

May 2018 - Issue #5



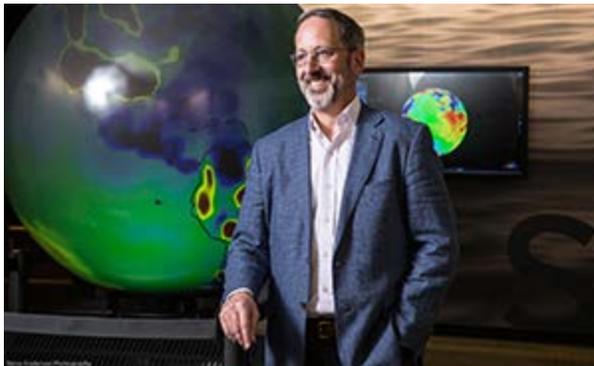
# Discovery Digest

Highlights of U of S research news

*In this issue:* New *Nature* study from Jay Famiglietti, E.W.R Steacie fellowship for Regan Mandryk, major funding for isotope and vaccine production, water research, USask students successful in space design competitions, and more!

Each month, U of S Research Profile and Impact assembles a selection of research stories from across campus. It's a glimpse into how U of S research, scholarly and artistic work is making a difference for Saskatchewan, Canada, and the world.

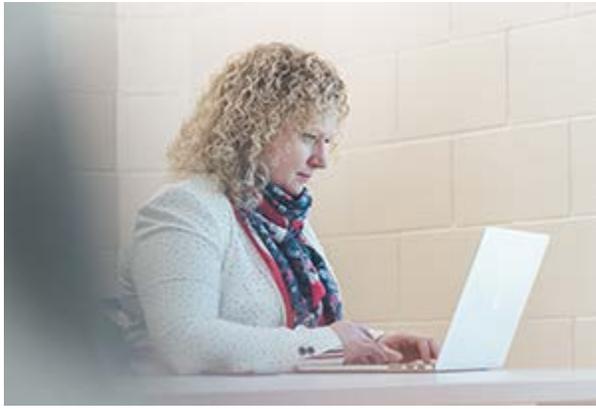
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## Unprecedented study reveals major shifts and threats to global freshwater supplies

A *Nature* article by Jay Famiglietti, the incoming executive director of the Global Institute for Water Security (GIWS) at the University of Saskatchewan (USask) and Canada 150 Research Chair in Hydrology and Remote Sensing, reveals the dramatic impact of climate change and human activities on the availability of freshwater around the globe.

The **first-of-its-kind study published today** reveals a startling new global map depicting changing freshwater availability over the 2002-2016 period, using observations from NASA's Gravity Recovery and Climate Experiment (GRACE) satellites.



### **U of S computer scientist awarded Steacie Fellowship**

USask computer science professor Regan Mandryk, whose ground-breaking research involves developing digital game technology to assess mental health, has been awarded one of Canada's highest honours for young scientists.



### **Catherine Trask renewed as a Canada Research Chair**

Canada Research Chair in Ergonomics and Musculoskeletal Health Catherine Trask has been awarded an additional five-year term in that role. This chair will support Trask's on-going research on work-related musculoskeletal disorders in agriculture with the Canadian Centre for Health and Safety in Agriculture (CCHSA) Ergonomics Lab until 2022.



## USask gets major federal boost for isotope and vaccine production, water research

Federal investment of \$5.25 million in three USask research centres will help protect Canadians against infectious disease, produce and deliver medical isotopes to hospitals using non-reactor nuclear technology, and help conserve water and energy by advancing green roof technology for cold climates.



## USask students achieve success in national and international space design competitions

In what will be Saskatchewan's first student-designed satellite mission to fly in space, a USask-led space design team has been chosen by the Canadian Space Agency (CSA) to design, build, launch and operate a small cube-shaped research satellite for launch by rocket in 2021.

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## A Green and White Globe



## International partnership results in new vaccine for cattle in Africa

Working with African partner organizations, USask's Vaccine and Infectious Disease Organization - International Vaccine Centre (VIDO-InterVac), has just licensed a vaccine against contagious bovine pleuropneumonia (CBPP) for commercial production by the Kenya

Veterinary Vaccines Production Institute (KEVEVAPI). CBPP is an infectious lung disease of cattle which affects the livelihoods of approximately 24 million small-scale cattle farmers in Africa and causes over \$60 US million in losses annually. VIDO-InterVac was partnered with the Kenya Agricultural and Livestock Research Organisation (KALRO) and the International Livestock Research Institute (ILRI) for the development.



## 2018 International One Health Congress to be hosted at USask

USask and One Health Platform Foundation are hosting world's premier conference for the global One Health community June 22-25<sup>th</sup>. The focus of the conference is *One Health in underserved communities* -- recognizing the complex interplay of environmental, animal and human health in underprivileged or subsistence societies.

Participants can choose from 28 sessions in three tracks: One Health Science, Antimicrobial Agents and Resistance, and Science Policy Interface.

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## In THE CONVERSATION



## The hidden history of Indigenous stereotypes in tabletop games

While games today often sanitize conquest in North America rather than glorify it, they

continue to grapple with the same questions about race, culture and history that game-makers 100 years ago encountered. USask history professor **Benjamin Hoy** details the history of the challenging task of representing identities and histories with bits of wood, plastic and cardboard in ***The Conversation Canada***.

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

Want to reach a broad audience with your research? Consider submitting an item to the Conversation, an academic journalism hub of which U of S is a co-founding member. **Read more here** or **get in touch with Sarath Peiris**.

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## **Signature Area Research**



### **House of Commons Committee Pays a Visit to GIFS**

The Global Institute for Food Security (GIFS) at the University of Saskatchewan hosted Parliament’s Standing Committee on Agriculture and Agri-Food on May 9.

The visit was part of the committee’s work to understand the challenges, problems and other factors that help or hinder the success of Canadian companies’ efforts to innovate and export their products. The meeting included a discussion on food security science, and how the Canadian government can support GIFS, and ultimately, bring the benefits of this science to producers and the public.



### **U of S training the next generation of soil scientists**

USask soil science and toxicology professor Steven Siciliano is developing improved, more cost-effective solutions to remediate contaminated fuel and fertilizer sites from coast-to-coast, making clean-up of thousands of former gas stations economically feasible, and helping students achieve their life dreams along the way.

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## Commercialization



### Academics and industry tackle “big data” challenges at U of S-led AIMday™ event

AIMday™ Big Data, led by and hosted at USask, has resulted in 16 new partnerships between companies and scientists, including seven successful teams from USask, each being awarded \$1,000 in initial funding. Researchers from the U of S, University of Regina and Saskatchewan Polytechnic met with representatives of 12 organizations in various sectors to discuss innovative solutions to questions posed by industry.

USask, through Innovation Enterprise, is the official Canadian AIMday™ hub, enabling IE to help facilitate AIMday events at institutions across Canada.

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## Social Sciences and Humanities Research



## **Gladue Rights Research Database first of its kind in Canada**

A **unique-in-Canada research database** developed and launched at USask will help to ensure the Gladue rights of Indigenous people are fully considered during sentencing. The database is a growing subscription-based service providing Indigenous people and their advocates with easy access to a wide range of peer-reviewed scholarship, built by Indigenous and non-Indigenous students under faculty mentorship. The product is a partnership among Legal Aid Saskatchewan, the Community-Engaged History Collaboratorium in the USask history department, and the USask Humanities and Fine Arts Digital Research Centre, and supported by the Law Foundation of Saskatchewan.



## **Canadian Blood Services funds JSGS-led research to investigate harmonization and reform of legislation on the sale of blood and tissue**

Alana Cattapan, assistant professor in the Johnson Shoyama Graduate School of Public Policy (JSGS) at USask, has been awarded the Canadian Blood Services (CBS) James Kreppner Award (\$43,275) to study the commercialization of blood and tissue in Canada.



## **Museum of Antiquities prints 3D replicas of artifacts**

USask's Museum of Antiquities is creating replicas of artifacts using a 3D printer, enabling visitors to get an in-person look at copies of ancient artifacts. The museum's collection of replicas of the Lewis Chessmen, a collection of chess pieces washed up on shore on the Isle of

Lewis in Scotland, is now complete thanks to the 3D printing efforts of third-year computer science undergraduate Elyse Jensen. The originals are thought to have been carved in Norway between 1150 and 1200.

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## Health Research



### **\$8-M international childhood arthritis study**

A total of 3,000 children, including between 50 to 75 from Saskatchewan, will be enrolled in an \$8-million, five-year Canadian-Dutch study to identify specific genetic and immune markers that could lead to individualized treatment approaches in childhood arthritis. The study, a collaboration of Canadian and Dutch researchers including Saskatchewan team members, is supported by the Canadian Institutes of Health Research and Dutch funding agencies. The study was launched with a meeting of a team of 55 Canadian pediatric rheumatology researchers May 11 and 12 at USask, hosted by the USask Division of Pediatric Rheumatology.



### **Three USask researchers awarded in grants for Indigenous-centred, patient-oriented research**

**Gary Groot** (Medicine), **Vivian Ramsden** (Medicine) and **Angela Bowen** (Nursing) have been awarded grants over three years totalling almost \$750,000 from Saskatchewan Health Research Foundation (SHRF) and the Saskatchewan Centre for Patient-Oriented Research (SCPOR). The grants will support research with Sturgeon Lake First Nation for improved well-

being, improving birth experiences of Indigenous mothers, and working with Indigenous patients to identify local health care needs in the North, respectively.

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## Indigenous Research



### USask hosts two conferences with an Indigenous focus

USask hosted the *Teaching and Learning Today Conference*, May 2-3, which brought professionals from across Canada together to tackle two important topics in Canadian higher education—indigenizing academia and improving access to educational resources. On May 4, USask also held *Indigenous Health: Mysteries and Myths of the HIV Crisis in Saskatchewan*. Co-hosted by Saskatchewan Health Research Foundation (SHRF) and the Canadian Academy of Health Sciences (CAHS) Saskatchewan Regional Network, the conference brought together nearly 150 people from the province’s health research community, including government officials, and community-based and Indigenous organizations to address the current HIV crisis facing Saskatchewan.



**Gabriel Dumont Research Chair in Métis Studies and new graduate scholarships**

The Gabriel Dumont Research Chair in Métis Studies and Gabriel Dumont Graduate Scholarships for Métis Students have been launched in the College of Arts and Science. Both initiatives are part of a new five-year partnership agreement between the U of S and Gabriel Dumont Institute of Native Studies and Applied Research (GDI). The search for the new Métis chair is expected to begin shortly, with a projected start date of January 2019.

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## Young Innovators



### **Astronaut training program leads U of S student to “Mars”**

USask graduate student Doug Campbell, who dreams of a career in space, went on a mission to "Mars," simulated deep in the Utah desert. [Read more in the \*Young Innovators\* series.](#) His experience was also featured in a [CTV News story](#).

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## Upcoming events



## Exhibition: Jennifer Crane's *Reverie in Darkness*

On display now until June 12 at **The Gallery / Art Placement**, *Reverie in Darkness* presents selections from three bodies of art and art history professor **Jennifer Crane's** recent work: *Outlaw (and other failed portraits)* [2016-18], *Dear Edward* [2009-10], and *Specter* [2017-18]. Each body of work is distinct both in conceptual approach and process of making the images.

"The title of the exhibition refers to the experience of making photographs in darkrooms under red safe lights and the dark places that creative exploration can take you - following intuitive impulses while recognizing your failures," Crane says.



## International Day of Light: Talk and Tour and CLS Science Odyssey Tours

Canadian Light Source CEO Rob Lamb will present a talk on International Day of Light, May 16, at 7 p.m. Education Building, Room 1004, followed by a tour at CLS. Get your free ticket at **EventBrite**.

In conjunction with NSERC Science Odyssey, CLS is hosting a week of special evening and weekend tours of Canada's only synchrotron research facility from May 11 to 17. Learn about CLS history, how it all works, and the amazing work scientists from around the world have done here! Go to **EventBrite** to order free tickets.

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