

## Physicist wins Premier Young Researcher Award

By Jim Oldfield

*Canadian Institutes of Health Research presents Sunnybrook scientist with top honour*

Dr. Charles Cunningham accepted Canada's Premier Young Researcher award at the seventh annual Canadian Health Research Awards gala on November 19th, 2008, held at the National Gallery of Canada in Ottawa. The award, worth \$560,000 over five years, is co-funded by the Peter Lougheed Medical Research Foundation and the Canadian Institutes of Health Research (CIHR), and given annually to the top-ranked applicant in the CIHR New Investigator funding competition.

Cunningham placed first of 50 researchers from across Canada in that competition—a rare and prestigious distinction. "I wasn't expecting this award," said Cunningham, an imaging scientist at Sunnybrook Research Institute (SRI), "but it sure makes life easier." Roughly one-half of the award goes to salary, with the remainder available for research operating expenses. Cunningham plans to use some of the funding to recruit new lab members, likely one or two postdoctoral fellows, to his current staff of five.

With his lab and other SRI collaborators, Cunningham is developing magnetic resonance imaging (MRI) techniques for use in the new field of molecular imaging. Approaches he's working on include experimentation with the physics of radiofrequency pulse design to improve MRI sensitivity, placing magnetic iron nanoparticles in cells to monitor cell movements in the body and genetically modifying cells to produce an enzyme which could then be imaged with a contrast agent.

Cunningham performs much of this work, which has potential for novel applications across several clinical areas with a focus on cancer and cardiology, with SRI's recently installed hyperpolarizer. Funded by the Canada Foundation for Innovation, the device enables unprecedented sensitivity, accuracy and depth of imaging of metabolism via hyperpolarized carbon, in real time.

An assistant professor in the department of medical biophysics at the University of Toronto, from which he received a PhD in 2002, Cunningham completed a postdoctoral fellowship at Stanford University in California before returning to Toronto and setting up a lab at SRI. In addition to helping establish that lab, the award has already meant considerable recognition and publicity, which Cunningham said will "definitely help" future funding applications.

As for the award ceremony and presentation, attended by CIHR's president Alain Beaudet, numerous research luminaries and their friends and family, and a smattering of politicians, Cunningham was enthusiastic but modest: "To receive this award at an event like that, in the Great Hall with a view of the Parliament Buildings—it was pretty special."