



August 2023 - Issue 67

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!](#)

This Month's Stories



[USask researchers receive \\$7 million in CIHR funding](#)

Researchers working with the University of Saskatchewan (USask) received more than \$7 million in this round of Canadian Institute for Health Research (CIHR) funding — the most that USask researchers have ever received in a single round.

Dr. Humphrey Fonge (PhD) and **Dr. Maruti Uppalapati (PhD)** with the College of Medicine received \$979,200 for their research project to develop new diagnostics and therapeutics for pancreatic and ovarian cancer. Dr. John Gordon (PhD) of the Department of Respiriology is also a co-applicant of the project.

[Putting Indigenous knowledge at the forefront of water research in Canada](#)

In an attempt to create a better water future for everyone, Indigenous water experts and Knowledge Keepers have created a protocol that puts co-generation of research at the forefront, and promote its use across Canada in future water research projects.



The Everyone Together: Water Gathering Statement was created by a group of 22 participants representing 14 different First Nation and Inuit communities and organizations.

The protocol outlined in the document was initially discussed over three days in April 2023 during the USask-led Global Water Futures (GWF) - Mistawasis Nêhiyawak Water Gathering, and is now available publicly.

“Nothing about us without us,” said **Anthony Blair Dreaver Johnston**, Knowledge Keeper with Mistawasis Nêhiyawak. “Research must meaningfully engage community members, governments, organizations, and include local and traditional knowledge about the nature and use of water. This is how we grow as people and communities to be better stewards of the land.”



[New USask funding to advance Canada’s beef sector](#)

Dr. Antonio Facciolo (PhD) from the Vaccine and Infectious Disease Organization (VIDO) at the USask has new support to develop a vaccine against Johne’s disease—a chronic intestinal disease of cattle that is significant to both the beef and dairy industry.

Facciolo is one of five scientists at USask awarded funding from the Beef Cattle Research Council (BCRC) under the newly announced Canada’s Beef and Forage AgriScience Cluster.

The USask-led projects, totalling \$3,107,317, will help bolster the beef sector’s environmental and economic sustainability. The research will focus on improving cow-calf health and productivity, breeding climate-resistant forages, studying the Canadian feed-lot industry, managing cattle diseases, and advancing gut health research.

[USask leads investigation into COVID-19 effects on dentists](#)

A multi-university research team in collaboration with USask analyzed the stress levels of dentists during the COVID-19 pandemic.

The research project used a tool called the COVID-19 Anxiety Syndrome scale (C-19ASS), a self-reporting tool developed in 2020 to help quantify some of the mental health impacts and coping methods used by individuals to manage the effects of the pandemic.

Dr. Michelle Siqueira (DDS, DSc), an assistant professor with USask’s College of Dentistry, said the purpose of the study was to apply the C-19ASS to working dentists to determine the validity of the test among that professional group and subsequently analyze the effects of the pandemic on dentists.



[Combating diabetes using community strengths, aided by USask research](#)



A USask research team is working directly with Indigenous communities throughout Saskatchewan to improve methods for preventing Type 2 diabetes.

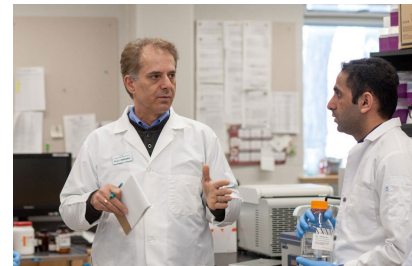
Dr. Sarah Oosman (PhD), acting director of USask's School of Rehabilitation Science, is one of the lead researchers on a project titled "Strong Bodies, Spirits, Minds, and Voices" Privileging Indigenous Knowledge to Guide Pediatric Type 2 Diabetes Prevention with First Nations and Métis Communities in Saskatchewan." Oosman co-leads this interdisciplinary project with **Dr. Shelley Spurr (PhD)** and **Dr. Jill Bally (PhD)** from the College of Nursing, **Dr. Amanda Froehlich Chow (PhD)** from the School of Public Health, and Knowledge Keepers **Gilbert Kewistep** and **Margaret Larocque**.

The goal of the project is to connect directly with Elders, Knowledge Keepers, youth, and families in Indigenous communities to co-create and implement an Indigenous-driven health promotion intervention toolkit for preventing Type 2 diabetes, that is grounded in Indigenous world view.

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

[With help from pigs, USask scientists strive to expedite organ transplant process](#)

As a solution to Canada's ongoing organ shortage crisis, biomedical scientists such as **Dr. Ali Honaramooz (DVM, PhD)** at USask are looking to xenotransplantation (organ transfers from animals to humans). Specifically, Honaramooz and his post-doctoral fellow, **Dr. Fahar Ibtisham (PhD)**, are investigating the use of pig organs for human transplants.



Honaramooz's research team received \$10,000 from the Saskatchewan Health Research Foundation's (SHRF) Align Grant program, which supports Saskatchewan-related human health studies.



[Space training program at USask launched many careers](#)

Jarle Steinberg is currently working as a spacecraft systems engineering intern at the European Space Agency in Germany, helping build payloads for upcoming lunar missions. His work will be part of human habitats built on the

moon. There are even preliminary plans to give him a seat on a future private launch.

Steinberg is one of 67 students to complete the International Space Mission (ISM) Training Program since it began seven years ago. The program wrapped up this summer when the final group of participants launched two high-altitude research balloons during a three-week workshop at USask. **Dr. Kathryn McWilliams (PhD)** with the Department of Physics and Engineering Physics headed the ISM program.

[USask experts sound warning over wildfire smoke, drought conditions](#)

A record year of wildfires is threatening communities and leaving trails of devastation through forests in British Columbia and Alberta and across the country as far as Nova Scotia, while also creating dangerous air quality conditions from smoke drifting across the Prairie provinces.



For **Dr. Erika Penz (MD)**, an associate professor of respirology in the College of Medicine at USask, it has been one of the worst years in recent memory, with deteriorating air quality conditions in Saskatchewan significantly affecting many of the patients she sees across the province in her clinical practice.



[Supporting the health of 'little hearts' with physical literacy: USask research](#)

USask PhD student **Matthew Chapelski** is part of a research team investigating how physical activity can benefit children with congenital heart disease, by integrating it into their everyday lifestyle.

Congenital heart disease (CHD) is a condition that children are born with, and occurs when the chambers, walls or valves of the heart do not develop properly before birth. Treatment options for the condition vary. According to the Heart and Stroke Foundation of Canada, a common symptom experienced by children with CHD is fatigue during exercise or physical activity.

[USask researchers test alternative anesthetic protocol for sedating pronghorn](#)

A research team in the Western College of Veterinary Medicine (WCVM) at USask is working to find a reliable method of sedating North America's fastest land mammal: the pronghorn.



The research team includes **Dr. Barbara Ambros**, a professor and anesthesiologist in the WCVM's Department of Small Animal Clinical Sciences, and veterinary anesthesiology residents **Dr. Jennifer Pelchat** and **Dr. Bruna Hech**.

Opioids are a family of pain-relieving drugs commonly used in anesthesia, and etorphine is one particular opioid that wildlife researchers have previously used to immobilize pronghorn.

However, etorphine is now restricted in Canada because of its high potency. No one can import the opioid into the country without a special authorization from Health Canada. As a result, scientists are working to find another reliable method of effectively sedating these animals.



[USask-developed crop diagnostic tool gaining widespread use](#)

As **Karolina Pusz-Bochenska** finishes her PhD in biology at USask, the revolutionary crop diagnostic tool she helped develop is already evolving for commercial use.

By utilizing molecular testing techniques, Pusz-Bochenska and a USask research team – with the support of Agriculture and Agri-Food Canada (AAFC) – created a cutting-edge tool that is already finding its way into research laboratories and the hands of farmers across the country.

Pusz-Bochenska and the research team's work revolves around the detection of aster yellows, a crop disease that can devastate wheat, barley, and canola yields.

[USask wheat breeder earns province's highest honour](#)

Dr. Pierre Hucl (PhD) has been named a 2023 Saskatchewan Order of Merit recipient in recognition of his remarkable contributions to crop development and research.

A professor and plant breeder in the Department of Plant Sciences and Crop Development Centre (CDC) in the College of Agriculture and Bioresources (AgBio) at USask, Hucl's expertise in bread wheat, specialty wheats, and canaryseed breeding and genetics has revolutionized farming practices and enhanced food security across Western Canada.



[Renewed support for Cameco Chair in Indigenous Health and Wellness at USask](#)

Since 2017, the Cameco Chair in Indigenous Health and Wellness at the USask's College of Medicine has carried out

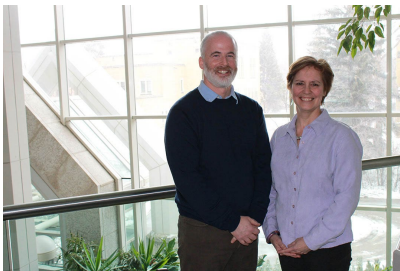


extensive and innovative research to improve the health outcomes of Indigenous people in Canada. A new commitment of \$1.25 million from the Royal University Hospital Foundation (RUHF) will ensure that work continues for an additional five years.

The chair was initially established through a partnership with RUHF in which Cameco led the way with a forward-looking donation. **Dr. Alexandra King (MD)** of Nipissing First Nation, an internal medicine specialist and health researcher, was named the inaugural Cameco Chair in Indigenous Health and Wellness in 2017 and still holds that position today.



[USask cancer researchers, patients come together at CIHR community event](#)



[USask-led project develops guiding principles for community-engaged research](#)



[Exciting times in wheat research at the Crop Development Centre](#)

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 follow [USask Research on LinkedIn](#), [@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.



ICYMI: [This year's TEDxUniversityofSaskatchewan videos are now available!](#)

USask is home to pioneers in discovery who are improving lives, expanding opportunities, strengthening social cohesion and protecting the environment. In the spirit of ideas worth spreading, they took to the TEDx stage in January with compelling stories of ambition and achievements, sharing their voice and vision to be what the world needs.

Whether you missed the event or just want to re-watch the amazing talks, [find all the videos online](#).

Learn more [about the event](#).

In the Conversation...

[This solar cycle, the sun's activity is more powerful and surprising than predicted](#)

By: Dr. Daniel Billett (PhD), USask College of Arts and Science

We're currently a few years into the 25th studied solar cycle. An 11-year period of sun activity, this solar cycle is more active than previously expected.



[Manitoba's reasons for refusing to search for Indigenous women's remains in landfill are a smokescreen](#)

By: Dr. Kathy Walker (PhD), USask College of Arts and Science

Manitoba's refusal to fund the search for the remains of three Indigenous women is met with denouncement from the Assembly of First Nations.



[Wildfire evacuations: How our diverse experiences can strengthen disaster response](#)

By: Dr. Maureen Reed (PhD), USask School of Environment and Sustainability, Dr. Amber Fletcher (PhD), University of Regina, Dr. Heidi Walker (PhD), University of Manitoba



To effectively address climate hazards like wildfire, we must consider the diverse experiences of people, account for longstanding institutions and create processes that empower local people.

School-approved Cheetos? Why we must protect school food from corporate interests

By: Dr. Amberley Ruetz (PhD), USask College of Medicine, Dr. Sarah Kirk (PhD), Dalhousie University, Dr. Rachel Prowse (PhD), Memorial University, Steve Machat, Dalhousie University



An effective national school food program can help build the foundations for a healthy population. That's why Ottawa must limit the influence of the food industry on a national school food program.

Upcoming events



Vice-President of Research Campus Address

Hear from Dr. Baljit Singh (PhD), USask's Vice-President Research, about the highlights of the past year and plans for the future.

The event will take place at 12 pm on Wednesday, Sept. 6 at Convocation Hall. You can also view the event via livestream. Please register using the link below.

- [Vice-President of Research Campus Address – Wednesday, Sept. 6th](#)

GIFS – Accelerated Breeding: Genomic Selection and Predictive Breeding

This online webinar will explore genomic selection and predictive breeding with insights from researchers from Agriculture Victoria Research in Australia.



GIFS will also provide an update on its Accelerated Breeding Program that is being established to provide public and private plant-breeding organizations with access to these technologies that help bring new crop varieties to agricultural producers faster.

The online webinar will take place from 3-5 pm CST on Wednesday, Aug. 16.

- [GIFS – Accelerated Breeding: Genomic Selection and Predictive Breeding – Wednesday, August 16th](#)



USask Agriculture Research Day 2023

Agriculture Research Day is taking place on Wednesday, September 20, 2023, in the College of Agriculture and Bioresources.

Projections show that food production must double by 2050 to feed the world's growing population. We are working to strengthen Saskatchewan's agricultural leadership with new science, technology and policies to help feed a hungry world adequately, safely and sustainably.

Agriculture Research Day is open to all students, post-doctoral fellows, faculty, and staff conducting research in the Agriculture Signature Area.

This will be an excellent opportunity to practice research communication, network, and enhance your CV, all while promoting the diversity of agriculture research across campus. There will also be cash prizes for the best posters and poster presentations.

Interested in displaying a poster? Please complete the poster submission form by September 6.

- USask Agriculture Research Day 2023 – [Poster Submission Form](#)

NEW - Information for researchers



Announcing TEDxUniversityofSaskatchewan 2024: Call for speakers and performers

Universities play a vital role in nurturing, empowering, and unleashing the curiosity that will allow us to imagine a brighter, more sustainable future. In the spirit of ideas worth spreading, USask will host a TEDx event. We are looking for pioneers in discovery who are improving lives, expanding opportunities, strengthening social cohesion and protecting the environment to share their voice and vision. This year's theme is, "Courageous Curiosity".

To apply to speak or perform at this year's event, [fill out this form](#) by Sept. 15. More details on the event will be shared soon.

You can stay up-to-date by visiting research.usask.ca/tedx.

Learn more about HARVEST

Did you know that the University Library provides a digital



repository for the research, scholarly, and artistic outputs of the USask community? It is called **HARVEST**. You can preserve your articles, book chapters, presentations (and more!) for the long-term, and make them discoverable and freely accessible to anyone anywhere in the world.

Repositories like HARVEST are the ideal place to share research outputs that may not otherwise be published or preserved such as reports. This is also a way that you can comply with funders' mandates for open access (like the Tri-Agency Policy on Publications) without paying expensive publisher's fees. It is free and legal to self-archive your revised manuscripts in HARVEST. Learn more [here](#).

Ready to get started? Reach out to us at HARVEST@library.usask.ca to get set up!

In the news

- Aug. 13 – CBC News – [**This Sask. lab is studying agricultural pests — even before they arrive on the Prairies**](#)
- Aug. 10 – Western Producer – [**Feed tests especially important during drought**](#)
- Aug. 9 – CTV News – [**Animal therapy program shows promise in Canadian prisons, study found**](#)
- Aug. 9 – MSN News, CBC News – [**What to know about EG.5, the latest Omicron subvariant in Canada**](#)
- Aug. 8 – CBC Radio One – [**The connection between health research and urban planning**](#)
- Aug. 6 – The Canadian Press, CBC News – [**Liberals haven't answered 2020 invite for Canada to join global body creating vaccines for poor people**](#)
- Aug. 2 – CBC News – [**Study looks at whether targeted exercise before hip or knee surgery can help recovery**](#)
- July 26 – Global News – [**Saskatoon-developed app connects dialysis patients to experts and others**](#)
- July 21 – Global News – [**Saskatchewan byelections easily swayed by amount of coverage: USask assistant prof**](#)
- July 20 – CBC Radio – [**Saskatoon hosting conference that brings together the top scientists, researchers who study nuclear isotopes**](#)
- July 19 – Toronto Star – [**Climate change and the global species shakeup**](#)
- July 19 – CBC News, CBC Radio – [**First Nations sick of Sask. government's 'trinkets and beads' approach to resource development: Opposition**](#)
- July 18 – MSN News, Global News – [**Long COVID presents 'unfathomable' burden as health-care system reaches 'boiling point'**](#)
- July 18 – CTV News Saskatoon – [**Sask. university researchers using AI to measure**](#)

Banner image photo credit: **Meet Your Local Backyard Buddy** - By **Georgiana Antochi-Crihan**, Plant Sciences masters student

Images of Research 2023 - *Runner-up, More than Meets the Eye*

Did you know that there are an estimated 7 million insect species on our planet? Insects play many roles in our ecosystem, including pollination, pest control, and nutrient recycling. This little friend is a thistle tortoise beetle (*Cassida rubiginosa*). They are very effective at reducing Canada thistle (*Cirsium arvense*) populations and are found locally in our backyard!

Interestingly, this beetle was unexpectedly found in the middle of a wheat field. Despite the vast quantity of insects worldwide, little is known about their distribution throughout Saskatchewan. My project aims to fill this knowledge gap by inventorying the insect diversity of our prairies. By gaining insight into the true distribution of insects across the prairies, we can better implement insect management strategies.

Funders: MITACS, Ducks Unlimited Canada, SaskWheat



We want your feedback! [What do you think of Discovery Digest?](#)

You are receiving this email because you either
subscribed manually to Discovery Digest or were
a former subscriber to USask

Monthly Research Update. Questions? Comments? Send an email to [Research
Profile and Impact.](#)
