Report on the *Canadian Science Policy Conference*

The Canadian Science Policy Conference was held in Toronto on October 28-30. The brainchild of Dr. Mehrdad Hariri, a postdoctoral fellow from the McLaughlin-Rotman Centre for Global Health in Toronto and 19 other individuals, virtually all of whom were graduate students and postdocs, mostly from the health field. An ambitious endeavour, with 400 participants, its primary objective was to make a measured first step towards building a robust science policy network in Canada.

CAP was represented by our president Robert Mann, who was participating on a panel, and our vice-president, Henry van Driel. This is their joint report.

Attendance: The conference brought together people from academia, business, government, media, and the non-profit sector and from all regions of the country, although the francophone part of Quebec and New Brunswick were under represented. It consisted of 4 keynote talks and several plenary panel sessions interspersed with parallel panel discussions on various topics associated with science policy. The conference and much of the discussion was dominated by life sciences and medicine, although there were some participants from the hard sciences and humanities. There was also a very refreshing balance of youth (graduate students, pdfs, junior policy people, etc.) with their enthusiasm/ new ideas, and "senior citizens", with their wisdom/experience.

Summary of Keynote talks:

1. *Bruce Alberts* (Editor of *Science*) gave a short history of National Academy of Science and of its reports to government; he discussed the dual role of "Science for Policy" and "Policy for Science" in the US, underlining that with Obama and Chu the US has strong champions for science/innovation at the highest level. The focus/concern of the US in terms of science/science policy is on what's happening in China, where scientists work at the highest levels of government and science/innovation is regarded as the key to increased prosperity.
2. *Preston Manning* (Manning Centre for Building Democracy) gave much practical advice on how scientists should deal with government. His main message:
    i. Spread scientists into government circles through committees, elected office, etc. to change the culture on the "hill". We also need a "science office", similar to that of the auditor general, that can advise parliament, not just government.
    ii. Canada must find the incentives to increase corporate R&D. This will require serious analysis of current policies and groups in (or connected to) government that ensure recommendations are followed. Too often they vanish due to lack of effort. He suggested a non-partisan think-tank/do-tank to deal with science policy.

iii. Communications between scientists and government must be improved. Scientists in particular should be much more sensitive to the constraints/attention spans of politicians, being clear, succinct, and bottom□line oriented in their discussions, rather than “explaining”. There is a need to apply the “science of communication” (training in public speaking, make your point in 10 words, etc.) to the “communication of science”.

iv. In lobbying government, scientists must take one point and be persistent until it is implemented or is forced off the table. If we approach government with monetary request and a policy change, government will generally assume that we only want the money.

3. *Gary Goodyear* (Minister of State, Science and Technology), as expected, gave a good political speech, but one without surprise. He articulated the list of spending initiatives the Conservative government has implemented over the past few years, pointing out that his government is keenly aware that we do well in basic science but poorly in corporate investment in R&D. Innovation in Canada is lagging the rest of world (e.g. Brazil, China, India) and we have to accelerate this to maintain our standard of living in future. The most important part of the speech was his continued emphasis on how the government regards S&T as being very important to Canada's economy.

Plenary Panel Sessions

1. *Canada’s National Science and Technology Strategy* (Alain Beaudet, Peter Singer, Heather Munroe-Blum, Christopher Paige): Canada’s economy, in addition to being shaped by geography, demography, and history, is resource□based, in which science has played little role. Research is not driving the economy as it does in most other developed countries and profitable businesses see little incentive to invest in research. As a result too much pressure is put on universities for innovation. However, in so doing we could be compromising fundamental research and training since a university’s best technological transfer walks on two feet. Monroe-Blum (McGill) stressed the need for our governments to get away from the politicizing of post-secondary education. Beaudet (CIHR) stated the need to be tough: to select the best and then support the best; we tend to be “too Canadian” in our thinking (risk adverse, subject to “tall poppy syndrome” (we should all be equal), etc.) while other economies are making brutal, bottom□line oriented decisions. The most interesting idea, perhaps, came from Singer (McLaughlin-Rotman Centre) who suggested that Canada take advantage of the enthusiasm of our youth as well as the links of our diaspora to their homelands to brand itself as "doctor to the world", mobilizing its scientific community to engage developing nations.

2. *The Canadian Economy-From Resource-based to Knowledge-driven* (Peter Hackett, Peter Nicholson, Mark Lievonen, Suzanne Fortier). Canada's GDP/hourworked as a percentage of the US value rose from 70% in 1947 to 93% in 1984, only to fall back to about 72% by 2007. The reasons for this are due to sub-par innovation on the part of Canada's businesses, and are rooted in three factors. One is Canada's small and fragmented domestic market. Another is that many of Canada's industries are "upstream" in the value chain, having little contact with the end consumers of their

products. The third is that, paradoxically, business profits are healthy despite weak innovation so there is little incentive to change. However Nicholson (Council of Canadian Academies) went on to warn that the US market is increasingly vulnerable, there are new emerging markets (India, China, Brazil), and that resource dependence is increasingly volatile. We have to move from an extractive to a creative economy, overcoming barriers of risk aversion in individuals. Individuals are creative; institutions are not. Fortier (NSERC) added that NSERC is struggling to find ways to overcome the innovation gap while maintaining solid support for basic research; it is well-aware that the research capacity is not optimally connected to the corporate sector. Everybody is also aware that we do not produce enough PhDs compared to other nations, and that our natural resource sector is indirectly starving other sectors of our economy. Hackett (University of Alberta) made the amusing comment that when you Google "Canada's Innovation Strategy", you get a site that indicates our strategy has been archived.

Highlights from some Parallel Panel Sessions:

1. *Who Speaks for Science (Deb de Bruijn, Rees Kassen, Robert Mann, Reinhart Reithmeir):* These individuals representing, respectively, the Canadian Research Knowledge Network (CRKN), the Partnership Group for Science & Engineering (PAGSE) of the Royal Society, CAP and the Canadian Biochemisty Society spoke to how their organizations are helping researchers, writing reports for government, engaging the media, etc. The PAGSE group (Royal Society of Canada), which operates on broad consensus opinion, as a non□advocacy, non□lobby group feels they have had a strong impact on government policy (e.g., recommending the Canada Research Chair program and Vanier scholarships (although others in the audience regard as having negative impact). Robert spoke about what CAP does and our role in CCR and PAGSE. He stressed the importance of devoting serious funding to the study and implementation of science policy in Canada. Reithmeier said that we need to emphasize that scientists are ordinary people doing extraordinary things and demonstrate our passion, which may be our strongest message to public and youth. As scientists, in talking to government, we need to speak with one voice since our community, and our societies are all very small. He felt we spend too much time on our own partisan interests. We should look at the bigger picture and bigger problems facing Canada.
2. *Science Journalism, Media and Communication (Chantal Barriault, Peter Calamai, Mark Henderson, Nicola Jones):* Panelist pointed out how journalism and the media are undergoing an incredible revolution driven mainly by young people and no one knows for sure how we will most effectively communicate with each other in just a few years. Nonetheless, this is partly a case of the medium changing. A good story is still welcome but it has to be packaged appropriately for the intended audience.
3. *Innovation Commercialization; From Bench to Market (Tom Brzustowski, Ronald Dyck, Jorge Niosi, Mark Romof).* This was a discussion on how Ontario and Alberta are trying to marry university and corporate interests with various incentives. Alberta, in particular, has completely revamped its research funding programs (e.g. the $1B

Alberta Ingenuity fund has now been taken back from the foundation used to administer it) and is focusing on energy, health, bio□solutions and IT. Ontario is enhancing its 22□year□old Centre of Excellence Program to engage more researchers. Canada is not remarkable relative to any of 20 other comparable developed countries (only the US has a distinguishable innovation culture and is an outlier) and has to break free from the "peloton" and accelerate its science and innovation if it is to keep pace with other countries. We need to bundle and enhance our best programs and focus on certain sectors where we know we have an advantage. We have to be brutal about decision□making. As part of this, NSERC funding has to be accelerated, somewhat on the fundamental research side, but even more on the outreach/corporate involvement side. We need more strategic procurement and the equivalent of the US SBIR program to help small companies.

4. *The Democratization of Science* and *Science Policy and International Cooperation (Elena Brief, Ramin Jahanbegloo, Hiromi Matsui, Marc Saner).* The next generation is advocating more than ever the inclusion of developing nations in the scientific endeavour, for reasons of both justice and economic self-interest. The situation with international cooperation could use a lot of improvement: there are no stable academic exchange programs in Canada. This is a missed opportunity to say the least -- researchers are left jury-rigging collaborations and partnerships as best they can.

Summary

Overall, this meeting was a good step in the process of developing a much better way of doing science policy in Canada. It was also good for promoting the CAP. Not only did Robert Mann make a presentation at the meeting, but he was also interviewed for the web-based media publication "The Mark". The CAP should keep good communication links with the proponents of this initiative and work on maybe the main question following this conference: *Where do we go form here?*

Robert Mann and Henry van Driel

Much more detail is available on the website at www.sciencepolicy.ca including twitter messages, video and audio recordings, etc.