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Chair

Mr. Massimo Pacetti

Standing Committee on Finance

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● (1535)

[*English*]

The Chair (Mr. Massimo Pacetti (Saint-Léonard—Saint-Michel, Lib.)): Order. Let's begin.

[*Translation*]

Good afternoon, everybody. Pursuant to Standing Order 83.1, we meet today for the 2005 pre-budget consultations.

I will give the various groups, associations and witnesses seven to eight minutes to make their initial presentation.

[*English*]

Please keep to the seven or eight minutes, because I don't want to interrupt you. There are seven groups, I believe, and then the members are going to want to ask questions. We also have another panel afterwards.

Without further ado, following the list, we'll start with the Association of Canadian Community Colleges, Mr. Brown.

[*Translation*]

Mr. Gerald Brown (President, Association of Canadian Community Colleges): Ladies and gentlemen, the Association of Canadian Community Colleges is delighted to have this opportunity to appear before the Standing Committee on Finance.

[*English*]

Canadian society is undergoing a significant transformation, largely in response to the forces of globalization and the development of the knowledge and information economy.

For Canada, the key to economic and social well-being of its communities lies in the knowledge and skill base of our citizens, i.e., human capital infrastructure. Canada must ensure policies and programs that will give all Canadians—and I stress the word “all” Canadians—entry into the skill-based economy and then help them to remain active participants.

Since the nation's primary competitive advantage is the quality of its workforce, the association firmly believes that training and skill development are critical to the nation's transition from a resource-based economy to one of human capital and knowledge-based. While significant progress has been made in building a prosperous and inclusive society, Canada must ensure that investment in human capital be a priority for the government's future agenda.

Continuing concerns about skills shortages and gaps lead us to believe that the time has come for all stakeholders—industry, labour, educational institutions, and the federal and provincial governments—to commit and interact more effectively to build a pan-Canadian workforce development agenda. The cornerstone of this agenda must promote a commitment to life-long learning, must be based on the principle of inclusivity, and, while national in scope, must operate on a community level. Communities are best attuned to the human resource needs of their own environment.

About 150 institutions in 900 communities—community colleges and technical institutes—are ideally situated and suited to contribute significantly to the success of such an agenda. The challenge to strengthen the economy and labour market alignment is expected to become even more compelling, with forecasts that some form of post-secondary education will be required in about 72% of the 1.3 million new jobs to be created. Furthermore, it is predicted that a large percentage of these new job creations will occur in occupations that require college degrees, diplomas, or trade certificates.

While there are several components to a pan-Canadian workforce development agenda, which will require long-term planning, the Association of Canadian Community Colleges recommends the following actions in the short term: the separation of post-secondary funding from the Canada social transfer and the creation of a post-secondary education transfer, restoring funding to 1992-93 levels, adjusting for inflation and demographic growth; that modifications be made to the employment insurance program to enable workers currently in the workforce to access funding for skills upgrading; the creation of a college and institute infrastructure enhancement fund, including funds for modernization and equipment acquisition, that would assist colleges to better prepare themselves to produce a more qualified and properly trained workforce in order to meet the demands of businesses and industry; and increasing funding for the Indian and Northern Affairs Canada, INAC, post-secondary student support program, as well as updating and modifying their policies and programs to provide increased access to post-secondary education for first nations people.

Secondly, investments in skills—and here I join many of my colleagues around the table—along with investments in R and D, are two of the most important factors driving productivity growth. Innovation is as much about building the skills and knowledge base of Canada's industrial workforce as it is about developing and implementing new products, processes, and technologies. By nature, colleges and institutes are fundamentally applied. They provide applied education and training, conduct applied and industry-led research, and work on industry problems, needs, and goals. Colleges focus on the development and commercialization side of the research, development, and commercialization equation.

Unfortunately, the potential of applied skills and physical resources resident in colleges and institutes for industrial support at the technology transfer product development levels is not sufficiently exploited. The signal from government, whether intended or not, is that it continues to marginalize the important contribution of colleges and institutes to the innovation, research, and technology transfer needs of business, industry, and community organizations. As a result, colleges and institutes must scramble to create the infrastructure and support mechanisms necessary to facilitate the research and development process.

The Natural Sciences and Engineering Research Council recognized the potential of the vast college and institute network in the creation and design of what is called the college and community innovation pilot program. The program's objective is to increase the capacity of colleges to support innovation at the community or regional level. The association recognizes and appreciates the contribution of NSERC for the colleges and institutes potential and wishes to draw attention to the financial limitations of total funding. As such, the Association of Community Colleges strongly recommends that the government target additional funding to expand this program, the Natural Sciences and Engineering Research Council's college and community innovation pilot project. In this fashion, a substantial expansion of this initiative would contribute significantly to the economic development of communities across the country, many of which are served only by colleges or institutes.

● (1540)

Applied knowledge and technology transfer and diffusion are key elements of a future pan-Canadian workforce development agenda. For the wealth creation of this country, it is critical that colleges' and institutes' capacity be utilized.

[*Translation*]

In conclusion, the Association of Canadian Community Colleges believes that a pan-Canadian workforce development agenda is essential if Canada is to maintain is competitive edge in today's complex, and increasingly integrated, world economy. Canada's colleges and institutes have a key role to play in such an agenda.

[*English*]

Thank you very much.

The Chair: Thank you, Mr. Brown.

From the Association of Universities and Colleges of Canada, Ms. Morris.

[*Translation*]

Ms. Claire Morris (President and Chief Executive Officer, Association of Universities and Colleges of Canada): Thank you, Mr. Chairman.

My name is Claire Morris. I am President and CEO of the Association of Universities and Colleges of Canada, an organization which represents 90 universities and university colleges across the country. With me today is Bonnie Patterson, President and Vice-Chancellor of Trent University and Chair of the AUCC Board of Directors. I will hand over to her shortly.

Mr. Chairman, productivity has been a constant theme of this year's hearings. All parties recognize that an aging population and increased global competition pose major challenges to Canada's future prosperity. With our relatively small labour market, it is difficult to compete on the basis of quantity; so we must compete across the board on the basis of quality and productivity.

Increasing productivity is not about working longer hours or participating in a cost-cutting race to the bottom. As Canadians, we must have the talent and ideas to produce more for each hour worked. We must make it possible for Canadians to earn a good living while spending time with their families. And we must ensure that governments are able to pay for valued social programs.

[*English*]

Ms. Bonnie Patterson (Chair, Board of Directors, President of Trent University, Association of Universities and Colleges of Canada): Universities contribute to increasing productivity by developing the people and ideas necessary in a global knowledge economy. Canadians have heard about the knowledge economy and recognize three facts: on average, university graduates earn the highest salaries; they have the highest levels of workforce participation; and they have the lowest levels of unemployment.

Canadians are demanding access to education in unprecedented numbers. Preliminary estimates for this year suggest that there are now nearly 150,000 more full-time students than four years ago, bringing total full-time enrolment to 800,000.

Provincial governments have helped to make this growth possible through increased investments, but in constant dollars per student, government funding is still at record lows, giving rise to concerns about the competitiveness of the educational experience in our institutions. U.S. governments invest $5,000 more per student in the operating and research budgets of their four-year public universities and colleges, placing our universities at a major competitive disadvantage.

More public investment will create added capacity to offer high-quality education in a research-enriched, internationalized learning environment to more and more Canadians. At the same time, public investment is required to ensure that traditionally underrepresented groups, including aboriginal Canadians and some recent immigrant groups, are able to benefit fully from higher education.

With regard to ideas, Mr. Chairman, universities account for more than one-third of the national research effort, and Canada does a higher proportion of its research through universities than is the norm in G-8 countries. In recent years, federal and provincial investments in university research, including some $11 billion in federal funds from 1997 to 2004, have revitalized the university research effort and enhanced Canada's international reputation as an exciting place to be to conduct research.

But we cannot rest on our laurels. International competition to attract research talent and generate new discoveries is growing. Over the past decade, public investment in university-based R and D has grown dramatically around the world, and more is planned. Research is vitally important to Canada's economic future. We can no longer rely so heavily on our resource industries. To the extent that these industries remain an important part of the economy, they and the communities that depend upon them will need to add value and enhance productivity to thrive.

The university community is eager to be part of the solution to Canada's productivity challenge. The federal government has a key role to play in providing the necessary resources. Two distinct but not incompatible paths are open to the federal government in this regard: targeted investments in areas of traditional federal involvement and the creation of a federal-provincial fund for post-secondary education. With regard to targeted investments, we propose initiatives in five key areas.

First, attracting and retaining top-notch research talent requires an internationally competitive research environment in universities and building upon the momentum generated by federal investments over the past eight years. This calls for increased investments in the direct cost of research through the research granting agencies, full funding of the indirect costs the universities incur to support federally sponsored research, and competitive levels of university research infrastructure.

Second, we will need to increase the supply of individuals with research training, especially at the level of advanced degrees. As demand for advanced degrees increases throughout the economy and as large numbers of advanced degree holders retire, we must produce more master's and PhD holders. This requires investments to ensure more students can and will access graduate programs.

Third, we must ensure that more undergraduate and graduate students have an international element in their education. With strategic investments the federal government can cultivate the next generation of leaders abroad with an affinity for Canada and provide much greater opportunity for a critical mass of Canadian students to gain international experience.

● (1545)

Fourth, investments in both student financial aid and institutional outreach and support services are clearly necessary to increase the participation and attainment rates of aboriginal Canadians.

Finally, the universities need enhanced capacity to expand outreach to underrepresented immigrant groups and to provide bridging support programs and services to internationally trained professionals so they can fully participate in Canadian society.

[*Translation*]

Ms. Claire Morris: Mr. Chairman, accessibility has three dimensions—affordability, capacity and quality.

Affordability is best addressed through student assistance measures targeted to individuals and groups most in need. But governments must also ensure that universities have the capacity to provide quality education to growing numbers of students.

Federal investments in graduate education would address the capacity challenges at that level while the full payment of indirect costs related to research would reduce pressure on institutional operating budgets.

However, further investments in institutional capacity and quality will still be required, particularly at the undergraduate level. The federal government has long played a supporting role in this area, primarily through transfers.

A federal-provincial higher education fund would provide a mechanism for federal investments in institutional capacity and quality. It would allow provinces to draw down their share of the fund for purposes set out in bilateral or multilateral agreements, while providing for public accountability and provincial flexibility. Such a fund would not alleviate the need for increasing federal investments in university research.

Whatever mechanisms are adopted, federal-provincial cooperation and complementarity are essential.

● (1550)

[*English*]

In closing, Mr. Chairman, I can say investing in people and ideas will contribute to enhanced productivity, a prosperous economy, strong international influence, and the revenue base that's necessary to sustain health and social programs. Universities are keen to play their part.

Thank you.

The Chair: Thank you, Ms. Morris.

From the Canadian Foundation for Innovation, Mr. Phillipson.

Dr. Eliot A. Phillipson (President and Chief Executive Officer, Canada Foundation for Innovation): Thank you, Mr. Chair.

It's my privilege to serve as the president of the Canada Foundation for Innovation. I'm joined today by our senior vice-president, Carmen Charette.

This is the seventeenth appearance of CFI before a parliamentary committee since the foundation was founded in 1997 by an act of Parliament. Since that time the research landscape in Canada has changed dramatically as a result of the commitments made by the Government of Canada to invest in research and development in publicly funded institutions. These investments are creating jobs and leading to innovative solutions in some of today's most important and exciting areas of investigation, from bio-informatics and genomics, to nanotechnology, high-performance computing, and early childhood development.

Furthermore, the discoveries are moving from the laboratory to the marketplace. Spinoff companies are being created to supply highly demanded technology for the biotech, communications, aerospace, and other business sectors. High-quality personnel are being trained for careers in both the public and private sectors.

Eight years after its creation, the CFI has invested in nearly 4,300 projects at 127 institutions in 62 municipalities across Canada. These projects have helped to attract more than 8,000 new researchers to Canadian universities, colleges, research hospitals, and non-profit research institutes since 2000, with approximately 20% of these coming from the U.S. and 17% coming from other countries. More than 34,000 graduate students and post-doctoral students in Canada have used the state-of-the-art research facilities and equipment supported by CFI

CFI's investments are made on the basis of a rigorous assessment of merit using international standards and on the capacity of the program to enhance the training of future researchers and bring economic and social benefits to Canadians.

Today I want to speak to you about maintaining the momentum. The challenges we face as a nation early in the 21st century are well-known and have already been mentioned, namely an aging population and intensifying international competition. Canada cannot afford to slip into the global race to the bottom that will be earmarked by low-skill and low-paying jobs, nor should we want to. Rather, in the knowledge-based and highly competitive international economy, we need to ensure our competitive advantage, as new middle-class consumer markets in China, India, Brazil, and other emerging economies drive up the demand for new ideas, new products, and new services, and, most importantly, for the highly qualified personnel who produce them.

How will our nation of 33 million people compete successfully in this international environment? One solution is to ensure that the best and the brightest from around the world continue to see Canada as a destination of choice when it comes to research, development, and innovation. In meeting this challenge, the CFI has an important role to play in helping Canada compete.

Think of how far we've come in only eight short years. When CFI was created, the public sector research landscape in Canada was characterized by years of underfunding and deferred renewal of physical infrastructure. As a result, much of the equipment and facilities in Canadian universities, colleges, and research hospitals was in an advanced state of obsolescence or was entirely non-existent, and Canadian institutions were severely limited in the scope of research that could be undertaken. The institutions were at a distinct disadvantage in recruiting new faculty, particularly in their ability to provide equipment and infrastructure that were competitive with those of universities in other countries.

The result, as we all know, was a brain drain of graduate students, junior faculty, and established investigators to those countries. So just at the time that innovation was rapidly becoming the industrial doctrine of the 21st century, Canadian research institutions were falling behind in the highly competitive international research environment.

● (1555)

The creation of the Canada Foundation for Innovation in 1997 was therefore extremely timely, as were several other government initiatives, including creation of the Canadian Institutes of Health Research, the Canada research chairs program, Genome Canada, support for the indirect costs of university research, increased funding for the three federal research funding agencies, and, most recently, investment in graduate student support.

However, the rest of the world is not standing still. Like all industrialized countries, Canada will have to continue to position itself to remain competitive in the innovation-based economy of the 21st century by maintaining its commitment to the research agenda. Much like education and health care, investing in knowledge creation is not a one-time-only event, but rather requires ongoing investments to ensure the future prosperity of the country and a better quality of life for all Canadians.

Leading-edge research in the 21st century is critically dependent on having the right tools to do the job. Furthermore, the pace at which cutting-edge research infrastructure must be renewed today is radically different from even a decade ago. Imagine for a moment that I had stood before you in 1995 and boldly declared that a decade from now, Saskatoon would be home to the biggest science project in Canada in a generation; that Chicoutimi would be a world leader in developing de-icing technology for commercial use on airplane wings and hydroelectric wires around the world; that St. Mary's University in Nova Scotia would be a world leader in astronomy and astrophysics; and that coronary surgery could be performed on a patient by a surgeon or surgeons located hundreds of miles away, thanks to robotics and Internet technology developed by researchers in London, Ontario. The reaction to all of that would likely have been one of disbelief. Yet I am pleased to report that in 2005 all of the advances I've described are a reality, in large part due to investments made by the CFI to the funded institutions and their partners.

However, as the CFI enters the 2006 to 2010 phase of its mandate, the funds available for the support of research infrastructure will not be sufficient to meet future needs and to maintain Canada's international competitiveness. Specifically, if Canada is to remain competitive in world-class research, then the ratio of infrastructure support through the CFI to research funding support through the three funding agencies should be brought to a level of at least 20%. This ratio would ensure that Canadian research institutions can remain competitive with the leading institutions in the world as new technologies become available. It's also important that government recognize that a continued enhancement of the budgets of the funding agencies is also necessary. To achieve the 20% ratio that I just mentioned and maintain a balance between research funding and infrastructure support, the CFI would require an additional $1 billion in funding between now and 2010. This ratio would be comparable to that of other research-intensive countries.

In conclusion, investments made in research infrastructure serve as a beacon for the attraction of researchers, helping institutions to build their human infrastructure, which is our most important renewable resource. As a result of the investments made by the CFI, the Canadian capacity for research, development, and innovation is being dramatically enhanced in areas of strategic importance. We owe it to future generations to maintain the commitment.

Thank you, Mr. Chair, and my thanks to members of the committee.

● (1600)

The Chair: Thank you, Mr. Phillipson.

From the Coalition for Canadian Astronomy, Mr. Jolliffe.

Mr. Michael Jolliffe (Co-Chair, Industry and Vice-President, Government Relations and Communications, AMEC, Coalition for Canadian Astronomy): Thank you, Mr. Chairman, members of the committee. My name is Michael Jolliffe, and I'm the industry co-chair of the Coalition for Canadian Astronomy. With me today is Gretchen Harris, who is the co-chair representing the Canadian Astronomical Society, and unable to be with us today is Pekka Sinervo, who is the co-chair representing the Association of Canadian Universities for Research in Astronomy.

I'd like to thank the committee for inviting us here today. Since our initial appearance before the committee in 2001, Canadian astronomy has made incredible strides. Canada ranks as a world leader in astronomy, and our accomplishments have even been recently noted in *The New York Times*. That success would not have been possible without the federal government's commitment to investments of $35.9 million in the 2001 budget and $20 million in the 2003 budget.

Those initial investments are due in large part to the support that we have received and continue to receive from members of Parliament from all political parties. In 2001, the Standing Committee on Finance recommended the federal government provide the necessary funds to assure that Canada is able to realize the significant economic benefits that arise from its international participation in the next generation of astronomical observatories.

These investments represented about a third of the resources initially required to successfully launch our long-range plan, and we are back before the committee asking that the federal government fund the remaining elements of our plan.

If you examine what has been accomplished with those initial investments, you will see it has been money well spent. We will elaborate on those successes shortly.

First, though, I'd like to ask Gretchen to provide some background on the coalition.

Ms. Gretchen Harris (Co-Chair, Canadian Astronomical Society and Associate Professor, University of Waterloo, Coalition for Canadian Astronomy): Thank you, Michael.

The Coalition for Canadian Astronomy was formed in 2000 and is unprecedented in the Canadian science community. It brings together representatives from the astronomical community, from academia, and from industry to chart a course for scientific excellence in this field.

This course is clearly defined in the long-range plan and then reaffirmed in the community's mid-term review of that long-range plan. All of Canada's astronomy stakeholders have signed off on this document. It is supported by a community of international experts. Based on Canadian astronomers' science goals and expertise, the community selected only those projects that offered the best opportunity for scientific leadership internationally for Canada.

By focusing our efforts, we made it easier for government to do the same. You'll not have rival astronomers coming before you to argue for support for other astronomy projects. We fought those battles internally, and our coalition and community are united behind the long-range plan. Our coordinated effort and focus is the reason for our success, and those successes have been considerable. Canadian astronomers now have access to the world's leading astronomy projects providing unparalleled research opportunities.

We should celebrate the fact that in astronomy, the future of our scientists is in Canada. For our university partners, the benefits have been profound. New astronomy departments have been created at several universities. The number of Canada research chairs in astronomy has grown from one to 23 in four years, an exceptionally high percentage compared to other science disciplines. The number of graduate students pursuing astronomy has doubled since we launched the LRP.

These students all have access to the world's leading astronomy projects, thereby ensuring we are developing the next generation of astronomers who will keep Canada at the forefront of the field for years to come—provided, of course, that we have the needed financial support.

Our university partners take the field of astronomy and the long-range plan very seriously. The Association of Canadian Universities for Research in Astronomy was formed at the very senior levels of university administration with 20 university members, from St. Mary's University in the east to the University of Victoria in the west.

Mr. Michael Jolliffe: Lastly, our industry partners have benefited in perhaps the most tangible way. Canada has received a two to one direct return for every dollar invested in astronomy, and this direct return stems from contracts awarded to Canadian companies to design and build the world's major international observatories.

Consider just the experience of my own company, AMEC. The federal government invested $38 million to become a partner in the Gemini observatories. That led AMEC to being awarded a $44 million contract to build the enclosures for Gemini. The structural design expertise generated through that investment and with other projects has now grossed our company over $300 million.

High-tech companies all over Canada are now winning contracts to support Canada's astronomical pursuits, providing direct jobs and income to Canadians, including companies that are now for the first time becoming involved in astronomy. DiCos Technologies of Sherbrooke, Quebec, and Nanowave Technologies of Toronto are involved with the Atacama large millimetre array. INO of Sainte Foy, Quebec, is designing adaptive optics for the 30-metre telescope, and Breconridge, right here in Ottawa, in Kanata, is working on the square kilometre array.

The indirect returns are even more impressive, estimated by KPMG to be as high as 10 to 1. Work on astronomy projects has led to new business opportunities for Canadian industry in fields as diverse as MRI technology, computing imaging, and theme park rides. These spinoffs are also providing jobs and income to Canadians, constantly improving the skills of our workforce and helping keep talented labour here in Canada. Also, these skills are being transferred into the broader industrial and business sector.

It is because of these successes that the federal government should continue its investments in astronomy. We are contributing to Canada's productivity performance through new jobs, new technologies, skills development, and innovation. Not only that, we're offering opportunities for young Canadians to be the best in their fields right here in Canada.

● (1605)

Ms. Gretchen Harris: We have no doubt that a continued investment by the federal government in astronomy would be a productive one. Conversely, to walk away from astronomy funding would be profoundly unproductive. It would squander the initial investments that have been made. Canada's partnerships in international astronomy projects would be threatened. Our leading researchers and students would go elsewhere. Canadian firms would no longer be able to bid on contracts for international projects. To invest in a scientific field, let it build up to a world-leading level, and then walk away is simply not a productive use of government resources.

Canada can maintain its world leadership position in astronomy, but only if the federal government continues to invest in astronomy research. Major astronomy projects today require several international partners and long-term funding to assure our partners that our participation has a sufficient and stable foundation, which will entrust critical work to Canadians.

The private sector cannot play that role for the astronomical community. To maintain its world leadership in astronomy, the federal government must provide that investment. That is why we are so conscious of our contributions back to the Canadian economy.

Astronomy is also Canada's most productive science. Its benefits are felt in universities, government research facilities, and companies. There are outreach programs at facilities large and small throughout Canada that link hundreds of scientists to more than 10,000 amateur astronomers and hundreds of thousands of citizens and that motivate the young.

Mr. Michael Jolliffe: As mentioned, our plan spells out our specific scientific priorities for the next seven years. To fully fund that plan, the coalition now needs approximately $235 million over that time period. This is needed to maintain Canada's pre-eminence in the field. Virtually all that money will come back to Canada immediately in high-tech development. As just one example, AMEC will receive a $100 million contract by an international consortium once further funding is secured—and that is only one contract, for one project, for one firm.

Canadian astronomy's footprint is quite literally the size of the universe. We urge you to support these initiatives. Your past support has kept us in the game. Your future support will ensure that when the world looks into the universe, they see it through Canadian eyes.

Thank you, Mr. Chairman.

The Chair: Thank you, Mr. Jolliffe.

I have just a quick question. Is AMEC a private company or a non-profit?

Mr. Michael Jolliffe: AMEC is an international project management engineering company. It's a private company.

The Chair: Does it pay taxes?

Mr. Michael Jolliffe: It does. We actually pay about $80 million a year.

The Chair: Corporate taxes or—

Mr. Michael Jolliffe: Corporate.

The Chair: Okay. Thank you.

Genome Canada, Mr. Godbout.

[*Translation*]

Mr. Martin Godbout (President and Chief Executive Officer, Genome Canada): Mr. Chairman, distinguished members of the committee, esteemed colleagues, my name is Martin Godbout and, in my capacity as President and CEO of the Genome Canada, I am pleased to be here today to take part in these pre-budget consultations.

[*English*]

My message to you this afternoon is simple. I'm urging you to recommend to the Minister of Finance and his department to continue to build on the Government of Canada's unprecedented strategic investment in research and development.

Genome Canada was created almost six years ago, thanks to those R and D investments. Over that period of time we have leveraged $600 million in federal funding into more than $1.2 billion in genomic and proteomic research. We have involved over 2,200 researchers in over 100 large-scale genomics research projects in every region of Canada and in many important sectors of the Canadian economy, such as agriculture, environment, forestry, fisheries, and health. These projects were supported by state-of-the-art science and technology platforms. One of these platforms, for example, located in Vancouver, enabled Dr. Marco Marra and his team in 2003 to be the first in the world to sequence the SARS virus.

Genome Canada has also developed links with over 60 biotechnology companies, has joined and led major international consortiums, and has produced over 100 inventions and patents. Genome Canada has developed a unique international reputation as a leader in exploring the ethical, environmental, economic, legal, and social issues emerging from these new fields of human knowledge.

● (1610)

[*Translation*]

Genome Canada also has a mandate to inform the public about the benefits and risks related to genomics. To this end, the “Geee! in Genome” exhibit, organized in partnership with our colleagues from the Canadian Museum of Nature and the Canadian Institutes of Health Research, has to date reached over 500,000 Canadians from coast to coast.

Genome Canada was created in recognition of the potential of genomics technology to fundamentally alter our understanding of the world around us. Each living organism, from the smallest insect to the mightiest tree, from the fish in the seas to the crops in our fields, contains a genetic code—DNA. Understanding that code offers us insight into the building blocks of life itself.

[*English*]

With the creation of Genome Canada, this country declared to our international partners its clear intention to be among the world leaders in this new field of science.

I would like to bring your attention to the front page of this morning's *Globe and Mail*. Over 20 media and press,

[*Translation*]

including the French-language press and both written and oral media, spoke of a new discovery, a world first, made by Canadian researchers,

[*English*]

Dr. Tom Hudson and Bartha Knoppers.

In addition, according to a recent international benchmarking study of genomics and proteomics research carried out by Science-Metrix from 1993 to 2004, Canada increased both its productivity in genomics and proteomics research outputs and its level of scientific impact. Canada certainly has what it takes to continue competing with other countries in the production of excellent science.

In many ways, genomics is unique. It will touch almost every sector of our economy and benefit every aspect of our society, from the way we treat disease to how we grow crops, protect our forests, see the environment, understand life, and imagine the future.

Genome Canada's projects have attracted leading scientists from around the world and collaboration with such notable universities as Harvard, MIT, Stanford, Oxford, and the Karolinska Institute in Sweden. Mr. Chair and members of the committee, the strategic investment in R and D dollars that I mentioned in my opening remarks has put Canada on the global map of today's knowledge-based economy.

Genome Canada is positioned to capitalize on this impressive foundation of high-quality research and to seize the commercial opportunities before us. An emphasis on commercialization is not only appropriate, it is essential. It is essential for the future productivity of this country. It is essential for all Canadian citizens.

Canada has already made impressive gains. This country is now an important player in the field of genomics inventions. Indeed, together with the United States, Japan, and the U.K., Canada is one of the most important producers of genomics-related intellectual property as measured by patents granted in the United States.

This is why genomics has been called the next Internet. Just as the Internet has changed our day-to-day lives and the way we do business, genomics will expand the power of knowledge. Genomics will grow the economy. Genomics will create opportunities for countries, companies, and investors alike.

To really understand the potential before us, consider Genentech, a California-based biotechnology company that was created in 1976. Today the market capitalization of Genentech is worth more than the Royal Bank, Alcan, and Bombardier together.

The time has come for Canada to create our own Genentechs. The next three years will be critical for Genome Canada, as we believe that more than 2,000 technicians, graduate students, PhDs, and post-docs will be trained and educated in Canada in areas of genomics and proteomics research.

We will see the commercialization of products developed through research founded by Genome Canada and the Canada Foundation for Innovation over the past five years. We will see investment by venture capital firms of at least $200 million in several Canadian biotechnology companies that use genomics and proteomics technologies. We will see the revitalization of traditional industry through the application of genomics and proteomics technologies.

● (1615)

[*Translation*]

The Government of Canada has built a solid and strong foundation for genomics research and development in Canada by providing the right instrument.

At Genome Canada, we believe that our return on this federal investment and social and economic benefits is within our grasp. However, in the coming years the Government of Canada must continue to support the momentum that has been achieved, for recognizing the value of excellence that will enable our country to be on the leading edge of genomics research.

[*English*]

As I indicated earlier, I am urging you to recommend that the Minister of Finance and his department continue to build on the Government of Canada's unprecedented strategic investment in research and development.

For Genome Canada, that will require a further investment of $235 million over the next three years. Genome Canada is committed to leveraging this amount by an additional $275 million, which will come from our international partners.

By continuing to invest in genomics and proteomics research, Canada will enhance productivity across almost every sector of our economy. We will provide Canadians with access to the latest in medical, environmental, and industrial breakthroughs. We will continue to train and educate the next generation of genomics and proteomics scientists in Canada. We will attract both investment and leading researchers from around the world and help to brand Canada as a leader in the field of genomics and proteomics research.

Mr. Chair, members of the committee, thank you very much for your attention. I would be pleased to answer your questions.

The Chair: Merci, Monsieur Godbout.

What type of business is Genentech in? Is it biotechnology?

Mr. Martin Godbout: Genentech is the largest and oldest biotechnology company in the United States. It was there at the beginning of genomics and proteomics research, and less than 25 or 30 years later it's the largest market capitalization in the world.

The Chair: Merci.

Next, from le Conseil de recherches en sciences naturelles et en génie du Canada, is Mr. Lloyd.

[*Translation*]

Dr. Nigel Lloyd (Executive Vice-President and Chief Operating Officer, Natural Sciences and Engineering Research Council of Canada): Thank you, Mr. Chairman, members of the committee.

[*English*]

Thank you for the opportunity to make a presentation on behalf of NSERC. I am NSERC's executive vice-president and currently chief operating officer, filling in until we get a new president.

NSERC is in the business of wealth creation through research and innovation—creating wealth to allow us to pay for all those worthy things like health care, education, and child care. As you know, the government has dramatically increased its support for university research over the last eight years, and this has transformed the climate in our universities.

The wonderful facilities put in place mainly by the CFI, together with the Canada research chairs program, have attracted a large number of highly talented researchers, who in turn attract and train the brightest students. The brain drain of our best researchers to other countries has largely been reversed. This is great news for Canada, and we must capitalize on the opportunity it represents.

First, NSERC must provide these highly talented researchers with adequate research support. For each of the last four years we have received more than 900 first-time applications for research support. This compares to only about 250 who leave the system each year. The AUCC data suggests that this will continue for some time to come. By comparison, before the government's reinvestment in the universities began we were receiving less than 400 such applications a year, again with 250 leaving the system annually. So the net growth has gone from around 150 a year to around 650 a year. We need to provide competitive support to these people or they will leave as quickly as they came. They are highly mobile and sought after by many countries.

The second great pressure is to fund the operating and maintenance expenses of the wonderful facilities CFI and others have put in place. CFI provides some support for this, but only over the first five years. Universities are looking to us to provide ongoing support, and this pressure grows every year. Without such support these facilities will be underutilized and eventually unusable.

In addition to being able to address these pressures, we also believe we must improve Canada's ability to compete globally, and we propose to address three important opportunities.

First is to equip our science and engineering graduates with the professional skills that companies are looking for to allow them to transfer new discoveries to industry. By professional skills, I mean skills in project management, entrepreneurship, teamwork, inter-disciplinarity, etc. We plan to do this by both increasing the number of students we train in an industrial setting—we already have very successful programs that do this at the undergraduate, graduate, and post-doctoral levels—and supporting new initiatives that implement innovative new training programs in our universities.

Second, we propose to put more emphasis on research in emerging areas of strategic importance to Canada. Examples are nanotechnology, which we have already given a boost to through what we call an innovation platform; and quantum information, which is an exciting new area with enormous potential to, for example, take quantum computing from the blackboard to the drawing board, or encrypt information with unbreakable security. Canada has attracted and retained world-class expertise in this field. We are also revising our strategic areas to bring them more in line with established government priorities.

Third, we plan to increase our international activities to both allow our researchers to fully participate in international research projects—we are viewed as not always pulling our weight in this area—and promote more student and faculty exchanges of the brightest people around the world to Canada, and of Canadians to some of the best laboratories in the world.

We have heard the Prime Minister's comments about the challenge posed by the emerging economies of China, India, and Brazil, and we are developing a proposal in the first instance for increased interaction with India.

● (1620)

There is much more that I don't have time to address, such as the opportunity to expand our pilot program of support to community colleges across the country, as Gerald Brown proposed earlier.

What are we asking for? We estimate that to take full advantage of the opportunity provided by the reinvigoration of our universities would require an additional investment in NSERC of $100 million in each of the next three years, meaning that in three years our budget would be $330 million more than today, or around $1.195 million. There is additional information in the brief, which we submitted in advance.

I will stop there.

I thank you for your attention. I would be pleased to answer any questions.

The Chair: Thank you, Mr. Lloyd.

I think you were the first one under six minutes. I appreciate it. Thank you very much.

From the Ottawa Centre for Research and Innovation, we have Mr. Dale.

Mr. Jeffrey Dale (President and Chief Executive Officer, Ottawa Centre for Research and Innovation): Thank you, Mr. Chairman and committee members. It's a pleasure to be here again.

The Ottawa Centre for Research and Innovation is the local technology association in Ottawa as well as the economic development arm of the city. Our 650 members represent about 125,000 employees, mostly in the technology sector.

We are here today representing a lot of the issues that are dealt with by the technology sector.

There are 30,000 tech companies in Canada that contribute roughly $54 billion toward our national GDP and represent about 5.4% of the total Canadian GDP. In fact, according to Industry Canada, the ICT sector—the tech sector—outperforms other sectors such as the aerospace and automotive sectors in GDP, R and D, and employment.

But the technology sector is a bit different. It is an enabler of other sectors. Your thought today is, of course, on productivity. The use of technology can help to drive productivity and innovation, and not only within our own markets, but it can also help us connect to markets around the world.

In speaking to today's committee, we note, you want us to talk about productivity. Productivity is actually an outcome of what happens with inputs. It is important now to discuss what we need to have in terms of the inputs that will drive productivity in the future.

The first one I'd like to discuss is innovation. Many of my colleagues here today have discussed the importance of federal funding of research within our academic institutions and federal research labs. Canada has made an unprecedented investment in this over the last number of years in order to increase its level of involvement of federal government funding in research. We urge the committee to continue that funding, to continue the creation of innovation within our research environments.

However, innovation also happens in the private sector. Over that same period of time—the last couple of years—R and D in the private sector has actually declined. We think this is an alarming trend that we must address.

We don't have all the answers, but we have been before this committee before, and one of the tools the federal government has is the SR and ED program, the scientific research and experimental development program. This program was launched in the 1980s, and it has not had a significant review since the eighties. We have joined with ITAC and CATA, two other industry associations, and we recommend that this program be reviewed in its entirety. It is one of the tools allowing corporations to deduct qualified research they're doing for either refunds or tax credits.

We do not have the data for what costs would be involved with some of the changes that have been proposed in our brief. We just do not have access to the SR and ED files from either Revenue Canada or from the Department of Finance. But I can tell you that the business community is willing to give to put together timeframes to do a speedy review of the SR and ED programs and of the specific changes they would like to see.

After innovation comes the time to commercialize. I would like to keep my comments on commercialization to access to capital.

Access to capital is a very important aspect. Many people have talked here about the access to skills, and I echo their comments about making sure we have adequate skills to fund this innovation and commercialization. But one of the other inputs we need is access to capital. Many times we sit here and talk about venture capital—it is the media darling—and about what goes on and how much has been invested, when in reality less than 5% of all companies will have access to venture capital; 95% of the companies rely on different sources.

There are two proposals in our brief. The first one to look at is that the National Angel Organization of Canada has proposed the innovation and productivity tax credit, which is for angel investors. It would be, for qualified investors who invested in qualified companies, to the tune of about a 30% tax credit, very similar to the total tax credit that's available for labour-sponsored funds. British Columbia has implemented such a program, limited to $30 million per year for their province, and they are seeing tremendous results in the job and company creation aspects.

The second area I'd like to talk to you about in terms of access to capital is elimination of some barriers for foreign investments. There exist still within the Income Tax Act some barriers for foreign LCs—limited corporations and limited partnerships—to having direct investments in Canadian companies. There is a restriction, because when they have a liquidity event, those gains become taxable in Canada and they have a tax-free status in the U.S.

● (1625)

What results from this information in the act is that many of the companies that invest—foreign investors that come into Canada—demand that corporations be registered in Delaware or some other jurisdiction. This, of course, can cause them over time to change headquarters. There are very small provisions in the Income Tax Act that need to be changed that would eliminate these barriers and allow these companies to invest tax free, as they do in the United States. We believe the omission of this from last year, and through the changes of QLP rules, was just an oversight, and we're hoping it can be fixed up in this year's budget.

My last conversation on productivity will centre around taxation. The federal government has enjoyed record surpluses for eight years. It's an accomplishment that's not shared by any other of the G-7 countries. Among the G-7, however, we still have the highest corporate taxation rate in the OECD nations. With the surpluses, the government has the opportunity to use our current success in fiscal management to align our corporate tax rates with other international jurisdictions to assist our companies in increasing their competitiveness and also to encourage new foreign investment in Canada.

Mr. Chairman, thank you very much.

● (1630)

The Chair: Thank you, Mr. Dale.

Mr. Penson, then Mr. Desrochers, then the Liberals, then Ms. Wasylycia-Leis.

I just want to remind the witnesses, please, the members only have five minutes. That includes questions and answers, so if you can keep your answers to a brief intervention, the members would appreciate that.

Mr. Penson.

Mr. Charlie Penson (Peace River, CPC): Thank you, Mr. Chair, and thank you to the panel members for coming today.

I think I have the gist of most of the presentations, but for the colleges and institutes, I didn't get what you were asking for in terms of what the federal government component is going to be. I see you have said you need to have an upgrade in your system of $608.9 million. Is there any specific request today of the committee and the government in their pre-budget...?

Mr. Gerald Brown: Actually we had a number of requests. One was in the area of separating the post-secondary funding in a social transfer program.

The second one was in the area of equipment. The example we've used was as a result of a study we did with the federal government in looking at the equipment needs in the area of the colleges in their work, specifically in the area of apprenticeship. That amounted to roughly $600 million. When we did our own research around the entire system—because our thesis here is that if we prepare a productive, competitive, skilled workforce, we need to have the tools to train them—we think that's pretty close to $2 billion in overall needs in general across the system in Canada.

Our third request is that maybe the time has come for us to look at the EI, the Employment Insurance Act. I'm putting emphasis on the word “employment” because it's an opportunity for us to look at how to fund those who are presently employed in the workforce that we upgraded.

The last one was to deal with the whole issue in the area of applied research and the role that colleges play in research. We already have a program in place with NSERC. It has been a very successful program. It's a community-based program and it's one that we hope to see additional funding to do so. We're there thanks to the support of NSERC and we would like to have the federal government support us with additional funding.

In the area of equipment, though, specifically in the brief where it talks about roughly $600 million for the apprenticeship program, that is an example. We're looking at an amount for the system across the country.

Mr. Charlie Penson: Over what period of time are you talking for that equipment?

Mr. Gerald Brown: We'd be open to looking at it over a period of about four to five years of investment.

Mr. Charlie Penson: Okay. That's all. Thank you.

In terms of the universities and colleges, I take note that you're talking about a need for a federal-provincial higher education fund, and such a fund would not alleviate the need for increased federal investments in university research. Can you tell us what you're envisaging in this federal-provincial fund, and how it would be funded and in what amounts?

Ms. Claire Morris: The point we make in our brief is that in fact the federal government has two ways of investing in universities, and one is through the transfer fund. The proposal you have in front of you is a targeted fund, which would focus on priority areas in higher education and would allow the provinces to draw down the funding to meet their particular priorities.

The figure of $4 billion is the figure that has surfaced again and again in presentations that have been made to you. Of the figures that we've attached to our targeted funding proposals, which are in those specific areas of investment and research, the two largest are the initiatives that call for continuing investment in the research strategy that the government put together very coherently several years ago.

If you look at the combination of continuing those investments and investing in the need for additional master's and doctoral graduates, and obviously there's a very close link between them, ramped up over a four-year period—based on an assumption that you would set a target of 25% more graduate students over that period of time—those two initiatives together would total $3 billion over that four-year period.

● (1635)

Mr. Charlie Penson: The federal-provincial fund you're talking about, would that be a matching program?

Ms. Claire Morris: Typically, the provinces, through their own funding sources, contribute dollars to the universities for their operating costs. The transfers from the federal government have always been a means of support to the provincial governments, to provide the funding to the universities and degree-granting colleges.

The Chair: Thank you, Mr. Penson.

Monsieur Desrochers.

[*Translation*]

Mr. Odina Desrochers (Lotbinière—Chutes-de-la-Chaudière, BQ): Thank you, Mr. Chairman. I will be sharing my time with my colleague Mr. Clavet.

I would like to welcome our witnesses to today's meeting. We have a lot of witnesses this afternoon, and while we would have liked to have asked questions of all of you, we are going to have two priorities. In today's society, education is increasingly a hot topic.

My question is for Ms. Morris.

In Quebec, many students are concerned that the freeze on tuition fees will not be maintained as the federal government is withholding certain funding from the Quebec government. Have you evaluated the amount that the federal government would have to return to Quebec to enable the Quebec government to meet Quebeckers' expectations without having to reverse the tuition fees freeze?

Ms. Claire Morris: I apologize, but I did not fully understand your question.

Mr. Odina Desrochers: In Quebec there is currently talk of undoing the tuition fees freeze because the federal government is not providing the Quebec government with sufficient funding. At the moment, we are investing a great deal of money in education. Would you be able to tell us how much money the Canadian government would have to give Quebec to avoid the tuition fees freeze being reversed?

Ms. Claire Morris: Mr. Chairman, last year Quebec's university rectors provided figures on this matter to a parliamentary committee of the Quebec legislative assembly. If memory serves me well, it was determined that there was a shortfall of around $385 million in transfer payments for Quebec.

Mr. Odina Desrochers: To your knowledge, are any other provinces in a position whereby they will be forced to undo the freeze on tuition fees?

Ms. Claire Morris: As you know, many provinces have frozen tuition fees. Quebeckers have a lower level of schooling than Canadians in any other province in Canada. In our briefs, we repeatedly stressed the importance of helping those most in need. We therefore believe that more attention should be paid to the availability of programs providing financial support to students than to the matter of tuition fees. Lastly, I would point out that Quebec's low level of education offers a real advantage to those who do have the means to pay tuitions fees. The critical point is to ensure access to financial assistance for those in need.

Mr. Odina Desrochers: Would you like to add something, Mr. Brown?

Mr. Gerald Brown: Yes. You should know that we agree entirely with Ms. Morris. However, studies have been carried out, particularly as part of the Millennium Scholarship Program, which clearly demonstrate that students are not driven into debt by tuition fees, but by all of the other expenses incurred in the pursuit of an education. Tuition fees, particularly in Quebec, are amongst the lowest around. Tuition fees are more of an issue in other provinces; Quebec's are amongst the lowest in the country.

● (1640)

Mr. Odina Desrochers: Thank you.

I would now like to hand over to my colleague.

Mr. Roger Clavet (Louis-Hébert, BQ): Thank you. We have six parliamentarians for eleven witnesses—that is twice as many researchers as parliamentarians. I imagine that you would like to see that ratio applied to research and development in the next budget. I imagine that you would like to be allocated twice as much as you are currently receiving.

My question is for Mr. Godbout of Genome Canada. Université Laval, which is in my riding, hosts a high number of research centres where a lot of researchers are focusing their work on genomics. Nobody could accuse you of being unforthcoming about the amount of money you feel is required; you need an additional $235 million.

In return, can we expect to see products developed by Genome Canada launched onto the market in the near future?

Mr. Martin Godbout: Absolutely. My comment to you would be:

[*English*]

Don't over-promise; under-deliver.

[*Translation*]

I cannot promise anything, but bear in mind that we are talking about genomics and biotechnology. I use to be the president of Inovatech Québec, a Quebec-based venture capital investment fund.

The example of Quebec City and Laval University applies equally at the national and international level. It takes 10 years for an investment to mature. I would be lying if I said otherwise. If anybody here or elsewhere tells you that investments in genomics or biotechnology will generate profits from product sales in under 10 years, he is a charlatan.

Take the example of Quebec City. Inovatech was founded in 1993-94 and, as a result, companies which carry out clinical trials, such as Aeterna, DiagnoCure, Infectio Diagnostic and Anapharm, were set up. These companies still exist today. Some of them have launched products onto the market and are listed on the stock exchange.

Genome Canada has only been around for five years. Two years ago, we launched a competition entitled "Applied genomics and Proteomics Research in Human Health". Invitations to tender were made all across the country. One of the selection criteria was that any chosen project would have to be able to produce a product for sale within five years.

Genomics is an absolutely remarkable science which allows us to measure genes. Studying genes allows us to diagnose disease. Although Genome Canada did not make any promises, one of the selection criteria for the competition was that the chosen project would have to be able to launch a product onto the market in under five years.

Mr. Roger Clavet: In other words, when it comes to science, patience is required for a return on investment. That would seem to be what you want the government to bear in mind while it is drafting its budget. The same applies to astronomy, results are not immediately obvious. A little patience is required.

Mr. Martin Godbout: With your permission, Mr. Chairman, I would draw to your attention that while members of Parliament are elected for a five-year mandate, the impact of decisions which you make are sometimes still felt ten years down the line.

Mr. Roger Clavet: Five years would be the best-case scenario.

Mr. Martin Godbout: Yes, it is the best-case scenario.

It is a problem that we face in the biotechnology and genomics sectors, but investments will pay off. Take for example Genentech, which has a greater market capitalization than the Royal Bank, Alcan and Bombardier put together. Patience pays off.

The Chair: Thank you, Mr. Clavet.

I would remind you that this a meeting of the Standing Committee on Finance. The reason why we have six parliamentarians for eleven witnesses is that we are extremely efficient and ensure the best possible value for the money that we spend.

[*English*]

Mr. Holland, and then Ms. Wasylycia-Leis.

Mr. Mark Holland (Ajax—Pickering, Lib.): Thank you very much, Mr. Chairman, and thank you to all the deputants.

I want to come back to the issue of access in a moment, but before I do—and I'm cognizant of the fact that I have only five minutes, which is sort of a hint to those I want to ask questions of to perhaps try to keep it relatively brief—I want to talk about innovation. I think Canada's investment in innovation and research and development, including the tax climate we create for businesses to do that, is exceptionally important. We talk about a reversal of the brain drain, we talk about our desire to be productive in the future; it's absolutely imperative that we invest in these areas. I think we've done a good job, but a lot more needs to be done.

I should also say that it's interesting to see the inner universe sitting beside the outer universe in two areas that are not only having a profound impact upon science, or in terms of productivity, but that are also starting to move towards answering some fundamental questions that we've asked from time immemorial. It's really a golden age, both for astronomy and biotechnology, and genomics in particular, so let me just say at the outset that I'm extremely excited, and follow it with great interest. It's something that I think we should all be excited about. Beyond its economic output, it's something that's exciting for us as a society.

To Genome Canada, you talked about the need for $235 million over the next five years, that you're going to leverage that by $275 million outside of that. Have you also considered the economic impact of this over that period of time? When we get a request, often it's we put in this much, you put in that much, and it's going to generate this much economic activity.

Has there been any analysis done of that?

● (1645)

Mr. Martin Godbout: Yes, there are economic impacts. Again, there are three levels in science. You have the fundamental research, in which NSERC and other agencies are involved. You have agencies or organizations like Genome Canada that are doing the transfer of technology from fundamental research to more applied research. And then you have the venture capitalists. I would be in the same position today in front of my peers as the venture capitalists. The question is what your return on investment will be. It would be wise to say that it will be 15% to 20% over the next five years.

The Government of Canada, when they invested in Genome Canada, never asked about the return on investment in terms of money, so I would not answer in terms of a cash return. If the federal government provides $600 million over five years, there is no obligation from Genome Canada to return that amount, compared to an investment in the BDC, which is for-profit.

The economic performance indicator that we are measuring is brain drain. We had to stop the brain drain in Canada, and we did that. We reversed the brain drain, turning it into a brain gain.

The second big step is that we have to prepare the role, the path, for further investment in this sector by the venture capitalists, the for-profit corporations. When they want to start their own biotech company, the first step venture capitalists will ask you about is whether you have protected your technology, whether you have filed for patent. No patent, no commercialization, no venture capital, no tax credit.

So Genome Canada has an obligation, but it's not a moral obligation. We are investing a substantial amount of money. For every dollar that we invest in science, we have a system, an organization, in place all across Canada that is filing for patents.

For your information, within the past three years we went from number six in the world to number two. In terms of patent filing in genomics and proteomics, Canada is number two, behind the United States—and we say the world, because the patents are being filed mostly in the States.

So those are the performance indicators that we're measuring.

Mr. Mark Holland: If I could, to the Ottawa Centre for Research and Innovation, you talked about something similar to labour-sponsored venture capital tax credits for investments. You mentioned that was capped at a certain amount in B.C. I didn't know if I heard you right. Was it $30 million or was it...? In any event, would you suggest a similar cap in Canada, and what would you see as the cost of that program? What sort of cap would you be looking at nationally?

Mr. Jeffrey Dale: The benefit of that program is that you can set the cap. You can set how much credit you want to have accessible each and every year.

Mr. Mark Holland: But you don't have a recommendation on it?

Mr. Jeffrey Dale: No, I don't have a recommendation on the amount of cap that you would want to set with it.

Mr. Mark Holland: Thank you.

Just very quickly, for the Canada Foundation for Innovation, which I think has done fantastic work, foundations have been under attack somewhat of late, as you know, but the reality is that they do play an extremely important role.

I don't know if you want to talk about the importance of the ability for you to operate as a foundation, how that has allowed you to accomplish some of what you have done, how that structure works for you, and how you've been able to be successful at utilizing it.

Dr. Eliot A. Phillipson: Yes, thank you. I'm pleased to talk about it, and I'll make just a few very brief points.

The first is that when it approves a project , the Canada Foundation for Innovation funds 40%, and the other 60% is the responsibility of the institution. In practice, the provinces generally provide another 40% and the private sector or the institutions themselves 20%. So to date the $2.9 billion of federal government money that CFI has awarded has generated an investment of over $7 billion in the research enterprise. That's a function of the foundation's model and the funding arrangements.

The second is the nature of the projects we fund. These are often large infrastructure projects. They require a grant application cycle of 18 to 24 months, and sometimes 30 months. The design, the building, and the commissioning of the facility, depending on its size, may extend over two, three, or four years, during which we maintain very tight control over the disbursement of the funds. The disburse is done when the project meets certain milestones and conditions. That's an advantage of our funding model, because we are not obligated, of course, to disburse the funds within a budget cycle.

Finally, when it comes to recruiting, we come back here to the brain drain and the brain gain. When universities are competing for new faculty members, remember that we wish to compete with the best institutions in the world—and we do. The nature of the foundation model allows us to provide a very quick response to the infrastructure needs for that particular recruit proposed by the institution. Therefore, they're in a position to recruit on a very quick basis, and they don't have to wait for the next budget cycle for us to be able to indicate whether or not funds would be available.

● (1650)

The Chair: Thank you, Mr. Holland. Thank you, Mr. Phillipson.

Ms. Wasylycia-Leis.

Ms. Judy Wasylycia-Leis (Winnipeg North, NDP): Thank you, Mr. Chair, and to all of you for your great presentations. I've got to start with Mr. Jolliffe and Madam Harris.

You had this last year. We thought you had won the day. What happened?

Mr. Michael Jolliffe: If that were the case, we wouldn't be here today.

Ms. Judy Wasylycia-Leis: It seems so reasonable. You're asking only for $235 million over seven years. You're talking about a $100 million contract to work on the 30-metre telescope. You're talking about all kinds of kudos for Canada and the government that does it. I don't understand. What do we need to do to help you get through this year?

Mr. Michael Jolliffe: Certainly, you could recommend, as the committee did in 2001, to support getting the funding for $235 million. I should say that we obviously do have some money, as I indicated. And in the budget when that comes, you could recommend to ensure that the money is there.

Canada is ranked number one in the world in astronomy. Canada's number one exported science by citation is astronomy. The economic returns have been demonstrated over the last 30 years. They're there, and it's a great opportunity for Canada to continue that leadership role for a very minor investment and to leverage that into a fairly significant economic return.

Ms. Judy Wasylycia-Leis: I congratulate you on your perseverance, and I think we all join with you in putting this forward again.

I would like to ask a general question on education. I don't think there is anyone on this panel who would deny, and in fact some of you have said it directly, that education is key to any kind of productivity agenda and ought to be at the centre of government spending.

We're going to have some tough choices in the next while, even assuming there is about a $10 billion surplus next year. The talk of the government right now is about splitting the surplus three ways. After you take out $3 billion for contingency, which goes to the debt, it might not leave a lot for all investments in this country.

It seems to me what you've all hinted at, and said directly as well, is on the need for a complete revisiting of the education agenda, that we need to get back to the days of significant transfer, of regular significant spending at the core, and that besides all the work that needs to be going on in terms of research and innovation, we need to really look at the core of the program.

To get us back to even 1992-93 levels is going to take a lot. To get us back to even a 25% federal-provincial spending ratio is going to take a lot. It could take all of that $10 billion.

Do you have any advice generally for how we tackle this big project, how we make it the number one priority for the government, and what we say in terms of other competing demands like tax cuts and debt reduction in that context? Perhaps we could go around the table quickly.

Mr. Gerald Brown: I think what's really important here at this stage of the game is that we shift the focus. The country has been focused very much on the health of individuals and it's been an important priority. But I think the time has come now for the health of the nation, and it is very much at the educational core.

It's a huge shift in priorities, and we're hearing that now from the premiers in the provinces who are saying that, and I think the federal government has a key role. The federal government has no difficulty working in areas like universities, colleges, provinces, municipalities, and in health, so I think the time has come now to shift this from the health of the individual to the health of the nation.

● (1655)

Ms. Bonnie Patterson: Thank you for asking the question. I think our real point is that there's more than one methodology for getting there, so the structure of how this is done, we really believe, is in your hands. We've simply put out a couple of methodologies.

Second, I think the real word is “momentum”. The government has made an extraordinary investment, whether it's in the infrastructure programs, in Canada research programs, directly in research programs, or directly in institutions. The bottom line is for that investment to pay off we have to continue the momentum.

Number two, if we're going to meet future labour market needs, we've got to invest in people. What we've put out are a number of approaches to investing in people, whether it's through research that in turn invests in people, that in turn invests in higher education at the graduate level, that will in turn produce people back into the labour market.... If we're going to continue with economic, social, and cultural renewal, there has to be an increased investment. It is the number one investment regardless of whether you adjust tax regimes or not. It is those people who will contribute to the advancement of tax regimes in Canada.

Ms. Judy Wasylycia-Leis: Does anyone else want to jump in?

Ms. Gretchen Harris: I'll jump in briefly.

The issue is complex. For the best students to get the best education, they need the best professors and the best resources to do the learning. So all of these things fold in together. The best education is provided by the best support of the universities, to give the best professors the best chance to get the best students to do the learning.

The Chair: I think we're okay on time, so I want to call the meeting, because we're going to have another panel.

I want to thank the witnesses for coming here and taking time out of your day. As you can tell, we had a very similar panel, but it's still very difficult for us. It's difficult for the members to ask questions, but again, it's up to us to decipher all this information. Thank you again. It's appreciated.

The meeting is adjourned.

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