

2018 AOCS Annual Meeting & Expo

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



Protein and Co-Products (PCP) Interest Area Tentative Technical Program

As of April 11, 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

PCP 1a: Protein Nutrition and Health

Chairs: Janitha Wanasundara, Agriculture and Agri-Food Canada, Canada; and Lamia L'Hocine, Agriculture and Agri-Food Canada, Canada; and Navam Hettiarachchy, University of Arkansas, USA

Overview of the Protein Quality Assessment of Quinoa (*Chenopodium quinoa*). Matthew G. Nosworthy*, and James D. House, *University of Manitoba, Canada*

Effects of Soy Protein Isolate Hydrolysates on Cholecystokinin Released by Rat Intestinal Mucosal Cells and Food Intake in Rats. Na Zhang and Yan-Guo Shi, *Harbin University of Commerce, China*

Functional Properties and ACE Inhibitory Activity of Mealworm Protein Isolates and Hydrolysates. Navam S. Hettiarachchy¹, Hongrui Jiang², and Ronny Horax³, ¹*University of Arkansas, USA*; ²*Institute of Light Industry and Food Engineering, Guangxi University, China*; ³*University of Arkansas Fayetteville, USA*

Mushroom Phenolics as Inhibitors of Tryptophan Oxidation and Carbonyl Formation in Bovine Proteins with Salt. Natalie G. Tom, and Lilian M. Were, *Chapman University, USA*

PCP 1b: Advances in Bioactive Peptides

Chairs: Hitomi Kumagai, Dept. of Chemistry and Life Science, College of Bioresource Sciences, Nihon University, Japan; and Hisham Ibrahim, Kagoshima University, Japan

Occurrence of Cyclic Peptides in Human Blood after Collagen Hydrolysate Ingestion. Yasutaka Shigemura¹ and Kenji Sato², ¹*Tokyo Kasei University, Japan*; ²*Kyoto University, Japan*

Bioactive Peptides for Brain Health and its Mechanistic Exploration. Shigeru Katayama, Takakazu Mitani, and Soichiro Nakamura, *Shinshu University, Japan*

Potential Bioactive Peptides from Hydrolyzed Tomato Seed Proteins. Apollinaire Tsopmo and Nasim Meshginfar, *Carleton University, Canada*

Suppression of Postprandial Hyperglycemia by Bioactive Peptides from Rice (*Oryza sativa*) Albumin. Yusuke Yamaguchi¹, Shigenobu Ina², Aya Hamada², Hanae Nakamura², Nozomi Fujisawa², Makoto Akao⁴,

Hitoshi Kumagai⁴, and Hitomi Kumagai³, ¹*Nihon University, Japan*; ²*College of Bioresource Sciences, Nihon University, Japan*; ⁴*Dept. of Chemistry and Life Science, College of Bioresource Sciences, Nihon University, Japan*;
⁴*Faculty of Home Economics, Kyoritsu Women's University, Japan*

Tuesday Morning

PCP 2a: Proteins for Delivery Functions

Chairs: Lingyun Chen, University of Alberta, Canada; and Chibuikwe Udenigwe, University of Ottawa, Canada

Nature-inspired Protein Nanotechnology for Delivery of Nutraceuticals and Anti-cancer Drugs. Yoav D. Livney, *Department of Biotechnology and Food Engineering, Technion, Israel Institute of Technology, Israel*

Protein-lipid Complexes for Delivery of Nutraceutical Compounds. Lingyun Chen, Guangyu Liu, and Zhigang Tian, *University of Alberta, Canada*

Design of Alginate Based Microgels for Protein Encapsulation and Delivery: pH Triggered Release. Ruojie Zhang, Zipei Zhang, and D. Julian McClements, *University of Massachusetts Amherst, USA*

Hemp Protein as an Encapsulating Agent to Produce Hemp Oil Powders. Anusha Samaranayaka, Moumita Ray, and Udaya N. Wanasundara, *POS Bio-Sciences, Canada*

Development of Protein-based Filled Hydrogels for Oral Delivery of Lipophilic Active Ingredients. Zipei Zhang and D. Julian McClements, *University of Massachusetts Amherst, USA*

PCP 2b: Current Trends in New and Minor Proteins, New Methods and New Uses

Chairs: Keshun Liu, USDA, ARS, USA; Xiaonan Sui, Northeast Agricultural University, China; and Hui Wang, Iowa State University, USA

Understanding Cohesive Strength from Plant and Animal Proteins. Charles R. Frihart, *Forest Products Laboratory, USA*

Enzyme-assisted Aqueous Extraction of Soybean Oil and Protein: Focus on Solving the Wastewater Problem. Xiaonan Sui and Lianzhou Jiang, *Northeast Agricultural University, China*

An Improved Wet Method to Process Oats into Fractions Enriched with Protein, Beta-Glucan, Starch or Other Carbohydrates. Keshun Liu, *USDA, ARS, USA*

Functional Properties of Mealworm Proteins. Changqi Liu¹, Emily Woolf¹, Jing Zhao², Sarah Kim¹, and Shruti Shertukde¹, ¹*San Diego State University, USA*; ²*California State University, Los Angeles, USA*

Emerging Camelina Protein: Extraction, Modification and Structural/Functional Characterization. Baraem Ismail, *University of Minnesota, USA*

Tuesday Afternoon

ANA 3.1a / PCP 3a: Bioprocessing for New/Value-added Protein Utilization: Digestibility Issues/Analytical Measurements

Chairs: Sneh Bhandari, Merieux Nutrisciences, USA; Buddhi Lamsal, Iowa State University, USA; and Bishnu Karki, Dept. of Biology and Microbiology, South Dakota State University, USA

Matrix Effect on the *in vitro* Immunodetection of Food Allergens. Qinchun Rao, Xingyi Jiang, and Behnam Keshavarz, ¹Florida State University, USA

Protein Quality Evaluation in Protein Enhanced Formulations Including Those Based on Oilseed Based Proteins. Sneh Bhandari, Merieux Nutrisciences, USA

Simultaneous Quantification of Hydrolysis Degree, Protein and Mean Weight of Peptides Released during Enzymatic Proteolysis. Sophie Beaubier¹, Irina Ioannou¹, Xavier Framboisier², Olivier Galet³, and Romain Kapel², ¹LRGP - UMR CNRS 7274, France; ²Reaction and Process Engineering Laboratory UMR-7274, France; ³Avril Group, France

Nutritional Evaluation of Modified Carinata Meals in Finfish. Tom Kasiga and Michael Brown, Dept. of Natural Resource Management, South Dakota State University, USA

PCP 3b: Bioprocessing for New/Value-added Protein Utilization: Technologies

Chairs: Buddhi Lamsal, Iowa State University, USA; and Bishnu Karki, Dept. of Biology and Microbiology, South Dakota State University, USA

Fungal Fermentation of Rapeseed Meal for Better Animal Feed. Fatemeh Heidari¹, Aravindan Rajendran¹, Pedro Urriola¹, Gerald Shurson¹, Bo Hu¹, Jon Øvrum Hansen², Liv Torunn Mydland², and Margareth Øverland², ¹University of Minnesota, USA; ²Norwegian University of Life Sciences, Norway

Extraction and Properties of Protein from Camelina Engineered to Produce Acetyl-triacylglycerols (Camelina Acetyl-TAG). Mila P. Hojilla-Evangelista¹, Roque L. Evangelista¹, and John Ohlrogge², ¹USDA, ARS, NCAUR, USA; ²Michigan State University, USA

Oilseed Protein Based Biomimetic Adhesive Inspired by Mussel Adhesion. Nandika Bandara¹, Hongbo Zeng, and Jianping Wu², ¹Dept. of Agricultural, Food and Nutritional Science, University of Alberta, Canada; ²University of Alberta, Canada

Production of Proteins from Partially De-oiled Mustard Flour. Levente L. Diosady, and Bih King Chen*, Dept. of Chemical Engineering, University of Toronto, Canada

Wednesday Morning

PCP 4: Pulse Proteins

Chairs: Tanya Der, Pulse Canada, Canada; and Chibuike Udenigwe, University of Ottawa, Canada

Global Market Trends for New Pulse Product Development. Tanya Der, Pulse Canada, Canada

Cropping Location and Year Affect Protein Content and Amino Acid Score of Different Lentil Varieties. Matthew G. Nosworthy¹, Jason Neufeld¹, Tom Warkentin², and James D. House¹, ¹University of Manitoba, Canada; ²Crop Development Centre/Dept. of Plant Sciences, University of Saskatchewan, Canada

Bioaccessibility of Bioactive Compounds with Dipeptidyl Peptidase-IV and α -glucosidase Inhibitory Activities in Pulses. Chibuikwe C. Udenigwe¹, Elisa Di Stefano*¹, and Teresa Oliviero², ¹University of Ottawa, Canada; ²Wageningen University, The Netherlands

Functional and Sensory Characterization of Pre-treated Yellow-Eyed Beans. Marcia English, Saint Francis Xavier University, Canada

Pulse Ingredients as an Alternative to Soy in the Production of Meat Analog via High Moisture Extrusion Cooking. Jenni Harrington, Buhler Inc., USA

Oleogelation using Pulse Protein-Stabilized Foam. Athira Mohanan, Yan Ran Tang, Michael Nickerson, and Supratim Ghosh, University of Saskatchewan, Canada

Wet Fractionation of Lentil and Faba Bean for Protein Ingredient Production: Effect of Processing Factors on Ingredient Quality and Functionality. Anusha Samaranayaka¹, Rick Green¹, Michael Nickerson², and Shannon Hood-Niefer³, ¹POS Bio-Sciences, Canada; ²University of Saskatchewan, Canada; ³Saskatchewan Food Industry Development Centre Inc., Canada

Nanoparticles Prepared from Desolvation of Pea Protein Concentrates as a Potential Stabilizer for Pickering Emulsions. Chi Diem Doan and Supratim Ghosh, University of Saskatchewan, Canada

Effect of the Carriers on the Microstructure and Functionality of Spray Dried Pea Protein Isolate. Yang Lan and Jiajia Rao, North Dakota State University, USA

Reformulating Cereal-based Foods with Pulses: Effect on Nutrient Density and Environmental Sustainability. Christopher Marinangeli, Pulse Canada, Canada

Panel Discussion: Current Trends and Future Direction of Pulse Research and Development.

Wednesday Afternoon

PCP 5: Protein and Co-Products General Session

Chairs: Nandika Bandara, Dept. of Agricultural, Food and Nutritional Science, University of Alberta, Canada; and Rotimi Aluko, University of Manitoba, Canada

Iron Release Properties of Pulse Seed Ferritin Concentrates After Simulated in vitro Gastrointestinal Tract Digestion. Rotimi Aluko, University of Manitoba, Canada

Anti-inflammatory Properties of Potato Protein Hydrolysates in Primary Cells, Cell Lines and Mice Model. Chibuikwe C. Udenigwe¹, Ming Gong², Emeka B. Okeke³, and Jude E. Uzonna³, ¹University of Ottawa, Canada; ²Dalhousie University, Canada; ³University of Manitoba, Canada

Antioxidative Peptides from Sorghum Proteins and Composition-Activity Relationships. Yonghui Li, Kansas State University, USA

Greening, Reducing Capacity, and Protein Oxidation in Sunflower Butter Cookies as a Function of pH. Sihui Liang¹, Lan Han Tran², and Lilian M. Were¹, ¹Chapman University, USA; ²Nong Lam University

Transforming Soy Adhesives to Provide Greater Strength. Christopher Hunt, and Charles R. Frihart *, Forest Products Laboratory, USA

Recovery and Utilisation of Pelagic Processing Blood-Waters from Marine Processing Plants and Utilization of Protein for Nutritional and Potential Health Applications. Maria Hayes¹, John Fagan², Michael Cannon², and Michael Gallagher², ¹Food BioSciences Department, Teagasc Food Research Centre, Ireland; ²Bord Iascaigh Mhara, Ireland

Modelling and Optimization of Rapeseed Protein Extraction and Purification. Claire Defaix¹, Frantz Fournier¹, Arnaud Aymes², Olivier Galet³, and Romain Kapel², ¹LRGP - UMR CNRS 7274, France; ²Reaction and Process Engineering Laboratory UMR-7274, France; ³Avril Group, France

Preparation of Highly Purified Lignan from Defatted Sesame by Supercritical Carbon Dioxide and Low-Temperature Crystallization. Heejin Kim¹, Nakyung Choi², No Young Kim³, Jong Hun Choi⁴, Chulyoung Lee⁴, and In-Hwan Kim⁵, ¹Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea; ²Korea University, Republic of Korea; ³Korea University, Republic of Korea; ⁴R&D Center, Nongshim, Seoul, South Korea; ⁵Korea University, Republic of Korea

PCP-P: Protein and Co-Products Poster Session

Chairs: Mila Hojilla-Evangelista, USDA, ARS, NCAUR, USA; and Navam Hettiarachchy, University of Arkansas, USA

Pilot Plant Fractionation of Canary Seeds and Functional Properties of Protein Isolates. Allaoua Achouri¹, Delphine Martineau Côté¹, Stéphane Sirois¹, Emily Mason², Pierre Hucl³, Elsayed Abdel-Aal¹, and Lamia L'Hocine*¹, ¹Agriculture and Agri-Food Canada, Canada; ²Agriculture and Agri-Food Canada, Canada; ³University of Saskatchewan, Canada

Inhibitory Activities of *Amaranthus viridis*, *Telfairia occidentalis* and *Solanum macrocarpon* Leaf Extracts Against Carbohydrate-Digesting Enzymes. Olayinka A. Olarewaju, Adeola M. Alashi, and Rotimi Aluko, *University of Manitoba, Canada*

Inhibitory Activities of Yellow Field Pea Protein-derived Peptides Against α -amylase and α -glucosidase. Temitola O. Awosika and Rotimi Aluko, *University of Manitoba, Canada*

Optimization of Submerged Fungal Incubation Process for Production of Guar Protein Hydrolysate. Jacob Zahler¹, Bishnu Karki², Michael Brown³, and William Gibbons⁴, ¹South Dakota State University, USA; ²Dept. of Biology and Microbiology, South Dakota State University, USA; ³Dept. of Natural Resource Management, South Dakota State University, USA; ⁴South Dakota State University, USA

Effect of Physical and Biochemical Pre-treatment on Digestibility and Bioaccessibility of Nutrients in Pulses. Elisa Di Stefano¹, Chibuike C. Udenigwe¹, and Teresa Oliviero², ¹University of Ottawa, Canada; ²Wageningen University, The Netherlands

A New Chromatographic Method for Simultaneous Quantification of Proteins and Phenolic Compounds from Oleaginous Meal. Sara Albe Slabi¹, Christelle Mathé², Xavier Framboisier³, Arnaud Aymes³, Olivier Galet⁴, and Romain Kapel³, ¹Reaction and Process Engineering Laboratory UMR-7274, Avril Group, France; ²Reaction and Process Engineering Laboratory, France; ³Reaction and Process Engineering Laboratory UMR-7274, France; ⁴Avril Group, France

Understanding the Effects of Processing Conditions on the Extraction of Oil and Protein from Almond Flour. Thaiza Serrano Pinheiro de Souza, Neiva Maria M. de Almeida, and Juliana M. Leite Nobrega de Moura Bell, *University of California-Davis, USA*

Peptide Mapping of Cryoprecipitated Proteins from Select Rosaceae Seeds. Sahil Gupta, Valerie D. Zaffran, Tengfei Li, and Shridhar K. Sathe, *Florida State University, USA*

Inhibitory Effects of Hydrolyzed Oat Proteins on Human LDL Oxidation their Bile Acids Binding Capacity. Gabriela Campos and Apollinaire Tsopmo, *Carleton University, Canada*

Characterization of Soluble Proteins from Commercial Oat Millings. Mallory E. Walters and Apollinaire Tsopmo, *Carleton University, Canada*

Physicochemical Properties of Rice Albumin with a Suppressive Function Against Hyperglycemia. Aya Hamada¹, Shigenobu Ina², Nozomi Fujisawa², Ayaka Akima³, Yusuke Yamaguchi¹, Makoto Akao⁴, Hitoshi Kumagai³, and Hitomi Kumagai⁴, ¹*Nihon University, Japan*; ²*College of Bioresource Sciences, Nihon University, Japan*; ³*Kyoritsu Women's University, Japan*; ⁴*Dept. of Chemistry and Life Science, College of Bioresource Sciences, Nihon University, Japan*

Deamidation of Water-soluble Wheat Gliadin by Cation-exchange Resins. Hanae Nakamura¹, Sumika Ochiai¹, Ryusuke Abe¹, Yusuke Yamaguchi, Makoto Akao², Hitoshi Kumagai³, Reiko Urade⁴, and Hitomi Kumagai², ¹*Nihon University, Japan*; ²*Dept. of Chemistry and Life Science, College of Bioresource Sciences, Nihon University, Japan*; ³*Faculty of Home Economics, Kyoritsu Women's University*; ⁴*Kyoto University, Japan*

Protease Hydrolysis to Alter the Functional Properties of Proteins. Kelly Gregory, Caroline H. Best, Deborah Winetzky, and Chris Penet, *Bio-Cat, USA*

Substitution of Naturally Occurring Bromelain using a Blend of Proteases. Caroline H. Best, Kelly Gregory, and Chris Penet, ¹*Bio-Cat, USA*

Orally Administered Ovotransferrin Preserves Bone Microarchitecture in Ovariectomized Rats. Nan Shang and Jianping Wu, *University of Alberta, Canada*

Converting Corn Distillers Grain Proteins to High-value Antioxidants. Ruijia Hu¹, Wei Wu¹, and Yonghui Li*², ¹*Kansas State University, Grain Science and Industry, USA*; ²*Kansas State University, USA*

Single-shot Top-down Proteomics with Capillary Electrophoresis-electrospray Ionization-tandem Mass-spectrometry for Identification of 570 Escherichia Coli Proteoforms. Rachele A. Lubeckyj, *Michigan State University, USA*

Protein Digestibility and Quality Determined using Two *in vitro* Methods in Cooked, Baked and Extruded Pulses. Adam J. Franczyk, Gerardo Medina, Matthew G. Nosworthy, Jason Neufeld, and James D. House, *University of Manitoba, Canada*