

June 29, 2009

Dr. Alain Beaudet
President, CIHR

Dear Dr. Beaudet;

We are writing to you in response to the 2009-2014 CIHR draft strategic plan. While we applaud the plan for its commitment to investment in world-class excellence in training and research and the desire to address important issues in Canadian and Global health while improving knowledge translation, we have serious reservations about the way that the CIHR proposes to do this and the way in which strategic priorities will be decided.

Training:

The draft plan emphasizes training through multidisciplinary teams and training for alternate careers. In our experience, the most important part of graduate training is that a student becomes immersed in an area to the point that they can think and conduct research rigorously and critically in that area. A concern with having trainees learn research as part of large international, multidisciplinary projects, is that the trainee may play a small role in one particular aspect and be confined to that agreed upon role rather than allowing them to explore a problem in depth using a variety of tools. The skills trainees learn in driving their own projects allow them to develop as independent investigators. This is also a major issue for young investigators embarking on their independent careers- it is critical that they develop an independent research expertise. Too much emphasis on team-based multidisciplinary projects at an early career stage can make it difficult for them to gain recognition for their own independent research. Multidisciplinary team based research projects are invaluable in tackling certain problems, such as genome wide analysis of large patient populations, but their strength relies on the fact that individuals recruited to these multidisciplinary teams have accumulated the appropriate expertise in one specific area first. Thus we feel that investigator driven research grants to individuals should remain the major mechanism for funding the operating costs involved in training Canada's future scientists.

We also have concern about the emphasis on training for alternative careers. The primary role of CIHR is to fund health research. Of course the CIHR plays an essential role in training the next generation of health scientists. Specific technical skill sets needed in industry and research are constantly changing, however, one always needs a strong grounding in scientific principles, problem solving and critical thinking. Collectively, we have extensive experience with post-doctoral fellows going from our academic research laboratories to highly successful careers in the biotech sector as senior scientists, executives, management consultants and entrepreneurs. In our experience, industry is looking for the same qualities that we value in academia. One needs scientists who are critical, rigorous, far-sighted and have the background and skills to assess new ideas and opportunities. Once that training is obtained, it may be useful for that trainee to obtain additional skills depending on their career choices. A case in point, a recent graduate went direct from the PhD to a short course in regulatory affairs at a local technical college and was then recruited and quickly promoted in the Vaccine branch of Health Canada, due to her unique skill

set. However, we do not believe it should be the role of CIHR to fund such specific training for alternate careers, rather the new reality is that after getting a solid grounding in research funded by the federal granting agencies, some trainees do opt to add other aspects to their training. University/Technical colleges are beginning to recognize these unique niches that need to be filled and indeed we believe this should be considered by the Colleges and Universities, and might be an area for specific industry Canada scholarships, but should not be the focus of CIHR.

Setting strategic priorities:

We are very much concerned about the statement in the strategic plan that CIHR will align its priorities with the Federal R and D strategy. The plan implies that end users of the fruits of research, such as industry and government should have more say in setting research priorities. While industry and government indeed may have very good ideas about unmet needs and certainly should be making researchers aware of them, it is dangerous and ultimately wasteful to forecast the research projects that will answer those needs. Significant improvements in healthcare have typically come from unexpected quarters. One needs to be very cautious of shifting the research agenda too much to the next big thing or in having too much of the funding aimed at quick fixes to the latest emerging problem. It is important to remember that during the SARS outbreak, Canada responded quickly to identifying and sequencing the virus in part because we had trained virologists on the ground with expertise in diverse viral strains, including as it happens the Corona viruses.

It is worth pointing out that one of the most valuable breakthroughs for the development of the biotechnology sector was the discovery of restriction enzymes (which allowed molecular cloning). Restriction enzymes were discovered by scientists trying to understand why bacteriophages could infect some bacterial strains and not others—restriction enzymes cut the DNA of invading genomes. A second example, the polymerase chain reaction, which has revolutionized biomedical and other sciences, made use of a heat-stable polymerase identified by studying unusual thermophilic bacteria. These esoteric topics were not obviously translational when they were initiated.

There are now spectacular antibody treatments for non-Hodgkin's lymphoma and B-CLL (Rituximab, anti-CD20), rheumatoid arthritis (Rituximab and antibodies against TNF) and certain forms of breast cancer (Herceptin). These would not have been possible without the development of monoclonal antibody technology decades ago by Kohler and Milstein and the work of many scientists identifying particular surface molecules unique to B cells or breast cells or studying soluble proteins that mediated inflammation. The practical applications of these findings often take place decades after the initial basic science discovery and it is often the combined knowledge of the field based on many earlier discoveries that brings us to the point where the application appears almost obvious.

Broad-based discovery research is relatively inexpensive compared to bringing an idea through all the steps required to take an idea from conception through to clinical trials and approval for clinical use. As it is impossible to predict accurately which research will lead to the paradigm shift of tomorrow, one needs to fund a large pool of discovery research long term and be highly selective in which projects one can afford to translate to the clinic. Therefore, it is critical to keep

in mind, that while some strategic funding to tackle pressing problems is important, this must not be done at the expense of a well-funded program of investigator driven research in diverse areas of biology and biomedicine, that will lead to science moving forward in unpredictable ways and contribute to the long term health of science and medicine in our country.

Knowledge translation and improving Canada's track record in translational research:

The draft strategic plan points out that while Canada excels in publishing high quality papers, it lags behind other countries in filing patents, suggesting a lack of success in translational research. Thus CIHR would like to align with the Federal research strategy of supporting translational research. The best way for CIHR to fulfill this goal is to fund excellent science. The job of CIHR is to fund innovation. There are a number of challenges to translation. There are limited resources available to fund patenting of novel findings at an early stage. Venture capital and development money are dependent on IP protection. Although these are tough times to find investment funds anywhere, a large problem is that Canada has a small and conservative venture capital pool. If the federal government wants to encourage more translational research a drastically new approach may be required. For example, Industry Canada might consider providing Small Business Research Innovation grants. With the money spent on R and D by the pharmaceutical industry shrinking, the government should ensure that Canadian ideas do not flow south where at least government money is available. Industry Canada might also consider providing academic institutes with access to a patent fund, perhaps administered by an independent agency, qualified to evaluate the cost-benefit of a particular application. Again this should not fall within the mandate of Health Canada or CIHR.

Review panels:

The CIHR draft plan calls for more use of specific multidisciplinary panels, more use of international reviewers and involvement of the knowledge users in evaluation of proposed research. This raises a number of issues. We have serious reservations about taking the peer out of peer review. The scientific integrity of the review process must allow the science to be evaluated first, without interference based on the perceived priorities of the day. There is also a serious problem with reviewer fatigue and with CIHR hastily calling together panels weeks before they are due to meet, with the result that the panels may not have the best composition and that reviewers have limited time to review thoroughly. We believe that CIHR needs to focus on fewer separate competitions for larger sums of money, rather to divide the pots of money into small, specialized competitions for very specific areas. There have been an endless series of emerging team competitions just to give one example. Although many of us have found ways to align ourselves with the current priorities, it would be much more efficient to simply fund larger and more grants through the regular panels, adding priority announcements in certain areas where appropriate, rather than to have us reinvent ourselves for small short term grants, only to re-emerge a year or two later into the next kind of "emerging team."

The NIH will invest \$30 Billion in research in fiscal year 2009. A major portion of this goes to investigator driven research. This compares with the CIHR budget of \$960 million for 2009. Thus, as has been the case historically, NIH funding is about 30x the CIHR level, despite a population difference of only 9.3x. Yet CIHR wants to do everything that the NIH does and

more. There have been many recent articles in the Globe and Mail and elsewhere about the disconnect between new funding for research personnel (Canada Research Chairs, Canada research scholarships) and CFI funding for infrastructure without the necessary increase in core funding of operating costs through the federal granting agencies. This results in excellent people and equipment going to waste for lack of operating funds. CIHR cannot spend its limited core research funding aligning with the government research priority of the day or the latest crisis-whether it be an isotope shortage or a new strain of influenza; these areas should and do receive separate funding. While it may well be appropriate for CIHR to handle these special funding situations, these strategic areas should not become the primary focus of CIHR at the expense of the core CIHR mandate to fund excellence in research and training in health research.

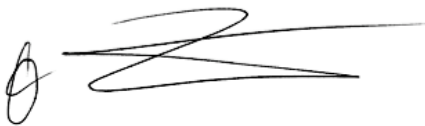
In sum, we are concerned that CIHR is in danger of losing sight of what made MRC and CIHR great in the first place---funding excellent science based on a strong tradition of investigator driven research and peer review.

Thank you for your consideration.

Sincerely,



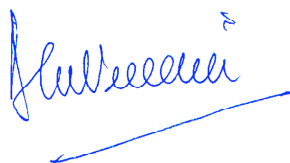
Tania Watts, Ph.D.
President, Canadian Society for Immunology
Professor and sanofi pasteur chair in Human Immunology
University of Toronto
Department of Immunology,
1 King's College Circle,
Toronto, ON M5S 1A8



Hermann Ziltener Ph.D.
Past president, Canadian Society for Immunology (2007-2009)
Professor
Department of Pathology and Laboratory Medicine
The Biomedical Research Centre, UBC
2222 Health Sciences Mall
Vancouver B.C. V6T 1Z3 Canada



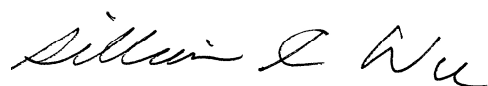
R. Chris Bleackley, Ph.D., FRSC
Professor of Biochemistry
Canada Research Chair
Dept. of Biochemistry
University of Alberta
Edmonton, Alberta T6G 2H7
Canada



André Veillette, MD, FRCP (C), FRSC
Professor and Canada Research Chair
Institut de recherches cliniques de Montréal
Institute Recherche Clinique
110, avenue des Pins Ouest
Montréal (Québec) H2W 1R7Canada



Tak W. Mak, OC, PhD, DSc, FRSC, FRS
Director, The Campbell Family Institute for Breast Cancer Research at Princess Margaret
Hospital, University Health Network
Senior Staff Scientist, Ontario Cancer Institute
University Professor, University of Toronto
620 University Avenue, Suite 706
Toronto, Ontario M5G 2C1



Gillian E. Wu, PhD
Professor, Faculty of Health
Dean of Science and Engineering 2001-2006
York University, Toronto, Canada
President of the Canadian Society for Immunology 2005-2007



John Schrader, MB. Ph.D. FRSC
Director, The Biomedical Research Centre, UBC
Canada Research Chair in Immunology
Past-President, Canadian Society for Immunology (2003-2005) and Australian Society for Immunology
Professor, Department of Medicine
2222 Health Sciences Mall,
University of British Columbia,
Vancouver, BC
V6T 1Z3
Canada



David Evans, Ph.D.
Professor and Chair
Medical Microbiology & Immunology
University of Alberta
Edmonton, Alberta, T6G 2H7



Juan Carlos Zuniga-Pflucker, Ph.D.
Professor
Department of Immunology, University of Toronto
Canada Research Chair in Developmental Immunology
Senior Scientist
Sunnybrook Research Institute
2075 Bayview Avenue, Rm. A-331
Toronto, Ontario, M4N 3M5

A handwritten signature in black ink, reading "Michael Ratcliffe". The signature is written in a cursive, flowing style.

Michael J. H. Ratcliffe
Past-president of Canadian Society for Immunology (2001-2003)
Professor and Chair
Department of Immunology
University of Toronto
Senior Scientist
Sunnybrook Research Institute
2075 Bayview Avenue,
Toronto, Ontario, M4N 3M5