



July 2021 - Issue 42

*In this issue:* New COVID-19 insights, new beef industry chair established, USask research predicts extreme rain events to become more severe and frequent in U.S., promising Phase 1 trial results for VIDO's COVAC-2 vaccine, and much more!

Every month, USask Research Profile and Impact highlights research from across campus. *Discovery Digest* is a glimpse into how USask research, scholarly and artistic work is making a difference for Saskatchewan, Canada, and the world. [Feedback welcome!](#)

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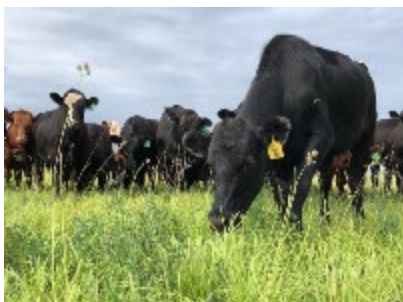
## Top Stories



### **New insight into the immune response and possible long-term health impacts associated with COVID-19**

One of VIDO's newest scientists, **Dr. Alyson Kelvin** (PhD), has published new research on COVID-19. Kelvin came to USask's VIDO in February 2020 as a visiting scientist to access the containment level 3 facilities, conduct research, and **help develop potential solutions to COVID-19** – she will officially join the VIDO team this August.

Her recent publications include research on how nonagenarians and centenarians recover from COVID-19 ( [EClinicalMedicine](#)), and on the potential lasting effects of the disease, so-called COVID-19 'long-haulers' ( [PLOS Pathogens](#)). [The full story.](#)



### **New Research Chair at USask will maximize environmental, economic benefits of forage crops**

A new Beef Industry Integrated Forage Management and Utilization Chair will be established at USask to connect the study of soils, plants, animals, economics, and ecosystems to tap into the full range of benefits of forage crops.

The Beef Cattle Research Council (BCRC) is contributing \$2.5 million toward the chair, the Saskatchewan Cattlemen's Association (SCA) is providing \$1 million, the governments of Canada and Saskatchewan are together investing \$750,000 through the Canadian

Agricultural Partnership, and USask's Global Institute for Food Security (GIFS) is committing \$320,000.

An international search will begin this summer to fill the position before the end of 2021.

**The full story.**



### **New model predicts the nature of extreme rain storms in the U.S.**

If no changes are made to the rate of global greenhouse gas emissions, storms that used to occur every 20 years on average will instead occur every seven by the end of the century. That's according to modelling research conducted by USask civil, geological and environmental engineering researcher **Dr. Simon Papalexiou (PhD)**.

He recorded hourly rainfall data across the United States from 2000 to 2013. Projections suggest storms with extreme rain will become more frequent and more intense, and go through significant changes in seasonality and duration. Taken together, that will affect ecosystems, increase flood risk, and threaten societies. **The full story.**

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## **COVID-19 Research**



### **USask's VIDO announces positive Phase 1 results for COVAC-2**

The Vaccine and Infectious Disease Organization (VIDO) at USask announced positive interim results on June 23 from its Phase 1 clinical trial for COVAC-2, VIDO's COVID-19 protein subunit vaccine candidate.

Data from the study, led by the Canadian Centre for Vaccinology (CCfV), demonstrate COVAC-2 is safe and well tolerated. The reactions noted are common after most immunizations, including headaches and mild pain at the injection site.

Participants continue to be recruited for the clinical trial at the CCfV in Halifax, and a new clinical trial site will open in Saskatoon this summer. **The full story.**



### **USask survey finds many Canadians broke COVID rules, and tensions grew in relationships**

Nearly one in three Canadians have flouted public health guidelines on COVID-19, mostly to see friends or family. Meanwhile, more than one in five have had a falling out with friends or family members because of conflicting views on the pandemic. These are a selection

of findings from Taking the Pulse of Canada, a quarterly national survey conducted by USask's Canadian Hub for Applied and Social Research

(CHASR).

The study received responses from 1,000 Canadians contacted between June 1 and June 15 via landlines and cellphones. They were asked about their adherence to COVID-19 restrictions, justifications for breaking rules, their sources for pandemic information, and the impact the pandemic has had on their personal relationships.

The data gathered will be used to advise policymakers on the best way to handle guidelines, restrictions and recommendations regarding the current pandemic, and future pandemic responses. [The story](#). [Full survey results link here](#).

## COVID-19 Research

USask researchers in a wide range of fields are undertaking critical research to help combat COVID-19. [Read other stories](#).

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## Health research

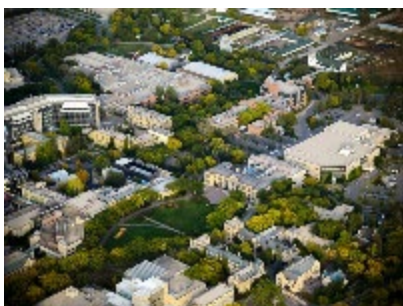


### USask-based Indigenous centre for research on HIV, HCV and STBBI in Saskatoon

A new Indigenous-led centre for research on HIV, Hepatitis C Virus (HCV) and sexually transmitted blood-borne illness (STBBI) was officially launched on June 21, coinciding with the National Indigenous Peoples Day in Canada.

The *waniska* Centre aims to engage Indigenous communities and people in research, using both an Indigenous and Western lens to focus on Indigenous knowledge and the land, to develop, explore, and scale up promising and wise practices.

The *waniska* Centre, which is funded by the Canadian Institutes of Health Research, will build its capacity to conduct research in partnership with Indigenous and non-Indigenous experts in the field of Indigenous health and HIV/HCV/STBBI research. [The full story](#).



### SHRF announces \$720,000 in support for USask early-career researchers to address health challenges

Six USask researchers will tackle a wide variety of health challenges, thanks to an investment of \$720,000 from the Saskatchewan Health Research Foundation (SHRF).

Projects will address vital health areas such as developing new therapeutics for cancer, and creating a culturally responsive research framework that supports Indigenous people in tackling their healing and wellness challenges.

The Establishment Grant funding from SHRF is intended to attract and retain researchers with the knowledge and expertise needed to build careers in the province, create effective collaborations, and work to improve health outcomes for the

people of Saskatchewan. [The full story.](#)

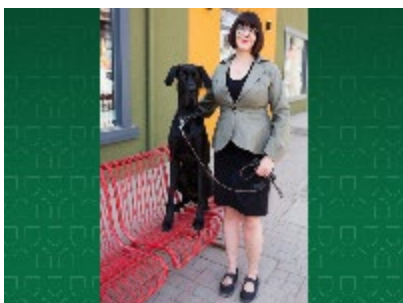


### Sleep and fitness go hand-in-hand

USask College of Kinesiology researcher **Dr. Heather Foulds (PhD)** and her team of students have conducted a study that confirms the connection between sleep and physical activity among middle-aged women.

Women entering menopause can experience a decrease in their sleep quality. This study recruited 114 healthy Saskatoon women aged 30-55, from 2015 to 2019.

Participants were classified based on their aerobic fitness, grip strength and physical activity level. Findings demonstrate that women with higher aerobic fitness levels tend to get more sleep nightly and feel more rested. [The full story.](#)



### Examining how therapy dogs support well-being

USask sociology researcher, **Dr. Holly McKenzie (PhD)**, and supervisor, **Dr. Colleen Dell (PhD)**, are studying how St. John Ambulance therapy dog-handler teams can support people dealing with substance use and/or mental health concerns during online or in-person visits—explicitly including Indigenous people’s experiences and perspectives.

In previous research led by Dell, people reported feeling supported and comforted by visiting therapy dogs. Studies have also demonstrated that visits with therapy dogs reduce stress levels and anxiety of people in various settings.

The research is being informed by an advisory group including patient and family advisers, therapy dog handlers, health care decision-makers, researchers, and a Knowledge Keeper. [The full story.](#)



### Improving cardiac surgery recovery

Led by **Drs. Michelle Clunie (MD)** and **Ryan Pikaluk (MD)**, a multidisciplinary research team is working to improve recovery for patients of cardiac surgery when faced with limited health care resources during the pandemic.

There were nearly 200 fewer surgeries in 2020 compared to the year before. More than 800 Saskatchewan patients require heart surgery annually, but many health resources have been required for COVID-19 patients and the strain is being felt in the health care system.

The medical research team decided to focus on five key recommendations to educate surgical health-care professionals and cardiac patients on the best uses of resources. These recommendations include best practices in surgical care steps, mobilization, and fluid management, and managing pain with opioid alternatives along



with essential lifestyle changes. [The full story.](#)



### **USask research facilities and technology are state-of-the-art**

When it comes to advanced technology and specialized research centres, USask's cluster of extraordinary equipment and unique facilities is unmatched among Canadian universities.

Innovative new technological additions include a PET-CT scanner for clinical use to treat animals at the Western College of Veterinary Medicine (WCVM), and a new made-in-Saskatchewan BioPETx, a first-of-its kind nuclear imaging detector designed specifically for plant and soil research in USask's Saskatchewan Centre for Cyclotron Sciences (SCCS).

With three national research centres on campus, the university's reputation is growing across the country and around the globe as a prime destination for world-leading researchers. [The full story.](#)

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## **Arts and humanities**



### **National survey: More non-Indigenous Canadians see themselves as having a role in reconciliation**

The fourth report from the Confederation of Tomorrow 2021 Survey has found that seven in 10 Canadians believe individuals have a role to play in reconciliation—a higher proportion than in the previous two years.

The study surveyed 5,814 adults online and by telephone across Canada between January and March.

The report was issued on National Indigenous Peoples Day by the Environics Institute and the Johnson Shoyama Graduate School of Public Policy (JSGS) at USask and the University of Regina, in collaboration with leading public policy organizations across the country. [The full survey results.](#)



### **USask researchers examine extradition and state kidnappings across the 49th parallel**

**Dr. Benjamin Hoy (PhD)**, assistant professor of history, and assistant librarian **Sarah Rutley** aim to advance knowledge about how Canada and the United States project power and exercise justice on their citizens living across the border.

The team will create a centralized toolkit to help researchers studying extradition, extra-legal justice, Indigenous policy, and race-based policing in both countries.

The project will train more than a dozen graduate and undergraduate students, and Hoy will use the project findings to write a book about why the legal extradition process went awry and the resulting impacts. [The full story.](#)



### **USask researcher studies ancient northern reindeer herding culture**

An international team led by **Dr. Tatiana Nomokonova (PhD)** will investigate the 2,200-year history and ongoing importance of reindeer herding to Indigenous Nenets and Khanty peoples in Arctic Siberia's Iamal peninsula.

The project aims to transform and decolonize archaeological practices in the region by forging close working relationships with Indigenous communities—efforts that follow the calls to action by Canada's Truth and Reconciliation Commission but applied in Siberia.

This research is one of nine USask projects to have been awarded a total of \$1.6 million in Insight Grant funding by Canada's Social Sciences and Humanities Research Council (SSHRC) to address critical societal issues in fields ranging from history, anthropology and sociology to wildlife, music, and art, with two projects relating to the impacts of COVID-19.

[The full story.](#)

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## **Food security research**



### **USask agricultural researcher receives \$2.5 million from federal and Saskatchewan governments**

College of Agriculture and Bioresources researcher, **Dr. Yongfeng Ai (PhD)**, has been awarded \$2.5 million through the joint federal-provincial Canadian Agricultural Partnership to improve the processes of transforming pulses into novel food ingredients, new bioplastics, and high-value biomedical materials.

The strong gelling and film-forming ability of pulse starches make them useful in bioplastics and biomedical materials. The bioproducts are highly biodegradable and compostable, making them a sustainable option for producing easily disposable products in the future.

Ai is collaborating with multiple Canadian agricultural research partners. The funding is part of Saskatchewan's Strategic Research Initiative Program, which announced its theme of Pulse Starch Utilization in 2020. [The full story.](#)

### **USask research has potential to revive fava beans as a farm-to-fork favourite**

A once popular high-protein legume crop with potential to make farming more environmentally sustainable is poised



for reinvigorated popularity, thanks to the findings of an international research team and plant geneticists from USask, including **Dr. Albert Vandenberg (PhD)**.

For an estimated 400 million people worldwide, who are deficient in a certain enzyme, eating fava beans can result in a severe blood disorder. It has contributed to decline in the popularity of the bean.

In research just published in the journal *Nature Plants*, plant scientists have identified a key step in how the fava bean plant produces the anemia-causing compounds. Researchers are confident that they can shut down these compounds through genetic sequencing and genomics. [The full story.](#)

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## Water security research



### Managing water supply in changing times

When talking about future water issues, **Dr. Jay Famiglietti (PhD)** says there are two main concerns: population growth and climate change.

Famiglietti, executive director of USask's Global Institute for Water Security (GIWS) and the Canada 150 Chair in Hydrology and Remote Sensing, says that the water availability we've been counting on in the past 50 to 100 years is changing, including in locations such as the Saskatchewan River Basin.

Famiglietti stresses that the development of better models would allow water supply managers to more efficiently answer questions of how to manage water reservoirs, and about the effects of climate change. [The full story.](#)



### Congratulations to the 2021 Let's Talk About Water Film Prize Winners!

GIWS has announced winners of its Let's Talk About Water Film Prize. This year, more than 200 films were submitted from nearly 50 countries. Watch the **15 winners across the International and Youth prize categories.** [Watch the award ceremony.](#)

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## Telling your research story

**Being aware of predatory journals is important for every researcher**



Predatory journals often target academics, urging them to submit their work under the guise of open-access publishing, and taking advantage of the built-in model of charging fees for publication online.

These journals often accept work easily, with limited peer-review processes. Other warning signs of a predatory journal include those who publish articles with questionable rigour, print multiple retractions or corrections, and spam academics with emails that market their publications.

With the number of predatory journals increasing, researchers should ensure they are informed of the best choices for their academic manuscript submissions.

**An article from *University Affairs* (2017). [USask Library's Research Guide on Predatory Publishers.](#)**



### **Follow USask Research Profile & Impact on LinkedIn**

Follow the USask Research Profile and Impact page to stay in the know, with exciting research news delivered right to your LinkedIn newsfeed. As a unit of the Office of the Vice-President Research, our mission is to help share USask research stories with the world.

We will be sharing current research, exciting findings, new research directions and partnerships regularly. Come see what we're up to at USask by making us part of your professional network, and check back often for updates.

*In* **THE CONVERSATION**

### **Write about your own research in The Conversation**

USask is a founding member of The Conversation Canada, an online academic journalism hub/newswire where researchers write plain-language editorials and explainer articles about their research. Articles written by USask researchers have been read more than 2.3 million times since the university entered into a partnership with the SSHRC-funded Conversation Canada in June 2017.

Writing is easier than you think!

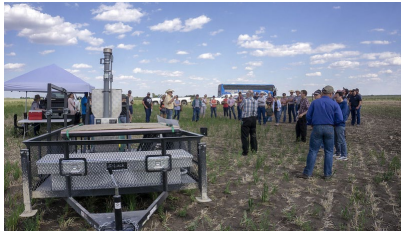
**Watch a video from Conversation Canada Editor-in-Chief Scott White.**



Want to reach a broad audience with your research? Consider pitching 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**



## Upcoming events



### Summer field day at USask's LFCE -- July 20

The Livestock Forage and Excellence Centre (LFCE) is planning its second annual Summer Field Day to celebrate its teaching and research community.

The day will begin with a panel discussion with clinical psychology graduate student **Cynthia Beck**, market analyst **Anne Wasko**, and LFCE director, **Dr. Scott Wright (PhD)**. They will address returning to normal operations with a focus on mental health, an eye to the future of the markets, and an outlook on livestock and forage science.

The field day is a free event, with lunch provided. Registration is required. To register for the LFCE Summer Field Day presented by Canadian Western Agribition, and to read more about the event: [click here](#). Masks are mandatory at this event, and will be provided.

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## In the news

- VIDO's COVID-19 research has been featured in:
    - *The Canadian Press* - July 8 - **Canada monitoring 'whole slew' of variants, says chief public health officer.**
    - *CKOM News* - June 27 - **VIDO vaccine to be put to test this summer in Saskatoon.**
    - *Global News* - June 25 - **Promising first phase for VIDO-Intervac vaccine development.**
    - *CBC News* - June 23 - **Sask. research lab says its COVID-19 vaccine shows positive results in Phase 1 trial.**
    - *CBC News* - June 23 - **Why mixing Pfizer and Moderna vaccines could help Canada end pandemic sooner.**
    - *The Star Phoenix* - June 23 - **Saskatchewan-made COVID-19 vaccine reaches 'critical step' in testing.**
  - Saskatchewan Blue Cross - **Ask a Scientist!: Get to know VIDO.**
  - USask research has also been featured in:
    - Saskatchewan Health Research Foundation - College of Engineering - **Meet the Researcher: Dr. Amira Abdelrasoul**
    - *Professional Edge Magazine* - College of Engineering and College of Agriculture and Bioresources - **Prairie Agriculture Machinery Institute researching how crops affected by pesticide drifts.**
    - *Farmscape Online* - College of Engineering - **Durability of Sensors Key in Tracking Biosecurity and Animal Welfare Parameters**
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**We want your feedback! [What do you think of Discovery Digest?](#)**

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