



NEWS

SPRING 2011

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Health services scientists target regional variation in cardiac care

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Big Grant for Small Science

Nanotech microchip could change screening for prostate cancer

By Jim Oldfield

Dr. Robert Nam was one of many who noticed Dr. Shana Kelley's 2009 *Nature Nanotechnology* paper on cancer-detecting microchips—*Scientific American* covered the publication; Peter Mansbridge interviewed Kelley for "Mansbridge One On One"—but he was one of the few to launch a collaboration based on it.

Kelley, a professor in the departments of biochemistry and pharmaceutical sciences at the University of Toronto, and Nam, a clinical epidemiologist at Sunnybrook Research Institute (SRI) and head of the genitourinary cancer group at the Odette Cancer Centre, turn down more offers to collaborate than they initiate. But when Nam approached Kelley about working together, they each found a match.

"Boom. It just fell into place," says Nam, who is also an associate professor of surgery at U of T. "Our goals were the same."

The main goal the two shared was to transform prostate cancer screening. Now, the Canadian Institutes of Health Research has awarded them an emerging team grant to do just that.

Worth \$1.6 million over four years, the grant will fund a team led by Nam and Kelley that includes Dr. Ted Sargent, Canada Research Chair in Nanotechnology and Dr. Aaron Wheeler, Canada



Dr. Robert Nam, an associate scientist in the Odette Cancer Research Program at Sunnybrook Research Institute

Research Chair in Bioanalytical Chemistry, both faculty at U of T. Nam and colleagues will refine Kelley's microchip technology to develop a prostate cancer screening device that is fast, inexpensive and noninvasive.

The technology consists of finely structured electrode probes, grouped into blossoms and arrayed on a chip of silicon. Each probe is coated in molecules designed to bind with the ribonucleic acid in cancer cells.

Continued on page 2

Credit Where Credit's Due

Sunnybrook Research Institute (SRI) hosted a town hall February 22 on the Scientific Research and Experimental Development (SR&ED) Tax Incentive Program, which gives tax credits to individuals and businesses that invest in research.

The research institute recently became a legal entity independent from Sunnybrook Health Sciences Centre, in part to secure SR&ED-credit status. That status, SRI executives expect, will encourage investment in research at the institute.

Dr. Michael Julius, vice-president of research at Sunnybrook Health Sciences Centre and Sunnybrook Research Institute, outlined benefits to faculty that will arise from the change. As an example, Julius noted physicians frequently invest a portion of their Ministry of Health and Long-Term Care billing revenue in research without a tax shelter for it. "We have many practitioners at Sunnybrook who are already investing in research, and we did not have good vehicles in place to support their decision to do so," said Julius.

Dr. Kevin Imrie, physician-in-chief of Sunnybrook's department of medicine, explained what the change could mean for his department. Based on current research expenditures the department could realize \$200,000 to \$300,000 in credits, he said. But with SR&ED status enabling compensation for physician time spent in research, the department could flow up to \$10 million through the program and generate \$2 million in credits. (A typical credit is 20% for individuals and 35% for corporations.) "The SR&ED program has tremendous potential, and our department sees it as a mechanism to enrich or increase our investment in research," said Imrie.

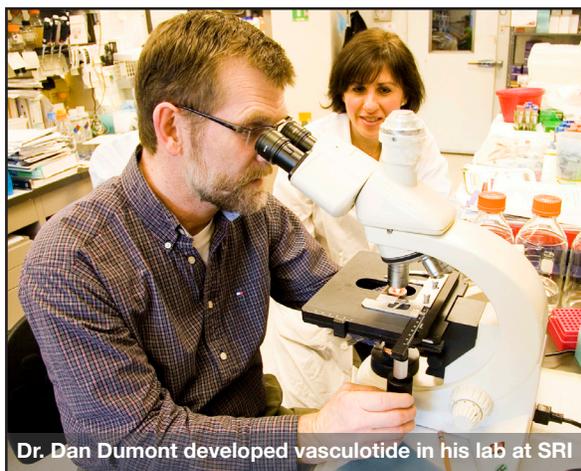
The town hall was co-hosted by Dr. Cameron Guest, a critical care physician at Sunnybrook, and CEO and chair of Academic Clinicians' Management Services, a not-for-profit corporation that manages the financial aspects of physicians' practices at teaching hospitals. Guest stressed the win-win rationale for seeking SR&ED status: investing in research is already part of the university model of how physician practice plans work, and new tax credits can be reinvested in research. "The SR&ED program has been around for years," said Guest. "Really the question is not, 'Why would this happen now?' but, 'Why hasn't it happened until now?'"

For more information on the SR&ED program, visit the SRI section of the intranet, under "Education and Research" at www.sunnynet.ca.

Partnership To Spur Commercialization

Sanofi-aventis, MaRS Innovation and Sunnybrook Research Institute announced on February 15 that they have entered into a research agreement and exclusive worldwide licensing option to develop and commercialize vasculotide, a synthetic peptide compound shown to speed healing of chronic wounds in preclinical studies.

Sunnybrook Research Institute senior scientist **Dr. Dan Dumont** and **Dr. Paul Van Slyke**, a research associate in Dumont's lab, developed the compound. Dumont identified the molecular target for vasculotide, Tie-2, 20 years ago. The initial aim is to develop a treatment for diabetic foot ulcers.



Dr. Dan Dumont developed vasculotide in his lab at SRI

Continued from page 1

The chip enables detection of small numbers of circulating cancer cells—a feat previously possible only with a roomful of computer technology.

The chip's sensitivity is a major breakthrough, but a remaining challenge is specificity: it must distinguish cancer cells from an increasingly complex background of molecular material, as the researchers shift their experiments from cancerous cell lines to human tissue biopsies and blood.

To detect prostate cancer reliably, and to establish whether it is slow-growing or aggressive, the researchers will need a well-developed panel of prostate-cancer-specific biomarkers. Nam will look for those markers—which he and other scientists are discovering with increasing efficiency—using SRI's newly acquired next-generation DNA sequence analyzer and Sunnybrook's tumour bank. Meanwhile, Kelley, Sargent and Wheeler will streamline the chip-based nanotechnology. If all goes according to plan, says Nam, "We can throw out the PSA [prostate-specific antigen] test."

The PSA test is the standard noninvasive screening tool for prostate cancer, but its accuracy is limited. Moreover, it doesn't discriminate between slow-growing and metastatic cancer—a crucial distinction for catching aggressive forms of the disease at a treatable stage and making therapeutic decisions. "Watchful waiting," for example, where a physician closely monitors a patient for signs of disease progression, is often a better choice for preserving quality of life than are radical alternatives like surgery.

Despite the tantalizing promise of better screening, Kelley says clinicians need to decide if they're willing to adopt new diagnostics like the microchip. She says that having a clinical collaborator like Nam helps her understand the challenges in gaining acceptance for her technology, and provides a critical link to the community that she hopes will use it.

"Rob is a great collaborator because he is so excited about the science—the potential for impact—and he's the right combination of pushy but realistic in terms of timelines," says Kelley. "He always has good ideas about the next step. For me it's been just a fantastic new relationship."

CIHR Invests \$3.3 Million in SRI Scientists

The Canadian Institutes of Health Research (CIHR) has awarded nine scientists at Sunnybrook Research Institute (SRI) operating grants totaling \$3.3 million through its September 2010 funding competition.

Dr. Robert Jankov, a senior scientist in clinical integrative biology, will receive \$665,853 over five years for his study on Rho-kinase inhibitors for chronic pulmonary hypertension. The grant will allow Jankov to build on research that shows Rho-kinase inhibitor drugs can reverse severe chronic pulmonary hypertension in young animals, and to explore the mechanisms behind heart failure caused by the disease.



Dr. Robert Jankov

Dr. Jean-Philippe Pignol, an imaging scientist, will receive \$130,322 over three years to follow up on results from his Canadian multicentre clinical trial on intensity-modulated radiation therapy for breast cancer—a technique that reduces radiation burns on the skin. The award will enable Pignol to examine the long-term effects of using this therapy on women who participated in the trial.

Dr. Burton Yang, a senior scientist in molecular and cellular biology (MCB), was awarded \$419,755 over five years to study the role of a specific microRNA in tissue regeneration and blood formation. This research could lead to the development of new treatments for vascular diseases.

These SRI researchers also received CIHR support:

- **Dr. Yaacov Ben-David**, a senior scientist in MCB: \$696,385 over five years for his work on identifying genes associated with leukemia development.
- **Dr. Jonathan Rast**, a senior scientist in MCB: \$100,000 in one-year bridge funding for his project on gene regulatory networks and human immunity.
- **Dr. Bradley Strauss**, a senior scientist in MCB, and chief of the Schulich Heart Program: \$100,000 over one year for his study on microvascular injury in an acute heart attack.
- **Dr. Jack Tu**, a senior scientist in clinical epidemiology: \$995,919 over four years for his research on measuring and improving the quality of care for heart attack patients (see page five for feature story).
- **Dr. Richard Wells**, a scientist in MCB: \$100,000 in one-year bridge funding for research on treating acute myelogenous leukemia with a new drug called EAR-2.
- **Dr. Juan Carlos Zúñiga-Pflücker**, interim director of MCB: \$100,000 in one-year bridge funding for his work on the characterization and lineage of progenitor thymocytes.

The agency received 2,338 applications in the competition, and approved 501 of these, for a 21% funding rate.

Funding Agency News

The Canada Foundation for Innovation (CFI) shared initial thoughts on the next Leading Edge Fund (LEF) and New Initiatives Fund competition. We can expect that the competition will be launched this fall, with notices of intent due three months later and full proposals five months after that. This gives us a deadline of late spring or early summer 2012.

Two-thirds of the smaller-than-usual \$155-million budget will be earmarked for LEF projects, which are those that have already received funding from the CFI and now require additional investment to continue to be at the leading edge.

The province's role is as-yet unclear, especially with an October 6 election in the pipeline, but at this stage there is no indication that it would not continue to match equally CFI's 40% funding of a total project budget.

Scientists interested in learning more about these programs should contact **Kevin Hamilton**, director of strategic research programs at Sunnybrook Research Institute: khamilton@sri.utoronto.ca.

More Funding From CIHR . . .

In addition to the operating grants, the agency also awarded grants to the following SRI scientists through other competitions.



Dr. Rajiv Chopra

Dr. Rajiv Chopra, an imaging scientist, will receive a one-year proof-of-principle grant worth \$153,344 to develop and evaluate endorectal magnetic resonance elastography for prostate cancer detection.

Dr. Gregory Czarnota, an imaging scientist and interim director of the Odette Cancer Research Program, was awarded a one-year meetings, planning and dissemination grant for cancer research worth \$15,250 towards an international symposium on quantitative ultrasound methods to detect cancer cell death.

Dr. Damon Scales, a scientist in clinical epidemiology, will receive an operating grant from the Heart and Stroke Foundation of Canada, in partnership with the CIHR. Scales will use the grant, worth \$193,120 over two years, to study the premature termination of resuscitation in patients who survive cardiac arrest.



Dr. Damon Scales

Tool Kit: Toshiba Aquilion ONE CT System



Caron Murray, a senior MRI research technologist at Sunnybrook, from inside the new Toshiba Aquilion ONE

Sunnybrook Research Institute (SRI) recently installed a state-of-the-art Toshiba Aquilion ONE computed tomography (CT) system on the ground floor of S wing. The system's 320-row detector can image up to 16 centimetres of anatomy—covering a heart or head—in a single scan, thereby capturing dynamic processes like perfusion, and reducing exam time.

To cover equivalent volume with the previous generation's 64-row detector, researchers needed four or five scans pieced together.

“A study of the heart would catch different sections on different heart beats, which could result in jagged coronary images. With a picture of the whole heart in a single frame we have the potential to produce more consistent images,” says **Dr. Graham Wright**, director of the Schulich Heart Research Program.

Wright and imaging scientist **Dr. Alan Moody** will use the Aquilion for diagnostic and therapeutic cardiac studies. **Dr. Kullervo Hynynen**, director of imaging research at SRI, will plan and monitor focused ultrasound therapies for neurological diseases with the new system. “Historically, CT has been a diagnostic system, but we believe it has significant potential for guiding interventions,” says Wright.

To make the system viable in guiding clinical therapeutics, the scientists need to reduce the radiation it imparts to a level below that of typical diagnostic CT scans. Toward that goal, they will experiment with undersampling (acquiring limited data) and reconstruction of images with minimal data, while preserving spatial resolution.

The \$2.9 million Aquilion ONE is part of SRI's Centre for Research in Image-Guided Therapeutics, established with a \$57 million infrastructure award from the Canada Foundation for Innovation through its Research Hospital Fund.

CV: Dr. Stanley Liu



Bio basics: Since January 2011, a scientist in molecular and cellular biology at Sunnybrook Research Institute (SRI) and radiation oncologist in the Odette Cancer Program at Sunnybrook. Assistant professor of radiation oncology at the University of Toronto. Completed a PhD in medical biophysics in 2000, an MD in 2004 and a radiation oncology residency in 2009, all at U of T. Finished postdoctoral research at the Gray Institute for Radiation Oncology and Biology, University of Oxford, in December 2010.

Why were you drawn to Sunnybrook?

There was a strong clinician-scientist model in place at the Odette [Cancer Centre] in radiation oncology, and a critical mass to provide optimal clinical and research support. Also, together with SRI we have the whole research pipeline—I can take my basic and preclinical work from the lab, collaborate with basic and translational researchers, and then work with our clinical trials group at Odette to bring our findings to patients.

Was there a key point in your path to clinician-scientist?

Actually, several. At the end of my PhD I was introduced to excellent clinician-scientist role models at SickKids, and I realized that conducting translational research as a clinician-scientist was something I wanted to pursue. Then, during my residency at Princess Margaret Hospital, Dr. Rob Bristow provided valuable mentorship and allowed me to enhance my research productivity. This experience prepared me for postdoctoral fellowship training at Oxford with Drs. Adrian Harris and Ruth Muschel.

What is your research focus?

I'm researching ways to improve the efficacy of radiation treatment by targeting the Notch pathway. It's well-known that for radiation to work effectively, the tumour should be well-oxygenated. However, disruption of Delta-like ligand 4 (DLL4), which is part of the Notch signaling pathway, makes tumours hypoxic [oxygen-starved], so it's paradoxical to think you should combine this treatment with radiation. We found that when we block DLL4 after radiation treatment is given, a profound delay in tumour growth results, and this novel therapy is well-tolerated.

What are the next steps in studying this potential therapy?

We need to figure out how our therapy is working at the cellular level, and then overcome any resistance to it, to make the therapy even better. Nothing has yet been published on DLL4 blockade and radiation, so there is a lot to be discovered. Ultimately, the plan is to expeditiously translate this research to an early-phase trial in patients.

PEOPLE @ SRI

Appointed:

Dr. Stanley Liu, MCB, Cancer (scientist)

Promoted:

Dr. Michele Anderson, MCB, Cancer (senior scientist)
Dr. James Carlyle, MCB, Cancer (senior scientist)

Million-Dollar Heart Research

Health services scientists target regional variation in cardiac care

By Jim Oldfield

The Canadian Institutes of Health Research has awarded a research team led by **Dr. Jack Tu** \$995,919 over four years. The grant is for research to measure and improve quality of care for ST-segment elevation myocardial infarction (STEMI) patients in Ontario.

One-third of heart attacks are STEMIs. Although the condition is treatable with thrombolytic (clot-dissolving) drugs or primary percutaneous coronary intervention (revascularization via a balloon-tipped catheter or other techniques, commonly called PCI), patient survival rates vary in Ontario from 7% to 14%. Tu and his team will study reasons for this regional variation, then issue report cards that will include methods for improving care in each area.

If all regions in the province achieved optimal survival rates, then the researchers estimate 600 lives could be saved each year.

“Our hypothesis is that regions with a well-organized STEMI care program, offering PCI with timely patient transfers between receiving hospitals by well-trained EMS staff, will do better,” says Tu, a senior scientist in the Schulich Heart Research Program at Sunnybrook Research Institute who holds the Canada Research Chair in Health Services Research.

Only 14 hospitals in Ontario offer PCI—which has a success rate of over 90% versus 60% for thrombolytic therapy—in part because it requires a catheterization lab and a large medical team. This difference in treatment availability likely accounts for some of the regional variation in survival rates, but Tu says other factors could be at play.

“It could be that patients are sicker or poorer in some regions. Those patients might be expected to have worse outcomes,” says Tu, who is also a professor at the University of Toronto. “As well, there is a shortage of family doctors in certain regions in Ontario, so adequacy of primary care could be a factor, as could quality of care provided within the hospital.”



Dr. Jack Tu, a cardiologist and senior scientist in the Schulich Heart Research Program
[Photo: Curtis Lantinga]

Tu has assembled a multidisciplinary team of researchers to tease out which factors are affecting care in each region. The team includes researchers with expertise in methods and statistics, scientists from other provincial health care systems and interventional cardiologists who have implemented STEMI care systems with primary PCI.

One such interventional cardiologist is Dr. Harindra Wijeyesundera, who manages the quality improvement component of Sunnybrook’s STEMI care program. Wijeyesundera has experienced the challenges of growing the program since its inception in 2007, when the standard practice at Sunnybrook was administration of thrombolytics. Sunnybrook’s STEMI team now does PCI exclusively, for local patients and those in the catchment areas for North York General and Humber River Regional hospitals.

A health services scientist who will complete his PhD this year, Wijeyesundera is keen to work with Tu’s team. “The core group has been together for quite a while under Jack’s leadership, and has produced insightful, high-impact work that has contributed to changes in care,” he says.

Wijeyesundera expects this grant will spur changes in STEMI care, but says those changes could be complex because the ideal treatment may not be a one-size-fits-all solution. Switching to primary PCI requires infrastructure changes, for example, that may not be feasible in some regions. Further, in the north, large distances between hospitals, along with limited access to specialists, could require that STEMI programs are highly customized for specific regions. “Our grant will not likely say, ‘This is what you should do,’” says Wijeyesundera. “It will prepare an inventory of the options—what works and what doesn’t.”

The nuance in those options will colour any controversy that emerges when the researchers make public, via the web, the regions underperforming in STEMI care. But Tu doesn’t expect that nuance or controversy will hinder progress.

“Our experience is that people will use this kind of data to make system improvements—even if there might be some initial anger or disbelief around unfavourable data—because clinicians want to provide the best possible care to their patients,” he says.

Trainees' Post

For Students and Postdocs

Mentorship provides students with insight into the world of science

Many students interested in science do not get the opportunity to work in a research lab until they are well into their undergraduate studies. Research personnel in the biology lab of **Dr. Juan Carlos Zúñiga-Pflücker**, interim director of molecular and cellular biology at Sunnybrook Research Institute (SRI), however, are giving earlier-stage students in high school and university hands-on experience to explore their scientific interests.

Dr. Patricia Benveniste is a research associate in Zúñiga-Pflücker's lab who has more than 10 years' experience mentoring students. Born in Paris, France, Benveniste attended medical school at the National Autonomous University of Mexico. She completed a master's in autoimmune thyroid diseases and a PhD in bone marrow T cell differentiation at the University of Toronto. She then did postdoctoral studies at the U.S. National Institutes of Health in T cell development.

Here, she tells **Eleni Kanavas** how much she enjoys being a mentor and providing students with an opportunity to learn and develop research skills in the lab.



Dr. Patricia Benveniste has mentored several students during her career and enjoys helping students develop research skills in the lab [Photo: Jim Oldfield]

What inspired you to become a mentor?

When I was a student, this trend in mentorship programs was not available. It's nice to teach young people who might be interested in following research and to show them what we do. It gives students exposure to different labs before they make their career decision.

Why is mentoring important in research?

We have an array of interests within the lab, and we try to pair students with a researcher who is most linked to the student's interest. I think it's very important for students to experience what it's like working in the lab before deciding if they want a science career or a more clinical one, like being a doctor. Students often have doubts about their career choice, and offering them the possibility of testing options is important.

How does mentoring promote the sharing of ideas?

We discuss the progress of our research in the lab quite a bit, especially at the beginning when I introduce the topic that the student will be working on with me. After they get more familiar with the theme and they've read some of the literature, then there is a lot more discussion and questions.

Are there challenges that come along the way?

The challenges are different with every student. For example, you may get a student who has experience in biochemistry, but this is a biology lab and we grow things. For a person who has never dealt with that, it's ground zero and we have to start from scratch.

Students have to digest what they learn in a relatively short time and must be proficient with the handling of the material. For the mentor, the challenge is to make sure the student understands the reason for doing the experiment and how best he or she can present their work at the end of the term.

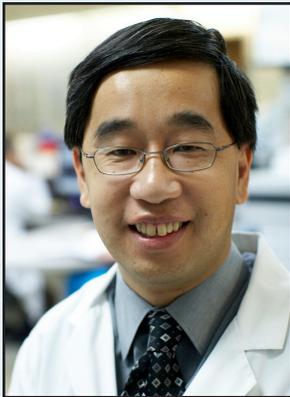
What do you like best about mentoring?

The interaction with the new generation. Students enliven the lab and are very enthusiastic, and sometimes we lose some of that enthusiasm in growing up. I really enjoy watching students develop their skills and grow in their learning. Whether they decide to pursue science later on is irrelevant, but at least they are enjoying what they are doing and learning. That's what I like the most.

Applause

Dr. Jack Tu

CIHR Institute of Health Services and Policy Research Article of the Year



The Institute of Health Services and Policy Research (one of the Canadian Institutes of Health Research) gave **Dr. Jack Tu**, a cardiologist and senior scientist in the Schulich Heart Research Program, the 2010 Article of the Year award. Published in the *Journal of the American Medical Association*, the article, “Effectiveness of Public Report Cards for Improving the Quality of Cardiac Care: The EFFECT study: a Randomized Trial,” was the first randomized clinical trial to assess whether public hospital report cards can improve quality of care.

Tu and colleagues found that while report cards did not improve several aspects of cardiac care, there was reduced mortality at hospitals that adopted the report cards early, compared with hospitals that adopted them later. Several Canadian hospitals have used results from the EFFECT study to instigate improvements in patient care.

Tu, who holds the Canada Research Chair in Health Services Research, will receive \$10,000 with the award.

Canadian Cancer Society Presents Prevention Initiative Award

The Canadian Cancer Society awarded **Dr. Jill Tinmouth**, a scientist in the Odette Cancer Research Program, a Prevention Initiative—Prevention Translation Supplement award worth \$186,758 over two years. Tinmouth will use the award to study quality improvement of colonoscopy through a pilot test of an endoscopist audit-and-feedback tool derived from health administrative data.

Funded: Clinical Trial at Ross Tilley Burn Centre

The Physicians’ Services Incorporated Foundation has awarded **Dr. Marc Jeschke**, a senior scientist in molecular and cellular biology at Sunnybrook Research Institute, \$165,000 over two years to conduct a clinical trial comparing two drugs for glucose control in severely burned patients.

Insulin is used in modern burn management care to control hyperglycemia in burn patients. Metformin, another common diabetic drug, has a better safety profile but a different mechanism of action; current evidence is unclear as to whether metformin may control blood sugar levels effectively in burn patients.

Jeschke, who is also the director of the Ross Tilley Burn Centre at Sunnybrook, will lead a trial with three groups—patients will receive a placebo, insulin or metformin—to compare the benefits of the drugs and examine their effects in fat, muscle and skin. The trial, which Jeschke expects will begin in June at the Ross Tilley Burn Centre, will include patients with burns to 25% or more of their bodies.



Dr. Marc Jeschke

Heart and Stroke Foundation Awards Five Scientists Grants-in-Aid Funding

The Heart and Stroke Foundation of Ontario awarded five scientists at Sunnybrook Research Institute (SRI) grants-in-aid funding in its September 2010 competition.

Dr. Richard Aviv, an associate imaging scientist, will receive a \$70,000 over two years for his project titled, “A novel animal model of contrast extravasation in intracranial hemorrhage.”

Dr. Benjamin Goldstein, a scientist in clinical integrative biology, was awarded \$53,218 over two years for his project titled, “Inflammation and brain-derived neurotrophic factor: at the heart of cardiovascular risk among adolescents with bipolar disorder.”

Dr. Simon Graham, a senior imaging scientist, will receive \$51,427 over two years for his project titled, “fMRI (functional magnetic resonance imaging) neurofeedback applied to motor imagery in stroke.”

Dr. Krista Lanctôt, a senior scientist in clinical integrative biology, was awarded \$65,288 over two years for her project titled, “The neurotrophic effects of lithium carbonate following stroke: a feasibility study.”

Dr. Bradley Strauss, a senior scientist in molecular and cellular biology will receive \$93,142 over three years for his project titled, “Microvascular injury in acute myocardial infarction.”



Dr. Richard Aviv



Dr. Krista Lanctôt

WHAT'S ON

April 5–8

Ontario Public Health Convention
Ontario Agency for Health Protection
and Promotion
Westin Harbour Castle
1 Harbour Square, Toronto

April 14

Health Innovation Leadership Course
Faculty of Medicine
7:45 a.m.–7:30 p.m.
6th Floor Auditorium, Dalla Lana School
of Public Health, University of Toronto

June 16

CIHR Grant Writing Workshop
Faculty of Medicine
1:00 p.m.–5:00 p.m.
Medical Sciences Building
University of Toronto

April 7

Molecular and Cellular Biology Seminar
1:30 p.m.
Room SG 22

May 18

SRI Summer Student Orientation
2:00 p.m.–3:00 p.m.
Harrison Hall, EG 21

June 23–24

**4th Annual Molecular Function and
Imaging Symposium**
University of Ottawa Heart Institute
Hampton Inn Hotel
100 Coventry Rd., Ottawa

April 8

SRI Safety Seminar
10:30 a.m.–noon
Room SG 22

June 6

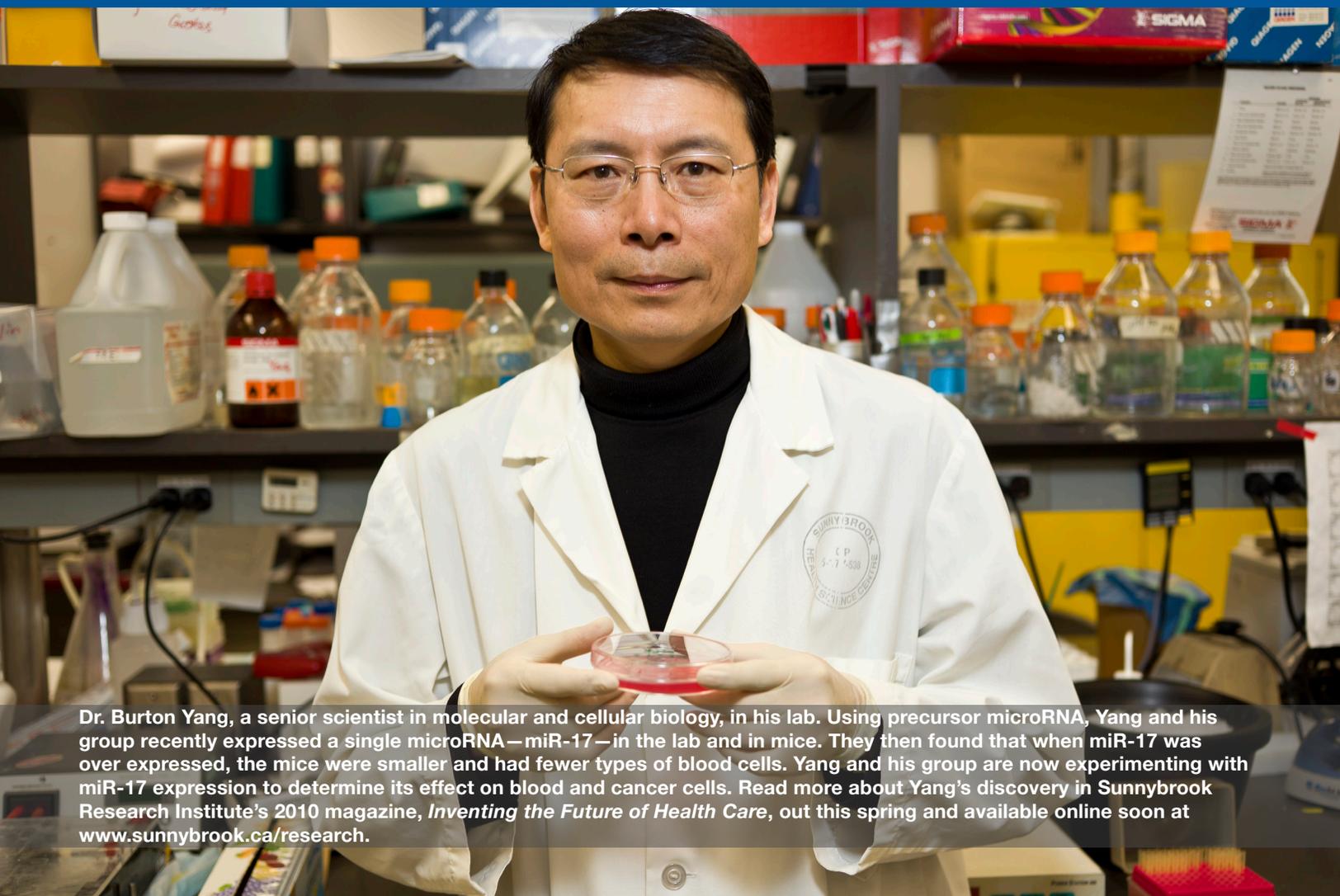
4th Annual Canadian CTO Summit
7:30 a.m.–4:00 p.m.
Harrison Hall, EG 21

Editor: Stephanie Roberts

Contributors: Eleni Kanavas, Jim Oldfield

Photography: Doug Nicholson

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



Dr. Burton Yang, a senior scientist in molecular and cellular biology, in his lab. Using precursor microRNA, Yang and his group recently expressed a single microRNA—miR-17—in the lab and in mice. They then found that when miR-17 was over expressed, the mice were smaller and had fewer types of blood cells. Yang and his group are now experimenting with miR-17 expression to determine its effect on blood and cancer cells. Read more about Yang's discovery in Sunnybrook Research Institute's 2010 magazine, *Inventing the Future of Health Care*, out this spring and available online soon at www.sunnybrook.ca/research.