

Discovery Digest

BE WHAT THE WORLD NEEDS

January 2021 - Issue 36

In this issue: VIDO COVID-19 vaccine approved for clinical trials by Health Canada, COVID isolation worsens students diets, drinking, and inactivity, \$5.8M awarded to USask crop researchers, USask Crop Development Centre marks 50 years, 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!**

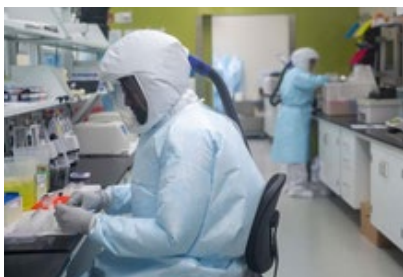
Get the latest in **COVID-19 Updates** online.



Paper accepted for publication? Get in touch!

Contact USask's **Research Profile and Impact** unit when you have a newsworthy publication about to come out. We need at least one week lead time to properly support your work, so don't wait—get in touch early!
Email: [**Research.Communications@usask.ca**](mailto:Research.Communications@usask.ca)

Top Stories



VIDO's COVID-19 vaccine gets Health Canada clinical trial approval

USask's Vaccine and Infectious Disease Organization (VIDO) has received the go-ahead from Health Canada to start Phase 1 clinical vaccine trials, enabling the Canadian Center for Vaccinology (CCfV) in Halifax to begin recruiting volunteers for vaccination this month.

The vaccine is one of two COVID-19 “subunit” vaccines currently in development at VIDO. With an excellent safety profile, subunit-based vaccines—which use a protein fragment of the virus to trigger an immune response—are a proven technology for many commercially available vaccines, including for hepatitis, diphtheria, and whooping cough.

Assuming all goes well with the trials, VIDO expects to have at least one vaccine ready for use by late 2021. **Read the full story.**



USask study finds COVID isolation worsens student diets, inactivity, drinking

A USask study led by nutrition researcher Dr. **Gordon Zello** (PhD) has found that the COVID-19 pandemic has led to significant worsening of already poor dietary habits, low activity levels, sedentary behaviour, and high alcohol consumption among university students. The findings of the study—the first to assess changes in students’ dietary intake, physical activity, and sedentary behaviour before and during the pandemic—are published today in the journal ***Applied Physiology, Nutrition and Metabolism***.



USask agriculture researchers awarded \$5.8M to help feed the world, protect the planet

Eighteen USask crop research projects have been awarded a total of almost \$5.8 million through Saskatchewan’s Agriculture Development Fund (ADF), jointly supported by the federal and provincial governments and supplemented by industry partners.

Innovative research into disease resistant and nutritious crops, human health applications of cannabis, and biodegradable plastics made from plants are among the USask projects, which also attracted almost \$1.9 million in total industry funding for the teams. [Read the details.](#)



USask dinosaur discovery named as one of CNN’s and National Geographic’s top 2020 discoveries

Research into the diet of large, plant-eating dinosaurs—led by USask geologist Dr. **Jim Basinger** (PhD) and published by Royal Society Open Science—has been lauded by National Geographic and CNN as one of 2020’s “most fascinating and awe-inspiring discoveries.”

The remarkable findings of the 110-year-old dinosaur’s last meal are the product of a research partnership among USask, Brandon University and the Royal Tyrrell Museum in Drumheller, Alta. [Read the details.](#)



Stretching more effective than walking to lower high blood pressure: USask study

A new USask study has found that stretching is superior to brisk walking for reducing blood pressure in people with high blood pressure or who are at risk of developing elevated blood pressure levels.

For adults with an average age of 61, stretching for 30

minutes per day, five days per week over eight weeks, led to lower blood pressure than did matched time spent walking. Walkers did lose more body fat off their waists during the study, published in the *Journal of Physical Activity and Health*.

USask kinesiologist Dr. **Phil Chilibeck** (PhD), the study's co-author, suggests a shorter routine, focusing on the large leg muscles, may achieve the same benefits. [Read the full story.](#)



NSERC, FCL commit \$2.5M to renew USask research chair focused on eco-friendly gas station clean-up

Over the last five years, USask soil scientist and Industrial Research Chair (IRC) Dr. **Steve Siciliano** (PhD) and his team have developed innovative techniques that can reduce hydrocarbons in contaminated soil from gas station sites by more than 90 per cent.

Now, the Natural Sciences and Engineering Research Council (NSERC) and Federated Co-operatives Limited (FCL) are each providing \$1.25 million to renew Siciliano's five-year funding, building on the team's success to further optimize soil remediation approaches and protect the environment. [Read the full story.](#)



USask's Crop Development Centre celebrates a half century of research innovation

In the 50 years since USask's Crop Development Centre (CDC) was founded, USask research has transformed crop agriculture in the province and beyond, helping producers diversify and farm more productively and profitably.

More than 500 new crop varieties have been released, generating \$7 for producers for every \$1 invested in research. CDC scientists have led international efforts to sequence genomes for 16 wheat varieties, as well as for pea, lentil, chickpea, tepary bean, barley, oat, and flax.

Led by CDC Director Dr. **Curtis Pozniak** (PhD), CDC research is featured in the annual Saskatchewan Seed Guide by the *Western Producer*. [Read the full stories – 1, 2.](#)



Research Junction awards \$100,000 for projects to benefit Saskatoon residents

Public safety in the downtown, slope failures along the east riverbank, business tax incentives, and integration of renewable energy into the city's power grid are local challenges to be tackled jointly by USask researchers and City of Saskatoon staff through the Research Junction

partnership.

Providing USask research expertise to the four collaborative projects are: professor emerita Dr. **Isobel Findlay**, geophysicist Dr. **Sam Butler**, Johnson-Shoyama policy researchers Dr. **Haizhen Mou** (PhD) and Dr. **Yang Yang** (PhD), and engineering researcher Dr. **Xiaodong Liang** (PhD).

Read the full story. [Research Junction's webpage.](#)



Celebrating Karen Chad's leadership as Vice-President Research

As the university's longest-serving vice-president of research, Karen Chad has led our research enterprise since 2010 with passionate, visionary and strategic leadership, fostering "discovery with impact" that will have long-lasting benefits for the university and the many

communities USask serves.

A key initiative she led through a highly consultative process was the development of the university's signature areas of research focus which have been foundational for advancing the university's research as a U15 university. **[Read about the journey to develop the signature areas and the ways these strategic research areas have made a difference for the university, the province, and beyond.](#)**

Chad will be succeeded by Dr. Baljit Singh on Feb. 1st. A "virtual" celebration of her many contributions will be held Jan. 29th at 3:30 p.m. Register **[here](#)**. Members of the research community are invited to sign a **[virtual guestbook](#)**

COVID-19 Research

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



New device could help remove COVID-19 virus from the air we breathe

A USask team led by engineering researcher Dr. **Jafar Soltan** (PhD) is developing a new air sanitization device to deactivate the airborne pathogen which causes COVID-19.

The device uses an electrified filter to neutralize the virus and could be attached to commercial and personal ventilation systems to sanitize air.

Soltan's team, which involves researchers from the Vaccine and Infectious Disease Organization (VIDO), the College of Medicine, and industry partner Engineered Air, has tested the device using a harmless substitute that acts similarly to SARS-CoV-2. Once the device has proven effective, Soltan will test the device with the real virus at VIDO.

Safar and his PhD student **Nazanin Charchi** used the university's Canadian Light Source to take high-resolution images and optimize the device's performance.



USask PhD student creates app to help surgeons face the pandemic

USask computer science PhD student **Mayra Samaniego**, a research assistant in the USask surgery department, has played a key role in developing a new app to help Saskatchewan surgeons respond to the COVID-19 pandemic.

Supported by the Saskatchewan Health Research Foundation, the team also involves Dr. **Ivar Mendez** (MD, PhD), surgery head for both USask and the Saskatchewan Health Authority, and computer expert Christian Spana, CEO of Allpa Tech.

Called *Inventory*, the new app will aid in decision-making about COVID-positive patients, help better assess the likelihood a patient has been exposed, and enable health authorities to deploy resources more effectively. [Read more about the app from SHRF](#). [Watch a video](#).



Adapting your research in a time of COVID

Have you been adapting your research program in innovative ways to pivot to our current pandemic reality? Have you changed your focus to study something COVID-specific? Have you found a new way to conduct your research remotely? *Research Profile and Impact* wants to tell that story. Send brief examples of how you have been coping to

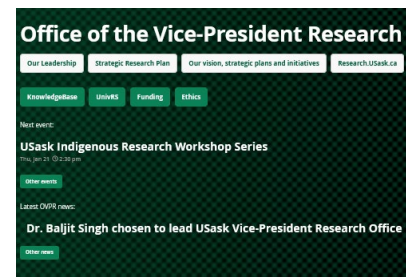
Research support

New OVPR website launched

The Office of the Vice-President Research has launched a new website to make it easier to find essential information for conducting research, and to reflect organizational changes to the portfolio.

Visit VPRResearch.USask.ca for the latest grant funding deadlines, event listings, and OVPR-led initiatives.

Prominent links to your most pressing tasks are now even easier to find, so don't forget to update your bookmarks.



Health research

USask biomedical researcher studies rare mosquito-



borne virus

Biomedical scientist Dr. **Anil Kumar** (PhD) is taking aim at eastern equine encephalitis virus (EEEV) that fatally impacts humans and horses in eastern parts of Canada and the United States.

Transmitted via a mosquito bite, the virus attacks the body's nervous system, causing meningitis and brain inflammation. Though there were just 38 reported human cases in the U.S. in 2019, half the patients died within two to 10 days of infection. Survivors can experience lifelong neurological disability.

Kumar aims to develop a vaccine for EEEV before it mutates and reaches pandemic levels.

[Read the full story.](#)



Improving treatment for human and animal cancer patients

Veterinary radiation oncologist Dr. **Monique Mayer** (DVM) is collaborating with colleagues across campus and at the Canadian Light Source synchrotron to improve treatment options for human and animal cancer patients.

Working with her collaborators, Mayer aims to better protect medical staff in veterinary hospitals and clinics from radiation exposure, as well as to develop more precise targeting for radiation therapy and new potential microbeam radiation treatments using the synchrotron for reoccurring cancer.

[Read the full story.](#)

Water security research



What Canada's melting glaciers tell USask researchers

Led by Canada Research Chair in Water Resources and Climate Change Dr. **John Pomeroy** (PhD), researchers at USask's Coldwater Laboratory in Canmore, Alta. are gathering data and doing mathematical modelling on changes to glaciers—research that will help predict what glaciers will look like in 10 to 80 years.

Canadian glaciers have shrunk 15 per cent since 1985, and estimated glacier loss in the Rockies could rise to 100 per cent by the end of the century. [Read the full story.](#)

Accolades

Former USask music professor named to the Order of Canada



Gary Gullickson, former USask music professor and department head, has been appointed to the Order of Canada for his lifelong dedication to the city's music community in advancing the music and art as a choir director and educator. Gullickson is also a performer and member of numerous boards and volunteer

organizations. [Read more.](#)



Renewal of USask Centennial Enhancement Chair in One Health and Wellness

Dr. **Colleen Dell** (PhD)'s Centennial Enhancement Chair in One Health and Wellness, has been renewed for a five-year term, effective July 1st.

The chair program aims to assist USask in retaining world-class faculty undertaking research and scholarship in one of the university's six signature areas.

Dell, a sociologist, has earned a national and international reputation for work on substance abuse focused on Indigenous health, healing from drug addiction, mental wellness, and harm reduction initiatives. [Read the story here:](#)



USask names new Distinguished Professors

Two USask researchers have been awarded the title of "Distinguished Professor", a lifetime award meant to honour exceptional achievement in research, scholarly, or artistic work by USask faculty or emeriti.

- Archaeology and anthropology researcher Dr. **James Waldram** (PhD) is honored for his many research accomplishments, including significant contributions to enhancing knowledge in medical anthropology and Indigenous studies.
- English professor Dr. **Lisa Vargo** (PhD) was named for distinguished scholarship in the field of Romantic literary studies and textual editing for which she has gained an international reputation, particularly with respect to the study of female writers of the late 1700s and early 1800s.



USask engineering researcher one of Canada's longest-serving CRCs

Dr. **Ajay Dalai** (PhD), Canada Research Chair (CRC) in Bioenergy and Environmentally Friendly Chemical Processing, has held his chair since 2001, making him one of Canada's longest serving CRCs.

Dalai, who has been awarded more than \$36 million from

Canada's Natural Sciences and Engineering Research Council and other sources over his career, is a world leader in efforts to develop alternative energy sources. Read about his start as a petroleum engineer and career trajectory.

Telling your research story



Essay: Breaking through language barriers (*Science*)

- USask water researcher Dr. **Saman Razavi** (PhD) writes in *Science Magazine* about his personal experience starting a doctorate and pursuing an academic career in Canada, as well as challenges he faced in expressing himself in a language other than his mother tongue.

. “With some effort on both sides, language barriers need not be insurmountable,” writes Razavi. Read the full essay.

In **THE CONVERSATION**

Keeping it local: The story behind a made-in-Saskatchewan COVID-19 emergency-use ventilator

USask veterinarian Dr. Julia Montgomery (PhD, DVM), and law professor Patricia Farnese.

How a veterinarian and a law professor joined a multidisciplinary team to help produce a made-in-Saskatchewan emergency-use ventilator during the COVID-19 pandemic.



The ‘Christmas Star’ appears again: Jupiter and Saturn align in the ‘great conjunction’ on Dec. 21, 2020

Dr. Daryl Janzen (PhD), USask observatory manager and astronomy instructor

From the birth of Jesus Christ to Newton's discovery of gravity, great conjunctions of Jupiter and Saturn have many notable connections in human history.



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 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 Research Profile and Impact.**

Opportunities



USask “Images of Research 2021” to launch in March

USask’s “Images of Research” competition, organized by Research Profile and Impact, launches in March. Snap your research, scholarly, and artistic work and enter your images for the chance to win glory and cash prizes. Get those shutters clicking and check Research.USask.ca for past winners and contest details.



LAST CHANCE: Enter NSERC’s Science Exposed Image Competition by Jan. 18

If you have eye-catching images from research projects from any scientific or engineering field, submit your photos to the **Science Exposed** competition by **January 18, 2021**.

Individuals or groups that have most successfully combined creativity and science will be eligible for a total of three \$2,000 Jury Prizes and a \$2,000 People’s Choice award. The contest is organized by the Natural Sciences and Engineering Research Council (NSERC) and Association francophone pour le savoir (Acfas). [Submit your image here.](#)

Upcoming events



“Delivering on the Promise of Medicare” - Jan. 21 Houston Lecture (Online)

Johnson-Shoyama Graduate School of Public Policy hosts Dr. **Danielle Martin**, internationally recognized health policy leader, executive vice-president and chief medical executive at Toronto’s Women’s College Hospital, and practicing family physician, in the third annual Houston

Lecture.

In the context of COVID-19, Dr. Martin will explore from the vantage point of a family

doctor working in the system, how we can do better at delivering on the promise of Medicare.

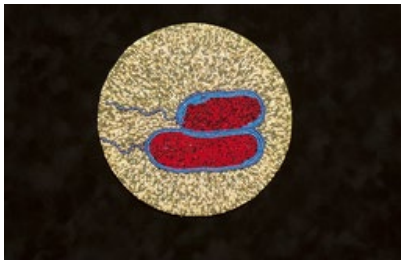
Martin made headlines in 2014 when her testimony on the merits of the Canadian versus the American health system at a U.S. Senate Subcommittee hearing, with Senators Richard Burr and Bernie Sanders, went viral. To attend, you must **register in advance** for the Zoom lecture, to be held **Jan. 21. 7:00 – 8:30 p.m. (CST)**.



Engaging with Indigenous Elders and Participants: USask Protocols and Process

Hosted by USask Research Acceleration and Strategic Initiatives, attend a free workshop on navigating the practical logistics of working with Elders and Knowledge Keepers within the requirements of USask policy and in compliance with ethics.

The free, online workshop will address cultural protocols and stewardship, payment processes, and ethical considerations. Thursday Jan. 21, 2021, 2:30 PM – 4:00 PM CST. **Register here.**



Beads in the blood: Ruth Cuthand exhibition – Jan. 22 to April 10

USask alumna **Ruth Cuthand** presents *Beads in the blood*, a survey exhibition of new and past works that include video, mixed-media installation and photography and collaborative story-work between Cuthand and alumna **Felicia Gay**, curator of the exhibition.

The show will be presented in College Art Galleries 1 and 2. **Read the details.**



USask “People Around the World Conference”– Feb. 2-3 - Registration now open

The annual People Around the World Conference (PAW 2021) invites you to attend an online conference of professionals, academics, and researchers seeking to re-examine how to realize the U.N.’s 17 Sustainable Development Goals (SDGs) in the wake of COVID-19.

Keynote speakers include: **Columbia University economist Dr. Jeffrey Sachs, president of the U.N. Sustainable Development Solutions Network**; Canada's Minister of International Development **Karina Gould**; Saskatchewan Human Rights Chief Commissioner **David Arnot**; **Livia Castellanos**, Saskatchewan's Ministry of Advanced Education executive lead for international education and jurisdictional initiatives; and National Research Council program director **Phil De Luna**, who leads a \$57-million collaborative research project on Canada-made clean energy technology.

The conference will also feature opening remarks from USask’s new Vice-President

Research, Dr. **Baljit Singh** (PhD). **Read the details. Registration is open until Feb. 1--sign up now.**



6th Annual Science & Society Conference—February 20-21, 2021

Registration is free for this online conference which is organized by the University of Toronto-founded Beyond Sciences Initiative, a not-for-profit network that aims to empower young scientific leaders to make lasting change within their local and global communities. The conference intended for a broad audience invites scholars

worldwide to present research on topics of global health, infectious diseases, cancer, chronic diseases, biotechnology, and bioinformatics. **Visit the website** for more information.

Make your research stand out with ORCID

Join the rapidly growing network of USask academics setting up their own ORCID (Open Researcher and Contributor ID) identifier.

Open to faculty, lecturers, graduate students and post-doctoral fellows—anyone who researches—ORCID is free to use and takes less than a minute to set up. Your ORCID ID is a career-long, unique-to-you, 16-digit identifier that ensures you are more consistently and accurately credited for your work, and helps to advance the university's reputation.



Register now for your ID make sure to **link it to your USask NSID**.

For more information on ORCID and how to get started, visit **library.usask.ca/orcid**

In the news

- USask's **announcement of new crop research funding from the Saskatchewan Agriculture Development Fund** was featured by *Global News*, *The Toronto Star*, and the *Western Producer*. More than 21 million people viewed the story.
- **VIDO's approval to test their COVID-19 vaccine** was featured in ***CBC The National***, ***CTV Saskatoon***, ***The Saskatoon StarPhoenix***, ***CTV Saskatoon*** (December 10), ***Bridges***, ***CBC News Network***, ***The Toronto Star***, and ***MSN News Canada***. More than 154 million people viewed the story.



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