

Medical Research News

Funded through donations to Royal University Hospital Foundation December 2010



Dr. Jim Thornhill and Dr. Beth Horsburgh foster medical research in Saskatoon.

Medical Research for a Healthier Future

Donor generosity funds groundbreaking advancements close to home

When you hear about advanced medical research, what comes to mind? A big-name hospital in a large and distant city? If so, it's time to adjust your focus closer to home, because advanced medical research is happening right here, right now, at Royal University Hospital in Saskatoon – a legacy of the \$15 million Royal Care Campaign.

An initiative of the Royal University Hospital Foundation, the Royal Care Campaign raised close to \$7 million for leading-edge research, Endowed Chairs and professorships, the Canadian Light Source Biomedical Beamline and PACS (the Picture Archiving and Communication System).

“When research happens here, patients in Saskatchewan are among the first to benefit,” says Dr. Beth Horsburgh, Associate Vice-President Research–Health for the University of Saskatchewan and Vice-President Research and Innovation for the Saskatoon Health Region. “It allows clinicians to provide cutting-edge treatments and technologies to patients that go beyond standard practice.”

For example, Dr. Alan Rosenberg's research has uncovered a connection between respiratory problems in children and a lack of vitamin D. This knowledge will lead to new treatment protocols for our children (see his story, following page). Other researchers include Dr. José Tellez-Zenteno, Saskatchewan's leading epilepsy specialist, and Drs. Ali Rajput and Alex Rajput, whose work gave patients in this province access to new drug treatments for Parkinson's disease long before these drugs came into standard practice (read their



stories at www.ruhf.org in the Success Stories section).

“The importance of research as a complement to patient care really came to the fore during development of the Royal Care Campaign,” says Arla Gustafson, CEO of RUH Foundation. “Until this campaign, our Foundation had funded research initiatives but we didn't have a long-term strategy in place.”

“Research is an area where donors can make a huge contribution.”

That research strategy was driven by necessity. Physicians and other health specialists at RUH wanted to be involved in leading-edge research – and they were prepared to leave Saskatchewan in order to pursue those opportunities elsewhere. As well, access to research funding is essential for recruiting highly qualified health professionals to our province.

“Health researchers don't come to RUH by chance. They are brought here as part of a strategy that links best care and best practice with research,” says Dr. Jim Thornhill, a member of the Board of Directors at RUH Foundation and Volunteer Chair of RUH Foundation's Research Grant Committee, as well as Special Assistant for Health Research to the Office of the Vice-President Research, University of Saskatchewan.

“Research is about having the best protocols and the best treatments available. The government is already stretched in terms of finding funding partners for health care, so research is an area where donors can make a huge contribution,” says Thornhill.

For more information about donor-funded research at RUH or to contribute to our research fund, please contact the RUH Foundation at 306-655-1984 or visit the Foundation's website at www.ruhf.org.

Dr. Rajendra K. Sharma

Advancing Diagnosis of Colon Cancer

Dr. Rajendra Sharma has demonstrated the role of the enzyme N-myristoyltransferase in colon cancer. Now he is using an RUH Foundation Research Grant to pursue this inquiry even further. Using samples collected from patients at Royal University Hospital, the Saskatoon Cancer Agency and other medical centres, Sharma is working to develop a blood test for use in diagnosis and prognosis of colon cancer. His work puts Saskatchewan on the leading edge of colon cancer treatment.



The Vitamin D Connection

– Helping Children Breathe Easier



Dr. Alan Rosenberg is connecting vitamin D and childhood illness.

Lung infections such as pneumonia and bronchitis are among the most common childhood illnesses. But why are some children more at risk than others?

“Respiratory infections are common in Saskatchewan children, especially during the winter months when reduced sunlight is associated with lower levels of vitamin D. We also noticed that a large number of Saskatchewan children have vitamin D deficiency, and we wanted to determine if low vitamin D levels might be associated with a higher risk of more severe lung infections,” says Dr. Alan Rosenberg, who received funding from the SaskEnergy Centennial Research Fund in Children’s Health at RUH Foundation.

Rosenberg is a pediatric rheumatologist who provides care to Saskatchewan children and youth at Royal University Hospital. He is also engaged in active research at the University of Saskatchewan.

Intrigued by the possible link between vitamin D deficiency and acute respiratory infection, he and

his research team (J. Dayre McNally, MD, PhD; Karen Leis, MD; Loren A. Matheson, PhD; Chandima Karuananyake, PhD; Koravangattu Sankaran, MD) decided to investigate. The study demonstrated that children with abnormally low levels of vitamin D are more likely to suffer severe lung infections. Their finding opens the door to a new prevention strategy.

“Our study is an excellent example of how research can lead to action that will improve health. Successful research requires collaboration amongst scientists, patients and communities – and adequate funding,” says Rosenberg. “Donations that support research in children are especially important as the new knowledge can have lifelong health benefits.”



Reducing the Risk of Infection in Newborns

The birth of a child is one of life’s most joyous occasions. But even with modern medicine, there are risks such as Group B Streptococcus infection. Present in up to 30% of women, Group B Strep (GBS) bacteria can cause severe illness and even death in their newborn babies.

GBS can be prevented at an early stage by the administration of antibiotics during labour. With research funding from the RUH Foundation, a team of researchers led by Dr. Sophie Robichaud has devised a new protocol to provide better detection of GBS in pregnant women.

“We found that the traditional way of culturing GBS in the lab was time consuming and not as sensitive as some of the new methodologies,” says Robichaud. “We were looking for a way to provide better results in a shorter time period to clinicians, and hopefully have a positive impact on prevention of infection in newborns.”

Robichaud is trained in both pediatric infectious

diseases and medical microbiology, and now works exclusively in microbiology. Her team included Travis Marfleet, research assistant; Dr Harry Deneer, head of Diagnostic Molecular Pathology; Dr. Hyun Lim and Hitash Bhatt, biostatisticians; Shirley Leung, laboratory technologist and Dr. Joseph Blondeau, head of the Medical Microbiology Division.

“The funding provided by RUH Foundation was crucial,” says Robichaud. “It allowed us to test the new methodologies available at the time and demonstrate which one was most sensitive and cost-effective.”

She says the result offers the best of both worlds: better care for women and newborns and better cost-effectiveness. Findings from the donor-funded GBS study were presented at the American Society of Microbiology General Meeting in May 2010. The new protocol was put in place at Royal University Hospital in July 2010.

Dr. Sophie Robichaud is giving babies a healthier start.



Synchrotron Pushes the Limits of Medical Research

“There’s no other facility like this in the world. It lets us see things we can’t see any other way.”

Dr. Dean Chapman sees the future of medical care at the synchrotron.



Those are the words of Dr. Dean Chapman, Canada Research Chair in X-ray Imaging and team leader at the Biomedical Imaging and Therapy (BMIT) beamline at the Canadian Light Source Synchrotron, located just a short distance from Royal University Hospital in Saskatoon. BMIT uses intense beams of light to generate images of living tissue that are as superior to those produced by conventional X-ray techniques as high-definition television is to old-fashioned black-and-white TV.

“BMIT is one of the most advanced medical imaging beamlines in the world, and the only one in this hemisphere capable of dealing with both humans and large animals,” says Chapman, who came to Saskatoon from a research institute in Chicago in order to work at the synchrotron.

RUH Foundation donors have a vested interest in BMIT – the Foundation contributed \$500,000 in donor funds raised through the Royal Care Campaign. This investment could lead to the development of new diagnostic techniques and treatment protocols for some of the greatest health challenges we face today: cancer, heart disease, asthma, epilepsy, stroke, spinal cord injury, infertility, arthritis, Alzheimer’s disease and more.

BMIT spent its first official year of operation “working out the bugs” and testing the limits of its capabilities, according to Chapman. It already has more users than any other of the synchrotron’s beamlines, and he expects to see an increasing variety of projects in the months ahead.

Chapman’s own research includes a diffraction-enhanced imaging technique for viewing soft tissue with greater clarity and an imaging method using iodine as a contrast agent that could lead to better ways to see disease and disease progression.

A common theme among the research projects at BMIT is that they enable scientists to “see” what is going on in living systems at levels never before imagined. Greater accuracy, detail, sensitivity – all of these are pushing the boundaries of medical imaging. The resulting insights could be used to develop new diagnostic techniques and treatment protocols for some of today’s greatest health challenges.

“We could not have built what we’ve built without funding support, and Royal University Hospital Foundation was a big part of that,” Chapman says. “This isn’t just about Saskatoon or Saskatchewan or even Canada. BMIT is a world-class facility. It is helping make it possible for us to really push the limits of our research.”

Dr. Anurag Saxena & Dr. Lauren Bolster

Predicting Lymphocytic Leukemia



Chronic lymphocytic leukemia (CLL) is the most common leukemia diagnosed in adults, yet specialists continue to struggle with accurate prognosis. Dr. Lauren Bolster and Dr. Mark Bosch along with Dr. Anurag Saxena are using Canada’s most powerful research tool, Saskatoon’s synchrotron, to help relieve that struggle. Research has already shown that most CLL patients have abnormal genes, and that differences in genetic mutations have a direct impact on patient survival. The team is using the synchrotron’s high-resolution spectra to more accurately identify patients at higher risk. This donor-funded research has the potential to revolutionize the diagnosis and prognosis of chronic lymphocytic leukemia.

Endowed Research Chairs

Devoting time to research that can change the world

We all know how hard it is to carve out time for special pursuits. Medical professionals face the same time crunch when it comes to research. Between seeing patients, teaching duties and keeping their knowledge up to date, it's hard to find time for dedicated research and for disseminating the results to the world.

Royal University Hospital Foundation is proud to fund several Endowed Research Chairs serving

Royal University Hospital and the University of Saskatchewan's College of Medicine.

"Endowed Research Chairs offer the promise of dedicated research time so that busy physicians can act on their research ideas and produce results that directly benefit society as a whole," says Arla Gustafson, CEO of RUH Foundation. "They also offer an attractive incentive for leading-edge physicians from other medical centres to be recruited to Saskatoon to carry out their important work."

This fall, Dr. Paul Babyn, former Radiologist-in-Chief at Toronto's Hospital for Sick Children, was appointed the new PotashCorp Chair in Clinical Research (read more about him below). The \$3 million PotashCorp Chair in Clinical Research Endowment was created through a lead donation of \$1.5 million from PotashCorp to the Royal Care Campaign.

In appreciation of PotashCorp's health care philanthropy over the years, the new PotashCorp MRI Centre at RUH was recently named in its honour. Back in 1993, PotashCorp led the campaign to bring the first MRI to Saskatchewan by committing \$1.5 million in matching funds.

The search is now underway to fill another new Endowed Research Chair – the \$3 million Cameco Chair in Aboriginal Health created with a \$1.5 million contribution from Cameco to the Royal Care

Cameco Generates Energy for Life



Maura Davies, CEO Saskatoon Health Region; Jerry Grandey, CEO Cameco; Arnie Arnott, Volunteer Chair RUH Foundation.

Campaign. Cameco made the donation in support of its Aboriginal workforce and their families, many of whom work at its mines in northern Saskatchewan. "For Cameco, we believe being a good corporate citizen is not just about jobs and economics," says Jerry Grandey, CEO of Cameco. "It's also about supporting programs and projects that contribute to the quality of life in our community."

Aboriginal health is also a high priority for the College of Medicine. "The Cameco Chair in Aboriginal Health will provide an opportunity to profile both the need for improved Aboriginal health care services, and a model to attract Aboriginal physicians to academic positions within the province of Saskatchewan," says Dr. William Albritton, Dean of the College of Medicine.

For a full list of RUH Foundation endowments, including those endowments supporting medical research, go to www.ruhf.org (in the Why Give section). To make a donation in support of these Endowed Research Chairs, please contact the Foundation's Major and Planned Giving Officer, Gay Oldhaver, at 306-655-1063.

Saskatchewan Story...



Arnie Arnott, Volunteer Chair RUH Foundation; Bill Doyle, President and CEO Potash Corp; Dallas Howe, Chair PotashCorp Board of Directors.

Donor funding makes the difference

In 2007 the Royal University Hospital Foundation, with support from the Saskatoon Health Region and the University of Saskatchewan's Colleges of Medicine and Nursing, established a peer reviewed Research Grant Subcommittee to review proposals and make recommendations to the Foundation's Board of Directors for the allocation of research funding. Submissions for research proposals are accepted in January with funding awarded in March.

Donor contributions are essential to vibrant and groundbreaking research at RUH, The Saskatoon Health Region and the University of Saskatchewan. Every funded research project has real world applications, and that means donor dollars are directly responsible for improving the health of everyone in our province.

If you would like to support the RUH Foundation Research Fund, you may:

Call us at 306-655-1984

Email us at ruhfoundation@saskatoonhealthregion.ca

Donate online at www.ruhf.org

Your contribution today could save a life tomorrow!

Dr. Paul Babyn

PotashCorp Chair in Clinical Research

Dr. Paul Babyn is a specialist in radiology, particularly the diagnosis of illness in children. He comes to Saskatoon from Toronto's Hospital for Sick Children, where he was Radiologist-in-Chief, as well as the University of Toronto, where he won awards for teaching excellence. He assumes the position of Joint Department Head of Medical Imaging and Nuclear Medicine and will hold the inaugural PotashCorp Chair in Clinical Research. He is an active clinician, author, researcher and educator. Please join us in welcoming Dr. Babyn and his family to Saskatoon!

