

2018 AOCS Annual Meeting & Expo

May 6–9 | Minneapolis Convention Center | Minneapolis, Minnesota, USA



Health and Nutrition (H&N) Interest Area Tentative Technical Program

As of April 1, 2018

This presentation list is not final and is subject to change.

The presenter is the first author, or the author indicated with an asterisk ().*

Monday Afternoon

H&N 1 / PHO 1: Emerging Bioactives and Health Impacts

Chairs: Eileen Bailey Hall, DSM Nutritional Products, USA; and Xiaosan Wang, Jiangnan University, China

Health Impact of the Newly Discovered Elovonoids: Stroke, Retinal Degenerations, Neurotrauma and Alzheimer's Disease. Nicolas G. Bazan, *LSU Health New Orleans Neuroscience Center, USA*

Evidence for the Use of Docosahexaenoic Acid in the Treatment of Breast Cancer. Catherine J. Field, Newell Marnie, and Lynne M. Postovit, *University of Alberta, Canada*

A Brief Overview of Palmitoleic Acid, the Forgotten MUFA. Gretchen Vannice, *Organic Technologies, USA*

Arachidonic Acid has Anti-diabetic Actions. Gundala K. Naveen Kumar, and Undurti Das*, *BioScience Research Centre, India*

Effects of Sesamol on Lipid Metabolism and Neurodegeneration. Xuebo Liu and Zhigang Liu, *Northwest A&F University, China*

A Novel Method for Evaluating Anti-inflammatory Activity of Camellia Seed Oil. Ruijie Liu¹, Niannian Lan², Ming Chang¹, Qingzhe Jin¹, and Xingguo Wang¹, ¹*Jiangnan University, China*; ²*School of Food Science and Technology, Jiangnan University, China*

Dietary Krill Oil Enhances Neurocognitive Functions and Modulates Proteomic Changes in Brain Tissues of Aging Mice. Ling Zhi Cheong, Tingting Sun, and Xiurong Su, *Ningbo University, China*

Role of Oxidized Phospholipids in Myocardial Reperfusion Injury. Amir Ravandi, *University of Manitoba, Canada*

Tuesday Morning

BIO 2.1 / H&N 2: Dietary Lipids and the Gut Microbiota

Chairs: Barry Tulk, DuPont Nutrition & Health, USA; and Jun Ogawa, Kyoto University, Japan

Effect of Diet on the Gut Microbiota. Joanne Slavin, *University of Minnesota, USA*

Interaction Between Diets and Gut Commensal Bacteria in the Regulation of Immunological Health and Diseases. Jun Kunisawa, *NIBIOHN, Japan*

Role of Bile Acid in Gut Microbiota Alterations in Rats Fed a High-fat Diet. Atsushi Yokota, Masamichi Watanabe, Satoshi Ishizuka, and Satoru Fukiya, *Research Faculty of Agriculture, Hokkaido University, Japan*

Correlation Between Dietary Lipid, Gut Microbiota and Health. Jun Ogawa^{1,2}, ¹*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*; ²*Res. Unit Physiol. Chem. Kyoto University, Japan*

Dietary Fatty Acid Metabolism in Gut Microbiota. Shigenobu Kishino¹, Akiko Hirata, Michiki Takeuchi¹, and Jun Ogawa², ¹*Kyoto University, Japan*; ²*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*

10-oxo-12(Z)-octadecenoic Acid, a Linoleic Acid Metabolite Produced by Gut Microbiota, Enhances Energy metabolism by Activation of TRPV1. Tsuyoshi Goto*¹, Minji Kim², Tomoya Furuzono², Kunitoshi Uchida³, Shigenobu Kishino¹, Haruya Takahashi², Huei-Fen Jheng⁴, Jun Yamazaki⁵, Makoto Tominaga³, Jun Ogawa⁶, and Teruo Kawada², ¹*Kyoto University, Japan*; ²*Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, Japan*; ³*Okazaki Institute for Integrative Bioscience, National Institute for Physiological Sciences, Japan*; ⁴*Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, Japan*; ⁵*Department of Physiological Science and Molecular Biology, Fukuoka Dental College, Japan*; ⁶*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*

Effects of Fatty Acid Metabolites by a Gut Lactic Acid Bacterium on Lipid Metabolism in NASH Model Mice. Neng Tany Sofyana*¹, Jiawen Zheng¹, Yuki Manabe¹, Yuta Yamamoto², Shigenobu Kishino¹, Jun Ogawa³, and Tatsuya Sugawara⁴, ¹*Kyoto University, Japan*; ²*Department of Anatomy and Cell Biology, Wakayama Medical University*; ³*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan*; ⁴*Laboratory of Marine Bioproduct of Technology, Division of Applied Bioscience, Japan*

Gut Microbiota and Free Fatty Acids Receptors Mediated Host Energy Regulation. Junki Miyamoto and Ikuro Kimura, *Tokyo University of Agriculture and Technology, Japan*

Effects of the Intake of a Gut Microbial Linoleic Acid Metabolite, 10-hydroxy-cis-12-octadecenoic Acid (HYA), on Postprandial Hyperglycemia. Yasunori Yonejima and Kohey Kitao, *Nitto Pharmaceutical Industries, Ltd., Japan*

Tuesday Afternoon

H&N 3: Lipids through the Lifespan

Chairs: Adriana Gaitan, Louisiana State University, USA; and Ignacio Vieitez, UdelaR, Uruguay

Fats and Oils Needs during the Lifespan and their Effects on Health and Well-being. Penny Kris-Etherton, *The Pennsylvania State University, USA*

Dietary Monounsaturated Fatty Acids and Cardiovascular Disease Prevention: A Surprising Story Beyond Oleic Acid. Zhi-Hong Yang, *Lipoprotein Metabolism Section, Cardio-Pulmonary Branch, NHLBI, NIH, USA*

Understanding the Relationship Between Dietary Fatty Acids and Blood and Tissue Fatty Acid Composition. Ken D. Stark, *University of Waterloo, Canada*

Antioxidant Potential of Esterified Resveratrol Derivatives in Different Model Systems. Won Young Oh and Fereidoon Shahidi, *Memorial University of Newfoundland, Canada*

Effect of Fatty Acid Chain Length and Saturation on the Lipid Profiles of Wistar Rats. Chathuri M. Senanayake¹, Gangi R. Samarawickrama², Nimanthi Jayathilaka², and Kapila N. Seneviratne*¹, ¹*University of Kelaniya, Sri Lanka*; ²*Department of Chemistry, University of Kelaniya, Sri Lanka*

Identifying Novel Docosahexaenoic Acid-containing Phospholipids in Human Whole Blood as Indicators of Omega-3 PUFA Intake. Juan J. Aristizabal Henao and Ken D. Stark, *University of Waterloo, Canada*

EAT 3.2 / H&N 3.1: Influence of Fat Composition on Metabolic Status

Chairs: Amanda Wright, University of Guelph, Canada; and Marie-Caroline Michalski,

Introducing the Importance of Molecular and Supramolecular Lipid Structures on Metabolism and Beyond. Marie-Caroline Michalski, *INRA, France*

Is the Food Matrix an Important Factor for Lipid Bioaccessibility and their Subsequent Metabolism? Sylvie Turgeon, *INAF, Laval University, Canada*

Citric Acid Esters-stabilized Emulsions During *in vitro* Digestion: Effect of the Physical State of Emulsifier. Qing Guo, Nick Bellissimo, and Dérick Rousseau*, *Ryerson University, Canada*

Impact of Emulsion Droplet Physical State on *in vitro* Lipid Digestion. Surangi K.P.H. Thilakarathna and Amanda Wright, *University of Guelph, Canada*

Monounsaturated Fats and Stearic Acid: Summary of Impact on Human Cardiometabolic Outcomes. Dariush Mozaffarian*, *Friedman School of Nutrition & Health Policy, Tufts University, USA*

***In vitro* and *in vivo* Evidence of Dietary trans-vaccenic Acid Retroconversion to trans-palmitoleic Acid.** Etienne Guillocheau, Garcia Cyrielle, Léo Richard, Daniel Catheline, Philippe Legrand, and Vincent Rioux, *Agrocampus-Ouest, France*

Wednesday Morning

H&N 4a: Nutrigenetics and Nutrigenomics and of Lipid Metabolism

Chairs: Susan Raatz, USDA, ARS, Grand Forks Human Nutrition Research Center, USA; and Fabiola Dionisi, Nestlé Research Center, Switzerland

Genetic Determinants of the Cardiometabolic Risk Factor Response to an N-3 PUFA Supplementation. Marie-Claude Vohl, *Laval University, Canada*

Effect of Fatty Acid Chain Length on Regulation of Hepatic Gene Expression by Saturated Fats. Harsha Hapugaswatte¹, Chathuri M. Senanayake¹, Gangi R. Samarawickrama², Kapila N. Seneviratne¹, and Nimanthi Jayathilaka*², ¹*University of Kelaniya, Sri Lanka*; ²*Department of Chemistry, University of Kelaniya, Sri Lanka*

Trans Fatty Acids Suppress TNFalpha-induced Inflammatory Gene Expression in Endothelial and Hepatocellular Carcinoma Cells. Marine S. Da Silva¹, Sarah O'Connor², Pierre Julien², Jean-François Bilodeau², Olivier Barbier³, and Iwona Rudkowska*², ¹*Centre de recherche du CHU de Québec – Université Laval, Canada*; ²*Endocrinology and Nephrology Unit, Centre de recherche du CHU de Québec – Université Laval, Canada*; ³*Laboratory of Molecular Pharmacology, Centre de recherche du CHU de Québec – Université Laval, Canada*

Gene-dietary Fat Interactions and Cardiometabolic Health. José M. Ordovás, *Tufts University, USA*

H&N 4b: Ralph Holman Lifetime Achievement Award Lecture

Chairs: Douglas M. Bibus, Lipid Technologies LLC, USA; Fabiola Dionisi, Nestlé Research Center, Switzerland

Ralph Holman, Omega 3 and Me. Susan K. Raatz, *USDA, ARS, Grand Forks Human Nutrition Research Center, USA*

Wednesday Afternoon

H&N 5: General Health and Nutrition

Chairs: Jenifer Heydinger Galante, Stepan Co., USA; and Fabien Schultz, Technical University of Berlin, Neubrandenburg University of Applied Sciences, Germany

East and Central African Medicinal Plants as Anti-inflammatory Inhibitors in the 15-LOX / 15-Hydroxyeicosatetraenoic Acid and COX / PGH2 Pathways. Fabien Schultz¹, Godwin Anywar², Ogechi Favour Osuji³, and Leif-Alexander Garbe⁴, *¹Technical University of Berlin, Neubrandenburg University of Applied Sciences, Germany; ²Makerere University, Uganda; ³Applied Chemistry, School of Agriculture and Food Sciences, Neubrandenburg University of Applied Sciences, Germany; ⁴Neubrandenburg University of Applied Sciences, Germany*

Gamma-linolenic Acid Regresses Human Glioma. Undurti Das, *BioScience Research Centre, India*

Conjugated Linoleic Acid Delivered as Nanoemulsion Reduced Fat Accumulation and Increased Activity in *Caenorhabditis elegans*. Yeonhwa Park¹, Peiyi Shen², Yiren Yue², Ou Wang², and D. Julian McClements³, *¹Department of Food Science, University of Massachusetts Amherst, USA; ²University of Massachusetts, USA; ³University of Massachusetts Amherst, USA*

Increased Body Mass Index and C-reactive Protein are Associated with Low Serum α -carotene in Adults. Ambria Crusan¹, David R. Jacobs², Ryan T. Demmer³, and Susan K. Raatz⁴, *¹University of Minnesota, USA; ²Division of Epidemiology and Community Health, School of Public Health, University of Minnesota, USA; ³Division of Epidemiology and Community Health, School of Public Health, University of Minnesota, USA; ⁴USDA, ARS, Grand Forks Human Nutrition Research Center, USA*

Enhancing Bioaccessibility of Phytosterols using Nanoporous Starch Bioaerogels. Ali Ubeyitogullari, Regis Moreau, and Ozan N. Ciftci, *University of Nebraska-Lincoln, USA*

Effect of the Type of Feeding on Quality Characteristics of the Lipid Fraction in Beef. Luis C. Vazquez¹, Jennifer Fernandez², Guillermo Reglero¹, and Carlos Torres¹, *¹University Autonoma of Madrid, Spain; ²Research Institute of Food Science (CIAL, CSIC-UAM), Spain*

Sex Differences in Rat Oxylipins Vary between Tissues and Diet, and Do Not Reflect Precursor Fatty Acids. Harold M. Aukema¹, Shan Leng¹, Anne Mendonca², Lucien G.J. Cayer¹, Afroza Ferdouse¹, and Tanja Winter¹, *¹University of Manitoba, Canada; ²Federal University of Uberlandia, Brazil*

High Speed, Consistent Extraction for the Compounds of Interest in the Potency Testing of Cannabis. Tom Hall and Rudolf Addink, *Fluid Management Systems, USA*

H&N-P: Health and Nutrition Poster Session

Chairs: Ignacio Vieitez, UdelaR, Uruguay; and Varun Koneru, Young Living Essential Oils, USA

Posters will be available for viewing from noon on Monday, May 7 through 2:00 p.m. Wednesday, May 9, 2018.

Evaluation of Intestinal Absorption of Dietary Sphingolipids. Yui Tomo¹, Nami Tomonaga¹, Yuki Manabe¹, Akinori Ando², Tsuyoshi Tsuduki³, Jun Ogawa², and Tatsuya Sugawara*⁴, ¹*Kyoto University, Japan*; ²*Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto University, Japan*; ³*Tohoku University, Japan*; ⁴*Laboratory of Marine Bioproduct of Technology, Division of Applied Bioscience, Japan*

The Protective Role of Lcn2 Against Intestinal Inflammation and Gut Microbiota Dysbiosis in HFD-Induced Obesity. Xiaoxue Qiu¹, Marissa Macchietto², Trevor Gould³, Steven Shen², and Xiaoli Chen⁴, ¹*University of Minnesota, Twin Cities, USA*; ²*Clinical Translational Science Institute, University of Minnesota-Twin Cities, USA*; ³*Informatics Institute, University of Minnesota-Twin Cities, USA*; ⁴*Dept. of Food Science and Nutrition, University of Minnesota-Twin Cities, USA*

Black Bean Flour Properties after Steam Jet-cooking: A Comparative Study as Affected by pH. Jim A. Kenar¹, Jill Moser¹, Frederick C. Felker¹, Mukti Singh², and Sean Liu³, ¹*USDA, ARS, NCAUR, USA*; ²*NCAUR-ARS-USDA, USA*; ³*USDA, ARS, USA*

Dietary Fat Influences the Composition of Bacteria and its Metabolites in Cecum of Rat. Ryota Hosomi¹, Anna Matsudo¹, Takaki Shimono², Seiji Kanda², Toshimasa Nishiyama², Munehiro Yoshida², and Kenji Fukunaga³, ¹*Kansai University, Japan*; ²*Kansai Medical University, Japan*; ³*Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan*

Edible Hydrogel Beads Fabrication with Self-regulating Microclimate pH Properties: Retention of Enzyme Activity After Exposure to Gastric Conditions. Zipei Zhang and D. Julian McClements, *University of Massachusetts Amherst, USA*

Virgin Grape Seed Oil Attenuates High-fat Diet-induced Obesity and Insulin Resistance. Hui Zhang and Gangcheng Wu, *Jiangnan University, China*

Effect of Noodle Formulation and Frying Medium on Oil Absorption in Steamed-and-Fried Instant Noodles. Jinfeng Qi¹, and Xingguo Wang², ¹*Jiangsu University of Science and Technology, Jiangnan University, China*; ²*Jiangnan University, China*

Endocannabinoid Metabolome in Human Breast Milk – A Guatemalan Cohort. Adriana V. Gaitan¹, Jodi T. Wood², Lipin Ji³, Yingpeng Liu³, Spyros P. Nikas⁴, Juliana A. Donohue⁵, Lindsay Allen⁶, Noel W. Solomons⁷, Alexandros Makriyannis³, and Carol J. Lammi-Keefe⁸, ¹*Louisiana State University, USA*; ²*Center for Drug Discovery, Northeastern University, USA*; ³*Center for Drug Discovery, Northeastern University, USA*; ⁴*Center for Drug Discovery, Northeastern University*; ⁵*Nestlé Institute of Health Sciences, Switzerland*; ⁶*University of California, Davis, USA*; ⁷*Center for the Studies of Sensory Impairment, Aging and Metabolism, Guatemala*; ⁸*Agricultural Center, Louisiana State University, USA*

Dietary Intakes of n-3 and n-6 Polyunsaturated Fatty Acids in Preschool-aged Children in the Guelph Family Health Study. Jessie L. Burns (née MacKinnon), Julia A. Mirotta, Alison M. Duncan, Jess Haines, and David W.L. Ma, *University of Guelph, Canada*

Potential Bioactivity of Phenolics in Hulls and Dehulled Grains of Lentils; Focusing on the Inhibitory Activity Against the Oxidation of LDL Cholesterol and Supercoiled DNA Strand. Fereidoon Shahidi and JuDong Yeo*, *Memorial University of Newfoundland, Canada*

Investigation of Bioactive Lipids from African Medicinal Plants Collected in the Tropical Rainforests of Uganda.

Fabien Schultz¹, Godwin Anywar², Ogechi Favour Osuji³, Anh Nguyen³, Luc Pieters⁴, and Leif-Alexander Garbe⁵,
¹*Technical University of Berlin, Neubrandenburg University of Applied Sciences, Germany*; ²*Makerere University, Uganda*; ³*Applied Chemistry, School of Agriculture and Food Sciences, Neubrandenburg University of Applied Sciences, Germany*; ⁴*Dept. of Pharmaceutical Sciences, University of Antwerp, Belgium*; ⁵*Neubrandenburg University of Applied Sciences, Germany*

Different Effects of Squalene on Lipid Metabolism in Livers of KK-A^y and C57BL/6 Mice. Shaokai Liu¹, Masashi Hosokawa², and Kazuo Miyashita², ¹*Graduate School of Fisheries Sciences, Hokkaido University, Japan*; ²*Hokkaido University, Japan*

Study on the Effect of Activated Carbon with Bleaching Earth in Reduction of Polycyclic Aromatic Hydrocarbons in Soybean Oil. Niloofar Aliyar Zanjani¹, Zahra Piravi Vanak², and Mehrdad Ghavami¹, ¹*Islamic Azad University, Science and Research Branch, Tehran, Iran*; ²*Standard Research Institute of Iran, Faculty of Food Industries and Agriculture, Iran*

Antioxidant Capacity of Mango Kernels: a Comparative Study. Anh T.L. Nguyen¹, Samuel A. Besong², and Alberta N.A. Aryee*¹, ¹*Delaware State University, USA*; ²*Dept. of Human Ecology, College of Agricultural Sciences, Delaware State University, USA*

Storage Stability of Palm-based Vitamin E (tocotrienol-rich fraction) in Functional Granola Bar. Noor Lida Habi Mat Dian¹, Wan Suet Ying¹, Fu Ju Yen¹, Miskandar Mat Sahri¹, and Lai Oi Ming², ¹*Malaysian Palm Oil Board, Malaysia*; ²*Universiti Putra Malaysia, Malaysia*

A New Dietary Source of Branched Fat from Fermented Asian Foods. Dong Hao Wang¹, Yupeng Yang¹, Zhen Wang^{1,2}, Peter Lawrence¹, Randy W. Worobo¹, and James T. Brenna², ¹*Cornell University, USA*; ²*University of Texas at Austin, USA*