



UM

Richardson Centre for Food Technology and Research

December 2025 Newsletter

DIRECTOR'S MESSAGE

Hello researchers, students and industry stakeholders. I am pleased to share a number of positive developments since the last newsletter published in July 2025.

On November 12, the RCFTR hosted a special delegation from the United Kingdom along with their industry collaborators from Lupin Platform Inc., Calgary, AB. Though based in Calgary, Lupin Platform is working with provincial farmers to expand lupin cultivation to Manitoba. Various areas of potential research and technical service collaborations were identified, and we are excited at the opportunity of strengthening the RCFTR R&D work on lupin seed value-added utilization. This was followed by the annual Food Technology and Research (FTR) Day, which had over 160 attendees in total, including for the first time, attendance by out of province industry participants from the USA and the UK. A special tour of the RCFTR facilities was organized for the out of province participants. On behalf of the RCFTR, my sincere thanks to all the attendees at this year's FTR Day and we are eager to welcome you back to the 2026 event.

On the major infrastructure front, the Pilot Scale Cooking Extrusion Laboratory was setup, commissioned, and is now up and running in the laboratory of Dr. Filiz Koksels. We have also received many of the wet processing pieces of equipment that will enable pilot plant scale wet extraction of food components, which will complement the dry milling facility. On the research front, we are happy that the ongoing human intervention trial involving the nutritional and health benefits of Haskap berry (PI: Dr. Semone Myrie) recruited its last participant in November, moving the study towards conclusion. The RCFTR had a booth (1 of 7 UM Centres/Institutes with a booth) at the UM Research Symposium on November 18, which was organized by the office of VP (Research & International). The event provided an avenue for attendees to learn about RCFTR activities, specifically infrastructure and project execution capacities, including the wide range of R&D opportunities available through Faculty members with research programs at the Centre. Just a reminder that the NRC-IRAP Contribution to Organizations (CtO) program is available to fund industry R&D collaborative projects at the RCFTR through a maximum of \$7,000 per project. Please note that companies can use this opportunity to work with the RCFTR on multiple projects.

ABOUT US

The Richardson Centre for Food Technology and Research (RCFTR) is a 55,000-ft² 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.

I am happy to inform you the 2025-2030 RCFTS Strategic Plan was recently approved by the Governance Committee. The plan provides a pathway that will ensure the RCFTS continue to strengthen its R&D collaboration with the food industry while ensuring that Faculty research programs and training of highly qualified personnel continue to flourish.

On a final note, this will be last newsletter under the leadership of Dr. Martin Scanlon, the outgoing Dean of the Faculty of Agricultural and Food Sciences. It is no exaggeration that the RCFTS will not be in the current position of R&D excellence and strong partnership with the industry without the able and effective leadership of Dr. Scanlon as Chair of the Governance Committee. Dr. Scanlon championed the development of the first RCFTS Strategic Plan (2020-2025), which has enabled expansion of services and infrastructure capacity. In addition to refurbishing the RCFTS analytical laboratory with a new suite of equipment, Dr. Scanlon led successful grant applications to government and industry agencies that have enabled acquisition of a wide range of pilot plant-scale wet processing equipment, most of which will be operational in early 2026. On behalf of the RCFTS Industry Advisory Board, staffs, faculty members, tenants, students, and all our clients, this is saying a big thank you to Dr. Scanlon and wishing him continued success in his academic career.

Additional news items on the Centre are described below. We look forward to continued growth at the Centre aligned with our mission of "Advancing innovation within the agri-food sector for improving food quality, human nutrition, sustainability and a circular bioeconomy."

Rotimi Aluko, PhD
Director

STUDENT CORNER

Sunita Karki completed her Bachelor's degree in Food Technology at Tribhuvan University from Nepal where her passion for food science first took shape. After completing her Bachelor's degree, she worked in the food industry, gaining hands-on experience in food quality assurance and processing.



Today, she is pursuing her Master's degree in Food Science at the University of Manitoba, working under the supervision of Dr. Cristina Rosell and co-supervision of Dr. Thomas Netticadan. Sunita's research explores an exciting area at the intersection of nutrition, health, and product development: Developing resveratrol-fortified bread to improve starch digestibility and help manage postprandial blood glucose. Her work aims to harness the potential of bioactive compounds to create healthier staple foods, an approach that could contribute to better dietary strategies for metabolic health.

Her academic excellence and commitment to research have been recognized through the Frank and Jeanne Plett Endowed Studentship Grant, a prestigious award that supports emerging research students in the field.

Outside the laboratory, Sunita is interested in involving in community and scientific outreach. She volunteers at St. Boniface Hospital, supports scientific events, and currently serves as a trainee representative at CCARM.

POST-DOC CORNER

Dr. Nazanin Vafaei is a Postdoctoral Fellow at the RCFTR, working under the supervision of Dr. Martin Scanlon. Her research focuses on sustainable lipid processing and the development of low-temperature extraction



technologies that produce high-quality oils and food-grade canola meal and other seed meals. She works extensively with pilot-scale supercritical CO₂ extraction (SFE), mechanical pressing, and functional characterization of oils and seed fractions to advance innovation within Manitoba's agri-food sector.

Her current postdoctoral project aims to develop a methodology to extract more than 99% of oil from expeller-pressed canola cake using supercritical CO₂. This work will be carried out using the 5 L pilot-scale SFE system and is intended to support a scalable pathway toward future commercialization. In addition, she has collaborated with industry partners in Calgary and scientists from Agriculture and Agri-Food Canada (AAFC) to scale up vitamin E extraction from canola seeds, contributing technical expertise to pilot-scale trials within an industrial facility.

Dr. Vafaei also brings expertise from her doctoral research, where she developed palm-alternative structured fats through enzymatic interesterification under supercritical CO₂ conditions—demonstrating an innovative approach to producing functional fat systems for food applications.

Beyond her research, Dr. Vafaei serves as President of the UM Postdoctoral Fellows' Association and recently led the inaugural 2025 UM Postdoctoral & Graduate Research Showcase. Her science communication and leadership have been featured in INFORM Magazine (AOCS), the Winnipeg Free Press, and the Manitoba Co-operator, highlighting her contributions to sustainable processing and agriculture.

She is the recipient of several recognitions, including the Mitacs Outstanding Innovation Award, the AOCS Industrial Oil Products Division Early Career Grant, and an Excellence in Poster Presentation Award at the 2025 Manitoba Sustainable Protein Symposium.

PARTICIPANT RECRUITMENT COMPLETED FOR NUTRITION STUDY

Congratulations to Drs. Semone Myrie (PI) and Dylan MacKay and Rebecca Mollard (co-PIs) and their hard-working team for successfully completing participant recruitment in their nutritional study investigating the health benefits of haskap berry powder.

The last participant visit is scheduled for spring 2026. We look forward to the study results.



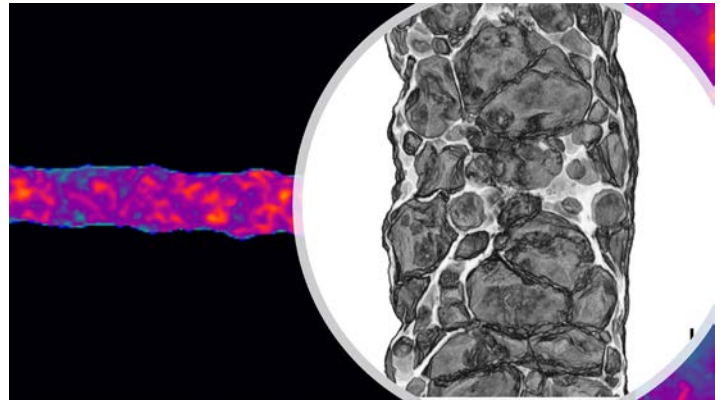
CAPACITY HIGHLIGHT - THE FOODPRO LAB

The FoodPro Lab, led by Dr. Filiz Koksel, is located at the RCFTR and is equipped with versatile processing equipment, featuring both a lab-scale (APV Baker Ltd.) and a pilot-scale (Leistritz Extrusion) co-rotating twin screw extruder. This equipment supports the development of novel ready-to-eat breakfast cereals and snacks, as well as the texturization of plant-based meat alternatives (TVPs and high moisture meat analogues).

Beyond processing, the FoodPro Lab offers comprehensive analytical services designed to support industry R&D. The lab provides detailed characterization of ingredients and end-products, including the measurement of particle size, density, texture profiles (hardness, chewiness), color,

and various techno-functional properties. The lab is also equipped to analyze pasting and rheological behavior, and to determine thermal properties, such as protein denaturation and starch gelatinization temperatures, via differential scanning calorimetry, of food ingredients. This “ingredient-to-product” testing capability allows collaborators to link raw material variability directly to extrusion performance and final product quality.

The FoodPro Lab welcomes collaboration with researchers from academia, government, and industry. Additional information may be found at <https://filizkoksel.ca/> and Dr. Koksel may be reached at filiz.koksel@umanitoba.ca.



Images from the FoodPro Lab, clockwise from above: meat analogues, microstructure of puffed snacks, pilot extruder, plant-based extruded products, research extruder.



STUDENT AWARDS

RCFTR Food Technology and Research Day Poster Awards

- First place: **Vidheesha Abeysinghe**
- Second place: **Marzia Islam**
- Third place: **Xiaohang Zou**

RCFTR Food Technology and Research Day Oral Presenters

- Graduate Students: **Abhinav Tiwari** and **Skyler Shaw**
- Post-Doctoral Fellows: **Drs. Ruth Boachie** and **Mariela Rodriguez**

RCFTR Food product development competition September 2025

- 1st place: **Maria Garofali, Sherwin Santiano, Kemashalini Ketheeswaran**
- 4th place: **Xiaohang Zou, Sunita Karki, Isanka Gimhani**

Timilehin Oluwajuyitan

- American Oil Chemists' Society (AOCS) Honoured Student award
- AOCS Peter and Clare Kalustian Award
- University of Manitoba Graduate Fellowship

Sunita Karki

- Frank and Jeanne Plett Endowed Studentship Grant
- Faculty of Graduate Studies Research Completion Scholarship

Pamela Pezuk

- Manitoba Sustainable Protein Research Symposium 2025: People's Choice Award

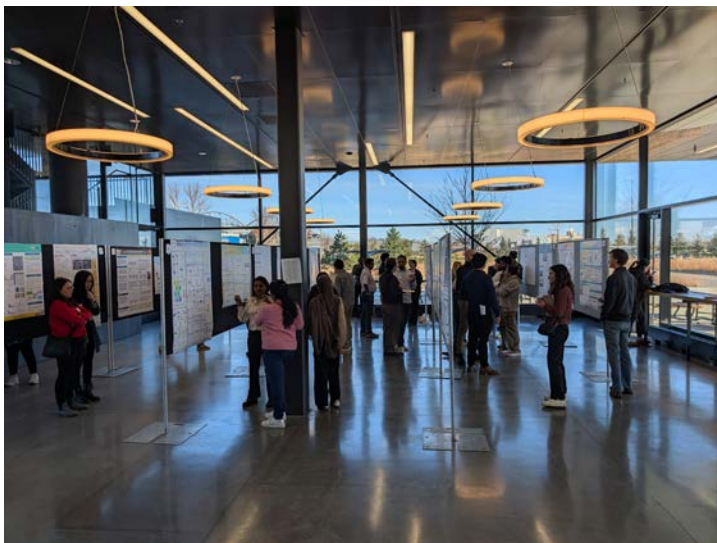
FOOD TECHNOLOGY AND RESEARCH DAY



Poster award winners (l to r): Xiaohang Zou, Dr. Aluko, Vidheesha Abeysinghe (Marzia Islam not pictured)



Graham Markham and Martin Vanderloo (New Protein Global Inc.)



Research Poster Session



Virtual presentation from keynote speaker Mulu Kassa (BioTEI Inc.)

UK LUPIN DELEGATION VISIT

On November 12, the RCFTTR hosted a special delegation from the United Kingdom along with their industry collaborators from Lupin Platform Inc., Calgary, AB. Though based in Calgary, Lupin Platform is working with provincial farmers to expand lupin cultivation to Manitoba. Various areas of potential research and technical service collaborations were identified, and we are excited at the opportunity of strengthening the RCFTTR R&D work on lupin seed value-added utilization.



FUNDING OPPORTUNITY FOR CANADIAN SMEs

Are you a Canadian small-to-medium size enterprise looking for financial support to assist your food ingredient R&D program?



If so, you may be eligible for up to \$5,000 in funding via a National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP) supported program for work performed at the University of Manitoba's Faculty of Agricultural and Food Sciences and Richardson Centre for Food Technology and Research.

The Contribution to Organization (CtO) program helps build and integrate innovation capacity in Canada and encourages investment in research and development activities that have clear commercialization goals.

Application is two pages in length and review time is one week.

Since April 2022, RCFTTR completed more than 20 NRC-IRAP funded projects from food companies across Canada.

Core areas of expertise at the RCFTTR include the following:

1. Pilot scale milling, air classifying, dehulling in a SFCA licensed facility
2. Lab- and pilot-scale oilseed screw pressing in a SFCA licensed facility
3. Protein quality testing
4. Food functionality testing
5. Sustainable packaging
6. Cooking extrusion
7. Flour quality and bakery applications
8. Human nutrition testing
9. Phytochemical testing
10. Lab-scale supercritical fluid extraction with CO₂ and/or ethanol
11. Metal and mineral testing using ICP-MS techniques
12. Particle size distribution testing

The CtO program is a great way to connect with world class faculty and staff in food ingredient testing, processing and applications. For more information, contact agresearch@umanitoba.ca.