

EVIDENCE FIRST

Celebrating 10 Years

ANNUAL REPORT 2014/15

Science Advice in the Public Interest



Council of Canadian Academies
Conseil des académies canadiennes

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MEMBER ACADEMIES

The founding members of the Council of Canadian Academies are:

THE ROYAL SOCIETY OF CANADA (RSC)

The RSC is the senior national body of distinguished Canadian scholars, artists, and scientists. The primary objective of the RSC is to promote learning and research in the arts and sciences. The RSC consists of nearly 2,000 Fellows – men and women who are selected by their peers for outstanding contributions to the natural and social sciences, the arts, and the humanities. The RSC exists to recognize academic excellence, to advise governments and organizations, and to promote Canadian culture.

THE CANADIAN ACADEMY OF ENGINEERING (CAE)

The CAE is the national institution through which Canada's most distinguished and experienced engineers provide strategic advice on matters of critical importance to Canada. The Academy is an independent, self-governing, and non-profit organization established in 1987. Fellows are nominated and elected by their peers in recognition of their distinguished achievements and career-long service to the engineering profession. Fellows of the Academy, who number approximately 600, are committed to ensuring that Canada's engineering expertise is applied to the benefit of all Canadians.

THE CANADIAN ACADEMY OF HEALTH SCIENCES (CAHS)

The CAHS recognizes individuals of great achievement in the academic health sciences in Canada. Founded in 2004, the CAHS has approximately 400 Fellows and appoints new Fellows on an annual basis. The organization is managed by a voluntary Board of Directors and a Board Executive. The main function of the CAHS is to provide timely, informed, and unbiased assessments of urgent issues affecting the health of Canadians. The Academy also monitors global health-related events to enhance Canada's state of readiness for the future, and provides a Canadian voice for health sciences internationally. The CAHS provides a collective, authoritative, multidisciplinary voice on behalf of the health sciences community.

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MESSAGE FROM THE PRESIDENT AND THE CHAIR



Janet W. Bax
Interim President

The Council of Canadian Academies is celebrating a decade of operation and we couldn't be prouder of this achievement or more thankful for the hundreds of expert volunteers who helped us reach this milestone. Together they have contributed their expertise to over 30 reports on topics of national interest, many of which have inspired or deepened policy conversations about economics, natural resources, education and training, the health of Canadians, and more. This year's Annual Report highlights some of the impacts Council reports have made over the last decade as well as those we noted throughout 2014/15.



Margaret Bloodworth, C.M.
Chair, Board of Governors

This past year — our most productive yet — saw the release of eight new reports covering topics as diverse as children's medicine, policing, digital heritage, energy prices, health data, science culture, information technology, and the environmental impacts of shale gas extraction. These reports are already being used by governments and national organizations to advance Canadian policies, and we wish to acknowledge our sponsors for referring questions that require deep analyses and provide essential answers for today's context.

In April 2015, the Council welcomed the federal government's announcement of new funding, which opened this fiscal year on a positive note. *Economic Action Plan 2015* has allocated \$15M over five years, and we greatly appreciate the support of the Honourable Ed Holder, Minister of State (Science and Technology) for ensuring meaningful questions continue to be referred to us. We look forward to a busy future and the delivery of many more reports, each bearing the hallmarks of a Council assessment: demand-driven, independent, evidence-based, peer-reviewed, and diagnostic rather than prescriptive. Decision-makers indeed value balanced and authoritative studies that draw together the latest information on challenging questions; we are pleased to continue to provide a scientific foundation for public policy by adding to our library of expert knowledge for years to come.

On a personal note, we wish to congratulate our past President, the Honourable Elizabeth Dowdeswell, O.C., OOnt, who became Ontario's 29th Lieutenant Governor in September 2014. Her Honour steered the Council for over four years with grace and discernment, and with unflagging dedication to our organization's mandate of delivering neutral, science-based assessments. Going forward, our mission is to continue to serve Canadians by doing what we do best: providing science advice in the public interest.



Janet W. Bax
Interim President



Margaret Bloodworth, C.M.
Chair, Board of Governors

ABOUT THE COUNCIL OF CANADIAN ACADEMIES

Assessments are the *raison d'être* of the Council of Canadian Academies. The work conducted by the Council addresses a wide spectrum of scientific knowledge. The Council defines *science* broadly to encompass the humanities, engineering, and the natural, social, and health sciences.

The Council assesses questions drawn from two sources: (1) questions posed by the federal government, as part of its funding agreement with the Council, and (2) questions submitted by sponsors outside of the funding agreement, such as non-governmental organizations, the private sector, and other levels of government. Council assessments are produced by multidisciplinary, volunteer expert panels that assemble and synthesize the available evidence to identify knowledge gaps, distinguish Canadian strengths and vulnerabilities, and examine international trends to describe the context within which policy-makers operate. The Council systematically works to identify the top minds among its Member Academies, across various business sectors, and internationally to provide the considerable knowledge needed to power its assessments. All reports must be approved by the Council's Board of Governors as a confirmation that Council processes were respected. More information about the Council, its governance structure, and operations can be found in Annex I.

"I wish to congratulate the Council on the substantial work it conducted [...] by producing diverse and vibrant assessments that contribute significantly to evidence-based decision-making in Canada. I look forward to the Council's future assessments."

The Honourable James Moore, Minister of Industry (August 2014)

"The impressive work of the Council of Canadian Academies has consistently provided a strong basis for both advancing our understanding of complex issues and ensuring well-informed policy dialogue in Canada."

David J. Mitchell, President and CEO, Public Policy Forum (April 2015)

VISION

To be a trusted voice for science in the public interest.

MISSION

To provide Canadians with:

- the best available scientific knowledge with the objective of informing debate and decision-making;
- independent, authoritative, and evidence-based assessments on the science underlying current and future issues of public interest; and
- a national and international voice for science.

VALUE PROPOSITION

The Council of Canadian Academies offers insights and evidence to enrich Canadian policy development and decision-making. This is achieved by harnessing the collective wisdom of the finest minds to develop comprehensive assessments on the issues that matter most to Canadians.

COUNCIL OF CANADIAN ACADEMIES: BY THE NUMBERS



848
expert
volunteers
since 2005



active
panels at
the end of
2014/15

22



unique assessment sponsors since 2005

8



public releases of reports in 2014/15

EXPERT VOLUNTEER GEOGRAPHICAL BREAKDOWN: TOP 10 COUNTRIES*

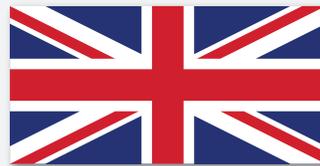
CANADA **624**



UNITED STATES **131**



UNITED KINGDOM **38**



FRANCE **8**



AUSTRALIA **8**



GERMANY **5**



SWEDEN **4**



NETHERLANDS **4**



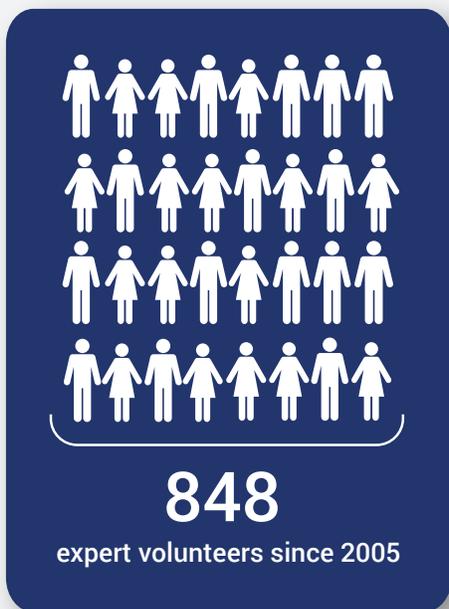
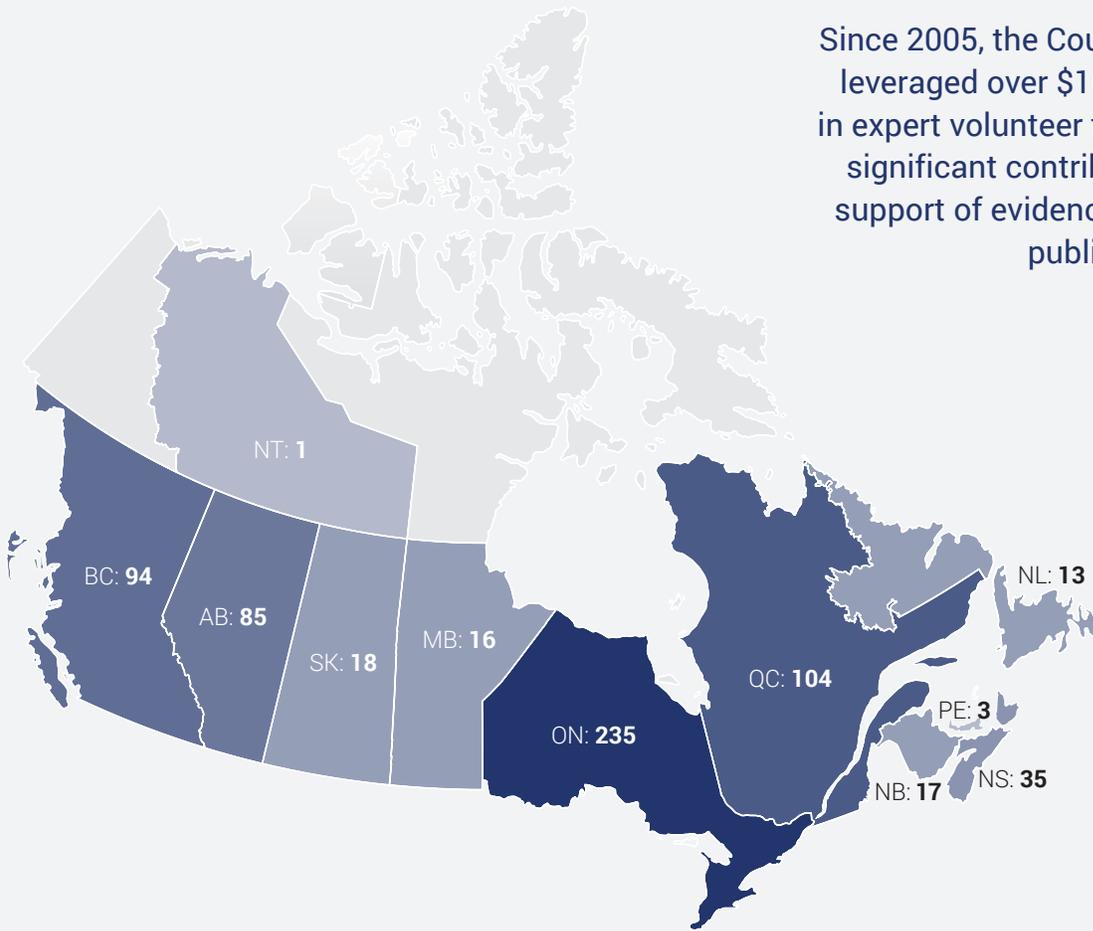
FINLAND **4**



NORWAY **4**

*Eighteen additional volunteers come from countries in Asia, Africa, Europe, the Middle East, and the Americas.

Since 2005, the Council has leveraged over \$16 million in expert volunteer time – a significant contribution in support of evidence-based public policy.



CELEBRATING 10 YEARS OF IMPACT

For 10 years, the Council of Canadian Academies has been inspiring discussions and informing decisions through insightful, evidence-based reports produced by the best minds in Canada and abroad. Policy-makers need reliable evidence to pursue competitive advantages and to harness the transformative power of new technologies that enhance the quality of life for all Canadians. In the face of rapid and unprecedented change, a proliferation of information and data, and a complex global context, keeping this evidence current is more vital than ever.

TOP 10 IMPACTS OVER 10 YEARS

Policy-making takes time, so the impact of a report is not always easy to gauge in the short term. But after a decade's worth of work, the Council has a clear view of the important conversations its reports have inspired or enlarged. Below is a sampling of responses and uptake generated by some of these reports:

Two reports from 2010 and 2012 respectively (*Honesty, Accountability, and Trust: Fostering Research Integrity in Canada* and *Informing Research Choices: Indicators and Judgment*) together inspired national consultations about Canada's research capacity, and spurred the development of new research-related policies and programs. They also influenced the 2011 *Tri-Agency Framework: Responsible Conduct of Research*.

"We regularly refer to [*Aboriginal Food Security in Northern Canada: An Assessment of the State of Knowledge* (2014)]. I would say it has become our turn-to place for reliable facts on indigenous food insecurity in the North. [...] The report is also informing the development of our conversations with government regarding ongoing activities, and I hope will also inform a roundtable we are planning."

**Amanda Sheedy, Director of Development and Engagement
Food Secure Canada**

The State of Science and Technology in Canada, 2012 has been cited in two federal budgets, which directed funding towards the research strengths highlighted in the report. It was also valuable in the development of the government's updated Science, Technology and Innovation Strategy, *Seizing Canada's Moment: Moving Forward in Science, Technology and Innovation 2014*.

Strengthening Canada's Research Capacity: The Gender Dimension

(2012) inspired McMaster University to conduct its own study on the gender pay gap between male and female researchers. The university discovered a 2% pay gap that could not be accounted for by discipline or rank. As a result, McMaster University gave all full-time female faculty members a salary raise of \$3,515 in spring 2015.

“Whether one is a police leader or a student of policing, [*Policing Canada in the 21st Century: New Policing for New Challenges* (2014)] is compulsory reading. [...] This paper is a serious and practical contribution to debate on the economics of policing and on the changing character of crime and disorder in the 21st century. There is a helpful enumeration and assessment of promising strategies for coping with change.”

**Robert Lunney, former Chief of Police, Edmonton and Peel Region,
Parting Shots (December 2014)**

Ocean Science in Canada: Meeting the Challenge, Seizing the

Opportunity (2013) was used by the Department of Foreign Affairs, Trade and Development Canada at an international conference on marine research in Galway, Ireland as an example of the type of scientific leadership and activity taking place in Canada. The report also served as a background document for the IOC-UNESCO *Global Ocean Science Report* (2013-2014), which relied on its definition of *ocean science*.

“*Improving Medicines for Children in Canada* (2014) has been pivotal to work being done in the child health research community to improve the evidence by which children are treated. The issues raised in the report and response plan have been discussed broadly with major stakeholders. Within Canada, the report has strong support from the health care community. It galvanized the development of a business plan for the creation of a national pediatric clinical trials infrastructure platform and coordinating hub. Internationally, the report was used to further the case for creation of a European pediatric clinical trials infrastructure. The report comes at a time of global interest in improving the current context in which children are treated.”

**Anne Junker, Scientific Director, Maternal Infant Child & Youth
Research Network (MICYRN) (May 2015)**

“Science Culture: Where Canada Stands (2014) paints an up-to-date picture of science knowledge and engagement in Canada. More specifically, the report’s survey provides insights on Canadian science attitudes and will be a valuable tool for policy-makers for years to come. It is gratifying that the evidence clearly shows the important role that our museums and science centres play and how they excite young and old alike.”

Denise Amyot, ACCC President and CEO and former President and CEO of the Canada Science and Technology Museums Corporation (May 2015)

Environmental Impacts of Shale Gas Extraction in Canada (2014) was a key background document for Report of the Nova Scotia Independent Panel on Hydraulic Fracturing (2014). The Nova Scotia report cited the Council report extensively and relied heavily on its data. As a result, the Government of Nova Scotia extended its moratorium on fracking in the province until further research is conducted and community engagement properly implemented. The Council report also supported the Canadian Association of Petroleum Producers in the development of their 2015 risk registry.

“Leading in the Digital World: Opportunities for Canada’s Memory Institutions (2015) draws attention to the idea of citizen participation, which is something I totally support. [...] The way forward, as the Council of Canadian Academies’ report concluded, is digital and collaborative. [...] The Expert Panel describes a growing ‘participatory culture’ in memory institutions. As people increasingly expect us to deliver cutting-edge services with digital tools, they also want to share their knowledge, their ideas, and their personal experience. In response, memory institutions like LAC are developing user-friendly services and tools that allow the public to engage with cultural artefacts and collections.”

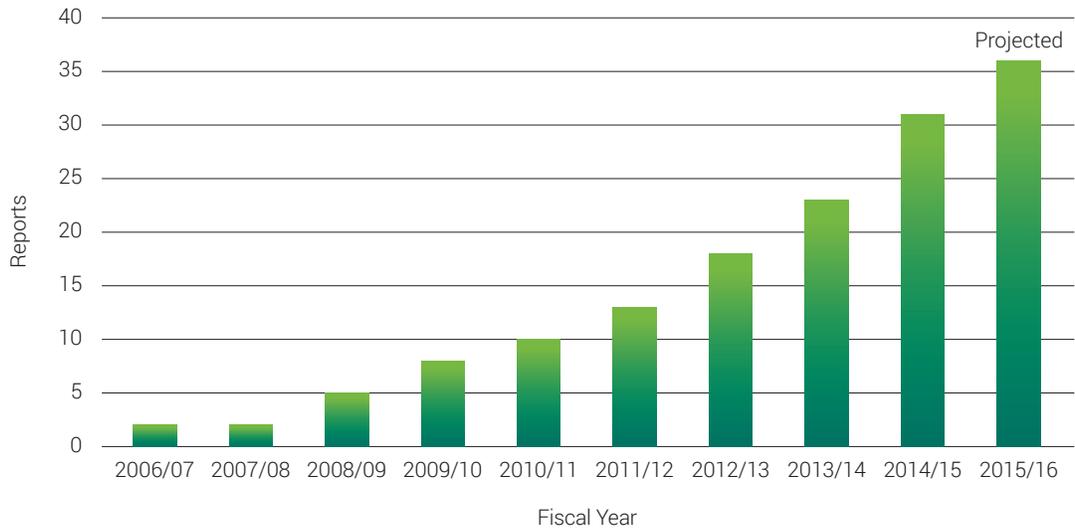
*Guy Berthiaume, Librarian and Archivist of Canada
Speech for the Association of Canadian Archivists (March 2015)*

The Hallmarks of a Council Report



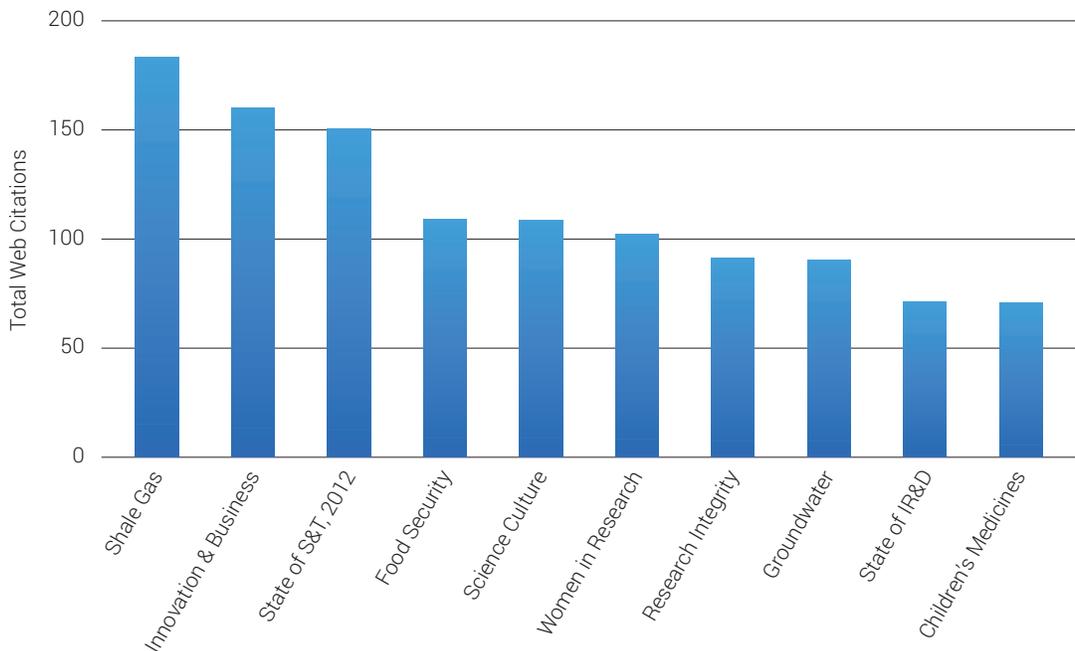
Twitter Reach





Total Reports Published

Graph does not include *Catalyzing Canada's Digital Economy* (2010) or *Paradox Lost: Explaining Canada's Research Strength and Innovation Weakness* (2013), as these were self-initiated assessments.

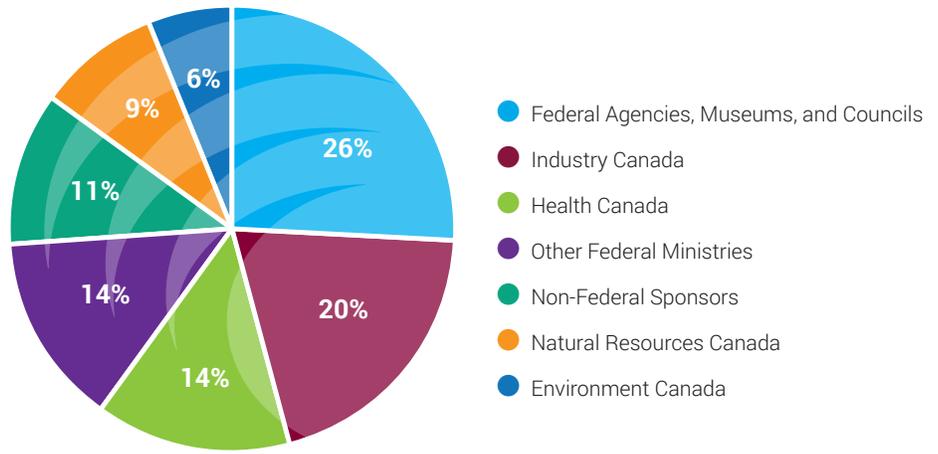


Ten Most Highly Cited Reports on the Web

This figure plots total Web citations for the 10 most highly cited Council reports (English). Estimates of total Web citations were calculated by averaging the number of distinct domains that resulted from searching Google, Yahoo!, and Bing.

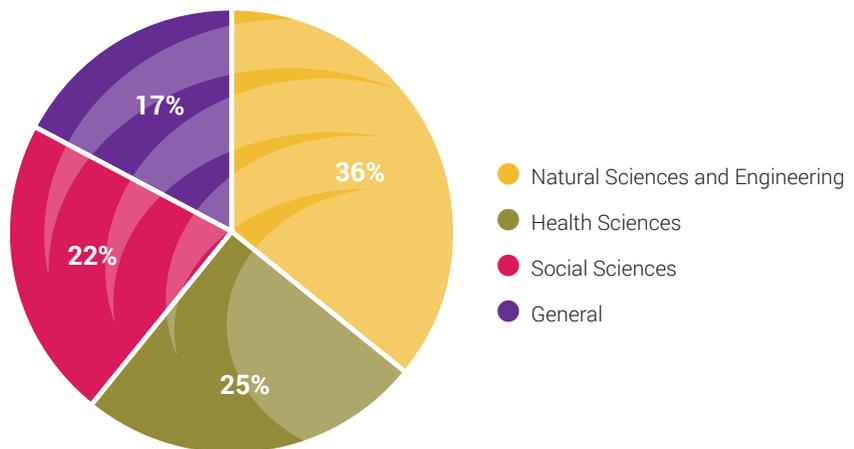
Diversity of Sponsors

(Percentage of Reports Sponsored)



Breadth of Report Subjects

(Reports 2005–2015)



Natural Sciences and Engineering – Assessments related to biology, chemistry, earth science, the environment, and engineering.

Health Sciences – Assessments on the influences, risks, and factors affecting human health.

Social Sciences – Assessments related to business, economics, industry, and academia, among others.

General – Assessments with a more overarching scope crossing numerous research fields (e.g., *The State of Science and Technology in Canada, 2012*).

COMPLETED REPORTS 2014/15

In 2014/15, the Council released eight diverse reports that cover a wide range of topics and present the evidence and insights needed to support sound public policy.



ENVIRONMENTAL IMPACTS OF SHALE GAS EXTRACTION
IN CANADA

The Expert Panel on Harnessing Science and
Technology to Understand the Environmental
Impacts of Shale Gas Extraction



Council of Canadian Academies
Conseil des académies canadiennes

Science Advice in the Public Interest

Environmental Impacts of Shale Gas Extraction in Canada

(released May 2014)

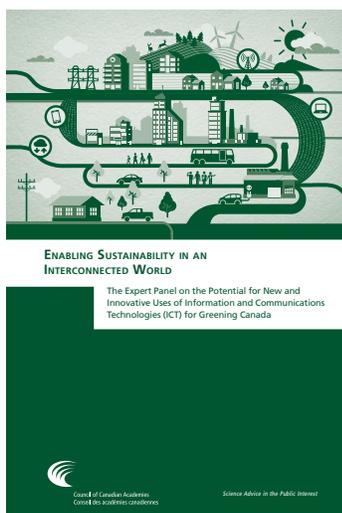
Expert Panel Chair: John A. Cherry, FRSC, Director, University Consortium for Field-Focused Groundwater Contamination Research; Associate Director of the G360 Centre for Applied Groundwater Research; and Adjunct Professor, School of Engineering, University of Guelph

Sponsor: Environment Canada

Charge: *What is the state of knowledge of potential environmental impacts from the exploration, extraction, and development of Canada's shale gas resources, and what is the state of knowledge of associated mitigation options?*

Findings: Monitoring, management, and oversight are critical for responsible shale gas development. Currently, baseline scientific data are needed to allow for longer-term work. The Panel stressed that regional context matters in Canada. A one-size-fits-all approach will not address the various potential environmental impacts that exist across the country, and decisions must be made in parallel with economic and social implications. The Panel considered impacts associated with well integrity, groundwater and surface water, greenhouse gas emissions, land impacts and seismic events, and human health.

Implications: The report signals Canada's opportunity to develop this resource responsibly by taking into account a go-slow approach that considers potential environmental impacts.



Enabling Sustainability in an Interconnected World

(released June 2014)

Expert Panel Chair: David Miller, President and CEO, WWF-Canada

Sponsor: Environment Canada

Charge: *What existing or potential opportunities exist to use Information and Communication Technologies (ICT) to create a greener Canada?*

Findings: Canada has a well-connected society, and its industries and higher education institutions are leaders in ICT research and development and in knowledge generation. Yet Canadian businesses lag behind those in the United States in ICT investment, the ability of firms to adopt technologies has been weak, and the country is not highly ranked in terms of ICT penetration and diffusion among individuals. While ICT have the potential to expand access to information, generate economic benefits, and improve Canada's environmental performance, the Panel determined that no single technological opportunity will achieve sustainability for Canada on its own.

Implications: The report explores ICT opportunities ranging from small-scale changes, such as the use of applications that inform consumers of household water use, to large-scale changes, like replacing aging utility networks with smart grid technologies.



Science Culture: Where Canada Stands

(released August 2014)

Expert Panel Chair: Arthur Carty, O.C., FRSC, FCAE, Executive Director, Waterloo Institute for Nanotechnology, University of Waterloo

Sponsors: Canada Science and Technology Museums, Natural Resources Canada, and Industry Canada

Charge: *What is the state of Canada's science culture?*

Findings: Canadians excel in public science knowledge, attitudes, and engagement, but there is room for improvement in some areas, including skills development. With the help of a new public survey that assessed Canadians' science attitudes, engagement, and knowledge, the Panel found that we have positive attitudes towards science and technology and low levels of reservations about science compared with citizens of other countries; that we exhibit a high level of engagement with science and technology relative to citizens of other countries; and that our level of science

knowledge is on a par with or above citizens of other countries for which data are available. However, our performance on indicators of science and technology skills development is variable compared with other OECD countries.

Implications: The report identifies promising strategies and practices for cultivating a strong science culture, organized under five themes: Supporting Lifelong Science Learning; Making Science Inclusive; Adapting to New Technologies; Enhancing Science Communication and Engagement; and Providing National or Regional Leadership.

Improving Medicines for Children in Canada

(released September 2014)



IMPROVING MEDICINES FOR CHILDREN IN CANADA

The Expert Panel on Therapeutic Products
for Infants, Children, and Youth



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Science Advice to the Public Interest

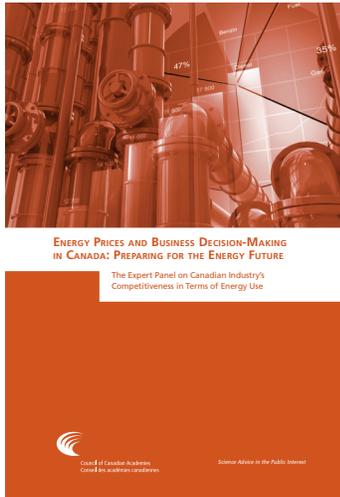
Expert Panel Chair: Stuart MacLeod, Professor of Pediatrics, University of British Columbia

Sponsor: Health Canada

Charge: *What is the state of clinical pharmacology, in Canada and abroad, that can be applied to the ethical development of safe and effective pharmaceuticals and biologics labelled as therapies for infants, children, and youth?*

Findings: Studying medicines in children is always possible and is in their best interest; indeed, they should be protected through research rather than from it. The Panel arrived at this conclusion after determining that many children's medications have not been proven safe and effective for their use; that children respond to medications differently from adults, so medicines must be studied in children and formulated for children; that, in the United States and the European Union, pediatric medicines research is encouraged, required, and monitored in ways that offer lessons for Canada; and that, while pediatric medicines research is a Canadian strength, it requires reinforcement and sustained capacity and infrastructure to realize its full potential.

Implications: There is an opportunity for Canada to move forward with innovative policies and regulations that will allow for a greater knowledge base and ultimately improved health care for the youngest members of our society.



Energy Prices and Business Decision-Making in Canada: Preparing for the Energy Future

(released October 2014)

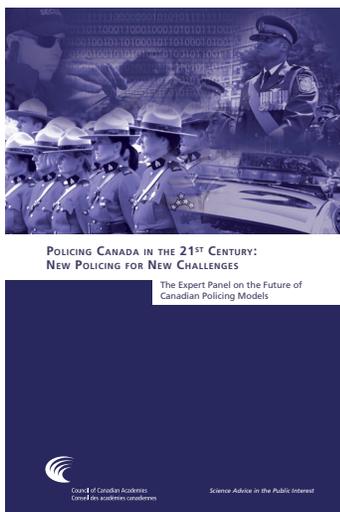
Expert Panel Chair: Fred Gorbet, C.M., Associate Director, Financial Services Program, Schulich School of Business, York University

Sponsor: Industry Canada

Charge: *What are the opportunities and risks to Canada related to the potential for sustained higher energy prices?*

Findings: Canadian businesses have historically been successful in responding to fluctuating energy prices, but this should not be considered a predictor for future resiliency or competitiveness. The energy environment is evolving with advances in oil and gas extraction, the development of alternative energy sources, changes within the electricity market, and new regulatory requirements. Understanding the implications of this complex energy environment and global pressures are critical for future business resilience and success, and preparedness is key. Appropriate and timely information, benchmarking data, and specialized personnel will all help Canadian firms as they seek to better prepare and respond to increasing energy prices.

Implications: The report serves as a resource for Canadian businesses and policy-makers as they seek to understand the implications of the complex and uncertain energy future and what it means for Canada's economic prosperity.



Policing Canada in the 21st Century: New Policing for New Challenges

(released November 2014)

Expert Panel Chair: Justice Stephen T. Goudge, Court of Appeal Ontario

Sponsor: Public Safety Canada

Charge: *Given the evolution of crime, the justice system, and society, what do current evidence and knowledge suggest about the future of the public policing models used in Canada?*

Findings: An increasingly complex safety and security environment demands a modern approach to policing. The Panel found that successful policing models require police to adapt to, and leverage, the specialized capabilities and resources in the new safety and security web; that evidence-based policing and increased

professionalization of police would optimize their role in the safety and security web; that the diversity of actors in the safety and security web creates accountability concerns that have yet to be addressed; that governments can serve as enablers of safety and security by ensuring that the safety and security web serves the public interest; and that knowledge gaps hinder the optimization of the safety and security web. However, transitions that reflect these findings have already begun in Canada and around the world.

Implications: Safety and security in the 21st century cannot rest with Canada's policing services alone. Specialists, public and private security services, and other first responders all have a vital role to play in an interconnected safety and security web.



LEADING IN THE DIGITAL WORLD: OPPORTUNITIES FOR CANADA'S MEMORY INSTITUTIONS

The Expert Panel on Memory Institutions and the Digital Revolution



Leading in the Digital World: Opportunities for Canada's Memory Institutions

(released February 2015)

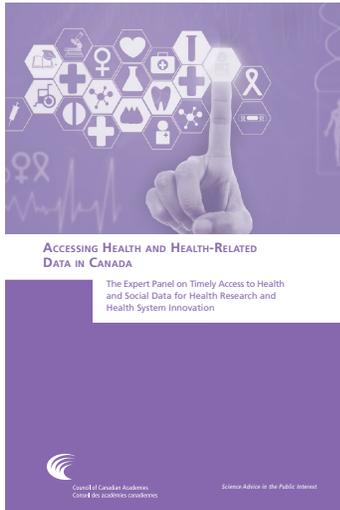
Expert Panel Chair: Doug Owram, FRSC, former Deputy Vice-Chancellor and Principal, University of British Columbia, Okanagan Campus

Sponsor: Library and Archives Canada

Charge: *How might memory institutions embrace the opportunities and challenges posed by the changing ways in which Canadians are communicating and working in the digital age?*

Findings: Vast amounts of digital information in Canada are at risk of being lost because traditional tools are no longer adequate in the digital age. In short, Canada is falling behind. The Panel concluded that, to meet the challenges presented by the digital revolution, memory institutions such as libraries, archives, and museums will need to focus strategic and business planning around digital technologies. There is an opportunity for these institutions to collaborate more strategically and develop interactive relationships with users through a more participatory culture, thereby enhancing content and providing meaningful experiences.

Implications: Canada's memory institutions must exercise their capacity to be leaders within and among their respective organizations.



Accessing Health and Health-Related Data in Canada

(released March 2015)

Expert Panel Chair: Andrew K. Bjerring, former President and CEO, CANARIE Inc.

Sponsor: Canadian Institutes of Health Research (CIHR)

Charge: *What is the current state of knowledge surrounding timely access to health and social data for health research and health system innovation in Canada?*

Findings: Balancing privacy with access to health and health-related data can be achieved, and there is an important opportunity for Canada to move from a culture of caution to a culture of trust. The Panel found that timely access to data is hindered by variable legal structures and differing interpretations of terms across jurisdictions, yet access enables high-quality research that can have far-reaching effects for health care and the overall health of Canadians. It also allows researchers to be better positioned to identify opportunities for health-system innovations that can ultimately lead to improved efficiencies, economies, and patient care. Among the organizations that have been most effective at providing timely access to data, a shift is occurring from a “data custodianship” model to a “data stewardship” model. Central to the success of this shift is the adoption of good governance practices.

Implications: Health data are essential for research aimed at improving health outcomes, managing costs, and accelerating health-care sector innovation. However, accessing data in a timely way must be weighed against respecting privacy and maintaining public trust. The report considers best practices that meet these twin goals.

LOOKING TO THE FUTURE: 2015/16 ASSESSMENTS



UNDERSTANDING THE EVIDENCE: WIND TURBINE NOISE

The Expert Panel on Wind Turbine Noise and Human Health



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Understanding the Evidence: Wind Turbine Noise

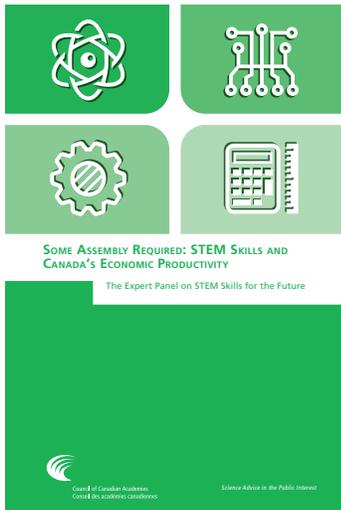
(released April 2015)

Expert Panel Chair: Tee L. Guidotti, Fulbright Visiting Chair, Institute for Science, Society and Policy, University of Ottawa

Sponsor: Health Canada

Charge: *Is there evidence to support a causal association between exposure to wind turbine noise and the development of adverse health effects?*

Findings: Given the nature of the sound produced by wind turbines and the limited quality of available evidence, the health impacts of wind turbine noise cannot be comprehensively assessed and further information and study are required. However, there is sufficient evidence of a causal relationship between exposure to such noise and annoyance. Impact assessments and community engagement would provide communities with greater knowledge and control over wind energy projects and therefore help limit annoyance.



Some Assembly Required: STEM Skills and Canada's Economic Productivity

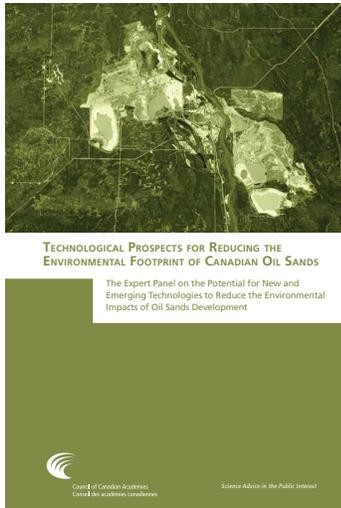
(released April 2015)

Expert Panel Chair: David Dodge, O.C., FRSC, Senior Advisor at Bennett Jones LLP

Sponsor: Employment and Social Development Canada

Charge: *How well is Canada prepared to meet future skills requirements in science, technology, engineering, and math (STEM)?*

Findings: Supply and demand for STEM skills, which are important for growth and innovation, have been balanced at the national level over the long term. However, there is room to improve the quality of STEM skills held by all Canadians. These skills are a central component for a strong and vibrant workforce and can equip people with options in uncertain labour markets. To strengthen Canada's capacity for innovation and productivity, the Panel determined that early childhood exposure and education in fundamental, practical, and advanced STEM skills is vital and will prepare the next generation to take on a variety of roles, both in and outside of STEM fields.



Technological Prospects for Reducing the Environmental Footprint of Canadian Oil Sands

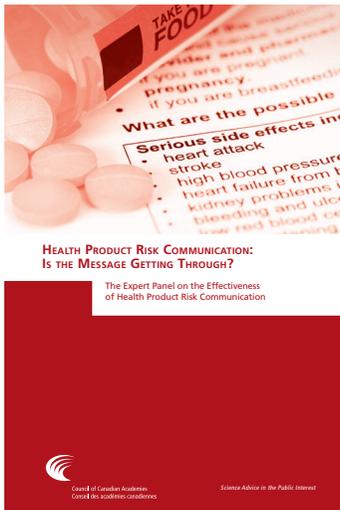
(released May 2015)

Expert Panel Chairs: Scott Vaughan, President and CEO, International Institute for Sustainable Development; and Eric Newell, O.C., FCAE, A.O.E., Former CEO of Syncrude Canada Ltd.

Sponsor: Natural Resources Canada

Charge: *How could new and existing technologies be used to reduce the environmental footprint of oil sands development on air, water, and land?*

Findings: Curbing the environmental footprint of greenhouse gas emissions is a long-term endeavour. New and emerging technologies will play an important role in addressing this challenge. An opportunity exists to accelerate the pace of technology development, creating a path to potentially significant long-term reductions in the overall environmental footprint of the oil sands. This requires strong leadership, continued investment, and risk-taking by all.



Health Product Risk Communication: Is the Message Getting Through?

(released June 2015)

Expert Panel Chair: Annette M. Cormier O'Connor, FRSC, FCAHS, Distinguished Professor, Professor Emerita, School of Nursing, Faculty of Health Sciences, University of Ottawa

Sponsor: Health Canada

Charge: *How can the effectiveness of health risk communication be measured and evaluated?*

Findings: Despite the many barriers that can make the evaluation of health product risk communication challenging, the evidence is clear that there is tremendous value in undertaking such efforts. While there is recognition of the importance of dialogue and ongoing relationships, and while there is a paradigm shift occurring in risk communication, regulators around the world use similar health product risk communication tools that are not systematically evaluated. This evaluation is an integral part of risk communication and can be supported with institutional commitment and sufficient resources. Careful planning will help determine relevant evaluation questions, which guide evaluation methods.

Energy Use and Climate Change: A Synthesis of the Latest Evidence

(to be released Fall 2015)

Expert Panel Chairs: Keith W. Hipel, FRSC, FCAE, Professor, Systems Design Engineering, University of Waterloo; and Paul R. Portney, Emeritus Professor of Economics, University of Arizona and former President, Resources for the Future

Sponsor: Magna International Inc.

Charge: *What considerations, related to different energy sources and technologies as well as public policies, are involved in Canada's transitioning to a low carbon energy system?*

IN MEMORIAM



Tracey Ann Sloan McKinlay, MBA (1972 – 2015)

On January 19th, the Council tragically lost a dear friend and employee. Tracey was an energetic and valuable part of the Council family whose lively sense of humour will be missed by her colleagues. She is fondly remembered for her resourcefulness and reliable corporate knowledge, and for her ability to wear multiple hats with ease. Tracey was Executive Assistant to the President and CEO, a project manager, a writer of corporate communications, and an enthusiastic supporter of volunteers on our Board of Governors, our Scientific Advisory Committee, and our panels. Her memory and spirit will live on in her children, husband, parents, and sister, all of whom have our deepest sympathy and support.

CONCLUSION

Our first decade has resulted in over 30 expert panel reports that are making a significant contribution in support of evidence-based policy-making in Canada. The value of our mission was confirmed in spring 2015 with news of the Government of Canada's decision to reinvest in the work of the Council, and we are building on our successful past to create an even more exciting future. With the help of our dedicated volunteer community, we will expand even further the breadth of topics analyzed by expert panels and supported by our Member Academies and by those who sit on our Board of Governors and Scientific Advisory Committee. The reports that comprise

our growing library are made possible by the expertise and wisdom of these committed and thoughtful individuals and by our staff, all of whom believe in the

importance of current and authoritative science advice that benefits Canadians. We have enjoyed a remarkable first 10 years and look forward to many more.



ANNEXES

ANNEX I: CORPORATE PROFILE

The Council of Canadian Academies is a not-for-profit organization registered under the Canada Corporations Act. It began operation in 2005.

ASSESSMENTS

Proposed assessment topics requested by the Government of Canada are selected through a cross-government competitive process and submitted to the Council for consideration. The criteria used to evaluate proposed assessments are as follows:

Government Criteria:

- The proposal is relevant to the agenda of the sponsoring department/agency and to Canada's policy agenda.
- The assessment topic is timely, and the timeframe for assessment is consistent with the needs of the sponsoring department/agency and of Canada.
- The value provided by the Council is unique.
- The assessment topic is a science-based question that has been coordinated with relevant departments/agencies and external stakeholders.

Council Criteria:

- The topic is of importance to Canada and its citizens.
- The appropriate expertise can be assembled and the required timeline can be met.
- The existing state of knowledge merits the assessment.
- Science underpins the question and its response.

Asset Criteria:

- The report is likely to be widely consulted within and outside government (e.g., other levels of government or organizations have a demonstrated interest in the outcome of the assessment).
- The topic is uniquely relevant to Canada.
- The topic is an international issue for which a Canadian assessment is important at this time.

The Council's Board of Governors, assisted by a Scientific Advisory Committee, oversees the integrity of the assessment process. The Board formally approves assessment questions, expert panel membership, and report review processes.

To protect the independence of the assessment process, the sponsor of an assessment does not participate in conducting the assessment, review drafts of the report, or propose any changes to the report before its release. Assessment reports undergo a formal peer review process to assure quality and objectivity. The Board is responsible for authorizing the public release of final assessment reports, and is advised in this regard by a report review monitor who ensures that expert panels give full and fair consideration to the comments of the external reviewers of every Council report. Final assessment reports are posted on the Council's website, www.scienceadvice.ca, in both official languages, and can be downloaded free of charge to ensure their availability to the public.

FUNDING

The Council was established with an investment by the Government of Canada in the form of a 10-year grant worth \$30 million. This founding grant was intended to support core operations of the Council through to March 31, 2015. Conditions on the use of the funds provided by the government were set out in a formal funding agreement between the Council and the Government of Canada as represented by the Minister of Industry. The Council has begun to explore other sources of funding by approaching potential sponsors interested in assessments on complex questions of relevance to Canada and Canadians.

STRUCTURE AND GOVERNANCE

The Council is governed by a twelve-member Board of Governors. The Board is responsible for setting the strategic direction of the organization, ensuring that the Council fulfills its mandate, and overseeing the Council's operations.

Each founding Member Academy appoints two governors. These six governors appoint two additional governors from the general public. The remaining four governors are proposed to the Board by the Minister of Industry, and are formally appointed through a resolution of the Board. Importantly, to maintain its independence from government, the majority of governors must not have status as Agents of Canada (employees of the Crown).

Governance of the Council is supported by five committees of the Board of Governors:

- Executive Committee
- Audit and Finance Committee
- Investment Committee
- Nominations, Selection, and Governance Committee
- Human Resources and Compensation Committee

The work of the Council is also supported by a Board-appointed Scientific Advisory Committee that provides advice on the substance and procedures of expert assessments, particularly on the following aspects:

- generating potential subjects for future assessments;
- evaluating the suitability of subjects proposed to the Council for expert assessment;
- setting the terms of reference for the independent expert panels that carry out the assessments;
- seeking out potential members for expert panels; and
- overseeing the process of peer review of draft assessment reports.

Day-to-day operations of the Council are carried out by a small staff team, under the direction of a full-time president. Council staff provide support to expert panels with research, writing, and overall management of logistics in the production of assessments. The staff also support the work of the Scientific Advisory Committee, particularly with analyzing proposed assessment topics, identifying panel membership, and carrying out report review processes.

Members of the Board of Governors, Scientific Advisory Committee, and staff are listed in Annex II.

STATEMENT OF INVESTMENT POLICY

The Council's founding grant was overseen, on behalf of the Board, by the Investment Committee. The committee appointed Towers Perrin Inc. as the Council's investment consultant to advise on the development of a Statement of Investment Policy.

The policy was formally approved by the Board of Governors and is available on the Council website. Subsequently, Phillips, Hager & North was selected as the Council's investment manager and Desjardins Trust as custodian.

FINANCIAL STATEMENTS: FISCAL YEAR ENDED MARCH 31, 2015

The Council retained the Ottawa-based accounting firm Parker Prins Lebrano to audit the financial results for the fiscal year 2014/15. The Council's financial statement for 2014/15 is provided in Annex III.

HUMAN RESOURCES

The Council focuses its human resource activity on the values outlined in the strategic plan. Those values are: excellence, independence, integrity, collaboration, and innovation.

ANNEX II: BOARD OF GOVERNORS, SCIENTIFIC ADVISORY COMMITTEE, AND STAFF

BOARD OF GOVERNORS

(As of March 31, 2015)

Margaret Bloodworth, C.M., Chair

Former Federal Deputy Minister
and National Security Advisor
(Ottawa, ON)

Graham Bell, FRSC

President, Royal Society of Canada
Research Director, James McGill Professor
and Chair, Department of Biology
McGill University
(Montréal, QC)

John Cairns, FCAHS

President, Canadian Academy of Health Sciences
Professor of Medicine
University of British Columbia
(Vancouver, BC)

Henry Friesen, C.C., FRSC, FCAHS

Distinguished Professor Emeritus and Senior Fellow
Centre for the Advancement of Medicine
Faculty of Medicine
University of Manitoba
(Winnipeg, MB)

Carol P. Herbert, FCAHS

Professor of Family Medicine
Western University
(London, ON)

Claude Jean

Executive Vice President and General Manager
Foundry Operation, Semiconductor
Teledyne DALSA
(Bromont, QC)

Peter MacKinnon, O.C.

Former President and Vice Chancellor
University of Saskatchewan
(Saskatoon, SK)

Jeremy McNeil, FRSC

Helen Battle Professor of Chemical Ecology
Department of Biology
Western University
(London, ON)

Axel Meisen, C.M., FCAE

Former Chair of Foresight at Alberta Innovates –
Technology Futures (AITF)
(Edmonton, AB)

Lydia Miljan

Associate Professor of Political Science
and Chair of the Arts and Science Program
University of Windsor
(Windsor, ON)

Ted Morton

Executive Fellow, School of Public Policy
and Professor of Political Science
University of Calgary
(Calgary, AB)

P. Kim Sturgess, FCAE

CEO and Founder
Alberta WaterSMART
(Calgary, AB)

SCIENTIFIC ADVISORY COMMITTEE

(As of March 31, 2015)

Susan A. McDaniel, FRSC, Chair

Director, Prentice Institute; Canada Research Chair (Tier 1) in Global Population and Life Course; Prentice Research Chair in Global Population and Economy; Professor of Sociology
University of Lethbridge
(Lethbridge, AB)

Lorne Babiuk, O.C., FRSC, FCAHS

Vice President (Research)
University of Alberta
(Edmonton, AB)

Murray S. Campbell

Senior Manager, AI and Optimization
IBM T.J. Watson Research Center
(Yorktown Heights, NY)

Clarissa Desjardins

CEO
Clementia Pharmaceuticals Inc.
(Montréal, QC)

Jean Gray, C.M., FCAHS

Professor of Medicine (Emeritus)
Dalhousie University
(Halifax, NS)

John Hepburn, FRSC

Vice President (Research and International)
University of British Columbia
(Vancouver, BC)

Gregory S. Kealey, FRSC

Professor, Department of History
University of New Brunswick
(Fredericton, NB)

Daniel Krewski

Professor of Epidemiology and Community Medicine and Scientific Director of the McLaughlin Centre for Population Health Risk Assessment
University of Ottawa
(Ottawa, ON)

Avrim Lazar

Former President and CEO
Forest Products Association of Canada
(Ottawa, ON)

Norbert R. Morgenstern, C.M., FRSC, FCAE

Professor (Emeritus), Civil Engineering
University of Alberta
(Edmonton, AB)

Sarah P. Otto, FRSC

Professor and Director of the Biodiversity Research Centre
University of British Columbia
(Vancouver, BC)

STAFF OF THE COUNCIL OF CANADIAN ACADEMIES

Janet W. Bax

Interim President

Elizabeth Dowdeswell,¹ O.C.

Former President and CEO

Tom Bursey

Vice President, Corporate Services
and CFO

Jennifer Bassett

Research Associate

Laura Bennett

Research Associate

Dane Berry

Associate Program Director

Anna Buczek²

Communications Specialist

Rebecca Chapman

Research Associate

Tijs Creutzberg

Program and Business
Development Director

Kristen Cucan

Program Coordinator

Marc Dufresne

Senior Bilingual
Publications Specialist

Andrea Hopkins

Program Coordinator

Suzanne Loney

Research Associate

Kelly Loverock³

Coordinator, Communications
and Website

Cate Meechan

Director, Communications

Emmanuel Mongin

Acting Program Director

Nancy Neil

Manager, Office Operations

Samantha Rae Ayoub

Senior Manager, Publishing
and Planning

Joe Rowsell

Research Associate

Christina Stachulak

Senior Program Director

Andrew Taylor

Program Director

Weronika Zych

Program Coordinator

Ranges of remuneration: for the fiscal year ending March 31, 2015, compensation was within the following salary ranges: Council Management (Officers) – President (\$200,000 – \$264,038) and Vice President and CFO (\$128,075 – \$192,113); Senior Professional – Senior Program Director and Director, Communications (\$106,000 – \$168,661); and Professional (i.e., employees whose remuneration exceeds \$100,000, including any fee, allowance, or other benefits paid in year) – Program Directors and Research Associates (\$56,315 to \$106,997).

¹ Left the Council during fiscal year 2014/15

² Maternity leave August 2014 – August 2015

³ Maternity leave September 2014 – September 2015

ANNEX III: FINANCIAL STATEMENTS FOR 2014/15

INDEPENDENT AUDITORS' REPORT

To the Board of Governors,
COUNCIL OF CANADIAN ACADEMIES

Report on the Financial Statements

We have audited the accompanying financial statements of the COUNCIL OF CANADIAN ACADEMIES, which comprise the Statement of Financial Position as at March 31, 2015, and the Statements of Changes in Net Assets, Operations and Cash Flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the organization's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the organization's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the COUNCIL OF CANADIAN ACADEMIES as of March 31, 2015, and its financial performance and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.



Parker Prins Lebao Chartered Accountants Professional Corporation

Authorized to practice public accounting by the Chartered Professional Accountants of Ontario

Ottawa, Canada

May 19, 2015

COUNCIL OF CANADIAN ACADEMIES STATEMENT OF FINANCIAL POSITION

As at March 31, 2015

	2015	2014
ASSETS		
CURRENT		
Cash	\$ 1,556,861	\$ 459,759
Investments (note 3)	–	5,747,627
Accounts receivable (note 7)	375,060	250,365
Prepaid expenses (note 9)	25,262	37,093
	1,957,183	6,494,844
CAPITAL (note 4)	85,311	128,128
	\$ 2,042,494	\$ 6,622,972
LIABILITIES		
CURRENT		
Accounts payable	\$ 170,272	\$ 211,637
Deferred revenue	190,072	–
Deferred grant contributions (notes 5 and 6)	1,173,788	–
	1,534,132	211,637
DEFERRED GRANT CONTRIBUTIONS (notes 5 and 6)	–	6,411,335
NET ASSETS	–	–
Unrestricted net assets	(85,312)	(128,129)
Net assets invested in capital assets	85,312	128,129
Deferred compensation fund (note 10)	508,362	–
	508,362	–
	\$ 2,042,494	\$ 6,622,972

On behalf of the board:



Director

COUNCIL OF CANADIAN ACADEMIES STATEMENT OF CHANGES IN NET ASSETS

For the year ended March 31, 2015

	2015	2014
UNRESTRICTED NET ASSETS		
Balance, beginning of year	\$ (128,129)	\$ (181,299)
Excess of revenue over expenditure	–	–
Add: amortization	49,761	79,051
Less: amount invested in capital assets	(6,944)	(25,881)
Recognition of deferred contributions	508,362	–
Allocation to deferred compensation fund	(508,362)	–
BALANCE, END OF YEAR	\$ (85,312)	\$ (128,129)
NET ASSETS, INVESTED IN CAPITAL ASSETS		
Balance, beginning of year	\$ 128,129	\$ 181,299
Invested during the year	6,944	25,881
Less: amortization	(49,761)	(79,051)
BALANCE, END OF YEAR	\$ 85,312	\$ 128,129
DEFERRED COMPENSATION FUND		
Balance, beginning of year	\$ –	\$ –
Allocation from deferred contributions	508,362	–
BALANCE, END OF YEAR	\$ 508,362	\$ –

COUNCIL OF CANADIAN ACADEMIES STATEMENT OF OPERATIONS

For the year ended March 31, 2015

	2015	2014
REVENUE		
Investment income	\$ 21,076	\$ 106,605
Add: grant revenue	4,729,185	5,947,452
Revenue from other sources	237,590	417,250
	4,987,851	6,471,307
EXPENDITURE		
Amortization	49,761	79,051
Assessment consultants	90,969	273,990
Central operations	227,590	354,917
Governance	58,536	105,769
Investment consultants	14,836	39,928
Panel meetings	509,315	897,313
Publications	755,184	582,909
Rent	368,489	400,052
Salaries and benefits	2,898,163	3,536,905
Other activities	15,008	200,473
	4,987,851	6,471,307
EXCESS OF REVENUE OVER EXPENDITURE FOR THE YEAR	\$ -	\$ -

COUNCIL OF CANADIAN ACADEMIES STATEMENT OF CASH FLOWS

For the year ended March 31, 2015

	2015	2014
CASH FLOWS FROM (USED FOR) OPERATING ACTIVITIES		
Excess of revenue over expenditure for the year	\$ –	\$ –
Items not requiring an outlay of cash:		
Amortization	49,761	79,051
Unrealized gain on investments	(81,860)	(127,581)
Allocation to deferred compensation fund	508,362	–
	476,263	(48,530)
Net change to non-cash items related to operations:		
Accounts receivable	(124,695)	118,022
Prepaid expenses	11,831	27,343
Accounts payable	(41,365)	(148,307)
Deferred revenue	190,072	–
Deferred contributions	(5,237,547)	(5,947,452)
	(4,725,441)	(5,998,924)
CASH FLOWS FROM (USED FOR) INVESTING ACTIVITIES		
Purchase of capital assets	(6,944)	(25,881)
Redemption of investments	5,829,487	5,813,144
	5,822,543	5,787,263
NET INCREASE (DECREASE) IN CASH	1,097,102	(211,661)
CASH, BEGINNING OF YEAR	459,759	671,420
CASH, END OF YEAR	\$ 1,556,861	\$ 459,759

COUNCIL OF CANADIAN ACADEMIES NOTES TO FINANCIAL STATEMENTS

March 31, 2015

1. Organization's Purpose

The Council of Canadian Academies is a not-for-profit organization incorporated in April 2002 under the Canada Corporations Act and began operations in 2005.

The Council's main purpose is to provide a source of credible, independent, expert assessments and evidence-based advice on the science that is relevant to matters of public interest, and to provide a voice for Canadians on behalf of the sciences on the national and international scenes.

2. Significant Accounting Policies

These financial statements have been prepared in accordance with Canadian accounting standards for not-for-profit organizations, and reflect the following policies:

CAPITAL ASSETS

Capital assets consisting of furniture and fixtures, computer equipment and software, and leasehold improvements are stated at cost. Amortization has been provided on the diminishing balance or straight-line basis as follows with half of amortization taken in the year of acquisition:

Furniture and fixtures	30% per annum
Computer and software	45% per annum
Leasehold improvements	10 years

REVENUE RECOGNITION

The organization follows the deferral method of accounting for contributions. Restricted contributions are recognized as revenue in the year in which the related expenses are incurred. Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

INVESTMENTS

Investments are recorded at market value.

INVESTMENT INCOME

Investment income is recorded as earned.

Unrealized gains on investments are recognized as an increase in deferred contributions while unrealized losses on investments are recognized as a decrease in deferred contributions.

Investment income on investments is recorded as income on the statement of operations.

3. Financial Instruments

Financial instruments reflected in the statement of financial position consist of cash, investments, accounts receivable and accounts payable. The Council does not hold or issue financial instruments for trading purposes and does not hold or issue derivative financial instruments.

INTEREST RATE RISK

The Council is subject to cash flow risk with respect to its holdings of investments.

Cash funds on deposit at an investment brokerage account receive interest at rates that fluctuate with bank prime.

4. Capital Assets

	Cost	Accumulated Amortization	2015 Net Book Value	2014 Net Book Value
Furniture and fixtures	\$ 376,044	\$ 346,566	\$ 29,478	\$ 41,148
Computers and software	392,838	348,625	44,213	72,497
Leasehold improvements	96,366	84,746	11,620	14,483
	\$ 865,248	\$ 779,937	85,311	\$ 128,128

5. Deferred Grant Contributions

Prior year grant revenue that was received in excess of expenses was deferred to offset expenses in future years.

6. Economic Dependence

In March 2006, the Council received a founding grant in the amount of \$30,000,000. The grant was intended to support core operations of the Council for 10 years. The remaining funds within the Council will allow them to operate through the completion of its remaining assessments based on current spending models. The Council received a letter of intent from the Government of Canada in March 2015 to renew its investment in the Council of Canadian Academies for a further five years. The Council was specifically referenced in the 2015 Economic Action Plan under the heading “Renewing Funding for the Council of Canadian Academies” whereby the Council’s mandate and work to date were lauded and a further \$15 million over five years starting in 2015-16 was accordingly proposed.

7. Accounts Receivable

Accounts receivable consists of trade receivables of \$214,781 and GST receivable of \$160,279 for a total of \$375,060.

8. Commitments

The organization entered into a 10-year lease commencing February 1, 2006, as well as office equipment contracts. The annual payments over the next year is as follows:

F/Y 2016	\$ 209,127
----------	------------

9. Prepaid Expenses

Prepaid expenses consist of prepaid rent of \$20,492, hotel deposits of \$500, D&O liability insurance of \$2,550, prepaid postage of \$32, prepaid quarterly lease charge on photocopier of \$1,085 and a commercial insurance policy of \$603 for a total of \$25,262.

10. Deferred Compensation Fund

As the current funding agreement entered its final year, Council management worked closely with the Board of Governors to ensure that there were no unfunded liabilities for the Council and the Governors. With the assistance and diligent efforts of the President and Board chair, an internally restricted fund was established to set aside funds for these potential liabilities. Council management intends to risk manage this situation in the future, by working closely with the Audit, Finance and Risk Committees.

11. Comparative Figures

Certain of the comparative figures have been reclassified in order to conform with the current financial statement presentation.