



## Opening, Keynote, Luncheon Speeches

### ✚ Nobel laureate stresses need to fund big science

#### **Keynote Speech: "The science of SNO and SNOLAB", Opening Speech by Dr. Arthur McDonald**

CSPC 2015 - November 25, 2015

*Speaker:* Dr. Arthur McDonald, Director, Sudbury Neutrino Observatory; Professor Emeritus, Queen's University; Nobel Prize Winner for Physics (2015)

#### **Takeaways and recommendations**

- ✓ Big science facilities need ongoing funding for operations, maintenance and research
- ✓ Back big science initiatives with "natural" advantages
- ✓ Allow federal labs to conduct both basic and applied research
- ✓ Canada Foundation for Innovation a proven model for funding big science facilities
- ✓ Involve industry where appropriate, but not at expense of basic science

### ✚ How science can best service policymakers

#### **Keynote Session: Science Advice to Government**

CSPC 2015 - November 25, 2015

*Panelists:* **Maryse Lassonde**, President elect, Scientific Director, Royal Society of Canada, Fonds de Recherche du Quebec-Nature et Technologies; **Alan Bernstein**, President & CEO, Canadian Institute for Advanced Research; **Arthur Carty**, Executive Director, Waterloo Institute for Nanotechnology at the University of Waterloo; **Sir Peter Gluckman**, Chief Science Advisor to the Prime Minister of New Zealand; **Remi Quirion**, Chief Scientist Officer, Government of Quebec

## Takeaways and recommendations

- ✓ Establish a sound science advisory system based on best practices in other countries
- ✓ Reinstate a national or chief science advisor and chief scientists in key science-based departments
- ✓ Commit to an open dialogue with scientists and the public on a long-term vision for science, technology and innovation
- ✓ Establish firm principles prescribing science-government relations and the use of evidence into the policymaking process
- ✓ Create a Parliamentary Office of S&T
- ✓ Ensure science advice is independent
- ✓ Create direct reporting lines to decision-makers
- ✓ Focus on evidence to inform policy, distinguishing that from policy for science
- ✓ Honest brokerage is not advocacy
- ✓ Acknowledge the limits of knowledge and report in probabilistic terms
- ✓ Trust in science advice is critical

## **Federal approach to S&T ready to evolve**

### **Keynote: Luncheon Session with Bruce Archibald**

CSPC 2015: November 26, 2015

*Speaker:* **Bruce Archibald**, DM Champion, Federal Science and Technology Community; President, Canadian Food Inspection Agency

## Takeaways and recommendations

- ✓ Establish a framework for federal leadership on science and technology
- ✓ Create a federal S&T governance board that will bring coherence to Canada's S&T ecosystem
- ✓ Develop a streamlined approach to attracting and retaining talent in federal science initiatives
- ✓ Take further steps in optimizing open science for greater collaborative opportunities
- ✓ Develop new mechanisms for better collaboration between federal departments, between countries and with industry and academia
- ✓ Invest in government laboratories and S&T infrastructure

## Theme: The Impact of Transformative and Converging Technologies on Private Sector Innovation Productivity

### Services supply firms' key to success in deep mining sector

#### **Panel: Challenges Associated with Transferring New Technologies to the Mining Industry**

Organized by the Centre for Excellence in Mining Innovation  
CSPC 2015: November 26, 2015

*Panelists:* **Adi Treasurywala**, ArrowCan Partners Inc.; **Wayne Ablitt**, President, Jannatec Technologies; **Zachary Mayer**, Manager, Mine Technical Services, Glencore's Kidd Operations; **Douglas Morrison**, President & CEO, Holistic Mining Practices, Centre for Excellence in Mining Innovation; **Sylvie Nadeau**, Professor, École de technologie supérieure.

#### **Takeaways and recommendations**

- ✓ Mining innovation creates new businesses, particularly in the services supply sector
- ✓ Technology development and adaptation key to mining extraction at greater depths
- ✓ Strong correlation between market price of metals and the level of innovation in mining sector
- ✓ Commercialization of technology in the mining sector is highly competitive
- ✓ The services supply sector drives innovation as these companies are most interested in selling new technologies
- ✓ Public-private collaboration can reduce time-to-market by half

### Disruptive technologies: the pitfalls and opportunities

#### **Panel: Disruptive Technologies**

Organized by Ryerson University  
CSPC 2015: November 26, 2016

*Panelists:* **Wendy Cukier**, Vice-President Research and Innovation, Ryerson University; **Dr. Michelle Chrétien**, Program Manager, Strategic Research, Xerox Research Centre of Canada; **Mohamed Elmi**, PhD Student/Research Associate, Information Systems, University of Cape Town/Ted Rogers School of Management's Diversity Institute; **Martin Lavoie**, Director, Innovation, Canadian Manufacturers & Exporters; **Colin McKay**, Head, Public Policy and Government Relations, Google Canada

## Takeaways and recommendations

- ✓ Disruptive technologies disrupt existing business models
- ✓ Universities need new incentives to deliver the skills industry needs
- ✓ Increase digital literacy and STEM education, from kindergarten to post-secondary
- ✓ Encourage greater ICT adoption by companies
- ✓ Disruption can be minimized through open science and science communication
- ✓ Social sciences and humanities can help policymakers better prepare for these changes
- ✓ Modernize regulations to support disruptive technologies

## ICT base strengthens resilience of city regions

### Panel: Creating Digital Opportunity for Canada: Challenges and Emerging Trends

Organized by Innovation Policy Lab, Munk School of Global Affairs, University of Toronto  
CSPC 2015: November 26, 2015

*Panelists:* **David Wolfe**, Co-Director, Innovation Policy Lab President and CEO, Cybera;  
Panelists: **Catherine Beaudry**, Professor, Department of Mathematics and Engineering, Polytechnique Montréal; **Tijs Creutzberg**, Program and Business Development Director, Council of Canadian Academies; **Adam Holbrook**, Associate Director, Centre for Policy Research on Science and Technology, Simon Fraser University; **Tara Vinodrai**, Associate Professor, School of the Environment, University of Waterloo

## Takeaways and recommendations

- ✓ Urban centres with strong concentration of digital technologies are resilient to economic downturns, even when anchor firms fail
- ✓ When large companies like Nortel Network or Blackberry fail, much of the talent they attracted to their respective regions remains
- ✓ Strong, enduring industry-academic linkages are a key building block to achieving and maintaining economic growth
- ✓ Long-term, company-specific data needed for effective policy decisions to sustain regional growth

## Incentives needed to drive innovation in antimicrobial resistance

### Panel: The Role of Innovation in Addressing Antimicrobial Resistance

Organized by Industry Canada  
CSPC 2015 - November 27, 2015

*Panelists:* **Dr. Roman Szumski**, Vice-President of Life Sciences, National Research Council;  
*Panelists:* **Patrice Allibert**, CEO, GenePOC; **Brigitte Nolet**, Head of Global Health Policy, F. Hoffmann-La Roche Ltd.; **Dr. Marc Ouellette**, Scientific Director, Canadian Institutes of Health Research (CIHR); **Dr. Sameeh M. Salama**, Vice President, Business Development, NAEJA Pharmaceutical Inc; **Angela Wittlesberger**, Scientific Officer, Innovative Medicines Initiative;  
**Dr. Gerry Wright**, Director, Michel G. DeGroote Institute for Infectious Disease Research, McMaster University

### Takeaways and recommendations

- ✓ Create programs that help bridge the gaps between discovery, clinical testing, development and market
- ✓ Consider a federal framework for AMR similar to U.S. and Europe
- ✓ Incentivize and reward the sustainable use of antibiotics
- ✓ Reward novel discoveries and approaches
- ✓ Create more partnerships between academia and industry
- ✓ Encourage international partnerships between various funders and AMR programs
- ✓ Create partnerships that keep resources and talent within Canada

### Entrepreneurship training now the norm at Ontario schools

Panel: **The Role of Post-secondary Institutions in Building Ontario's Entrepreneurial Class**

Organized by the Ontario Ministry of Research and Innovation (MRI)

CSPC 2015: November 27, 2015

*Panelists:* **Bill Mantel**, Assistant Deputy Minister, MEDEI/MRI; **Tony Bailetti**, Director, Technology Innovation Management, Carleton University; **Steve Farlow**, Lazaridis School of Business & Economics, Wilfrid Laurier University; **Deepak Gupta**, Director for Applied Research, Innovation, and Entrepreneurship Services, Centennial College; **Francine Schlosser**, Director, Research and Interdisciplinary Learning, Entrepreneurship, Practice, and Innovation Centre, University of Windsor; **Abdullah Snobar**, Executive Director, DMZ, Ryerson University

### Takeaways and recommendations

- ✓ Champion an institutional commitment to entrepreneurship
- ✓ Provide exposure to entrepreneurship education, programs and services
- ✓ Actively promote entrepreneurship as a career option
- ✓ Build companies within the institution and link them to the broader business community

# Theme: Big Science in Canada: Realizing the Benefits

## Big science facilities driving international collaboration

**Panel Session: Are we Jupiters' in the celestial field of science?**

**Organized by: SNOLAB**

CSPC 2015 - November 25, 2015

*Panelists:* : **Timothy Meyer**, Chief Operating Officer, Fermi National Accelerator Laboratory;  
*Speakers:* **Johnathan Bagger**, Director, TRIUMF; **Robert Lamb**, Chief Executive Officer, Canadian Light Source; **Dugan O'Neil**, Chief Science Officer, Compute Canada; **Nigel Smith**, Director, SNOLAB

### Takeaways and recommendations

- ✓ Big science is a long-term game, with research solutions leading to technological advancement, industry engagement and economic impact
- ✓ Big science facilities encourage international collaboration and leverage benefits for Canadian and foreign participants alike
- ✓ Advanced research computing is essential to collaboration and must be constantly upgraded
- ✓ Significant investment is needed to scale the benefits of big science facilities from individual researchers to society at large
- ✓ Canada is a small country and must identify niches where it can excel and succeed
- ✓ Issues faced by large science facilities can't be addressed by a bottom-up, proposal-driven funding model. It's time for Canada to take a second look at how these facilities are supported.

## CSPC shares ideas for governing and funding big science facilities

**Plenary Session: International Perspectives on Big Science in Canada: Where Should Canada Go?**

**Organized by: Canada Foundation for Innovation**

CSPC 2015 - November 26, 2015

*Panelists:* **Gilles Patry**, President and CEO, Canada Foundation for Innovation; **Catherine Ewart**, Head of Stakeholder and International Relations, Science and Technology Facilities Council, U.K.; **Rolf Heuer**, Director General, CERN; **Nigel Lockyer**, Director, Fermi National Accelerator Laboratory

## Takeaways and recommendations

- ✓ Canada needs a vision and roadmap for big science
- ✓ Funding for big science is the responsibility of countries and the public sector
- ✓ A big science model should be fair and flexible
- ✓ Governance and accountability are key
- ✓ A user facility should be both host and participant to ensure excellence
- ✓ For CERN, all funding agencies agree on a plan and oversee its execution
- ✓ Canada should become a member of CERN

## Big science redefining the boundaries of collaboration

### Panel: Science Without boundaries

CSPC 2015: Organized by TRIUMF

November 26, 2015

*Panelists:* **Andrew Potter**, Editor, The Ottawa Citizen; **Jonathan Bagger**, Director, TRIUMF; **Bob Crow**, Executive in Residence, Institute for Quantum Computing, University of Waterloo; **Mark Dietrich**, President and CEO, Compute Canada; **Heather Douglas**, Waterloo Chair in Science and Society, University of Waterloo

## Takeaways and recommendations

- ✓ Science can be an incredible platform to drive national and international collaboration. It is important to consider how we can better enable this
- ✓ Consider academic structures that allow more cross-disciplinary opportunities
- ✓ Create more partnerships between industry, government and academia
- ✓ Look to address boundaries existing within Canada and how we might overcome these
- ✓ Build capacity in Canada to retain talent and resources
- ✓ Look carefully at the policy culture of international partners
- ✓ Partner equally with science capacity in developing countries
- ✓ Consider local issues when partnering to ensure inequalities are not exacerbated

## Theme: Transformation of Science, Society and Research in the Digital Age: Open Science, Participation, Security and Confidentiality

### ✚ Why Canada needs a national digital literacy strategy

#### Panel: Digital Literacy: What is going to make the real difference?

Organized by Actua

CSPC 2015 - November 25, 2015

*Panelists:* **Aaron Brindle**, Communications Manager, Google Canada; **Miles Berry**, Principal lecturer for Computing Education, University of Roehampton; **Jennifer Flanagan**, CEO, Actua; **Karen Gill**, Director of the Curriculum and Assessment Policy Branch, Ontario Ministry of Education; **Steven Woods**, Senior Engineering Director, Google Canada

#### Takeaways and recommendations

- ✓ Create a federal digital literacy strategy
- ✓ Ensure provinces design a curriculum informed by a digital strategy
- ✓ Be inclusive – equal opportunities for girls, indigenous youth and youth in poor communities
- ✓ Provide professional training for new curriculum
- ✓ Create opportunities for youth to learn how to innovate using digital skills

### ✚ Blogging and social media bring public voice to policy issues

#### Panel: Science Blogging: The Next Generation

Organized by Science Borealis

CSPC 2015: November 27, 2015

*Panelists:* **Brian Owens**, General Science Editor, Research Canada / Science Borealis; **Amelia Buchanan**, Blogger, Journalism Student, Algonquin College; **Christopher Buddle**, Associate Professor and Associate Dean, McGill University; **Sabrina Doyle**, New Media Editor, Canadian Geographic; **Paul Dufour**, Principal / Adjunct professor, PaulicyWorks / University of Ottawa; **Lisa Willemse**, Senior Communications Advisor, Ontario Institute for Regenerative Medicine

#### Takeaways and recommendations

- ✓ Trust and transparency are paramount
- ✓ Reference sources on blog postings
- ✓ Consider having an editorial team review postings
- ✓ Introduce academic incentives to reward scientists for outreach activities
- ✓ Support hubs like Science Borealis that draw scientists, media, public and policymakers



## Theme: Science and Innovation for Development

### Shifting the power structure of global scientific publishing

#### Panel: **Role of Open Science in Innovation for Development**

Organized by International Development Research Centre (IDRC)

CSPC 2015: November 26, 2015

*Panelists:* **Naser Faruqui**, Director of Technology and Innovation, IDRC; *Panelists:* **Leslie Chan**, Associate Director, Centre for Critical Development Studies, University of Toronto Scarborough; **Suzanne Kettley**, Executive Director, Canadian Science Publishing; **Florence Piron**, Professor, Department of Information and Communication, Université Laval

#### Takeaways and recommendations

- ✓ Work with universities from the Global South help them acquire the tools and skills to establish online institutional repositories, open archives and local journals
- ✓ Support a pan-African open archive based on open source software
- ✓ Rethink the incentive and reward structure of research funding and who sets the standards for the tools and for the quality of research
- ✓ Open Science is a commitment to the idea of science for the public good. This is particularly important for citizens in the Global South.
- ✓ Open access and open science calls for new forms of governance, institutions and sustainability models
- ✓ Article processing fees provide a sustainable business model for open access journals but there are challenges

### How Canada can become a more innovative nation

#### Plenary: **The Outlook for Canada's S&T/Innovation (STI) ecosystem: Risks and Opportunities**

CSPC 2015: November 27, 2015

*Panelists:* **Janet Halliwell**, Principal, JE Halliwell Associates Inc.; **Gerard Kennedy**, CEO, Alpha Healthcare; **Ken Knox**, Chair, Science, Technology, and Innovation Council (STIC), CEO, Knox-Vannest Inc.; **John Knuble**, Deputy Minister, Innovation, Science and Economic Development Canada; **Roseann O'Reilly Runte**, President, Carleton University; **Dave Watters**, President and CEO, Global Advantage Consulting Group Inc.

## Takeaways and recommendations

- ✓ Overall decline in innovation/R&D funding
- ✓ No national innovation objectives
- ✓ No industry sector strategies
- ✓ Inadequate understanding of the structure of the private sector
- ✓ Too narrow a focus on R&D, including scope of SR&ED
- ✓ Little effective federal coordination or federal/provincial coordination
- ✓ Inadequate data on innovation performance
- ✓ An innovation strategy must be an export strategy
- ✓ Rebalance direct and indirect (e.g. SR&ED) support for R&D
- ✓ Canada needs to significantly increase R&D investments, more in line with OECD average
- ✓ Need improved collaboration, information sharing and relationship building among innovation stakeholders to improve Canada's innovation performance
- ✓ Universities should focus more on providing the skills that industry needs (e.g. experiential learning, co-ops, etc.)
- ✓ Increase support for research in the social sciences (represents 64% of university graduates)
- ✓ Look at ways to make it easier for the private sector to navigate Canada's 70+ innovation funding programs (e.g. consider consolidating programs)

# Theme: Evidence-Based Decision Making: The Challenge of Connecting Science and Policy Making

## How to Ensure a Stronger Voice for Evidence in Government Policy Making!

### **Symposium: Evidence Based Decision Making**

CSPC 2015 - November 25, 2015

*Panelists:* **Janet Bax**, Former Interim President of the Council of Canadian Academies; **Paul Dufour**, Principal PaulicyWorks, Adjunct Professor, University of Ottawa; **Gerard Kennedy**, Chief Executive Officer, Alpha Healthcare Group; **Heather Douglas**, Waterloo Chair in Science and Society, Associate Professor, Department of Philosophy, University of Waterloo; **Kamiel Gabriel**, Professor, Department of Automotive, Mechanical and Manufacturing Engineering, Faculty of Engineering and Applied Science, University of Ontario Institute of Technology; **Kamiel S. Gabriel**, Professor, Department of Automotive, Mechanical and Manufacturing Engineering, Faculty of Engineering and Applied Science, University of Ontario Institute of Technology; **Gordon McBean**, President, International Council for Science & Co-Chair, Governing Council, Future Earth: Research for Global Sustainability; **Paul Dufour**, Principal PaulicyWorks, Adjunct Professor, University of Ottawa; **Heather Douglas**, Waterloo Chair in Science and Society, Associate Professor, Department of Philosophy, University of Waterloo; **Monica Gattinger**, Director, Institute for Science, Society and Policy, University of Ottawa; **Dr Chandrika Nath**, Deputy Director, U.K. Parliamentary Office of Science and Technology; **Gerard Kennedy**, Chief Executive Officer, Alpha Healthcare Group, **David Hall**, Associate Professor of Animal Health, University of Calgary; **Micheal Kruse**, Board Chair, Bad Science Watch; **Margaret Dalziel**, Associate Professor, Conrad Centre for Business, Entrepreneurship and Technology, University of Waterloo & Vice-President Research, The Evidence Network; **Graham Fox**, President and CEO, Institute for Research on Public Policy; **Rees Kassen**, Professor and University Research Chair in Experimental Evolution, University of Ottawa

### **Takeaways and recommendations**

- ✓ Establish a framework for evidence to encourage integration of science into practice
- ✓ Integrate and synthesize evidence and bring to policymakers in a meaningful way
- ✓ Ensure evidence is accessible to policy makers by using common outcome measures understood by scientists, policymakers, politicians, industry and public
- ✓ Design process to determine when you have sufficient credible evidence. Transparency is key in building trust and credibility

- ✓ Make advice of the Science, Technology and Innovation Council (STIC) public and make its information accessible, transparent and reflective
- ✓ Ensure the research and policy making communities take responsibility in evidence generation seriously
- ✓ Build a scorecard of how science departments are responding to integrity and transparency, as well as a checklist to demonstrate how evidence used in policy decisions
- ✓ Engage Parliament and establish a parliamentary science office
- ✓ Fellowships and training for science community to better understand policy making
- ✓ Science policy office should be non- partisan & located within the parliamentary apparatus
- ✓ Network and support independent organizations communicating science evidence in all forms
- ✓ Civic engagement and participation
- ✓ Generation of evidence (citizen science, direction of research, evidence on public values)
- ✓ Evaluation of evidence
- ✓ Hold elected officials accountable
- ✓ Promote leadership in Canadian science policy and develop alliances with other players
- ✓ Understand and engage all stakeholders nationally and internationally (e.g. Quebec chief scientist)
- ✓ Explore potential role for the CSPC

## Experts call for coordinated approach to combat superbugs

### **Panel: Beating Superbugs: Innovative genomics and policies to tackle AMR**

#### **Organized by Genome Canada**

CSPC 2015 - November 25, 2015

*Panelists:* **Dr. Natalie Brender**, National Director, Genomics in Society, Genome Canada; **Dr. Rainer Engelhardt**, Former Assistant Deputy Minister/Chief Science Officer, Public Health Agency of Canada; **Bonnie Henry**, Deputy Provincial Health Officer, Province of British Columbia; **Dr. Stephen Hoffman**, Associate Professor, Faculty of Law, University of Ottawa; **Dr. Gerry Wright**, Director of the Michael G. DeGroot Institute for Infectious Disease Research, McMaster University; **Dr. Craig Stephen**, Executive Director, Canadian Wildlife Health Cooperative

#### **Takeaways and recommendations**

- ✓ Surveillance requires open access to data and sharing data across sectors, provinces and countries
- ✓ Shift priorities of Canadian Food Inspection Agency from industry promotion to surveillance (from “farm to fork”)
- ✓ Reform how farmers and people use antibiotics to ensure sustainable use

- ✓ Train more experts in bioinformatics who understand and can use genomics data
- ✓ Focus on AMR policies that emphasize harm reduction, health promotion and resilience
- ✓ Coordinate policies nationally and globally to combat AMR
- ✓ Identify proven models and expand them to other provinces and territories

## Consumer perspectives remain biggest hurdle to GM foods

### **Panel: Addressing Concerns over GMOs - Striking the Right Balance**

#### **Organized by Agriculture and Agri-food Canada (AAFC)**

CSPC 2015 - November 26, 2015

*Panelists:* *Moderator:* **Sylvain Charlebois**, College of Business and Economics, University of Guelph; *Panelists:* **Andrew Goldstein**, Director General of Policy, Planning, and Integration, Agriculture and Agri-food Canada; **Muffy Koch**, Biotech Regulatory Affairs Manager, Simplot Plant Sciences; **Elizabeth Nielsen**, Board of the Consumers Council of Canada and the Consumer Policy Committee of ISO; **Mike Peterson**, Global Traits Lead, Forage Genetics International; **Lucy Sharratt**, Coordinator, Canadian Biotechnology Action Network

#### **Takeaways and recommendations**

- ✓ Greater collaboration needed between industry, government and consumers
- ✓ Review viable options for public information, including labelling
- ✓ Make the risk assessment process more transparent
- ✓ Reduce regulatory scrutiny for low-risk varieties
- ✓ Ensure regulators have the necessary skills to evaluate the safety of new GM products
- ✓ Ensure separation in CFIA's dual mandate of protecting health and safety and promoting industry

## Digital literacy, coordination key to maximizing benefits from big data

### **Panel: Data Driven Decisions: Putting IoT, Big Data and Analytics to Work for Better Public Policy**

#### **Organized by Cybera**

CSPC 2015: November 26, 2015

*Panelists:* **Ron Winsor**, President and CEO, Cybera; **Janet Bax**, Interim President, Council of Canadian Academies; **Jim Ghadbane**, President and CEO, CANARIE; **Jill Kowalchuk**, Consultant; **Bonnie Schmidt**, President and Founder, Let's Talk Science; **Shannon Wilson**, Business Development Executive, IBM; **Aaron Maxwell**, Machine Learning Research Scientist, Makeplain Corporation

## Takeaways and recommendations

- ✓ Establish a platform for tools and services to address the gap in Canadian infrastructure for digital research data management
- ✓ Build awareness in government of the importance of data access and analysis to generate knowledge from existing and future data sets that benefit the greatest number of people
- ✓ Extracting knowledge from big data requires different yet complementary skillsets working collaboratively
- ✓ Ways of using data are changing as younger, computationally literate people enter the system
- ✓ Privacy issues should only be cited for certain types of data, not all. Governments often hesitant to release data sets for research purposes.
- ✓ New markets for data will emerge when the entrepreneurial community develops business cases for making data meaningful to more people
- ✓ Canada needs to join other countries in establishing a national big data policy that informs both the research community and end users
- ✓ To remain competitive, Canada must become a nation of digital citizens with high levels of digital literacy

## Collaborations expand beyond traditional tech transfer model

### Panel: The Future of University Support for Canada's Science, Technology and Innovation (STI) Strategy

Organized by York University

CSPC 2015: November 27, 2015

*Panelists:* **David Phipps**; Panelists: **Christine Tausig Ford**, Vice President, Universities Canada; **Ron Freedman** CEO, Innovation Atlas Inc. and Research Infosource Inc.; **Robert Hache**, Vice-President Research and Innovation, York University; **Cameron Ower**, Chief Technology Officer for, MDA Robotics and Automation

## Takeaways and recommendations

- ✓ Universities have diversified their interactions with industry with positive effects
- ✓ Industry could benefit from more funding for technology development
- ✓ Mitacs stands out as an effective vehicle for transferring skills from academia to industry
- ✓ Industry engagement has overtaken technology transfer as the preferred model for knowledge translation and commercialization
- ✓ Knowledge translation/mobilization including but beyond industry (with government and community) can be both profitable and socially beneficial

## Experts advocate for sector-based innovation strategy

### **Panel: So What Now? The Path to Science, Technology and Innovation Competitiveness**

CSPC 2015: November 27, 2015

*Panelists:* **Ken Knox**, Chair Science, Technology, and Innovation Council (STIC) /and CEO, Knox-Vannest Inc.; **Bogdan Ciobanu**, Vice-President, National Research Council of Canada's Industrial Research Assistance Program (IRAP); **Sophie Forest**, Managing Partner, Brightspark; **Marc Fortin**, Assistant Deputy Minister, Science and Technology, Department of National Defence (DND) and CEO, Defence Research and Development Canada (DRDC); **Arvind Gupta**, Professor and former President, University of British Columbia

#### **Takeaways and recommendations**

- ✓ STIC's State of the Nation Report offers a data-rich foundation for moving the conversation on innovation to a new level
- ✓ Government can be a catalyst or convenor for shifting from a national to a sector-based system of innovation
- ✓ A Canadian SBIR program is a favoured approach to enhancing innovation. Current Canadian approach of incubators, accelerators and government procurement is not achieving the desired results
- ✓ A culture change is required to reduce the levels of risk aversion endemic in all sectors
- ✓ Policy needs to move from a dominant focus on start-up firms to the scaling of companies with the greatest potential for global competitiveness

## Does Canada need a chief scientist, a parliamentary science officer or both?

### **Panel: Who should be the Voice for Science within government?**

Organized by Evidence for Democracy

CSPC 2015: November 27, 2015

*Panelists:* **Katie Gibbs**, Executive Director, Evidence for Democracy; **Nicole Arbour**, Senior International Advisor Government and International Relations, National Research Council of Canada; **Patrick Fafard**, Associate Professor, Graduate School of Public and International Affairs, University of Ottawa; **Ted Hsu**, former MP Kingston & the Islands, Liberal Party of Canada Science critic; **Kevin Page**, Jean-Luc Pepin Research Chair in the Faculty of Social Sciences, University of Ottawa

#### **Takeaways and recommendations**

- ✓ CSO and PBO need a clear mandate and a large enough budget to support that mandate
- ✓ Position must be independent and non-partisan

- ✓ Learn from the experience and lessons of other countries
- ✓ Consult widely before establishing the position, and review the scientific literature on science advice
- ✓ If want oversight and accountability, establish a PSO which reports directly to Parliament
- ✓ Determine how position fits within larger system of science advice

## Breakfast session: Economic Impact of Innovative Financing Models

### How virtual models are driving innovations in drug discovery

#### **Panel: Economic Impact of Innovative Financing Models**

#### **Organized by Eli Lilly & Company**

CSPC 2015 - November 27, 2015

*Panelists:* **Dr Cynthia Lavoie**, General Partner, TVM Capital Life Science; *Panelists:* **Marc Rivière**, General Partner, TVM Capital; **Cedric Bisson**, Partner, Teralys Capital and Head, Life Sciences Practice; **Daniel Biuthillier**, President and CEO, Kaneq Bioscience; **Jeff Courtney**, Chief Commercial Officer, Fight Against Cancer Innovation Trust

#### **Takeaways and recommendations**

- ✓ Rebalance innovation policies to incent emerging virtual model for drug development
- ✓ Virtual model maximizes impact of top talent, regardless of location or sector
- ✓ Public-private investment in venture capital enhances commercialization potential for university-based drug discovery
- ✓ Virtual model helps to build large, multi-institutional, multi-year projects



## Pre-conference session

### Experts examine options for mobilizing diaspora scientists

#### **Symposium: Diaspora scientists: Canada's untapped resource of global knowledge networks**

CSPC 2015 - November 25, 2015

*Panelists:* **Rahim Rezaie**, Research Associate, Centre for Global Engineering, University of Toronto; **Valerie La Traverse**, Deputy Director, Policy Research and Outreach, Global Affairs Canada. **Farid Bensebaa**, Senior Research Officer / Adjunct Professor, National Research Council of Canada / York University; **Elian Carsenat**, President, NamSor Applied Onomastics; **Jeongdong Choe**, Ottawa chapter head, Association of Korean-Canadian Scientists and Engineers (AKCSE), Senior Technical Fellow, Techinsights; **Daryl Copeland**, Senior Fellow, Canadian Global Affairs Institute/University of Montreal's Centre for International Studies and Research; **Govinda Dahal**, Senior Researcher, Faculty of Medicine, University of Ottawa; Mehrdad Hariri, President and CEO, Canadian Science Policy Centre; **Chris Mayaki**, Director, Special Duties and Leads Programme, National Universities Commission, Nigeria; **Sujata Ramachandran**, Research Associate, Queen's University, Southern African Research Centre; **Girish Shah**, Professor, Faculty of Medicine, Laval University; **Ken Simiyu**, Program Officer, Grand Challenges Canada; **Halla Thorsteinsdottir**, Director / Adjunct Professor, Small Globe Inc. and Institute of Health Policy, Management and Evaluation, University of Toronto; **Margaret Walton-Roberts**, Associate Dean, School of International Policy and Governance, Balsillie School of International Affairs

#### **Takeaways and recommendations**

- ✓ Government is best positioned to be a collaborator/facilitator.
- ✓ There is often difficulty determining who the appropriate government scientists/contacts are that the community should be reaching out to.
- ✓ Identify the membership, institutional affiliations and specialists of existing diaspora science communities (DSCs)
- ✓ There are no existing platforms where diaspora scientists can come together. (e.g. a database of DSCs in Canada and Canadian DSCs abroad)
- ✓ Individual culture is important, but also infrastructure (e.g. funding frameworks)
- ✓ Linking and leveraging the diaspora would be a good way to advance development objectives.
- ✓ Work with Government of Canada to skill-up Canada's foreign service in science diplomacy and management of international S&T issues.
- ✓ Engage with more than just the usual suspects. Business councils have already established connections that could be leveraged.
- ✓ There needs to be a strong value proposition when asking people to join any diaspora network.

- ✓ There are large Canadian diasporas in places like Hong Kong as well as many Canadian scientific entrepreneurs in Boston and the SF Bay Area that can be tapped into.
- ✓ Conduct further research on the current status of DSCs at home and abroad, existing programs that support DSCs and potential policy options.