



## June 2023 Newsletter

### DIRECTOR'S MESSAGE

Hello researchers, students and industry stakeholders. I am happy to share a number of positive developments since the last newsletter published in December 2022.

Dr. James House was awarded the Manitoba Strategic Research Chair in Sustainable Protein with the mandate to lead strategic research priorities attracting investment in the Manitoba protein sector for long-term economic growth. The Chair provides funding of \$1.5 million over 6 years. In addition, the Canadian Nutrition Society awarded Dr. House the Earle Willard McHenry Award for Distinguished Service in Nutrition and a CNS-Fellow designation in honour of his contributions to nutrition science. Dr. Trust Beta was a recipient of the 2023 Institute for Food Technologists Achievement Award for advancing diversity and inclusion so that more people from a variety of demographic backgrounds and identities have increased access to training in food and nutritional sciences. Congratulations Jim and Trust!

On March 22 the RCFTR hosted Pulse Canada's Pulse Immersion Days for >50 industry representatives from across North America showcasing the Centre's pulse research capacities in extrusion cooking, plant-based beverages, milling and air classifying, and protein quality testing. After completing the RCFTR workshop, industry participants attended additional workshops at Cereals Canada and Red River College Polytechnic's Prairie Research Kitchen.



As part of a successful PrairiesCan infrastructure grant, several new pieces of equipment were purchased and installed at the Centre, including a 35L freeze dryer, a high-speed centrifuge, and a protein analyzer. Additional equipment items from the grant will be installed later in the year.

The Centre recently hired Mr. Atanas Karamanov as Analytical Technician to manage the Centre's new ICP-MS instrument. Atanas has over 10 years ICP experience and is a wonderful addition to the team. More information on Atanas is found on page 2 of the newsletter.

### ABOUT US

The Richardson Centre for Food Technology and Research (RCFTR) is a 55,000-ft<sup>2</sup> state-of-the-art research centre within the Faculty of Agricultural and Food Sciences, University of Manitoba, located on the Fort Garry campus. Our mission is to advance food quality and human nutrition through traditional and innovative food processing techniques. Our mandate is to support the food and agriculture value chain by engaging in collaborative research and development activities with the food industry.

### PRESIDENT BENARROCH TOURS RCFTR

On May 8, President Michael Benarroch, and Vice President (Research and International) Mario Pinto toured the Richardson Centre for Food Technology and Research. Dr. Aluko led a tour of major infrastructures at the Centre, including stops at the research laboratories of Drs. Nandika Bandara, and James House, as well as the Centre's state-of-the-art analytical chemistry MASS Laboratory and the Centre's Safe Food for Canadians Act licensed Dry Fractionation Facility. Also present to receive the President and Vice President were Dr. Martin Scanlon (Dean, FAFS), Dr. Nazim Cicek (Associate Dean Research, FAFS), Dr. Cristina Rosell (Head, Dept of FHNS), Dr. Annemieke Farenhorst (Associate Vice-President, Research), and Dr. Michael Janzen (RCFTR Research Development Manager).



(L to R): Michael Benarroch, Rotimi Aluko, Mario Pinto, Nandika Bandara

Additional news items on the Centre are described below. We look forward to continued growth at the Centre aligned with our mission of "Advancing food quality and human nutrition through traditional and innovative food processing techniques."

**Rotimi Aluko, PhD**  
Director

## RCFTR RESEARCH COMMUNITY

**Dr. Sijo Joseph (Thandapilly)** is a Cereal Nutrition Research Scientist with AAFC-Morden located at the RCFTR in Winnipeg, Manitoba. Dr. Joseph's research program specifically focuses on Canadian agricultural commodities with the primary focus of adding value to various grains such as wheat, oat, barley, as well as certain pulses through identification and validation of health-promoting traits. Furthermore, Dr. Joseph's research also assesses the impact of genotypic and environmental factors on quality and developing processing strategies that ensure safety and optimize marketability. Dr. Joseph also works towards developing novel technologies to effectively predict the physiological efficacy of cereal functional components such as protein, fibre, carbohydrate, polyphenols etc. He is currently an Adjunct Professor in the Department of Food and Human Nutritional Sciences at the University of Manitoba and serves as editor in multiple research journals.



**Dr. Mohamed Elhiti** is a Technology Lead Scientist at Farmers Business Network Inc. (FBN), Seed R&D. He has a PhD in plant biology from the University of Manitoba and has over 10 years of experience in plant functional genomics and biotechnology. His research at FBN focuses on developing hemp and canola varieties with improved agronomic traits.



He previously held postdoctoral and research associate positions at the University of Manitoba, Agriculture and Agri-Food Canada, and Aarhus University in Denmark.

## RESEARCH ASSOCIATE CORNER

**Dr. Alistair Brown** is a Research Associate in Soil Science working with Dr. Annemieke Farenhorst, Lab Manager of the MASS Lab in the RCFTR and Instructor in the Department of Environment and Geography. He received his BSc (Honours) in biochemistry from the University of Winnipeg, and a PhD in analytical chemistry from the University of Manitoba specializing in environmental forensic mass spectrometry. Dr. Brown has extensive analytical chemistry experience including measuring toxins in indoor environments, measuring pharmaceutical metabolites in wastewater, and cannabis testing in an ISO 17025 certified laboratory. Dr. Brown's current research interests are in quantitative assessment of on-farm pesticide remediation using biobeds, water monitoring for pesticides and testing for UV filters from sunscreens and cosmetics in environmental waters, sediments, and soils. Dr. Brown is currently expanding into food quality, analyzing for nutritional structural components as well as organic contaminants in food and agriculture.



## RCFTR STAFF UPDATE

**Mr. Atanas Karamanov** joined the RCFTR as Analytical Technician on May 15, 2023. Prior to joining the Centre, Atanas worked in the Department of Animal Science as Research Technician with primary responsibilities for managing the ICP-OES instrument and Animal Surgery room. Atanas completed his Bachelor of Animal Science from the Saints Cyril and Methodius University in North Macedonia. Atanas brings a wealth of ICP experience to the Centre including sample extraction and preparation, ICP testing, instrument maintenance and data analysis. These work experiences are well suited as the Centre gets its new ICP-MS operational. Atanas – welcome to the RCFTR team!



## RCFTR TENANT HIGHLIGHT

FBN® helps Family Farmers maximize their profit potential with data and technology, direct-to-farm commerce, community and a sustainability platform. They operate globally with over 65,000 member farmers. FBN has a strong focus on supporting research and development and they value their partnership with the University of Manitoba.

FBN has been breeding canola and hemp, partly based at the RCFTR since 2019. FBN's Canada Seed R&D team was awarded a three-year funding grant by Protein Industries Canada in June of 2021 to undertake innovative research to improve hemp grain nutritional qualities.



FBN's team is spearheading one of the largest and most expansive hemp-breeding programs in North America and have pioneered hybrid hemp breeding in Canada, delivering the first biomass and grain hemp hybrids.

Companies looking to introduce new agricultural technologies can generate critical data on real-world performance from large-scale, on-farm field trials with FBN member farmers, access direct farmer feedback, and potentially gain access to commercial opportunities with FBN.

## STUDENT CORNER

**Amanjeet Singh** is a MSc student in the Department of Food and Human Nutritional Sciences. He completed his undergraduate degree in India, where his research focused on mass transfer modeling using artificial neural networks. Amanjeet



started working in the FoodPro Extrusion Lab in Fall 2022 under the supervision of Dr. Filiz Koksel, where he is exploring development of novel sustainable texturized plant proteins using extrusion while exploring efficient protein concentration methods, such as air classification. As a student member of Institute of Food Technologists, Amanjeet stays up-to-date with the latest trends and innovations in the food industry. He believes his research has the potential to make a significant impact by promoting sustainability, enhancing consumption of underutilized Canadian crops and providing consumers with more healthy and ethical choices in their diets.

**Nnedinso Aguwa** is a MSc student in the Department of Food and Human Nutritional Sciences with a major in Food Science in the MacKay and Mollard lab. She started her program in the Winter, 2023 term. She is supervised by Dr. Dylan MacKay and her M.Sc. research thesis will focus on evaluating factors that influence the glycemic response to wild rice and wild rice blends in humans. Nnedinso has a bachelor's degree in microbiology from the Federal University of Technology Minna, Nigeria, where her research project was on screening of yeast isolates from some indigenous fermented beverages (Kunun-Zaki, Fura-da-nono, and Burukutu) for potential to produce biosurfactants.



## WHERE ARE THEY NOW?

**Elyssa Chan** completed her Master's Degree under the supervision of Dr. Koksel and is working as a food technologist at Beyond Meat (Redondo Beach, CA).

**Pamela Drawbridge** completed her PhD under the supervision of Dr. Beta, and is working at Manitoba Agriculture- Food Safety and Inspection Branch, Winnipeg, MB and the Winnipeg Cyclotron Facility.

**Nancy Asen** completed her PhD under the supervision of Dr. Aluko, and is working as a postdoctoral fellow at the Department of Food and Bioproduct Sciences, University of Saskatchewan, Saskatoon.

**Olayinka Oluwagunwa** completed her PhD and postdoctoral training under the supervision of Dr. Aluko, and is working as part of the Manitoba Government's 'Leaders in Training' internship program.

## RESEARCH GRANT ANNOUNCEMENTS

**Dr. Trust Beta** and **Dr. Fuji Jian** awarded the GO EC-seed 2023 fund (\$38,000) from FAFS for a period of two years.

**Dr. Nandika Bandara** (PI) awarded the Research Manitoba New Investigator Operating Grant (\$50,000) for the project "Novel and Sustainable Technologies for Protein Ingredient Development and Functionalization from Canadian Crops".

**Dr. Nandika Bandara** (PI) secured a research contract (US\$18,496.57) from Roquette America Inc. for a project on "Developing yellow pea protein isolates using novel extraction methods".

**Dr. Nandika Bandara** (PI) and **Dr. Filiz Koksel** (Co-PI) awarded the NSERC Research Tools and Instrument Grant (NSERC-RTI) (\$134,388) for the project "Differential scanning calorimeter (DSC) for protein, food processing, material science and nanotechnology research".

**Dr. Cristina Rosell** awarded the Natural Sciences and Engineering Research Council Discovery Grant (\$255,000) for the project "Unraveling amylase activity going from wheat kernels to healthy foods (AMY-WHEALTHY FOOD)".

**Dr. Rotimi Aluko** awarded the Natural Sciences and Engineering Research Council Research Tools and Instruments Grant (\$43,440) for the infrastructure "Spectrofluorimeter for protein and peptide research".

**Dr. Rotimi Aluko** awarded the Natural Sciences and Engineering Research Council Discovery Grant (\$255,000) for the project "Structural requirements and efficacy of food protein-derived peptides that modulate glutathione peroxidase 4 activity".

[RCFTR.CA](https://rcftr.ca)