

## RESEARCH UPDATE

### NEW INITIATIVES

#### **Innovation Enterprise launches**

U of S Industry Liaison Office, a division of the Office of the VP Research, launched a new name and website on Feb. 9. The newly minted [Innovation Enterprise \(IE\)](#) will take a proactive approach to turn research ideas into commercial solutions. By fostering an entrepreneurial culture, Managing Director Johannes Dyring (featured in this month's banner) hopes to shift away from the old mindset of a technology transfer office. The launch was featured in *ReSearch Money*, a highly respected technology-focused newsletter, widely read by Canada's research and development community.

Visit [research.usask.ca/ie](http://research.usask.ca/ie) to learn more.

#### **U of S launches study of cannabis treatment for childhood epilepsy**

U of S pediatrics department is launching a study examining the efficacy and safety of using Cannabidiol (CBD) to treat children with medically intractable epilepsy and associated cognitive decline, after recently obtaining Health Canada approval to proceed. Dr. **Richard Hunstman** (Pediatric Neurology) with Dr. Richard Tang-Wai, a pediatric epileptologist at University of Alberta, will lead a multidisciplinary team at sites across the country to recruit 30 children ages one to 10. [More details are available here.](#)

#### **New signature research areas video**

The Research Profile and Impact unit of the U of S Office of the VP Research, in conjunction with Media Production, has just released a new video showcasing signature research areas at U of S to attract prospective researchers and graduate students. The video is also being used for undergraduate recruitment and alumni events. [View it here.](#)

### DISCOVERIES WITH IMPACT

#### **Saskatchewan researchers hone in on antibiotic for staph infection**

An interdisciplinary team of researchers from the University of Regina and U of S has created a potent new synthetic antibiotic called phosphopyricin that is effective in lab research against several drug-resistant pathogens such as the bacteria responsible for staph infection and other difficult-to-treat human infections.

**Jane Alcorn** (Pharmacy), working with U of R microbiologist John Stavrinides and chemist Brian Stereberg and a team of graduate and undergraduate students, found the compound was effective against antibiotic-resistant bacteria MRSA and VRE in a mouse model, while remaining non-toxic to mice when given orally. Next, the researchers aim to identify the mechanism of action of the new antibiotic, its efficacy and impact in humans. [The results are described in \*Scientific Reports\*, an open access journal from the publishers of \*Nature\*.](#)

### REPUTATIONAL SUCCESS

#### **Karen Chad and McMaster VP Research Robert Baker pen innovation op-ed**

U of S VP Research Karen Chad and McMaster University VP Research Robert Baker have jointly penned an opinion piece on behalf of the Canadian Neutron Initiative, calling for a national strategy and increased funding for neutron sciences in light of the federal government's impending March 2018 closure of the Chalk River reactor and subsequent termination of the Canadian Neutron Beam Centre. [Read the full editorial here.](#)



## **Images of Research photo and video competition launches**

Voting begins March 18 in the third annual U of S *Images of Research* photo and imaging competition, celebrating the diversity of research, scholarly, and artistic work on campus and beyond.



Also, for Canada's 150th, voting begins March 18 in the *Making a Difference* video research pitch competition. [Go to research.usask.ca for more details.](http://go.to/research.usask.ca)

## **U of S scientist awarded CFI funding to help protect wildlife**

**Jeffrey Lane** (Biology) has been awarded \$260,250 from the Canada Foundation for Innovation (CFI) towards equipping a mobile laboratory for studying animals in their habitat. The mobile lab will allow Lane to measure changes in body composition and metabolism in prairie rodents, due to environmental change. The lab is a collaborative endeavor which will also be used by **Christy Morrissey** (Biology, SENS) to study the effects of pollution and climate change on birds, and by University of Winnipeg biologist Craig Willis to study white nose syndrome in bats. [Read more here.](#)

## **U of S Psychiatrist wins Professorship**

The U of S Department of Psychiatry has awarded the prestigious *Iver and Joyce Graham Small Indiana Professorship in Psychiatry* to **Dr. Yanbo Zhang**. Up to \$165,000 is dedicated to support *Low Field Stimulation (LFMS) for Mood and Memory: from Bench to Bedside*, a five-year multidisciplinary research and training program, bringing together physicians, bench scientists, bioengineers, trainees and industry partners. It is the only research laboratory in Canada which uses an LFMS device for invitro, animal and clinical studies.

## **U of S researchers honoured for inventions**

Four U of S researchers were honoured with the *Award of Innovation* at the 2017 SABEX Awards on Feb. 9 at Prairieland Park for innovations that will improve human health and the environment.

- ❖ **John Gordon** (Respirology) won for discovering a way to reverse hyper-immune response in allergic reactions. This technology could potentially be applied to a wide range of autoimmune diseases (e.g. peanut allergy) and has the potential to greatly improve the quality of life of many people.
- ❖ **Stephen Foley** (Chemistry), and his PhD students **Hiwa Salimi** and **Loghman Moradi**, won for developing a new process for selectively removing gold from electronic waste, such as printed circuit boards. This is the fastest and most environmentally friendly method known for leaching gold into solution, is selective for gold, and requires no energy input.

## CONTRACT AND GRANT FUNDING SUCCESS

### ❖ GRANTS

#### CIHR

- ❖ **Gary Teare** (Community Health and Epidemiology) has been awarded \$1.02M in CIHR funding as a co-investigator on the \$17.5M CIHR renewal of the Canadian network for observational drug effect studies (CNODES), led by Samy Suissa (Jewish General Hospital).



## NSERC Strategic Partnership Grants

- ❖ **Angela Bedard-Haughn** (Soil Science), U of S co-investigators **Melissa Arcand** (Soil Science) and **Ken Belcher** (Agricultural and Resource Economics), **Joan Knight** (Soil Science), **Colin Laroque** (Soil Science), **Derek Peak** (Soil Science), **Katherine Stewart** (Soil Science), and **Frances Walley** (Soil Science) have been awarded \$852,036 for the project *Understanding Resilience in Agroecosystems: Landscapes in Transition*, in partnership with Agriculture and Agri-Food Canada's Swift Current Research and Development Centre, which provided in-kind contributions to this project.
- ❖ Canada Research Chair **Qiaoqin Yang** (Mechanical Engineering), U of S co-investigator **Yongfeng Hu** (Chemical and Biological Engineering), and a co-investigator from UBC have been awarded \$634,632 for *Advanced Synthesis and Characterization of DLC-based Nanocomposite Coatings for Biomedical Applications*, in partnership with PLASMIONIQUE Inc. and Intlvac Thin Film Corporation, which provided in-kind contributions to this project.

## NSERC Discovery Grants

As a result of new funding provided in the 2016 federal budget, NSERC topped up grants for [the 58 U of S researchers who were awarded 2016 NSERC Discovery Grants](#) in the total amount of \$759,000.

## SHRF Collaborative Innovative Development Grants

A total of 59 U of S researchers have been awarded \$694,290 in SHRF funding. That amount is divided among 14 U of S projects of the 18 projects awarded.

The following are the U of S projects awarded:

- ❖ **Georghita Adams** and **Mansfield Mela** (Psychiatry), *The relationship between attachment, recidivism and treatment in forensic patients with mental illness.*
- ❖ **Veronica Campanucci** (Physiology), *Mechanisms underlying autonomic neuropathy in cystic fibrosis.*
- ❖ **Francisco Cayabyab** (Surgery), *Therapeutic potential of novel dimer drugs in a new rat model of Parkinson's disease.*
- ❖ **Daniel Chen** and **Donald Bergstrom** (Mechanical Engineering), *CFD-based visualization of cerebral aneurysms treated with flow-diverting stents.*
- ❖ **Andrew Freywald** (Pathology and Laboratory Medicine) and **Franco Vizeacoumar** (Oncology), *Research study to initiate a clinical trial for targeting synthetic lethality between EPHB6 and SRC in breast cancer.*
- ❖ **Donna Goodridge** (Medicine) and **Cory Neudorf** (Community Health and Epidemiology), *How do material and social deprivation affect health care utilization of high system users with multimorbidity? A retrospective cohort study.*
- ❖ **Nancy Gyurcsik** (Kinesiology), *Exploring the effectiveness of an in-person integrated counselling training module to increase exercise providers' knowledge and beliefs to instruct and educate Saskatchewan adults with chronic non-cancer pain.*
- ❖ **Marcella Ogenchuk** (Nursing), **Vivian Ramsden** (Family Medicine), **Holly Graham-Marrs** (Nursing) and **Gerald Uswak** (Dentistry), *Exploring oral health with Indigenous communities: collaborative pathways for early intervention.*
- ❖ **Tracie Risling** (Nursing) and **Noelle Rohatinsky** (Nursing), *Developing a mobile application to support healthcare transition success for adolescents with inflammatory bowel disease.*



- ❖ **Alan Rosenberg** (Pediatrics), *Prenatal determinants of chronic inflammation-mediated diseases.*
- ❖ **Maruti Uppalapati** (Pathology and Laboratory Medicine) and **Changiz Taghibiglou** (Pharmacology), *Development of protein inhibitors targeting SREBP1 for targeted therapy of glioblastoma.*
- ❖ **Yuliang Wu** (Biochemistry) and **John DeCoteau** (Pathology and Laboratory Medicine), *Targeting HAGE (DDX43) helicase in acute myeloid leukemia.*
- ❖ **Jim Xiang** (Oncology), *Beneficial cytotoxic T lymphocyte responses derived from irreversible electroporation (IRE-NanoKnife) of pancreatic cancer for improvement of IRE-ablation cancer therapy.*
- ❖ **Lifeng Zhang** (Chemical and Biological Engineering), *Dust exposure reduction for workers: airborne dust removal in poultry houses by electrostatic space charge system (ESCS).*

## MITACS Elevate

- ❖ In partnership with Ducks Unlimited (Manitoba), **Robert Clark** (Biology), with post-doctoral fellow **Chrystal Sharon Mantyka-Pringle**, was awarded \$55,000 for *Prioritizing decision-making for agriculture and conservation in North America's prairies under climate change and land-use change.*

## MITACS Accelerate

- ❖ In partnership with Delivra Inc., **Philip Chilibeck** (Kinesiology), with intern **Ruirui Gao**, was awarded \$26,667 for *An analysis of Delivra LivSport preworkout cream combined with oral creatine to improve muscular performance and alter arterial stiffness.*
- ❖ In partnership with BNTrading Inc., **Lope Tabil** (Chemical and Biological Engineering), with

intern **Majid Soleimani**, was awarded \$15,000 for *Development of feed blocks for livestock.*

## Silicon Valley Community Foundation

- ❖ **Li Chen** (Electrical and Computer Engineering) has been awarded \$39,303 for *Cisco - On-Chip Voltage Regulation in Advanced Technologies.*

## Saskatchewan Egg Producers

- ❖ **Henry Classen** (Animal and Poultry Science) has been awarded \$15,000 for *Determining the impact of gizzard size on feed efficiency, gut health, and the incidence of focal duodenal necrosis (FDN).*

## CONTRACTS

### Agriculture and Agri-Food Canada

- ❖ **Diane Knight** (Soil Science), with U of S co-principal investigator **Herbert Lardner** (Animal and Poultry Science) and co-investigators **Richard Farrell** (Soil Science), **Jeff Schoenau** (Soil Science), **Melissa Arcand** (Soil Science), and **Katherine Stewart** (Soil Science), have received \$1.8M for the project *Strategies for improving nutritional value of grazed forages: impact on greenhouse gas emissions and carbon sequestration.*
- ❖ **Diane Knight** (Soil Science) has also been awarded \$146,000 for the project *Enhancing the long-term sustainability of pulse cultivation using system approaches.*
- ❖ **Colin Laroque** (Soil Science), with U of S co-investigators **Ken Van Rees** (Soil Science), **Suren Kulshreshtha** (Agricultural and Resource

Economics), **Ken Belcher** (Agricultural and Resource Economics), has received \$1.44M for *Development of a Management Support Toolbox for Carbon Sequestration Strategies Using Agroforestry Shelterbelt Systems in Saskatchewan*.

- **Colin Whitfield** (Global Institute for Water Security), with U of S co-investigator **Helen Baulch** (Global Institute for Water Security), has received \$185,814 for *Better BMPs - Budgeting And Minimizing Greenhouse Gas Emissions Associated With Keeping Water On The Land In Agricultural Reservoirs*.

### FP Genetics

- **Aaron Beattie** (Crop Development Centre) has received \$350,000 for *Oat Research and Development Project Agreement*.

## INTERNATIONAL

### Partnership grant success

The winners of the second round of the International Flagship Partnership Research Grant (IFPRG) competition, a joint initiative between U of S and Beijing Institute of Technology (BIT), have been announced. **Xiongbiao (Daniel) Chen** (Mechanical Engineering) and Duanduan Chen (no relation), professor of Biomedical Engineering at BIT, were respectively awarded \$20,000 CAD from U of S and \$100,000 CNY from BIT for their project *Stroke and biodegradable stent treatment*. The U of S-BIT relationship began in 2000, and IFPRG competition began in December 2014.

## UNDERGRADUATE RESEARCH INITIATIVES

The University of Saskatchewan Students' Union hosted the fifth annual Undergraduate Project Symposium on Jan. 26.-- the largest to date, with more than 40 student projects competing for over \$3,500 in prizes. The best projects were awarded in two categories:

### ■ **Social Sciences, Humanities, and Fine Arts**

1. Michael Lewis
2. Kathryn Bloski
3. Mackenzie Moleski

### ■ **Natural Sciences and Engineering**

1. Abhishek Kumar and Courtney Onstad (tied)
3. Damon Swarich

Additionally, **Courtney Onstad's** project *Preliminary Geochemical Analysis of Host Rock Lithologies at the Arrow Uranium Deposit, Athabasca Basin, Saskatchewan*, supervised by **Kevin Ansdell** (Geological Sciences), was also awarded the Office of the Vice-President Research's prize in Research Signature Areas. This award recognizes an outstanding project that fits within one of the six research signature areas.