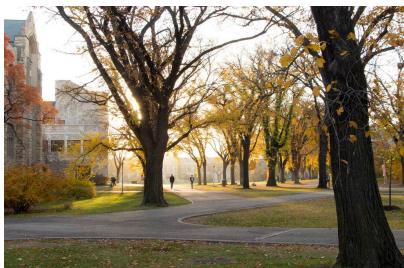




November 2023 - Issue 70

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 moving up in international subject rankings](#)

The University of Saskatchewan (USask) has placed among the best universities in the world in two newly released international subject rankings.

After increasing its overall ranking in the 2023 Times Higher Education (THE) and ShanghaiRanking university tier list to the 351-400 tier and the 301-400 tier respectively, USask has also made strides in the ranking of key individual subjects.

[USask researcher explores value of service dogs for veterans](#)

Dr. Linzi Williamson (PhD) knows the benefits service dogs can have for veterans – and she hopes she can show the public those benefits, too.

Williamson, an assistant professor in the Department of Psychology and Health Studies in the College of Arts and Science at USask, received more than \$340,000 from the Canadian Institutes of Health Research (CIHR) for her project titled, “Supporting Canadian Veterans with Service Dogs.” The funding is part of the Patient-



Oriented Research – Transition to Leadership stream designed to support the careers of the “next generation” of patient-oriented researchers.



[USask’s VIDO signs agreement with Pirbright to advance vaccine manufacturing](#)

USask’s Vaccine and Infectious Disease Organization (VIDO) has signed a memorandum of understanding (MOU) with the Centre for Veterinary Vaccine Innovation and Manufacturing (CVIM) at The Pirbright Institute (Pirbright).

The MOU allows for expanded collaborations and training around vaccine manufacturing to drive innovations for animal health.

“Collaborating with the CVIM is a vital step towards establishing a global network of key groups with the capacity to drive discovery innovations to commercial readiness,” said VIDO Director and CEO, **Dr. Volker Gerdts (PhD)**. “This MOU reinforces VIDO’s commitment to addressing infectious diseases of global importance and foster vaccine commercialization as Canada’s Centre for Pandemic Research.”

[Talking taxes: New USask-City of Saskatoon research project](#)

USask researchers are working with City of Saskatoon officials to identify potential avenues for property tax reform, as well as developing strategies to communicate these changes to city residents.



Mike Jordan, chief of public policy and government relations for the city and **Dr. Yang Yang (PhD)**, an assistant professor with USask’s Johnson Shoyama Graduate School of Public Policy (JSGS), are receiving support for this research from the Research Junction initiative, which provides funding to joint City of Saskatoon-USask projects aimed at bettering the lives of Saskatoon residents.



[GIFS laboratory at USask brings latest sequencing technology to Western Canada](#)

World-class talent and sequencing technology at the Global Institute for Food Security (GIFS) at USask is enabling researchers in agriculture and other disciplines to more quickly — and cost effectively — explore the genomes of plants, animals, and microbes.

GIFS’ Omics and Precision Agriculture Laboratory (OPAL) is the first lab in Western Canada to

offer genomics analyses services using PacBio's new Revo DNA sequencer, the highest-capacity instrument the manufacturer has produced.

"At GIFS, we are committed to accelerating research, development, and commercialization within agri-food and providing impactful services that enhance the entire innovation ecosystem. Our investments in PacBio's Revo system and other advanced sequencing instruments are bringing leading-edge technologies to Saskatchewan and Western Canada and supporting our research community's position at the forefront of discovery," said **Steve Webb**, chief executive officer of GIFS.

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

[AgBio graduate explores soil health and legume biodiversity](#)

Healthy soil is more resilience to drought, increases nutritional density of food, fosters biodiversity, absorbs and filters more water, and helps fight climate change by absorbing carbon from the atmosphere. Since soil is a non-renewable resource, it is vital to increase soil health around the world.



For USask student **Warren McAuley** with the College of Agriculture and Bioresources, it is important to research practical ways producers can improve soil health via the crops they plant.

In May 2023, he successfully defended his master's thesis, Effect of Intercropping with Faba Bean on Land Equivalency Ratio and Soil Health in Saskatchewan. McAuley was co-supervised by **Dr. Maryse Bourgault (PhD)** and **Dr. Kate Congreves (PhD)**.



[USask's Master of Indigenous Land-Based Education program celebrates first graduates](#)

Launched in 2022 by the College of Education, the Master of Indigenous Land-based Education (MILBE) degree is unique in North America and provides educators with a knowledge base in Indigenous teachings, restoring connections to the land which have been severed through colonization.

Developed by **Dr. Alex Wilson (EdD)**, member of Opaskwayak Cree Nation and professor in the Department of Educational Foundations, the program is rooted in Indigenous worldview

and frameworks, taught primarily by Indigenous faculty, and offered in partnership with Indigenous communities.

The program celebrated its first graduates this past week. Sixteen graduates received their diplomas from USask at the Fall Convocation on Wednesday, November 8 at Merlis Belsher Place.

[‘Other ways of knowing and being’ that enrich our lives](#)

When Xavier met Anna-Belle, his posture suggested he wasn’t ready for a relationship. His eyes obscured by sunglasses, his arms crossed, his skin hidden under extensive tattoos: all suggested he was unapproachable. Yet Anna-Belle was undeterred, and after a day and a half, Xavier (not his real name) considered her family.



It may sound like an unlikely bond – between an inmate serving time in a Canadian prison and an exuberant bulldog – but **Dr. Colleen Dell** in USask’s College of Arts and Science has seen such scenarios repeated over and over again in a number of settings, from prisons and addiction treatment centres to psychiatric institutions, emergency wards and hospices.

As a leading Canadian public sociologist, animal-assisted intervention practitioner and professor in One Health and Wellness at the University of Saskatchewan, Dr. Dell conducts research aimed at advancing our understanding of the human-animal connection.



[USask, City of Saskatoon explore merits of sustainable transportation strategies](#)

A joint project co-led by USask researchers and City of Saskatoon officials will use data-driven assessment tools to create “healthy, sustainable transportation” strategies in Saskatoon.

Dr. Daniel Fuller (PhD), an associate professor in Community Health and Epidemiology with the College of Medicine, and his team are working with **Chris Schulz**, the manager of the City of Saskatoon’s Planning Project Services, on this research. Their work is aimed at developing evidence-informed methods of assessing sustainable transportation options to improve health and address climate change in an economically beneficial manner.

[USask ‘clones’ researcher wins international award](#)

A USask computer scientist has earned another honour for his influential work in the rising field of software clone research.



Dr. Chanchal Roy (PhD), a professor in the Department of Computer Science in the College of Arts and Science, was given the Clones Lifetime Achievement Award at the 17th International Workshop on Software Clones in Bogota, Colombia, on Oct. 1. He is only the second person to receive the award.

Roy was recognized for his research into the detection and management of software clones: duplicated fragments of code in software systems that result in increased errors and maintenance costs.



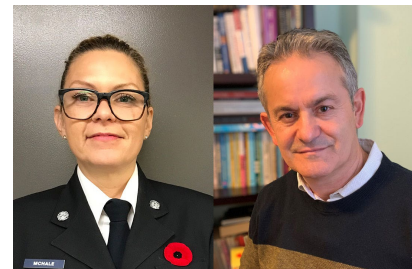
[The toxin detectives at the University of Saskatchewan](#)

When coho salmon in the Pacific Northwest came floating downstream belly up after waiting for rainfall that would enable them to swim to their spawning grounds, scientists were puzzled. The cause for this mass mortality event was not immediately obvious – and the resulting uncertainty hampered mitigation efforts.

Similar to a good detective story, a decade-long search for answers started with casting a wide net for potential suspects – and ended with the positive ID of the culprit: a chemical called 6PPD, says **Dr. Markus Brinkmann (PhD)**, associate professor in the School of Environment and Sustainability and director of the Toxicology Centre at USask, whose team are examining the toxicological workings and impacts of 6PPD.

[USask, City of Saskatoon partner to fight housing insecurity](#)

A joint project between USask researchers and members of the Saskatoon Fire Department is looking to develop top-down solutions to issues of housing insecurity and homelessness for Saskatoon residents.



Dr. Nazmi Sari (PhD), the department head of Economics in USask's College of Arts and Science, is working with **Melissa McHale** from the Saskatoon Fire Department's Fire Bylaw Enforcement division on this project. Their aim is to learn more about any gaps in social services provided and the bylaws enacted by the city in order to create more preventative systems to fight housing insecurity and homelessness in the future.



[Plaque Unveiling at Herzberg Experimental Hall](#)

On Nov. 1 at an invitation-only event at the Canadian Light Source (CLS) in honour of the naming of the Herzberg Experimental Hall, a plaque was unveiled honouring Dr. Gerhard Herzeberg.

The plaque reads as follows:

Dr. Herzberg was a world-renowned expert in spectroscopic studies of molecular structures in nature, including molecules in planetary atmospheres, comets and interstellar space. From 1935–45, Dr. Herzberg conducted his research at the University of Saskatchewan, building a legacy that would eventually lead to the creation of the Canadian Light Source. The CLS experimental hall was renamed in October 2021 in recognition of the 50th anniversary of Dr. Herzberg’s 1971 Nobel Prize in Chemistry.



[USask scientists aim to determine appropriate sheep vaccination protocols](#)



[USask President’s Medal winner grateful for ‘chance to learn’](#)



[Biology professor to receive USask Distinguished Teacher Award](#)



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.



ICYMI: [The 2023 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...

[Climate change is affecting bears, and humans need to learn more to avoid conflicts](#)

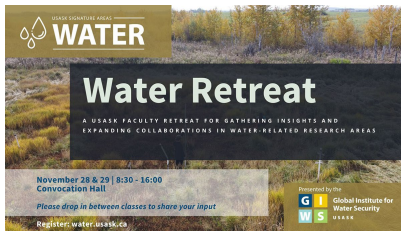
By Dr. Douglas Clark (PhD), USask School of Environment and Sustainability

A new perspective is needed to understand how bears and the ecosystems that support them are affected by climate change, and how those stresses, in turn, might create novel risks for people. Rare situations such as predatory attacks remain poorly understood, but are becoming common enough to require precautions.



Upcoming events

Faculty Water Retreat: Re-Visiting the Foundations of GIWS



This USask faculty retreat for water research aims to gather insights and expand collaborations across campus regarding strategic direction, long-term sustainability, and enhancing Global Institute for Water Security (GIWS) membership.

This retreat is intended for USask faculty working in water research areas or looking to extend their research into water-related areas. Further consultations will take place for students, staff and technicians later in the year.

Please note that this will be an in-person event only. The deadline to register is Nov. 21, 2023.

- [Faculty Water Retreat: Re-Visiting the Foundations of GIWS – Tuesday, Nov. 28, 2023](#)

Campus Conversations – November 2023

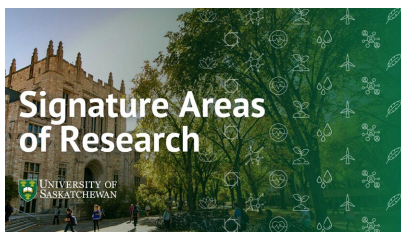
Mark your calendar for the next 'Campus Conversations' event with Vice-President Research Baljit Singh on Wednesday, November 29th from 12:00 - 12:45pm in Administration Building C280.



The 'Campus Conversations' events bring together members of the USask community for constructive and engaged discussions about research, scholarly and artistic works on campus. Senior administrators, faculty, staff, students, post-doctoral fellows and others are encouraged to attend.

- Campus Conversations – Wednesday, Nov. 29, 12:00 p.m., Administration Building Room C280

NEW - Information for researchers



Signature Areas of Research help USask #BeWhatTheWorldNeeds

Through nine defined areas of research, scholarly and artistic work, USask is embracing unprecedented capacity, investment, history and a sense of place to drive world-leading innovations and create real, formidable change.

The Signature Areas of Research bring USask high-profile recognition and position us among the most distinguished universities in Canada and among the very best in the world. Work within these Signature Areas draws on the strengths of multiple disciplines and leverages USask infrastructure to make impacts at home and around the globe.

The Sginature Areas of Research website can be accessed [here](#).

Living Skies Postdoctoral website is now live!

The Living Skies Postdoctoral Fellows (PDF) program was created to support the recruitment of outstanding postdoctoral fellows to our university and further grow our research, scholarly and artistic enterprise. This unique program is meant to foster interdisciplinary collaborations by joining cohorts of PDFs with multiple faculty members. The PDFs will not only foster interdisciplinarity on campus, but will also gain from interactions with more than one mentor and with their PDF peers.

This project has been made possible by the financial support from the Government of Saskatchewan through the USask Horizons Fund and significant contribution from the Vaccine and Infectious Disease Organization (VIDO).

To learn more about our current Living Skies Fellows make sure to review their projects on [our new website](#).



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

- Nov. 14 – Saskatoon StarPhoenix, Regina Leader-Post – [Sask research finds vaccine mandates' effectiveness varies by age](#)
- Nov. 8 – CBC News – [How northern Sask. communities plagued by high crime rates are trying to stifle the violence](#)
- Nov. 7 – CBC Radio One – [New research on vaccine passports and vaccination rates](#)
- Nov. 2 – CBC Radio One – [New research out of Saskatchewan gives scientists some ideas why women suffer from long COVID more often than men](#)
- Oct. 31 – CBC News – [Manitobans asked to be on lookout for elusive wild pig](#)
- Oct. 29 – Canadian Press, MSN News – [Doctors say we need the updated COVID-19 shot. So why haven't we heard more about it?](#)

- Oct. 28 – CBC News – [Rabies hitched a ride to Canada in dogs flown from Iran. Scientists caught the spread just in time](#)
 - Oct. 27 – The Toronto Star – ['Continued resistance': Saskatchewan government won't fund supervised consumption](#)
 - Oct. 24 – Global News, The Canadian Press – [Doctors should normalize questions about drinking habits, guideline says](#)
 - Oct. 17 – Forbes – [What To Know About Europe's New 'Glitter Ban'—As EU Cracks Down On Plastic](#)
 - Oct. 17 – CBC News, Yahoo! News – [Yukon University announces new research chair on northern governance](#)
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Banner image photo credit: **What does the fox say?** - by **Dr. Kayla Buhler (PhD)**, recent alumna in Veterinary Microbiology

Images of Research 2023 - *Runner-up, Research in Action*

Many of you have heard of this song that overtook the internet almost a decade ago. Most of my research focuses on wildlife diseases in Nunavut, but I noticed some very interesting sounds while working on arctic fox dens. In general, dogs and other canids with strong family units are thought to have more complex vocalization with lots of quiet sounds for close range communication, while solitary foxes should have a simple vocal repertoire with loud noises for long distance communication. However, video recordings on dens revealed many unique sounds that foxes make while rearing their young, including a range of low frequency noises between parents and pups. So, what does the fox say? The truth is - a lot!

Funders: NSERC, ArcticNet, Weston Family Foundation, Earth Rangers



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