu-Chuan Shen, NPUST (Taiwan)
 Youcheng Shen, Chung Shan Medical University (Taiwan)
 Tuzz-Ying Song, National Chung Hsing University (Taiwan)
 Chien-Yen Tsai, NPUST (Taiwan)
 Chin-Kun Wang, Chung Shan Medical University (Taiwan)
 Mei-Li Wu, NPUST (Taiwan)
 Ming-Chang Wu, NPUST (Taiwan)
 Gow-Chin Yen, National Chung Hsing University (Taiwan)
 Yong-Yu Yen, Chung Shan Medical University (Taiwan)
 Shu-Ru Zhuang, Chung Shan Medical University (Taiwan)
 Soottawat Benjakul, Prince of Songkla University (Thailand)
 Cesarettin Alasalvar, TUBITAK Marmara Research Centre (Turkey)
 Paul A. Kroon, Institute of Food Research, Norwich Research Park (UK)
 Bharat Aggarwal, The University of Texas MD Anderson Cancer Center (USA)
 Anthony Almada, IMAGINutrition, Inc. (USA)
 Okezie Aruoma, Tuoro University (USA)
 David J. Baer, USDA (USA)

Debasis Bagchi, InterHealth USA (USA)
 Stephen Barnes, University of Alabama (USA)
 Joseph M. Betz, Office of Dietary Supplements, NIH (USA)
 Mark Blumenthal, American Botanical Council (USA)
 Keith Cadwallader, University of Illinois (USA)
 Oliver Chan, Tuft University (USA)
 Hongda Chen, US Department of Agriculture (USA)
 Audra Davies, Nutrilite Health Institute (USA)
 Wayne Ellefson, Covance (USA)
 John Finley, Louisiana State University (USA)
 Edwin Frankel, UC Davis (USA)
 Balz Frei, Linus Pauling Institute (USA)
 James Griffiths, USP (USA)
 Clifford Hall, North Dakota State University (USA)
 Clare Hasler, UC Davis (USA)
 Ernesto Hernandez, Omega Protein (USA)
 Chi-Tang Ho, Rutgers University (USA)
 Peter Hutt, Covington & Burling (USA)
 James Joseph, USDA (USA)
 Hordur G. Kristinsson, University of Florida (USA)
 David Kyle, Advanced BioNutrition (USA)
 Johanna Lampe, Fred Hutchison Cancer Research Center (USA)
 Chong Lee, University of Rhode Island (USA)
 Rui Hai Liu, Cornell University (USA)
 Karen Lapsley, Almond Board of California (USA)
 Jack Losso, Louisiana State University (USA)
 Dave Luthria USDA, (USA)
 Jose Martinez, Thar Technologies, Inc. (USA)
 Len Monheit, Global Supply Products (USA)
 Janet A. Novotny, USDA (USA)
 Bhimanagouda Patil, Texas A&M University (USA)
 Ronald Pegg, University of Georgia (USA)
 Ray Rodriguez, UC Davis (USA)
 James S. Tonkin, Healthy Brand Builders (USA)
 Wally Yokoyama, USDA (USA)
 Liangli (Lucy) Yu, University of Maryland (USA)
 Lester Packer, University of Southern California (USA)

ISNFF 2009 Awards

There will be awards given out for the students' presentation competition at the Annual ISNFF Conference. To be eligible, students must be a member of the Society. First, second, and third place awards will include a plaque and a cheque. For Fellowship and Merit Awards please see our website <www.isnff.org> for details.



2009 ISNFF Conference Registration
November 1-4, 2009
Golden Gate Holiday Inn (Van Ness Avenue)
San Francisco, CA



First Name: _____ Middle Name: _____

Family Name: _____ Title: _____

Affiliation: _____

Address: _____

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Categories		Till Sept. 4, 2009	After Sept. 4, 2009
Conference registration	Member	US \$425	US \$495
	Non-member	US \$495	US \$575
	Student member	US \$195	US \$245
	Student non-member	US \$245	US \$295
	Exhibitor	US \$2,995 (includes 2 registrations) Double US \$4,995	US \$4,000 Double US \$6,000
Pre-conferences Track A – Antioxidant Forum or Track B – Omega-3 and Beyond		US \$495	US \$595
Conference registration, membership		US \$520	US \$590
Conference registration, membership, and Journal		US \$620	US \$720
Dinner		US \$80	US \$100

If registering for both pre-conference and conference, deduct \$50. Members, deduct \$45 for pre-conference registration.

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UPCOMING NUTRACEUTICAL AND FUNCTIONAL FOODS EVENTS

September 2009

- 13-15. 5th Probitoics, Prebiotics and New Foods Conference; Università Urbaniana, Rome, Italy
- 22-23. Functional Food Technology and Innovation Summit; Shanghai, China.

October 2009

- 20-21. 10th Annual Nutraceuticals and Functional Foods Conference; London, UK.

November

- Oct 31 - International Forum and Practical Short Course – “Methodologies, Assessments, Applications, and Health;” ISNFF, San Francisco, CA
- Oct 31 - International Forum and Practical Short Course – “Omega-3 and Beyond: Fundamentals, Applications, and Health;” ISNFF, San Francisco, CA
- 1-4. Annual Conference and Exhibition of the International Society for Nutraceuticals and Functional Foods (ISNFF); San Francisco, CA



December 2009

- 8-10. ICPH 2009. 4th International Conference on Polyphenols and Health; Yorkshire, UK.

January 2010

- 9-14. Triglycerides and Triglyceride-Rich Particles in Health and Disease; Big Sky, MO, USA.

March 2010

- 9-11. US/Ireland Functional Foods Conference: Dietary Optimization of Gut Function and the Microbiota; Cork, Ireland
- 10-11. Nutracon; Anaheim, CA.
- 11-14. Natural Products Expo West; Anaheim, CA.
- 15-17. International Conference on the Health Impact and Future Potential of Beneficial Microbes. 2nd TNO Beneficial Microbes Conference; Noordwijkerhout, The Netherlands
- 24-25. Wellness 2010; Chicago, IL.

June 2010

- 1-4. 3rd International Symposium on Propionibacteria and Bifidobacteria: Dairy and Probiotic Applications; Oviedo, Spain.
- 6-11. Bioactive Lipids: Biochemistry and Diseases; Kyoto, Japan.
- 15-17. International Probiotic Conference; Kosice, Slovakia
- 23-25. 7th Symposium on Gut Microbiology (Rowett-INRA 2010); Aberdeen, UK

NEW TITLES FOR 2009

Listed alphabetically below are a number of recently published and upcoming titles dealing with nutraceuticals and functional foods.

Bioactive Components in Milk and Dairy Products, Editors: Young W. Park, Wiley-Blackwell, 2009, pp 440.

Delivery and Controlled Release of Bioactives in Foods and Nutraceuticals, Editor: Nissim Garti, CRC Press, 2008, pp 384.

Extracting Bioactive Compounds from Food Products: Theory and Applications, Contemporary Food Engineering Series, Editor: Angela A. Meireles, CRC Press, Taylor & Francis Group, 2008, pp 464.

Fiber Ingredients: Food Applications and Health Benefits, Editor: Susan Sungsoo Cho, CRC Press, 2009, pp 480.

Functional and Specialty Beverage Technology, P. Paquin, CRC Press, 2009.

Functional Foods: Principles and Technology, Editor: Mingruo Guo, CRC Press, 2009, pp 358.

Handbook of Nutraceuticals. Ingredients, Formulations, and Applications, Editor: Yashwant Pathak, CRC Press, 2009, pp 416.

Handbook of Prebiotics, Editors: Glenn R. Gibson and Marcel B. Roberfroid, CRC Press, 2008, pp 504.

Medical Foods from Natural Sources, Meera Kaur, Springer, 2009, pp 212.

Methods of Analysis for Functional Foods and Nutraceuticals, Second Edition, Editor: W. Jeffrey Hurst, CRC Press, Taylor & Francis Group, 2008, pp 552.

Mushrooms as Functional Foods, Editor: Peter C.K. Cheung, Wiley-Interscience, 2008, pp 259.

Nutrigenomics and Proteomics in Health and Disease. Food Factors and Gene Interactions, Editors: Yoshinori Mine, Kazuo Miyashita, and Fereidoon Shahidi, Wiley-Blackwell, 2009, pp 412.

Tea and Tea Products: Chemistry and Health-Promoting Properties, Editors: Chi-Tang Ho, Jen-Kun Lin and Fereidoon Shahidi, CRC Press, Taylor & Francis Group, 2008, pp 305.

Tree Nuts. Composition, Phytochemicals, and Health Effects, Editors: Cesarettin Alasalvar and Fereidoon Shahidi, CRC Press, Taylor & Francis Group, 2009, pp 352.

ISNFF Membership Application

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Membership Rates: **Add 13% US for HST (Harmonized Sales Tax)**

Active member US \$ 95
Student member US \$ 45
Corporate member US \$ 2,000

Optional Subscription to ***Journal of Functional Foods***, the Official Journal of the ISNFF:

Annual Subscription: US \$100 (Add 13% HST) _____

Please complete form and fax to Conference Secretary, Ms. Peggy-Ann Parsons at
(709) 737-4000 or scan and email to pparsons@mun.ca



International Society for Nutraceutical and Functional Foods