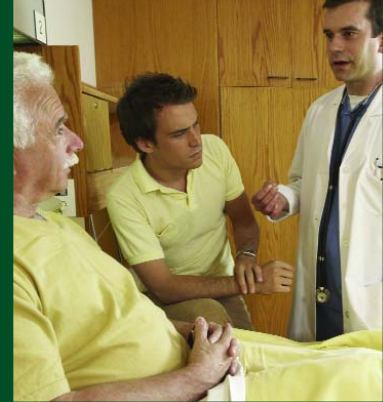
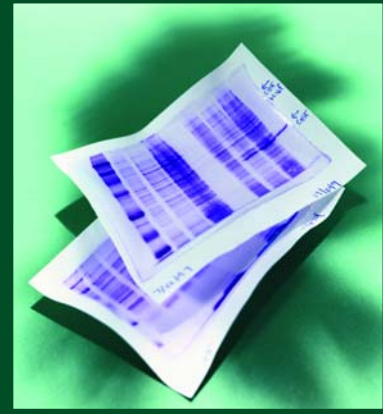
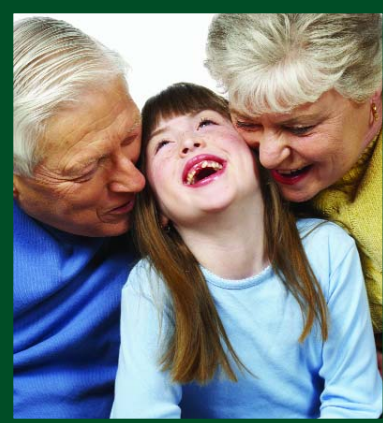




Canadian Institutes  
of Health Research

Instituts de recherche  
en santé du Canada



# Canadian Institutes of Health Research Institute of Cancer Research

## ANNUAL REPORT 2005/2006



CIHR IRSC

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Instituts de recherche en santé du Canada

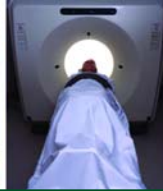
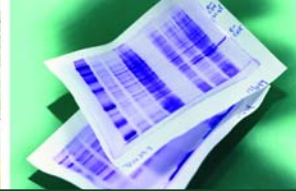
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Institut du cancer

Written by: Judith Bray, PhD, Assistant Director, ICR  
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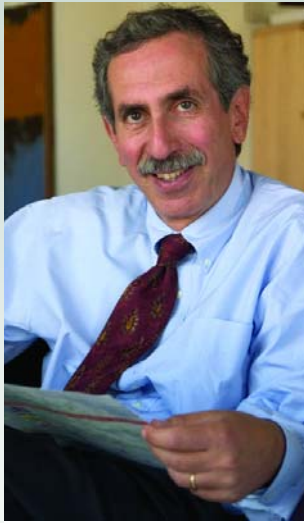
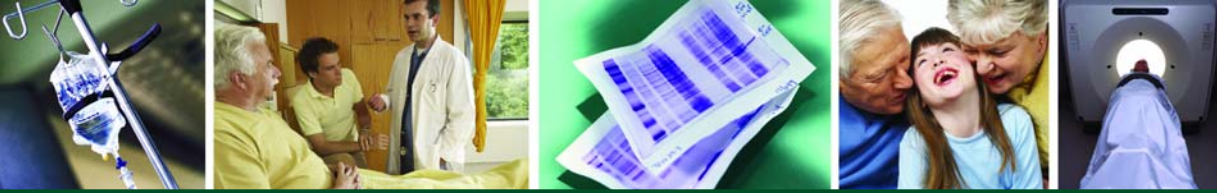
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Dr. Alan Bernstein,  
O.C., FRSC  
President, Canadian  
Institutes of Health  
Research (CIHR)

## MESSAGE FROM THE PRESIDENT

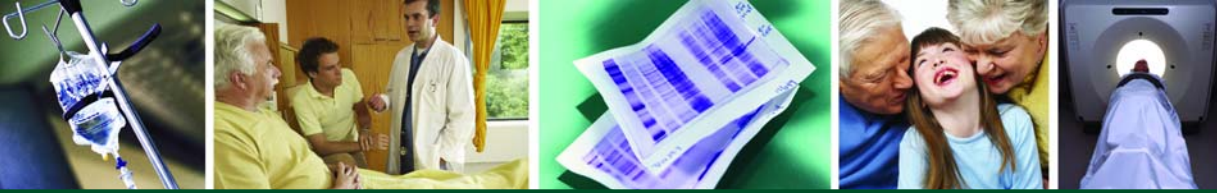
The next decade in cancer research is likely to be dramatic, as our improved understanding of the basic mechanisms involved in malignant transformation, gained from many years of painstaking research, begins to yield results. There are now many new interventions, therapies and technological advances waiting to be assessed in the clinic, which in combination are likely to dramatically change the way we diagnose and treat cancer. Such advances come with caveats, however, not least of which is the spiraling cost of these new drugs and treatments and concerns about how we can provide timely access to high quality health care for all Canadians. Moreover, there is an increased awareness of the effects of lifestyle and environment on health, particularly the risk for chronic diseases, including cancer.

CIHR has an historically strong commitment to outstanding research that will have an impact on cancer control and supports a cadre of outstanding researchers in all areas of cancer research, many of whom are internationally recognized for their innovative contributions to the field. The Institute of Cancer Research (ICR) has contributed to this excellence through the launch

of strategic initiatives developed in response to the Institute's eight research priority areas. In 2005/2006, ICR's primary focus was on access to health services and products related to cancer and colorectal cancer screening, both of which were addressed initially through invitational workshops to gather input and direction from a broad range of stakeholders including the research community. The launch of the Access to Quality Cancer Care initiative in December 2005 and the planned launch of the Colorectal Cancer Screening initiative in June 2006 will provide a solid foundation for research in these two areas. In the case of the former, the Institute consulted broadly with provincial cancer agencies, seven of which are partners on the Request for Applications (RFA), in order to align research projects with provincial health priorities and promote timely translation of research findings into changes in policy and practice.

I would like to thank Dr. Philip Branton for his extraordinary leadership skills in managing ICR and also for his achievement in bringing together members of the cancer research community, through the creation of the Canadian Cancer Research Alliance. Dr. Branton is an outstanding ambassador for the field and demonstrates an impressive and long-standing commitment to cancer control. I also extend my thanks to the outstanding Institute Advisory Board, led by Dr. Heather Bryant, and to the dedicated Institute staff, in both Ottawa and Montreal, who continue to support the Institute in all its activities. Lastly, my congratulations and thanks to all Canada's cancer researchers who collectively have made possible the progress we have seen in recent years and whose efforts will eventually lead to prevention strategies, effective treatments and cures for this dreaded set of diseases.

Dr. Alan Bernstein, O.C., FRSC  
President, Canadian Institutes of Health Research (CIHR)



## MESSAGE FROM THE SCIENTIFIC DIRECTOR

Dear Colleagues,

Many Canadians fear cancer above all other diseases, believing it to be a slow, methodical, and painful killer. Sometimes patients fear the treatments more than the disease itself, as many of our current interventions can cause additional suffering. In general, Canadians believe that we ought to be able to prevent and treat cancer better than we are currently able, given the investments made and the knowledge we have gained over the past decades. As cancer researchers, how should we address these issues?

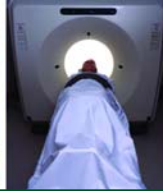
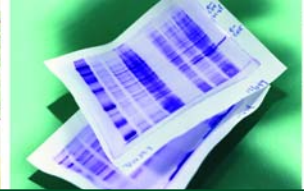
First, even without the introduction of the new-generation therapies, great progress has been made in the treatment of many malignancies, including childhood leukemias, breast cancer, testicular cancer and prostate cancer. In addition, we are starting to see the use of the first two or three new targeted therapies, the result of decades of fundamental research. These treatments will save, or vastly prolong, the lives of many, if not most, cancer patients and will significantly reduce severe side effects. As for prevention, we already know how to prevent up to a third of all cancers by stopping tobacco use, and more cancers could undoubtedly be prevented by changes in diet and lifestyle. While important inroads have been made, particularly in reducing the use of tobacco products, it is proving difficult to change behaviour at a population level. More research remains to be done in this area.

We need to hasten the development and use of new treatments as well as assess, in a meaningful way, the genetic, environmental and life-style factors that may affect the occurrence of cancer. These goals require major new investments in translational cancer research and in the establishment of a large cancer cohort. The Canadian Cancer Research Alliance (CCRA), a coalition composed of all the major funders of cancer research and representing the research arm of the Canadian Strategy for Cancer Control (CSCC), has identified these large projects as priorities for significant action.

The Institute of Cancer Research (ICR) is committed to supporting research that will lead to improvements in cancer diagnosis and control. In 2005/2006, we focused our efforts on two main areas of concern: access to quality cancer care and colorectal cancer screening. The initiatives developed in these two areas will provide valuable knowledge to guide strategies for improved cancer care from prevention to palliation and to promote population-based screening programs for colorectal cancer that will have an impact on disease burden through early detection and prevention.



*Dr. Philip Branton,  
FRSC  
Scientific Director, ICR*

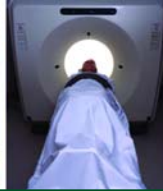
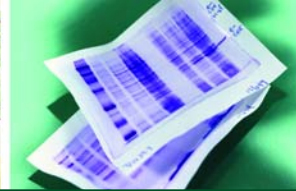


*Montreal, Quebec*

I am very grateful for the hard work and commitment of the ICR staff in both Montreal and Ottawa and the support of our excellent Institute Advisory Board (IAB), led by Dr. Heather Bryant. In 2005/2006, we welcomed Stephanie Pineda to the Montreal staff, as my secretary, and also new IAB members: Richard Doll, Cheryl Robertson, Jacques Corbeil and Jeannette Ward. I would also like to extend my thanks to CIHR President Dr. Alan Bernstein for his continued advice and support as we work towards full implementation of the Canadian Strategy for Cancer Control. Together, we will continue to work with the Canadian research community to advance our understanding of effective mechanisms for cancer control.

*Dr. Philip E. Branton, FRSC*  
*Scientific Director*  
*CIHR Institute of Cancer Research*





## PROFILE OF THE INSTITUTE

The Canadian Institutes of Health Research (CIHR) is Canada's federal funding agency for all health research, from prevention to palliation, across the full spectrum of health: biomedical, clinical, health services and population health. With an annual budget of over \$810 million for 2005/2006 (including the funds that flow through CIHR for the Canada Research Chairs program), CIHR supports over 10,000 outstanding researchers in more than 250 institutions in every Canadian province. In addition to investigator-initiated research, CIHR's 13 Institutes fund research in strategic priority areas. The Institute of Cancer Research (ICR) strategic research priorities are shown in below.

ICR is dedicated to supporting research that reduces the burden of cancer on individuals and families through prevention strategies, screening, diagnosis, effective treatment, psycho-social support systems and palliation. ICR is committed to working with all members of the cancer community to develop strategic research and knowledge translation initiatives that will lead to improvements in cancer prevention and control for all Canadians.





*CIHR headquarters in Ottawa, ON*

ICR places a strong emphasis on partnership and collaboration when planning research initiatives and maintains a focus on promoting effective mechanisms for the timely translation of research results into action.

The Institute is located at McGill University in Montreal, academic home of its Scientific Director, Dr. Philip Branton, and is supported by a small professional staff located at the Montreal offices and also at CIHR headquarters in Ottawa. This team works closely with members of the Institute Advisory Board (IAB) to determine strategic directions, establish research priorities and plan and implement Institute strategic research initiatives through the development of Requests for Applications (RFAs) and Priority Announcements.

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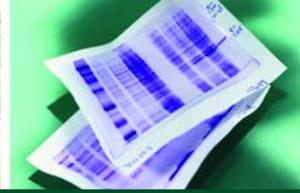
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The IAB for 2005/2006 (Appendix 1) was comprised of 15 individuals drawn from the research community, cancer-related voluntary organisations, and other stakeholder groups with an interest in cancer research. Some members of the IAB have been with the Institute since its inception; others have joined more recently, selected annually in a process of continuous renewal. In 2005/2006, ICR expressed its thanks to retiring IAB members Anne Leis, Joe Pater and Joan Loveridge and welcomed new members Richard Doll, Cheryl Robertson, Jacques Corbeil and Jeanette Ward. The ICR staff and IAB meet three times a year at various locations across the country, taking advantage of the opportunity to interact with members of the local research community and professional colleagues with an interest in ICR activities. In 2005/2006, the IAB meetings were held in Halifax, Toronto and Edmonton.

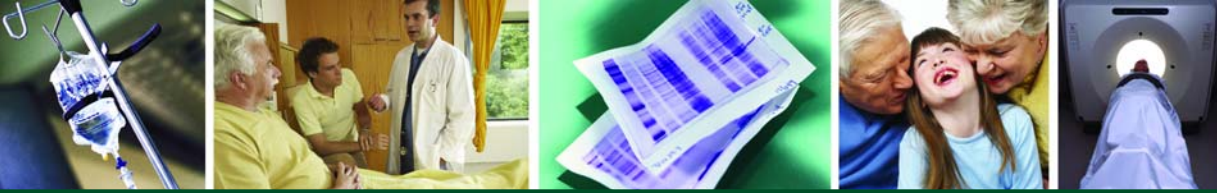


**ICR Institute Advisory Board 2005/2006**

From left to right (top row): Bill Mackillop (Vice-Chair), Jim Woodgett, Jeanette Ward, Gerry Johnston, Roy Cameron, Ron Barr, Neil Berman, Anne-Marie Mes Masson

From left to right (bottom row): Cheryl Robertson, Jacques Corbeil, Heather Bryant (Chair), Philip Branton (Scientific Director), Margaret Fitch, Richard Doll, Angela Brooks-Wilson

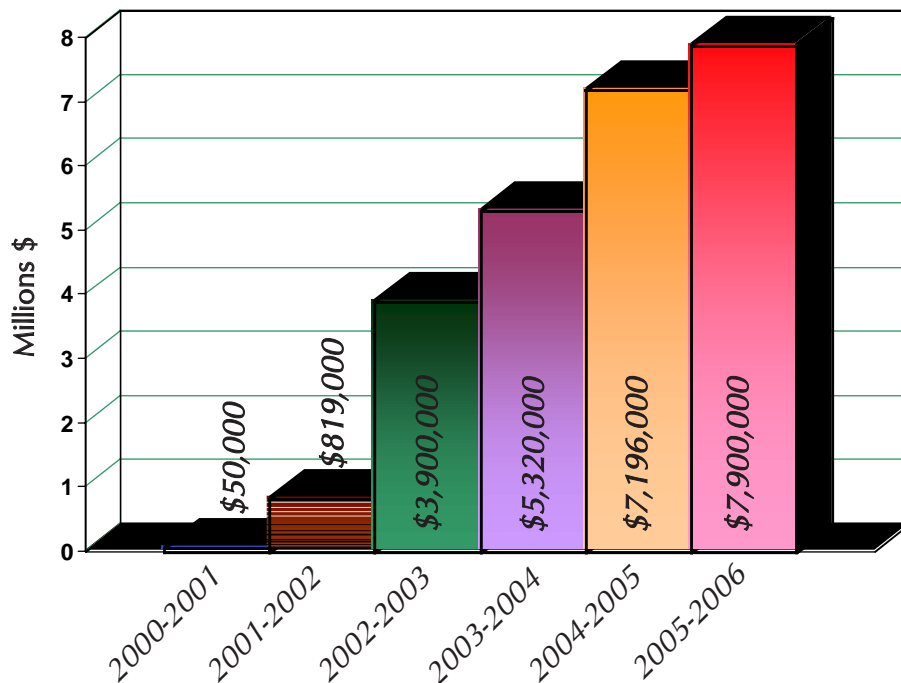
Absent: Diane Proulx-Guerrera, Ian Smith



The Scientific Director serves as a member on many cancer-related committees and Boards across the country. The Institute has a particularly close relationship with the National Cancer Institute of Canada (NCIC), with both organisations maintaining close links when identifying research priorities and championing the key role of cancer research within the cancer community and beyond.

ICR receives a yearly Institute Support Grant of \$1 million for salary, operational and infrastructure costs and also for community and capacity-building initiatives such as workshops and meeting support (Appendix 2). In 2005/2006, ICR also had a \$7.9 million Strategic Initiative budget (Appendix 3) for the support of peer-reviewed research projects funded in the Institute's priority areas. Much of this strategic budget was already committed to the continued support of ongoing initiatives launched in previous years. This annual report will focus on new activities and initiatives launched by ICR in 2005/2006 and the results of initiatives launched in previous years for which funding commenced in 2005/2006.

### ICR's Strategic Initiatives Budget





## ORGANISATIONAL EXCELLENCE

ICR places strong emphasis on team work to enhance both efficiency and productivity in all areas of Institute business. Institute staff from the Montreal and Ottawa offices meets regularly to conduct joint planning activities and monitor the progress of ongoing projects and also interacts on a regular basis with staff in other Institutes as well as other CIHR portfolios including Research, Corporate Affairs, Institute Affairs and Service and Operations.

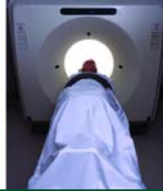
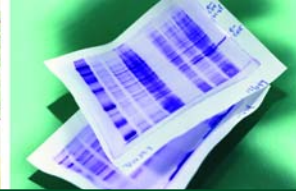
### Factors considered in Institute evaluation

- A review of ICR documents and administrative data;
- 44 key informant interviews with ICR staff and IAB members, researchers, students, stakeholders and partners;
- A focus group discussion with IAB members;
- Case studies of two ICR initiatives; and
- A telephone survey of funded and non-funded researchers affiliated with ICR.

### Institute Mid-Term Evaluation

In 2005/2006, ICR staff worked closely with the CIHR Evaluation and Analysis group on the CIHR-wide evaluation. The goals of this evaluation were to provide the Institutes with feedback on their overall progress and effectiveness, and to provide input into the Five-Year International Review of CIHR.

The final report indicated that ICR has been successful in most areas, including promoting research excellence, capacity development, addressing strategic research priorities and partnerships. The report suggested that more attention needed to be paid to the communication of Institute activities and achievements to the cancer research community at large, particularly the basic/biomedical researchers who form the bulk of the Institute's research community. In addition, ICR was encouraged to place more emphasis on research into ethics and on developing a strong knowledge translation plan for the future. The report and recommendations from the mid-term evaluation were used to inform the Five-Year International Review of CIHR. In February 2006, that Review Panel met with the Scientific Director and IAB members, including the Chair. The final evaluation report is expected in June 2006. The Institute will respond to the recommendations from both the mid-term Institute evaluation and the international review when setting future strategic directions.

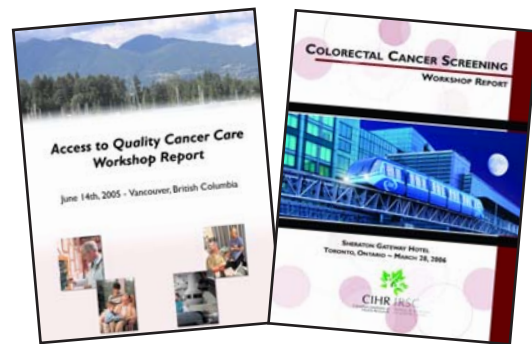


## Workshop Program

ICR operates an active workshop program that supports meetings organised by the Institute and also those organised by others to which ICR contributes funding. ICR usually organises and facilitates invitational workshops in the context of strategic research initiatives to gather information, identify priorities and obtain input from members of the broader cancer community including researchers, health care managers, policy makers and representatives from potential partner organisations. In 2005/2006, ICR hosted two strategic initiative planning workshops: Access to Quality Cancer Care and Colorectal Cancer Screening. The reports from these workshops can be found on the ICR website at <http://www.cihr-irsc.gc.ca/e/12483.html>.

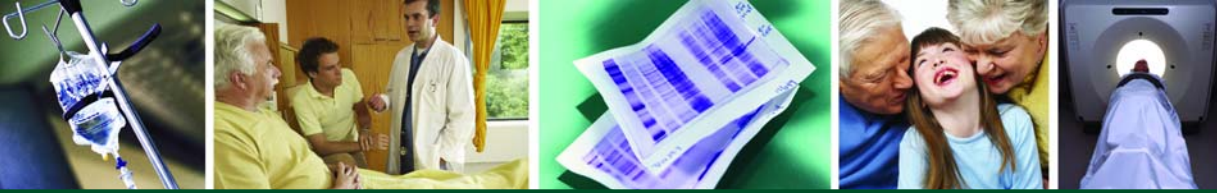


*The Access to Quality Cancer Care Workshop Vancouver, British Columbia, June 14<sup>th</sup>, 2005*



*National Meeting for trainees, Mont Tremblant, Quebec May 9-11, 2005*

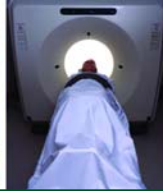
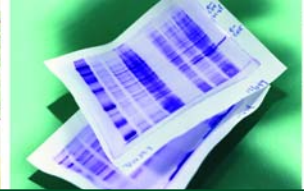
In May 2005, ICR, in collaboration with NCIC, organised and hosted a three-day meeting "Cancer Research across the Spectrum: National Meeting for Trainees", in Mont-Tremblant, Quebec. The meeting was attended by 165 trainees and faculty members from the CIHR-funded cancer-related Strategic Training Initiatives in Health Research (STIHR) program, as well as a number of NCIC-funded students and fellows. The primary objective of the meeting was to enhance the training experience of the trainees through interaction, scientific exchange and networking across the entire field of cancer research. The meeting program included 100 poster presentations, 27 oral presentations selected from submitted abstracts, presentations by seven keynote and invited speakers and competitions to select the best trainee poster and oral presentations.



ICR also took the lead in organizing an international workshop on palliative and end-of-life care, in partnership with the British National Cancer Research Institute (NCRI-UK) and the U.S. National Cancer Institute (NCI-US). The workshop, held in Birmingham, UK, in October 2005, immediately followed the NCRI-UK Annual Cancer Conference and brought together representatives from nine of the ten palliative care teams funded under CIHR's Palliative and End-of-Life Care initiative with palliative care researchers from both the UK and the US. Over a day and a half, researchers from the three countries compared experiences and lessons learned in the different research landscapes of their respective countries.

The group plans to continue networking to promote knowledge exchange and investigate opportunities for joint research applications to available funding opportunities in the three countries. The workshop report will be published in the Journal "Cancer" in 2006.

Throughout 2005/2006, ICR provided partial funding for 23 workshops held in Canada and organised by members of the Canadian cancer research community, ranging in topic from cell signaling, proteomics and nanoscience to wait times, cohort studies and paediatric oncology. Included among these workshops was the 1st International Cancer Control Congress, held in Vancouver, British Columbia in October 2005. This important meeting brought together delegates from high, middle- and lower-income countries to consider population-based strategies to control cancer. The conference covered the four main areas of cancer control: the science, the programs, the strategies and the people.



### Canadian Cancer Research Alliance (CCRA)



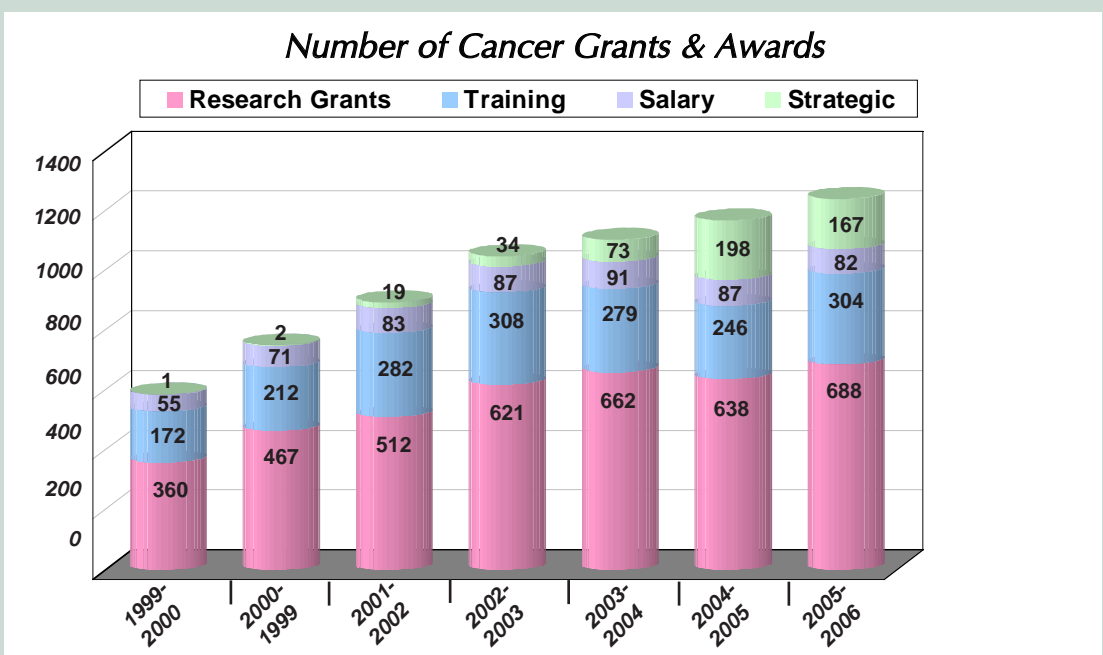
In 2005/2006, ICR continued to play a leadership role as part of the Canadian Cancer Research Alliance (CCRA), a group of 22 cancer research funding organisations and agencies that replaced the Research Action Group of the Canadian Strategy for Cancer Control. The CCRA secretariat is temporarily housed at the ICR offices in Montreal and managed by Acting Executive Director, Dr. Benoît Lussier.

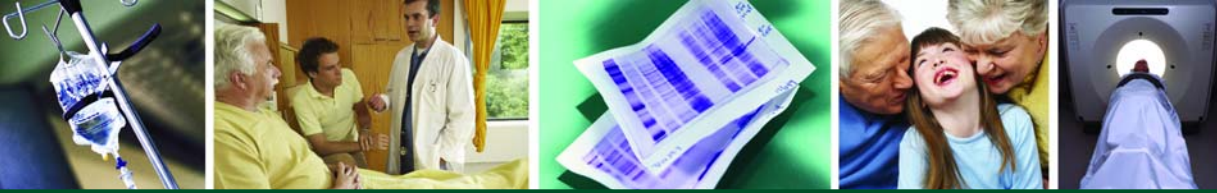
In 2005/2006, Ms. Kim Badovinac was hired as the Manager, Canadian Cancer Research Survey. Ms. Badovinac, who is based at the NCIC offices in Toronto, is responsible for establishing an ongoing inventory of all the cancer research funded in Canada, classified according to the Common Scientific Outline. This project is being undertaken as the first task of CCRA in order to identify gaps in cancer research funding in Canada. It is intended that this Canadian database will become part of the International Cancer Research Portfolio database (ICRP). The development of a comprehensive cancer research database with international linkages will provide the cancer community with a valuable infrastructure that can be readily accessed to guide the planning of strategic research initiatives by members of CCRA and the broader research community. The database will promote Canadian cancer research and facilitate future collaborations between researchers.



*Kim Badovinac  
Manager, Canadian  
Cancer Research Survey*

## CIHR Facts and Figures



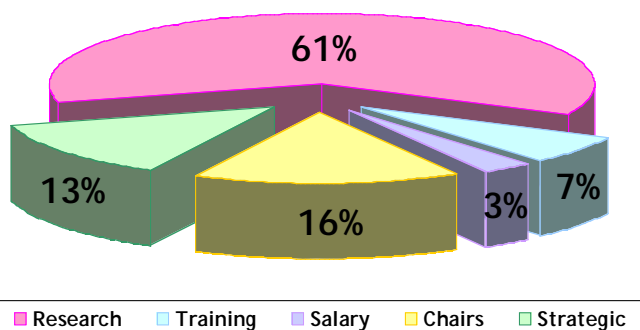


## OUTSTANDING RESEARCH

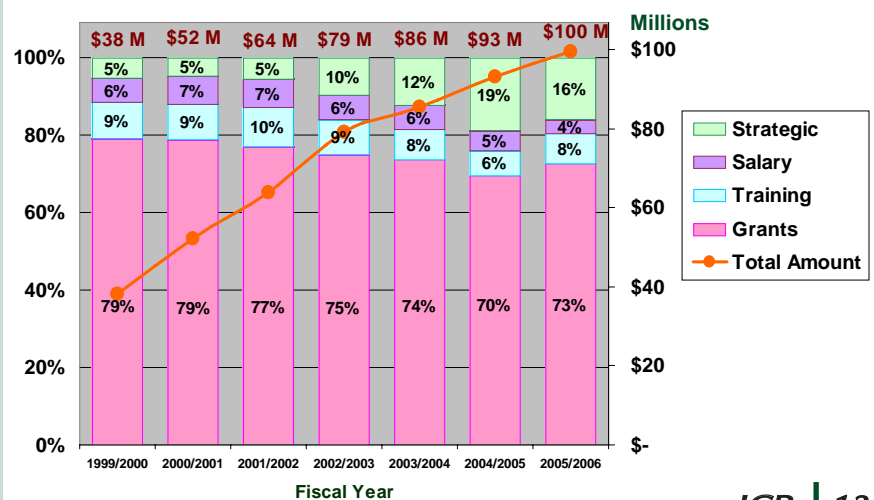
Canadian cancer research continues to be relatively well funded in Canada by both public and private sectors. In 2005/2006, CIHR alone contributed more than \$118 million towards cancer research, an increase of \$13 million from the previous year (Appendix 4). This growing funding base supports an outstanding research community with a strong history of collaboration. Much of the cancer research currently funded by CIHR is biomedical, with smaller amounts going towards the support of clinical, health services and population health research areas. To redress this situation, ICR placed its primary focus on training, capacity building and research support in areas perceived to be underfunded, such as palliative and end-of-life care, and also in providing needed infrastructure for the cancer research community.

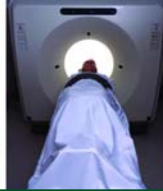
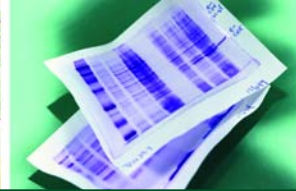
In these areas, modest financial investment has had a surprisingly large impact, as illustrated by the creation of the palliative and end-of-life care network comprised of the ten research teams funded under the Palliative and End-of-Life Care initiative, and the Canadian Tumour Bank Network (CTRNet).

**Cancer Research 2005/2006**  
Total Investment \$118.3M  
(including Canada Research Chairs)



**Cancer Research Funding**  
(not including Canada Research Chairs)





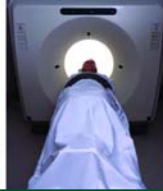
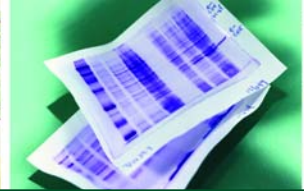
## Access to Quality Cancer Care

In 2005/2006, ICR focused on the problems associated with access to high quality cancer care across the cancer control continuum from prevention to palliation. Canadians are concerned about excessive wait times for health services and the largely unknown impact of long delays for medical interventions and treatments on the quality of life and survival of patients. The First Ministers, at their September 2004 conference, made a commitment to reduce wait times and improve access by determining evidence-based benchmarks for medically acceptable wait times in identified priority areas, including cancer. CIHR adopted a cross-cutting policy to provide the necessary evidence to inform the Deputy Ministers that included the launch of an RFA entitled "Towards Canadian Benchmarks for Health Services Wait Times - Evidence, Application and Research Priorities" in February 2005 (Wait Times RFA), in partnership with the Provincial/Territorial Deputy Ministers of Health, and a subsequent re-launch of the RFA in December 2005 that focused on research areas not addressed in the first round. ICR was a partner on both RFAs in support of research on the impact of wait times for cancer care. In total, four cancer-related projects were funded (see Table 1 below).

**Table 1: Towards Canadian Benchmarks for Health Services Wait Times - Evidence, Application and Research Priorities**

Principal Investigator	Research Institution	Project Title
Mackillop, William	Queen's University	Toward Canadian benchmarks for waiting times for radiotherapy for cancer: Synthesizing the evidence and establishing research priorities
Moayyedi, Paul	McMaster University	An evidence-based assessment of appropriate waiting times for gastrointestinal cancers
Taylor, Mark	CancerCare Manitoba	Determining acceptable waiting times for the surgical treatment of solid organ malignancies - A systematic review
Winget, Marcy	Alberta Cancer Board	Moving evidence to application: A three province cancer collaborative





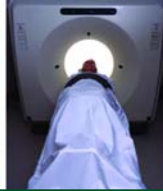
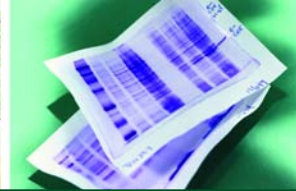
Summaries of these projects and the full reports are available on the CIHR website at <http://www.cihr-irsc.gc.ca/e/29903.html>. Overall, the reports indicated that, while there is insufficient scientific evidence to reliably inform benchmarks for wait times for particular cancers, available data suggest that the wait times for radiotherapy should be as short as possible and that, for lung cancer, delays following the initiation of treatment should be minimized.

In June 2005, ICR began planning for the launch of a large initiative to encompass some of the broader aspects of access to care, such as the economic factors related to the spiralling cost of the new generation of available technologies and treatments and inequality of access, particularly for those living in rural and northern communities and for vulnerable and marginalized populations. Recognizing that delivery of health care is a provincial responsibility, ICR has involved the provincial cancer agencies in the planning process in the hope of creating a national network of research teams studying questions related to access-to-care issues that are priorities for individual provinces.

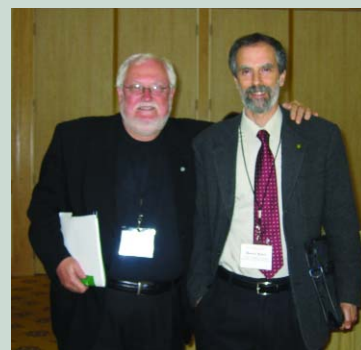
The planning process began with an invitational workshop, involving a wide spectrum of participants from across the cancer community and beyond, including end-users such as policy and decision makers and representatives from 18 potential partner organisations with an interest in access-to-care issues.

**Table 2: Partners on the "Access to Quality Cancer Care" RFA**

Alberta Cancer Board	CIHR Institute of Gender and Health
British Columbia Cancer Agency	CIHR Institute of Health Services and Policy Research
CancerCare Manitoba	Direction de la lutte contre le cancer du Québec
Cancer Care Nova Scotia	Health Canada
Cancer Care Ontario	National Cancer Institute of Canada
CIHR Institute of Aboriginal Peoples' Health	New Brunswick Cancer Network
CIHR Institute of Cancer Research	Saskatchewan Cancer Agency



The recommendations from this workshop (see workshop report at <http://www.cihr-irsc.gc.ca/e/12483.html> ) formed the basis of the RFA "Access to Quality Cancer Care" that was launched in December 2005 in partnership with eight provincial cancer agencies, Health Canada, NCIC and three other CIHR Institutes. The results will be known in February 2007.



*Access to Quality Cancer Care Workshop  
Vancouver (British Columbia), June 14<sup>th</sup>, 2005*

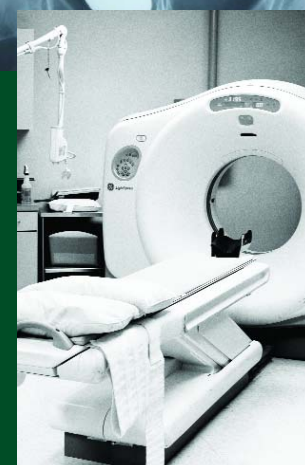
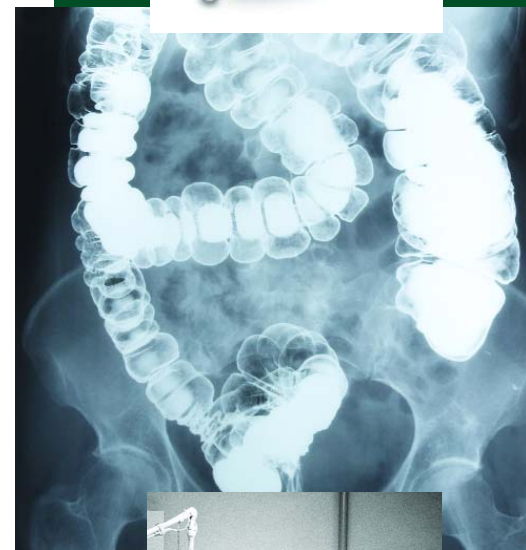
ICR also included the topic of access to quality cancer care in the October 2005 launch of the CIHR Partnerships for Health System Improvements (PHSI) program. This program supports research teams conducting applied health research that is likely to yield useful results for health system managers and/or policy makers in the short term. Applicants must obtain matching funds (cash or in kind) from relevant decision makers, who must also be part of the investigative team, and engage in negotiations with other identified partners supporting the program. The PHSI program provides an opportunity for partnership between health services researchers working in the cancer field and administrators or policy makers making decisions related to access to quality cancer care. Results will be known in July 2006.

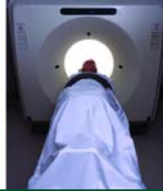
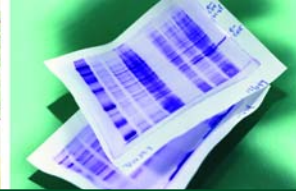


## Colorectal Cancer Screening

Another research focus for ICR in 2005/2006, stemming from the Early Detection of Cancer strategic research priority, was colorectal cancer screening. Canada has one of the highest incidences of colorectal cancer in the world. It is the third most diagnosed cancer in Canada after prostate and lung cancer in men, and breast and lung cancer in women. Overall, colorectal cancer is second only to lung cancer in the number of deaths caused. Regular screening for colorectal cancer can diagnose the disease at an early stage and screening using fecal occult blood testing (FOBT) has been proven to reduce mortality. Early screening can also prevent the disease through the detection of pre-cancerous polyps which can be removed during a procedure called colonoscopy. However, Canada currently has no population-based screening programs and uptake of available screening procedures by the population occurs on an ad-hoc basis.

In June 2005, in preparation for the launch of a larger initiative planned for the following year, ICR launched an RFA for one-year Pilot Project Grants in colorectal cancer screening. The intention was to provide a targeted investment to build research capacity and enable researchers to generate preliminary data, validate methodology and/or explore novel research ideas that would pave the way for larger team applications focused on population-based screening methods and implementation.



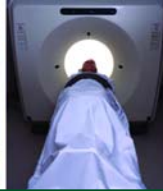
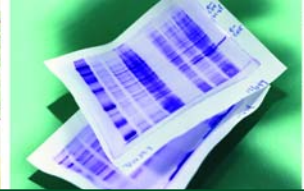


The relevant research areas included in the RFA were:

- *Population-based colorectal cancer screening program design*
- *Assessment/comparison of appropriate technologies for population-based colorectal cancer screening*
- *Health economics of population-based colorectal screening programs*
- *Cost benefit analysis of population-based colorectal screening programs*
- *Organisational and/or personal barriers to population-based colorectal screening programs*
- *Patient education - what works, what doesn't work in bringing individuals to get screened*
- *Target populations for screening*
- *Implementation strategies for population-based colorectal cancer screening*
- *Assessment of follow-up cascades*

**Table 3: Projects funded under the Pilot Project Grants - Colorectal Cancer Screening RFA**

Principal Investigator	Research Institution	Project Title
Baxter, Nancy	St. Michael's Hospital, Toronto	Effectiveness of colonoscopy for the prevention of colorectal cancer and mortality from colorectal cancer: A population-based case control study
Hilsden, Robert	University of Calgary	Understanding Canadians' preferences for a colorectal cancer screening program: A pilot study to develop a multi-province discrete choice experiment
Little, Julian	University of Ottawa	Pilot assessment of germline genomic profiling as adjunct to other methods of population-based screening for colorectal cancer
McGregor, Elizabeth	Alberta Cancer Board	Engaging family physicians and patients in an intervention to increase uptake of colorectal cancer screening: A pilot study



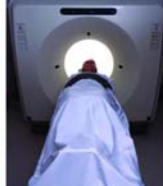
The four funded projects, shown in Table 3, will provide evidence on the effectiveness of colonoscopy; Canadians' preferences regarding screening through the development of questionnaires and methods required to carry out discrete choice experiments; the value of a new screening test using germline genetic information to predict risk; and appropriate educational resources, useful to patients and family physicians and likely to increase the uptake of colorectal cancer screening.

On March 28th, 2005, ICR began planning for a larger RFA on colorectal cancer screening with an invitational workshop designed to provide an overview of current screening methods and programs both in Canada and abroad, and to determine the most appropriate funding programs to move Canadian research in population-based screening forward in a new way. Participants shared some of the lessons learned during the early development of existing provincial screening programs in Canada and the national screening program being launched in the UK. The recommendations from the workshop will provide the basis for the development of an RFA for launch in June 2006 (see workshop report at <http://www.cihr-irsc.gc.ca/e/12483.html>).



*Colorectal Cancer Screening Workshop  
Toronto (Ontario), March 28<sup>th</sup>, 2006*

*In addition to the RFAs launched and funded by ICR in 2005/2006, the Institute also partnered on initiatives launched by other CIHR Institutes, in areas relevant to the ICR mandate. These partnerships will be described in the Effective Partnerships and Public Engagement section of this report.*



*In 2005/2006, several Canadian CIHR-funded researchers were recognized for their outstanding contributions to the field of cancer research:*



*Dr. Jeff Wrana from the Samuel Lunenfeld Research Institute in Toronto was one of three recipients of the Paul Marks Prize for Cancer Research in recognition of his achievements as a cancer research leader. Dr. Wrana, who is a Senior Investigator in Molecular Biology and Cancer, was honoured for his work on cell signalling proteins. This new award, which will be presented every other year by the Memorial Sloan-Kettering Cancer Centre, is named after Dr. Paul Marks, former president of the Memorial Sloan-Kettering Cancer Centre.*



**Dr. Andrew Churg**

*Drs. Andrew Churg and Joanne Wright, from the University of British Columbia, along with Dr. Steven Shapiro from Harvard University, received the 2005 Alton Ochsner Award Relating Smoking and Health for their outstanding work on proteases and emphysema.*

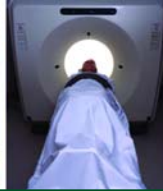
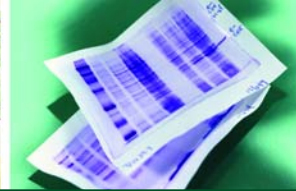


**Dr. Joanne Wright**

## OUTSTANDING RESEARCHERS IN INNOVATIVE ENVIRONMENTS

Canadian cancer researchers are internationally renowned for their scientific contributions. According to a recent survey conducted by ScienceWatch and the Institute of Scientific Information in Philadelphia, in the field of breast cancer alone, five of the top six published papers have Canadian authors, two of the top 20 institutions are Canadian and Canada ranks number one in terms of impact (citations per paper). In addition, Dr. Steven Narod, a CIHR-funded Canada Research Chairholder at Toronto's Centre for Research in Women's Health, is the first Canadian researcher to top the list of the world's most cited scientists in the field of breast cancer. There are numerous examples of outstanding cancer researchers supported by funding from CIHR, including those showcased throughout this report.

- Dr. Wei Xiao, at the University of Saskatchewan, has discovered a pair of closely-related genes that may govern the development of cancer.
- Dr. Mahyar Etminan, at the McGill University Health Centre (MUHC) in Montreal, and the Vancouver Coastal Health Research Institute, using meta-analysis combining data from 79 scientific studies, has found no marked increase in cancer risk with personal use of hair dyes.
- Dr. Jeremy Jass, at McGill University, has discovered a type of colon cancer that is hereditary which may help in early-diagnosis and treatment of those patients at-risk.
- Dr. Kish Wasan, a CIHR-funded University/Industry Research Chair at the University of British Columbia, and his team, have confirmed that a recently approved breast cancer prevention treatment, Letrozole, may not increase the risk of cardiovascular disease.



- Dr. Elizabeth Maunsell and her team at Laval University examined work absenteeism among female breast cancer sufferers and discovered that breast cancer survivors were not away from work for longer periods than other working women.
- Dr Megan Davey at the University of Saskatchewan has discovered six specific proteins that are critical components of the molecular machinery driving cell division.

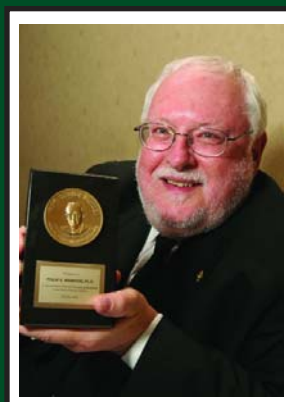
In October 2005, ICR and the Ontario Cancer Research Network (OCRN) hosted an Awards Gala to honour four outstanding Toronto cancer researchers - Drs. Jim Till, Ernest McCulloch, Tak Mak and Tony Pawson - for their remarkable achievements in the field of cancer research.

In addition to the pioneering stem cell work of Drs. Till and McCulloch, the studies of Dr. Mak have provided important information on the key regulators of cell growth and differentiation, with



*From left to right:* Dr. Tony Pawson, Dr. Ernest McCulloch (seated), Dr. Jim Till, Dr. Tak Mak

a major focus on breast cancer; and Dr. Pawson's work on molecular aspects of cell signalling, especially the role of cancer genes, has led to a paradigm shift in our understanding of the genetics and biochemistry of cell biology and cancer. The Gala was attended by Dr. Alan Bernstein, IAB members, members of the Toronto research community and representatives from partner organisations.



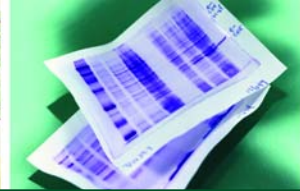
**Dr. Philip Branton, ICR Scientific Director, was awarded the 2005 RM Taylor Medal and Award from the Canadian Cancer**

*Society (CCS) and NCIC. This annual award recognizes Dr. Branton's significant contribution to the understanding of tumour growth suppression and regulation of cancer cell death; the development of novel cancer therapeutics through GeminX Biotechnologies Inc. (a company that he co-founded); and the establishment of multi-agency/institutional networks, such as CCRA.*



**Dr. Shabbir Alihai from the University Health Network in Toronto was awarded the Dorothy J. Lamont Scientist Award for 2005. This award is jointly sponsored by**

*CIHR and NCIC and is given to the top-ranking applicant for the research scientist award in the behavioural/psychosocial cancer control research category.*



In 2005/2006, ICR's largest single financial investment, \$1.7 million, was for the ongoing support of CIHR cancer-related training centres, reflecting a clear commitment to the training of the next generation of cancer researchers. In addition, the conference for trainees, described in the section on Organizational Excellence, provided a forum for education, knowledge sharing and networking that was well received by the participants. ICR also provides bridge funding for excellent researchers whose grant applications receive a meritorious ranking in the CIHR open competition, but fall below the CIHR funding cut-off. These funds enable researchers to maintain their laboratories while re-applying to subsequent grants competitions. ICR makes every attempt to consult with the research community during priority-setting exercises and the development of strategic research initiatives. The Institute also provides regular updates of ICR activities through web-postings, e-mail notices and distribution of the Institute's annual reports.



**Dr. Timothy Hughes** from the University of Toronto was awarded the Terry Fox Young Investigator Award for his outstanding research in the areas of molecular biology and genome science.

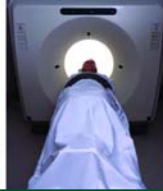
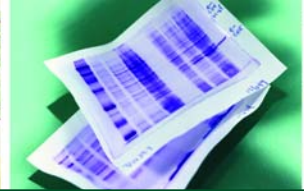
**Drs. Jim Till and Ernest McCulloch** from the Ontario Cancer Institute were awarded the 2005 Albert Lasker Award, which recognizes world-leading scientists who have made an exceptional contribution to the understanding, diagnosis, prevention and treatment of diseases. Drs. Till and McCulloch received the award for their ground-breaking discovery of stem cells in bone marrow, which opened up the entire stem cell field.



**Drs. Susan Cole and Roger Deeley** from Queen's University were awarded the Robert L. Noble Prize for their contribution to the understanding of multi-drug resistance, one of the major causes of treatment failure for cancer patients.

Correction from the 2004/2005 ICR Annual Report: Dr. Etienne Leygue **along with Dr. Yvonne Myal** of the University of Manitoba, have recently identified a novel gene called *hSBEM* that appears to have potential for breast cancer diagnostics.





## TRANSLATING RESEARCH INTO ACTION

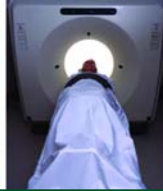
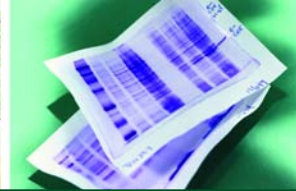
For CIHR, the term knowledge translation (KT) refers to the uptake and application of research findings leading to changes in current policies or practices, or the development of new products, leading to improvements in human health. The formal definition is: “knowledge translation is the exchange, synthesis and ethically sound application of knowledge within a complex system of interactions among researchers and users - to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened health care system”.

Some of the results coming from cancer research point to necessary changes in human behavior, for example the proven link between lung cancer and smoking. For decades we have known that tobacco use causes a variety of health problems, including cancer, and yet roughly 20% of the Canadian population continues to smoke and every day Canadians, especially youth, take up the habit for the first time, despite being fully aware of the long-term consequences. Similarly, the health risks of obesity are becoming well known and yet it is proving extremely difficult to influence human behavior to motivate people to adopt a healthy lifestyle that includes a balanced diet and adequate physical activity.



Clearly, understanding risk is not enough. Research is needed on the best interventions to influence behaviour in a positive way. The Canadian Tobacco Control Research Initiative, of which CIHR is a partner, seeks to support this kind of intervention research through the RFA "Advancing the Science to Reduce Tobacco Abuse and Nicotine Addiction" referred to in the section on Partnerships and Public Engagement, below. ICR is also a partner with the Institute of Nutrition, Metabolism and Diabetes and the Heart and Stroke Foundation on the Target Obesity initiative, which seeks to provide the evidence for positive interventions towards maintaining a healthy body weight.

In 2005/2006, ICR participated in plans to develop an Interventions Research program for CIHR that could be launched in the form of consecutive rapid response RFAs capable of taking advantage of natural experiments occurring across the country, such as the implementation of smoking bans, or the removal of soft drink machines from schools.



In both the Access to Quality Cancer Care initiative and the Wait Times RFA, ICR has recognized the value in working with "end users" in situations where new knowledge could rapidly lead to changes in policy and practice. In the area of palliative and end-of-life care, the ten research teams funded last year have been proactive, during 2005/2006, in planning for joint KT activities before the end of their research grants. These ten teams have, together, developed a business plan for KT activities for which they hope to obtain financial support in 2006/2007.

In cancer control, the research process may culminate in a clinical trial, the results of which rapidly change clinical practice and there are many examples of new drugs or treatment protocols that are adopted fairly rapidly as a result of definitive large-scale randomized controlled trials. As our knowledge of the molecular nature of cancer increases, and as the new drugs and therapies under development reach market, it is likely that we will see an increasing number of incremental changes in cancer control that together will exert a significant impact on the way we prevent and treat cancer in the future.

## EFFECTIVE PARTNERSHIPS AND PUBLIC ENGAGEMENT

Partnerships continue to be an important element of all ICR activities and opportunities for collaboration are sought during the development of all strategic research initiatives. By combining resources through partnerships, the number of individuals or teams that can be funded is increased. Partnership can also facilitate the uptake of research results into practice, as was the case with the Wait Times RFA, in which the partnership between ICR, the Institute of Health Services and Policy Research, the Institute of Musculoskeletal Health and Arthritis and the Provincial/Territorial Deputy of Ministers of Health provided the evidence to help the Deputy Ministers determine benchmarks for wait times in a number of health areas. Similarly, ICR joined the October 2005 launch of the PHSI program, a health services research program with a strong emphasis on both partnership and knowledge translation, in order to promote research on access to quality cancer care in partnership with decision and policy makers.

In the case of the launch of the Access to Quality Cancer Care RFA in December 2005, ICR is working closely with many partners, including the provincial cancer agencies, not only to increase the funding pool to maximize the number of research teams that can be funded but also to create a national network that directly addresses provincial health care priorities. In terms of community building and the ability to determine national priorities for cancer research, the creation of CCRA sets a new precedent for Canada by bringing all the major funders of Canadian cancer research together at one table.

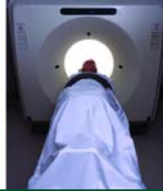
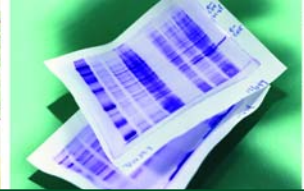


Many of ICR's partnerships including the ongoing partnership with the Canadian Breast Cancer Research Alliance and the CIHR Institute of Gender and Health to support translational breast cancer research and the partnership with seven CIHR Institutes and eight external partners on the Palliative and End-of-Life Care initiative have been in place for several years. ICR also continues to support initiatives led by other CIHR Institutes, such as the Regenerative Medicine and Nanomedicine initiative, and continues to be co-lead, along with the Institute of Neurosciences, Mental Health and Addiction, on the Advancing the Science to Reduce Tobacco Abuse and Nicotine Addiction initiative. In 2005/2006, ICR contributed funds in support of a successful application submitted to the "Reducing Health Disparities and Promoting Equity for Vulnerable Population RFA" launched by the Institute of Gender and Health in 2004. This Interdisciplinary Capacity Enhancement (ICE) grant, led by Drs. Allison Williams and Donna Wilson at McMaster University, focuses on timely access to palliative care in rural communities, encompassing two of ICR's major priority areas.

## PATH FORWARD

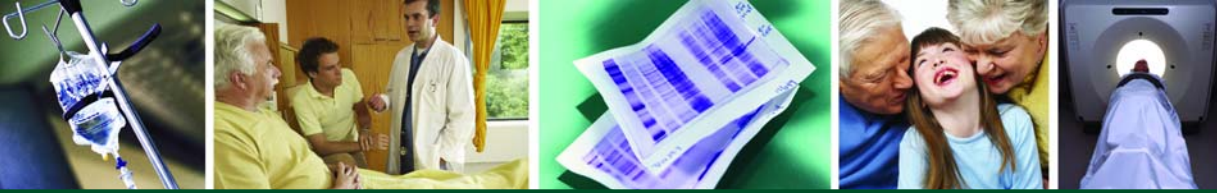
As a key player in the cancer community, ICR looks forward to increasing involvement, through CCRA, in the planning of new strategic directions and to the promised full funding and implementation of the Canadian Strategy for Cancer Control. In conjunction with the IAB and members of the cancer community at large, ICR hopes to initiate plans for a large initiative in the biomedical area, perhaps related to novel biomarkers, and hopes to build on its early start in the early diagnosis of cancer through additional initiatives focused on cancer screening. For 2006/2007, ICR looks forward to the results of the Access to Quality Cancer Care RFA and also the launch of the Colorectal Cancer Screening RFA. ICR will continue to work closely with the cancer community to develop innovative initiatives that will provide new opportunities for Canadian cancer researchers and ultimately lead to improvements in cancer control across the spectrum for all Canadians.





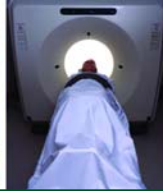
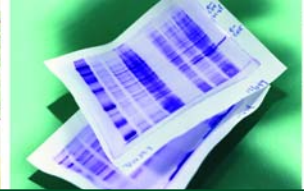
## APPENDIX 1

Institute Advisory Board 2005/2006		
	Dr. Heather Bryant IAB Chair	Vice-President and Chief Information Officer, Alberta Cancer Board Director, Division of Population Health and Information
	Dr. Ronald Barr	Professor of Pediatrics, McMaster University
	Dr. Neil Berman	Director, Business Development BC Cancer Agency
	Dr. Angela Brooks-Wilson	Head of Cancer Genetics, Genome Sciences Centre, BC Cancer Agency; Assistant Professor, Medical Genetics, University of B.C.
	Dr. Roy Cameron	Executive Director, CCS/NCIC Centre for Behavioural Research and Program Evaluation, Lyle Hallman Institute, University of Waterloo
	Dr. Jacques Corbeil	Canada Research Chair in Medical Genomics Professor of Medicine, Université Laval
	Mr. Richard Doll	Provincial Program Leader, Cancer Rehabilitation, British Columbia Cancer Research Centre
	Dr. Margaret I. Fitch	Head, Oncology Nursing & Supportive Care Toronto Sunnybrook Regional Cancer Centre University of Toronto



## APPENDIX 1 - CONTINUED

Institute Advisory Board 2005/2006		
	Dr. Gerald Johnston	Professor and Head, Department of Microbiology and Immunology, Dalhousie University; President, National Cancer Institute of Canada (NCIC)
	Dr. William Mackillop (Vice-Chair)	Head, Division of Cancer Care and Epidemiology, Queen's University Cancer Research Institute; Professor and Chair, Community Health and Epidemiology
	Dr. Anne-Marie Mes-Masson	Professor, Department of Medicine, University of Montreal
	Ms. Diane Proulx Guerrera	Founder and Administrator, CURE Foundation
	Ms. Cheryl Robertson	Educator (retired), New Brunswick public and post-secondary school system Active community volunteer
	Dr. Ian C. P. Smith	Director General, Institute for Biodiagnostics, National Research Council Canada
	Dr. Jeanette Ward	Director, Institute of Population Health University of Ottawa
	Dr. Jim Woodgett	Division Head, Experimental Therapeutics, Ontario Cancer Institute, Princess Margaret Hospital

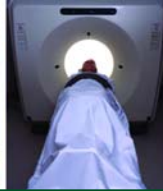
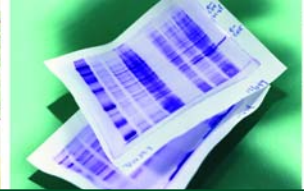


## APPENDIX 2 - Institute Support Grant

For the year ending March 31, 2006

<b>Available Funds</b>	<b>\$1,677,162</b>
<b>Expenses</b>	
Institute Development	
Conference, Symposia and Workshops	\$386,107
Institute Advisory Board	97,396
Professional Services	4,408
Travel Expenditures	98,524
<u>Other Expenditures</u>	
Canadian Cancer Research Alliance	98,023
Canadian Tobacco Control Research Initiative	50,000
Dorothy J. Lamont Scientist Award	85,408
	<b>\$819,866</b>
Institute Operations	
Salaries and Benefits	\$387,020
Office Accommodations	18,000
Telephone and Communication Services	4,991
Supplies, Material and Other Services	31,923
Office Furniture and Fixtures	1,574
Computer Equipment and IT Support	8,672
Travel Expenditures	70,394
	<b>\$522,574</b>
<b>Total Expenses</b>	<b>\$1,342,440</b>
<b>Unspent Balance*</b>	<b>\$334,722</b>

\*Note: The unspent balance as at March 31, 2006 is carried forward to the subsequent fiscal year

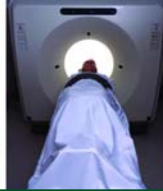
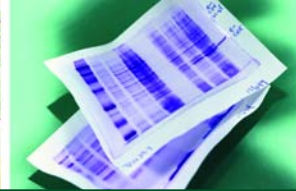


## APPENDIX 3 - INSTITUTE INVESTMENTS IN STRATEGIC INITIATIVES

For the year ending March 31, 2006

Strategic Initiatives	Contributions through Grants and Awards					
	Number	2005/06	2006/07	2007/08	2008 & beyond	Total
Invention Tools, Techniques and Devices for Research and Medicine	2	65,403	-	-	-	65,403
Reducing Health Disparities and Promoting the Health of Vulnerable Populations	2	7,500	-	-	-	7,500
Regenerative Medicine - Neurosciences	2	75,000	150,000	75,000	-	300,000
Healthy and Successful Aging	1	100,000	100,000	100,000	-	300,000
Excellence, Innovation and Advancement in the Study of Obesity and Healthy Body Weight	1	9,533	70,233	70,234	-	150,000
Operating Grants to Open Competition	6	274,640	564,566	-	-	839,206
Gene Therapy-Neurological Diseases	1	50,000	-	-	-	50,000
CIHR Training Program Grants	13	1,667,402	2,435,932	2,341,142	1,428,300	7,872,776
Palliative and End of Life Care	8	1,212,922	1,198,635	1,209,359	1,602,686	5,223,602
Tobacco	3	491,227	105,025	40,025	40,025	676,352
Cancer Screening from a Canadian Perspective	2	48,400	-	-	-	48,400
Novel Technology Applications in Health Research	4	649,858	214,705	-	-	864,563
National Tumor Banking Network	1	138,810	840,397	840,396	840,397	2,660,000
Translation Acceleration Grant	1	250,000	250,000	-	-	500,000
Target Obesity	7	102,812	85,625	36,615	-	225,052
Cuccione-ICR Paediatric Oncology	2	69,917	66,750	8,333	-	145,000
Dorothy J. Lamont Scientist Award	1	65,027	-	-	-	65,027
Toward Canadian Benchmarks for Health Services Wait Times	2	186,008	-	-	-	186,008
Pilot Project Grants - Population and Public Health Research Methods and Tools	2	195,740	-	-	-	195,740
Colorectal Cancer Screening Pilot Projects	4	384,995	-	-	-	384,995
Research in Addictions	0	-	100,000	-	-	100,000
Non-cytotoxic Cancer Drug Trials	3	475,000	250,000	250,000	-	975,000
<b>Total</b>	<b>68</b>	<b>\$6,520,244</b>	<b>\$6,431,868</b>	<b>\$4,971,104</b>	<b>\$3,911,408</b>	<b>\$21,834,624</b>

Note: Grants and awards in respect to these programs are approved for 1 to 6 years. Figures displayed represent CIHR financial commitments for these programs in 2005-06 and subsequent years. Availability of these funds in future years are subject to funding appropriations by Parliament. For some initiatives, partners also contributed to the funding of the grants and awards.



## APPENDIX 4 - CIHR Cancer Research Funding - 2005/06

FUNDING PROGRAM	AMOUNT	NUMBER
<b>Grant Programs</b>		
Operating Grants	58,938,637	629
Group Grants	5,360,745	21
Research Resources Grants	2,680,428	27
Randomized Controlled Trials	1,780,348	10
NCE Operating Grants	3,525,000	1
<b>Total</b>	<b>72,285,158</b>	<b>688</b>
<b>Training Awards</b>		
Studentships and Ph.D. Research Awards	2,825,480	153
Fellowships	4,313,890	124
Clinical Scientists	590,484	15
<b>Total</b>	<b>7,729,853</b>	<b>292</b>
<b>Investigator Awards</b>		
New Investigator	2,708,575	58
Investigator	702,066	16
Senior Investigator	373,708	6
Chair	12,500	1
<b>Total</b>	<b>3,796,849</b>	<b>81</b>
<b>Workshops and Symposia</b>		
ICR-sponsored Workshops and Symposia <sup>1*</sup>	(272,954)	23
<b>Total</b>	<b>(272,954)</b>	<b>23</b>
<b>Strategic Initiative Grants</b>		
ICR Institute Support Grant	990,909	1
ICR Strategic Initiative Grants <sup>2*</sup>	4,052,973	39
Other Institute Strategic Initiative Grants (cancer)	2,751,340	40
Canadian Breast Cancer Research Alliance	3,648,605	33
Canadian Prostate Cancer Control Research Initiative	149,333	10
Canadian Tobacco Control Research Initiative	1,279,566	22
New Emerging Team Grants	-	0
Strategic Training Initiative in Health Research <sup>3*</sup>	2,873,416	22
<b>Total</b>	<b>15,746,142</b>	<b>167</b>
<b>SUB - TOTAL</b>	<b>99,558,002</b>	<b>1,251</b>
<b>Canada Research Chairs Funded through CIHR</b>		
CRC-Health <sup>4*</sup>	18,700,000	130
<b>Total</b>	<b>18,700,000</b>	<b>130</b>
<b>TOTAL (including CRC-Health)</b>	<b>118,258,002</b>	<b>1,381</b>

<sup>1</sup>Funds for ICR-sponsored workshops and symposia are accounted for in ICR Institute Support Grant

<sup>2</sup>Excluding TPGs

<sup>3</sup>Amount proportional to cancer research component of 22 training programs

<sup>4</sup>The research interest of the chairholder is relevant to cancer research and/or the chairholder has been awarded operating grants for cancer research

**Note:** \*The Table entitled "CIHR Cancer Research Funding" reflects an estimate of CIHR's support of research related to cancer. The numbers were generated through a search of the CIHR database for grants and awards. The expenditures in this table reflect in-year investments for projects that included, but were not necessarily exclusively related to, cancer research. The following classification codes were used to search the CIHR database: Research Area (primary or secondary) was "Cancer" OR Research Classification (primary or secondary) was related to cancer. As well, grant and award projects in which the applicant chose the Institute of Cancer Research (ICR) as the primary institute were included. Expenditures that were contributed by the Institute of Cancer Research, including those funded through the Institute Support Grant were also included. Finally funding for Strategic Training Initiatives in Health Research that have a cancer component, and grants to Canada Research Chairs where the research interest of the Chairholder is relevant to cancer research and/or the Chairholder has been awarded operating grants for cancer research, were included.

It is not possible to determine the proportion of a project's expenditures that are relevant to a specific research area or population. Therefore project expenditures can be reported multiple times across several CIHR institutes as estimated expenditures relevant to their areas of research. It would therefore be inappropriate to add up similar numbers from all Institutes to determine CIHR's overall support of health research. Certainly, such a process would lead to a figure that exceeds CIHR's total budget.