

MAJOR RESEARCH PROGRAM FUNDING SUCCESSES

U of S awarded \$77.8M CFREF to lead “Global Water Futures” research program

The U of S has been awarded \$77.8 million from the Canada First Research Excellence Fund (CFREF) to lead the *Global Water Futures: Solutions to Water Threats in an Era of Global Change* initiative—the largest university-led water research program ever funded worldwide. The total budget for the program is \$143.7 million, including major contributions from partners University of Waterloo (\$15M), McMaster University (\$12.1M), and Wilfrid Laurier University (\$10.6M). U of S is the only institution to have been awarded in both inaugural rounds of the competitive program.

For more details, visit: <https://goo.gl/uR54Qj>

U of S awarded \$20-M Canada Excellence Research Chair

Leon Kochian (Plant Sciences/Soil Science/GIFS), one of the world’s most highly cited scientific researchers, was named the Canada Excellence Research Chair (CERC) in Food Systems and Security at the U of S—a \$20-million initiative that will use cutting-edge plant and soil science to help feed a growing world. Additionally, the Canada Foundation for Innovation has contributed \$800,000 towards the cost of a \$2-million *Roots of Food Security* research facility. The CERC funding will also add three new faculty positions, and support research opportunities for 120 undergraduate, graduate and post-doctoral fellows over seven years. Kochian joins the U of S and its Global Institute for Food Security (GIFS), where he will serve as associate director, from Cornell University and the U.S. Department of Agriculture. The CERC program is a tri-agency initiative, and among the most prestigious and generous of such programs available globally.

Read more here, <https://goo.gl/Gfa5E3>

New U of S plant research centre launched to design crops for global food security

U of S marked the official launch of the Plant Phenotyping and Imaging Research Centre (P2IRC) with an international symposium organized by the U of S Global Institute for Food Security and a demonstration of new drone technology to be used in novel crop development approaches. The creation of P2IRC stems from the \$37.2-million inaugural Canada First Research Excellence Fund (CFREF) award granted in 2015 for the innovative research program, *Designing Crops for Global Food Security*.

For more details, visit: <https://goo.gl/HSWF4t>

U of S Research in Dementia in Rural Settings Garners \$2.3-M CIHR Foundation Grant

Debra Morgan (Medicine) was awarded \$2,336,491 over seven years through a CIHR Foundation grant for her project entitled *Design and evaluation of integrated primary health care practices for dementia in rural and remote settings*.

More details are available here, <https://goo.gl/vjPhvL>

Saskatchewan Pulse Growers invests \$23 million in pulse breeding at U of S

Saskatchewan Pulse Growers (SPG) announced nearly \$23 million in funding to support pulse crop breeding at the U of S Crop Development Centre (CDC), continuing, for a further five years, a crop breeding program which has already been running for 10 years.

For more information, visit: <https://goo.gl/kz6ySX>

Prestigious Banting Fellowships Bring Two Top Researchers to U of S

Two outstanding young researchers from Germany and Alberta have been recruited to the U of S as 2016 Banting Postdoctoral Fellows, a federal fellowship, the most prestigious of its kind in Canada, that attracts top-tier talent both nationally and internationally. Each fellow will receive \$140,000 over two years from NSERC. The 2016 Banting Fellows are

- ❖ **Markus Brinkmann** (Toxicology) from Germany's RWTH Aachen University, will be working with supervisor **Markus Hecker**, Canada Research Chair in Predictive Aquatic Ecotoxicology. His research will focus on creating computer models to predict contaminant levels and health impacts in fish.
- ❖ **Nilusha Malmuthuge** (VIDO-InterVac) from the University of Alberta, will be working with supervisor **Philip Griebel**, Canada Research Chair in Mucosal Immunology. Her research will focus on the role of microbes in the gut of newborn lambs.

For further details, see <https://goo.gl/i1M8Xr>

Two U of S graduate students awarded Vanier Scholarships

Two U of S PhD students have been awarded Vanier Canada Graduate Scholarships, the country's most prestigious and competitive federal scholarship for top-tier graduate students. Each student will be funded for \$150,000 from NSERC over three years, to develop cutting-edge software.

- ❖ **Kimberly MacKay** (Bioinformatics), working with supervisor Tony Kusalik (Bioinformatics) and collaborating with Chris Eskiw (Agriculture), will create software to model the structure and organization of chromosomes within cells – specifically investigating what controls folding and unfolding of chromosomes.

- ❖ **Jacques Desmarais** (Geology), co-supervised by professor **Yuanming Pan**, Canada Research Chair **John Tse**, and **Roberto Dovesi** at University of Turin, will develop new software to model minerals deep beneath Earth's crust, providing unprecedented knowledge about the composition, interior movement of materials, and origin of our planet, and then experimentally verify the results.

More details on the scholarships are available here, <https://goo.gl/iVpEYp>

MAJOR RESEARCH INFRASTRUCTURE FUNDING

Canada and Saskatchewan invest in post-secondary infrastructure

The U of S and its federated colleges are receiving \$32 million in infrastructure investment, combined, from the federal government and from the province of Saskatchewan. Federal funding will be allocated through the Post-Secondary Institutions Strategic Investment Fund. The funds are earmarked for three projects:

- ❖ \$30.1 million for the construction of the university's new Collaborative Science Research Building, which will focus on projects that have potential clean-technology applications, such as the development of more efficient bio-based energy systems and better water purification techniques, the breeding of more drought-tolerant crops, and the development of more sustainable pest-control mechanisms;
- ❖ \$1.09 million for renewing research space and improving energy efficiency at the university's St. Thomas More College; and
- ❖ \$815,000 for building new infrastructure at the St. Peter's College campus for biomass production, harvesting and processing, which will act as a model for future green technology projects. The Government of Saskatchewan

is providing an additional \$250,000 for this project.

The construction project will generate more than 600 construction jobs, and the economic impact is estimated at \$67 million for Saskatchewan and \$127 million for Canada.

More details are available by visiting: <https://goo.gl/pc6WrJ>

U of S NSERC/SaskPower research chair to develop modern power grid

Tony Chung (Engineering) has been awarded a \$2.2-million Industrial Research Chair (IRC) that will help Canada achieve a safe, reliable and sustainable power grid that incorporates renewable energy sources. The research will be funded with \$1.14 million over five years from the federal Natural Sciences and Engineering Research Council of Canada (NSERC) and a matching \$1.14 million over five years from SaskPower through a previously announced \$2.5-million 10-year investment in Chung's research program.

For more information, visit: <https://goo.gl/DEQ1cX>

DISCOVERIES WITH IMPACT

U of S VIDO-InterVac develops vaccine for devastating pig virus

In less than a year, U of S scientists have developed and tested a prototype vaccine that could protect the North American swine industry from a virus, Porcine Epidemic Diarrhea Virus (PEDV) that has killed more than eight million pigs and cost more than \$400 million in lost income since 2013. For more information, visit <https://goo.gl/WmePDE>

U of S produces world's first in vitro bison calves

Veterinary researchers at the U of S have successfully produced bison calves using in vitro fertilization—a world first. Researchers produced embryos in a laboratory, then transferred them into surrogate mothers more than nine months ago. The bison

cows gave birth to the calves in July. A fourth calf was produced from a frozen embryo taken from a bison cow in 2012 and transferred to a surrogate mother in 2015—another reproductive first for the bison species.

For more information, visit <https://goo.gl/lizO25>

UNDERGRADUATE RESEARCH INITIATIVES

Undergraduate Student Research Assistantships

A total of 81 faculty-supervised students received \$297,000 in matched funding this summer through Undergraduate Student Research Assistantships (USRA's) co-funded through the Office of the Vice President Research (OVPR). The program culminated with a poster competition on August 18th, the winners were,

- ❖ 1. **Matthew Nadeau** (Geological Sciences) supervised by **Chris Holmden**,
- ❖ 2. **Wesley Ridgway** (Mathematics and Statistics) supervised by **Alexey Shevyakov**,
- ❖ 3. **Ryan Thiessen** (Mathematics and Statistics) supervised by **Alexey Shevyakov**

Undergraduate Research Initiative: First-Year Research Experience

This fall, 1,500 students will be introduced to research in their first term, in 12 unique, introductory courses, thanks to 14 faculty/instructors. The courses will be given from four colleges: Agriculture and Bioresources, Arts and Science, and Kinesiology, and newly this year, St. Thomas More College. Among the classes on offer are the Aboriginal Student Achievement Program (ASAP), part of the College of Arts and Science, an online class through a partnership with Distance, Continuing and Community Education, and a pilot group project offered through EVSC 110 at the Canadian Light Source.

REPUTATIONAL SUCCESS

Dillon and George Named to Royal Society

Jo-Anne Dillon (Medicine) and **Graham George** (Arts and Science) have been named Fellows of the Royal Society of Canada – our country's senior body for distinguished scholars and one of Canada's highest academic honours.

Royal Society of Chemistry Fellowship

Graham George (Arts and Science) was also elected fellow of the Royal Society of Chemistry, United Kingdom.

Faculty elected to College of New Scholars

The Royal Society of Canada selected four U of S researchers to elect to the College of New Scholars, Artists, and Scientists. **Markus Hecker** (SENS), **Margaret Kovach** (Education), **Angela Lieveise** (Arts and Science) and **Dwight Newman** (Law) were all recognized as members of Canada's emerging generation of intellectual leaders. For more information, visit: goo.gl/5DvHhn

New Fellows and New Secretary in the Canadian Academy of Health Sciences

Debra Morgan (Medicine) and **Susan Whiting** (Pharmacy and Nutrition) have been inducted as two new fellows into the prestigious academy. **Kishor M. Wasan** (Pharmacy and Nutrition), current CAHS Fellow, was also elected as Secretary of the Board of CAHS, the first time a pharmacist researcher has been selected to the board.

IAHS Dooge Medal

Jeffrey MacDonnell (SENS/GIWS) is the 2016 winner of the Dooge Medal, the International Hydrology Prize. The medal, which was awarded in June, in Paris, is given to one recipient annually by the International Association of Hydrological Sciences, UNESCO, and the World Meteorological Society in recognition of outstanding contributions to hydrological science.

ASHRAE Fellowship

Carey Simonson (Engineering) was elected fellow of the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE). This honour is bestowed on 1% of all ASHRAE members.

GRANT FUNDING SUCCESS

U of S researchers awarded \$9.2 million from NSERC

Over the next five years, 57 U of S scientists will receive more than \$9.2 million from the Natural Science and Engineering Research Council of Canada (NSERC) through their Discovery, Discovery Accelerator, and Research Tools and Instruments programs. Details of the award recipients and their projects can be found here, <https://goo.gl/mWQw7Z>

SSHRC Insight Development Grant

Ten U of S researchers have been awarded over \$582,000 via SSHRC Insight Development Grants

- ❖ **Jon Bath** (Art and Art History) received \$66,358 for the project *The Post-Digital Book Arts*.
- ❖ **Ben Hoy** (History) received \$72,771 for his project *Building Borders on Aboriginal Lands 1860-1930*.
- ❖ **David Mykota** (Educational Psychology and Special Education) received \$44,296 for the project *The Effective Affect: Social Presence*.
- ❖ **Kalowatie Deonandan** (Political Studies) received \$73,685 for her project *Women, Resistance and Extractive Development*.
- ❖ **Laurie Hellsten** (Educational Psychology and Special Education) received \$63,645 for the project *Why Do Youth Cyberbully? Exploring Instigating Triggers, Impelling Factors, and Inhibitors in Cyberbullying*.
- ❖ **Tasha Hubbard** (English) received \$69,040 for her project *Buffalo Stories of the International Buffalo Treaty*.

- ❖ **Philip Loring** (School of Environment and Sustainability) received \$70,890 for the project *"Risk, Resilience, and Innovation in Gulf Islands Food Systems."*
- ❖ **Stephanie Martin** (Educational Psychology and Special Education) received \$52,353 for the project *Using digital storytelling to empower young women exposed to dating violence.*
- ❖ **Aloysius Newenham-Kahindi** (Human Resources and Organizational Behaviour) received \$43,307 for the project *Regional Political Strategies, Legitimacy Spillovers, and Competitive Advantage: The Case of MNCs in the E.A. Community.*
- ❖ **Jeanie Wills** (Ron and Jane Graham School of Professional Development) received \$25,659 for the project *Women's Advertising Clubs and Professional Identity: Constructing Credibility.*

SSHRC Insight Grant

Four researchers at U of S are the new beneficiaries of over \$700,000, via the SSHRC Insight Grant

- ❖ **Keith T. Carlson** (History) received \$189,100 for his project *"Mapping the transformers' travels: gender, colonialism and coast Salish territoriality."*
- ❖ **Erika E. Dyck** (History) received \$170,079 for her project *"Hollywood hospital: the highs and lows of LSD treatments for addiction in the 1960s."*
- ❖ **Melanie A. Morrison** (Psychology) received \$175,079 for the project *"Prevalence characteristics and impacts of macro- and micro-aggressions directed toward lesbian gay bisexual transgender and two-spirit /LGBTB/ persons in Canada."*
- ❖ **Dwight G. Newman** (College of Law) received \$166,630 for the project *"The post-Tsilhqot'in legal doctrine of Aboriginal title."*

SSHRC: Targeted Research: Syrian Refugee Arrival, Resettlement and Integration Grant

Hassan Vatanparast (Nutrition and Dietetics) with U of S Co-Is **Louise Racine** (Nursing), **Marwa Farag** (SPH), **Rachel Engler-Stringer** (CHE), **Carol Henry** (Nutrition and Dietetics) and **Joseph Garcea** (Political Studies) received \$25,000 for *The Impact of Socio-economic and Cultural Factors on Household Food Security of Syrian Refugees in Canada.*

CIHR Project Scheme Grant

- ❖ **Jo-Anne Dillon** (Microbiology and Immunology) and **Anthony Kusalik** (Computer Sciences) received \$100,000 for the project *A disruptive whole genome sequencing platform for the simultaneous identification and characterization of multiple sexually transmitted pathogens.*
- ❖ **Brian Eames** (Anatomy and Cell Biology) received \$753,035 over five years for the project *Mechanisms and effects of proteoglycan-dependent signaling in skeletal tissues.*
- ❖ **Charity Evans** (Pharmacy) with Co-I **David Blackburn** (Pharmacy) received \$282,865 for the project *Medication adherence in multiple sclerosis: a model for other chronic diseases?*

NSERC Engage

Eight researchers have been awarded almost \$200,000 from the NSERC Engage grant.

- ❖ **Qiaoqin Yang** (Mechanical Engineering) received \$25,000 for *Electric-Field-Induced Phase Transitions in VxOy Thin films for Electrochromic Switches* with additional support from industry partner Cisco Systems Canada Co.
- ❖ **Heather Wilson** (Vaccine and Infectious Disease Organization) received \$25,000 for *Evaluating Efficacy of ARC-005 Lipopeptide as Vaccine Adjuvant in Mice* with additional support from industry partner Alberta Research Chemicals Inc.

- ❖ **Rajesh Karki** (Electrical and Computer Engineering) received \$22,286 for *Power Systems Reliability Methodology to Incorporate Emerging Measures for Variable Supply-Demand Characteristics* with additional support from industry partner B.C. Hydro.
 - ❖ **Donald Bergstrom** (Mechanical Engineering) received \$25,000 for *Research and development of CFD centrifugal fan modeling* with additional support from industry partner Nortek Air Solutions Canada Inc.
 - ❖ **Raymond Spiteri** (Computer Science) received \$25,000 for *Optimization of Grain Inventory and Transportation* with additional support from industry partner Ag Exchange Group Inc.
 - ❖ **Andrew Ireson** (School of Environment and Sustainability) received \$25,000 for *Improving and Benchmarking Models for Snowmelt Infiltration in Seasonally Frozen Soils* with additional support from industry partner Geo-Slope International Ltd.
 - ❖ **Martin Reaney** (Plant Sciences) received \$25,000 for *Fermentation of Industrial Waste Stillage with Lactobacilli* with additional support from industry partner Spectrum Technologies Inc.
 - ❖ **Takuji Tanaka** (Food and Bioproduct Sciences) received \$25,000 for *Bioconversion of agriculture by-products through creation of nutritious feeds for food insect culture* with additional support from industry partner Entomo Farms.
- SHRF Establishment**
- ❖ **Jeffrey Chen** (VIDO-InterVac) received \$120,000 for the project *Towards a porcine model of tuberculosis aerosol transmission*.
 - ❖ **Christopher Eskiw** (Food and Bioproduct Sciences) received \$120,000 for the project *The impact of amino acid depletion and metformin treatment on Hutchinson Gilford Progeria Syndrome genome function and structure*.
 - ❖ **Charity Evans** (Pharmacy and Nutrition) received \$78,700 for the project *Establishing the incidence and prevalence of multiple sclerosis in Saskatchewan*.
 - ❖ **Lissa Peeling** (Neurosurgery) received \$120,000 for the project *A novel, high-resolution, in vitro technique to assess hemodynamic flow in cerebral aneurysms*.
 - ❖ **Christopher Phenix** (Chemistry) received \$119,900 for the project *PET imaging GBA1 activity, a potential marker of early Parkinson's disease*.
 - ❖ **Kishor Wasan** (Division of Pharmacy) received \$119,856 for the project *Chronic in vivo study of lanthanide compounds in an osteoporosis model (OVX rat) for the treatment of bone density disorders*.

CONTRACT FUNDING SECURED

Six U of S researchers have recently secured research funding through contracts with partners:

- ❖ **Adam Bourassa** (Physics and Engineering Physics) has received \$388,467 from the Canadian Space Agency/ Public Works and Government Services of Canada for the project *Science Support, Calibration, Flight and Data Analysis for Spatial Heterodyne Observations of Water (SHOW) Demonstration on a High-Altitude Aircraft*.
- ❖ **Tim Jardine** (Toxicology Centre) has received \$124,220 from Environment and Climate Change Canada (under their program, Environmental Damages Fund) for the project *Development of a Fish Biomonitoring Program for Northern Saskatchewan*.
- ❖ **Mike Nickerson** (Food and Bioproduct Sciences) has received \$120,750 from the Saskatchewan Pulse Crop Development Board

for the project *Growing the Market for Pulse Flours: Creating Innovative Bakery Products and a Pulse Database for the Food Industry*.

- ❖ **Tom Warkentin** (Crop Development Centre) has received \$1,871,494 from the Saskatchewan Pulse Crop Development Board for the project *Pulse Crop Regional Trials in Saskatchewan*.
- ❖ The Crop Development Centre has received an additional \$490,000 from the Western Grains Research Foundation, Saskatchewan Barley Development Commission, Alberta Barley Commission and Manitoba Wheat and Barley Grower's Association for the ongoing Barley Breeding Research program (2015-2019)
- ❖ **Curtis Pozniak** (Crop Development Centre) has received \$1.5 million from Secan Association and the Saskatchewan Wheat Development Commission for Durum Wheat Research and Development.

PARTNERSHIPS

Nursing students and educators from around the world come together at U of S to improve northern health

Nursing students and educators from Greenland, Iceland, Norway, Finland, Russia and Canada are gathered on campus as the U of S hosted the 2016 Innovative Learning Institute for Circumpolar Health from August 2 to 12.

IMII funds U of S research to enhance underground safety in Saskatchewan potash mines

The International Minerals Innovation Institute (IMII) and three of its member companies are investing \$127,500 over two and half years in U of S engineering research that will advance understanding of the effectiveness of drilling resin-bonded rebar into potash mine ceilings to prevent rock from falling. Read on for more details here, <https://goo.gl/GOjHRE>

Cyclotron now supplying radioisotopes to RUH

The Saskatchewan Centre for Cyclotron Sciences started supplying radioisotopes Royal University Hospital on June 6, 2016. The achievement marks the end of the cyclotron's three-year, \$25 million capital project and the beginning of its operational life as a supplier of radioisotopes for Saskatchewan patients. Radioisotopes produced by the cyclotron continue to also be used in research, from exploring new cancer treatments and understanding how Parkinson's disease develops, to investigating how plants store nutrients and respond to environmental stresses to develop new crops. More details are available here, <https://goo.gl/eVifE>

Mitacs Accelerate

- ❖ **Raymond Spiteri** (Computer Science) received \$15,000 for "*Methods for Constrained Scheduling Optimization*" in partnership with Western Heritage Services Inc.
- ❖ **Longhai Li** (Mathematics and Statistics) received \$15,000 for *Application of Neural Network Curve Fitting Methods for Least-Squares Monte Carlo Simulations in Financial Risk Management* in partnership with Aon Securities Inc.
- ❖ **Ken Coates** (Johnson-Shoyama Graduate School of Public Policy) received \$105,000 for *Sustainable Capacity Building in the North by the North* in partnership with Cameco Corporation.

Mitacs Elevate

- ❖ **Daniel Columbus** (Animal and Poultry Science) received \$55,000 for *Development of Low-Cost Feeding Strategies for Group-Housed Gestating* in partnership with Saskatchewan Pork Development Board. Post-Doctoral Fellow **Atta Kofi Agyekum**.

INTERNATIONAL

Academic Freedom Cornerstone of New U of S Confucius Institute Agreement

U of S has signed an unprecedented five-year renewal agreement with the Confucius Institute Headquarters that protects academic freedom and transparency in the activities of the U of S Confucius Institute (CI), a centre that promotes educational and academic cooperation between China and Canada. The agreement also stipulates that the activities of the CI will respect U of S institutional values, priorities and policies, and that the U of S will maintain control over the hiring, curriculum and academic practices of the CI.

After wide consultation earlier this year, a CI Working Group struck by VP Research **Karen Chad** found no evidence of academic freedom or university autonomy being compromised, nor of control of participants, the curriculum, or other CI activities but did recommend these principles be made explicit in the agreement, and that the centre's governing body should regularly review the institute's operations to ensure these principles are upheld.

During his first official trip to China, U of S President **Peter Stoicheff** signed the renewal agreement with Lin Xu, Chief Executive of the Confucius Institute Headquarters and Director General of Hanban, the executive body of the Chinese Language Council International which is a non-governmental and non-profit organization affiliated with China's Ministry of Education.

An agreement was also signed with Haiyan Hu, President of the Beijing Institute of Technology, one of China's top universities, which will continue to be the U of S CI's academic partner in China. That agreement outlines how U of S and BIT, already one of the university's flagship academic partners in China, will co-manage the academic

activities of the CI through a 10-member board that includes a co-director from each institution.

U of S now has a total of 53 agreements with 34 institutions in China, including four other agreements signed during this trip:

- ❖ The first U of S collaboration agreement with Hubei Institute of Fine Arts in Wuhan was signed that will support faculty and student exchange, joint exhibitions and joint academic programming, formalizing the U of S's relationship with one of the top fine arts institutions in China
- ❖ A new agreement was signed with Beijing Normal University to offer a collaborative doctoral scholarship program including tuition bursaries and entrance scholarships for China Scholarship Council-funded PhD students
- ❖ An agreement was renewed with flagship partner Huazhong Agricultural University in Wuhan for a PhD scholarship program
- ❖ A student exchange agreement with Hong Kong Baptist University was renewed, providing opportunities for U of S undergrads to experience education in one of the most dynamic cities in Asia