CIHR Responds to Revolt While Releasing Results

Peer rebellion brings promise of change to granting agency

By Betty Zou

Against a backdrop of tumultuous change and controversy, the Canadian Institutes of Health Research (CIHR) released the results of its latest funding competitions. The news was partly overshadowed by the frustration many Canadian health scientists expressed over recent months about new policies and procedures at CIHR.

Four years ago, CIHR started making drastic changes to its funding programs and peer-review processes. It replaced dozens of programs with “foundation scheme” grants, which can last for up to seven years and are meant for open-ended research; and “project scheme” grants, to support more focused research projects for up to five years. The agency also eliminated the traditional peer-review process that flew leading scientists to Ottawa to discuss and rank proposals in their area of expertise. Under the new system, applications were placed in a general pool and assigned via a computer algorithm to four reviewers who participated in asynchronous online panels overseen by virtual chairs. As the adjudication process unfolded, reviewers and chairs took to Twitter to express their dismay and dissatisfaction with the changes in what has been described as a “peer revolt.”

“The big problem with asynchronous virtual review is [lack of] complete engagement of the reviewer,” says Dr. David Andrews, director of Biological Sciences at Sunnybrook Research Institute (SRI) and a virtual chair in the latest funding competition. Based on comments posted on social media, the problems Andrews encountered in his panel were not unique. Of the roughly 60 reviewers in his panel, some submitted reviews late, others not at all. Most did not provide constructive feedback, a critical part of the review process that helps unsuccessful applicants improve their grants for the next competition. Andrews notes that while some reviewers in his panel engaged in meaningful discussions about the proposals, many did not. In the absence of real-time, face-to-face discussions with their peers, reviewers were often less vested, and therefore less involved, in the process.

Furthermore, the cancellation of two previous rounds of competition caused a massive surge in the number of applications—over 3,800—making it the largest competition in CIHR’s history.

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“I pointed out to CIHR from the beginning that their numbers didn’t add up,” says Andrews. “Based on the number of applications they expected to have, there are not enough reviewers in the country.” In a last-minute effort to find enough reviewers, the agency recruited adjudicators who may not have been sufficiently qualified in a specific area or given enough time to review the proposals, further compounding the problems.

Stagnant government support and changes to CIHR’s funding programs and peer-review processes have created an atmosphere of uncertainty in Canada’s health research community. This feeling is particularly strong among young scientists who are disadvantaged under a new adjudication system that favours established researchers. Far from helping Canada recruit and retain bright young minds, the changes at CIHR have discouraged many aspiring researchers from pursuing a career as a scientist in this country and prompted them to look elsewhere.

As an outspoken critic of the CIHR reforms, Dr. Jim Woodgett, director of research at the Lunenfeld-Tanenbaum Research Institute at Mount Sinai Hospital, often receives emails from scientists about the impact of these changes on their staff and their ability to do research. “Seventy percent of CIHR-funded researchers in Canada have only one CIHR grant,” he says. “If they lose that, they are often forced to make very difficult decisions. The host institutes have very little capacity to tide people over when grants are lost so skilled employees are placed on notice or have to be let go.” Given that it often takes years to train an employee, loss of these highly skilled individuals can be devastating to the advancement of research projects, not to mention to the morale within a lab.

In an open letter to federal Health Minister Jane Philpott, Woodgett called on CIHR “to suspend the roll out of the reforms and to reintiate expert panel-based reviewing where scientists meet and discuss in person.” By July 12 the letter had been signed by 1,338 Canadian scientists, including many at SRI. The letter drew a swift response from Philpott, who instructed CIHR to meet with the scientists to identify problems and propose solutions. At the emergency meeting on July 13, more than 50 scientists met with CIHR staff and senior officials from the ministry in Ottawa. By the end of the day all parties had reached a consensus on several outcomes, chief among them a return to face-to-face peer reviews and the elimination of virtual discussions.

“It’s cautiously optimistic that this government seems to be listening. That’s a good thing,” says Andrews. “The devil is in the details—we’ll wait and see.” His sentiments were echoed by many scientists on Twitter. These agreements are a first step toward rebuilding the relationship between CIHR and Canada’s health research community and restoring confidence in the embattled agency. The next challenge will be implementing the working group’s recommendations in time for the next competition in the fall, the launch of which has already been delayed from June 30.

In the midst of the peer rebellion, SRI scientists secured a total of $12.6 million in funding from both the foundation and project scheme competitions with success rates of 9% and 26%, respectively. The national success rates for the foundation and project scheme competitions were 13% and 16%, respectively.

Those at SRI who prevailed are to be commended for their research excellence, which is not in question,” says Dr. Michael Julius, vice-president of research at SRI and Sunnybrook. “Even so, I echo David’s comments and trust that this government is listening to those who rely on the agency, for undoubtedly scientists who should have received awards did not. And let me be clear: the scientists who have chosen to work in health research do so because they have a calling and seek to have an impact on people’s lives here and globally.”

A multidisciplinary team led by Drs. Peter Burns, and Stuart Foster, senior scientists in Physical Sciences, received a seven-year foundation scheme grant worth $3.7 million to develop next-generation ultrasound imaging technology. Other members of the team include SRI scientists Drs. Kulervo Hynynen, Robert Kerbel, Graham Wright and Martin Yaffe.

Nineteen SRI scientists also secured $8.9 million in funding in the project scheme competition.

Dr. Richard Aviv, an affiliate scientist in the Hurvitz Brain Sciences Research Program, was awarded $722,454 over six years to test therapeutic interventions in an animal model of acute spot-sign-positive intracranial hemorrhage.

Drs. Nick Daneman and Robert Fowler, scientists in the Trauma, Emergency & Critical Care (TECC) Research Program will receive $2 million over five years to conduct a randomized controlled trial (RCT) looking at the length of antibiotic treatment needed for clinical effectiveness.

Dr. Robert Kerbel, a senior scientist in the Odette Cancer Research Program, was awarded $607,780 over five years to advance his preclinical work on improving testing of immune-oncology combination therapies for early- or late-stage metastatic disease.

Dr. Paul Karanicolas, a scientist in the Odette Cancer Research Program, will receive one-year bridge funding worth $100,000 to support his work on catheter-based ultrasound-mediated collagenase therapy for chronic total occlusions.

Dr. Dennis Ko, a scientist in the Schulich Heart Research Program, will receive $470,169 over three years to study ways to improve care and reduce readmission after acute coronary syndrome hospitalizations.
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Dr. Avril Mansfield, an affiliate scientist in the Hurvitz Brain Sciences Research Program, was awarded $554,264 over three years to conduct an RCT examining whether aerobic exercise and self-management early after a stroke can increase daily activity.

Dr. Diane Nam, an associate scientist in the Holland Musculoskeletal Research Program, was awarded one-year bridge funding worth $100,000 to conduct an RCT on the effectiveness of lithium for fracture treatment.

Dr. Avery Nathens, director of the TECC Research Program, and Dr. Barbara Haas, a trauma surgeon, were awarded one-year bridge funding worth $92,500 to evaluate the impact of severe injury on elderly patients.

Dr. Damon Scales, a scientist in the TECC Research Program, and Dr. Farhad Pirouzmand, a neurosurgeon, were awarded one-year bridge funding worth $100,000 to conduct an RCT on thromboprophylaxis after traumatic brain injury.

Dr. Rob Screaton, a senior scientist in Biological Sciences, will receive $764,500 over five years to establish a comprehensive genetic roadmap for human pancreatic beta cell proliferation and function.

Dr. Baiju Shah, a scientist in Evaluative Clinical Sciences, will receive $424,298 over three years to develop risk prediction and computer microsimulation models to aid clinical decision-making and health technology assessment in Type 2 diabetes.

Dr. Greg Stanisz, a senior scientist in Physical Sciences, was awarded $895,465 over five years to evaluate brain metabolites following a microbiotic diet using magnetic resonance spectroscopy and chemical exchange saturation transfer.

Drs. Bojana Stefanovic and JoAnne McLaurin, senior scientists in the Hurvitz Brain Sciences Research Program, were awarded $898,289 over five years to further their research on promoting neurovascular recovery following stroke. They will partner with Dr. John Sled at SickKids.

Dr. Hannah Wunsch, a senior scientist in the TECC Research Program, was awarded $183,480 over two years to study opioid use after critical illness.

Dr. Burton Yang, a senior scientist in Biological Sciences, was awarded one-year bridge funding worth $100,000 to study the inhibitory effect of a circular RNA called circ-CCNB1 on ovarian cancer cell growth.

A total of $667 million was awarded in the competitions.

Investments in Research and Innovation

The Canada Foundation for Innovation (CFI) awarded Dr. Rob Screaton, a senior scientist in Biological Sciences at Sunnybrook Research Institute, with a John R. Evans Leaders Fund grant in the latest competition. He received $501,251 to conduct high-throughput genetic screening to identify novel targets for treating diabetes. The Ontario Ministry of Research, Innovation and Science (MRIS; formerly known as the Ministry of Research and Innovation) matched the funds by the same amount.

Two researchers in Physical Sciences also received funding from the CFI and MRIS in recent competitions.

Dr. Brian Courtney, a scientist in the Schulich Heart Research Program, was awarded a 2015 Innovation Fund grant from the CFI worth $600,000 for his work on interventional device development and testing platforms in cardiology. The MRIS matched the grant by the same amount.

Dr. Graham Wright, director of the Schulich Heart Research Program, was awarded an Ontario Research Fund-Research Excellence grant from the MRIS with $1.2 million in funding, matched by industry and the institution for a total of $3.5 million over five years. Wright will develop and evaluate imaging tools to monitor interventional devices, therapeutic targets and treatment effects. The aim is to improve outcomes in minimally invasive cardiovascular procedures.

The Canadian Cancer Society Research Institute (CCSRI) awarded Dr. Lisa Barbera, a senior scientist in Evaluative Clinical Sciences, an Innovation Grant in the April 2016 competition. She will receive $193,417 over three years to study the impact of a provincial program to screen for symptoms on health service use.

Fifteen CCSRI Innovation Grants were approved out of 199 applications for $2.9 million in funding—an 8% success rate.

A Timely Investment

Dr. Andrea Gershon, a scientist in Evaluative Clinical Sciences, and Dr. Stanley Liu, a scientist in Biological Sciences, were recognized with an Early Researcher Award from the Ontario Ministry of Research, Innovation and Science.

Liu is studying how microRNAs—short fragments of RNA that regulate gene expression—make cancer cells aggressive and resistant to radiation treatment. He is also investigating whether microRNAs, which are secreted in bodily fluids, can be used as biomarkers to guide treatment of prostate cancer.

Gershon is analyzing large administrative datasets on people in Ontario who are diagnosed with chronic obstructive pulmonary disease, a lung disease that makes it hard to breathe. Her aim is twofold: to uncover the reasons why poor quality care exists, and to improve treatment of this disease.

Read the full story at sunnybrook.ca/research.
Sunnybrook Research Institute (SRI) has upgraded its microscopy facilities with the addition of the Nikon A1 laser scanning confocal microscope. “The main advantage is that you can get really great resolution,” says Dr. Geneve Awong, manager of the Centre for Flow Cytometry and Microscopy where the new microscope is housed.

The Nikon A1 is equipped with new scanner and image correction technologies that enable users to acquire high-resolution images of up to 4096 x 4096 pixels. It is also capable of high-speed acquisition at 10 frames per second for 512 x 512 pixel images, which allows researchers to observe dynamic processes in real time. Other unique features of the microscope include a 32-channel spectral detection to identify fluorophores with overlapping emission spectra; a high-content analysis program for high-throughput imaging; and a perfect focus image stabilization system.

“The perfect focus system allows you to autocorrect and keep that nice focus through the whole well and in all wells during imaging,” says Awong.

Dr. Isabelle Aubert, a senior scientist in the Hurvitz Brain Sciences Research Program, is one of the main users of the new microscope. “The quality of the image that you can get for fluorescence microscopy is significantly improved from a spinning disk,” says Danielle Weber-Adrian, a PhD student in the Aubert lab. Weber-Adrian is studying noninvasive gene delivery to the brain using focused ultrasound (FUS).

Following FUS treatment, she uses the Nikon A1 to image thick sections of the brain and look for fluorescent signals from her therapeutic. “I want to know how much got into the brain and where did it go,” she says. The powerful new microscope enables her to determine not just where in the brain her therapeutic is, but specifically in what cell types and what areas within a cell. Prior to SRI obtaining the Nikon A1, Weber-Adrian had to travel downtown to use a laser scanning confocal microscope. “Now I don’t have to take the shuttle downtown [with my samples],” she says. “This is a huge improvement.”

“The quality of the image that you can get for fluorescence microscopy is significantly improved from a spinning disk.”

Other SRI researchers who will use the laser scanning confocal microscope include Drs. Kullervo Hynynen, Marc Jeschke and Burton Yang. Dr. Rob Screaton, a senior scientist in Biological Sciences, will also be using it to conduct imaging screens to identify new genes involved in pancreatic beta cell and mitochondrial biology.

The Nikon A1 laser scanning confocal microscope is worth $630,000 and was purchased with funding from the Canada Foundation for Innovation. — Betty Zou

Scientists Score Funds for Discovery Research

The Natural Sciences and Engineering Research Council of Canada (NSERC) awarded Discovery Grants to seven scientists at Sunnybrook Research Institute (SRI) on June 23, 2016. “Discoveries build the necessary foundation for an innovative, prosperous and sustainable society,” said Dr. Mario Pinto, president of NSERC, at the announcement.

“Fundamental research is where the future is discovered. These are where the most impactful advances in science are made. Tomorrow’s health care depends on investment at this level,” said Dr. Michael Julius, vice-president, research, SRI and Sunnybrook. “Programs like this one thus are essential.”

Six of the scientists are within the Physical Sciences platform at SRI.

Dr. Charles Cunningham was awarded $150,000 over five years, the normal term of the grant, to develop devices to enable new MRI-guided procedures.

Dr. Brad MacIntosh will receive $140,000 to develop tools that elucidate changes in the brain after aerobic exercise. In addition to quantifying physiological changes in the brain after exercise, he aims to learn whether exercise enhances people’s ability to perform challenging mental tasks.

Dr. Anne Martel was awarded $140,000 to build robust classification techniques for medical imaging.

Dr. Meaghan O’Reilly will receive $125,000 to study how ultrasound therapy can be used to treat diseases of the spine and spinal cord. She will investigate how sound penetrates vertebral bone, and what ultrasound frequencies are optimal for transmitting through these bones so that she can engineer ultrasound transducers that will best focus acoustic energy to different targets.

Dr. Ali Sadeghi-Naini was awarded $125,000 to design, develop and test new techniques for imaging the breast and prostate. He is using ultrasound-based methods to measure bioacoustical and biomechanical properties of breast and prostate tissue. Such knowledge could help with diagnosis and prognosis in cancer.

Dr. Cari Whyne, director of the Holland Musculoskeletal Research Program, was awarded $170,000 to advance her study of thin bone structures in the human body like the craniofacial skeleton and pelvis. Trainees in her lab are creating image-processing algorithms and computational models to study how a break progresses in thin bone structures after a fracture. These techniques depict how loads are transmitted onto these structures, which could enhance understanding and treatment of bone disorders.

From Biological Sciences, SRI senior scientist Dr. Juan Carlos Zúñiga-Pflücker was awarded $210,000 to study the molecular mechanisms behind the expression of a gene called Delta-like 4 in thymic cells, and how the structure and organization of the thymus organ affects gene expression.

Read the full story at sunnybrook.ca/research.
CV: Dr. Nir Melamed

Bio basics: An associate scientist in Evaluative Clinical Sciences and the Women & Babies Research Program at Sunnybrook Research Institute (SRI), a staff physician in maternal-fetal medicine at Sunnybrook, and an associate professor in the department of obstetrics and gynecology at the University of Toronto. Completed a fellowship in maternal-fetal medicine at U of T; residency in obstetrics and gynecology at the Rabin Medical Centre in Israel; MD and M.Sc. in molecular biology at Hebrew University, Jerusalem, Israel. Born and raised in Israel; moved to Canada in 2012 and joined SRI in 2014.

How do you like working at SRI?
Sunnybrook and SRI offer a great setting. Having protected time for research allows me to conduct research in addition to doing clinical work and to develop collaborations with investigators. Also important is the access to experts and resources. Dr. Jon Barrett and I are working with scientists in the radiology department involving fetal and neonatal functional MRI studies and studies involving unique algorithms for image-processing that may predict lung maturity of preterm fetuses.

Why maternal-fetal medicine?
Although I’m not truly objective, this is one of the most exciting disciplines in medicine. There is an exciting field that has emerged over the last few years: fetal origin of adult disease, which suggests that many of the factors that affect the well-being of the fetus during intrauterine life not only affect the immediate neonatal outcomes, but also have an impact on the long-term health of the newborn, as a child, adolescent and adult.

What is your research focus?
The long-term health of growth-restricted fetuses, fetal growth disorders in singleton and twin pregnancies, prediction of preterm birth in twin pregnancies and gestational diabetes.

What’s the most rewarding part of your job?
Definitely the interaction with couples. We follow them throughout pregnancy, sometimes even before they become pregnant for preconception counselling. Having the opportunity to guide, counsel and reassure them at stressful times during pregnancy, and to contribute to a successful pregnancy with a healthy mother and a healthy child is a real privilege.

How do you maintain a work-life balance?
This is definitely one of the major challenges for all those who practise medicine. Balancing between clinical work, research, the constant need to read to remain up to date, and personal life is an ongoing challenge. Luckily, I have a wife and four kids who help me find the right balance between these obligations.

Any hobbies and interests that you enjoy?
I like playing basketball. When I find the time, I like to play the piano and guitar. My kids play as well, so we have a small ‘band’ at home. We like to compose songs and perform them together.

For a longer transcript visit sunnybrook.ca/research.
In His Element: PhD Student Finds Calling in Translational Research

By Alisa Kim

Abdikarim Abdullahi was driving home when his phone alerted him to a new email. Certain it was the notice he was eagerly awaiting, Abdullahi pulled into the nearest parking lot and opened the message.

It was good news: he had won a Vanier Canada Graduate Scholarship through the Canadian Institutes of Health Research.

“The first person I called was my brother,” says Abdullahi, a PhD student in the Institute of Medical Science at the University of Toronto who is training in the lab of Sunnybrook Research Institute (SRI) senior scientist Dr. Marc Jeschke. “He was the only family member who knew I applied. He was so happy and proud.”

The prestigious award, worth $150,000 over three years, meant more to him than simply funding to do his work. Of the roughly 200 students that U of T nominates for the Vanier scholarship, only one-quarter receive the honour. It recognizes not only academic excellence, but also leadership. Abdullahi, who has done extensive youth outreach for the city’s Somalian community, was ranked in the top 10th percentile of all U of T applicants. For someone who hadn’t planned on a career in research, the validation was huge.

“I would never in my wildest dreams have thought [I’d do] a PhD,” says Abdullahi. “All the times I doubted myself—Have I picked the right career? Am I behind?—this [award] solidified that this is the path I’m supposed to take.”

Ever since his first-year human physiology course, Abdullahi has wanted to become a doctor. He did a master of science degree in which he studied how muscle cells are differentiated to strength-en his medical school application. “I swore off grad school after my master’s. I was in a university basement working with cells every day. It was the same thing over and over again. It didn’t foster a passion for research.”

He thought clinical research would round out his med school application so he worked part-time as a research assistant for Dr. Jacques Lee, who specializes in emergency medicine at Sunnybrook and is a scientist at SRI. A year later, a position for a technician opened up in Jeschke’s lab. Jeschke thought Abdullahi’s background in cell biology and clinical research would be useful and hired him.

Jeschke is also a surgeon and director of the Ross Tilley Burn Centre at Sunnybrook. His lab’s dual focus on use of stem cells to regenerate skin and the metabolic changes that occur after a burn injury was an excellent fit for Abdullahi, who by this point realized he enjoyed doing basic science with clinical applications. Recognizing his aptitude for translational research, Jeschke suggested he do a PhD.

Abdullahi’s excitement about his research is palpable. He studies changes in metabolism in the liver and fat tissue after a burn. His focus is on a phenomenon called browning, in which the body shifts from storing fat to burning fat. He notes different types of

fat get their name from the colour of the tissue. “White adipose [fat] tissue is the kind no one wants, which stores fat,” he says. “Brown fat burns fat. The more brown fat you have, the more your resting energy expenditure increases.”

The study of browning is gaining popularity because controlling the process could help people who are obese or have diabetes. “If we promote more brown fat activation, these people will burn more fat, lose weight and improve insulin sensitivity without drugs,” he says.

As a burn researcher, he looks at the issue differently. He recently published a paper in *Trends in Endocrinology and Metabolism* that summarizes research into the harmful effects of browning in traumatic injury and cancer. The paper was well received by the journal’s editors for its originality; it’s the first review to turn a critical eye on browning under these conditions.

Unlike in obesity or diabetes, where brown fat activation may be desirable, in burn injuries browning is linked to poor outcomes. A burn sends the body into calorie-burning overdrive, a hyper-metabolic state in which the body begins to waste away. In these patients browning is detrimental because “the more fat you break down, your body starts breaking down muscle tissue,” says Abdullahi.

He, like others, is searching for the genes responsible for browning. Once found he will test whether blocking a specific signalling pathway inhibits conversion of white fat to brown fat. By uncovering the biological mechanisms behind browning, he hopes to be able to curtail the ravaging effects of burns.

He still wants to be a doctor—an endocrinologist, specifically—but he’s added running a lab to the job description. Getting there won’t be easy, but Abdullahi is used to overcoming adversity. He and his family immigrated to Canada in 1995 to flee the civil war in Somalia. He recalls coming here as a toddler without knowing any English. Reflecting on his past he says he is grateful for the opportunity to achieve his goals and sees a future in translational research. “It’s rewarding figuring out what you want to do. I finally have clarity.”
Applause

Recognizing the scientific and scholarly achievements of SRI faculty and trainees

Dr. David Andrews, director of Biological Sciences, has been awarded a Tier 1 Canada Research Chair in Membrane Biogenesis. He will receive $1.4 million over seven years. His research focuses on membranes and their associated proteins, cancer research, high-content screening and automated imaging analysis, and apoptosis.

Dr. Don Redelmeier, director of Evaluative Clinical Sciences, was awarded the Canadian Medical Association Journal's Bruce Squires Award for his article, Pregnancy and the Risk of a Traffic Crash, published in 2014. The award is given annually to the CMAJ's best paper as evaluated by originality, potential to impact practice and methodological rigour.

Dr. Mary Bell, an associate scientist in the Holland Musculoskeletal Research Program and a rheumatologist at Sunnybrook, was named 2015 Rheumatologist of the Year by the Ontario Rheumatology Association. The award recognizes her outstanding leadership and commitment in arthritis and medical education research.

Dr. Jack Tu, a senior scientist in the Schulich Heart Research Program, received the first Eaton Scholar Researcher of the Year Award. The Eaton Scholars program, supported by the Eaton family, recognizes excellence among clinician-scientists in the department of medicine at U of T. Earlier this year, Tu was awarded the 2015 University of Toronto Department of Medicine Research Award.

Dr. David Andrews, director of Biological Sciences, has been awarded a Tier 1 Canada Research Chair in Membrane Biogenesis. He will receive $1.4 million over seven years. His research focuses on membranes and their associated proteins, cancer research, high-content screening and automated imaging analysis, and apoptosis.

Dr. Sandra Black, director of the Hurvitz Brain Sciences Research Program, received the 2015 Dean's Alumni Lifetime Achievement Award from the University of Toronto for her internationally recognized research in stroke and dementia. The award recognizes a graduate from the faculty of medicine whose outstanding career achievements have earned him or her national or global prominence.

Dr. Robert Fowler, a senior scientist in the Trauma, Emergency & Critical Care Research Program, was named to the Order of Ontario, the province's highest honour that recognizes individual excellence and achievement. As a critical care physician, he treated Ebola patients over a nine-month period in Guinea, Sierra Leone and Liberia during a sabbatical year with the World Health Organization in 2014.

Fowler also received a Meritorious Service Cross (civil division) in recognition of his work with the World Health Organization during the global response to the Ebola crisis in West Africa. This award recognizes individuals who have performed an exceptional deed or activity that sets an example for others to follow, improves the quality of life of a community, and brings considerable benefit or honour to Canada.

A Triple Win

The Canadian Institutes of Health Research awarded three doctoral students with the prestigious Frederick Banting and Charles Best Canada Graduate Scholarship. The award provides special recognition and support to students who are pursuing a doctoral degree in a health-related field in Canada. Each recipient will receive $105,000 over three years.

Trisha Roy, supervised by Dr. Graham Wright, will use MRI to characterize peripheral arterial plaque for planning of percutaneous vascular interventions, a less invasive approach to re-establish blood flow in the leg.

Myuri Ruthirakuhan, in the lab of Dr. Krista Lanctôt, will investigate cerebrocholesterol as a biomarker of agitation in people with moderate-to-severe Alzheimer’s disease, and of treatment response to nabilone, a therapeutic drug, in a randomized controlled trial.

Danielle Weber-Adrian, working with Drs. Isabelle Aubert and Kullervo Hynynen, will investigate the therapeutic potential of noninvasive gene delivery for the treatment of Alzheimer’s disease. The aim is to deliver brain-derived neurotrophic factor (BDNF) or a BDNF receptor-specific agonist to the brain using MRI-guided focused ultrasound. The results of these experiments could demonstrate a novel treatment strategy using targeted gene delivery to restore memory.
What’s On

August 18
D+H SRI Summer Student Research Program Poster Competition
Noon–4:30 p.m.
McLaughlin Auditorium, EG 18

September 7 and 14
Biological Sciences Learning at Lunch Seminars
Titles to be announced
Noon–1 p.m.
SG 22

September 13
Physical Sciences Seminar
Title to be announced
11 a.m.–noon
SG 22

September 27
Cancer Research Rounds
Title to be announced
1–2 p.m.
M6 502

September 30
Physical Sciences Seminar
Title to be announced
2–3 p.m.
SG 22

November 14–15
Innovations in Radiation Engineered Therapy
Vaughan Estate, Sunnybrook Health Sciences Centre
Register at sunnybrook.ca/research

November 16–17
Innovations in Cancer Therapy and Response Monitoring
Vaughan Estate, Sunnybrook Health Sciences Centre
Register at sunnybrook.ca/research

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We welcome your suggestions. Please send them to Eleni Kanavas at eleni.kanavas@sri.utoronto.ca.

Dr. Julie Hallet, an associate scientist in the Odette Cancer Research Program and surgeon at Sunnybrook, excises a liver tumour. Her research has shown that blood transfusions during surgery to remove liver tumours are associated with lower rates of survival and higher rates of cancer recurrence. Read more about her and her colleagues’ research into upper gastrointestinal cancers in the 2016 SRI Magazine, available on newsstands and online at sunnybrook.ca/research.
[Photo: Nation Wong]