

Meet your Match

Science solutions for value added agriculture

Colour key:



Plant based ingredient and processing/engineering:
Protein, Lipids, Starch



Feed processing and utilization



Bioproduct processing



Michael Nickerson

SK. Ministry of Agriculture Research Chair (Protein Quality and Utilization)

University of Saskatchewan

Protein, Lipids, Starch

Research with the Protein Quality and Utilization program aims to develop sustainable, economically viable, industry adoptable, and commercially ready technologies for utilization of proteins, protein-rich co-products and ingredients in food, feed and bioproducts. Specially, research efforts will focus on a) improving crop quality for end use applications; b) develop novel fractionation strategies for yielding high value, more functional, nutritional and cleaner tasting ingredients; c) advancing ingredient performance further through clean label processes; d) utilize the aforementioned ingredients within plant-based foods and bioproduct/industrial applications; and e) knowledge translation to industry. The research program focuses primarily on proteins derived from pulses, oilseeds and cereal crops, as well as from some alternative sources. Building growth in the plant-based ecosystem, fostering collaborations and industrial partnerships, and training highly qualified people to fill the growing employment gap in the sector is set as a priority



Martin Reaney

Professor Ministry of Agriculture Strategic Research Program (SRP) Chair in Lipid Quality and Utilization

University of Saskatchewan

Protein, Lipids, Starch

Dr. Martin Reaney is a professor and Chair of Lipid Quality and Utilization in the Department of Food and Bioproduct Sciences at the University of Saskatchewan in Canada. His research focuses on developing and improving methods to extract and purify lipids from various sources such as canola, flaxseed, mustard, borage, and camelina. He also investigates the utilization of these lipids for the production of biofuels, nutraceuticals, and functional foods. Dr. Reaney's work aims to contribute to sustainable and environmentally friendly practices in the agriculture and food industries.



Yongfeng Ai

Associate Professor and Research Chair in Carbohydrate Quality & Utilization

University of Saskatchewan

Protein, Lipids, Starch

Dr. Yongfeng Ai is an Associate Professor and Saskatchewan Ministry of Agriculture Endowed Research Chair in Carbohydrate Quality and Utilization in the Department of Food and Bioproduct Sciences at the University of Saskatchewan. The primary goal of his Carbohydrate Chemistry and Utilization Program is to promote value-added utilization of carbohydrates in foods, feeds and bioproducts. His research areas include: (1) Carbohydrate chemistry and nutrition; (2) Value-added processing of cereals and pulses; and (3) Biomaterials



Jafar Soltan

Professor and Associate Dean Research and Partnerships

University of Saskatchewan

Protein, Lipids, Starch

An important component of our research program focuses on adding value to agricultural products and by-products. Two examples of our research are: 1: De-flavoring plant proteins through controlled oxidation processes with ozone (O₃). We have more than 20 years of experience in using ozone for treatment of water and air. Through a mild and controlled oxidation process we intend to convert flavor-causing chemicals in plant proteins (e.g., pea protein) to acceptable and safe products while maintaining the nutritious value and important properties of the proteins. 2: Developing adsorbents from waste biomass (e.g., sawdust, wheat straw) for removal of pollutants from water. In this research we convert biomass to activated biochar for removing organic pollutants from municipal wastewater and harmful metals from industrial wastewater.



Takuji Tanaka

Professor, Department of Food and Bioproduct Sciences

College of Agriculture and Bioresources

Protein, Lipids, Starch

Dr. Tanaka was born in Osaka, Japan. He obtained B.Sc., M.Sc. and Ph.D. from Kyoto University, and moved to Canada in 1994. He started his faculty position in University of Saskatchewan in 2003 in the field of food enzymology. His program includes the studies to modify the functionality of legume proteins and starch through the utilization of enzymes and microbial fermentation. Through the modification of proteins through proteolysis and conjugation, the proteins from legume show the good characteristics as the food ingredients, such as emulsifier and foaming agents. Fermentation of legume flour is also examined to enhance the functionality and to fortify the nutritional values of legume flour. Besides these studies, his group studies to combine fermentation and insect culture to convert proteins and lipids in the underutilized agriculture byproducts, such as oilseed meals and straw, into readily-utilizable insect biomass forms.



Rex Newkirk

*Associate Professor, SK Research Chair Feed Processing
University of Saskatchewan*

Feed processing and utilization

Dr. Newkirk is a Research Chair in Feed Processing Technology, Associate Professor at the University of Saskatchewan and the scientific lead for the Canadian Feed Research Centre (CFRC) which is located in North Battleford, Sk. His work focuses on adding value to grains and by-products through processing to increase value and market opportunities in the feed industry. This includes modification and utilization of a wide range of by products such as canola meal, pea starch, camelina meal, flax and many others. He also creates value by sorting grains to remove or reduce mycotoxins. At the CFRC, Dr Newkirk assists industry and academic clients to conduct research that supports the development of new products or add value to existing ingredients. The CFRC offers three main services. Consulting, feed or ingredient processing research and laboratory analysis. Through the consulting service, the CFRC helps clients determine the market opportunities for their products and the pathway for commercialization. The CFRC is a well-equipped facility with production capacity ranging from 100 kg lab scale batches to 20 tonne per hour commercial scale production. Through the CFRC clients also have access to a full range of nutritional evaluation tools. Dr. Newkirk is ready and able to assist you to find the optimal value for your product and bring your product to market.



Peiqiang Yu

*Professor and Ministry of Agriculture Strategic Research Chair in Feed R&D
Department of Animal and Poultry Science, University of Saskatchewan*

Feed processing and utilization

Research and Interest: Feed Science Technology, Ruminant Nutrition, Feed Chemistry, Feed BioTech Application, Synchrotron Applications, Feed Molecular Structure and Nutrition Interaction, Feed Processing and Treatments, Nutrient Modelling, Molecular Spectroscopy, etc. Area1: Research to Utilize By-Products and Co-Products or Waste from Industry Processing and Develop Value-Added Feed Products. Area 2: Research to Manipulate Digestive Behavior and Increase Animal Production Performance Through Feed Processing and Blending Technology. Area 3: Research to Improve Nutrient Availability and Utilization and Manipulate Nutrient Metabolism Through Adding Feed Additives. Area 4: Research to Evaluate and Improve Forage Quality and Animal Health through Biotechnology. Area 5: Research to Assist Feed Crop Breeding Programs to Select Superior/Best Variety to Improve Feed Quality and Nutrient Availability for Animals. Area 6: Research to Understand the Principle, Mechanism and Relationship of Feed Molecular Structure and Biological Components Matrix etc. with Digestive Behavior and Nutrient Utilization in Animals: Synchrotron Applications



Bishnu Acharya

*Associate Professor & Saskatchewan Ministry of Ag. Research Chair in Bioprocess Engineering
University of Saskatchewan*

Bioproduct processing

Dr. Acharya research expertise lies in the area of bioprocessing and conversion, particularly in the emerging area of conversion of biomass to bioproducts for chemical, material, and energy applications by adopting a circular bioeconomy approach. Dr. Acharya research investigates biomass characterization, thermochemical (torrefaction, hydrothermal, pyrolysis, gasification, combustion), biological (fermentation and anaerobic digestion) and chemical synthesis processes for the conversion of low value biomass to high value bioproducts. He is also developing research capacity to analyze the biopolymer and biobased-materials at the University of Saskatchewan.

Dr. Acharya is a founding member and scientific advisor of a spin off – TuniStrong Technologies Inc. that focuses on the commercialization of tunicate-based cellulose nanomaterials. He is leading the development of bio-based glitters materials and canola meal-based media for biotechnology application.



Lee Wilson

*Professor
University of Saskatchewan*

Bioproduct processing

Current research in the Wilson laboratory at the University of Saskatchewan is focused on the transformation of biomaterials into value added products, processes, and sustainable technology. Previous ADF projects have focused on the utilization of fibers, starch and other carbohydrate materials, including their modification to yield adsorbents, flocculants, functional films that have functional properties such as adsorbents, flocculants, bioplastics, films and carrier systems. The resulting biomaterial products have been used to develop a range of adsorbent technologies to address various challenges in water treatment technology, chemical separations, controlled-release of fertilizers, sustainable solutions for controlled removal of sulfate to address water security for livestock in SK, desiccant coating for air-to-air energy exchange (HVAC) systems, and solid-phase biomaterials for controlled dehydration of biofuels.

The ongoing adsorption Science and Technology under research and development within my research group at USask has contributed to the value added sector in the form of original and innovative Science & Technology (materials & processes) that are based on platforms derived from agricultural Biomaterials. In particular, successfully completed projects have provided sustainable solutions related to current challenges relevant to water, food, and energy security.



Denise Stilling

*Associate Professor
University of Regina*

Bioproduct Processing

Focus is on value-added material and product development for creation of sustainable, circular economies. Successfully, converted flax residue into single-use vacuum formed, compostable dinnerware, transformed polyethylene from used grain bags and polypropylene from used face masks into paving brick and related products. Currently, development of additive manufacturing printing filaments from waste stream compounds and compostable drinking straws from crop residue and food grade thermoplastics.

AGENDA

8:30 AM - Welcome & Opening remarks

8:35 AM - Presentations

9:45 AM - Coffee break

10:00 AM - Speed networking

11:15 AM - General networking

11:30 AM - Event ends



Saskatchewan 