



DEBATES OF THE SENATE

1st SESSION • 41st PARLIAMENT • VOLUME 148 • NUMBER 176

UNIVERSITIES AND POST-SECONDARY INSTITUTIONS

Inquiry—Debate Continued

Speech by:

The Honourable Claudette Tardif

Tuesday, June 18, 2013

THE SENATE

Tuesday, June 18, 2013

[Translation]

UNIVERSITIES AND POST-SECONDARY INSTITUTIONS

INQUIRY—DEBATE CONTINUED

On the Order:

Resuming debate on the inquiry of the Honourable Senator Cowan, calling the attention of the Senate to the many contributions of Canadian universities and other post-secondary institutions, as well as research institutes, to Canadian innovation and research, and in particular, to those activities they undertake in partnership with the private and not-for-profit sectors, with financial support from domestic and international sources, for the benefit of Canadians and others the world over.

Hon. Claudette Tardif (Deputy Leader of the Opposition): This inquiry stands in the name of Senator Fraser, and at the end of my speech I would like the inquiry to continue to stand in her name.

Honourable senators, I am pleased to speak today to take part in the inquiry co-sponsored by Senators Cowan and Segal calling the attention of the Senate to the many contributions of Canadian universities to innovation and research.

I want to thank the senators for giving us the opportunity to celebrate the work of Canadian universities. As a former professor at the University of Alberta, I am very passionate about research and the contributions universities make to Canadian society.

Having also had the opportunity to work in university administration, I can assure you that Canadian universities are complex institutions that contribute to our society in a number of ways. First of all, they provide a public service as their role is to expand our knowledge and hand down our scientific and cultural heritage to the next generation of Canadians. They offer an ideal vantage point for taking a critical look at society. They cultivate students' independent and critical thinking. They also help train professionals and highly skilled workers in Canada.

As an employer in our communities, they contribute to the prosperity and cultural life of many regions in Canada. Universities are where researchers discover and develop new ideas, products and treatments.

It is this last role that I would like to highlight today. The research activities that push the limits of our knowledge result in improved quality of life and contribute to our long-term prosperity.

The senators who spoke to this inquiry have already talked about a number of Canadian establishments and accomplishments that demonstrate why university research is more valuable than ever.

I would like to contribute to this inquiry by highlighting some of the research conducted at the University of Alberta. For lack of time, I will only be able to present a very small sample of the many types of research and innovation.

The University of Alberta, located in the heart of Edmonton, is truly a research-intensive university. It receives almost \$500 million annually from governments, foundations and other donors for various research projects, making it one of the most important research institutions in Canada. It has almost 39,000 students, including more than 7,000 graduate students, and more than 400 separate laboratories where research is conducted in practically every field.

[English]

Notably, the university is home to several research centres dedicated to finding solutions for health and medical problems. The university is an established leader in researching virus-based diseases, such as hepatitis B and C, which affects some 600 million people in the world and approximately 600,000 in Canada. These diseases can lead to several health problems, including liver failure and liver cancer. In fact, hepatitis C, for which there is no vaccine, is the leading cause of liver transplants in Canada.

University of Alberta researchers have been at the forefront of research relating to hepatitis B and C, including Dr. Lorne Tyrrell, whose work on developing antiviral therapy for hepatitis B is now being used around the globe.

• (2120)

In the 1980s Dr. Tyrrell headed a team whose research led to the licensing of the first drug treating hepatitis B infection. For his work, Dr. Tyrrell has been named an Officer of the Order of Canada and has been handed other awards too numerous to mention.

He is currently the director of the University of Alberta's Li Ka Shing Institute of Virology. The institute was established in 2010, thanks to a \$28-million gift from the Li Ka Shing Foundation, the largest cash gift in the university's history, and \$52 million in funding from the Government of Alberta.

Along with developing new treatments, the institute seeks to attract private sector collaboration with pharmaceutical and life sciences companies in its efforts to treat and cure virus-based diseases. I am happy to note that last year, Dr. Michael Houghton, the current chair in virology of the Li Ka Shing Institute of Virology, announced the discovery of a vaccine that will potentially help combat hepatitis C. With hundreds of thousands of people being infected with hepatitis C annually, and with between 20 per cent and 30 per cent of those developing some form of liver disease, this announcement brings much hope.

Honourable senators, according to the Canadian Diabetes Association, today more than 9 million Canadians live with diabetes or pre-diabetes, a condition that, if left unchecked, puts people at risk of developing type 2 diabetes. The prevalence of diabetes has risen dramatically over the past 30 years and has been identified as the sixth leading cause of death in Canada.

As some honourable senators may know, diabetes is a disease influenced by numerous hereditary, lifestyle and social factors. An effective approach to understanding the disease can be achieved only by integrating the knowledge from many disciplines. This is why the University of Alberta's Diabetes Institute, Canada's largest diabetes research centre, brings the world's leading researchers from different disciplines under one roof to find new, collaborative ways of preventing, treating and ultimately curing the disease.

The institute was created in 2007 and is supported by both public and private funding sources, including the Alberta Diabetes Foundation. Well-known researchers at the institute are Dr. James Shapiro, Dr. Gregory Korbitt and Dr. Raymond Rajotte, who, honourable senators might be interested to know, is the cousin of James Rajotte, Member of Parliament for Edmonton—Leduc.

The three researchers, along with Drs. Jonathan Lakey, Edmond Ryan, Ellen Toth, Norman Kneteman and Garth Warnock, formed the group that helped establish the University of Alberta as a pioneer in diabetes research by developing a new medical procedure in the late 1990s, now dubbed the "Edmonton Protocol."

The procedure greatly increases the success rate of islet transplantations, a treatment that helps improve the quality of life of people suffering from severe type 1 diabetes. The treatment involves isolating islet cells from a donated pancreas and transplanting them into the liver of the patient. Although still an experimental treatment, successful islet transplantation can change a person's life. For those living with type 1 diabetes, it can mean an end to multiple daily insulin shots, constant blood monitoring and the risk of complications from the disease.

Today, the University of Alberta Hospital is home to the largest clinical islet transplant program worldwide. Its researchers have continued to work on refining the Edmonton Protocol, which has been adapted by islet transplant centres around the world and has been hailed as the biggest advance in diabetes research since the discovery of insulin.

Honourable senators, sometimes the next big thing in science can be really small. This is especially true with the science of the infinitely small nanotechnology. To put it simply, nanotechnology is the science that looks at how we can manipulate matter and build applications at the molecular and atomic level. This might sound abstract, but it holds the promise of revolutionizing our approaches to common problems in many areas, from applications in medicine and agriculture to developing alternative energy sources.

A leading centre of research and innovation in the field of nanotechnology is the National Institute for Nanotechnology, located on the University of Alberta campus. The institute was established in 2001 as a partnership between the National Research Council of Canada, the University of Alberta and the Government of Alberta. As a result, many researchers at the institute are affiliated with both the National Research Council and the University of Alberta.

The institute's building is one of the world's most technologically advanced research facilities. For those amongst you who have trouble focusing in a noisy environment, the institute houses the quietest laboratory space in Canada, which

for scientists means a place with ultra-low vibration and minimal noise, an environment that is essential for research at the nano-scale. Nanotechnology is a relatively new field of research. Therefore, many researchers at the institute are working to discover so-called design rules that will eventually lead to applications that can be put to practical use. It is work that has the potential to have long-term relevance and value for Alberta and Canada, as well as to foster innovation in support of a new generation of nanotechnology-based firms.

[*Translation*]

Honourable senators, as you know, Alberta is known for its energy resources, which have in many ways helped shape the province and its economy. However, you may be less familiar with the role played by professors and former students at the University of Alberta in the discovery and development of Alberta's oil sands. Without a doubt, one essential contribution was the invention of the hot water extraction process to separate the bitumen from the oil sands. It was developed in the 1920s by Professor Karl Clark at the University of Alberta. This bitumen extraction process is still used today.

Although this process works well technically, its environmental impact is considerable. It requires the use of large quantities of water, creates large basins of toxic waste and releases huge amounts of carbon dioxide into the atmosphere.

In 2005, the engineering faculty at the University of Alberta created the Centre for Oil Sands Innovation. It is funded in part by members of the petroleum industry and the National Research Council of Canada. Its goal is to develop more environmentally friendly and energy-efficient ways to develop the oil sands, to replace the hot water extraction process.

One of the main areas of research at the centre is the development of an extraction method that will reduce water use by 90 per cent and reduce or eliminate the need for tailings ponds. The process is based on a reusable, gasoline-based solvent that is injected into the oil sands rather than the use of hot water. Although this process is still at the experimental stage, the centre's director described this emerging extraction technology as having the potential to revolutionize the industry.

Honourable senators are no doubt aware that the University of Alberta is home to Campus Saint-Jean, the only francophone university west of Saint-Boniface. Campus Saint-Jean plays a very special role in the Franco-Albertan community. In addition to its training and research mandate, Campus Saint-Jean also plays a key role in preserving and promoting the French language and culture in Alberta. The institution is located in the heart of Edmonton's francophone neighbourhood and it has a very close relationship with the Franco-Albertan community, which derives great benefit from the institution's vitality and contribution.

In terms of research, the institution's researchers base their work in large part on the social context of the Franco-Albertan community, which is in a minority situation and has to fight against assimilation.

• (2130)

Since the 1970s, researchers associated with Campus Saint-Jean have been making a special effort to promote Franco-Albertan heritage, advance the language rights of francophones and respond to the specific education needs of minority francophones.

Since 1987, Campus Saint-Jean has been offering a specialized training program for teachers in francophone minority settings, the only program of its kind in Canada at the time.

Campus Saint-Jean was also one of the first institutions to offer a training program in immersion education, and has contributed to research in that area.

May I request an additional five minutes?

The Hon. the Speaker *pro tempore*: Is it your pleasure, honourable senators, to grant an additional five minutes?

Hon. Senators: Agreed.

Senator Tardif: Campus Saint-Jean is also home to the Canadian Studies Institute, which is known for the quality of work done by its researchers on Canadian Francophonie and federalism. The institution's research focuses on French-speaking Canadian populations, their history, their culture and their governance. Take, for example, the work of Professor Donald Ipperciel, who received the Campus Saint-Jean award for excellence in research in 2009 and who is the Canada Research Chair in Political Philosophy and Canadian Studies. He is interested in studying Canadian nationalism in order to better understand Canadian history from both English- and French-speaking perspectives, as well as relationships with First Nations and other multicultural groups.

Another Campus Saint-Jean initiative that is worthy of note is the Institute of Western Canadian Francophone Heritage, which seeks to preserve, promote and share Franco-Albertan heritage.

The current director of the institute is François McMahon, former dean of Faculté Saint-Jean. The institute published the

first overview of the Franco-Albertan community's history, which was written by France Levasseur-Ouimet, professor emeritus and writer in residence at Campus Saint-Jean.

In recent years, research efforts at Campus Saint-Jean have been closely tied to Gilles Caron's court case. He is a French-speaking Albertan who is challenging the unilingual status of Alberta and Saskatchewan. Professor Edmund Auger, now retired, discovered long-forgotten, historic documents that prove that Rupert's Land and the North-Western Territory — which now make up the bulk of the Western provinces — were primarily francophone in the 19th century. Therefore, the language rights of francophones in the West should have been guaranteed from 1869 onwards. According to Professor Auger, the continued protection of those rights was promised in a royal proclamation approved by the Queen in December 1869. Those rights were also unanimously approved by a major joint constitutional convention of francophones and anglophones who met at Red River in early 1870. Professor Auger's research provided a historical basis for Mr. Caron's defence and could ultimately be used to advance the language rights of francophones in Alberta and Saskatchewan. Alberta's Court of Appeal is currently looking at the matter, which will likely be referred to the Supreme Court of Canada.

Honourable senators, I would like to conclude by reiterating that research and innovation have been and continue to be essential to improving and maintaining the living conditions of Canadians and all people. Research allows us to better understand ourselves and the world. I hope that this small sample of the numerous research activities at the University of Alberta has demonstrated the importance of university research and the high quality of research being done at this university in my province.
