

# 2022 AOCS Annual Meeting & Expo

## Protein and Co-Products Program

*As of March 23, 2022. Subject to change.*

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### Application of Advanced Green Processing for the Preparation and Utilization of Food Proteins

#### PROTEIN AND CO-PRODUCTS

*Chairs: Lamia L'Hocine, Agriculture & Agri-Food Canada, Canada; Mehmet Tulbek, Saskatchewan Food Industry Development Centre, Canada; and Md Mahfuzur Rahman, Kraft Heinz Food Company, USA*  
Monday, May 2, 2022 | 9:55 a.m.–Noon EDT (Atlanta, USA; UTC-4)

*This session includes: technologies for extraction such as solubility, foaming/emulsion, gelation; plasma-activated water treatment; high-power sonication application; maximizing protein in herring co-products; and tribo-electrification separation process for dry fractionation.*

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**Conventional and novel technologies for extraction of protein and their impact on structure and functionality as ingredient.** Md Mahfuzur Rahman<sup>1</sup>, Buddhi Lamsal<sup>\*2</sup>, <sup>1</sup>Kraft Heinz Food Company, United States; <sup>2</sup>Iowa State University (ISU), United States

**Effects of high-power sonication and atmospheric cold plasma on the dispersions and gelling properties of mung bean protein.** Md Mahfuzur Rahman<sup>\*1</sup>, Buddhi Lamsal<sup>2</sup>, <sup>1</sup>Kraft Heinz Food Company, United States; <sup>2</sup>Iowa State University (ISU), United States

**Functional properties of faba bean proteins extracted by different aqueous processes for food applications.** Brasathe Jeganathan\* (**Canadian Section Student Support Grant Winner**), Thavaratnam Vasanthan, Feral Temelli, Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada

**Impact of plasma-activated water treatment on physicochemical and functional properties of Bambara globulin.** Opeyemi Alabi<sup>\*1</sup>, George Annor<sup>2</sup>, Eric O. Amonsou<sup>1</sup>, <sup>1</sup>Biotechnology and Food

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Technology, Durban University of Technology, South Africa, South Africa; <sup>2</sup>Food Science and Nutrition, University of Minnesota, United States

**Development and statistical optimization of a tribo-electrification separation process for dry fractionation of yellow pea flour.** Sama Ghadiri Gargari\*<sup>1</sup>, Jamaka Thomas<sup>2</sup>, Solmaz Tabatabaei<sup>2</sup>, <sup>1</sup>Civil and Environmental Engineering, Howard University, United States; <sup>2</sup>Chemical Engineering, Howard University, United States

**Creating functional protein ingredients by cross-processing herring co-products with lingonberry press-cake, shrimp shells or green seaweed.** Jingnan Zhang\*<sup>1</sup> (**Protein and Co-Products Division Student Travel Grant Winner**), Anna Ström<sup>2</sup>, Romain Bordes<sup>3</sup>, Marie Alminger<sup>1</sup>, Ingrid Undeland<sup>1</sup>, Mehdi Abdollahi<sup>1</sup>, <sup>1</sup>Department of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden; <sup>2</sup>Department of Chemistry and Chemical Engineering-Pharmaceutical Technology, Chalmers University of Technology, Sweden; <sup>3</sup>Department of Chemistry and Chemical Engineering-Applied Surface Chemistry, Chalmers University of Technology, United States

## Emerging Source of Proteins

### PROTEIN AND CO-PRODUCTS

*Chairs: James House, University of Manitoba, Canada; Rotimi Aluko, University of Manitoba, Canada; and Janelle Courcelles, Pulse Canada, Canada*

Monday, May 2, 2022 | 1:25–3:30 p.m. EDT (Atlanta, USA; UTC-4)

*The Emerging Source of Proteins session includes: opportunities and challenges for insect protein-rich food ingredients; precision fermentation; processing opportunities and challenges; extraction and purification of lupin proteins; consumer preferences' impact on industry; and optimized infrared heat treatment and cowpea protein isolate.*

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**Combined effect of extraction and purification conditions on yield, composition, functional and structural properties of lupin proteins.** Sara Albe Slabi\*<sup>1</sup>, Odile Mesieres<sup>2</sup>, Christelle Mathé<sup>2</sup>, Mbalo Ndiaye<sup>1</sup>, Olivier Galet<sup>1</sup>, Romain Kapel<sup>2</sup>, <sup>1</sup>Groupe AVRIL, France; <sup>2</sup>LRGP CNRS UMR7274, France

**Opportunities and challenges for the development of insect protein-rich ingredients.** Alain Doyen\*, Food Sciences, Université Laval, Canada

**Spotlight on sustainability: How growing consumer preferences are changing the plant-based protein industry.** Jean Heggie\*<sup>1</sup>, Mac Marshall<sup>2</sup>, <sup>1</sup>U.S. Soy, United States; <sup>2</sup>United Soybean Board, United States

**Animal-free protein production using precision fermentation.** Fei Luo\*, Pratish Gawand, Ondrej Halgas, Sagar Lahiri, Liven Proteins Corp., Canada

**Effect of optimised infrared heat treatment on composition structure and gelation properties of cowpea protein isolate.** Opeoluwa M. Ogundele\*<sup>1</sup>, Opeyemi Alabi<sup>2</sup>, Oluwatosin A. Ijabadeniyi<sup>3</sup>, Oluwafemi A. Ogundele<sup>1</sup>, <sup>1</sup>University of Johannesburg, South Africa; <sup>2</sup>Biotechnology and Food Technology, Durban University of Technology, South Africa, South Africa; <sup>3</sup>Durban University of Technology, South Africa

**Processing opportunities and challenges for plant-based proteins.** Buddhi Lamsal\*<sup>1</sup>, Bibek Byanju<sup>2</sup>, <sup>1</sup>Iowa State University (ISU), United States; <sup>2</sup>Food Science and Human Nutrition, Iowa State University, United States

## Novel Edible Application of Food Proteins

### PROTEIN AND CO-PRODUCTS

Joint session with the Edible Applications Technology Division

Chairs: *Pulari Krishnankutty Nair, Danone North America, USA; and Serpil Metin, Cargill Inc, USA*

Monday, May 2, 2022 | 3:55–6 p.m. EDT (Atlanta, USA; UTC-4)

*The Novel Edible Application of Food Proteins session features the impact of cold plasma on protein structural and functional characteristics; replacing animal fat with fababean emulsions; physicochemical properties of buckwheat albumin; and pea proteins use as emulsifiers in beverages.*

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**Plant protein functionalization: Exploring cold plasma.** Pam Ismail\*, *Department of Food Science and Nutrition, University of Minnesota, United States*

**Physicochemical properties of buckwheat albumin.** Rio Ogawa\*<sup>1</sup>, Kazumi Ninomiya<sup>2</sup>, Yusuke Yamaguchi<sup>1</sup>, Hitoshi Kumagai<sup>2</sup>, Hitomi Kumagai<sup>1</sup>, <sup>1</sup>*Bioresource Sciences, Nihon University, Japan; <sup>2</sup>Food Science and Nutrition, Kyoritsu Women's University, Japan*

**Utilization of mildly fractionated pea proteins for the development of heat-stable beverage emulsions.** Neksha Devaki\*, Supratim Ghosh, *University of Saskatchewan, Canada*

**Utilization of faba bean protein-stabilized structured emulsions in the replacement of animal fat in beef burgers.** Breann Squires<sup>1</sup>, Oluwafemi J. Coker<sup>2</sup>, Phyllis J. Shand<sup>2</sup>, Supratim Ghosh\*<sup>1</sup>, <sup>1</sup>*University of Saskatchewan, Canada; <sup>2</sup>Department of Food & Bioproduct Sciences, University of Saskatchewan, Canada*

### Panel discussion

## Standard/Novel Analytical Methods for Protein Analysis in Food

### PROTEIN AND CO-PRODUCTS

Joint session with the Analytical Division

Chairs: *Sneh Bhandari, Independent Consultant, USA; Janitha Wanasundara, Agriculture and Agri-Food Canada, Canada; and Frederic Baudouin, Improve SAS, France*

Tuesday, May 3, 2022 | 7:25–9:30 a.m. EDT (Atlanta, USA; UTC-4)

*This session features measuring chymotrypsin inhibitor activity; the need for standardization of protein functionality methodologies; nitrogen to protein conversion factors; prediction of protein and amino acid contents in lentils; and cross-reactivity risks of canary seed to related grains.*

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**Nitrogen to protein conversion factors—an update and practical guidance for their use and for determining specific factors for novel protein sources.** Elaine S. Krul\*, *EKSci, LLC, United States*

**Allergenicity risk assessment of glabrous canaryseed as novel food protein source.** Lamia L'Hocine\*<sup>1</sup>, Mélanie Pitre<sup>2</sup>, Emily Mason<sup>2</sup>, Allaoua Achouri<sup>2</sup>, <sup>1</sup>*Saint-Hyacinthe Research and Development Centre, Agriculture & Agri-Food Canada, Canada; <sup>2</sup>Agriculture and Agri-Food Canada, Canada*

**Methodological inconsistencies in novel plant protein functional properties, and improvements for water absorption capacity determinations.** Analiese Goins\*, Sara Griffin, *Department of Food Science and Nutrition, California State University, Fresno, United States*

**Developing an optimized method for measuring chymotrypsin inhibitor activity in protein products.** Keshun Liu\*, Mike Woolman, *Agricultural Research Service, US Dept. of Agriculture, United States*

**Prediction of protein and amino acid contents in whole and ground lentils using near-infrared reflectance spectroscopy.** Jiayi Hang\*<sup>1</sup>, Da Shi<sup>1</sup>, James House<sup>1</sup>, Jason Neufeld<sup>1</sup>, Kirstin Bett<sup>2</sup>, <sup>1</sup>University of Manitoba, Canada; <sup>2</sup>University of Saskatchewan, Canada

## Protein Biofunctions

### PROTEIN AND CO-PRODUCTS

*Chairs: Kaustav Majumder, University of Nebraska-Lincoln, USA; Hitomi Kumagai, Nihon University, Japan; and Hongbing Fan, University of Alberta, Canada*

Tuesday, May 3, 2022 | 9:55–Noon EDT (Atlanta, USA; UTC-4)

*The Protein Biofunctions session includes enhancing resistance of food proteins to proteolysis; plant and gut microbiota-derived protein metabolites; and the potential of miso in suppressing high fat diet-induced obesity.*

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**Protein gelation enhances resistance to proteolysis and in vivo cholesterol-lowering ability of the indigestible proteins.** Rotimi Aluko\* (***Protein and Co-Products Division Lifetime Achievement Award Winner***), Food and Human Nutritional Sciences, University of Manitoba, Canada

**Plant and gut microbiota-derived protein metabolites and potential health functions.** Thanutchaporn Kumrungsee\*<sup>1</sup>, Toshiro Matsui<sup>2</sup>, Yongshou Yang<sup>3</sup>, Norihisa Kato<sup>1</sup>, <sup>1</sup>Graduate School of Integrated Sciences for Life, Hiroshima University, Japan; <sup>2</sup>Faculty of Agriculture, Kyushu University, Japan; <sup>3</sup>School of Life Sciences, Anhui University, China (People's Republic)

**Amelioration of high fat diet-induced obesity in rat by short chain pyroglutamyl peptides in Japanese salted fermented soy paste (miso).** Kenji Sato\*, Graduate School of Agriculture, Kyoto University, Japan

**From the bench to the bedside: The history of lupin bioactive peptides as useful ingredient for the prevention of metabolic syndrome.** Carmen Lammi\*, University of Milan, Italy

## Protein Based Hydrocolloids for Food and Health Applications

### PROTEIN AND CO-PRODUCTS

*Chairs: Lingyun Chen, University of Alberta, Canada; and Navam Hettiarachchy, University of Arkansas-Fayetteville, USA*

Tuesday, May 3, 2022 | 1:25–3:30 p.m. EDT (Atlanta, USA; UTC-4)

*The Protein Based Hydrocolloids for Food and Health Applications session features Pickering emulsions stabilized by soybean protein isolate; pulse starch as gelling agent and starch source; protein gel networks; comparison of structure and functionality of amyloid fibrils from different sources; and egg white-derived peptides with hydrogelation properties.*

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**Gluten as a unique protein building cereal product structure, is there an alternatives?** Presenter to be announced.

**Pulse starch as a promising gelling agent and resistant starch source for industrial applications.** Yongfeng Ai\*, Food and Bioproduct Sciences, University of Saskatchewan, Canada

**Pickering emulsions stabilized by soybean protein isolate/cellulose nanofibrils: Influence of pH.** Xingzhong Zhang<sup>1</sup>, Xiaogang Luo<sup>2</sup>, Yixiang Wang\*<sup>3</sup>, Yan Li<sup>1</sup>, Bin Li<sup>1</sup>, Shilin Liu<sup>1</sup>, <sup>1</sup>Huazhong Agricultural University, China (People's Republic); <sup>2</sup>Wuhan Institute of Technology, China (People's Republic); <sup>3</sup>McGill University, Canada

**Comparing the structure and functionality of amyloid fibrils assembled from peanut, pea, lentil, and mung bean proteins.** Sara Zamani<sup>1</sup>, Fan Bu<sup>1</sup>, Lanfang Shi<sup>1</sup>, Derek Dee\*<sup>2</sup>, <sup>1</sup>*The University of British Columbia, Canada*; <sup>2</sup>*Faculty of Land and Food Systems, The University of British Columbia, Canada*

**Self-assembly and hydrogelation properties of egg white-derived peptides.** Raliat Abioye\*<sup>1</sup>, Xiaohong Sun<sup>2</sup>, Pei Chun Queenie Hsu<sup>3</sup>, Caleb Acquah<sup>2</sup>, Nico Huttmann<sup>3</sup>, Chibuikwe Udenigwe<sup>3</sup>, <sup>1</sup>*Chemistry and Biomolecular Sciences, University of Ottawa, Canada*; <sup>2</sup>*School of Nutrition Sciences, University of Ottawa, Canada*; <sup>3</sup>*University of Ottawa, Canada*

**Structural design of plant protein gel networks for food applications.** Lingyun Chen\*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada*

## Functionality of Proteins in Foods and Interactions with Other Food Components

### PROTEIN AND CO-PRODUCTS

*Chairs: Jiajia Rao, North Dakota State University, USA; Chibuikwe Udenigwe, University of Ottawa, Canada; and Yifu Chu, University of Alberta, Canada*

Tuesday, May 3, 2022 | 3:55–6 p.m. EDT (Atlanta, USA; UTC-4)

*This session includes green modifications for enhancing pea protein; lentil protein-tannic acid complexes; emulsifying properties of pea proteins; eco-friendly protein isolation method; rapeseed meal proteins; and effects of extraction methods on pea proteins.*

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**Enhancing pea protein functionalities through “green” modifications for food applications.** Yonghui Li\*<sup>1</sup>, Yanting Shen<sup>2</sup>, Shan Hong<sup>2</sup>, <sup>1</sup>*Grain Science and Industry, Kansas State University, United States*; <sup>2</sup>*Kansas State University, United States*

**Improved emulsification behaviour of pea protein-polysaccharide complexes for beverage application.** Burcu Guldiken<sup>1</sup>, Maxime Saffon<sup>2</sup>, Supratim Ghosh\*<sup>1</sup>, Michael Nickeson<sup>1</sup>, <sup>1</sup>*University of Saskatchewan, Canada*; <sup>2</sup>*Nestle Product Development Center, United States*

**The role of conformational state of pea protein fractions on the oil/water dynamic adsorption, rheological interfacial properties and emulsifying properties.** Liuyi Chang\*<sup>1</sup>, Jiajia Rao, *Plant Science, North Dakota State University, United States*

**Effects of extraction methods on the composition, structure, and gelling mechanism of pea proteins.** Jingqi Yang\*, Lingyun Chen, <sup>2</sup>*Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada*

**Functional, nutritional properties and aroma profile of hemp protein isolate by reverse micelles extraction technique: Impact of defatting processing.** Baochen Fang\*, Jiajia Rao, *North Dakota State University, United States*

## Breeding and Biotechnology for Improved Quality of Food Proteins.

### PROTEIN AND CO-PRODUCTS

Joint session with the Biotechnology Division

*Chairs: Phil S. Kerr, Prairie AquaTech, LLC, USA; and Long Zou, Bunge Creative Solutions Center, USA*

Wednesday, May 4, 2022 | 7:25–9:30 a.m. EDT (Atlanta, USA; UTC-4)

*The Breeding and Biotechnology for Improved Quality of Food Proteins session includes soybean varieties with desirable carbohydrate fraction; ultra-high protein soybeans; modifying oil and protein quality in hemp; methionine content in soybean; and hydrolysates from sunflower proteins.*

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**High-yield soybean lines with improved seed protein and oil balance.** George Graef\*, Dept. of Agronomy & Horticulture, University of Nebraska-Lincoln, United States

**Ultra-high protein soybeans for food and aquaculture.** Michael Lassner\*, Amfora, Inc., United States

**Developing high yielding soybean varieties with desirable carbohydrate fraction for enhancing nutrition.** Henry T. Nguyen\*, Pengyin Chen, Tri D. Vuong, Haiying Shi, Dongho Lee, Ali Md Alikat, Plant Science & Technology, University of Missouri, United States

**Evaluating breeding and management solutions for methionine content in soybean.** William M. Singer\*<sup>1</sup>, Zachary Shea<sup>2</sup>, Dajun Yu<sup>2</sup>, Keren Brooks<sup>1</sup>, Mark Reiter<sup>1</sup>, David L. Holshouser<sup>1</sup>, Haibo Huang<sup>3</sup>, Rouf Mian<sup>4</sup>, Maria L. Rosso<sup>1</sup>, Bo Zhang<sup>1</sup>, <sup>1</sup>School of Plant and Environmental Sciences, Virginia Tech, United States; <sup>2</sup>Virginia Tech University, United States; <sup>3</sup>Food Science and Technology, Virginia Tech, United States; <sup>4</sup>Soybean & Nitrogen Fixation Unit, USDA-ARS, United States

**Modifying oil and protein quality in hemp using modern conventional breeding approaches.** Rich Fletcher\*, New West Genetics, United States

**Production of highly soluble and functional hydrolysates from sunflower proteins.** Sophie Beaubier\*<sup>1</sup>, Sara Albe Slabi<sup>2</sup>, Odile Mesieres<sup>3</sup>, Marine Bianeis<sup>2</sup>, Olivier Galet<sup>2</sup>, Romain Kapel<sup>3</sup>, <sup>1</sup>University of Lorraine, LRGP CNRS, France; <sup>2</sup>Groupe AVRIL, France; <sup>3</sup>LRGP CNRS UMR7274, France

## Non-food Applications of Proteins

### PROTEIN AND CO-PRODUCTS

*Chairs: Nandika Bandara, University of Manitoba, Canada; Yixiang Wang, McGill University, Canada; and Bishnu Karki, South Dakota State University, USA*

Wednesday, May 4, 2022 | 9:55 a.m.–Noon EDT (Atlanta, USA; UTC-4)

*The Non-food Applications of Proteins session features plant polymer-based solid foams applications; protein-based biopolymers as sorbents for industrial wastewater; improving canola protein-based packaging films; 3D printing of gelatin/alginate based hydrocolloids; and wet strength of wood adhesives made with soy protein.*

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**Developments of plant polymer-based solid foams applications in the Food Industry.** Marcela A. Jarpa-Parra\*, Research Direction, Universidad Adventista De Chile, Chile

**3D Printing of gelatin/alginate based hydrocolloids as delivery systems for food and pharmaceutical applications.** Xiaolei Shi\*, Iowa State University, United States

**Protein based biopolymers as sorbents for treatment of industrial wastewater.** Aman Ullah\*<sup>1</sup>, Irum Zahara<sup>2</sup>, Tariq Siddique<sup>2</sup>, <sup>1</sup>AFNS, University of Alberta, Canada; <sup>2</sup>ReNR, University of Alberta, Canada

**Relationships between wet strength of wood adhesives made with soy protein, and the protein aggregation state/physical chemistry.** Christopher G. Hunt\*<sup>1</sup>, Nayomi Plaza<sup>2</sup>, Charles Frihart<sup>3</sup>, Casey Crooks<sup>2</sup>, Matthew Gargulak<sup>4</sup>, <sup>1</sup>Forest Biopolymer Science and Engineering, USDA, Forest Service, Forest Products Laboratory, United States; <sup>2</sup>USDA Forest Service, Forest Products Laboratory, United States; <sup>3</sup>Retired, United States; <sup>4</sup>Agrichemical Technologies, United States



**Food protein self-assembly towards high-performance functional materials.** Yiping Cao\*, *Department of Chemical Engineering, MIT, United States*

**Improving mechanical, barrier, and thermal properties of canola protein-based packaging films using hydrophobically modified nanocrystalline cellulose.** Thilini Dissanayake\*<sup>1</sup> (**Canadian Section Student Support Grant Winner; Protein and Co-Products Division Student Travel Grant Winner**), Binh Minh Trinh<sup>2</sup>, Tizazu Mekonnen<sup>2</sup> Nandika Bandara<sup>1</sup>, <sup>1</sup>*Food and Human Nutritional Sciences, University of Manitoba, Canada;* <sup>2</sup>*Chemical Engineering, University of Waterloo, Canada*

## Protein and Co-Products Poster Session

*Chairs: Keshun Liu, USDA ARS, USA; and Pankaj Bhowmik, National Research Council of Canada, Canada*

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**PCP-01 Comparing the structural and functional characteristics of novel proteins from Pennycress (*Thlaspi arvense*) and *Camelina sativa*.** Serap Vatansever\*<sup>1</sup>, Rachel Mitacek<sup>1</sup>, Vaidehi Narkar<sup>2</sup>, Pam Ismail<sup>3</sup>, <sup>1</sup>*Food Science and Nutrition, University of Minnesota, United States;* <sup>2</sup>*R&D, General Mills, United States;* <sup>3</sup>*Department of Food Science and Nutrition, University of Minnesota, United States*

**PCP-02 Comprehensive evaluation and comparison of machine learning methods in QSAR modeling of antioxidant tripeptides.** Zhenjiao Du\*<sup>1</sup>, Donghai Wang<sup>2</sup>, Yonghui Li<sup>1</sup>, <sup>1</sup>*Grain Science and Industry, Kansas State University, United States;* <sup>2</sup>*Biological and Agricultural Engineering, Kansas State University, United States*

**PCP-03 Development of a low-cost, nano-fibrillar xerogel network comprised of cyclic-di-amino acids.** Arianna Sultani\*, Michael Rogers, Pedram Nasr, *Food Science, University of Guelph, Canada*

**PCP-04 Does soil nutrient management with nitrogen fertilizer increase protein content in leguminous plants.** Emily Jundt\*<sup>1</sup>, Kaustav Majumder<sup>1</sup>, Bijesh Maharjan<sup>2</sup>, <sup>1</sup>*Food Science and Technology, University of Nebraska-Lincoln, United States;* <sup>2</sup>*Agronomy, University of Nebraska-Lincoln, United States*

**PCP-05 Efficacy of Great Northern beans-derived  $\gamma$ -glutamyl peptides in reducing vascular inflammation.** Snigdha Guha\* (**Honored Student Award Winner; Peter and Clare Kalustian Award Winner**), *Food Science and Technology, University of Nebraska, Lincoln, United States*

**PCP-06 Evaluating the efficacy of germination in producing biologically active peptides from garbanzo beans.** Kaustav Majumder, Ashley Newton\*, *Food Science and Technology, University of Nebraska, Lincoln, United States*

**PCP-07 Functional properties of enzymatic pea protein hydrolysates that inhibit in vitro activities of acetylcholinesterase and butyrylcholinesterase.** Nancy D. Asen\*<sup>1</sup>, Rotimi Aluko<sup>2</sup>, <sup>1</sup>*Food Science, University of Manitoba, Canada;* <sup>2</sup>*Food and Human Nutritional Sciences, University of Manitoba, Canada*

**PCP-08 Improving edamame seedling establishment by determining the optimal temperature.** Xiaoying Li\*<sup>1</sup>, Bo Zhang<sup>2</sup>, <sup>1</sup>*Virginia Tech, United States;* <sup>2</sup>*School of Plant and Environmental Sciences, Virginia Tech, United States*

**PCP-09 Increasing soybean meal protein level reduces GHG emissions and improves farm and food sector sustainability metrics.** John Osthus\*<sup>1</sup>, Bart Borg<sup>2</sup>, Shawn Conley<sup>3</sup>, Paul Mitchell<sup>3</sup>, R. Dean Boyd<sup>4</sup>, <sup>1</sup>*Blue Spring Communications, United States;* <sup>2</sup>*Standard Nutrition Company, United States;* <sup>3</sup>*University of Wisconsin-Madison, United States;* <sup>4</sup>*Animal Nutrition Research, United States*

**PCP-10 Introducing mung bean as an alternative or rotation crop to tobacco in Virginia.** Jessica Wilbur\*<sup>1</sup>, Ozzie Abaye<sup>1</sup>, Bo Zhang<sup>2</sup>, Carol Wilki<sup>3</sup>, <sup>1</sup>*Virginia Tech, United States;* <sup>2</sup>*School of Plant and*

*Environmental Sciences, Virginia Tech, United States, <sup>3</sup>Virginia Tech Southern Piedmont Agricultural Research & Extension Center, United States*

**PCP-11 Quantitative structure-activity relationship study on antioxidant dipeptides.** Zhenjiao Du\*, Yonghui Li, *Grain Science and Industry, Kansas State University, United States*

**PCP-12 RuBisCO proteins as plant-based alternatives to egg white proteins: Characterization of thermal gelation properties.** Hualu Zhou\*<sup>1</sup>, Giang Vu<sup>1</sup>, David J. McClements<sup>2</sup>, <sup>1</sup>*University of Massachusetts Amherst, United States; <sup>2</sup>Food Science, University of Massachusetts Amherst, United States*

**PCP-13 Sequential fractionation as a tool for understanding the physicochemical and thermal properties of aqueous and enzyme-assisted aqueous extracted black bean proteins.** Jasmin S. Yang\*, Fernanda Furlan Goncalves Dias, Juliana Leite Nobrega De Moura Bell, *Food Science and Technology, University of California, Davis, United States*

**PCP-14 Tailoring the ultrafiltration of colostrum whey to produce a bioactive compound-rich permeate for subsequent isolation by nanofiltration.** Andrea J. Tam\*<sup>1</sup>, Sierra D. Durham<sup>1</sup>, Daniela Barile<sup>1</sup>, Juliana Leite Nobrega De Moura Bell<sup>2</sup>, <sup>1</sup>*University of California, Davis, United States; <sup>2</sup>Food Science and Technology, University of California, Davis, United States*

**PCP-15 Atmospheric cold plasma treatment enhanced the pea protein gelling properties and mechanisms study.** Sitian Zhang\*, Lingyun Chen, *University of Alberta, Canada*

**PCP-16 Bioactive peptide production from slaughterhouse blood proteins: Impact of pulsed electric fields and pH on enzyme inactivation, antimicrobial and antioxidant activities of peptic hydrolysates from bovine and porcine hemoglobins.** Zain Sanchez Reinoso\*, Jacinthe Thibodeau, Laila Ben Said, Ismail Fliss, Laurent Bazinet, Sergey Mikhaylin, *Food Science Department, Université Laval, Canada*

**PCP-17 Chicken feathers keratin/modified graphene oxide based biosorbent for water remediation** Muhammad Zubair\* (**Canadian Section Student Support Grant Winner; Protein and Co-Products Division Student Travel Grant Winner**), Aman Ullah, *Agricultural, Food and Nutritional Science, University of Alberta, Canada*

**PCP-18 Development of protein–polyphenol conjugates via free radical grafting method: Evaluation of physicochemical and functional properties.** Shahrzad Sharifimehr\*<sup>1</sup>, Supratim Ghosh<sup>2</sup>, Ramaswami Sammynaiken<sup>3</sup>, <sup>1</sup>*Food and Bioproduct Sciences, University of Saskatchewan, Canada; <sup>2</sup>University of Saskatchewan, Canada; <sup>3</sup>Saskatchewan Structural Science Center, Canada*

**PCP-19 Effects of particle size distribution and feed moisture content on the techno-functional properties of extruded soybean meal.** Ravinder Singh\*, Filiz Koxsel, *Department of Food and Human Nutritional Sciences, University of Manitoba, Canada*

**PCP-20 Effects of pH-shifting process on the improvement of gelling properties of pea protein and their potential application as binders in meat alternative products.** Peineng Zhu\*<sup>1</sup>, Lingyun Chen<sup>2</sup>, <sup>1</sup>*University of Alberta, Canada; <sup>2</sup>Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada*

**PCP-21 Exploring Malaysian consumers' perception and purchase intention of meat analogues.** Maslia Manja Badrul Zaman\*<sup>1</sup>, Chun Wai Lai<sup>2</sup>, Ungku Fatimah Ungku Zainal Abidin<sup>2</sup>, Maimunah Sanny<sup>2</sup>, <sup>1</sup>*Oils & Fats, Sime Darby Plantation Research Sdn Bhd, Malaysia; <sup>2</sup>Universiti Putra Malaysia, Malaysia*



**PCP-22 Extraction and characterization of minimally processed native faba bean (*Vicia faba*) protein using mild fractionation.** Madhurima Bandyopadhyay\*<sup>1</sup>, Supratim Ghosh<sup>2</sup>, Michael Nickerson<sup>1</sup>, <sup>1</sup>*Food and Bioproduct Sciences, University of Saskatchewan, Canada;* <sup>2</sup>*University of Saskatchewan, Canada*

**PCP-23 Functionalization of rapeseed protein using membrane filtration.** Simone Bleibach Alpiger\*, Milena Corredig, *Department of Food Science, Aarhus University, Denmark*

**PCP-24 'Green' production of protein isolate from novel golden pennycress seeds.** Milagros P. Hojilla-Evangelista\*<sup>1</sup>, Roque L. Evangelista<sup>2</sup>, <sup>1</sup>*USDA ARS NCAUR Plant Polymer Research, United States,* <sup>2</sup>*USDA ARS NCAUR Bio-Oils Research, United States*

**PCP-25 Optimization of culture conditions for protein induced foam production by *Pseudomonas aeruginosa* for enhancing oil recovery.** Miu Ito\*<sup>1</sup>, Yuichi Sugai<sup>2</sup>, <sup>1</sup>*Graduate School of Engineering, Kyushu University, Japan;* <sup>2</sup>*Faculty of Engineering, Kyushu University, Japan*

**PCP-26 Optimization of potent mineral chelating peptides production from rapeseed meal proteins proteolysis and peptide characterizations.** Nastassia Kaugarenia\*<sup>1</sup>, Sophie Beaubier<sup>2</sup>, Erwann Durand<sup>3</sup>, François Lesage<sup>4</sup>, Xavier Framboisier<sup>5</sup>, Arnaud Aymes<sup>5</sup>, Pierre Villeneuve<sup>6</sup>, Romain Kapel<sup>4</sup>, <sup>1</sup>*LRGP, France;* <sup>2</sup>*University of Lorraine, LRGP CNRS, France;* <sup>3</sup>*CIRAD/UMR QUALISUD, France;* <sup>4</sup>*LRGP CNRS UMR7274, France;* <sup>5</sup>*LRGP CNRS, France;* <sup>6</sup>*CIRAD, France*

**PCP-27 Prediction of protein and amino acid contents in canola seeds and canola meal with near-infrared spectroscopy.** Junya Liu\*, *University of Manitoba, Canada*

**PCP-28 Processing of silflower (*Silphium integrifolium*) seeds to obtain oil and enriched protein meal.** Roque L. Evangelista\*<sup>1</sup>, Milagros P. Hojilla-Evangelista<sup>2</sup>, Steven Cermak<sup>3</sup>, David Van Tassel<sup>4</sup>, <sup>1</sup>*USDA ARS NCAUR Bio-Oils Research, United States;* <sup>2</sup>*USDA ARS NCAUR Plant Polymer Research, United States;* <sup>3</sup>*USDA, United States;* <sup>4</sup>*Perennial Oilseeds, Land Institute, United States*

**PCP-29 Variations in phytochemicals in DDGS oil from 30 ethanol plants.** Jill Winkler-Moser\*, *USDA ARS NCAUR, United States*