

2007
*Health Canada Science Forum:
Integration of Science, Regulation
and Policy for Healthier
Canadians*

*Health Canada
Office of the Chief Scientist*

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Welcome and Opening Remarks

Wendy Sexsmith
Acting Chief Scientist
Health Canada

Wendy Sexsmith welcomed all guests and participants. She noted that this was the sixth annual Health Canada Science Forum, which is held to showcase the science being done in Health Canada and to provide an opportunity for a dialogue across department and the Canadian science community on relevant issues. Ms. Sexsmith noted that today's record attendance, including people from Health Canada, from within the Health Portfolio - CIHR and PHAC, from other federal departments, from universities and indeed from other health sector partners and stakeholders, speaks volumes about the need to do things more effectively and efficiently. She mentioned the theme for this year's Forum, which is "Integration of Science, Policy and Regulation for Healthier Canadians" and, noted that it is consistent with the new federal Science and Technology (S&T) Strategy, announced by the Prime Minister on May 17, 2007, which calls for all players in the Canadian innovation system to improve their collaboration.

Ms. Sexsmith noted that it is not easy how to do this in an efficient and effective way, and to support innovation while protecting Canadians and the environment. This is difficult, she noted, because we all work in complex environments, with many challenges and increased expectations for quicker decision-making. Ms. Sexsmith noted that we cannot do everything by ourselves, and that we need to improve our ability to work horizontally across the department and beyond. She hoped that the agenda of the Forum and the dialogue over the next few days would help us down that path.

ADMs Panel on the Integration of Science, Regulation and Policy

Moderator/Chair:

Morris Rosenberg
Deputy Minister
Health Canada

Participants:

Susan Fletcher
Assistant Deputy Minister
Health Environments and Consumer Safety Branch (HECSB)

Karen Dodds
Executive Director
Pest Management Regulatory Agency (PMRA)

Siddika Mithani
Acting Associate Assistant Deputy Minister
Health Products and Food Branch (HPFB)

Abby Hoffman
Acting Assistant Deputy Minister
Health Policy Branch (HPB)

Morris Rosenberg said Health Canada generates, gains access to, and uses the best science available to make regulatory and policy decisions. Science is the key to assuring partners, stakeholders, and the public of the soundness of these decisions. The government's new federal Science and Technology Strategy, announced by the Prime Minister on May 17, 2007, reflects this approach, stating that departments must have access to the science and technology capacity required to meet their important regulatory mandates.

Various factors, such as the use of different language, priorities' time scales and tolerances for uncertainty, often render the dialogue between scientists and decision-makers difficult. "To help Canadians maintain and improve their health" Mr. Rosenberg said, "the relationship between science, policy, and regulation in the department must be as productive as possible."

Susan Fletcher described a meeting she attended with HECSB scientists where she learned that the gaps between science and policy were affecting both communities and would, if not addressed, widen further. The scientists acknowledged that the nature of their work made it challenging to understand; however, they also acknowledged a similar lack of understanding on the part of the policy and regulatory decision-makers. They proposed the following avenues to improve integration:

- Offer laboratory tours to demonstrate how the science is performed.
- Hold thematic workshops to review knowledge developed and knowledge still

required.

- Ask scientists to attend policy development courses and policy analysts to take a Science-101 course.
- Develop partnerships with other departments, industry and academia to keep the department informed of emerging science and technologies and develop a foresight capacity for Health Canada.

Karen Dodds presented two examples of integration within PMRA. She described an incident-reporting regulations project for pesticides that includes improved labelling and improved awareness among consumers, industry, and government. She also discussed a system for reporting incidents, which are posted on the Web using an electronic form, which go straight into a database.

She referred to the other project example as the “buffer-zone policy,” which establishes buffers between the last area of pesticide use and the next sensitive area. The question, Dr. Dodds said, is, “What are we trying to protect and how big should the zone be?” Wood rows and woodlots in rural areas are examples of buffer zones. Environmentalists encourage such areas, but farmers are likely to remove them if the buffer zone is too large. She explained the need to examine societal values to support the science, which would, in turn, support policy objectives. “Policy objectives change with each new government,” she said. “We’re under constant pressure to align science, policy and regulations.”

Siddika Mithani explained that HPFB’s work revolves around science and policy. Several projects have involved successful integration, including a progressive licensing framework for pharmaceutical companies. “As a regulator,” she said, “we need to make appropriate interventions to protect the public from unsafe products during their life cycle.” However, social science is not filtering hard science. The ongoing HPFB modernization strategy will allow the regulatory system to keep track of advances in chemistry, nutrition, and food technology. “Regulation is not the only way to do things,” she said. “One of the department’s best achievements in integration is the Canada Food Guide.”

Abby Hoffman said that HPB uses science for its own work or to support a stronger scientific base for policy makers. She cited the Canadian Strategy for Cancer Control as an example. In this model, she said, the government is helping to create organizations whose mandate is to generate knowledge and influence practice. “We need to think of ourselves as being in the change management business also,” she said.

Questions and Discussion

A participant asked what level of scientific knowledge is sufficient to trigger decisions on policies or regulations. Dr. Dodds replied that the situation can vary with the circumstances,

and that sometimes, difficult decisions need to be made. "Do you protect kids more than women?" she asked, "or women more than men? Eventually, policy and societal issues take over."

Susan Fletcher added that her branch does not need access to a high degree of scientific data to apply a precautionary principle to reduce exposure to a big hazard with big exposure. Conversely, where the exposure is less clear, more science is needed.

The Deputy Minister of Health closed the session by thanking participants and stressing the importance of improved integration between science, policy and regulatory decisions across the department.

Plenary Session: Emerging Science and Technologies

Moderator/Chair:

David Blakey
Director, Environmental Health Science and Research Bureau
Safe Environments Program
Health Environments and Consumer Safety Branch (HECSB)

Health Research and Development (R&D) Innovation: The National Research Council Perspective

Roman Szumski
Vice-President, Life Sciences
National Research Council of Canada (NRC)

Roman Szumski described the NRC's new strategy of contributing to the competitiveness of Canadian industry in key sectors, making significant contributions to national priority areas, and strengthening Canada's innovation system. This strategy means all the NRC's institutes work together. "I used to see these changes as a threat," Dr. Szumski said. "Now, I look forward to them. If you look at the business side, you say, 'Wow, what an opportunity'."

An example of such cross-collaboration is the moving-magnet MRI. During neurosurgery, the MRI magnet moves around the patient's head and provides a picture that allows surgeons to make more precise incisions. Another innovation permits the surgical team to check for leakage in the sutures of coronary arteries, which occurs 15% of the time. "It's selling like crazy in the United States," Dr. Szumski said.

Roman Szumski said he believes there are "interesting regulatory issues ahead." For example, MDS Nordion's TheraSphere, a clear liquid used to treat advanced hepatocellular carcinoma, is

registered in the United States as a medical device. In practice, however, the millions of glass beads in the liquid get stuck in the microcirculation of the tumour, where they deliver radiation. The “device” is too small to see with the naked eye - so, is it a drug or a medical device?

“How can we share NRC’s foresight with Health Canada to anticipate change?” Dr. Szumski asked. “If we can help the department anticipate change as a regulator, it will be a business advantage for Canada.”

Hazards of Engineered Nanomaterials: Issues and Current Knowledge

Paul White
Research Scientist, Safe Environments Program
Health Environments and Consumer Safety Branch (HECSB)

According to Paul White, global investments in nanotechnology will reach \$2 trillion by 2012–2014.

To combat what he called “nano-nonsense,” Dr. White offered a broad definition of nanomaterials and explained some of their unique properties. Nanomaterials are both familiar (for example, carbon black and ultra-fine clay) and revolutionary (such as carbon nanotubes and quantum dots). He also explained that, opportunities for exposure exist, but that the complexity of the materials, hinder life cycle analysis and assessments. It is known, for instance, that nanoparticles can be deposited in the deepest regions of the pulmonary system, which creates some reason for concern.

In March 2006, 200 products containing nanomaterials were on the market. The number is now 580 and growing exponentially, Dr. White said. These products include stain- and wrinkle-resistant textiles, paints and coatings, electronic devices, and sunscreens.

Among experts and authorities, there is a growing consensus that nanotechnology holds great promise for the future of cancer therapy and water treatment, but concerns over the safety of products may limit their development. “What instrument can we employ to protect health without putting a lid on the industry?” asked Dr. White. It does not make sense to regulate based on the properties of the bulk materials from which the nanomaterials are derived, because they do not share the nano-properties. For example, it can be asserted that the titanium and zinc in sunscreens represent simply a reduction in ingredient size and not new ingredients per se. He cited a recent US Food and Drug Administration ruling supporting this approach and noted that this ruling is currently being challenged.

The Health Canada Framework for Products of Nanotechnology calls for action to fill the knowledge gaps, identify products on the market, work with international partners on

nomenclature, evaluate the ability of the legislative framework to handle products, develop communications materials, and build a database.

Plenary Session: Interactions between Health and the Environment

Moderator/Chair:

David Clapin
Branch Science Advisor
Health Products and Food Branch (HPFB)

Environmental Transitions and Inuit Health

Grace Egeland
Centre for Indigenous Peoples' Nutrition and Environment
and School of Dietetics and Human Nutrition
McGill University

"Science cannot discredit climate change any longer," said Grace Egeland, "and with that comes public health implications." Wind currents bring contaminants from the South that affect the food chain in Canada's northern regions; the thinning ozone layer has increased susceptibility to skin cancer; and the opening of the Northwest Passage to shipping affects the health of northerners who are already facing massive societal changes due to modernization and globalization.

West Nile Virus entered New York State in 1999; seven years later, it had reached the 56° latitude. "We're a global community; and we should be acting as such every day," Dr. Egeland said. "The public listens to health people. Politicians listen to you. That gives you added responsibility."

The Inuit cannot read their environment as they used to - winds come from different directions, and they can no longer listen to the ice in the same way as before. As migration patterns change, new species encroach, and the waters are too warm to safely allow consumption of traditional shellfish. What does it mean for the North when its inhabitants can no longer trust their instincts to navigate in their environment and put food on the table?

Aboriginal people are westernizing their diet. In Baffin, adults consume an average of two cans of soda pop each day, which may add up to 16 pounds of weight gain in a year. As well, food costs in the North are far higher than in the rest of Canada. In 2006, groceries that cost \$144 for a Montreal family of four cost \$320 in Baffin.

Household crowding and homelessness are hidden issues that, community-wide, create a situation ripe for transmitting infectious diseases such as tuberculosis - which is showing new signs of drug resistance. Such hidden issues make fighting poverty pivotal to public health.

Dr. Egeland said, "Northerners don't want to live in a museum. They want ecologically responsible development where the nearest communities can directly benefit from jobs and tax revenues." Addressing this problem requires multidisciplinary teams of researchers to provide innovation.

"If we all dream the same dream," Dr. Egeland said, "we can make things happen."

Exploring Environmental Contaminants' Influences on First Nations and Inuit Health

Constantine Tikhonov
Chief, Environmental Contaminants Research
First Nations and Inuit Health Branch (FNIHB)

Constantine Tikhonov described fundamental differences between First Nations and Inuit People's models and perceptions of health in contrast to the western bio-medical model. Many indigenous health models are based on the need for assessment of the whole community, stressing an inherent importance of the surrounding environment on the health of all living organisms that coexist in the biosphere. The First Nations and Inuit models balance social, economic, cultural, spiritual, environmental, and biological factors. The objective of environmental contaminants research programs managed by Dr. Tikhonov is to help First Nations and Inuit people in improving their health and well-being by supporting their capacity to identify, understand and, whenever possible, reduce the impact of exposure to environmental contaminants on their health.

The environmental health research work of the First Nations and Inuit Health Branch started at the end of the 1960s, when communities of Grassy Narrows and WhiteDog, northern Ontario, suffered from mercury exposure as a result of industrial pollution of the English-Wabigoon river system with 20 000 lbs. of mercury. This mercury, in time, biomagnified up the food chain, resulted in toxic exposure of individuals within the communities. Along with this direct effect, the local commercial fishery collapsed and communities could not continue their reliance on traditional foods. This environmental catastrophe was an impetus for a national mercury-monitoring program. Since then, testing for mercury has been carried out in 40 000 individuals among 529 First Nation communities.

Dr. Tikhonov described other research programs and projects that are examining eating patterns, contaminants, fish consumption, and the environmental health of First Nations communities - all of which are creating new knowledge through community-based research.

He identified the benefits as:

- Addressing the environmental health concerns of First Nations communities.
- Integrating traditional knowledge and practices with scientific techniques.
- Creating linkages between communities and academia.
- Enabling communities to initiate or influence remediation on the foundation of better knowledge.
- Providing evidence to support better decisions.

To illustrate the life-span of environmental contaminants issues, Dr. Tikhonov said that researchers returned to Grassy Narrows and WhiteDog in 2003 - more than 30 years after the original exposure - to assess levels of mercury in people and fish. The level of contamination in a number of fish samples still exceeds Health Canada's guidelines.

Dr. Tikhonov said the time has come to collaborate, re-examine and harmonize guidelines and reference values for mercury and other environmental chemicals to find a way of better interpreting them and communicating the risk to the population.

He called for capacity building, a focus on integrating science and community perspectives in research design, a large-scale human bio-monitoring study to address baseline First Nations exposures, a food safety study for First Nations, and the promotion of knowledge sharing among all participants of community-based research programs.

Distinguished Chief Scientist Guest Lecturer

Converging Technologies and the Canadian Mosaic: Finding Level Ground to Build Strategic Advantage in a Turbulent Global Environment

Michael Mehta
Executive Director, Population Research Laboratory and Professor of Sociology
University of Alberta

Michael Mehta discussed the complex social, ethical, and regulatory issues that arise from the convergence of nanotechnology, biotechnology, information-communication technology, and cognitive science. Convergence, he said, is now the norm: The pooling of ideas and intellectual property leads to novel products that should make individuals rethink the way they deal with change.

As suites of transformative technologies come together, more complex issues emerge. It is therefore important to understand how convergence operates, in order to create national and

international policy mechanisms to address it. Regulation can no longer be based solely on products or processes, but must be geared towards the social context in which convergence is unfolding.

Dr. Mehta challenged participants to consider how converging technologies affect their own lives, and he presented links that demonstrate the increasingly complex social, ethical, and scientific implications of convergence in a world where the “triple helix” of government, university, and industry has shifted. Universities, for example, are no longer the only venues where research occurs. “McDonald’s even has McDonald’s University, a learning institution of sorts,” he quipped. And global events are felt more than ever at the local level, influencing the pace and direction of convergence.

Dr. Mehta’s examples ranged from the development of artificial intelligence to the search for a genetic basis for criminality or homosexuality, to the creation of the “ultimate soldier.” He demonstrated that these applications, which once seemed farfetched, are now raising several social, legal, and ethical issues - from their effects on the labour force and national sovereignty, to the debate on embryo selection and the creation of a genetically based justice system.

Dr. Mehta said Health Canada must take the issue of convergence to heart. Global trends are creating regulatory and policy pressures in Canada that require swift and decisive action to help safeguard not only the health of Canadians but also Canada’s social and cultural values. Ignoring this call to action could jeopardize the public’s trust in Health Canada’s capacity to respond to threats to both human health and the environment.

“The only way to predict the future is to create it,” said Dr. Mehta. “I want you to think about your jobs as more than just regulating things. You need to regulate both the application and the social impact.”

Plenary Session: Knowledge Transfer and Translation

Moderator/Chair:

Dawn Walker
Special Advisor to the Branch on Maternal, Child and Community Health
First Nations and Inuit Health Branch (FNIHB)

Addictions: Rhetoric Versus Reality

Edgar Kaiser
Chairman & C.E.O., Kaiser Foundation

“My generation became aware that families were addicted to alcohol, drugs, smoking, et cetera,” said Edgar Kaiser. That awareness led to the creation of the Kaiser Foundation to bring into the open the subject of addiction and mental health. “In the United States,” he said, “if you have a good idea, you have to persuade 1500 providers or more. Here, you only deal with one provider - so you have a greater opportunity to influence policy.”

Mr. Kaiser said addictions are widely publicized but little understood, and are a health issue, not a moral one. “Perception doesn’t match reality,” he said. “Two percent of addictions get 80% of the news.” But legal substances are more costly to the system, directly and indirectly, than illegal ones. A study by Columbia University revealed that 40% of American white-collar workers abuse prescription drugs. In Canada, the cost of addiction is estimated at \$40 billion - 61% of which is measured by lost productivity.

The process of addiction is the real problem, however. Most attention is focused on its manifestations - the behaviour and the social problems - and very little on how the brain works. This includes factors such as genetics, childhood, and environmental factors. Emotion, fear, and lack of dialogue, create barriers to a unified strategy, Mr. Kaiser said. “If we run across a darkened room, we’ll bang our shins,” he said. “If we talk, we can avoid the furniture.”

Opinions on addiction are polarized, and solutions also vary greatly. At one extreme, the mayor of Vancouver advocates making drugs freely available. At the other extreme, prisoners are drugged so that they do not cause problems. However, neither approach solves the underlying problems.

Mr. Kaiser said he is optimistic about discoveries to help addiction. In Burma, for example, methadone is available legally in hospitals, but illegal drugs are cheap and available in rural areas. The bark of a certain tree, however, can replace the craving for heroin or methadone without withdrawal symptoms. From a holistic standpoint, Mr. Kaiser hopes this discovery can

be meaningful. He said he believes it could present an enormously effective treatment in developed societies that offer follow-up action.

In today's economy, 85% of jobs are brain-based. "By drugging our brains," Mr. Kaiser said, "we're reducing productivity and increasing health care costs." As well, further damage can be caused by people with mental health problems, who tend to self-medicate. To illustrate the scope of the problem, Mr. Kaiser quoted a WHO study that revealed 20% of Canadians will have a brush with mental illness in any given year, and that 37.5% will do so during their lifetime. The annual cost of mental illness to the health care system is estimated at \$1.4 billion.

The fact that 70%–90% of Canadians with a serious mental illness are unemployed presents an associated problem. "It's another street person," Mr. Kaiser said. "They can't take care of themselves. What do you do with them?"

The Kaiser Foundation does not take sides on any given issue. Instead, it tries to connect people, reduce friction, and find consensus. Governments alone cannot make change happen but must instead connect with the private sector. "Labour and industry have a lot to gain by taking better care of their workforce," Mr. Kaiser said. "We need national dialogue, coordinated strategies, and research - and they have to be connected."

Controversy and Knowledge Translation Lessons from Genetic Modification and Statistical Significance

William Ross
Director, Bureau of Biostatistics and Computer Applications
Health Products and Food Branch (HPFB)

"Risk is never zero," said William Ross, and dealing with risk requires decision-making based both on consideration of its magnitude and its importance. Because it is impossible to be completely sure of the magnitude of risk, we sometimes affirm the presence of an important risk when there isn't one, or alternatively, affirm the absence of an important risk when it is present. In fact, the preferred balance between these two possible errors in decision-making reflects the fundamental values of the decision-making process.

In the public domain, controversy results most often from a disagreement over the magnitude of risk and over appropriate action to take. A very important component facing regulators is distrust of the risk-management system. "The less you are trusted, the harder your work becomes. It becomes more expensive to make decisions, and more extreme actions are required."

Dr. Ross explained that knowledge transfer is not just about conclusions and fact sheets. "That's just information. It's about transparency and the openness of the process." Results should be accessible to the general public, so they can be assured the process is not "an insider job."

People want to understand why a decision is made, not just how; the level of uncertainty needs to be disclosed. "We talk about scientific results as though they're written in stone with no alternatives," Dr. Ross said. "In our environment, uncertainty rules the day. We need to acknowledge that and engage the community in a non-antagonistic way."

In the scientific assessment of risk, results are accumulated from many studies and individual experiments. Scientific hypotheses, and the appropriate statistical hypotheses must be compiled to look at the bigger picture. Choosing the wrong statistical hypothesis and test is the most common error in risk decision-making.

Dr. Ross identified three types of statistical hypothesis important to risk decision-making:

- No Effect vs. Some: This type prefers affirming no effect when there is one; a strong test is required to protect the integrity of science.
- Small Effect vs. Large Effect: This type suggests the effect is not large enough to worry about; it incorporates variability in studies. It prefers affirming no large effect when, in fact, there is one.
- Large Effect vs. Small Effect: This type incorporates acceptable variability. It prefers affirming a large effect when there is none.

In many areas, these are well understood. However, in certain cases such as the assessment of genetically modified (GM) foods, they are not, Dr. Ross said. In assessing these products, the evidence must show that GM foods are as safe as traditional products and that there is a reasonable certainty that no harm will result from intended uses under anticipated conditions of consumption. Confusion over the roles of different types of statistical hypotheses often leads to arguments based on tests of the wrong hypothesis. The third test, above, would be the appropriate statistical test in this case.

Health Canada Science and Technology (S&T) Strategy

Information Session on the Health Canada Science and Technology (S&T) Strategy

Ellen Birnbaum
Manager, Horizontal Science Strategies, Policy, Planning and Partnerships
Office of the Chief Scientist (OCS)

In spring 2007, Health Canada launched the development of its Science and Technology (S&T) Strategy to improve its ability to apply science to meet its responsibilities. Ellen Birnbaum briefed participants on the process and milestones involved in developing the Strategy, its

purpose and objectives, and the key messages heard to date regarding Health Canada science needs.

Wendy Sexsmith, as project champion, opened up the floor to questions.

Asked how the Strategy will deal with policies that sometimes hinder implementation (getting approval for staff travel, for instance, is complicated), Ms. Sexsmith said ADMs recognize the need for change; although no simple solutions exist, the Strategy has the full support of senior management. Noting a lack of questions from the floor, Ms. Sexsmith reminded participants that this information session was an opportunity to comment on the Strategy, and asked whether the silence reflected total satisfaction.

A participant said the group's silence probably reflected a lot of questions - not a lot of answers - and that he had hoped to see a connection between Health Portfolio partners. Ms. Sexsmith replied that the Strategy involves close collaboration with portfolio partners. She asked participants to involve themselves in the project, because without their input, the Strategy cannot better position science within the department.

Tri-Council Session: How They Increasingly Work Together in Funding Research in Health

Moderator/Chair:

Iain Stewart
Director General, Policy Branch
Industry Canada

Panelists:

Janet Walden
Vice-President, Research Partnerships Programs
Natural Sciences and Engineering Research Council of Canada (NSERC)

Gisèle Yasmeeen
Vice-President, Partnerships
Social Sciences and Humanities Research Council of Canada (SSHRC)

Ian Graham
Vice-President, Knowledge Translation
Canadian Institutes of Health Research (CIHR)

Moderator Dr. Iain Stewart said that by collaborating and concentrating resources in some areas, including health and life sciences, Canada could achieve critical mass. The 2007 budget, he noted, supports the new federal Science and Technology (S&T) Strategy by putting money into partnerships to ensure that organizations serve academics and civil society.

Dr. Janet Walden said NSERC has a \$170 million annual budget to build private/public partnerships with the purpose of accelerating technology into products, processes, and services that benefit Canada. The agency is supporting more interdisciplinary teams of researchers in tandem with other agencies, depending on the thrust of their research, to close the gaps in programming. Recently, NSERC opened strategic areas to social scientists and humanists, and in 2000, launched a collaborative research program in health that became a joint CIHR program. Based on its success, the program's budget has been expanded to \$40 million. "There is no doubt that the federal S&T Strategy is providing further incentive for us to evolve our practices, but in creating new structures we face challenges that are both within our agencies and the communities we serve, and within the structures of government. To succeed, we too will need to be creative and flexible or work around these challenges."

Dr. Gisèle Yasmeen said that the social sciences and humanities play an important role in the health dossier considering that the research shows that the determinants of health are social (e.g., literacy, income, etc.). As the agency's mandate is to promote and support the social sciences and humanities in general, researchers in the area of health often apply to SSHRC and are successful. However, some researchers may not be aware of the fact that CIHR has the mandate to fund research in all areas of health, including the social sciences and humanities aspects. SSHRC funded \$23 million related to health in 2006, up from \$11 million in 2000, and encourages its researchers to work on a bi- or tri-council level. Also, it is interesting to note that two of the recent SSHRC award winners are working in the areas of medical anthropology. The medical humanities are, in addition, an area that must not be overlooked in terms of the importance of understanding the meanings, interpretations and lived experiences of disease. There are bigger issues to tackle as well, Dr. Yasmeen said, notably the balance of funding based on the direct and indirect costs of research, infrastructure, and people.

Dr. Ian Graham said that the federal S&T Strategy underlines the value of peer review, as a means of ensuring excellence, transparency and fairness and that a CIHR's internationally respected peer review system is the driver behind all its funding programs. Although much work remains to convert science to Canada's advantage, CIHR has a work plan to measure the impact of health research, balance of funding at the federal level, alignment of programs across the tricouncils, and international activities. In terms of collaboration, the Canada Research Chairs program and the Networks of Centres of Excellence program, among others, demonstrate that the councils are already working together effectively. As for international activities, CIHR has awarded over 2,000 grants since June 2000, for a total of \$66 million. Dr. Graham said his job is to ensure that discoveries improve the health of Canadians and provide better avenues for commercialization and productivity.

Questions and Discussion

A participant asked whether plans had been made for further integrating government research with university research to meet priority challenges. Dr. Walden replied that NSERC is trying to create fewer but larger opportunities that are more integrated, and therefore easier for government departments to join. The challenge is that the *Financial Administration Act* prevents the agency from funding government work.

Best Poster Awards Ceremony

Moderator/Chair:

Dr. Tony Myres
Scientist Emeritus, Health Canada

Dr. Tony Myres, Health Canada's first Scientist Emeritus, reminded the audience that Health Canada depends on excellent science to make its regulatory and policy decisions. He congratulated this year's Best Poster Awards winners, who were selected by their peers for their outstanding research poster presentations.

Dr. Myres said the posters covered a variety of topics, reflecting the complexity of the issues Health Canada faces. He also noted that several posters involved collaborations - for example, with other federal science departments, universities, research hospitals, and provincial laboratories. These collaborations, Dr. Myres said, are becoming crucial as science increasingly touches every aspect of Canadians' lives.

Dr. Myres presented the Best Poster Award in the "Emerging Science and Technologies" category to Dr. Zubin Master, of Health Canada's Assisted Human Reproduction Implementation Office. The poster reviewed the health, safety, and ethical risks, and the policy options to address such concerns, for the use of in vitro embryos for research under the *Assisted Human Reproduction Act*.

The Best Poster Award in the "Interactions Between Health and the Environment" category went to the Bureau for Microbial Hazards' Dr. Franco Pagotto and his team, for work related to the possibility of cross-contamination of foods via gloved hands.

Dr. Myres presented the Best Poster Award in the "Knowledge Transfer and Translation" category to Dr. Sylvie St-Pierre and her team, for their study of Canadians' intake of vitamin D and calcium.

The Best Student Poster Award went to Dr. Sabina Halappanavar and her team, for their study of the biological implications of genomics data.

Dr. Myres once again congratulated all the winners, and invited them to join him for a group photograph.

Presentation of the Scientist Emeritus

Moderator/Chair:

Wendy Sexsmith
Acting Chief Scientist
Health Canada

Wendy Sexsmith introduced Dr. George Douglas, Head of the Mutagenesis Section of the Safe Environments Programme of the Healthy Environments and Consumer Safety Branch as Health Canada's third Scientist Emeritus. The Scientist Emeritus program allows retiring scientists to continue their work and contribute to public service renewal by sharing their knowledge and experience with a new generation of scientists.

Dr. Douglas said he joined Health Canada in 1974 as a research scientist and had enjoyed a rewarding career turning new technology into regulatory practice. He said he was lucky to be "at the right place at the right time," working on timely issues such as genetic risk assessment and mutagenesis. Dr. Douglas said he would remain linked to the Environmental Health Science and Research Bureau upon his retirement, and he underlined the outstanding contribution of his current and former colleagues, many of whom have received awards for the excellence of their work.

Closing remarks

Wendy Sexsmith thanked participants in the 2007 Health Canada Science Forum, and expressed the hope that the dialogue started at the Forum would not stop here but continues to move everyone along the path to improved collaboration. She expressed her gratitude for the outstanding work done by the Forum's Organizing and Scientific Review Committees and specifically to the staff of the Health Research Secretariat of her office.