Research News
umanitoba.ca/research

Technology Transfer partnership grows

IPM Partnership now includes University of Saskatchewan, University of Regina

BY FRANK NOLAN
Research Promotion

A province-wide technology transfer partnership led by the University of Manitoba has now expanded into Saskatchewan, thanks to $300,000 in new funding from the Government of Canada.

Last month, the Manitoba Intellectual Property Mobilization (IPM) Partnership was awarded $300,000 in new funding from the Government of Canada's IPM Program, a cooperative arrangement involving the Natural Sciences and Engineering Research Council of Canada (NSERC), the Canadian Institutes of Health Research (CHIR), and the Social Sciences and Humanities Research Council of Canada (SSHRC).

The new funding allows the University of Saskatchewan and the University of Regina to join the group, now known as the Prairie IPM Partnership, which also includes the University of Manitoba, the University of Winnipeg, Brandon University, Red River College, the Health Sciences Centre, St. Boniface General Hospital, and CancerCare Manitoba.

Photo by Frank Nolan

Gary Breit, executive director of the Technology Transfer Office at the University of Manitoba.

Originally established in 2001 to encourage cooperation among Manitoba's research-intensive institutions, the partnership is designed to accelerate the transfer of knowledge and the development of new technologies to a commercialization stage. The latest funding builds on a grant of $1.2 million the Manitoba partnership received from Canada's IPM Program in 2005.

The expanded Prairie IPM Partnership is led by the University of Manitoba's Technology Transfer Office.

"This is the first time that a Canadian intellectual property partnership has reached out across provincial boundaries," said Gary Breit, executive director of the Technology Transfer Office. "The University of Saskatchewan and the University of Regina are both involved in cutting-edge research that is complimentary to Manitoba's research community. And, they both have growing research parks and experienced technology transfer operations. Strategically, having these universities on board is great news for all of our partner institutions."

Breit said the expanded partnership will open up new licensing opportunities by allowing technologies to be bundled together. Technology bundling, he said, adds value for customers, and it significantly reduces the associated transaction costs.

"For example, if a new compound is patented at one university, and researchers at another university discover a novel use for it, the customer could license both of those technologies as a single bundle," he said. "Increasingly, industry and universities are working to reduce transaction costs, and this coalition can facilitate the technology development and technology bundling activities that lower those costs."

The Prairie IPM Partnership will also create increased opportunities for research collaboration among the partner institutions, and activities like technology fairs in both provinces will showcase innovative research to more potential customers.

"It is also important to consider the aggregated research mass that this collaboration offers," Breit said. "Now, Prairie IPM Partnership institutions will conduct about $400 million of research per year. This strong research base represents the core of the prairies coming together, and it gives us a chance to do a lot more as a group."

Surviving a heart attack: "time is muscle"

BY FRANK NOLAN
Research Promotion

If you ever have a heart attack, where and when it happens can play a critical role in determining how much permanent damage is done to your heart. In the words of Larry Hryshko, "time is muscle."

"The best place to have a heart attack is in a major city during normal business hours in the proximity of a major hospital" said Hryshko, physiology. "If you have your heart attack in the middle of nowhere, obviously you have much less chance of getting timely treatment, and time is everything. During a heart attack, heart muscle begins to die, and a patient's outcome is largely determined by how much muscle is lost."

Hryshko holds a Canada Research Chair in Cardiac Electrophysiology, and his lab at the St. Boniface General Hospital Research Centre is one of a few worldwide studying a molecule called the "sodium-calcium exchanger" using an unusual technique referred to as giant patch clamping.

"This technique literally allows us to count the number of sodium and calcium atoms moving across a cardiac cell membrane," Hryshko said. "Malfunction of the sodium-calcium exchanger is central to the muscle cell damage caused by a heart attack, so it is critical to examine its behaviour accurately. Your heart beats in response to an increase in calcium inside heart cells—calcium comes into the cell, telling it to contract. However, the heart has to relax between beats and therefore calcium has to be removed after every contraction. The sodium-calcium exchanger takes the calcium out of the cell after each heart beat so that the various heart chambers can refill with blood"

During a heart attack, however, the sodium-calcium exchanger starts to work backwards, bringing calcium into the cell rather than removing it. Ultimately, the cell becomes overloaded with calcium and literally self-destructs.

"If we can prevent the sodium-calcium exchanger from reversing its action, we can greatly reduce the damage caused by a heart attack," he said.

Hryshko is experimenting with novel drugs that can stop this from happening while still allowing the molecule to perform its normal function of removing calcium so that the heart can relax between beats.

"We do all of our studies at the molecular level, but this is a very tough molecule to study, because the assays for it are technically very challenging and take a long time to perform. That's why there are only two or three labs in the world using this approach."

Photo courtesy of St. Boniface General Hospital Research Centre

Larry Hryshko, physiology, Canada Research Chair in Cardiac Electrophysiology.

"We're working very methodically to understand exactly how the drugs interact with this molecule, what their shortcomings are, and how they can be improved. I would love to see that the drugs I've been studying for the past 10 years are eventually perfected for use in humans. These drugs offer the genuine opportunity of providing advance protection to heart muscle in individuals at high risk for heart attacks. This would effectively buy people time until conventional treatment can be implemented."

Hryshko will be describing his research on April 25, as part of the **Get to Know Research at Your University** lecture series. His presentation, "**How to Plan Your First Heart Attack**," begins at 7:00 pm in the Smartpark Boardroom at 135 Innovation Drive. Admission is free and everyone is invited to attend. For more information, please call Kimberley at 474-9020.

Bringing Research To Life

Research News is Published
by the Office of the Vice-President (Research)
Comments, submissions and event listings to:
stefaniu@ms.umanitoba.ca
Phone: (204) 474-9020 Fax (204) 261-3475