Discovery Digest

BE WHAT THE WORLD NEEDS

April 2026 - Issue 99

Discovery Digest **is a glimpse into how University of Saskatchewan research, scholarly and artistic works are 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

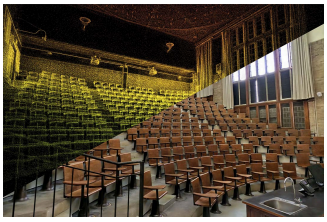
USask acquires quantum computer in huge step for research and innovation

The University of Saskatchewan (USask) will soon be home to the first university owned-and-operated, vendor-supported, full-stack, open-architecture quantum computer in Canada, positioning the university as a unique hub for quantum innovation.

The new technology will enhance quantum computing application development and cutting-edge research collaborations in disciplines including human health research, energy and agriculture.

Dr. Steven Rayan (PhD), the director of USask's Centre for Quantum Topology and Its Applications (quanTA) and a professor of mathematics and statistics at USask's College of Arts and Science, is the principal investigator on the project.

Celebrating the winners of USask's 12th annual Images of Research contest

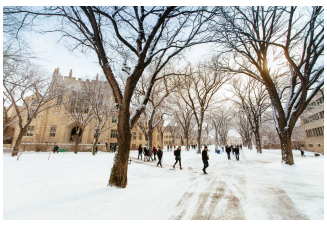


From field work in the Canadian Arctic to the 3D map of one of USask's most iconic lecture theatres, this year's Images of Research contest once again showcases the rich research, scholarly and artistic work of USask staff, faculty, students, and alumni.

With nearly 110 entries across five categories, the following eight images took home this year's top spots. Seven of these images were selected by judges on multi-disciplinary panels while the Viewers' Choice category was decided by more than 1,500 online votes.

The grand prize image was submitted by **Dr. Ian Stavness (PhD)**, the head of the Department of Computer Science in the College of Arts and Science.

USask earns high marks in world university subject rankings



USask was listed among the top 50 universities in the world for veterinary science in the QS World University Rankings by Subject for 2026, earning a spot at 49th overall. In addition, USask ranked 54th in the world in agriculture and forestry, both increases that speak to USask's strong research and scholarly impact in those subject areas.

USask also climbed the rankings in four other subject areas: geophysics, chemistry, electrical and electronic engineering, as well as physics and astronomy.

USask placed in the top 300 institutions in the world in the subject areas of veterinary science, agriculture and forestry, environmental sciences (151-200 tier), geophysics (151-200 tier), geology (201-250 tier) and Earth and marine sciences (201-275 tier).

USask rehabilitation research helping MS patients maximize their goals

For Canadians diagnosed with neurodegenerative diseases like multiple sclerosis (MS), losing the ability to do the things they love is a real fear. And while breakthroughs in drug treatments have helped slow the progression of MS, there is still more to be done to ensure that people affected are able to keep living active and engaged lives.

USask researcher **Dr. Sarah Donkers (PhD)**, an associate professor in the School of Rehabilitation Science, believes rehabilitation is a crucial component of MS care that gives people this opportunity, but it is often overlooked.

Donkers and her team are looking to see how they can maximize the outcomes of rehabilitation for people with MS who are in the progressive stage of the disease. For the new study, the team is looking at the impacts of brain priming on training efforts and outcomes. They will be conducting a large-scale multi-site international research trial.

USask researchers pioneer blood test for rapid Parkinson's diagnosis

A new blood test created by USask researchers could mean faster diagnosis of the most devastating and aggressive types of Parkinson's disease.

Dr. Chris Phenix (PhD), an associate professor of chemistry in USask's College of Arts and Science, said rapid detection of aggressive Parkinson's could lead to better outcomes for patients and medical researchers.

This innovative research project received funding from the Saskatchewan Health Research Foundation (SHRF) Solutions Program, which provides support to impactful research addressing timely health needs in Saskatchewan.

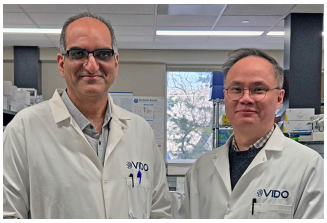
Looking for more research stories? Visit Discovery Digest online.

USask research explores impacts of increasing wildfires on biodiversity

Dr. Aaron Bell (PhD), a USask alumnus, closely studied the biodiversity of birds, plants, and beetles on a series of lake islands in Lac la Ronge Provincial Park. These island ecosystems have burned at various times throughout the last 230 years, providing unique insights into how changing wildfire patterns are impacting biodiversity – or the variety of living things in a given area – on the nearby mainland.

Bell recently completed his PhD in biology in USask's College of Arts and Science under the supervision of adjunct professor **Dr. Iain Phillips (PhD)** and supported by **Dr. David Wardle (PhD)** at Umeå University in Sweden.

In his recently published paper in Ecological Applications developed from his PhD research, Bell shared how the characteristics of wildfires help promote biodiversity by creating different habitats for a variety of species post-burn.



VIDO: Advancing tuberculosis research for a healthier world

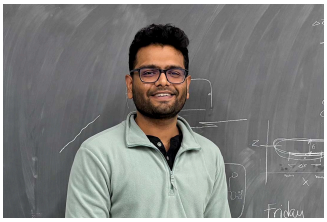
Scientists at the Vaccine and Infectious Disease Organization (VIDO) based at USask are tackling one of humanity's oldest and most persistent infectious diseases: tuberculosis (TB).

According to the World Health Organization (WHO), an estimated 1.3 million people die each year from TB globally and more than 10 million people develop active TB annually, placing enormous strain on families, health systems, and economies. Recently, it has surpassed COVID-19 as the leading infectious disease killer.

"Our ultimate goal is to develop vaccines as well as anti-TB drugs that are both more effective and compatible with existing treatments and diagnostic systems," said VIDO scientist **Dr. Jeffrey Chen (PhD)**. "By identifying new targets in the TB bacterium, we are creating opportunities to design novel vaccines and drugs that can strengthen global TB control efforts."

Young Innovators

Young Innovators: USask researcher discovering frost-free heating solutions



While high efficiency furnaces may be better for the environment than their predecessors, they still burn fossil fuels and fall short of other technologies like air-source heat pumps (ASHPs). One graduate student at USask is working with his team to help develop ASHPs that can withstand the severe weather and low temperatures of even the harshest Canadian winters.

Siddhartha Gollamudi, a PhD student in the College of Engineering, is at the helm of the computational programming for a project to explore frost-free ASHPs. Using computational models, he has run countless scenarios to find ways to prevent heat pumps from freezing in cold weather.

Gollamudi works with supervisor **Dr. Carey Simonson (PhD)** in the College of Engineering on this research.

Young Innovators: Exploring the health and wellness of Indigenous leaders

USask graduate student **Sheila Naytowhow** was raised by First Nation elected officials and saw first-hand how their leadership roles impact their health.

With a background in business and psychology — Naytowhow received her bachelor's degree in psychology from the College of Arts and Science and a graduate certificate in leadership from Edwards School of Business at USask— she wants to understand how First Nation elected officials experience and derive meaning from their leadership roles. As a master's student in USask's College of Medicine, supervised by **Dr. Shelley Kirychuk (PhD)**, Naytowhow is particularly interested in how these experiences impact their overall wellbeing, including their physical, mental, emotional and spiritual health, both positively and negatively.

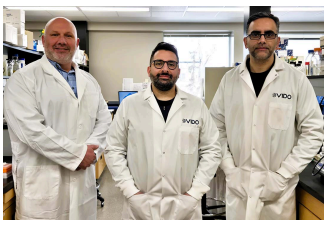
Young Innovators: USask student uncovers hidden risk in cleaning products

USask PhD Candidate **Pedro A. F. Souza** is investigating some unexpected impacts of using common household cleaners on indoor air quality. Specifically, he is looking to understand how certain cleaning products and conditions compromise our indoor air quality.

Souza is part of the Kahan Laboratory in the Department of Chemistry. Led by **Dr. Tara Kahan (PhD)**, the team studies chemical reactions in the environment and atmosphere, using specialized tools to understand and predict the reactions happening in parts of the environment like ice, oceans and indoor air.

Souza is particularly interested in the use of germicidal ultraviolet (GUV) light and its use alongside cleaning products containing bleach. GUV lights have been used for sanitation in industrial and institutional settings like hospitals for decades but became popular and more accessible to individuals during the COVID-19 pandemic. Anyone can purchase a GUV light online and use it as part of their cleaning routine.

Building Canada's vaccine expertise: From the classroom to the front lines



[A closer look at fluoride levels in Saskatoon's water supply]

[Prairie Swine Centre celebrates 35 years of driving innovation]

USask Signature Series Podcast - Season 2

The USask Signature Series Podcast is an exploration and celebration of the interesting and the innovative, the fun and the fantastic, the cutting-edge and creative of USask research.

You'll hear from USask experts across a variety of disciplines and research areas as they tackle the questions and opportunities the world needs today.

Check out the podcast on Spotify, Apple Podcasts or wherever you get your podcasts!

Here are the newest episodes of the USask Signature Series:

- S2E10 – What should your children be eating for lunch?
- S2E09 – How are we encouraging young scientists? (International Day of Women and Girls in Science special!)
- S2E08 – How does a curling rock curl?

If you have an idea for an episode of the podcast, please email research.communications@usask.ca.

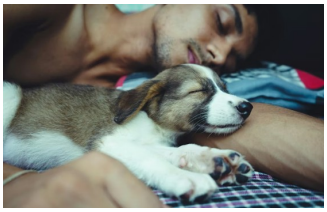
Stay connected with USask research news

Make sure to follow USask Research on Instagram at @usaskresearch, and on LinkedIn and Twitter/X to stay in-the-know, with exciting research news delivered right

to your newsfeed. Don't forget to also follow **@VPR_USask** and **@USask** on Twitter/X 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.

In *The Conversation*



Do you love sleeping with your pet? Science reveals there's a tricky trade-off

By: **Dr. Renata Roma (PhD)**, PAWsitive Connectons Lab, USask College of Arts and Science

For some pet guardians, their pets are present in their lives from the moment they wake up to the moment they go to bed.

The benefits of this bond are supported by science. Research shows daily interactions with pets can enhance well-being.

But research also suggests any potential benefits to sleeping next to a beloved pet aren't straightforward: it can feel comforting even as it may quietly disrupt sleep quality.

From 'sustainable' to 'regenerative' agriculture: What's in a name?

By: **Dr. Kate Congreves (PhD)**, USask College of Agriculture and Bioresources

Sustainability has become something of a buzzword over the years. From the clothes we wear and the energy that powers our homes to the way we live our lives, the idea of sustainable production and consumption has become commonplace.

That is also true about the way we grow and consume food. Recently, however, another term has come to the fore: regenerative agriculture. It sounds attractive, somehow better than sustainable, but what does it really mean?

Regenerative agriculture began as a grassroots approach to farming led by farmers. It has been described in many different ways, but a common thread is a set of values.

Being involved in *The Conversation* is a unique and renowned avenue for sharing research and study with both colleagues and the public. We strongly encourage researchers to explore *The Conversation* as a way to share and distribute their expertise! Feel free to reach out to research.communications@usask.ca if you have questions.

Upcoming events

Campus Conversations – Alix Hayden

Join Alix Hayden, Director, Innovation Mobilization and Partnerships on Tuesday, May 5 for the next Campus Conversations event.

The event fosters onstructive discussions with members of the campus community and OVPR leadership to support research, scholarly and artistic works (RSAW) at USask.

All faculty, staff, postdoctoral fellows and students are welcome. No registration required.

- Campus Conversations – Tuesday, May 5, 12-12:45pm – Administration Building C280

UPlan 2035 Campus Conversations – Join the last UPlan Campus Conversation!

USask is undertaking a process to **develop a new strategic plan**—one that will build on our successes and help shape a clear, aligned, and revitalized direction for the next decade. To do this in a good way, we are listening to faculty, staff, students, and partners across community, government, and industry. With our last UPlan Campus Conversation sessions happening on April 16, now is the time to share your perspective. Coffee and snacks will be provided. Register today to participate. Click here for **more information**.

- UPlan Campus Conversation – Thursday, April 16, 1:30-4pm – AGRI2C61, Agriculture Building

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EDI Discussion Series: Boys and educational attainment: Implications for the future of the Canadian Workforce

This lecture will examine the growing educational gap affecting boys in Canada, with many falling behind academically and gravitating toward traditional gender roles. We'll explore how this trend may impact the future workforce and discuss the implications for equity, economic growth, and the need for targeted policy and educational responses. Register at the **link here**.

- EDI Discussion Series – Tuesday, April 21, 11am – 12:30pm – Virtual event

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USask Assessment Conference focuses on assessment redesign

Assessment practices at USask continue to evolve across courses and programs, including in response to artificial intelligence, academic integrity, and clarity for students. The USask Assessment Conference brings academic leaders, educators, and teaching support staff together to explore how assessment is being approached in practice across disciplines and roles, with a strong focus on assessment redesign. The conference includes a 90-minute live online keynote on April 29 and a full-day, in-person conference on April 30 with discussion-based sessions led by

the 2026 USask Assessment Champions. Registration is free, and lunch and breaks are provided for the in-person day. **Register now**.

- USask Assessment Conference – April 29-30 – virtual and in-person

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RSC College Webinar – Critical Minerals, Critical Responsibilities

The Royal Society of Canada (RSC) College Webinar on "Critical Minerals, Critical Responsibilities" brings together leading voices from research and public policy to explore how sustainable and equitable practices can be advanced within the mining sector.

This webinar will feature Dr. Nadia Mykytczuk (PhD), President and CEO of MIRARCO (Mining Innovation, Rehabilitation and Applied Research Corporation), Executive director of the Goodman School of Mines, Laurentian University, and a member of the RSC College, whose work focuses on innovative scientific approaches to mine waste valorization and environmental remediation, and Dr. Ken Coates (PhD), Professor Emeritus, President of Coates Holroyd Consulting, and Canada Research Chair in Regional Innovation, known for his scholarship on Indigenous rights, northern development and resource governance. Register at the **link here**.

- Critical Minerals, Critical Responsibilities – Thursday, May 7, 12pm ET – Virtual event

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Centre for Forensic Behavioural Science and Justice Studies (CFBSJS) Public Form 2026 and Strategic Plan Launch

The Public Forum will commence with the official launch of the CFBSJS Strategic Plan 2026–2029, followed by two keynote sessions on Homelessness and Inadequate Housing in Saskatoon.

- Session 1: Inadequate Housing and Homelessness in Saskatoon: A Look into the Saskatoon Fire Department's Response.
- Session 2: Homelessness in Mid-Sized Canadian Cities

This event will be perfect for university students, staff, and faculty; federal and provincial government representatives; community-based organizations; and community members!

The event will take place on Friday, April 17, 2026, at ARTS 241. Admission is free, so secure your spot by emailing us at **forensic.centre@usask.ca**.

- Public Forum and Strategic Plan Launch – April 17, 1-4pm – ARTS 241

Save the Date: People Around the World 2026 International Congress

Responsible minerals, sustainable energy and community engagement are important areas shaping Canada's next chapter. Don't miss the opportunity to join the conversation!

We invite you to save the date and join us for the People Around the World (PAW) International Congress taking place at the University of Saskatchewan's Saskatoon campus.

Mark your calendars for October 20-22, 2026, for this must-attend event.

You can find more information about the international event at the **link here**.

- PAW 2026 – Oct. 20-22, 2026 – USask campus

21st Biennial Symposium on Violence and Aggression

The 21st Violence and Aggression Symposium on May 25 and 26 will focus on "Advancing Responses to Violence" and will feature four plenary sessions and 12 concurrent sessions, involving more than 20 local and national presenters. Presenters will share their knowledge and experience on an array of topics, including:

- Frontline responses to violence
- Indigenization of justice responses
- Current issues in violence

Targeted to frontline workers, as well as clinicians and other professionals and administrators in criminal justice and forensic mental health, the Symposium translates research and theory into practice and provides an opportunity to highlight excellence and innovation within a variety of correctional and criminal justice environments.

Click the **link here** to register and see early bird discounts.

- 21st Biennial Symposium on Violence and Aggression – May 25 and 26, 2026 – Multiple rooms across USask campus

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Have any upcoming research events?

Please email research.communications@usask.ca with your event title, information and any links links for registration to include in the Discovery Digest.

Information and Community for Researchers

Open Access Publishing Discounts Available for USask Authors

Did you know that the University Library has agreements with many publishers to provide USask corresponding authors with full or partial discounts on their open access (OA) article processing charges (APCs)?

See the full list of publisher agreements on **this page** of the library's Open Access guide. Or search for your favourite journal on our **Journal Search Tool** to see if it is included in one of these agreements.

And don't forget, you can still publish in a conventional closed journal and make a copy of your article OA in an open online repository. This is free and legal and in compliance with the Tri-Agency OA Policy. You can do this through USask's repository **HARVEST**. We also have a free **HARVEST Upload Service** where library staff will upload your work for you.

- For help with these agreements, contact your **liaison librarian** or **open.collections@library.usask.ca**.
- For help with HARVEST, contact **harvest@library.usask.ca**.

Introducing the new Research Administration Systems PAWS channel

Starting **March 24, 2026** a new PAWS channel, Research Administration Systems will replace the UnivRS PAWS channel.

This change is intended to improve access to services and support future improvements. The **UnivRS** research administration system will remain operational and available, and **will**

not be impacted by this change.

If you have any important information for USask researchers, please contact research.communications@usask.ca!

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

- April 13 – CBC Radio – **There is a tricky trade-off for people who love to sleep with their pets**
- April 13 – CBC News – **Alberta testing AI-powered drone technology in battle against wild boar**
- April 2 – MSN News, CBC News, CTV News, Global News, Saskatoon StarPhoenix – **U of S acquires powerful quantum computer to aid cutting-edge research**
- March 30 – Yahoo! News, Calgary Herald – **Snowpack 'remarkable' in some parts of Alberta's Rockies**
- March 24 – The Western Producer – **University of Saskatchewan crop breeder recognized internationally**
- March 19 – CBC Radio – **Naloxone could reverse opioid overdoses in pets**
- March 16 – CTV News – **U of S hair restoration research could grow on you**
- March 16 – Saskatoon StarPhoenix, Regina Leader-Post – **Sask. bovine veterinarian calls industry award 'humbling'**
- March 15 – CTV News, Saskatoon StarPhoenix, SaskToday, CJWW, CBC News – **New poultry research centre coming to University of Saskatchewan**

BONUS – Olympics science coverage

- Feb. 20 – Nature – **Why do curling stones slide across ice the way they do?**
- Feb. 6 – National Geographic – **The science behind some of the world's fastest ice**

Banner image photo credit: **Capturing the Radiance of USask's Beloved Airplane Room** - by **Dr. Ian Stavness (PhD)**, Department of Computer Science, College of Arts and Science

Images of Research 2026 - *Grand Prize winner*

Rendering of a 3D radiance-field capture of the Henry Taube Lecture Theatre in the Thorvaldson Building at the University of Saskatchewan. This near-visually-perfect virtual replica of the theatre can be explored like a video game or viewed in immersive virtual reality, allowing off-campus community members to visit this treasured space from afar. The upper-left cutaway reveals the millions of optimized 3D points that conform to every nook and cranny of the room, outlining individual desks, the lamps and projectors on the wall, and even the paper airplanes embedded in the ceiling. Our research in 3D capture aims to comprehensively measure buildings for historical preservation, plants for detailed phenotyping, and natural spaces for artistic expression.

UNIVERSITY OF SASKATCHEWAN

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We want your feedback! **What do you think of Discovery Digest?**