



July 2024 - Issue 78

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 receives record \\$417M in awarded research funding in 2023/24](#)

The University of Saskatchewan (USask) set a new benchmark in the institution's history, attracting \$417 million in awarded research funding in the 2023/24 fiscal year.

That amount is the highest-ever awarded in a single year in the university's history and is a testament to both the quality and quantity of research being conducted across campus.

"USask faculty, staff and students continue to excel in their research, scholarly and artistic work activity, reflected in this record-setting year of \$417M in funding. This new achievement is a reminder that through innovative research across a very broad range of disciplines USask is making good on its aspiration to be the university the world needs." - **Peter Stoicheff**, USask President

[USask researchers discover swath of previously undocumented polar bear dens](#)

Dr. Doug Clark (PhD), an associate professor and acting director of USask's School of Environment and Sustainability (SENS), has crawled into many polar bear dens as a graduate student and in a former job as a park warden.

So many, in fact, that when Clark and his group of researchers identified a large number of previously undocumented dens north of Churchill, Man., – more than 100 kilometres further north than any other documented polar bear dens – he knew they belonged to polar bears.

"We knew these were polar bear dens for a couple of reasons. One, they were in peat deposits ... but more to the point, we found polar bear hair," Clark said.



[Thousands of jobs and billions of dollars attributed to USask's Crop Development Centre](#)



A glowing new assessment report of the Crop Development Centre (CDC) at USask highlights the centre's tremendous economic impact, including thousands of jobs and billions of dollars for Canada.

The CDC Economic Footprint Assessment prepared by EY (formerly Ernst and Young LLP) provides a detailed analysis of the centre in three distinct areas: economic contribution, return on investment (ROI) analysis, and socioeconomic benefits.

Dr. Curtis Pozniak (PhD), the director of the CDC, said the results of the report were “impressive and invigorating” for the entire CDC team.

“It's humbling to work with such a fantastic group of scientists that believe in the mission and vision of the centre, in terms of commitment to advancing science and delivering that innovation through the release of productive field-ready cultivars that are adopted by growers,” he said.

[USask researcher celebrated for work in complex water-human systems](#)

Dr. Saman Razavi (PhD) received the Walter L. Huber Civil Engineering Research Prize from the American Society of Civil Engineers (ASCE) for bridging hydrology, data sciences and socioeconomics.

Razavi is an associate professor in both the School of Environment and Sustainability (SENS) and the Department of Civil, Geological and Environmental Engineering in the College of Engineering at USask. He develops computer models that blend physical and socioeconomic principles, data analytics and AI algorithms to study complex systems including the interactions between humans and water in processes like drought, irrigation and flooding. These models simulate real-world scenarios of climate and policy change, helping to predict and manage potential, often unexpected, situations.



[New USask-RUH cardiology pilot project saving time and muscle](#)



As part of a clinical research pilot project underway at USask and Royal University Hospital (RUH), cardiologists can now remotely diagnose a heart attack and dispatch their team straight to the Cardiac Catheterization (Cath) lab at the hospital.

This change in procedure is already shaving significant time off what healthcare professionals refer to as “door to balloon” time, or how fast a patient can be treated during an ST elevation myocardial infarction (STEMI), the medical term for a heart attack in which the coronary artery is completely blocked.

“Time is muscle” in these situations, according to **Dr. Jay Shavadia (MD)**, an associate professor of cardiology in the Department of Medicine in the USask College of Medicine.

Every minute that passes during a heart attack can cause further tissue die-off, which does not recover.

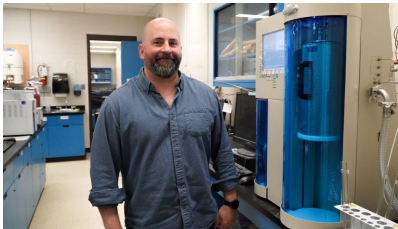
Looking for more research stories? [Visit Discovery Digest online.](#)

[Siemens gift helps USask develop local talent in electronic chip design](#)

USask has received a significant gift from Siemens to create a tenured professor chair in the College of Engineering for research and teaching that develops local talent in the large, fast-growing industry of electronic design automation (EDA).

EDA software is used to create electronic chips, which are used in almost all modern electronic devices.

“USask Engineering welcomes the gift, as it supports the college’s commitment to equipping its graduates with the skills needed by industry so they can be what the world needs,” said **Dr. Carey Simonson (PhD)**, interim dean of the College of Engineering.



[USask researcher exploring sustainable solutions for wastewater](#)

With both increasing water demands and strained capacity to handle wastewater, there is a growing need to explore water reuse and recycling in Canadian cities.

Dr. Kerry McPhedran (PhD), USask's Centennial Enhancement Chair in Water Stewardship for Indigenous Communities, and professor in Civil, Geological and Environmental Engineering in the College of Engineering, is exploring community concerns around reusing municipal wastewater and stormwater for personal and industrial use.

Currently, cities use a lot of energy to collect both wastewater and stormwater. McPhedran said energy could be channeled into recycling the collected wastewater instead of simply storing and releasing it.

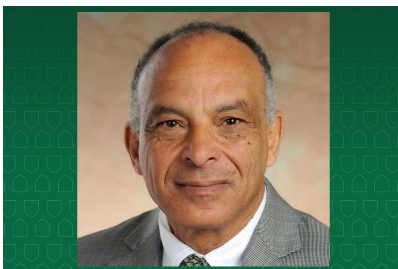
His project recently received funding through the NSERC Discovery Grant program.

[Farm Credit Canada announces \\$5 million investment into GIFS at USask to accelerate breeding and innovation for Canadian agriculture](#)

Canadian agriculture is set to thrive further with a \$5 million investment from Farm Credit Canada (FCC) into the accelerated breeding program of the Global Institute for Food Security (GIFS) at USask.

The newly named FCC Accelerated Breeding Program at GIFS will drive sustainable advancements in agricultural productivity across Canada.

Accelerated breeding combines technologies such as genomic selection, speed breeding, bioinformatics and computer simulation to increase the rate of genetic gain for crop and livestock breeding programs, delivering new products into the hands of producers two to three years faster and improving agronomics, quality and disease resistant traits.



[New chair for the Fedoruk Centre at USask](#)

Saskatchewan nuclear engineering professor **Dr. Esam Hussein (PhD)** is the new chair of the board for the Sylvia Fedoruk Canadian Centre for Nuclear Innovation (Fedoruk Centre) at USask.

Hussein is a professional engineer, a fellow of the Canadian Society of Senior Engineers, a professor emeritus of engineering and applied science, and an adjunct professor in physics at the University of Regina. He is also a professor emeritus of mechanical engineering at the University of New

Brunswick (UNB).

“Dr. Hussein’s past experience in the nuclear industry and educating young nuclear engineers is beautifully matched to the Fedoruk Centre’s intention to devote more attention towards attracting new academic leaders to

build the Saskatchewan workforce for innovation and safe, reliable operation of nuclear technologies in decades to come,” said Fedoruk Centre Executive Director **John Root**.

USask professor emeritus to be inducted into Canadian Agricultural Hall of Fame

Dr. Bruce Coulman (PhD), a USask alumnus and professor emeritus in the College of Agriculture and Bioresources will be inducted into the Canadian Agricultural Hall of Fame for his significant contribution to Canadian agriculture.



“We are proud of Dr. Coulman’s many outstanding contributions to the sustainability and growth of Saskatchewan and Canadian agriculture,” said

Dr. Angela Bedard-Haughn (PhD), dean of the College of Agriculture and Bioresources. “His forage varieties will continue to benefit livestock and forage producers, the agriculture sector and the environment for many decades to come.”

Coulman’s legacy includes the development of 24 new forage crop varieties in nine different species, some of which were the first of their kind. These varieties have been widely adopted by livestock producers as they have helped to address major constraints – like feed quality – faced by producers.

USask researchers part of discovery of three extinct walnuts in Arctic



An international research project including USask experts discovered three new extinct walnut species in an unlikely place – the mummified remains of forests in the Canadian Arctic.

Two USask scientists – **Dr. James Basinger (PhD)**, professor emeritus of geological sciences in USask’s College of Arts and Science and USask alum **Robin Wilson** – were co-authors on the recent study highlighting the discovery of three new species of extinct, fossilized walnuts in Canada’s

far north.

The fossilized walnuts were discovered on the northern Canadian island of Axel Heiberg, which was covered with rainforest 45 million years ago.

New Zealand artist/scholar to lead USask School for the Arts



New dean brings a people focus to USask’s College of Medicine



[USask Kinesiology welcomes new dean](#)

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

In The Conversation...

[How medical schools can be more accountable to society through community connections](#)

By: Dr. Harini Aiyer (PhD), USask College of Dentistry

In Canada, undergraduate medical programs must currently demonstrate social accountability to receive accreditation. Our recent research has examined how medical schools can design channels through which students and faculty can relay the priorities and needs of communities back to medical schools.



[Saskatchewan's new oil and gas high school courses are out of step with global climate action](#)

By: Dr. Marcia McKenzie (PhD), USask College of Education, Dr. Emily Eaton (PhD), University of Regina, Dr. Kristen Hargis (PhD), USask College of Education

Saskatchewan Premier Scott Moe recently announced new oil and gas courses that will be offered to grade 11 and 12 students in the province to prepare students to work in those industries.

Instead of training high school students for an industry that the world is transitioning away from, we need education on energy alternatives and ways of addressing climate change impacts.

Upcoming events

Have a research event to share? Email research.communications@usask.ca with the subject line "Discovery Digest - Event" and let us know!

NEW - Information for researchers

USask renews customs broker agreement

USask has extended its partnership with Thompson, Ahern & Co Ltd (TACO), to serve as the university's customs broker. This agreement will run until 2029, with an option to extend the contract until 2034. This renewed contract is a part of the Saskatchewan Advanced Education Collaborative (SAEC), a joint initiative where USask, Saskatchewan Polytech, and the University of Regina combined to maximize their collective purchasing power. USask employees who have goods imported/shipped to Canada where USask is the importer or record should follow the steps laid out in the Shipping/Importing Goods to Canada [Knowledge Base article](#). In particular, users should fill out and submit the [Customs Clearance Form](#) to TACO. This will help ensure that shipments are not delayed at the border for clearance information, which is vital for perishable shipments.

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 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.**

In the news

- July 12 – CBC News, Global News – [Sask. puts moratorium on wild boar farms, but expert says it might already be too late](#)
- July 10 – Regina Leader-Post, Saskatoon StarPhoenix – [Major Western Canada wholesaler FCL still dealing with cyberattack](#)
- July 9 – CBC News – [This archaeological site could prove humans lived in northern Sask. earlier than we thought](#)
- July 8 – Reuters, Yahoo! News – [Bird flu strain in US cows shows minimal air spread in ferret study](#)
- July 5 – CBC Radio – [U of S researcher part of discovery of three new but long-extinct walnuts in Arctic](#)
- July 5 – Canadian Geographic Online – [Unpacking the mystery of grizzly bears in Wapusk National Park](#)
- July 4 – CBC News – [Many Canadians in their 20s and 30s are delaying having kids — and some say high rent is a factor](#)
- July 2 – Yahoo! Life – [A golden retriever provided comfort and calm to gymnasts at the Olympic trials. How pet therapy works.](#)
- July 1 – MSN News, CBC News – [Flies as pet food? Sask. team wants to boost insect's potential as sustainable protein source](#)
- June 17 – CBC News, Global News, MSN News – [USask lands \\$600K from province for NASA environmental science mission](#)
- June 17 – The Western Producer – [Researcher targets fibre digestibility for forage](#)

Banner image photo credit: **Family of Fungi** - by **Olivia Yurach**, MSc student, Department of Soil Science, College of Agriculture and Bioresources

Images of Research 2024 - *Winner, From the Field*

In northern Saskatchewan, ecological restoration research is seeking to understand recovery post-disturbance. These mushrooms were spotted while collecting blueberry seeds for propagation so we can study the role moss and blueberries have on boreal soil systems.



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

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