In this issue: CFI awards $77.5 million to major USask science facilities; USask-led Indigenous health networks to move into Station 20 West; funding for health, agriculture, environment, and social science research; COVID, COVID, COVID!

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!

**Read it now:** COVID-19 Updates and Fall Implementation Plan

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**Research resumption and mask wearing**

The next round of submissions for the resumption of on-campus research is now open to August 28. Applications will be reviewed as they are received. All research team members will need to complete the online COVID-19 Health and Safety Training. Visit updates.usask.ca for more information.

As of Aug. 24, all faculty, staff and students—as well as visitors, contractors and vendors—who are approved to be on USask campuses in Saskatoon, Regina and Prince Albert are expected to wear a face mask (non-medical mask or cloth face-coverings) in all indoor common or shared spaces. This includes hallways, lobbies, libraries, classrooms, labs, study spaces, elevators and other designated shared spaces. Read the full update here.

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**Top Stories**

**CFI awards $77.5M to help major USask science facilities address COVID-19 and other global challenges**

The Canadian Light Source (CLS) synchrotron and SuperDARN (Super Dual Auroral Radar Network), two of
Canada’s top science facilities at USask, have been awarded a total of more than $77.5 million—a third of the total $230 million announced by Canada’s Minister of Innovation, Science and Industry Navdeep Bains for 14 research facilities across Canada. The funding will be used to advance research to combat the COVID-19 global pandemic, and to improve the radar monitoring of space weather conditions with the SuperDARN. Read more.

USask-led Indigenous health research networks find home at Station 20 West

The national co-ordinating centre of the CIHR-funded Network Environments for Indigenous Health Research (NEIHR) and the Saskatchewan First Nations and Métis Health Research Network of NEIHR—both USask-led programs dedicated to improving health and wellness in Indigenous communities—will move into Station 20 West in Saskatoon’s core neighbourhood in September. The move is a significant step for Indigenous health and wellness research in Saskatchewan and nationally, and will make the health research networks more accessible to community partners. Read more.

USask researchers to examine AI in education, Canada’s labour movement, and ESL student writing

USask researchers Dr. Dirk Morrison (Ed.D), Dr. Elizabeth Quinlan (PhD), and Dr. Veronika Makarova (PhD) have
each been awarded SSHRC Insight Development Grants. Morrison will investigate how artificial intelligence (AI) will transform higher education, Quinlan will examine how one major event transformed the modern Canadian labour movement, and Makarova will explore how new tools can help English-as-a-second-language students excel in academic writing. **Read the full story.**

Traces of ancient life tell story of early diversity in marine ecosystems

In just-published research in *Science Advances*, a USask-led international research team has helped to paint a clearer picture of the Earth’s ancient oceans. Paleontologists Dr. Luis Buatois (PhD) and Dr. Gabriela Mángano (PhD), working with USask doctoral student Kai Zhou and researchers from England, Germany, and the United States, studied trace fossils from 560 to 433 million years ago on every continent. The team discovered that animals on the seafloor first dug into the offshore—an area just past where the waves break—and then expanded into shallower and deeper waters over subsequent millions of years. The paper is the culmination of over 20 years of research. **Read the details.**

New USask-led research reveals previously hidden features of plant genomes

An international team led by the USask Plant Phenotyping and Imaging Research Centre (P2IRC) and researchers at Agriculture and Agri-Food Canada has decoded the full genome for the black mustard plant—research that will advance breeding of oilseed mustard crops and provide a foundation for improved breeding of wheat, canola and lentils. The results are published in *Nature Plants*. **Read more.**

USask researchers partner on $1.3-million study on affordable housing

USask researchers Dr. Isobel Findlay (PhD, Professor Emerita), community health and epidemiology professor Dr. Nazeem Muhajarine (PhD), and law professor Sarah Buhler (LL.M.) are part of a study led by Cape Breton University researcher Dr. Catherine Leviten-Reid (PhD), a former USask post-doctoral fellow, to examine how different types of affordable rental housing impact the lives of marginalized people and families. The project is funded by a $1.3-million SSHRC gran in partnership with the Canada Mortgage and Housing Corporation. **Read more.**

Using synchrotron light to help conserve artwork

Research at the Canadian Light Source (CLS), a national
research facility of USask, was key to understanding how to conserve experimental oil paintings by Rita Letendre, one of Canada’s most respected living abstract artists. The work is part of a collaborative research project between the Art Gallery of Ontario (AGO) and the Canadian Conservation Institute that came out of a recent retrospective Rita Letendre: Fire & Light at the AGO. In the photo: Kate Helwig, Senior Conservation Scientist at the Canadian Conservation Institute. Read more.

COVID-19 Research

Tracking pandemic public health responses
USask researcher Dr. Cory Neudorf (MD), medical director of surveillance and health status assessment/reporting for the Saskatchewan Health Authority, is now leading a team of researchers who are the first in the world to track public health responses to an ongoing pandemic, using new World Health Organization (WHO) guidelines for tracking interventions. The goal of the $230,600 research project is to provide recommendations on how to best prepare for the next wave of COVID-19 and for future pandemics. Read the full story.

USask researchers explore therapeutics to fight COVID-19
Dr. Kerry Lavender (PhD) and Dr. Joyce Wilson (PhD) have been awarded more than $700,000 in CIHR rapid response funding to accelerate therapeutics research and find effective treatment options for COVID-19. Lavender’s project is rapidly evaluating some highly promising therapeutics against COVID-19, using a humanized mouse model. Wilson is also leading a team including VIDO-InterVac researchers Drs. Franco Vizeacoumar (PhD) and Darryl Falzarano (PhD) that is investigating the repurposing of currently approved drugs to treat COVID-19. Read the full story.

USask provides virtual care during pandemic
A USask team led by Dr. Ivar Mendez (MD) used a tele-robotic ultrasound system to provide prenatal care for pregnant women who were unable to leave the community of La Loche due to the COVID-19 lockdown. More than 30 women needed prenatal ultrasounds which were critical in determining patients’ treatment and even saving pregnancies. Read the full story.
USask preserving the provincial pandemic experience

As of Aug. 1, the COVID-19 Community Archive—a partnership between the USask Digital Research Centre, University Archives and Special Collections in the University Library, and history department faculty led by historian Dr. Erika Dyck (PhD)—has received and documented approximately 100 submissions from the public. The project team has also archived 800 gigabytes of web archive data from sites chronicling news and documentations of the pandemic. Interviews with members of the public are also being conducted to record their experiences. View the archive and submit your content. Read the full story.

Data drives decisions to contain COVID-19

In one of the first studies of its kind on the global pandemic, Dr. Nazeem Muhajarine’s (PhD)s team in the Saskatchewan Population Health and Evaluation Research Unit (SPHERU) is surveying provincial residents each month in the Social Contours and COVID-19 research project, sharing results of public perceptions of pandemic policies and how many people are following prevention measures. Read the story. See the survey results.

USask’s VIDO-InterVac with Canadian drug company to help combat COVID-19

USask’s Vaccine and Infectious Disease Organization-International Vaccine Centre (VIDO-InterVac) has contracted with Canadian pharmaceutical companies Dalton Pharma Services to undertake formulation of VIDO-InterVac’s potential COVID-19 vaccine for the first stages of early phase clinical trials. Read more

Canadian universities partner to fight COVID-19 at USask’s VIDO-InterVac

Infectious disease experts from Dalhousie University Dr. Alyson Kelvin (PhD) and Dr. Jason Kindrachuk (PhD) from University of Manitoba are joining the leading-edge research team at the USask Vaccine and Infectious Disease Organization-International Vaccine Centre (VIDO-InterVac) on one-year secondments to collaboratively advance research and development against COVID-19. Read more.

Agtech to the rescue in a pandemic: adapting plant labs
for human testing

Sophisticated agtech labs and equipment used for crop and animal breeding, seed testing, and monitoring of plant and animal diseases could easily be adapted for diagnostic testing and tracing in a human pandemic or epidemic, say the authors of a just-published article in *Nature Biotechnology*. The authors are: GIFS CEO Dr. Steven Webb (PhD); Dr. Richard Twyman (PhD) of Scientific Management Consultancy TRM Ltd. in the UK, and Dr. Maurice Moloney (PhD) of AgritecKnowledge LLC, an international consultancy network for agricultural technologies in the UK. Read more.

**USask Jazz Ensemble premieres new social isolation composition**

Physical isolation due to COVID-19 has resulted in unavoidable social isolation on a massive scale. USask music faculty member Dean McNeill and music grad Erika Rybinski have co-composed *Floruit*, an original composition that speaks to the issue of social isolation. The premiere of *Floruit* is performed by recent USask Jazz Ensemble alumni.

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**

**Cancer therapies connect dogs and humans**

As part of USask’s Comparative Oncology Research Group, WCVM researcher Dr. Behzad Toosi (DVM) is investigating a molecular similarity that could exist in canine and human cancers of the bone, mammary gland, lymphocytes and blood cells. Since cancers in dogs and humans are similar in terms of appearance, genetics, and response to treatment, and arise in similar environmental conditions, dogs may hold the key to uncovering novel cancer therapy targets and treatments that will benefit domestic animals and their owners, as well as human cancer patients. Read the full story.
USask and GIFS appoint Nutrien sustainability lead to GIFS board

Nutrien vice-president of sustainability and stakeholder relations Candace Laing has joined USask’s Global Institute for Food Security (GIFS) board of directors. Nutrien is the world’s largest provider of crop inputs, services and solutions. Read more.

New website for Livestock and Forage Centre of Excellence

The USask Livestock and Forage Centre of Excellence (LFCE) has a new website that highlights the many ways the world-class complex of field and science laboratories is helping to improve the global food chain. The LFCE brings together under one roof every link of the livestock production chain, building on renowned research and teaching in livestock and forage production. USask scientists in agriculture, veterinary medicine and engineering have access to new facilities and technologies, larger herds, and additional acres of forage and grazing land—all near Saskatoon. Check out the new website at https://lfce.usask.ca.

Water Security

USask water and health researchers part of new national network studying sepsis

Dr. Corinne Schuster-Wallace (PhD), a USask expert on issues of water and health, is a collaborator on a new national network to study deadly blood infections and to highlight the role of poor and inadequate water access in infection and infection management. A co-investigator of the project is USask medicine researcher Dr. Joann Kawchuk (MD). CIHR has invested $5.7 million in the new research network, which is based at McMaster University in Hamilton, Ont. Researchers from across Canada are participating in the project. Read more.

Accolades

USask emeritus professor named to the Canadian Agricultural Hall of Fame

After a highly successful career as a barley breeder with the Crop Development Centre spanning almost four decades, Dr. Bryan Harvey (PhD) has been inducted into the Canadian Agricultural Hall of Fame. Read more.
USask professor named one of the top women in Canadian cybersecurity

Computer science professor Dr. Natalia Stakhanova (PhD), Canada Research Chair in Security and Privacy, has been named one of the top women in cybersecurity by IT World Canada. Stakhanova’s work focuses on malicious software (malware), building secure systems, and includes software security, mobile security, and e-health security. Read the profiles of all the honourees. Read more.

USask historians win national writing prizes

Three history professors are among this year’s winners of scholarly writing awards from the Canadian Historical Association: Dr. Ashleigh Androsoff (PhD), Dr. Valerie Korinek (PhD) and Dr. Sarah Nickel (PhD). Read the details.

Undergraduate Research

USask undergrad researchers to share results in new, online format

From Monday Aug. 24 through Wednesday Aug. 26, the USask Student Undergraduate Research Experience is hosting their annual end-of-summer research symposium in a new, online format. Nearly 80 undergraduate student researchers from across USask will share their work via either poster or presentation format in Canvas. The symposium will be open to the campus community (anyone with an NSID) for viewing, commentary.

Telling your research story

Velez tackles growth and metabolism research through post-doctoral fellowship

Veterinary biomedical sciences post-doctoral fellow Dr. Emilio Velez (PhD) has received a prestigious CIHR post-doctoral fellowship to determine whether two recently identified peptides naturally produced in the
hypothalamus are involved in the regulation of growth in mammals. The peptides are known to diminish hunger and regulate body fat. Velez aims to help improve the health of both domestic animals and humans by studying the role the peptides play in maintaining growth and metabolism. Read more.

USask VIDO-InterVac research on COVID-19 in the news

VIDO-InterVac's director Dr. Volker Gerdts (PhD) was interviewed on Pamela Wallin’s No Nonsense Podcast.

In the news

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 explainers articles about their research. Articles written by USask researchers have been read more than 2.15 million times since the university entered into a partnership with the SSHRC-funded Conversation Canada in June 2017.

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.

Webinar

NSERC Live Q&A Webinars—How to complete a DG application
On Tuesday Aug. 25 and Thursday Sept. 24 from 1 pm to 2 pm attend the live Q&A series on how to complete an application using the Research Portal and the NSERC Canadian Common CV (CCV). Pre-registration is not required to attend the live Q&A sessions: *Live Q&A for August 25, 2020* and *Live Q&A for September 24, 2020*.

Please view the pre-recorded videos prior to attending a live Q&A session, and review the following documents:

- Discovery Grant application program description which includes the Peer Review Manual and the Frequently Asked Questions
- Instructions for Completing an Application
- Submitting an NSERC individual Discovery Grant application through the Research Portal tutorial.

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**UNIVERSITY OF SASKATCHEWAN**

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