

NSERC Investments

Saskatchewan



\$43.6 million

NSERC Investments in Saskatchewan (2010-11)

\$1 billion

Government of Canada Investments through NSERC (2010-11)

The Natural Sciences and Engineering Research Council of Canada (NSERC) is a federal agency that helps make Canada a country of discoverers and innovators for all Canadians. NSERC maximizes the value of the Government of Canada's investments in research by promoting **research-based innovation**, university-industry partnerships and the **training of people** with the scientific knowledge and business skill set to create wealth from **new discoveries in science and engineering**.

390

NSERC-funded Professors

25

Industrial Partners in the Province

\$3.1 million

Industrial Contributions
by these Partners

173

NSERC Awards to Students and Fellows

31

NSERC-supported Research Chairs

For more information, visit
www.nserc-crsng.gc.ca

NSERC Investments in Saskatchewan, by Federal S&T Priority Area

Total \$31.1 million (Excludes Scholarships and Fellowships)

- 1 | Environmental Sciences and Technologies
30%
- 2 | Manufacturing
24%
- 3 | Health and Related Life Sciences and Technologies
24%
- 4 | Natural Resources and Energy
17%
- 5 | Information and Communications Technologies
6%





Impacts and Investments

Saskatchewan's Synchrotron — a National Resource

The Canadian Light Source synchrotron in Saskatoon is a major research facility for researchers across Canada. The intense light that it generates allows scientists to see the “microscopic” nature of matter, right down to the level of the atom.

NSERC's financial support helps make this unique national resource available for studies that range from material science and biomedical imaging to archaeology. This year, NSERC will contribute **\$17.6 million** to support the facility, with the province, other agencies and the private sector adding **\$10.4 million** in contributions.

Improving Heavy Oil Production and Reducing its Footprint

In 2009, the federal government made a four-year \$10.5 million commitment to help Canada's heavy and extra heavy oil producers keep pace with domestic and international demands, while developing technology to leave the smallest possible environmental footprint.

The Regina-based Sustainable Technologies for Energy Production Systems (STEPS), a Business-Led Network of Centres of Excellence, builds on a management innovation to create new fundamental understanding of reservoir processes and technologies. The Network comprises a consortium of sector firms supported by academic and government researchers that actively engage industry in the hands-on design of technological development projects, prototypes and demonstrations. With an investment of **\$9.5 million** from NSERC out of total federal funding of **\$10.5 million**, the network is a magnet for professionals, researchers and students from across Canada and around the globe.

“In terms of R&D, partnerships like this are essential. And at the end of the day, the technology created from this research will create jobs for people living right here.”

Manfred Gerber
Manager of R&D and Engineering
Venmar CES Inc.



Appealing to the Social Conscience With Social Media

Research into social media — and what motivates people to use it — is helping to understand how it could be used to benefit people and communities.

Julita Vassileva, a professor in Computer Science at the University of Saskatchewan and the former NSERC–Cameco Chair for Women in Science and Engineering — Prairies, is investigating how social media is revolutionizing business, politics and education. This research aims to develop ways of using social media to motivate people by showing how their needs and desires are linked with common goals — providing the motivation to take concerted action with others. Her research team will explore ways of connecting youth with volunteer groups and charities and connecting the elderly with the broader community. Over the next five years, Dr. Vassileva will receive **\$416,215** in new NSERC discovery research support, including a prestigious Accelerator Supplement.

Top Institutions Ranked by NSERC Investments

1. **University of Saskatchewan**
\$36.6 million
2. **University of Regina**
\$4.5 million

Getting More Production From Oil Fields

Research into porous materials is helping oil producers get at more of the resource, which can be trapped within rock and other substances underground.

Liming Dai at the University of Regina is investigating this process to develop better methods for mobilizing liquids trapped in porous materials. His work could also lead to applications that could be used to make better predictions about the effective removal of liquids from porous materials. In addition to improving oil recovery, the work could also shed light on new methods for extending the life of porous materials used in construction, manufacturing and noise control. Dr. Dai's current NSERC Discovery Grant support and Accelerator Supplement funding totals **\$315,000**.



Investigating Microbes That Lend Grain Crops a Helping Hand

Research studying the fundamental processes of bacterial cell development could help reveal molecular processes during plant-microbe interactions.

As Canada Research Chair in Microbes, the Environment and Food Safety, Dr. Christopher Yost of the University of Regina is examining how *rhizobium* bacteria interact with legume crops, such as lentils, peas and beans — critical exports for Canada's agriculture industry. His work specifically examines how the bacterium adapts its cell envelope to survive in stressful soil conditions, as well as during symbiotic development with peas and lentils. The research could increase our abilities to exploit *rhizobium*-legume interaction, thus increasing legume crop yields for Canadian farmers and further promoting environmentally sustainable agricultural practices. Besides supporting his Chair and making a five-year **\$180,000** commitment to his Discovery Grant research, NSERC is also investing **\$439,650** in a three-year Strategic Project that he is carrying out with Dr. Rob Jamieson of Dalhousie University. The project is developing better indicators of fecal pollution in agricultural systems.

New Vaccines to Counter Disease Spread

Bacteria cause illness and death in humans around the world and major losses for livestock farmers.

Headquartered at the University of Saskatchewan's Vaccine and Infectious Disease Organization, the Pan Provincial Vaccine Enterprise (PREVENT) is dedicated to moving vaccine research from the laboratory into the marketplace. Funded through the federal Centres of Excellence for Commercialization and Research (CECR) program, PREVENT has already identified a dozen vaccines showing promise at the prototype stage, including those for preventing chlamydia, bovine spongiform encephalopathy, *E. coli* and salmonella. NSERC has made a **\$3.5 million** investment in the first five years of PREVENT's operation. Contributions from other granting agencies bring the federal total to **\$15 million**.

Some of NSERC's Saskatchewan-based Partners (2010-11)

AREVA Resources Canada Inc.
Becker Underwood Canada Ltd.
Biofume Technologies Inc.
CAMECO Corp
Canadian Green Fuels
Clifton Associates Ltd.
CNH Canada Ltd.
Droycon Bioconcepts Inc.
Evraz Inc. NA
Horizon Manufacturing Inc.
Hypor Inc.
IPSCO Inc.
Marei Therapeutics Inc.
Potash Corp. of Saskatchewan Inc.
Prairie Tide Chemical Inc.
Saskatchewan Forest Centre
Saskatchewan Mustard Development Commission
Saskatchewan Pulse Growers
SaskPower
SHEC Energy Corporation
TinyEYE Technologies
TransGas Limited
Venmar CES Inc.

For more information, visit
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