10
2005–2015

From Concept to Impact – 10 Years of Progress

Canadian Academy of Health Sciences
Académie canadienne des sciences de la santé

SCIENTIFIC ADVICE FOR A HEALTHY CANADA

Canadian Academy of Health Sciences
Académie canadienne des sciences de la santé

The Canadian Academy of Health Sciences (CAHS)
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Notice: This history of the Canadian Academy of Health Sciences was authored by John A Cairns (CAHS president 2013-15) and Paul W Armstrong (CAHS president 2004-07) on behalf of the Academy and with the approval of the Board of CAHS. The information contained herein is based upon the personal perspectives of the authors gained since the earliest planning of the CAHS and augmented by perusal of the electronic archives of the CAHS and the Council of Canadian Academies. Allison Hardisty, CAHS Director of Operations and Executive Assistant to the President assisted the authors in the acquisition of files and data. Inputs were also sought from prior CAHS presidents Martin Schechter (2007-09), Catharine Whiteside (2009–11) and Thomas Marrie (2011–13). Any opinions, findings, or conclusions expressed in this publication are those of the authors, and do not necessarily represent the views of their organizations of affiliation or employment.

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Forward: A message from the authors

The Canadian Academy of Health Sciences (CAHS) celebrates its 10th Anniversary during the Annual meeting in Ottawa on September 17–18, 2015.

Prior to the creation of the CAHS, unlike the UK, the US and many European countries, Canada had no widely recognized national academy of medicine or health sciences. The Canadian Institute of Academic Medicine (founded in 1989) had begun to fill this void, but its membership and mission were aligned largely with academic medicine. A vision for the Canadian Academy of Health Sciences emerged in the early 2000's to meet a major unmet national need.
Over 10 short years, the CAHS has grown to include 577 fellows, whose recognition by this honor is increasingly acknowledged by their academic institutions. Importantly, CAHS fellows share a covenant to serve the people of Canada. The CAHS has conducted 8 major and 2 focused assessments and has held a major forum every year as a highlight of the Annual Meeting. Now is a propitious time to take stock and reflect on where we have been, where we are and where we propose to go. We hope that readers of this document "From Concept to Impact – 10 Years of Progress" will gain insights into our development and be inspired to collaborate in supporting our mission in the challenging times ahead.

John A Cairns Paul W Armstrong

The Canadian Academy of Health Sciences

Mission:

To provide assessments of, and advice on, key issues relevant to the health of Canadians.

Objectives:

(a) To elect to fellowship, individuals who are recognized by their peers nationally and internationally for their leadership, creativity, distinctive competencies and commitment to advance academic health sciences;

(b) Serve as a credible, expert and independent assessor of science and technology issues relevant to the health of Canadians;

(c) Support the development of timely, informed and strategic advice on urgent health issues;

(d) Support the development of sound and informed public policy related to these issues;

(e) Enhance understanding of science and technology issues affecting the public good by transmitting the results of assessments and providing opportunities for public discussion of these matters;

(f) Provide a collective authoritative multi-disciplinary voice of health sciences communities; and

(g) Represent Canadian health sciences internationally and liaise with like international academies to enhance understanding and potential collaborations on matters of mutual interest.

Fellows:

Selected from the full breadth of academic health sciences from basic science to clinical science to social science and population health and including all the health disciplines: **Medicine, Nursing, Dentistry, Pharmacy, Rehabilitation Sciences** (Occupational and Physiotherapy) and **Veterinary Medicine**.

The Genesis of the Canadian Academy of Health Sciences

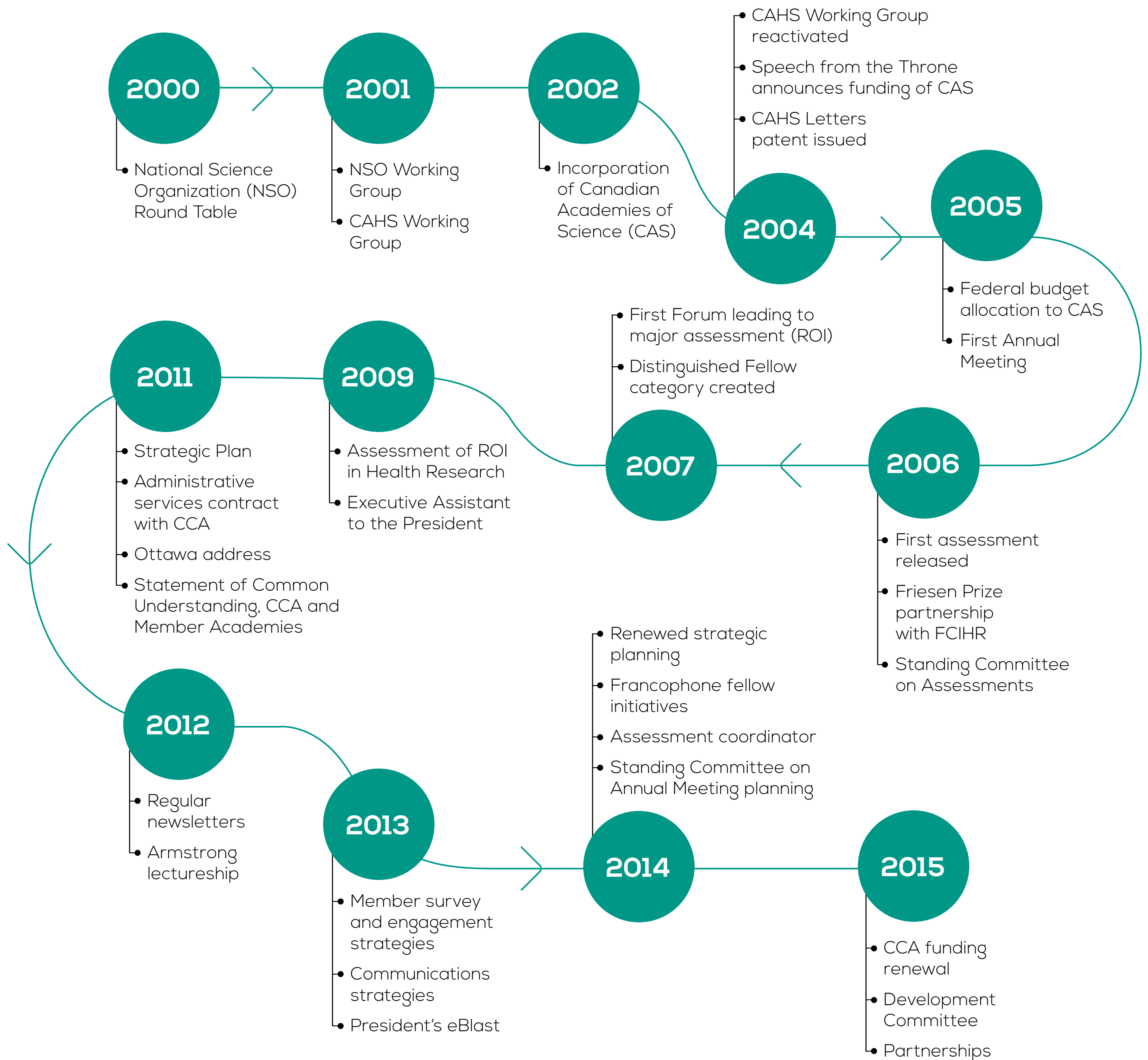
On reflection, the absence in Canada of an independent, expert, broadly representative national body willing and able to provide sound evidence-based advice on health related matters seems implausible today.

Such an absence appears even paradoxical, given the prior existence of health science-related academies in all other G7 countries and the enshrinement of universal health care in Canada for over half a century. Moreover, at the turn of the millennium, there was no broad-based national science organization able to speak with a single voice representing Canada on the global scene.

In response to this recognized deficiency and increasing calls to rectify it, **Dr. Gilbert Normand**, Canada's then Secretary of State for Science, Research and Development, hosted a national round table October 2000. It considered whether Canada required a National Science Academy (analogous to the National Academies in the US) to provide credible and independent assessments of scientific knowledge that could inform discussions of pressing contemporary issues of the day. This nascent organization was referred to as the **National Science Organization** (NSO). Although from the outset the Royal Society of Canada (RSC) and the Canadian Academy of Engineering (CAE) had been proposed as the anchoring pillars of this initiative, it was soon appreciated that matters affecting health and health science should be incorporated in any new science body to ensure an appropriately broad base. When in February 2001, a small NSO working group was formed, it included **Eliot Phillipson** [who had been present at the round table and was then President of the **Canadian Institute of Academic Medicine (CIAM)**], to develop a proposal for a new Canadian national science organization. Although the **Canadian Academies of Science (CAS)**, as conceived by the NSO working group, was incorporated in April 2002, it existed only as a legal entity and had no operating funds. Unfortunately, national security concerns following the September 2001 World Trade Center disaster, coupled with changes in federal governmental priorities and personnel, essentially curtailed progress on the initiative until 2004. To strengthen and broaden the health sciences academy, a further working group was convened by Charles Hollenberg in association with Eliot Phillipson and drawn from the CIAM and other health disciplines to consider developing a **Canadian Academy of Health Sciences** (CAHS).

The **CAHS working group** reviewed international precedents for academic academies, focusing especially on the U.K and U.S. The U.K. Royal Society founded in 1660 is one of the world's most venerable scientific academies. Interestingly however, the U.K. Academy of Medical Sciences was not established until 1998 when it took its place alongside the Royal Society and the Royal Academy of Engineering (1976). It has the authority to speak out on the multitude of public policy issues that involve the biomedical disciplines, provides an intellectual focus for the medical sciences and seeks to influence national, fiscal and regulatory policy. A considerable amount of the Academy's effort and resources is devoted to providing expert advice to Government and policy makers. Among its highly influential publications have been *Strengthening Clinical Research* (2003) and *A New Pathway for the Regulation and Governance of Health Research* (2011).

Background, Creation and Progress of the Canadian Academy of Health Sciences



The National Academy of Science (NAS) in the U.S. was signed into being by US President Abraham Lincoln in the midst of civil war on March 3, 1863, to "investigate, examine, experiment, and report upon any subject of science or art [technology]" whenever called upon to do so by any department of the government. The subsequent creation of the National Research Council (1916), the National Academy of Engineering (1964) and the Institute of Medicine (not until 1970) (recently renamed the National Academy of Medicine) completed this quartet of august bodies that have profoundly shaped opinion and public policy. Flowing from the IOM's transformative reports *To Err is Human* in 1999 and *Crossing the Quality Chasm* in 2001 lasting initiatives to improve patient care and safety have had major national and international impact. Key elements of the NAS reports have been not only reasoned reviews of existing evidence around the question(s) posed but also logical assessments of policy recommendations as to who should do what and how it might be undertaken.

The CAHS working group also became aware of a long tradition of scientific academies throughout the world, which since 1993 have formed a global network, the **InterAcademy Partnership (IAP)** of 107 national science academies. Its primary goal is to help member academies work together to advise citizens and public officials on the scientific aspects of critical global issues. In 2000, an **Inter Academy Medical Panel (IAMP)** was created within IAP (which CAHS eventually joined).

In 2004, the Canadian initiative to develop an academy of health sciences resumed when **Paul Armstrong** assumed the Presidency of CIAM and chaired a working group consisting of **Eliot Phillipson, Judith Hall, Eldon Smith, Catharine Whiteside** and **Martin Schechter**. The CIAM had been founded in 1989 under the leadership of **Aubie Angel**. It began with a charter membership of 50 senior academic physicians whose aim was to further the interests of academic medicine, clinician-scientists and the future of health research in Canada. CIAM subsequently grew to an agreed upon plateau of 100 members who were elected based on demonstrated achievement in academic medicine and biomedical science. It was recognized that a transition from the CIAM into the founding organization of a new academy would require substantial refocusing and reengineering. It was suggested that the 4 pillars of CIHR would constitute a useful framework for such an academy and that the model should be broadly inclusive of the health sciences groups. A subsequent survey of CIAM membership revealed strong support for development of the CAHS. Funds were provisionally allocated by the CIAM Board for an initial assessment to be conducted by the yet-to-be-formed CAHS. The concept of a Canadian Academy of Health Sciences gained substantial national traction with CIHR, CFI and selected members of government. In June 2004, the Canadian Institute Academic Medicine (CIAM) representing the nascent Canadian Academy of Health Sciences, joined with the CAE and RSC in promoting the concept of a Canadian Academies of

The founding organization of a new academy would require substantial refocusing and reengineering. It was suggested that the 4 pillars of CIHR would constitute a useful framework for such an academy and that the model should be broadly inclusive of the health sciences groups

Science (CAS). In August of 2004 the Presidents of the 3 Academies met with **Dr Arthur Carty**, newly appointed Science Advisor to recently elected Prime Minister Paul Martin. The Presidents further promoted the CAS concept and received assurance that the proposition was a priority for the government.

On September 13, 2004 the **CAHS working group** convened in Toronto for a key session that included leaders from the various health disciplines i.e. Medicine, Nursing, Pharmacy, Dentistry, Veterinary Medicine & Rehabilitation Science. Tentative agreement from this CAHS working group was reached on the structure and functions of the new health science academy as well as development of the membership criteria and other planning elements necessary for creation of CAHS. As the initial membership of CAHS was formulated, it was agreed that the prior selection and vetting process for membership in CIAM made it appropriate from the outset for these individuals to be invited to join the newly created CAHS.

On October 6, 2004 in his response to the Speech from Throne, Prime Minister **Paul Martin** assured the future of the Canadian Academies of Science by announcing "… that the government of Canada will mandate the Canadian Academies of Science. We seek to create a national alliance of leading scientific and engineering societies, one that will operate at arm's length from government and receive operational funding… over the next 10 years. The new Academies of Science will be a source of expert advice on scientific aspects of important domestic and international issues, and will give our country a prestigious voice among the choir of international science groups." The then presidents of the three founding Academies formed a Transitional Working Group to develop plans for implementation of the CAS and liaised with Dr Carty and staff to discuss organizational structure and governance. Six CAS internal governors were recommended for appointment by the three founding academies. **Paul Armstrong** and **Martin Schechter** represented the CAHS. To assist the Government in completing appointments to the agreed upon 12-member board, each Academy also developed a list of potential nominees for the 6 public governors.

In the 2005 budget there was $30 million allocated to the Canadian Academies of Science, to be used by them over the next 10 years to conduct independent assessments of the state of scientific knowledge in key areas. It was made clear that budget responsibility and government oversight regarding the choice of assessments would be managed through Industry Canada. Reluctantly in March 2005, the three member academy presidents agreed to sign on as founding members of the CAS despite the imposition of a fiscal firewall precluding a direct flow of funding to the member academies, contrary to what had been anticipated.

In the interim a second meeting of the CAHS working group had convened on December 13, 2004 in Toronto. Several issues were further developed: **1)** A Membership Committee was agreed upon and a plan for nominations and development of CAHS by spring 2005 was crafted; **2)** A consensus on the first assessment topic was reached concerning *The barriers and opportunities for conducting interdisciplinary collaborative research in Canada*. Judith Hall was selected as Chair and the panel members were to include representatives from each CAHS discipline; **3)** The inaugural meeting of CAHS was scheduled for September 22–23, 2005 in Vancouver B.C. with the intent to launch the new academy and admit its first slate of elected fellows. The Letters Patent incorporating the CAHS were issued effective December 17, 2004. Subsequently an initial multidisciplinary Board of Directors was created comprising Paul W Armstrong, President; Martin T Schechter, President-elect, Carol L. Richards, Secretary, Catharine Whiteside, Treasurer, and Directors: Carlton Gyles, Pavel Hamet, Celeste Johnston ,Kevin Keough, Dorothy Pringle, Barry Sessle ,Peter Tugwell and Jacques Turgeon. Bylaws were then created for the new Academy and the President-elect chosen as chair of the nominating committee for new fellows.

A call for nominations for new fellows was first communicated in early 2005. The following statement characterized the CAHS and what it sought in new fellows *"The Canadian Academy of Health Sciences recognizes the full breadth of academic health science*

including all of the medical and allied health sciences and ranging from fundamental science to social science and population health. Members elected to the Academy will be well recognized by their peers nationally and internationally for their contributions to the promotion of health science. They will have demonstrated leadership, creativity, distinctive competencies and commitment to advance academic health sciences. Such individuals are elected to the organization after a nominating and peer review procedure, which seeks to recognize those who are marked by a record of substantial accomplishment. At the time of election, members must be Canadian citizens or have been Canadian residents for the preceding 3 years. Election to the Academy is considered one of the highest honours for members of the Canadian health sciences community and carries with it a covenant to serve the Academy and the future well being of the health sciences irrespective of the member's specific discipline." Importantly the CAHS founders wanted to ensure that, in addition to recognized achievement in health science, elected fellows should exhibit leadership and be clearly committed to serve the Academy's mission. This wording has undergone only minor changes since it was first articulated.

Extensive effort and discussions then unfolded regarding the mandate of the new health science academy. It was agreed that the mission was twofold; **1)** to provide a source of credible independent expert assessments on the health science underlying pressing issues and matters of public interest and **2)** to provide a voice for Canada on behalf of the health sciences both nationally and internationally.

Whereas it was understood that the overriding mission of CAHS, as aligned with the CAS, was to provide expert scientific assessments on key issues relevant to the health of Canadians, it was felt that some additional roles not previously fulfilled would be of value to Canadians. These included; **1)** development of timely, informed, strategic assessments on urgent health issues **2)** development of sound and informed public policy related to these issues **3)** surveillance of global health related events to enhance Canada's state of readiness for the future. While some had envisaged that the CAS would be the sole provider of assessments, from the outset the founders of CAHS planned to conduct independent assessments on key topics affecting the health of Canadians. In the tradition of both the IOM and the UK Academy of health Sciences, CAHS also planned where appropriate, to couple their assessments with sound advice that might influence public policy. This intention became even more compelling as a future CAHS direction when it became clear that no central CAS funding would flow in support of CAHS activities. An outstanding presentation by Dr Kenneth Shine, immediate past President of the IOM at the second annual CAHS meeting in Ottawa in 2006 highlighted the need for CAHS to diversify its sources of financial support. He recalled the complex emerging history of the IOM as it developed its independence within the context of the U.S. National Academy of Sciences. He emphasized the need to take particular care in choosing the right questions(s) to be posed in an assessment and to be certain about independence from its sponsors. Previously Peter Tugwell and Paul Armstrong had visited the IOM and its President Harvey Fineberg as well as key executive officers to understand their operational modus operandi and in hopes of developing a closer relationship with the IOM. The CAHS leadership was focused on the distinct roles of the new Academy from the early planning stages and has remained the focus of successive Boards to the present.

Election to the Academy is considered one of the highest honours for members of the Canadian health sciences community and carries with it a covenant to serve the Academy and the future well being of the health sciences irrespective of the member's specific discipline

The Growth and Development of CAHS – Perspectives of the Presidents 2004–15

PAUL ARMSTRONG 2004–07

- CAHS as an appropriate home for non-traditional health disciplines
- Communication across fellowship ranks
- Financing
- Staff support
- Brand recognition
- Finding assessment sponsors
- CAHS independence from CAS

Having achieved a transformation from the CIAM to CAHS in 2004, we welcomed our newly elected fellows at our first annual meeting in September 2005. The Board was keen to ensure the fellows understood the structure, purpose and function of the new Academy – our initial meeting was devoted to the bylaws, process of nominations/election and financial affairs, communicating an appreciation of how assessments were to be developed and managed and promoting the value proposition of CAHS within and beyond traditional academic arenas.

Managing our relationship with CAS was complex. **Martin Schechter** and **Paul Armstrong** represented CAHS on the CAS Advisory Board. The previously anticipated funding from CAS to the three founding academies was not forthcoming. The expectation within CAS was that that the member academies would not conduct their own assessments. The CAHS Board was committed to CAHS maintaining the right to construct independent assessments on health related matters and to develop its own "brand" and identity. Despite lean administrative support and volunteer internal resources – the Executive began a determined search for sponsors to fund potential assessments. *Return on Investment in Health Research* became the first CAHS major assessment and substantial effort was then expended to organize, promote and fund this initiative. We were inspired by the uplifting presentation of Kenneth Shine (past President of the IOM) at our 2006 annual meeting as to some analogous struggles that organization had overcome and how it had ultimately succeeded.

MARTIN SCHECHTER 2007–09

- More sustainable funding model
- Identifying the issues of
  - subsidized staffing/operations
  - no head office/secretariat
  - inadequate translation
- Confronting lack of integration with CCA
- Establishing saleable assessments

CAHS solidified its peer review processes, for external review of assessment reports and for election of Fellows. We were attracting ever more applications from the cream of the Canadian health sciences. The initial assessments were very well received and together with a number of new ones that entered the pipeline during this period, provided the beginnings of a real track record. CAHS established relationships with more than two dozen regional, provincial and national NGOs and governments who sponsored our assessments. This diversity of funding helped to establish our independence from any single sponsor.

Without core funding, CAHS remained a bootstrap operation supported essentially by fellowship dues and AGM registration fees. We were aided by a single contribution of $100,000 from a generous donor during this time. Even so, we were not able to operate a head office in Ottawa; our operations depended heavily on in-kind contributions from members of the Executive and we regretted not having adequate funding for French translation of our on-line and print materials. The Academy was hampered by the lack of meaningful integration with the CCA, which operated independently and often in competition around the performance of assessments. As a result, CAHS could conduct only those assessments that found favour with a range of sponsors and members of the Executive spent a great deal of their time on fundraising for each assessment.

CATHARINE WHITESIDE 2009–11

- Permanent executive assistance
- Secretariat office and function
- Common interests, better relationships with CCA
- Meaningful engagement of fellows
- Communication of assessments

The CAHS required permanent executive assistance and a secretariat function to improve the continuity of planning our annual activities including tracking membership, planning the annual meeting and better tracking of revenues and expenses. We hired **Allison Hardisty** as our part time administrative assistant and contracted with CCA for excellent secretariat support (financial, and website services) and established a permanent Ottawa address.

The relationship between the leadership of the CAHS and CCA became more collegial and strategic as both parties engaged in constructive discussion resulting in the CCA recruiting more CAHS members to serve on assessment panels. The CAHS contracted CCA to provide expert research administrative and report publishing for two assessments – a major quality improvement strategy. During Elizabeth Dowdeswell's presidency the CAHS members of the CCA Board had considerable input, particularly about the importance of assessments financed independently from the federal government, setting the stage for further evolution of our relationship with CCA and its other Academy members.

Enabling more members of the CAHS to engage meaningfully in the mission was an ongoing challenge. Board strategic initiatives led to more members included in the planning and implementation of the presentations and discussions at the annual meeting, membership in assessments both for the CAHS and CCA and improved communication through the publication of our Newsletters.

TOM MARRIE 2011–13

- Enhancing relationship with CCA
- Earlier planning of Annual meetings
- Presentations to government committees
- Engagement of fellows
- Invited fellow lectures, Armstrong Lecture

The relationships between CCA and its member Academies surfaced as an issue during **Catherine Whiteside's** term but accelerated with new members on the CCA Board representing RSC and CAE. The CAHS took a moderating position and strove for optimizing relationships. This occupied my entire two years as president and was passed along to **John Cairns** who has brokered a satisfactory resolution.

Planning for annual meeting/symposium – as the meeting has grown in complexity it became apparent that planning for the next meeting had to begin as soon as the current year's event finished and is being moved further forward into the preceding spring.

We had three requests for presentations to federal government committees; one was given by **Paul Armstrong** and a second by **Lorne Tyrrell**. The third was cancelled because the House rose for summer recess early. We now have a policy for interacting with government(s) which should make us more visible and result in more presentations.

Fellow engagement is a perennial issue which has cut across the tenure of all presidents to date. Instituted during my tenure were invited presentations by two Fellows at the Annual Meeting. The entire Fellowship was asked to nominate Fellows for these presentations. We also established the Armstrong Lecture to honour **Paul Amstrong**, the first president of CAHS.

JOHN CAIRNS
2013–15

- Engagement of fellows
- Francophone initiatives
- Renewed strategic planning
- Finances
- Assessments
- Mutual benefits of CAHS-CCA relationship
- Establishing and strengthening partnerships

Engagement of the Fellows has been a major strategic objective. Responses to the survey of Fellows in early 2013 have influenced annual meeting and forum planning, communications, regional meetings and assessments.

With advice and assistance from **Louise Potvin** of U of Montreal, we implemented translation of the newsletter, completely revamped the French versions of our website (and committed to new technology to further enhance web translation), revised the strategies for fellowship nomination communications with francophone health sciences universities and the president attended a meeting in Montreal of an FRSQ anniversary celebration featuring Quebec CAHS fellows.

In April 2014, the Board revisited the 2011 strategic planning exercise and committed to new initiatives regarding fellow engagement, communications, fellow nominations, assessments, annual meeting planning, government relations and partnerships. In addition to our standing committees on assessments, fellow selection and governance/nominations we have added committees on communications, government relations, annual meeting planning and partnerships.

We have worked with CCA to strengthen and clarify our financial reporting, ensuring separate accounting of operations/governance, annual meeting/forum, assessments and strategic initiatives with adherence to financial targets. We are creating a development committee under the chair of **Catharine Whiteside**.

We have enhanced assessment activities with the release of 2 major assessments accompanied by major dissemination efforts, a forum co-sponsored by the World Heart Federation, the conceptualization and impending launch of 2 major assessments, the initial planning for another and the hiring of a coordinator of assessments.

We have enhanced our interactions with CCA and the other Academies, working towards optimizing mutual benefits.

The Fellows of CAHS

The earliest concepts of the CAHS embodied the ideal of a fellowship enriched from the full breadth of academic health sciences from basic science to clinical science to social science to population health and including all of the health disciplines: Medicine, Nursing, Dentistry, Pharmacy, Rehabilitation Sciences (Occupational and Physiotherapy) and Veterinary Medicine.

Fellows would be chosen by appropriate peers using rigorous and transparent processes designed to select individuals widely recognized for their leadership, scientific creativity, distinctive competencies and demonstrated commitment to advance academic health sciences and the health of all Canadians.

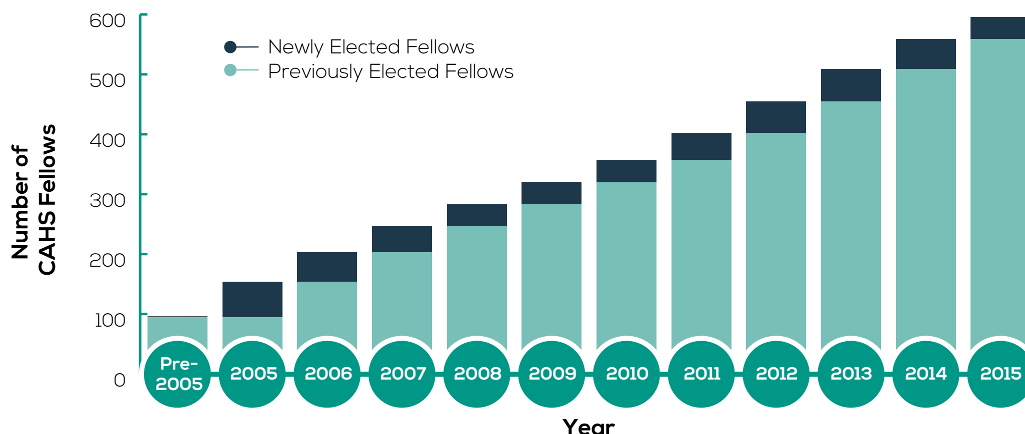
The challenges facing governments at all levels, institutional and professional leaders in the health care system, the non-governmental and business sectors and the public in regard to health and the healthcare system are complex and daunting. The creation of effective policy and its successful implementation require careful and thoughtful analysis of the issues that is not only expert, but also unbiased and independent of vested interests and agendas. There must be objective weighting of the available scientific evidence at arm's length from political considerations and with a focus on the public interest. CAHS was to be an honorific society that would not only recognize the achievements of outstanding individuals but also identify those who would undertake a covenant to serve the Canadian public by providing "scientific advice for a healthy Canada".

The founding fellows of the CAHS were drawn from the CIAM and the national associations of nursing, dentistry, pharmacy, rehabilitation sciences and veterinary medicine. A rigorous system was established to ensure the annual nomination of excellent health scientists whose achievements make them eligible for fellowship. In a given year, about 50% of those nominated are named to fellowship and they are formally inducted at the annual meeting in the autumn. The system has evolved, now to include a national call for nominations by current fellows, supported by the leaders of host universities and institutes and by national/international letters of support and a formal statement of intent by the nominee to serve the people of Canada. The designation of FCAHS has come to convey substantial academic merit.

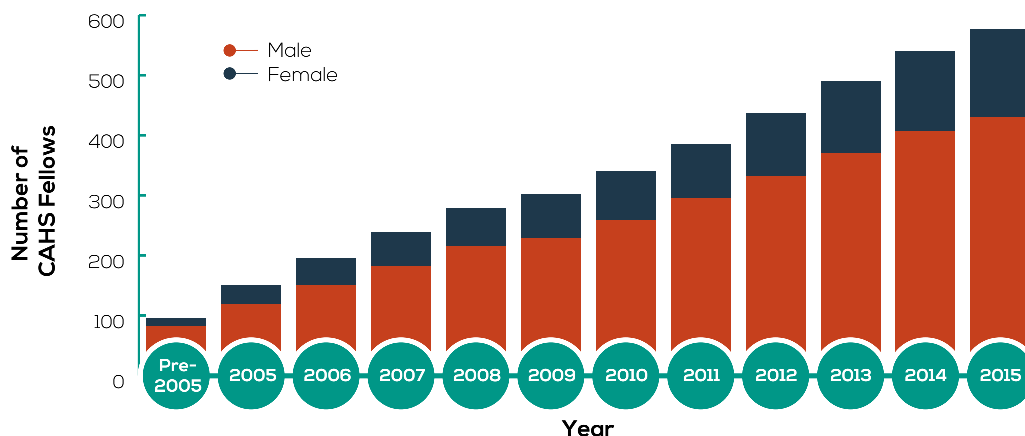
The Academy has grown to 577 fellows in the categories of regular (age < 65) (331), senior (age 65–74) (168), emeritus (age ≥ 75) (72), Distinguished (5) and Honorary (1). Their home faculties/disciplines are Medicine (457), Nursing (36), Rehabilitation Sciences (19), Dentistry (7), Pharmacy (16), Veterinary Medicine (14), Public Health (8) and Other (15). There are fellows from every Canadian province and 9 reside outside Canada. The fellowship is 75% male and 25% female.

CAHS was to be an honorific society that would not only recognize the achievements of outstanding individuals but also identify those who would undertake a covenant to serve the Canadian public by providing "scientific advice for a healthy Canada".

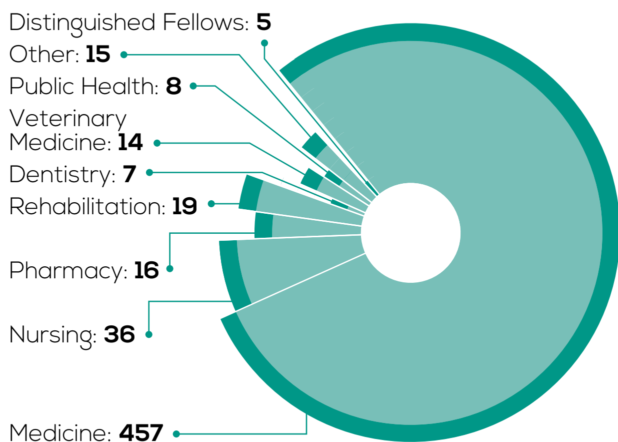
Growth in CAHS Fellow Membership from 2005–15



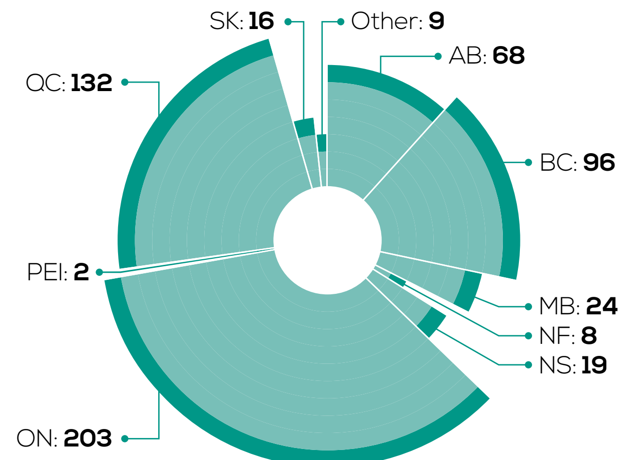
Gender Distribution of CAHS Fellows from 2005–15



Membership Breakdown by Discipline



Membership Breakdown by Province



CAHS assessments

CAHS serves as a credible, expert and independent assessor of science and technology issues relevant to the health of Canadians, to support the development of timely, informed and strategic advice on urgent health issues and the development of sound and informed public policy.

Our working processes are designed to ensure appropriate expertise, integration of the best science and avoidance of the bias and conflict of interest that frequently modulate solutions to difficult issues and areas of uncertainty in the health sector.

The idea of an assessment may arise from a specific request from a government, a public or private foundation or other agency, or from within the CAHS. An assessment often emerges from a CAHS Forum held during the Annual Meeting. The focus of the assessment is generally formulated as one or several problems, issues or questions where uncertainty or controversy exists. Clear definition of the question to be addressed by the assessment and an adequate existing evidence base to inform the question(s) are critical to the focus and eventual application of the findings. The Standing Committee on Assessments (SCA) works closely with the individual(s) or group initially proposing a problem/issue/question to create a formal structured abstract which describes the topic, its appropriateness as a CAHS assessment and the level of relevant Canadian/ International expertise and possible sponsors. The structured abstract requires CAHS Board approval to proceed to preliminary discussions with potential sponsors and panel chairs. Eventually a detailed prospectus is developed, either before selection of the chair or in conjunction with the chair and the prospectus is used as the basis for definitive discussion with potential sponsors.

Each assessment requires financial sponsorship, most often by agencies or divisions of federal, provincial or territorial governments, health organizations, various NGO's (including professional societies, academic and health institutions and private foundations) and for-profit businesses (with the intent that the funding from for-profit businesses will not exceed 50% of the total for a given assessment and that there is a preference for business associations over individual businesses). Sponsors have input to the framing of the assessment question, however they are not further involved in the process unless invited by the panel and cannot influence the deliberations of the panel or the content of the report. There are usually several sponsors of an assessment; all are acknowledged in the report within categories of the size of contribution.

The CAHS conducts three principal types of assessments:

1. Major assessment.

This format is used to approach a broad problem/ issue/question. An effective, experienced and credible chair of an expert panel (usually a CAHS fellow) is approved by the CAHS Board, and in consultation with the chair, the Assessments Committee selects a panel of 10–15 members with a suitable balance of expertise, gender and geography. Each is chosen as an individual and must not be considered as a representative of any particular group or organization. It is expected that about 25% of the members will be fellows of the CAHS and that some will be chosen from outside Canada. Panel members serve on a volunteer basis with reimbursement only for travel, accommodation and out-of-pocket expenses; research, scientific and coordination support is

provided. Once the question is finalized, the panel may employ various methodologies e.g. environmental scan, formal literature review, key informant interviews, sponsor interviews, expert external interviews, commissioned papers and consultations. The draft assessment report undergoes rigorous internal and external review with formal responses to every comment required. The final report is publically released in the name of the CAHS, generally in conjunction with a relevant event, and is published in English and French on the CAHS website and in print. The entire process generally takes 12–18 months.

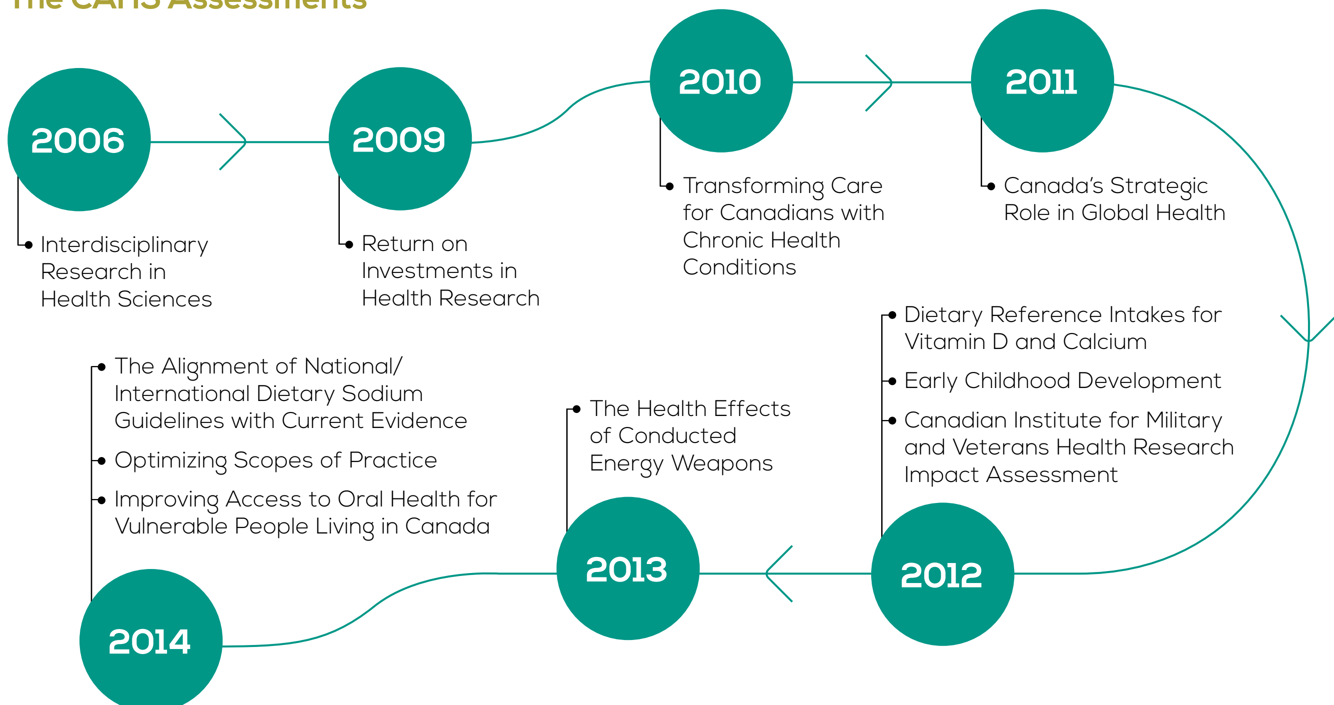
2. Casting in a Canadian Context (CCC).

This format is concerned with review of reports of other academies, governments and countries. Such a report and its recommendations may have potential Canadian applicability and if so, it may be important to frame it in the Canadian context. The CAHS process generally involves the appointment of an expert chair and panel, but of smaller size than that for a major assessment and the duration of the process is expected to be shorter.

3. Public Forum/Symposium.

This format takes the form a meeting or series of meetings convened by the CAHS and may engage public- and private sector experts, sponsors and other interested parties. It is designed to facilitate discussion of an important issue in an open environment that facilitates evidence-based dialogue in a neutral environment created by CAHS. They may be convened with the expectation that there will be continuing subsequent activity on the subject. Depending upon agreement with the sponsor(s), the summary reported of the convened activity may range from informal notes for the forum participants only through to a summary report for more general distribution. Such a report does not issue conclusions or recommendations in the name of CAHS because the forum process included the sponsors and other interested parties, and the Reports reflect the points of view of these committed groups and individuals.

The CAHS Assessments



All of the CAHS assessment reports with executive summaries may be found on the website in English and in French **http://www.cahs-acss.ca/completed-projects/**. They are briefly summarized in the following categories:

Major Assessments

1. Barriers to and Benefits of Interdisciplinary Research in the Health Sciences in Canada

The assessment of interdisciplinary health research (IDHR) was chosen specifically to explore the potential for collaboration between the 6 disciplines and to highlight Canada's unique opportunities for this kind of research. Chaired by **Judith Hall** (UBC) the expert panel represented the 6 health-science disciplines, was broadly based geographically and well-balanced by age and gender. The report highlighted the current mismatch of the traditional academic structures and reward systems with the requirements of IDHR. It indicated several potential measures to support IDHR through more strategic resourcing, rewards for IDHR and emphasis on the opportunities for interprofessional collaboration and interdisciplinary training. In this last regard, the strategic training initiatives of the Canadian Institutes of Health Research (CIHR) and its major contributions to team grants that emphasize trans disciplinary initiatives have been welcome advances. The panel indicated the need for "a true analysis of the state of IDHR, through systematic and rigorous data collection on programs and policies across Canada." Their proposed roadmap includes a broad inventory of IDHR in all sectors, an examination of the impact of professional organizations on health research, and a systematic review of research training opportunities. The findings were published in CMAJ 2006; 175:763-771 accompanied by an editorial CMAJ 2006; 175:761-62.

2. The Return on Investments in Health Research: Defining the Best Metrics

In early 2006 as the new CAHS Board began its first year, it resolved to develop a major assessment that would position its future role as an independent authoritative voice on health science matters. The Board was especially conscious of the need to engage key stakeholders in a topic that would have wide appeal, address an unmet need and possess genuine potential to make a future impact. After extensive deliberation and consultation the Board decided to pursue the topic of evaluating the return on investment (ROI) in health research. Several considerations supported this choice:

- Lack of public understanding of the value of research applicability to current issues in health
- Concern about accessible, affordable, high quality health care in a publicly funded system
- Need to adequately measure and meaningfully convey the benefits of health research to policy-makers and the public
- Increasingly common view that health care/health research is a cost-driver consuming an ever greater share of resources at the expense of other sectors
- Concern about expenditure accountability in both the public and private sectors in Canada and abroad
- Lack of consensus on how and when to best evaluate return on research expenditures
- Questions from policy makers about tangible results attributable to recent increases in public investment in health research e.g. CIHR, CFI, CRC programs

- Uncertainty about appropriateness of Canada's health research expenditures versus those of analogous contributions in other industrialized countries
- Need to acquire appropriate evidence to strike the right funding balance between investigator investigator-initiated "discovery" and targeted "strategic" health research

The Board appointed a Standing Committee on Assessments initially chaired by **Andreas Laupacis** (U of Ottawa) to guide the assessment process and ensure its quality and integrity. Particular attention was paid to selection of the assessment panel chair who was to be a recognized leader, principal architect, team builder and facilitator of the assessment process and would serve as a key spokesperson representing the panel to all stakeholders. By early 2007 enough commitment to funding had been secured, **Cyril Frank** (U of Calgary) was appointed as panel chair and plans to further engage potential sponsors were undertaken around a major forum held at the annual CAHS meeting in Montreal in September 2007. This forum featured international thought leaders including the Honorable John Manley as well as leaders from the major sponsors: Canadian Health Services Research Foundation, CIHR, the Public Health Agency of Canada and Canada's Research Based Pharmaceutical companies. This initiative proved critical to the subsequent progress of the assessment and with a formal prospectus developed by **Martin Schechter** (UBC) proved to be a key instrument in engaging all 23 funders and stakeholders in the ROI assessment process.

Dr. Frank recruited an outstanding assessment panel with key international representation. They refined the principal question to become: ***What Is the "best way" (best method) to evaluate the impacts of health research in Canada, and are there "best metrics" that could be used to assess those impacts (or improve them)?*** Following extensive internal and external review, in January 2009 the completed report was shared with the ROI assessment sponsors at a special closed meeting convened in Ottawa the day prior to public release. The report set out a series of key recommendations on how diverse organizations with differing missions can nonetheless measure and report the return on their investments in a consistent fashion. The assessment provided a new standard and measurement tools that facilitate enhanced opportunities for genuine accountability for funders of health research and was accompanied by seven commissioned papers.

The report identified five dimensions through which health research impacts should be measured: advancing knowledge; building research capacity; informing decision-making; improving health and the health system; and creating broad social and economic benefits. It developed a framework relevant to everything from fundamental laboratory science to research into the population health status of communities as well as to its broader economic and social impacts. The CMAJ had agreed to

The assessment provided a new standard and measurement tools that facilitate enhanced opportunities for genuine accountability for funders of health research and was accompanied by seven commissioned papers.

publish an on-line article simultaneous with the public release (January 2009), followed by a print version (CMAJ 2009; 180:528-534). The assessment has been incorporated into the CIHR strategic plan and evaluation roadmap, the provincial research foundations of British Columbia, Alberta and Saskatchewan assessment procedures as well as the federal government science and technology planning procedures. Uptake and promotion of the report has included several national and international presentations.

3. Transforming Care for Canadians with Chronic Health Conditions: Put People First, Expect the Best, Manage for Results

This assessment was launched immediately following the 2008 annual forum and embodied a commitment to examining the evidence related to the burden of chronic disease and its importance to the Canadian public policy agenda. The Forum identified the need to shift from thinking in silos of disease to a systems-oriented concept of chronicity, to synthesize the learning from good existing chronic disease management models and interventions to identify key elements of a sustainable strategy for healthcare system transformation, and to mobilize transformative action across Canada. **Louise Nasmith** (UBC) and **Penny Ballem** (UBC) were appointed co-chairs.

The expert panel examined the peer-review and grey literature using iterative approaches to identifying existing and emerging evidence as viewed from the perspectives of the broad experience of the panel members. Attention was given to case studies of health care system transformation in other countries, principles of complex system change, emerging reforms and research findings about the value of primary care including a commissioned paper and emerging and best practices and on-the-ground innovations for a variety of key enablers. There was consensus on the vison that ***"All Canadians with chronic conditions have access to healthcare that recognizes them and treats them as people with specific needs; where their unique conditions and circumstances are known and accommodated by all their healthcare providers; and where they are able to act as partners in their own care."***

The panel arrived at six recommendations designed to enable all people with chronic ***health conditions to access a system of*** care with a specific clinician or team for their primary care and coordination of their specialty care needs throughout their life spans. The many groups of stakeholders were identified and targeted to play explicit implementation roles, with clear identification of what needs to happen and how. The report was presented at a public meeting at the U of Ottawa on December 7, 2010. The recommendations have been presented in numerous settings by Louise Nasmith and have been extensively referenced in lay and academic publications. The recommendations are reflected in the strategic plans of all provincial health ministries (e.g. patient- and family- centred care, measure quality and empower self-management). The most recent CIHR call for Strategic Patient-Oriented Research is for the development of networks to address chronic disease management across Canada.

4. Canada's Strategic Role in Global Health

This assessment arose from a CAHS Annual Forum held in 2009. It was then apparent that Canada had become a leader in global health. However, there was a strong sense that Canada could accomplish more as a country if we had a coherent national strategy that brought together, connected and coordinated the efforts and energies of individuals and organizations and helped to catalyze their success. The CAHS decided to undertake a major assessment and selected **Peter Singer** (U of Toronto) as the chair. The Council of Canadian Academies was asked to manage the assessment process; the CAHS and the CCA jointly appointed the expert panel. The panel was charged to examine Canada's current role in global health, to assess its comparative advantages in the context of global health needs and to recommend

steps to optimize Canada's strategic role in terms of optimal use of Canadian investment of human, financial and other resources relating to global health. The panel gathered evidence from a review of recent international reports; a literature review of recent Canadian reports, policies and proposed frameworks relating to global health; a formal call for evidence; testimony form expert witnesses; targeted interviews; and roundtables with students on four Canadian university campuses.

The report was publically released at a Global Health Conference in Montreal in November 2011. The three major findings were: **1)** Complex global health issues will continue to increase in scope and complexity, **2)** Increasing inequity in global health is occurring in the context of ongoing international financial and economic instability, which is resulting in significant resource constraints on current and future investments in global health and **3)** There is an exciting opportunity for global health partnerships between Canada and LMICs that encourage bilateral South-North learning across all sectors through meaningful and mutual engagement. The panel articulated five roles that Canada might play, based upon Canadian success stories: ***Indigenous and Circumpolar Health Research, Population and Public Health, Community-Oriented Primary Health Care, Smart Partnerships in Education and Research and Global Health Innovation***. The panel concluded that an "all-of-Canada" approach was most likely to achieve success, whereby all members of the Canadian global health community, including governments, would work together to build a single multi-sectorial global health strategy that would then be implemented by the most appropriate organizations and institutions. A five step process was foreseen, commencing with the CAHS Forum on global health, then the assessments of Canada's strategic role, to be followed a by phases of listening to stakeholders, striking a global health commission to develop a national multi-sectoral global health strategy and finally to create a mechanism to monitor the outcomes and impacts of the strategy. Informed by this assessment, Peter Singer proceeded to develop a plan that led to the federal government investment in launching Grand Challenges Canada dedicated to supporting bold ideas for applied research innovation in global health. By 2014, this new NGO had supported almost 700 projects totaling $174 million, implemented in more than 80 countries.

5. Early Childhood Development (with RSC) 2012

This assessment was undertaken jointly in 2010 by the CAHS with the Royal Society of Canada and was sponsored by the Norlein Foundation of Calgary. It was generally accepted that child, adolescent and adult mental health, effective functioning and well-being all result from a complex array of biological, social and environmental factors interacting over the life course. The expert panel was convened to address the following questions: **1)** ***are there identifiable adverse childhood experiences (ACE) such as abuse, neglect, family addiction and/or mental illness that lead to poor mental health and unhealthy behaviors, such as addiction, in the adolescent and young adult? And*** **2)** ***What is the evidence for the effectiveness of a variety of interventions to mitigate the adverse effects of environmental influences on the developing child? To what extent are they being implemented in Canada?*** The expert panel was co-chaired by the late **Clyde Hertzman** (UBC) and **Michel Boivin** (Universite Laval). The panel built upon the extensive scientific evidence summarized in the US National Academies assessment of 2000 edited by Shonkoff and Phillips and went on to review the formidable subsequent progress in knowledge of child development, epidemiology, neuroscience, genetics, epigenetics and prevention as well as the emerging reports from ongoing longitudinal studies initiated in the 1980s. In the creation of their report, they were guided by three basic assumptions: **1)** the need to adopt a life-long developmental perspective **2)** the usefulness of a bio-ecological population health model to describe the multifaceted nature of the environment and **3)** the need to consider the dynamic interplay between nature and nurture in development.

The panel concluded that **1)** there is a predictive association between various early childhood adversities and a variety of maladaptive outcomes in later life, **2)** new findings in neurosciences, genetics and epigenetics have started to elucidate the biological pathways and conditions under which ACE may have long-term impact and **3)** there is emerging evidence that child maltreatment and its associated outcomes can be reduced if specifically targeted, intensive and sustained services can be deployed.

The report was released at a press conference on November 12, 2012, immediately before a symposium on the New Science of Child Development sponsored by the RSC and the Canadian Institute for Advanced Research. It has since been extensively referenced in the child development literature.

6. The Health Effects of Conducted Energy Weapons

Conducted energy weapons (CEW), commonly referred to as TASERs, the brand name specific to devices manufactured by TASER International, have been in use by law enforcement in Canada since the 1990s and have been subject to controversy and uncertainty. In 2010, the Centre for Security Science at Defence Research and Development Canada (DRDC) asked the CAHS to conduct an independent, evidence-based assessment of the state of knowledge about the medical and physiological impacts of conducted energy weapons. CAHS established a partnership with the Council of Canadian Academies to work collaboratively on the assessment and to serve as the secretariat for the science-based exploration of the evidence. The CAHS and the CCA jointly assembled an expert panel under the chair of the Honorable Justice **Stephen T Goudge**. The panel was asked three main questions: 1) ***What is the current state of scientific knowledge about the medical and physiological impacts of conducted energy weapons?*** 2) ***What gaps currently exist in the current knowledge about these impacts? and*** 3) ***What research is required to close these gaps?*** The panel assessed major evidence syntheses, reviews and books; peer-reviewed primary research; other relevant literature (research ethics, electrophysiology, electrical engineering); technical documents outlining testing results established by DRDC; and a hands-on demonstration of CEW deployment during a site visit to the Quality Engineering Establishment research facilities of the DRDC and the Canadian Forces.

The report was provided in confidence to DRDC in October 2013, prior to its public release. The five key findings were that **1)** Each CEW device must be tested on its own merit to assess performance as well as the ability to induce incapacitation and potential adverse health effects, **2)** While fatal complications are biologically plausible, they would be extremely rare, **3)** Although the electrical characteristics of CEWs can potentially contribute to sudden in-custody death, CEW exposure cannot be confirmed or excluded as the primary cause of a fatality in most real-world settings, **4)** There are five overarching knowledge gaps in health-related CEW knowledge and **5)** Filling these gaps can best be achieved through a series of integrated strategies that focus on better surveillance, monitoring, reporting and population-based epidemiological studies. The report has been extensively referenced and has been incorporated in the educational and regulatory frameworks of Public Safety Canada and Canadian police forces.

7. Optimizing Scopes of Practice: New Models of Care for a New Health Care System

This assessment arose from the 2011 Forum entitled "Smarter Caring for a Healthier Canada – Embracing System Change". The Forum dealt with a range of issues, but it was soon recognized that focus was required for an effective assessment. It was clear that a new health care system must be built upon collaborative care models, where the right professional provides the highest quality of care in the right setting and at the right time based upon the needs of the individual patient. The sense was that determining the

optimal scopes of practice of these health care providers would be an essential element in leading health care transformation for the future, but that the systems in place for determining and regulating scopes of practice had done more to preserve the status quo than to promote change. The question posed to the expert panel was, ***"What are the scopes of practice that will be most effective to support innovative models of care for a transformed health care system to serve all Canadians?"***

The assessment was co-chaired by **Jeff Turnbull** of University of Ottawa and **Sioban Nelson** of University of Toronto. **Ivy Bourgeault**, of University of Ottawa and Scientific Director of the Canadian Health Human Resources Network led the project team based at CHHRN in Ottawa. The report was released at a Canadian Association of Health Services and Policy Research Conference in Toronto in May 2014. It proposed an evidence-based approach characterized by three overarching elements which were supportive of innovative models of care, flexible in response to the varying needs of patients and communities and accountable to the public and to funders. Two levels of accountability were proposed: **1)** a regulatory model that ensures the health care professional's competence and **2)** an accountability model embedded within collaborative health care practice through a proposed accreditation structure that ensures that all members are working to their optimal scopes of practice in order to better meet patient, community and population health needs. This assessment has been widely reported in the press, has been presented in various formats in several settings across Canada and was referenced in the report from the Federal Government Advisory Panel on Healthcare Innovation released in July 2015.

8. Improving Access to Oral Health Care for Vulnerable People Living in Canada

The assessment grew out of a CAHS Annual Meeting Forum held in Ottawa in 2008 and chaired by **James Lund**, then Dean of Dentistry at McGill. The rationale was based on the awareness that although the oral health status of people in Western societies has improved markedly, dental caries and periodontal diseases remain highly prevalent. There is a particularly high burden imposed upon selected disadvantaged groups and yet the costs of prevention and management of these diseases are generally not incorporated in provincial or territorial health care systems in Canada. Following the untimely death of James Lund, **Paul Allison** succeeded him as Dean and assumed the Chair of the assessment. The Panel conducted targeted literature reviews and also relied heavily on the Canadian Health Measures Study data collection by Statistic Canada in partnership with Health Canada. The data were accessed in a secure university setting; original and secondary analyses were performed with the support of Statistics Canada's Research Data Centre in Montreal.

Two levels of accountability were proposed for Scopes of Practice: 1) a regulatory model that ensures the health care professional's competence and 2) an accountability model embedded within collaborative health care practice through a proposed accreditation structure that ensures that all members are working to their optimal scopes of practice in order to better meet patient, community and population health needs.

The assessment was completed in the spring of 2014, and was released in a phased process designed to build interest and constituencies of interest in support for the findings. The first public release was in September 2014 at a national meeting of the Canadian Association of Public Health Dentistry. The report identified two core problems: **1) *Vulnerable groups living in Canada have both the highest level of oral health problems and the most difficulty accessing oral health care and* 2) *The public and private oral health care systems in Canada are not effective in providing reasonable access to oral health care for all vulnerable people living in Canada***. The panel made five major recommendations to address the core problems and to achieve the vison of "equity in access to oral health care for all people living in Canada". For each recommendation, the panel identified groups (Targets) that should be acting on that recommendation. The report has had extensive press coverage, including a piece by Paul Allison in the Globe and Mail (September 16, 2014) and has had uptake by many public health and dental groups.

CCC's and Focused Assessments

1. Dietary Reference Intakes Vitamin D and Calcium

In 2009, the Health Canada Office of Nutrition Policy and promotion began discussion with CAHS to develop an Advisory Committee in regard to a report Health Canada was to receive from the Institute of Medicine on dietary reference intakes for vitamin D and calcium. Health Canada was seeking advice and expertise to allow the agency, in a timely manner, to develop renewed guidance for Canadians based on the recommendations to be made in the US report from the IOM. The Advisory Committee formed by CAHS under the chair of **David Goltzman** of McGill University first met in February, 2011. The committee had expertise in nutrition, growth and body composition; nutritional health of high risk Canadian populations (including obese children, the elderly and aboriginals); adult and paediatric clinical and investigative medicine; clinical biochemistry and genetics; calcium, vitamin D and bone physiology and biochemistry; epidemiology and biostatistics; health policy and governance; behavioural change and organizational improvement; social and economic determinants of health, nutrition and food insecurity; and bioavailability and safety of nutritional supplements. The process was organized around formal responses to questions posed by Health Canada, pursuant to the release of the IOM report in November, 2010. The Committee responded to several iterations of questions, clarifications and suggestions by Health Canada.

The report of the Advisory Committee was provided to Health Canada in January, 2012. Among the many issues addressed were those of polices for the fortification of the food supply and the related issues of the public's understanding and the necessity of irreproachable science underlying any such actions. Factors such as socio-economic status, age and ethnic origin were noted to have a huge influence on the nutritional experience of various groups and the implications for them of policy choices. The severity and intensity of health outcomes associated with deficiencies were taken into account. Attention was given to the need to weigh carefully the costs and benefits of any proposed intervention, both for public health and the economy. Health Canada's updated its guidelines state that " Health Canada has also made use of an independent expert advisory committee, managed by the Canadian Academy of Health Sciences, to consider specific questions related to the implementation of vitamin D and calcium values and provide advice to Health Canada". **http://www.hc-sc.gc.ca/fn-an/nutrition/vitamin/vita-d-eng.php**

2. Canadian Institute for Military and Veterans Health Research Impact Assessment

The Canadian Institute for Military and Veterans' Health Research (CIMVHR) is a virtual institute (with a secretariat at Queen's University) comprising 25 Canadian universities joined together by a memorandum of understanding created to address the health and wellbeing of Canadian military personnel, veterans and their families. Defence Research and Development Canada (DRDC) desired to support CIMVHR in the development of metrics and indicators of the outcomes of its principal activities which are focused on research and the delivery of scientific outcomes, supplemented by educational opportunities and the exchange of information and knowledge. Accordingly, DRDC approached CAHS to develop the requisite metrics and indicators, based upon the prior experience of CAHS gained during the conduct its major assessment of the Return on Investments (ROI) in Health Research released in 2009. The late **Cy Frank** of the University of Calgary chaired a small expert panel which built upon the CAHS ROI framework and considered the impacts and activities that are relevant to the military and veterans' health context. They ensured that the processes and primary outputs represented the most important activities of CIMVHR, with a focus on capacity building. They identified the most important stakeholders in CIMVHR activities to populate the secondary outputs. Given the network format of CIMVHR, the evaluation of networks was also addressed. Multiple impact categories were developed, several of them in addition to those in the 2009 CAHS framework. Five explicit recommendations were made in regard use by CIMVHR of a proposed modified CAHS framework for monitoring and evaluation, prioritized implementation of selected impact categories preceded by baseline documentation and staged implementation and finally a formal strategic partnership with CIHR to avoid duplication of efforts in documentation of research impacts. The report was publically presented at a Network meeting of CIMVHR in November 2012 in Kingston.

Forums Convened

The Alignment of National/International Sodium Guidelines with Current Evidence (with World Heart Federation)

On May 14–16, 2014, the CAHS co-convened (with the World Heart Federation [WHF]) a Consensus Conference on Nutrition, held at the Population Health Research Institute of McMaster University and Hamilton Health Sciences. The WHF and the CAHS had put in place explicit guidelines in regard to conflict of interest, financial sponsorship, and program committee responsibilities. The overall meeting was organized by a 5 person committee drawn from the WHF and the CAHS.

CAHS took responsibility for a Symposium on Dietary Sodium: "*The Alignment of National/International Guidelines with Current Evidence*," while the WHF managed the remainder of the program addressing a wide range of other nutrients. The sodium portion of the meeting featured speakers from the Global Burden of Diseases Group, the Canadian Sodium Working Group, the WHO Sodium Guidelines Group, and the American Heart Association Guidelines Committee. Their presentations provided essential context for presentations of new data (including the June 2013 report of the IOM Sodium Intake in Populations Expert Panel challenging some of the evidence for recommendations for stringent restriction of dietary sodium. A workshop of the sodium speakers occurred following the presentations and was chaired by **Stuart MacLeod** of the University of BC, who together with **John Cairns** (as a member of the planning committee) prepared a summary of the proceedings which is available on the CAHS website, and a published Commentary: (CMAJ 2015;187:95-96).

Annual Forums

As an integral part of its Annual Meeting, the CAHS presents an all-day Forum on a topic of current importance to the health of Canadians.

A range of speakers, including CAHS fellows and other experts from Canada and beyond present their views and are challenged by vigorous discussion and debate. The Forum often gives rise to a major assessment. The following Forums have been held:

2005 – The CAHS Assessment Program (Co-chairs **Judith Hall, Peter Tugwell**)

2006 – How can CAHS Achieve its Mission? (Co-chairs **Paul Armstrong, Martin Schechter**)

2007 – Return on Investments in Health Research (Co-chairs **Cy Frank, Andreas Laupacis, Martin Schechter**)

2008 – Improving Access to Oral Health Care for Canadians (Chair **Jim Lund**) and

– Health System Transformation to Meet the Burden of Chronic Disease (Co-chairs **Penny Ballem, Louise Nasmith**)

2009 – Canada's Strategic Role in Global Health (Chair **Peter Singer**)

2010 – Personalized Health Care – Epigenetics, Ethics, Education, Economics (Chair **Catharine Whiteside**)

2011 – Smarter Caring for a Healthier Canada: Embracing System Innovation (Chair **Carol Herbert**)

2012 – End of Life Care in Canada: The Last 100 Days (Chair **Deborah Cook**)

2013 – Substance Use and Addiction (Co-chairs **Anthony Phillips, Martin Schechter)**

2014 – The Commercialization of Health Research for Health, Social and Economic Benefit: Towards and Evidence-Informed Approach (Co-chairs **Rick Riopelle, Cy Frank**)

2015 – The Dementia Challenge: Facing the Rising Tide by 2025 (Co-chairs **Howard Feldman, Carole Estabrooks**)

The Henry G. Friesen International Prize in Health Research was established in 2005 by Friends of CIHR and spearheaded by FCIHR President, **Aubie Angel** in recognition of Dr. Friesen's distinguished leadership, vision and innovative contributions to health research and health research policy. The annual award includes a cash prize and supports a lecture or series of lectures by a worthy and accomplished speaker of international stature on topics related to the advancement of health research and its evolving contributions to society. Sponsorship is provided by a range of donors including Canadian universities which the prize winner visits. CAHS participates in the prize selection and hosts an address by the recipient to the Academy during its annual meeting. The Lecture endeavours to reach the broadest possible audience at major centres across Canada.

Prize winners have been:
2006 – **Joseph B Martin** (Harvard) ;
2007 – **John Evans** (U of Toronto);
2008 – **Howard Varmus** (Memorial Sloan-Kettering, NIH);
2009 – **John Bell** (Oxford);
2010 – **Shirley Tilgman** (Princeton);
2011 – **Victor Dzau** (Duke, IOM);
2012 – **Marc Tessier-Lavigne** (Rockefeller U);
2013 – **Harvey Fienberg** (Harvard, IOM);
2014 – **Lap-Chee Tsui** (U of Hong Kong);
2015 – **Paul Nurse** (Francis Crick Inst).

The category of Distinguished Fellow was created in 2007 as the highest honor awarded by the Academy. It is limited to individuals who must not only meet the usual criteria for Fellowship, but whose accomplishments in the health arena are considered of such high distinction that only a select few are deemed worthy of this designation. There may at any time, be no more than 10 Distinguished Fellows. Individuals so far named include: **John Evans** (U of Toronto) (deceased 2015), Hon. **Monique Begin** (U of Ottawa), Hon **Michael Kirby**, **Calvin Stiller** (UWO), **Stephen Lewis**, and **David Sackett** (McMaster) (deceased 2015).

The category of Honorary Fellow was created as a distinction intended for those who may not meet the usual criteria for Fellowship but who have rendered exemplary service to the Academy or who have made extraordinary contributions to its success. Such individuals are recognized for their contributions, financial or otherwise, to the welfare of the Academy. **Kenneth Fung** (UBC) is our only Honorary Fellow.

The Paul Armstrong Lectureship was created in 2013 in honour of the founding president of the Canadian Academy of Health Sciences. The honor has so far been accorded to **Jean Rouleau** 2012 (U of Montreal), **Lorne Tyrell** 2013 (U of Alberta), **Peter Singer** 2014 (U of Toronto) and **David Naylor** 2015 (U of Toronto).

The Council of Canadian Academies

The momentum for the creation of the Canadian Academies of Science resumed with the throne speech of October 2004.

The presidents of the member academies (CAHS, RSC and CAE) created an implementation task force and formed a provisional board which worked closely with National Science Advisor Arthur Carty and the Ministry of Industry which had been made responsible for the CAS initiative within government. Negotiation of a funding agreement between the government and the CAS proved to be difficult, primarily because of government provisions in regard to financial dealings with the member academies. The funding agreement was reluctantly endorsed by the three academies in March 2005, funding was finally designated, the first meeting of the Board occurred in September 2005 and Treasury Board approval of funding came in October, 2005. Soon thereafter the offices were established and in June 2006 the organization became the Council of Canadian Academies.

The CCA was designed to give the Government of Canada a standing capacity to obtain independent, authoritative and evidence-based science assessments on a broad range of policy-relevant and complex questions as submitted by government departments and agencies with the approval of relevant federal ministers. The CCA conducts its assessments much in the manner of CAHS, with careful definition of the question, choice of chair and expert panel, careful literature review and deliberations over several months, external review and eventual public release in English and French. The CCA began slowly, issuing its first

assessment in 2007, gradually gaining momentum to produce 31 assessments over its first 10 years of funding. The funding model of these assessments differs from that of the CAHS: the CCA receives a defined budget from the federal government for the production of about 5 assessments per year that are prescribed by the government, whereas the CAHS must obtain the funds for each assessment from either soliciting support from prospective sponsors or accepting proposals accompanied by funding from prospective sponsors.

Despite a high level of satisfaction among government Ministries with the CCA assessments, the Council had a period of considerable uncertainty about renewal of funding. The 2015 federal budget made provision for funding of $15M over the next 5 years. The CAHS has pursued close working relationships with CCA, beginning with the development (in conjunction with the RSC and the CAE) of a statement of common interests in 2010. CAHS purchases a range of administrative services from CCA. The President and the President-elect of CAHS are Board members of CCA. The CAHS is diligent and proactive in recommending fellows for membership on the Scientific Advisory Committee and the expert panels of CCA. The CAHS strongly supported the proposals for the funding renewal of CCA in 2015. CAHS has conducted two major assessments in partnership with CCA (Global Health and Conducted Energy Weapons).

CAHS – A look at the future

The mission and objectives of the CAHS were formulated in 2004–05. Over the ensuing decade 577 outstanding health scientists have been recognized by the Academy and have undertaken a covenant to serve the people of Canada. They are the evolving foundation of the Academy.

A formal strategic planning exercise in 2011 identified many areas of successful growth but also pointed towards several others that required more focused efforts to fulfill our objectives. Strategic planning was renewed in 2014 and established seven commitments to: (i) enhance engagement of the CAHS fellows, (ii) achieve greater continuity and procedural consistency for assessments, (iii) improve communications, (iv) develop more effective and transparent financial systems, (v) establish a more formal annual meeting planning process, (vi) create relevant partnerships and (vii) strengthen government relations.

On the occasion of our tenth anniversary, the need for a Canadian national academy of health sciences is even more compelling than at our onset. Canada is faced by a mounting panoply of such complex challenges as stem cell and reproductive technologies, personalized medicine, global disease threats and bioterrorism. An avalanche of new pharmaceutical agents and devices amidst an aging population creates the spectre of unsustainable health costs. Because CAHS aspires to assist Canadians in addressing these challenges and reaping their promises, it will fully engage the expertise and talents of the Fellows who constitute our most valuable asset. To effectively galvanize this asset and achieve our mission we must energetically seek Academy sponsors from governments, business and philanthropic individuals – indeed all who share a commitment to the health of current and future generations. We wish to inspire their collaboration in the attainment of our full potential to provide “scientific advice for a healthy Canada”.

The Board of CAHS

Presidents

Members

Paul Allison, McGill (2013–16)
Paul Armstrong, U of A (2005–09)
Dina Brooks, U of T (2014–17)
John Cairns, UBC (2009–17)
Alistair Cribb, U of C (2012–15)
Greta Cummings, U of A (2012–15)
Dale Dauphinee, McGill (2011–13)
Janice Eng, UBC (2011–14)
Jocelyn Feine, McGill (2010–13)
Cy Frank, U of C (2011–14)
Carlton Gyles, U of Guelph (2005–06)
David Golzman, McGill (2012–14)
Jean Gray, Dalhousie (2014-present)
Jane Green, Memorial (2014–16)
Pavel Hamet, U of Montreal (2005–08)
Carol Herbert, UWO (2010–19)
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Ellen Hodnett, U of T (2009–12)
Celeste Johnson, McGill (2005–06)
Joy Johnson, UBC (2007–09)
Jay Kalra, U of S (2010–14)
Kevin Keough, Memorial U (2005–08)
Bartha Knoppers, McGill (2008–11)
Mary Law, McMaster (2009–11)
James Lund, McGill (2008–09)
Noni Macdonald, Dalhousie (2008–11)
Tom Marrie, Dalhousie (2009–15)
Wayne Martin, U of Guelph (2009–12)
Patrick McGrath, Dalhousie (2005–07)
Jonathan Meddings, U of C (2014–18)
Barbara Morongiello, U of Guelph (2012–13)
Louise Potvin, U of Montreal (2013–17)
Dorothy Pringle, U of T (2005–07)
Remi Quirion, McGill (2007–10)
Linda Rabineck, U of T (2014–21)
Kim Raine, U of A (2014–21)
Carole Richards, U Laval (2006–07)
Martin Schechter (2005–11)
Barry Sessle, U of T (2005–07)
Robert Sindlelar, UBC (2010–13)
Peter Singer, U of T (2010–12)
Robyn Tamblyn, McGill (2008–12)
Sally Thorne, UBC (2013–16)
Peter Tugwell, U of O (2005–08)
Jacques Turgeon, U of Montreal (2005–09)
Catharine Whiteside, U of T (2005–13)

Manager of Operations and Executive Assistant to the President, Allison Hardisty

Members of Standing Committee on Assessments

Paul Armstrong	2009–14
John Cairns	2006–11, Chair '09–'11
Timothy Caulfield	2006–10
Andre-Pierre Contandripoulus	2006–09
Alistair Cribb	2006–09
Dale Dauphinee	2009–16, Chair '12–'13
Tom Feasby	2014–17
Pierre-Gerlier Forest	2009–17
Jean Gray	2006–11, Chair '14–'17
Jeremy Grimshaw	2009–17
Judith Hall	2014–17
Pavel Hamet	2006–09
Paul Hebert	2012–17
Carol Herbert	2012–14
Andreas Laupacis	Chair 2006–09
Mohammed Mamdani	2014–17
Helen Polatajko	2012–17
Dot Pringle	2006–14
Carol Richards	2009–11
Noraloo Rous	2014–17
Ingrid Sketris	2012–14
Mathew Spence	2006–14
Sharon Strauss	2014–17
Peter Tugwell	2006–17
Sharon Wood-Dauphinee	2006–09

Members of the Fellowship Selection Committee

David Hawkins	2005
Carlton Gyles	2005–07
Jean Gray	2005–08
Pavel Hamet	2005–08
Carol Herbert	2005–08, 2013–15
Mary Law	2005–08
Carol Richards	2005–08
Jacques Turgeon	2005–08
Lorne Tyrrell	2005–08
Alastair Cribb	2005–09
John Cairns	2005–09, 2012–13
Lindsay Nicolle	2005–10
Dorothy Pringle	2005–10
Catharine Whiteside	2005–10
Wayne Hindmarsh	2005–11
Chris Overall	2005–11
Kevin Keough	2005–12
Ellen Rukholm	2005–12
Barry Sessle	2005–12
Wayne Martin	2008–09
Jay Kalra	2008–12
Sally Thorne	2008–13
Johanne Desrosiers	2009
Ian Bowmer	2009–13
Annette Majnemer	2009–13
Karen Mann	2009–14
John Fairbrother	2010–16
Anita Molzahn	2010–16
Stuart MacLeod	2010–13
John Prescott	2010–14
Robert Sindelar	2010–14
Tom Marrie	2011–12
Michel Bergeron	2011–13
Susan Harris	2011–14
Chris McCulloch	2012–14
Andrea Baumann	2013–17
William (Bill) Fraser	2013–17
Louise Potvin	2013–17
Richard Riopelle	2013–15
Dina Brooks	2014–17
Davy Cheng	2014–17
Yves De Koninck	2014–17
Bilkis Vissandjee	2014–17
Walter W Rosser	2014–17
Kishor Wasan	2014–17
Bill Avison	2015–17
Roy Cameron	2015–17
Paul Allison	2015–17
Jay Cross	2015–17

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9. The Royal Scoiety of Canada. www.rsc-src.ca
10. The Canadian Academy of Engineering. www.cae-acg.ca
11. Henry G Friesen IUnternational Prize in Health Research. www.fcihr.ca/prize/