



Youth Science Canada's Pre-Budget Submission 2016

Brief to the Standing Committee on Finance

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Clerk, Standing Committee on Finance

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Introduction

Youth Science Canada is inspired by the potential of Canada's youth to improve the world through science and we deliver programs and resources to help realize that potential. Fired by the energy of over 8,000 volunteers – educators, scientists, engineers and parents across a network of over 100 regional affiliates – Youth Science Canada works to capture the imaginations of young Canadians and broaden their access to science.

For over 50 years, Youth Science Canada has been Canada's leading organization for the promotion of innovation and the celebration of excellence in science, engineering and technology among our nation's youth. This is conducted locally through the National Science Fair Network, nationally through the Canada-Wide Science Festival and internationally through our Team Canada contingents.

Executive Summary

Youth Science Canada proposes three recommendations for the development of the 2017 federal budget:

1. Investment in a national program to support youth engagement in STEM based innovation.
2. Implementing a youth-based focus for innovation and commercialization
3. Creating leadership to showcase Canada's youth innovation on the international stage

Recommendation One addresses the need to equip youth with the right skills for the future economy. Recommendation Two addresses the desire to cement Canada's place as a leader in social entrepreneurship. Recommendation Three contributes to establishing Canada's global science excellence.

Recommendation One: Investment in a national program to support youth engagement in STEM based innovation.

Rationale: The National Science Fair Network and the Canada-Wide Science Festival (CWSF) span 16,000 schools and over 100 regions nation-wide. Youth aged 11-18 identify local, regional or global issues of concern to them and build real-world solutions to those issues in a science fair project.

The solutions created are truly innovative with many becoming patented and commercialized.

In 2011, grade 8 student Daniel McInnis was motivated by his personal experience with concussions received while playing hockey to develop a concussion-proof helmet. His project won the Junior Platinum Award at CWSF in 2011 and he has since gone on to patent his design and is currently working with the NFL to apply the design to football helmets.

Adam Noble participated in multiple science fairs winning Best in Fair at the 2013 CWSF for his project in cancer research. His project in his grade 10 year focused on sustainable solutions to wastewater and has recently received \$20,000,000 in investment to go full scale in Kawartha County, Ontario.

These youth are among many astonishing young people who come through the program.

Investing in the National Science Fair Network and the Canada-Wide Science Festival will move the structure and support for youth like Daniel and Adam beyond the 8,000 volunteers who lead the network. Coordinating, aligning and connecting these volunteers to inspire and foster hundreds of thousands of Canadian youth to explore hands-on, project-based science has been severely inhibited by competition or funding. The proposed measure includes five years funding to grow, sustain and enable full participation of Canadian youth in hands-on, project-base science and innovation.

Actions: Investment in the National Science Fair Network and the Canada-Wide Science Festival

Expected Cost: \$10,000,000 (\$2,000,000 annually)

Period of Time: 5 years (2017-2022)

Intended Beneficiaries: The beneficiaries are the youth who will learn how to develop an idea from “this needs to be fixed” to “I can fix it” to “here’s the solution I made”. Organizers of school, regional and CWSF will benefit through secure funding to deliver the programming to grow, inspire and showcase the wealth of innovation within our youth.

Impact: Unlike many other G20 countries, Canada does not provide sustained government support to inspire, showcase and celebrate youth innovation. NSERC’s support of outreach, promoting interest in science, creates a base of interest. Support of the National Science Fair Network and Canada-Wide Science Festival moves this interest into action. These programs enable youth with the skills and platforms to take their interest in science, technology & engineering and apply them to issues in the real world. It creates Canada’s nation of innovators.

Recommendation Two: Implementing a youth-based focus for innovation and commercialization

Rationale: Youth participating in science fairs create real life solutions to issues of importance on a local, regional and global level. The end goal for many of the youth is to create the solution. No formal support exists to provide the skills and guidance for these youth to take their innovation to the next level.

Programs currently aimed at “youth” to develop these skills and to commercialize innovative ideas are focused at upper university age and graduate students.

How do we ensure that these solutions are not left in their parents’ garage?

Developing a program, based on an existing model operated in Ireland for the past six years, to deliver business, innovation and commercialization skills to youth within the National Science Fair Network and CWSF would ensure that these truly viable ideas are developed to their fullest.

Actions: Innovation, Science and Economic Development Canada extension of innovation, commercialization and start-up funding to include youth 14-19.

Expected Cost: \$1,200,000

Period of Time: 3 years (2017-2020)

Intended Beneficiaries: Canadian youth 14-19 within the science fair network who have projects assessed as having commercial potential.

Impact: The investment in this initiative directly delivers on the government’s desire to establish Canada’s place as a leader in social entrepreneurship. It supports Canada’s next generation of innovators by equipping youth with the right skills for the future economy. This initiative creates new businesses, jobs and drives Canada’s growth.

Recommendation Three: Creating leadership to showcase Canada's youth innovation on the international stage

Rationale: Canada has made significant investment and had great success in international athletic performance through the Own The Podium program. This has made Canada a world leader in high performance sport.

Replicating this format in support of youth innovation in science and technology would showcase and establish Canada's leadership in innovation on the international stage.

Canadian youth have had incredible success on the international stage and have shown the potential that exists if sustained investment were to be made to further development and competitiveness of youth innovation projects.

In 2016, Austin Wang, 17, of Vancouver, BC won Best-in-Fair at the Intel International Science and Engineering Fair.

In 2015, Raymond Wang, 17, of Vancouver, BC won Best-in-Fair and Nicole Ticea, 17, of Burnaby, BC placed second at the Intel International Science and Engineering Fair.

In 2014, Hayley Todesco, 17, of Calgary, AB won the Stockholm Junior Water Prize and her age group at the Google Science Fair.

In 2013, Ann Makosinski, 15, of Victoria, BC won her age group at the Google Science Fair.

This investment will support the country's most promising secondary and Cegep students – those who have been selected to represent Canada at international STEM competitions.

Actions: Innovation, Science and Economic Development Canada to support an 'own the podium' program for youth innovation.

Expected Cost: \$1,000,000

Period of Time: 5 years (2017-2020)

Intended Beneficiaries: The beneficiaries of this investment are individual young Canadians who have the potential to showcase Canadian innovation and compete on the international stage.

Impact: By aiming to improve Canada's participation and success rate at international competitions, we will establish Canada's global science excellence.