



SCIENCE & POLICY EXCHANGE
DIALOGUE SCIENCES & POLITIQUES



IN REVIEW

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About Science & Policy Exchange

Who we are

The Science and Policy Exchange is a Montreal based non-profit organization directed by graduate and postdoctoral students. Our mission is to promote the student voice in political discussions by bringing together leading experts from academia, industry, and government to engage and inform students and the public on issues at the interface of science and policy.

What we do

Since 2010, SPE has provided a platform to foster discussions between stakeholders and to inform the public about outstanding issues in science policy. The SPE conferences, held yearly from 2010-2014, established our reputation for meaningful discourse on the development of science policies in Canada. In doing so we have extended our reach to Quebec policy researchers, students, and stakeholders from all fields by covering a broad spectrum of topics through invited keynotes and panels.

SPE has since matured from a student group into a registered non-profit organization with a broader sphere of influence. A governing board of directors was also created, enabling SPE to pursue direct policy issues. We continue our student outreach through networking events, empowering interested individuals towards action and change. We engage the public through public forums, sparking discussions on hot topic issues between experts and lay audiences. We strive to drive positive policy changes and promote the student voice through expert-led working groups. We also create recommendations and reports that inform government and policy makers.

In the past year, SPE focused on emerging policy issues related to science diplomacy including climate change, overcoming barriers for women in STEM, and advances in genomics and personal genetic testing. We also led a panel discussion at the 2017 Canadian Science Policy Conference on developing new strategies for engaging the public in science using social media. These activities were supported by the

Canadian Institutes of Health Research (CIHR) and the Fonds de Recherche du Québec (FRQ). Recommendations and reports from these events will be released in early 2018.

Most notably, we led the nationwide #Students4theReport campaign to support the recommendations of the Fundamental Science Review, focused on its implications for students and trainees. This included an open letter signed by over 1200 students and was endorsed by associations representing over 300,000 students and trainees across Canada. In addition to breaching new topics in 2018 - including public discussions on the policy challenges facing the opioid crisis and the legalization of marijuana, student-centered consultations on strategies to improve global science literacy, and a discussion on the role of students in science diplomacy under the umbrella of Canada's G7 presidency - we will continue to engage the next generation of scientists and policymakers across Canada on policy developments that will shape our collective future.

Our impact

As an entirely student run organization, SPE is unique in its capacity to bring a student voice to science policy matters at provincial, federal, and international levels. In doing so, we also provide interested students with the unique opportunity to participate in science policy. This is supported by our strong social media presence, as well as a regular feed of science policy news on our website. Our audience and membership are primarily students and professionals of 25-35 years of age. As a testament to the success of this model, New Zealand launched its own "Science and Policy Exchange" led by the country's Chief Science Advisor, Sir Peter Gluckman.














Science & Policy Exchange helps Québec and Canada thrive by facilitating discussions to drive evidence-informed decisions

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Student Perspective on STEM Education in Canada

First review of its kind in 40 years • Commissioned by the Canadian government & Science Minister in June 2016 • Mandated to evaluate the functioning of the government's funding and support for science • A panel of 9 experts chaired by Dr. David Naylor who consulted Canadians • Report officially unveiled April 2017

KEY ISSUES		KEY RECOMMENDATIONS		IMPACT ON STUDENTS & YOUNG RESEARCHERS	
 Canada dropped out of top 30 for research intensity	 Multidisciplinary research not well funded	 Create a National Advisory Council on Research Innovation for broad oversight	 Increase funding for investigator-led fundamental research by \$485M over 4 years		 Supports our training, our critical transferable skills, our research, and all laboratory staff
 Funding per researcher in decline	 Underrepresentation of women and minority groups	 Develop coordinated policies to achieve better equity and diversity outcomes	 Increase support for multidisciplinary research		 Supports our career-building process & our progress into the middle class
		 Harmonize and re-evaluate scholarship and fellowship programs to better support training and attract international talent			 Enables us to be competitive on the international stage
				 Promotes expansion of diversity from the student population to leadership level	

#Students4theReport Campaign

Policy-Directed Activities

Student Perspective on STEM Education in Canada

In 2015, SPE organized a working group to convene students in a dialogue with experts from government, industry, and academia. The goal was to channel the student voice to develop strategies to translate STEM education into better employment opportunities and economic growth for Canada. The proceedings were compiled in a white paper report, which identifies current shortfalls in higher education and was presented in a joint panel at the Canadian Science Policy Conference in 2016.

Consultation on Alt-facts with the Fonds de Recherche du Québec

SPE participated in a recent FRQ consultation on addressing so called “alternative facts” and improving public engagement by the scientific community. Members of SPE attended the ACFAS Journée Internationale de la Culture Scientifique to brainstorm and devise strategies for better public engagement by the FRQ. This served as the inspiration for our panel at the 2017 Canadian Science Policy Conference.

#Students4theReport Campaign

In response to the Naylor Report, SPE wrote an open letter on the student perspective of the Fundamental Science Review and started the #Students4theReport campaign. By the end of 2017, over 1200 endorsed the campaign by signing the open letter. In addition, testimonials of students speaking openly about how fundamental research has impacted their life have been shared across YouTube, Facebook, and Twitter. These materials were sent to Prime Minister Trudeau, ministers Morneau (Finance), Duncan (Science), and Bains (ISED) and were presented to the Standing Committee on Finance during the 2018 pre-budget consultations. These efforts are ongoing, with continued social media outreach and publication of infographics, in partnerships with many groups including the Canadian Alliance of Student Associations (CASA), Universities Canada, and Evidence for Democracy.

Science & Policy Café

In fall 2017, SPE launched its Science & Policy Café series aimed at engaging students on relevant science policy issues in an informal setting. These events foster discussion among participants, who are invited to share ideas, and present novel solutions. Recommendations and ideas from these sessions will be published regularly and sent to stakeholder groups, and at the end of the year all reports will be collated as a short policy briefing issue. In 2017, cafés included discussions on grassroots climate change initiatives and on breaking gender barriers in STEM.

Science Diplomacy

SPE was invited to attend and publish reports on two Science & Diplomacy sessions held by the FRQ. Insights from the first session on the use of science diplomacy in Quebec and Canada held during the 85th ACFAS Congress were published in English by the International Network for Government Science Advice (INGSA) and in French in the ACFAS magazine *Découvrir*. A report from the second session on Quebec-France relations will be released shortly.

To bring the student voice to these discussions, SPE is organizing a series of science diplomacy events leading up to the G7 conference in May 2018 including a workshop on the Arctic Circle simulation, a session with experts on the role of students in science diplomacy and a forum open to the public.



Science & Policy Café

Public Forums

The Truth About Antibiotics: Superbugs and what you need to know

March 2015 — 80 attendees

The unscrupulous use of antibiotics has created “superbugs” that are completely resistant to antibiotic treatment. This has become a major issue as healthcare professionals are unable to treat or contain these infections. Through eminent panelists, this public forum addressed issues such as the state of antibiotics in research, and its impact on the food industry and human health.

Speakers: Dr. Albert Berghuis, Dr. Karl Weiss, Dr. Vinay Thatte, Dr. Marie Archambault, Mr. Michael Atkin

Come On Get Happy: The science of stress management & productivity

June 2015 — 100 attendees

This forum focused on mental wellness addressed the following questions: How does the environment affect our mental well-being? How does stress affect us and how can we deal with it? What factors affect our productivity at work?

Speakers: Jeff Moat, Dr. Michael Meaney, Dr. Sonia Lupien, Dr. Pierre Durand

Genetic Sequencing Gets Personal: Who Owns Your DNA

May 2017 — 135 attendees

DNA is an awesome source of information - you can trace your heritage, determine your risks of disease, and even use it to personalize treatments. With new technologies available in the clinic and at home, it is almost certain that your DNA will get sequenced. But who owns your genetic information? Will insurance companies or research groups have access to your genetic information? What is a genetic counselor, and do you need one?

Speakers: Former Senator James S. Cowan, Adrian Thorogood, Nathalie Bolduc



Come On Get Happy: The science of stress management & productivity



Gene Editing: Rewriting Your DNA

Gene Editing: Rewriting Your DNA

June 2017 — 260 attendees

DNA editing has been used for years in research labs to answer important questions about disease, but now with the advent of technologies like the CRISPR/Cas9 system the possibilities seem endless. This raises some questions: Do we understand enough about DNA to change it without creating undesirable side effects? Can we treat healthy people to fix genetic predispositions that lead to Huntington's disease and cancer later in life? Should we start worrying about "designer babies"? Where do we draw the line?

Speakers: Natalie Brender, Alan Peterson, Erika Kleiderman

Upcoming for 2018: (1) on the current opioid crisis in Canada (2) on the medical use of marijuana (3) on recreational uses of marijuana

2016 Panel

Developing Canada's Innovation Talent: How New Directions in STEM Education Can Position Canada for Success



Placing Canada at the centre of global innovation can only be achieved through the development of talent. This talent must come from both a new generation of young innovators, and from the ongoing training of those already in the workforce. While Canada's diverse systems of education and training have successfully positioned the country as a world leader in knowledge and skills. One of the greatest challenges we will face in 21st century is ensuring this advantage is maintained, both in the immediate future and for decades to come.

This may require new directions at every level of STEM education, including elementary and secondary education, postsecondary education, and adult learning and skills development. This panel will explore the question of what these new directions should be, drawing on the perspectives of students, educators, policy makers and employers. It will be informed by knowledge mobilization initiatives recently completed by three organizations: Let's Talk Science, The Science and Policy Exchange (SPE) and the Information and Communications Technology Council of Canada (ICTC). Let's Talk Science reviewed and consolidated recommendations for new directions in STEM education from experts from around the world to identify the core elements of a framework for innovative STEM learning. The SPE engaged university students and experts in a dialogue on the current state of STEM education in Canada, whose proceedings were compiled in a report which identifies several shortfalls in higher education. The ICTC launched a digital talent strategy highlighting Canada's digital

landscape and labour market needs and provided recommendations to build Canada’s digital talent base in an increasingly global and digital landscape. The panelists will consider the recommendations stemming from all three initiatives and consider the changes that should be made in STEM education and skills training to ensure that Canada continues to have the talent needed to successfully deliver on the promise of a new agenda on innovation.

Speakers: Dr. Bonnie Schmidt, Liam Crapper (SPE Board Member), Namir Anani, Dr. Andrew Parkin

2017 Panel (November 3rd, 2017)

Engaging the public where they live: perspectives from media personalities and strategists for better science communication



The steadily declining perception of science in the media has now become a critical, worldwide issue, fueled by the viral spread of pseudoscience and “fake news”. It has become necessary to enact new and more informed strategies to engage the public on a large scale, to break the stereotype of the “elite” scientist, and communicate the importance of evidence, consensus, and the scientific method. Our panel of media strategists and science communicators will describe their success in reaching the public on various media platforms (Twitter, podcasts, television, etc.) as well as how they believe scientists and policy makers

can leverage new media to reinvigorate public interest and engagement in science and evidence.

To maximize interactions between panelists and the audience, 45-60 minutes will be dedicated to a moderated discussion and question period. The strength of this panel firmly resides in establishing a dialogue between these media experts and our audience of established and aspiring science policy experts at CSPC, and we are confident that this exchange will yield viable and valuable strategies. The intended outcomes are to generate a set of concrete strategies with which scientists and policy-makers alike can deploy to (1) increase their social media presence in an impactful way, (2) communicate information more effectively to wider audiences, and (3) translate online interactions into more active engagement from the public. These will be communicated broadly through universities, provincial and federal agencies, and other interest groups following CSPC in 2018.

Speakers: Nora Young, Mark Blevis, Alyssa Lerner, Kirstine Stewart, Pascal Lapointe

On Science Advice

- Opinion editorial on engaging students in science advice, for the Hill Times

<https://www.hilltimes.com/2017/11/29/case-taking-student-advice-science-policy/127088>

- Interview of SPE Presidents Shawn McGuirk and Vanessa Sung on the role of Canada's new Chief Science Advisor

<https://researchmoneyinc.com/articles/csa-appointment-lauded-but-debate-swirls-over-scope-and-breadth-of-advisory-role/>

<https://researchmoneyinc.com/articles/government-appetite-for-science-advice-overwhelmingly-noticed-in-csas-1st-100-days/>

On Engaging the Public on Science

- Recommendations from our CPSC 2017 panel on engaging the public on science in social media

<http://sciencepolicy.ca/engaging-public-where-they-live-perspectives-media-personalities-and-strategists-better-science>

- Interview of presidents Shawn McGuirk and Vanessa Sung on the 2017 Abacus survey

<https://researchmoneyinc.com/articles/universities-canada-finds-ally-in-public-to-support-naylor-agenda/>

- Videos from Public Forum: Genetic sequencing gets personal: Who owns your DNA?

<http://sp-exchange.ca/events/Public-Forum-Gene-Sequencing/>

- Videos from Public Forum: Gene editing: Rewriting your DNA

<http://sp-exchange.ca/events/Public-Forum-Gene-Editing/>

On the Fundamental Science Review

- Opinion editorials by SPE members

<http://www.sciencepolicy.ca/news/investing-young-researchers-strengthen-canadas-future>

<https://www.affairesuniversitaires.ca/opinion/a-mon-avis/pourquoi-soutenir-la-recherche-fondamentale/>

<http://publications.mcgill.ca/medenews/fr/2017/12/22/why-support-basic-research/>

<http://publications.mcgill.ca/reporter/2017/12/mcgill-website-highlights-advocacy-efforts-to-supportthereport/>

— Interviews and mentions of the #Students4theReport campaign in the news

<https://www.universityaffairs.ca/news/news-article/federal-government-getting-pressed-many-sides-adopt-naylor-report/>

<https://www.universityaffairs.ca/news/news-article/science-minister-discusses-progress-naylor-report-lays-priorities/>

<http://www.mcgill.ca/research/funding-discovery-research>

<http://sp-exchange.ca/news/FINA-Montreal/>

<https://www.nature.com/articles/d41586-018-02529-6>

<https://www.universityaffairs.ca/news/news-article/budget-2018-gives-major-boost-fundamental-research-canada/>

— Links to the #Students4theReport campaign and our submission to the 2018 pre-budget consultations

<http://sp-exchange.ca/students4thereport/>

<http://sp-exchange.ca/news/2018-Pre-Budget-Consultation/>

<http://sp-exchange.ca/news/Budget-2018-Press-Release/>

On Science Diplomacy

- Proceedings of 2017 science diplomacy discussions by SPE Communications VP Tina Gruosso

<http://www.ingsa.org/ingsa-blog/science-diplomacy-canada/>

<http://www.acfas.ca/publications/decouvrir/2017/06/diplomatie-scientifique-au-quebec-au-canada-retour-rencontre>

On Critical Skills Development for Graduate Students

- Press releases on our 2015 consultation and ensuing white paper on the state of Canadian STEM education

<http://www.acfas.ca/publications/decouvrir/2016/12/plaidoyer-etudiant-reforme-en-seignement-sciences>

<http://sp-exchange.ca/news/STEM-press-release/>

- Link to our 2016 white paper

<http://sp-exchange.ca/news/STEM-White-Paper/>

SPE Café report: Breaking Gender Barriers in STEM - Whose responsibility is it?

http://sp-exchange.ca/news/Breaking_Gender_Barriers_in_STEM/

SPE presidents Shawn McGuirk and Vanessa Sung discuss the importance of advocating for science at the 2018 March for Science in Montreal

<http://blog.scienceborealis.ca/march-for-science-returns-for-a-second-year/>

<https://www.youtube.com/watch?v=3dB6lYxzxG0>

Video interviews (collection)

<https://www.youtube.com/watch?v=qzwnTdy2kHw&list=PL6d4039zB17YXqeKSfzV-ll7tBdlpebtzx>

<http://www.sp-exchange.ca/>



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