



In this issue: Indigenous-led agenda at the centre of national health research plan, new USask Canada Research Chairs and campus leaders, USask research reveals torrential rain more frequent with global warming, and much, much more...

Every month, USask Research Profile and Impact highlights research from across campus. *Discovery Digest* is a glimpse at how USask research, scholarly and artistic work is making a difference to Saskatchewan, Canada, and the world.



[New national Indigenous health research plan prioritizes Indigenous-led agenda](#)

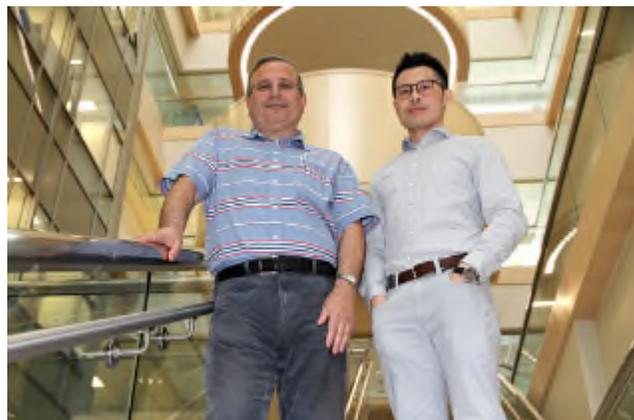
Supporting Indigenous individuals and their communities to drive Indigenous health research is a key goal of the new five-year plan of the national [Institute of Indigenous Peoples' Health](#) (IIPH), a Canadian

Institutes of Health Research institute based at USask.

Under the leadership of Dr. **Carrie Bourassa** (PhD), IIPH's scientific director and a faculty member in the College of Medicine's community health and epidemiology department (in the photo at the centre), the institute spent the past two years engaging with grassroots community members, organizations, and researchers across Canada to inform the new strategic plan which will guide research investment of roughly \$43 million to 2024. Read [more](#).

[Concussion symptoms reversed by magnetic therapy](#)

Dr. **Changiz Taghibiglou** (PhD) and Dr. **Yanbo Zhang** (PhD, MD) in the College of Medicine published evidence in [The Journal of Neurotrauma](#) that a new type of magnetic stimulation



mitigates concussion symptoms in mice, also potentially protecting the brain from future degeneration. The research received widespread international, local and national media coverage, including on the CBC national science program [Quirks and Quarks](#). Read [the story](#).



[Downpours of torrential rain more frequent with global warming](#)

Dr. **Simon Papalexiou** (PhD) of the USask College of Engineering found that the frequency of downpours of heavy rain, a cause of flash floods, has increased worldwide in the past 50 years when global

warming accelerated. Led by the Global Institute for Water Security, the research was published in [Water Resources Research](#). The study received widespread local and international media coverage [including on NBC news](#). Read [the story](#).

[Eels devouring own skeleton is possible link to shrinking eel population](#)

The future of European eels—a critically-endangered species—is under threat from toxic metals found in the rivers and lakes where they live, research by an international



team including Dr. **Markus Brinkmann** (PhD), an eco-toxicologist in USask's School of Environment and Sustainability. The research was published in the [Proceedings of the National Academy of Sciences \(PNAS\)](#). The research received widespread media attention, including from the *Guardian* newspaper's Environment Editor. Read his tweet [here](#). Read [the story here](#).



[TB in bison studied at LFCE and VIDO-InterVac](#)

Parks Canada scientist and adjunct professor Dr. **Todd Shury** (PhD) in the USask Western College of Veterinary Medicine is conducting research on

bovine tuberculosis in bison to improve diagnosis of the disease and to develop better vaccines. The research will be conducted at USask's Livestock and Forage Centre of Excellence Goodale Farm (LFCE) and at the Vaccine and Infectious Disease Organization-International Vaccine Centre (VIDO-InterVac). Read [more](#).

[Water retained in landscape crucial annual flow predictor](#)

Billions of people worldwide rely on streams flowing from forest lands for their water supply. But the



link between forests and the amount of water flowing in streams and rivers has been a hotly-debated topic for decades. [New research](#) published in [Nature](#) by Dr. **Jeffrey McDonnell** (PhD), associate director of USask's Global Institute for Water Security ([GIWS](#)), has found that when trees are cut down the amount of water that the landscape is able to retain is the crucial factor for predicting the increase in annual flow in streams. Read [the story](#).

Research Funding Success



[\\$6 million awarded for Canada Research Chairs at USask](#)

Three new Canada Research Chairs (CRCs)—all held by female academics recognized as potential leaders in their fields—have been established at USask to carry out innovative research into air quality in cold climates (Dr. **Tara Kahan**, PhD), enhancing Indigenous health and

well-being (Dr. **Michelle Johnson-Jennings**, PhD), and preventing cyberattacks (Dr. **Natalia Stakhanova**, PhD). The new Tier 2 CRCs—all based in the College of Arts and Science—will each receive \$120,000 a year for five years. Three Tier 1 CRCs—Dr. **Ken Coates** (PhD), Dr. **Mirosław Cygler** (PhD) and Dr. **Alexander Moewes** (PhD)—had their contracts renewed will each receive \$1.4 million. Read [more](#).

[Funding agreement ensures Fedoruk Centre continues to support world-class nuclear research and training in Saskatchewan](#)

At the opening of the new Innovation Wing of the Saskatchewan Centre for Cyclotron Sciences (SCCS) on May 23rd, **Tina Beaudry-Mellor**, Minister Responsible for Innovation Saskatchewan, announced \$11.6 million in new funding over the next five years for the Sylvia Fedoruk Canadian Centre for Nuclear Innovation (Fedoruk Centre) at USask. Read [more](#).



New campus research leaders

New appointments at the USask Global Institute for Food Security ([GIFS](#)), Canadian Light Source ([CLS](#)), University Art Galleries, and [Research Services and Ethics Office](#):

- Following an extensive global search, Dr. **Steven Webb** (PhD) and **Stephen Visscher**, two internationally recognized leaders with deep understanding of agricultural research and innovation, have been named to the top leadership

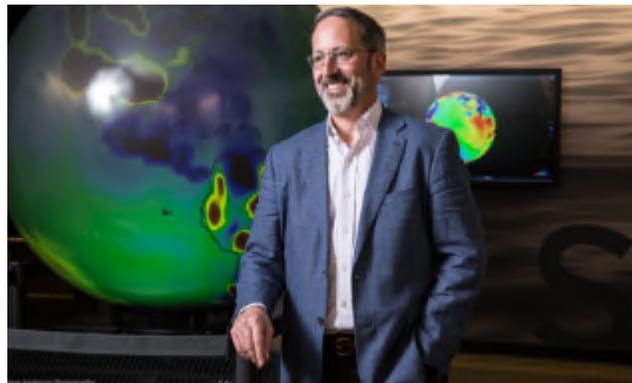
posts of the USask Global Institute for Food Security ([GIFS](#)) starting July 1st. Read [more](#).

- McMaster University professor Dr. **Gianluigi Botton** (PhD) has been appointed as the new USask Canadian Light Source (CLS) science director. An expert in using advanced microscopy techniques to examine materials at the atomic level, Botton will focus on ensuring the services offered at the synchrotron enables world-class research. Read [more](#).
- The new director of the University Art Galleries is **jake moore**, a PhD candidate at McGill University in Art History and Communications, who worked as a Director of FOFA Gallery (Faculty of Fine Arts) at Concordia University from 2009 to 2014.
- Dr. **Dion Martens** (PhD) has been appointed as the new director of the Research Services and Ethics Office (RSEO), effective July 1st. A PhD graduate in public policy and a Vanier Scholar from USask, he started his career working in restorative justice for young offenders and served as policy director for one of Canada's top non-partisan think tanks, the Public Policy Forum in Ottawa. Martens succeeds RSEO Director Dr. **Dena McMartin** (PhD), who will soon begin her new role as associate provost.

Green and White Globe

[Freakonomics features USask water expert](#)

[Freakonomics](#), one of the world's most popular podcasts, taped a live radio show from San Francisco that featured Dr. Jay Famiglietti (PhD), Canada 150 Research Chair in Hydrology and Remote Sensing and executive director of the [Global Institute for Water Security](#). The theme for the event was "long-term thinking in a start-up town" and the full podcast is now available [here](#). Famiglietti also talks about solutions to the global water crisis in a [Globe and Mail story](#) by Dr. **Lorne Doig** (PhD), research scientist at the USask Toxicology Centre.



[Work fighting computer bugs garners international acclaim for USask researcher](#)

Dr. **Chanchal Roy**, associate professor in the USask computer science department, is making a name for himself internationally for his work on finding, fixing and preventing bugs caused by copied and pasted bits of code called 'clones.' Read more in [The StarPhoenix feature](#).

Canada: Is it really a country divided?

Dr. Loleen Berdahl (PhD) and Dr. Éric Montpetit (PhD)

Despite decades of bickering and hand-wringing, Canada continues on.

National tensions, in and of themselves, are not leading us to poor policy outcomes.

This article was also translated in French [here](#).



As Dead Poets Society turns 30, classroom rapport is still relevant and risky

Dr. Lenin Cavalcanti Brito Guerra (PhD)

A USask researcher discusses how personal interaction between teacher and students impacts learning, just as it does in the movies.



Canadian schools spend more as enrolment and test scores fall

Jim Marshall, Haizhen Mou, and Dr. Michael M. Atkinson (PhD)

USask research shows that the provinces vary widely in their ability to produce academic results for money they spend, and PEI shows the most efficient results.



[Write about your own research in The Conversation](#)

Articles written by USask researchers have been read 1.09 million times since the university entered into a partnership with the SSHRC-funded Conversation Canada in June 2017. USask is a founding member of The Conversation Canada, an online academic journalism hub/newswire where researchers write plain-language editorials and explainers articles about their research.

Want to reach a broad audience with your research? Consider submitting an item to the Conversation. [Wondering where to start? Read a short explainer on how to write for the Conversation Canada. Read previous USask articles here](#) and [get in touch with Marie Woolf](#).

Entrepreneurship



[USask launches unique Summer Entrepreneurs program](#)

USask commercialization unit Innovation Enterprise (IE) is embarking on a new initiative to train, inspire and motivate the next generation of successful entrepreneurs, while bringing USask

innovations to the world. The inaugural Summer Entrepreneurs (SE) program (May 1—August 31) will provide USask students with the skills, mindset and knowledge to become full-fledged entrepreneurs. Read [more](#).

USask entrepreneurs won big at the Co.Launch finale

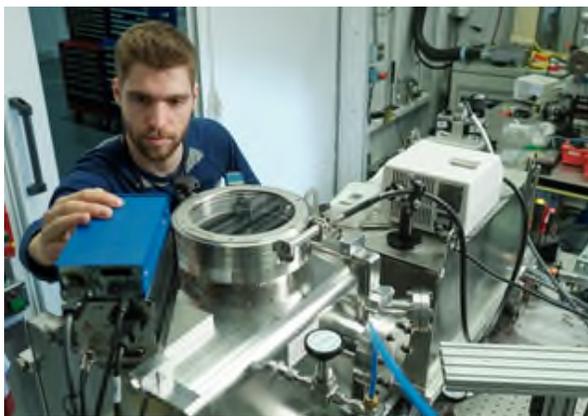
USask was well represented at the **Innovation Enterprise**-sponsored Co.Launch program finale May 28th. The **Co.launch program** is a province-wide accelerator for early-stage tech startups in the ideation and prototype phase. Of the 11 startups selected to participate, eight included USask staff, faculty and students. The program takes about three months to complete and in the finale, the startups competed for \$15,000 in cash prizes. Two startups with USask founders took home all the prizes:

- **BetterCart**: Dr. Melanie Morrison (PhD), won \$10,000 for a website that helps compare grocery prices so people can get the best deals.
- **SnowHydro**: PHD student Patricia Tozatti developed a commercialization plan for a snow acoustic sensor technology, winning a **trip from SREDA to San Francisco** and a \$5,000 runner-up cash prize.

Young Innovators

[New technique for studying rusting of steel benefits mining industry](#)

PhD student **Arthur Situm**, supervised by Dr. **Andrew Grosvenor** (PhD), has developed a new non-invasive technique to study the rusting of steel, research that may help with the safety of potash mining and construction of buildings, roads and bridges. Read [the story](#).



[Winner of Indigenous scholarship works to preserve northern landscape of his childhood](#)

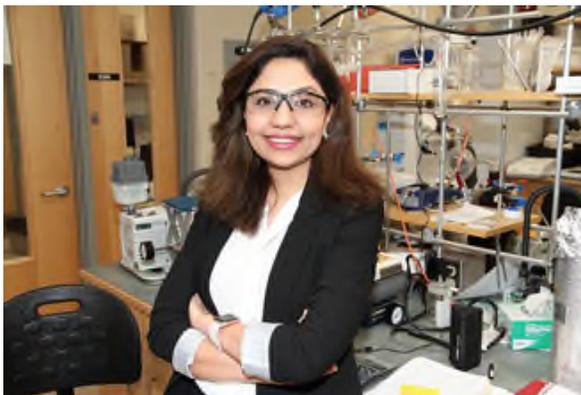
When should a forest fire be left to burn? **Aaron John Bell**, a biology PhD student in the USask College of Arts and Science, has been awarded a \$20,000 Queen Elizabeth II Centennial

Aboriginal Scholarship for his work that will contribute to better practices for conserving Canada's ecosystems and preserving diversity of life.

Another \$20,000 Queen Elizabeth II Scholarship has been awarded to **Oxana Pimenova**, a public policy master's student in the USask [Johnson Shoyama Graduate School of Public Policy](#). Read [more](#).

[USask researcher finds her chemistry destiny](#)

Coming halfway around the world to USask to work on a global problem, cancer researcher and post-doctoral fellow Dr. **Elaheh Khozimeh Sarbisheh** (PhD) couldn't imagine being in a better place to do it with her mentor Dr. **Eric Price** (PhD), Canada Research Chair in Radiochemistry. Read [more](#).



[USask graduate student earns agriscience international award](#)

Deeksha Shetty came to USask to earn her master's degree in food and bioproduct sciences department, and leaves as the winner of one of the most prestigious agriscience research competitions in the world. Read [more in the story](#).

[NSERC's Science, Action! Video Contest: USask student video won Special Jury Prize](#)

USask PhD student **Caroline Aubry-Wake**'s video titled [Research in the North](#) won the \$3,000 Special Jury Prize in the 2019 NSERC's Science, Action! Competition. [Check the winners](#).

Student wins International Award for Trichinella Research

Dr. **Rajnish Sharma** (PhD), who defended his PhD in March 2019, has received the Student Research Award for the International Commission on Trichinellosis (ICT) and has been invited to present his research at the ICT conference in Romania at the end of August.

Humanities and Arts

Small books tell big stories

While the phenomenon of the tiny book is largely a product of a bygone era, the [USask Archives and Special Collections](#) has several miniature marvels in its collection, from Shakespeare's Macbeth to Sun Tzu's Art of War. Several of the books are so minute that you would need a magnifying glass to read them. Read the [story](#).



Major accolades



USask historian's *Prairie Fairies* book wins prestigious history award

Dr. **Valerie Korinek** (PhD), a professor in the College of Arts and Science's history department, has been awarded the Canadian Historical Association's Clio Prize for her book [Prairie Fairies: A History of Queer Communities and](#)

[People in Western Canada, 1930-1985](#). The prestigious Clio awards acknowledge exceptional contributions to regional history, and Dr. Korinek was acknowledged for the Prairie region. Read [more](#).

Other researchers who have received recent recognition in Canada and abroad include:

- Dr. **Terry Wotherspoon** (PhD), professor in College of Arts and Sciences' sociology department: 2018 Canadian Sociological Association Outstanding Service Award
- Dr. **Jim Hendry** (PhD, DSc), professor in the College of Arts and Sciences' geological sciences department and NSERC-Cameco Industrial Research Chair: 2019 Farvolden Award from the International Association of Hydrogeologists

- Dr. **Maureen Reed** (PhD) of the USask School of Environment and Sustainability: 2019 Canadian Association of Geographers' Award for Scholarly Distinction
- Dr. **Stephanie Martin** (PhD), professor in the educational psychology and special education department in the College of Education: Canadian Psychological Association's Section of Women in Psychology's Distinguished Member Award 2019
- Dr. **David Mykota** (PhD), professor in the educational psychology and special education department in the College of Education: Canadian Network for Innovation in Education's International Journal of E-Learning & Distance Education Best Paper Award for 2018

Read the [details here](#).

Upcoming events

[Submit your idea to TEDxUniversityofSaskatchewan!](#)

TEDx is a self-organized event that brings people together to share a TED-like experience: TED Talk videos and live speakers combine to spark deep discussion and connection. The upcoming

TEDxUniversityofSaskatchewan will feature the newest trends, innovations, and experiences by showcasing innovators, creators, researchers, thinkers, and people who inspire others and drive change. You can submit your idea, or nominate someone else, **until July 1 2019, at 11:59 p.m.**, Saskatchewan Time. The theme of TEDxUniversityofSaskatchewan is "Building Bridges." Submit your idea [here](#) and follow TEDxUniversityofSaskatchewan on [Facebook](#), [Twitter](#) and [Instagram](#).



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

Looking for past issues of Discovery Digest or Research Update?
Visit Research.usask.ca for more.

You are receiving this email because you are a student, faculty or staff at the USask. Questions? Comments? Send an email to [Research Profile and Impact](#).

