



Recent Progress on Science, Technology and Innovation Cooperation between Japan and Canada



Takashi NISHIYAMA
The Embassy of Japan in Canada

Nov. 21, 2011
Canada-Japan Nanotechnology Workshop at Waterloo

■ ***S&T Agreement between Japan and Canada***

- S&T Agreement
- 25th Anniversary of S&T Cooperation

■ ***Overview of the last CJJC meeting***

■ ***Recent Progress in cooperation on:***

- stem cells and regenerative medicine
- sustainable energy technologies
- advanced materials

■ ***Canada-Japan Nanotechnology Workshop***

Self-Introduction



❑ **Science attache**
in the Embassy of Japan, Canada

❑ **Originally from MEXT**
(MEXT: Ministry of Education, Culture, Sports, Science
and Technology)



西山崇志

❑ **A government officer** on issues mainly concerning
science, technology and innovation policies, graduate
school policies and nuclear R&D policies for peaceful-use

❑ **Born in 1976**

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□ Agreement between the Government of Japan and the Government of Canada on Cooperation in Science and Technology;

- ✓ Established in 1986
- ✓ **This year is 25th Anniversary of the Agreement**

□ The Agreement includes;

- ✓ Developing cooperative activities in science and technology in such fields as may be mutually agreed
(Article 1)
- ✓ Establishing **Canada-Japan Joint Committee on Science and Technology Cooperation (CJJC)**
(Article 4.1)
- ✓ CJJC meets in principle 2 years
(Article 4.2.)

25th Anniversary of S&T Cooperation (1/2)



- ❑ Commemorative events in both countries
- ❑ **First Japanese Astronaut Dr. Mamoru Mohri visited Canada in September 2011**
 - ✓ Montreal, Ottawa and Vancouver
 - ✓ Met with Hon. Gary Goodyear, Minister of State (Science and Technology) and Hon. Christian Paradis, Minister of Industry
 - ✓ Public lectures on space and science, technology and innovation



Met with Hon. Gary Goodyear,
Minister of State(Science and Technology)



Met with Hon. Christian Paradis,
Minister of Industry



Public lecture by Dr. Mohri at the Canadian Museum of Civilization, a special event of the Japanese Exhibition; "Japan: Tradition. Innovation."

25th Anniversary of S&T Cooperation (2/2)



□ 25th Anniversary Celebration of the Canada-Japan S&T Agreement in Kyoto, Japan in October 2011

- ✓ Attendance of Hon. Ed Fast, Minister of International Trade
- ✓ Honoring of Dr. Shizuo Akira, Osaka University for his receipt of the 2011 Gairdner International Award
- ✓ The **signing of MOU between JST and NSERC** in support of **joint funding** for Canada-Japan research partnerships in the area of **Renewable Energy and Energy Use**



Hon. Ed Fast, Minister of International Trade and
Dr. Shizuo Akira, Osaka University



Signing ceremony of MOU between JST and
NSERC

(Ref.)

2011 Canada Gairdner Awards



□ **Canada Gairdner Awards;**

Recognition of individuals whose work or contributions constitute tangible achievement in the field of medical science.

□ **Dr. Shizuo Akira** was one of the recipients of the 2011 Canada Gairdner International Awards;

For their ground breaking discoveries and definition of the family of Toll like receptors and the array of microbial compounds that they recognize to provide innate resistance to infection (Immunology).



Dr. Shizuo Akira,
Osaka University



Hon. Leona Aglukkaq, Minister of Health and
H.E. Kaoru Ishikawa, Ambassador of Japan to Canada

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Overview of the last CJJC meeting (1/2)



❑ **The 11th CJJC** at Ottawa on November 9, 2010
(CJJC: Canada-Japan Joint Committee on Science and Technology Cooperation)

❑ **Co-chaired by;**

Mr. Ian Burney, Assistant Deputy Minister, DFAIT (then)-CANADA

Mr. Makoto Yamanaka, Ambassador for S&T Cooperation, MOFA (then)-JAPAN

❑ **Outcomes:**



(1) It was determined that the funding document; **Funding Opportunities for Canadian-Japanese S&T Cooperation and Exchange** would be published on respective Canadian and Japanese websites

Funding Opportunities for Canadian-Japanese
S&T Cooperation and Exchange

-This document is aimed to inform all relevant sectors (including administrative officials, researchers, students, and industries) of funding opportunities for Canadian-Japanese S&T Cooperation and Exchange.

-It will be open to the public with mutual understandings in the Joint Committee.

-It is expected to be revised for each Joint Committee, to give up-date information.



Canada-Japan Joint Committee on Science
and Technology Cooperation
Nov. 9th, 2010 at Ottawa, Canada

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1. Bi-/ Multilateral Research Project -based Cooperation		
Targeted Scientists	Japan's scheme	Canada's scheme
Research Groups	JSPS G8 Research Councils Initiative <ul style="list-style-type: none">- Overview: New multilateral research funding program for a remedy against well-known global problem which can be on a long run, achieved by global and other interdisciplinary scientific approach. It has been managed under the cooperation by funding agencies in G8 countries. (NSERC from Canada participates)- Funding amount: up to JPY 150 million/project/year- Support duration: 2 - 3 years- Eligibility: Research groups in G8 countries- Application to: Leading PI submits application to Call Secretariat (which is one of the participating organizations)- Deadline: Middle of May- Further information: http://www.iesp.go.jp/iesp/ndv/ie-bottom01_b_gaibo.html- Contact: platform-up@iesp.go.jp	NSERC Collaborative Research and Development Grants (CRD) <ul style="list-style-type: none">- The CRD program supports R&D projects undertaken by university researchers and their private-sector partners. Awards cover up to half of the direct project costs, with the industrial partner (s) providing the balance in cash and in-kind.- Collaborations are expected to result in industrial or economic benefits to Canada.- Partner companies operating from a Canadian base must participate in project, contribute at least half of the resources, and exploit the research results in Canada. Other partners (foreign universities or companies) can join these partnerships.- CRD awards range from \$10,000 to \$500,000 per year for 1-5 years. The application success rate is approximately 85 percent.- Year-round applications.
Research Groups/ Individual Collaboration	JSPS-CIHR Bilateral Program <ul style="list-style-type: none">- Overview: Support for joint research projects carried out between researchers from Japan and Canada. Proposals are openly recruited and jointly selected by JSPS/CIHR.- Funding amount: Up to JPY 2.5 million/project/year- Support duration: 1-3 years- Eligibility: Applicants must hold a full-time or equivalent position as a researcher at a university or research institute in Japan.- Application to: Japanese project leader submits application to JSPS while Canadian project leader submits to CIHR.- Deadline: Middle of September- Further information: http://www.iesp.go.jp/iesp/ndv/ie-bilateral/mega.html- Contact: nikokuam@iesp.go.jp	JSPS-CIHR Bilateral Program (Japan-Canada Joint Health Research Program) <ul style="list-style-type: none">- Overview: Support for joint research projects carried out between researchers from Japan and Canada in identified research areas. Proposals are openly recruited and jointly selected by JSPS/CIHR.- Funding amount: Up to \$CAN 30,000/year- Support duration: Up to 2 years- Eligibility: Applicants must hold a permanent position with universities or affiliated research institutes in Canada.- Application to: Japanese project leader submits application to JSPS while Canadian project leader submits to CIHR.- Deadline: potential research in 2011-12- Further information: iba- Contact: plab@cihr-iesp.gc.ca

http://www.mofa.go.jp/mofaj/gaiko/technology/nikoku/ja_ca.html

and

<http://scienceportal.jp/trend/report/canada.html>

Overview of the last CJC meeting (2/2)



□ Outcomes:

(2) **Agreement on the Framework on Research Cooperation**

- Prioritized Research Cooperation Fields(**PRCF**)
 - ✓ **Stem cells and regenerative medicine (Life Sciences)**
 - ✓ **Advanced materials (Nanotechnology)**
 - ✓ **Sustainable energy technologies (Clean Energy and Environment)**
 - ✓ **S&T support in developing countries**
- For **Advanced materials** and **Sustainable energy technologies**, further precision was requested and **both sides determined to define the subsectors more narrowly.**

(3) With the consensus of DFAIT and MEXT, **NSERC and JST** will work to establish **joint funding** for cooperative research projects in the area of **environmental science and technologies and energy.**

➡ **MOU** was signed in Kyoto October, 2011.



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Recent Progress in cooperation on stem cells and regenerative medicine



□ Major existing cooperation:

- ✓ MOU on research collaboration between CiRA, the Kyoto University and the University of Toronto in October 2008

□ Japan-Canada stem cell workshop

- ✓ First workshop in Toronto in June 2011



- ✓ Second workshop being planned at Yokohama, Japan in June 2012

...at the occasion of the annual meeting of the International Society for Stem Cell Research (ISSCR)

□ Joint funding for cooperative research projects in the area of stem cell and epigenetics being discussed between JST and CIHR

(Note:)

CiRA: Center for iPS Cell Research and Application

(Ref.) Distinguished Scientists in Stem Cell Research



Dr. Ernest A. McCulloch,
Canada
(1926-2011)



Dr. James E. Till,
Ontario Cancer Institute,
Canada



Dr. Shinya Yamanaka
CiRA, Kyoto University
Japan

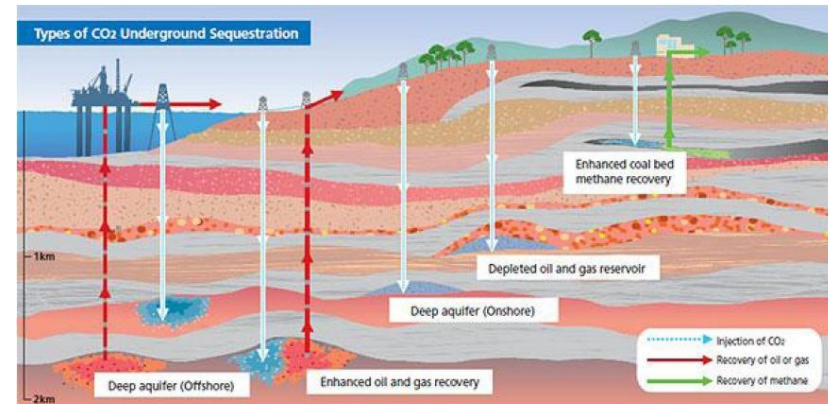
For the discovery of stem cells and the development of iPS cells

Recent Progress in cooperation on sustainable energy technologies



□ Major existing cooperation:

- ✓ Joint **CCS project** between Sojitz and Saskatchewan Power Corporation (SaskPower), signed in February 2010
- ✓ Collaboration on Energy and Environmental Technology Development, including **CCS, renewable energy and smart grid technologies** between Hitachi and Saskatchewan, signed in May 2010



Source: CO₂ Underground Sequestration, IPCC (Intergovernmental Panel on Climate Change)

□ CCS Mission

- ✓ September 2009: Japanese Mission to Canada
- ✓ February 2011: Canadian Mission to Japan

□ The signing of MOU between JST and NSERC in support of **joint funding** for Canada-Japan research partnerships in the area of **Renewable Energy and Energy Use**, in October 2011

Recent Progress in cooperation on advanced materials



□ Major existing cooperation:

- ✓ MOU on research cooperation between Japan's *National Institute of Advanced Industrial Science and Technology (AIST)* and Canada's *National Institute of Nanotechnology (NINT)*, signed in September 2006
- ✓ MOU on a partnership agreement between *Nagano Techno Foundation* and *Nano-Quebec*, signed in February 2009
- ✓ Comprehensive MOU between Japan's *National Institute for Material Science (NIMS)* and *Waterloo Institute for Nanotechnology (WIN)*, *University of Waterloo*, signed in February 2010



NINT, Edmonton



Signing ceremony of MOU between NIMS and WIN

Recent Progress in cooperation on advanced materials



□ Major existing cooperation:

- ✓ Partnership agreement between *Shinshu University* and *Canadian universities including the University of Montreal and Concordia University*, signed in June 2010
- ✓ MOU on research cooperation (nanotechnology and green chemistry) between *RIKEN* and *McGill University*, signed in July 2010

□ Nanotechnology Mission

- ✓ February to April 2009: Missions to Japan and Canada

□ And... Canada-Japan Nanotechnology Workshop

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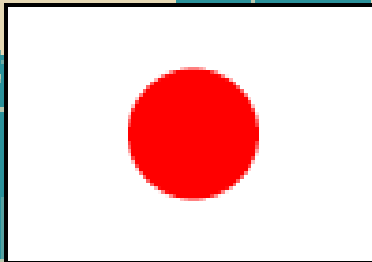
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■ *Canada-Japan Nanotechnology Workshop*



- A workshop for mainly scientists and researchers in the field of nanotechnology, proposed by the Governments of Japan and Canada
- ...to the next level, more actively promoting nanotechnology cooperation in the two countries...but how we can do it effectively...?
- Enhanced understanding of the current status of bilateral cooperation in nanotechnology, as well as increased sharing of concerns and issues
- Discussion to set priority areas and to find a way, in order to enhance cooperation in nanotechnology in the two countries

Thank you for your attention!



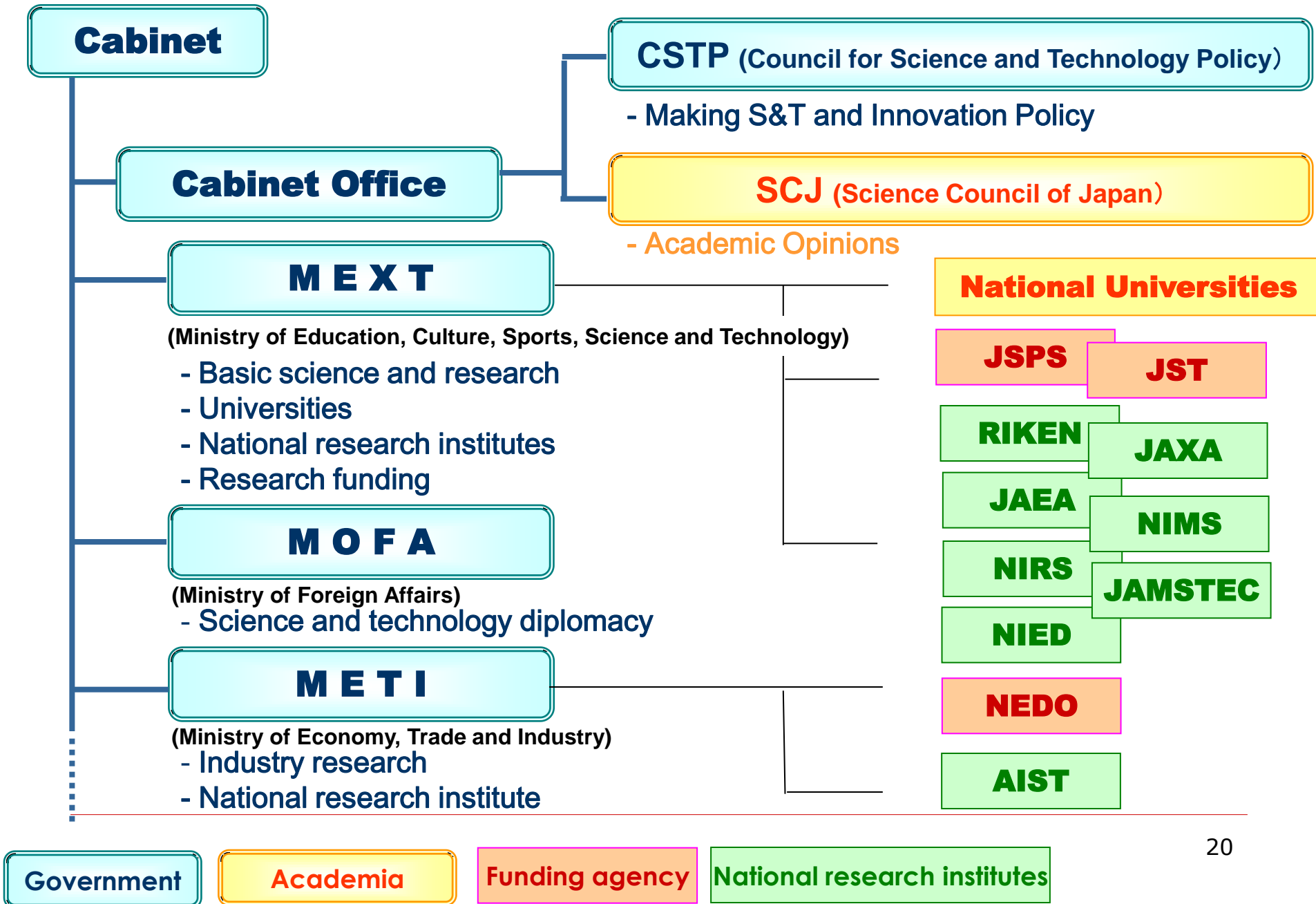
If any questions, please contact...

Takashi NISHIYAMA

First Secretary, the Embassy of Japan (Ottawa)

takashi.nishiyama@mofa.go.jp¹⁹

(Ref.) Japanese Government structure of S&T policy

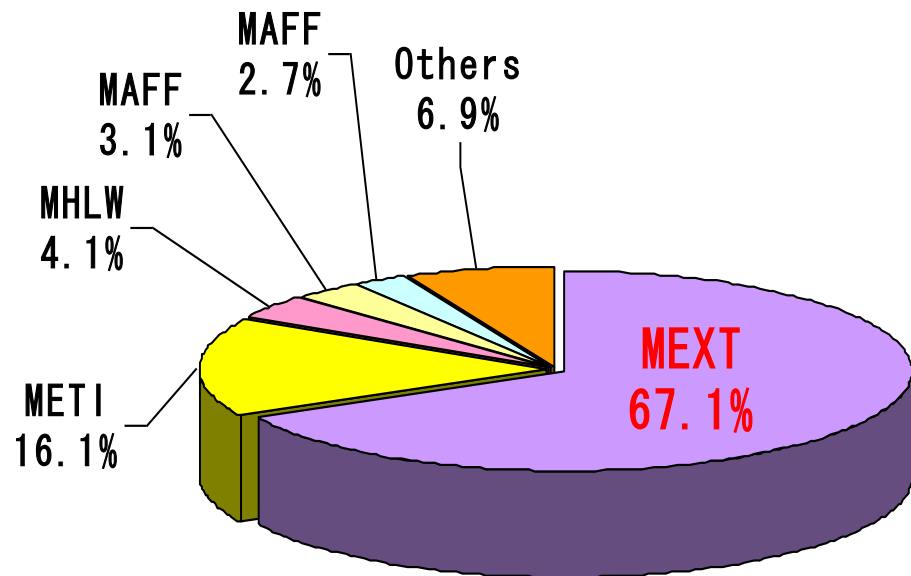


(Ref.) Some S&T Indicators Comparison Between Canada and Japan

	Canada (2008)	Japan (2009)
R&D amount (total)	¥ 2.5 trillion (CAD 29.8 billion)	¥ 17.2 trillion
Ratio of expenditure by the Government	24.2 %	20.3 %
Ratio of R&D expenditure against GDP	1.87 %	3.62 %
Number of researchers	148,980	839,000

(Ref.)

Japan S&T-Related Budget in FY2011



Ministry	FY2011 S&T-Related Budget	
	(billion JPY)	(billion USD)
MEXT	2,449	30.6
METI	586	7.3
MHLW	150	1.9
MAFF	114	1.4
MOD	97	1.2
Others	252	3.2
Total	3,649	45.6

	Ministry of Education, Culture, Sports, Science and Technology (MEXT)
	Ministry of Economy, Trade and Industry (METI)
	Ministry of Health, Labor and Welfare (MHLW)
	Ministry of Agriculture, Forestry and Fisheries (MAFF)
	Ministry of Defense (MOD)
	Others

NOTE The exchange rate : 1 USD = 80 JPY

(Ref.) Active Information Exchanges by the Governments leaders and senior scientists in 2011

On February 18, 2011



Dr. Arthur Carty, Executive Director, Waterloo Institute for Nanotechnology and
Dr. Masuo Aizawa, Executive Member, CSTP

On September 22, 2011



Hon. Christian Paradis, Minister of Industry and
Dr. Mamoru Mohari, First Japanese Astronaut

On September 22, 2011



Hon. Gary Goodyear, Minister of State (Science and Technology) and
Dr. Mamoru Mohri, First Japanese Astronaut

On September 30, 2011



Hon. Koichiro Gemba, Minister for Foreign Affairs and
Hon. Ed Fast, Minister of International Trade

On October 1, 2011



Hon. Ed Fast, Minister of International Trade and
Dr. Shizuo Akira, Osaka University

On October 25, 2011



Hon. Masaharu Nakagawa, Minister of Education, Culture, Sports, Science and Technology and
Dr. Howard Alper, Chair, STIC