



October 2024 - Issue 81

*Discovery Digest* is a glimpse into how University of Saskatchewan research, scholarly and artistic work is making a difference for Saskatchewan, Canada and the world. Curated by the Research Profile and Impact unit, Office of the Vice-President Research. [Feedback welcome!](#)

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## This Month's Stories



### [Innovation Saskatchewan invests \\$400K in Fedoruk Centre to advance nuclear research](#)

Innovation Saskatchewan is investing \$400,000 in the Sylvia Fedoruk Canadian Centre for Nuclear Innovation (Fedoruk Centre) at the University of Saskatchewan (USask) to support and expand nuclear research in the province.

The funding will support up to eight research projects led by Saskatchewan-based scientists through the Fedoruk Centre's 2024 Call for Proposals.

"From the start, the Fedoruk Centre has aimed to empower Saskatchewan people to apply nuclear science and technologies to advance health care, food security, energy policy, material sciences and social sciences. We aspire to help strengthen Saskatchewan's research and educational capacity to develop a highly qualified workforce for the deployment of nuclear technologies in Saskatchewan," said **Dr. John Root**, Fedoruk Centre executive director.

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### [New funding announced for Indigenous health research network](#)

The Network Environments for Indigenous Health Research (NEIHR) have received \$37.6 million over five years from the federal government through the Canadian Institutes of

Health Research (CIHR).



**Dr. Robert Henry (PhD)**, an associate professor in the Department of Indigenous Studies in the College of Arts and Science at USask is the nominated principal investigator for Saskatchewan NEIHR and a co-lead with the NEIHR National Coordinating Centre. He emphasized the importance of continued support for this kind of research in Canada.

“The NEIHR centres are independent, Indigenous-led networks that provide supportive research environments for Indigenous health research driven by, and grounded in, Indigenous communities in Canada,” Henry said in a statement. “This funding renewal means we can continue to support our community partners, our researchers and our trainees in addressing complex issues in community and with community.”

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### [International congress gathers world-renowned expertise at USask](#)

The People Around the World (PAW) 2024 International Congress takes place at USask from Oct. 16-18. Researchers and speakers from USask and across Canada, the United States, Germany, the Netherlands and more will come together to share critical research and new ideas.

**Dr. Darcy Marciniuk (MD)**, associate vice-president research at USask and the co-chair of PAW 2024, said this kind of gathering is necessary for fostering new ideas and research internationally.

“The PAW congress is important to our institution as it is a strong signal of our university’s goal and intention to internationalization,” he said. “We are very proud that PAW 2024 brings together world-leading experts, thinkers and innovators to drive meaningful sustainable solutions to problems affecting not only Saskatchewan but also the world.”

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### [Town of Canora works with USask to develop RaDAR rural memory clinic](#)

The Canadian Centre for Rural and Agricultural Health (CCRAH) at USask hosts the Rural Dementia Action Research program, known as RaDAR. The program has been a leader in



supporting rural communities to develop local team-based memory clinics.

The CCRAH RaDAR program has created key supports for the rural care teams, including Canora. These supports include opportunities to shadow other clinics, extensive ongoing consultation with training and mentorship, a co-ordinator who travels to every clinic, plus a handbook with useful resources including templates to guide team members through the assessment process.

The CCRAH RaDAR lead **Dr. Debra Morgan (PhD)** and team member **Dr. Julie Kosteniuk (PhD)** were both consulted on this endeavour.

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### [USask building on strong performance in Times Higher Education rankings](#)

For the second year in a row, USask has maintained its strong position as a research and scholarly institution in the 2025 Times Higher Education (THE) World University Rankings.

The THE rankings measure the performance of universities around the world through 17 metrics across five pillars: teaching, research environment, research quality, industry and international outlook.

USask jumped significantly in the rankings released in 2023, moving from the 501-600 tier of universities to its highest-ever placement in the 351-400 tier. This year, USask has once again achieved the 351-400 tier, as the university's unprecedented progress continues.

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**Looking for more research stories? [Visit Discovery Digest online.](#)**

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### [Hidden threat: New USask research looks to improve food safety](#)

Foodborne pathogens, like Salmonella, are a threat to food safety and can have harmful effects when contaminated food is consumed. As the new Agriculture and Agri-Food Innovation Chair in Applied Microbiology at USask, **Dr. Kaidi Wang (PhD)** with the College of Agriculture and Bioresources is looking to understand how foodborne pathogens survive in harsh environments, and how to effectively monitor and eliminate them.



Wang's research program at USask will focus on understanding the survival mechanisms of foodborne pathogens in food systems. This includes the study of the dormant state of bacteria, which is a stress response where bacteria "fall asleep," becoming inactive and

undetectable by conventional methods. Under the right conditions, the bacteria can “wake up” and become harmful again.

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### [Innovative USask collaboration helps medical residents develop essential disaster response skills](#)

On June 21, dozens of USask College of Medicine emergency resident students, university faculty and staff and trained simulated patients joined local physicians and first responders in the Health Sciences Building to simulate the unthinkable — a mass shooting during a public event.

Administered through the USask Clinical Learning Resource Centre (CLRC) and known as the Emergency Resident Mass Casualty Incident (MCI) Simulation, this multifaceted educational experience has been meticulously planned by the College of Medicine, the CLRC and its partners to share knowledge and help learners practice essential skills in a safe, simulated environment.

The initial proposal to develop this method of teaching mass casualty intervention skills at USask is the result of research published by emergency physician **Dr. Rob Carey (MD)**, a College of Medicine alumnus currently working as an assistant professor of emergency medicine and as a simulation co-ordinator with the college’s Postgraduate Medical Education (PGME) Office.

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### [USask researchers navigating complex systems to preserve Prairie wetlands](#)

From grasslands to boreal forests, Saskatchewan has some of the most dynamic ecosystems in the country and is home to equally complex water systems. Researchers like **Dr. Colin Whitfield (PhD)**, associate professor in the School of Environment and Sustainability and member of the Global Institute for Water Security (GIWS) at USask, are keeping a close eye on Saskatchewan’s water landscape.



“As a biogeochemist and environmental scientist, I’m really interested in understanding the impacts that various stressors have on ecosystems,” said Whitfield. “I often look at the watershed scale, understanding how movement of water across landscapes affects processes like clean air and water.”

Using a new modelling framework, Whitfield and his colleagues illustrated the significance of wetland drainage and the complexity of water systems in the Prairie region in a recently published paper in *Facets*.

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### [Effects of vaping by pregnant women on fetus development](#)

An increasing number of pregnant women turn to vaping as an alternative to smoking. In response to this concerning trend, PhD student **Dr. Tat Chuan Cham (DVM)** has developed a new research model to gather novel data about the potential effects of vaping on the development of a human fetus.

Working with his supervisor, **Dr. Ali Honaramooz (PhD, DVM)**, Cham created a synthetic testis model from artificial pig testis that replicates the cellular composition and functions of a human testis. Since few studies have been published in this area, Cham will use the model to gather vital data about the impact of vape toxicants on the development stages of human life. Cham is hopeful the model will advance new research opportunities investigating the long-term impact of vaping on fetal development.

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### [The impact of USask research on the future of breast cancer care](#)

If you are among the one in eight Canadian women who confronts a breast cancer diagnosis, you would want **Dr. Mita Manna (MD)** on your care team.

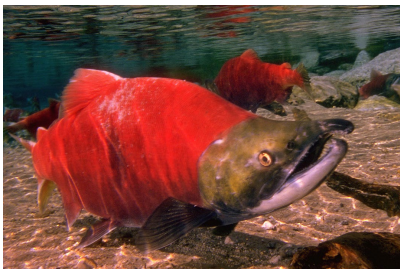


Manna is a medical oncologist and assistant professor at USask, and her days include a combination of medical education, patient care and research. She is a clinician at the Saskatchewan Cancer Centre providing care, teaches at USask's College of Medicine and is the Saskatoon research site lead for the Canadian Cooperative Trials Group.

One in 36 women will die of the disease, but the odds of beating breast cancer have improved since the mid-1980s, thanks to enhanced screening and treatment methods.

As provincial site lead, Manna oversees clinical trials related to breast cancer at USask's Clinical Trial Support Unit (CTSU), the current site for 16 breast cancer clinical trials. Manna serves as the principal investigator of four of the clinical trials.

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### [USask researchers use salmon migration data to reveal ecological impacts](#)

Migratory species like salmon travel thousands of kilometres to spawn at the end of their lives, leaving behind both nutrients and contaminants in freshwater rivers. By looking at both elements together, a team of North American researchers have greater insight into salmon's impact on ecosystems.

“The key takeaway from the work is that salmon are the most important movers of biomass in the animal kingdom, as their migration takes them from the ocean into freshwaters,” said **Dr. Tim Jardine (PhD)**, associate professor in the School of Environment and Sustainability, member of the Toxicology Centre, and the GIWS at USask.

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### [Switching ‘off’ equine herpesvirus](#)

**Dr. Kristen Conn (PhD)**, an assistant professor and virologist at WCVI, has received a three-year research grant worth US\$99,846 from the Morris Animal Foundation for research studies focused on equine herpesvirus (EHV). This highly infectious virus can cause respiratory disease, neurological disease, abortions and neonatal death among horse populations.



Conn’s work focuses on studying how the EHV-1 virus takes over host cells by harnessing their biological processes to make more virus particles (virions). Conn will then explore how these basic interactions can be targeted — helping the cells “switch off” the invading virus and stop replication. Findings may eventually play a role in the development of new antiviral therapies for EHV-1.

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### [Young Innovators: USask researcher studies severity of viruses like COVID on men vs women](#)

Is the feared “man cold” real?

That’s the question at the heart of **Marin Habbick’s** research. A Master of Science student specializing in virology, Habbick is exploring how the chemical messages sent through different sex hormones may affect the severity of illness caused by three dangerous human coronaviruses.

“It has been observed that male persons are more likely to get infected and become seriously ill when exposed to these coronaviruses, but it is unknown why they suffer greater disease compared to female persons,” she said.

This new project will form the core of Habbick’s MSc research and potentially determine whether the infamous “man cold” is, in fact, a real condition.

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### [Curing equine cuts with cod grafts](#)



### [GIFS at USask puts engineering biology to work](#)



### [Young Innovators: USask researchers lead promising advances in MS treatments](#)

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## Stay connected with USask research news



Make sure to follow the USask Research [Twitter page](#) to stay in-the-know, with exciting research news delivered right to your newsfeed. Don't forget to also follow [USask Research on LinkedIn](#), and [@VPR\\_USask](#) and [@USask](#) on Twitter for more of the latest research and university news.

Use the hashtag **#USaskResearch** when sharing USask-related research findings, publications or achievements on social media.

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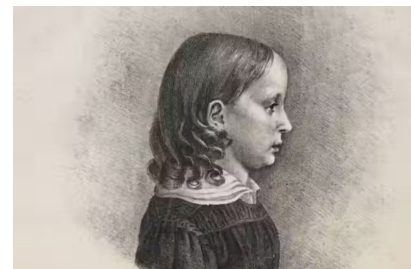
## ***In The Conversation***

### [When a child prodigy composer matured into a noblewoman, her legacy got complicated](#)

**By: Dr. Amanda Lalonde (PhD), USask School of Fine Arts, College of Arts and Science**

Delphine von Schauroth (1813–1887) was spectacularly famous in the early 19th century.

The German virtuoso pianist and composer was hailed as a musical genius by critics for her



powerful and inventive performances and her original and deeply expressive compositions.

Why, then, is she nearly forgotten today? Despite her genius status in her day, her family life and class status may account for some of her contemporary obscurity.

## Upcoming events



### **The 2024 Robertson Lecture – From Farm to Fork: Saskatchewan’s role in the Future of Food Security and Innovation**

Join us at the 2024 Robertson Lecture featuring Sylvain Charlebois, who will discuss Saskatchewan’s role in the evolving landscape of food production and distribution. Discover how emerging consumer trends, transportation logistics, and global events are reshaping our food systems. Delve into Saskatchewan’s unique role in agri-food production, including its contributions to global food security,

innovation and the urban-rural food connection. Join us to explore the dynamic interplay between food policy, safety, and economics, and consider how food producers and policy makers from municipal, provincial, and federal levels of government can better understand and navigate our food supply chain.

The event is a hybrid lecture. Register to attend virtually [here](#).

- 2024 Robertson Lecture – 7:00 p.m., Oct. 16 – College Building, University of Regina

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### **Open Access Publishing: Challenges, Costs and Ethical Models for the Future**

Open access (OA) publishing is a complex and evolving landscape. Increasingly, funder policies require researchers to publish OA, yet the fees associated with OA publishing pose barriers, particularly to those from under-resourced disciplines and under-funded institutions. For researchers, this complexity is further compounded by the pressure to publish to advance their academic careers. How can researchers compete in this landscape?

This presentation by Leigh-Ann Butler, Scholarly Communications Librarian at the University of Ottawa, will provide a general overview of open access publishing and discuss the upcoming revision to the Tri-Agency OA policy. The speaker will also present findings from recent studies on article processing charges (APCs) to spark a conversation around ethical publishing models and explore how our community can retain control of its research.

- Open Access Publishing lecture – 12-1 p.m., Nov. 4 – Arts 102



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**Participate in USask’s inaugural One Health Symposium**





The One Health Symposium celebrates and highlights the outstanding One Health-based research being conducted at USask. This coming together across disciplines will serve as a forum for learning, discussion and the provoking of new ideas and collaborations. The symposium is hosted by USask's One Health Signature Area of Research, whose interdisciplinary

work addresses the interconnectedness and interdependence between human, animal and environmental health.

This one-day event will be held on November 23 in USask's Health Sciences Building.

- One Health Symposium – November 23, 2024 – Health Sciences Building. Register at the [link here!](#)

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### **Innovation and Impact: Case Studies in Accelerated Breeding**

Join the Global Institute for Food Security (GIFS) at USask on October 31 and explore accelerated breeding strategies that help plant and livestock breeders stay ahead of the curve.



This hybrid seminar will feature researchers from the University of Guelph and Ohio State University discussing accelerated breeding success stories from both the livestock and crop sectors.

During the program, GIFS will also provide an update on the FCC Accelerated Breeding Program at GIFS, a collaborative initiative to accelerate innovation in agriculture, driving productivity, competitiveness, and sustainability for Canadian farmers and agri-food stakeholders.

This is a hybrid event – you can attend in person or virtually by [registering here](#).

- Case Studies in Accelerated Breeding – 1:00 – 4:30 p.m., Oct. 31 – Candle Span Room in The Atrium at Innovation Place

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### **Your Voice, Your Democracy – Info on the City of Saskatoon Election**

This in-person event focuses on municipal elections and is meant to promote civic engagement in Saskatoon.

Working with numerous groups in the community, USask and the Johnson-Shoyama School of Public Policy at USask are hoping to foster more engagement in the electoral process with multiple elections on the horizon.

- Info Session on City of Saskatoon election – 7 p.m., Oct. 24 – Station 20 West

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### **NEW - Information for researchers**

If you have any important information for USask researchers, please contact [research.communications@usask.ca](mailto:research.communications@usask.ca)!

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### Submitting to Discovery Digest

If you would like to submit a research-focused event or news item for consideration for Discovery Digest, please submit a link and a description of no more than 150 words to [research.communications@usask.ca](mailto:research.communications@usask.ca) with the subject line "Submission – Discovery Digest," along with the month and year you are submitting for.

Please indicate whether your submission is a recommendation for a news item, event or information for researchers. If you would also like to submit a photo, please make sure it is a 3:2 aspect ratio image.

The Discovery Digest goes out on or as close to the 15th of each month as possible. **Please ensure any submissions are sent in by at least the 8th of each month to be considered for inclusion.**

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### *In the news*

- Oct. 13 – Yahoo! News, The Cool Down – [Researchers make stunning discovery after examining farmland treated only with organic fertilizers for decades: '\[Will\] help us to move forward'](#)
  - Oct. 11 – CBC News – [Meet Saskatchewan's new treaty commissioner](#)
  - Oct. 4 – Yahoo! News, LiveScience – ['Extraordinary' burial of ancient Egyptian governor's daughter discovered in a coffin within another coffin](#)
  - Oct. 3 – Toronto Star, CTV News, Global News – [For Canadians seeking a non-mRNA COVID vaccine, lack of Novavax shot is 'unfair'](#)
  - Sept. 30 – Saskatoon StarPhoenix, Regina Leader-Post – [Stories and searches: How archeologists find unmarked graves at residential schools](#)
  - Sept. 30 – The National Post – [RCMP aims to dramatically expand reach into remote areas via drones](#)
  - Sept. 20 – Global News, CBC News – [Nuclear research at the University of Saskatchewan to receive more funding](#)
  - Sept. 20 – MedScape Medical News – [AI Tool May Reduce Risk for Unexpected Hospital Deaths](#)
  - Sept. 16 – CBC News – [Unidentified pest devastates already weakened wild rice crop in northern Sask.](#)
  - Sept. 16 – Global News – [USask researcher to co-chair United Nations advisory board on glacier preservation](#)
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Banner image photo credit: **Winter Embrace: Cattle Swathgrazing in Snow** -  
by **Somtochukwu Obiora**, M.Sc Student, Department of Animal and Poultry Science, College  
of Agriculture and Bioresources

Images of Research 2024 - *Runner-up, Research in Action*

I see cattle having fun doing what they know best: grazing. While most animals and we humans would love to stay away from the winter cold, these cattle are grateful to be in the field provided there is forage. Traditionally, they would have been fed in barns, but years of continued research have made it possible to continue grazing into the winter months. Having groups of these cattle graze on swathes of monoculture oat and other groups on polycrop mixture (oat, forage pea, and brassicas) tells a lot about the direction of this research aimed at comparing forage systems (monoculture or polyculture) for a successfully extended grazing.



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