



actüa™

Youth · STEM · Innovation
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ACTUA

2016/2017 ANNUAL REPORT

Inspiring the next 150 years of innovation



Who We Are

Actua is Canada's leading science, technology, engineering and mathematics (STEM) education outreach organization. Our 35 network members located at universities and colleges across Canada, coupled with our Outreach Team, annually engage 250,000 youth in 500 communities nationwide. Our for-youth-by-youth program delivery model equips youth with the skills they need to be the future drivers of innovation. It inspires them to fulfil their critical role solving real-world problems and contributing to Canada's social and economic prosperity.

Actua is a national leader in breaking down the barriers that prevent many of Canada's youth from accessing transformational STEM experiences and participating in STEM studies and careers. Our national inclusivity programs are customized to engage girls and young women, Indigenous youth, new Canadians, economically disadvantaged youth, and youth living in remote communities.

Canada will not achieve its full innovation potential without the full participation of these groups.

Working together, with our network members, our corporate partners, government agencies and other like-minded groups, we are moving the dial on Canada's future economic and social competitiveness and prosperity.



Message from the Chair

This year, Canada's 150th anniversary, is the perfect time for us to reflect as an organization on Actua's many contributions to Canada's innovation ecosystem while we collectively chart how to continue in the path of inclusivity and reconciliation.

Actua has been advancing diversity and inclusiveness in STEM for two decades, knowing that this is essential for the economic and social prosperity of the country and will continue to be a necessary priority for all of us. As an organization we recognize that empowering ALL underrepresented populations with skills and knowledge will strengthen our workforce, our institutions and, ultimately, our country.

I was reminded of how Actua puts these principles into practice when I was last in Ottawa for our annual meeting of our Board of Directors and had the wonderful privilege of spending an afternoon with this year's 15 bright young instructors on our Outreach Team. Between March and August, these impressive instructors engage almost 5,000 Indigenous youth in STEM, travelling to 29 communities in Nunavut, Northern Ontario and Quebec.

Actua's 'for-youth-by-youth' model offers young Indigenous participants the chance to meet older Indigenous youth role models and mentors who can share first-hand experiences on how they overcame barriers to success. This is empowerment in action.

We also continue to be extremely proud to support and represent our 35 network members located at Canada's leading universities and colleges. We are happy to welcome our newest members at Northwest Community College in Terrace, BC, Memorial University in St. John's, Newfoundland and Nipissing University in North Bay, Ontario. As Canada celebrates its sesquicentennial anniversary, the Board looks forward to continuing its work in supporting Actua's role in contributing to reconciliation and to working toward creating a truly inclusive 21st century workforce.

Paul Ledwell

Chair, Actua Board of Directors

Board of Directors



Paul Ledwell (Chair)

Deputy Minister, Policy & Priorities, Executive Council Office, Government of P.E.I.



Trevor Cuddy (Director)

Director, Continuing Professional Development, Faculty of Medicine, University of Toronto



Susan Holt (Vice-Chair)

Chief, Business Relationships (Executive Council Office) Province of New Brunswick



Kris Smith (Director)

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Jennifer Flanagan (Secretary)

CEO, Actua



Karen Kabloona (Director)

Associate Deputy Minister, Quality of Life, Government of Nunavut



Kim Warburton (Director)

Vice-President, Communications and Public Affairs, GE Canada



Jan O'Donnell (Director)

Independent Contract (CFO)

Message from the CEO

As we celebrate Canada's milestone anniversary of 150 years of confederation, there is a lot to be excited about. At Actua, we're thrilled to play a role in Canada's 150th celebration through a signature initiative grant from Canadian Heritage called Innovation150. This initiative includes Actua's Maker Mobile — a maker space on wheels travelling from coast to coast to coast throughout 2017 delivering inspiring hands-on workshops that connect youth with Canada's innovation history while inspiring future innovation.

We also had a successful year advocating the federal government to support access for Canada's most underserved and underrepresented youth to experiential learning in STEM. In March 2017 the federal government announced a \$50 million CanCode fund and recognized Actua in the Minister of Finance's federal budget speech of the exemplary work we do in engaging youth in STEM and digital skills. We look forward to applying to this competitive fund and increasing access to STEM programming for all Canadian youth.

Over the past year we continued to work with our university and college-based network members, our leading corporate funders, all levels of government, as well as other leading science and youth-serving organizations to engage and inspire 263,000 youth in 520 communities nationwide.



This represents nearly 2 million face-to-face hours of programming or an average of 7.5 hours per child!

2017 also marked the third year of our national Codemakers program supported by Google Canada. So far we've engaged over 80,000 youth in hands-on opportunities to innovate with technology and we are hearing from parents and teachers how important this work is. Moving forward, our reach and impact will continue to grow while we continue to act as a strong voice for the critical importance of digital literacy for youth.

Finally, our ongoing focus on underrepresented youth continues to be incredibly relevant and important. In the spirit of reconciliation, we are making huge advancements in the work we do with Indigenous communities. We are extremely grateful to all of our partners and the many community organizations who work with us to deliver locally and culturally relevant STEM-based learning experiences for Indigenous youth. We are also proud to build on our models of successful engagement of girls, and other youth facing significant socio-economic challenges in STEM.

Jennifer Flanagan
Actua President and CEO

Follow my blog <http://actua.ca/en/blog>
Twitter [@ActuaCEO](https://twitter.com/ActuaCEO)

Network Members

Actua supports 35 university and college based network members. These network members share Actua's commitment to engaging all young Canadians in hands-on STEM and to breaking barriers to youth participation in STEM studies and careers. Network members offer a wide variety of on and off campus programming including significant outreach work within their local communities and beyond. This outreach is what contributes to Actua's collective impact of reaching 500 communities covering every province and territory each year.

British Columbia

Thompson Rivers University,
Kamloops, BC – EUREKA!
Science Program

University of British
Columbia, Vancouver, BC –
Geering Up

Simon Fraser University,
Burnaby, BC – Science ALIVE

Northwest Community
College, Prince Rupert, BC –
Science Innovators Program

University of Victoria,
Victoria, BC – Science
Venture

Yukon

Yukon College, Whitehorse,
YK – Science Adventures

Alberta

University of Lethbridge,
Lethbridge, AB – Destination
Exploration

University of Alberta,
Edmonton, AB – DiscoverE

University of Calgary,
Calgary, AB – Minds in
Motion

Red Deer College, Red Deer,
AB – Red Hot Science at
RDC

Saskatchewan

University of Regina, Regina,
SK – EYES

First Nations University of
Canada, Regina, SK – FNU
Health and Science camp

University of Saskatchewan,
Saskatoon, SK – SCI-FI
Science Camps

Manitoba

University of Winnipeg,
Winnipeg, MB – Adventure
Kids

Brandon University, Brandon,
MB – Mini University

University of Manitoba,
Winnipeg, MB – WISE Kid-
Netic Energy

Nunavut

Nunavut Research Institute,
Iqaluit, NU – Simply Science

Ontario

University of Ottawa,
Ottawa, ON – Adventures in
Engineering and Science

Queen's University, Kingston,
ON – ASUS Summer Camps

University of Guelph, Guelph,
ON – Creative Encounters

University of Toronto,
Toronto, ON – Engineering
Outreach

University of Waterloo,
Waterloo, ON – Engineering
Science Quest

Nipissing University,
North Bay, ON – NUScience
Explorations

Queen's University, Kingston,
ON – Queen's Engineering
Outreach

York University, Toronto, ON –
Science Engagement

Lakehead University,
Thunder Bay, ON – Superior
Science

McMaster University,
Hamilton, ON – Venture
Engineering and Science

Carleton University, Ottawa,
ON – Virtual Ventures

Western University, London,
ON – Western Engineering
Outreach Programs

Quebec

École Polytechnique de
Montréal, Montréal, QC –
Folie Technique

Université du Québec à
Trois-Rivières, Trois-Rivières,
QC – Génitruks

Centre d'interprétation des
Biosciences, Laval, QC –
Musée Armand Frappier

New Brunswick

University of New Brunswick,
Fredericton, NB – Worlds
UNBound

Nova Scotia

Dalhousie University, Halifax,
NS – SuperNOVA

St. Francis Xavier University,
Antigonish, NS – X-Chem
Outreach Program

Newfoundland and Labrador

Memorial University, St
John's, NL – Memorial
Engineering Outreach



Martin Lipman

What's new at Actua

Actua's Youth Advisory Council

Actua's Youth Advisory Council is comprised of a diverse group of youth leaders aged 14-19 within the Ottawa area who share an interest in helping Actua achieve its mission by sharing their perspectives on STEM and STEM education. The Council offers a valued youth voice that contributes to the diversity of perspectives that Actua considers when shaping the experiential learning opportunities it provides for youth across Canada.

"Being a member of Actua's Youth Council has been such a nourishing and door-opening opportunity. Whether it be by meeting other passionate youth or by sharing my ideas as well as my perspective with government and industry leaders, this experience has left me inspired and evermore excited to innovate as an active member of the STEM community."

—Mathilde Papillon, Grade 12 student
at École secondaire publique De La Salle

A new, innovative workplace

We are growing and with that growth comes the need for new space. Actua's new office at 111 Murray Street in Ottawa is more than a place for our behind the scenes work. It is an incubation space where 3D printers work round the clock and various gadgets buzz and click as our content creation team works to innovate new ways to inspire youth with digital skills in STEM. Our storefront collaboration space is where we train instructors, test activities, and host parent workshops as we test our resources for influencers of youth. If you are in town — we welcome a visit! Come see innovation in action.





Actua's Maker Mobile — A Canada 150 Signature Project

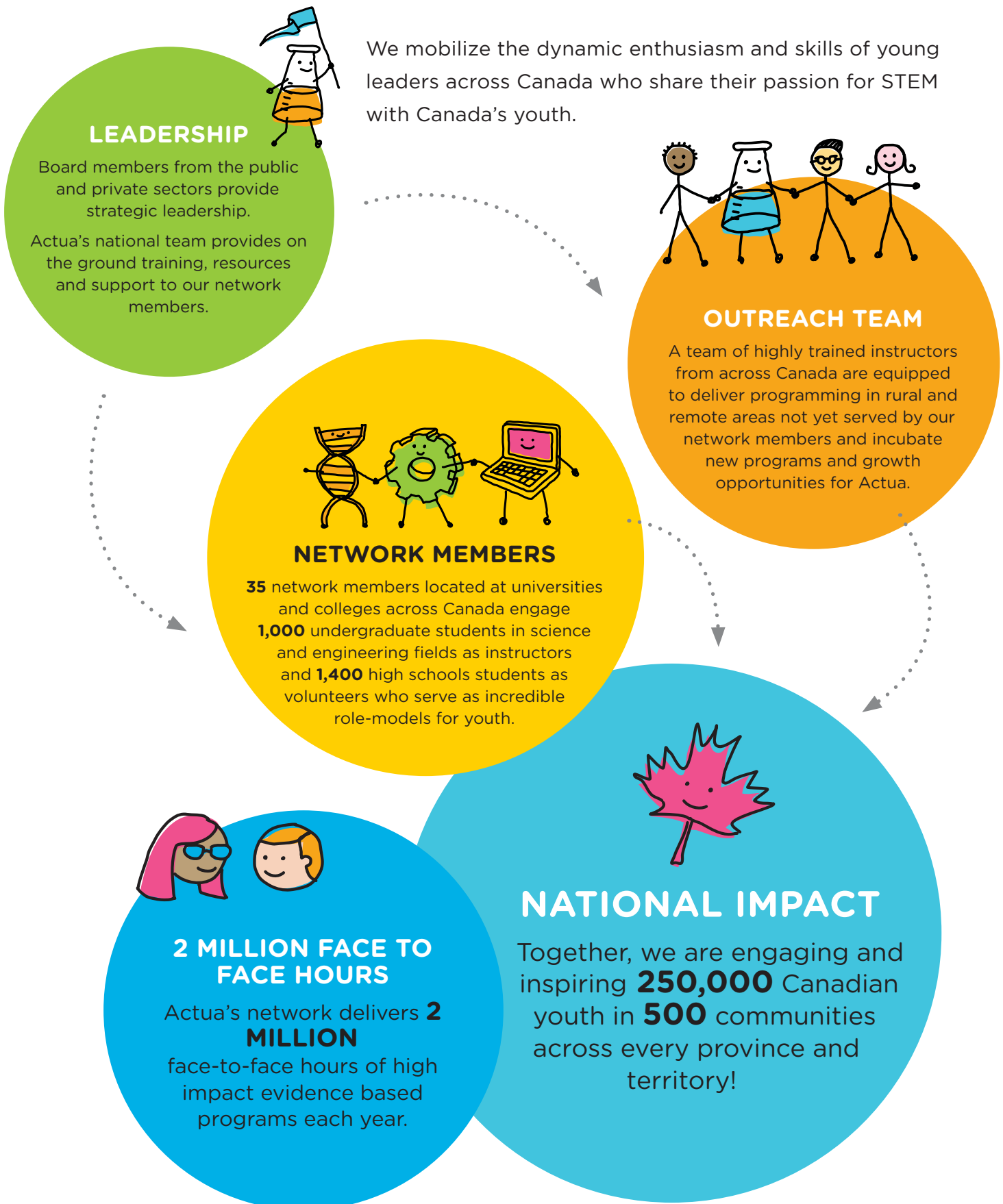
This year marked Canada's 150th anniversary of confederation, and Actua was pleased to be the recipient of a signature project grant from Canadian Heritage called Innovation150. Actua is one of five Innovation150 partners: Perimeter Institute for Theoretical Physics, the Canadian Association of Science Centres, the Canada Science and Technology Museums Corporation, and the Institute for Quantum Computing at the University of Waterloo who will be delivering innovation experiences across Canada throughout 2017 in celebration of Canada's 150th anniversary.

Actua's contribution to the signature project is a Maker Mobile which is a travelling classroom and innovation hub that is travelling across Canada to bring hands-on digital innovation experiences to approximately 100 cities and towns across all 13 provinces and territories, including Canada's Far North.

A significant priority for the Maker Mobile tour is to engage underrepresented youth audiences including girls, Indigenous youth, Northern youth and those with socioeconomic challenges. The Maker Mobile tour will engage 20,000 youth across Canada through meaningful and enriching digital and STEM-related experiences.



Actua's Program Delivery Model





“...young people aren’t just the leaders of tomorrow, they’re the leaders of today. Their voices matter ... the things they do now can have a tremendous impact to change the world, right now.”

- Prime Minister Justin Trudeau



Network Member Awards

Actua's 35 network members at universities and colleges across Canada are the forefront of Actua's program delivery model. Actua awards provide network members with the opportunity to be recognized for their excellence and success.

The Actua & GE Canada Award for Excellence recognizes network members who exemplify excellence while delivering on a shared national mission to provide transformational experiences in science, technology, engineering and math (STEM) so that ALL youth can be inspired to achieve their potential and fulfil their critical role in the world. The 2016 Actua and GE Canada Award for Excellence was awarded to Geering Up, at the University of British Columbia.

The Actua Experience Award recognizes network members' commitment to engage underrepresented youth in STEM and provide them with the skills, knowledge and attitudes necessary to succeed in the 21st century. This year, we highlighted network member excellence and successful practices in the engagement of underserved youth with The Actua Experience Award — Go Where Kids Are program, and the 2016 winner was SuperNOVA at Dalhousie University.



Indigenous Youth in STEM (InSTEM)

Actua's national Indigenous Youth in STEM program (InSTEM) represents a customized community-based approach to annually engage 35,000 First Nations, Métis, and Inuit youth in locally and culturally relevant STEM education experiences that inspire them to achieve their potential and fulfil their critical role in the world.

We work closely with Indigenous communities, Aboriginal Resource Centres at our network member institutions, Indigenous leaders and Indigenous organizations such as Indspire, Indigenous Works and Inuit Tapiriit Kanatami (ITK), to ensure our model is reflective of successful practices in Indigenous youth engagement. Our model starts with the premise that elements of STEM are intrinsic to Indigenous ways of knowing and day-to-day life of Indigenous peoples. As a result, we play a key role in facilitating the connections between aspects of culture, Traditional Knowledge and modern science, thereby opening the pathway for youth to explore their potential as future innovators in STEM.

“Indigenous Works has been proud to partner with Actua, sharing our knowledge and expertise as you have built your model of successful practices in the engagement of Indigenous youth in STEM. Actua’s work in building essential employability skills among Indigenous youth, developing authentic Indigenous community partnerships and proactively involving local Elders, Indigenous instructors and role models, is key to moving the dial towards developing a world class Indigenous workforce.”

– Kelly Lendsay, President and CEO,
Indigenous Works



Go Where Kids Are Program

Actua's Go Where Kids Are Program is a highly effective strategy for engaging youth that would otherwise never come to our programs. We do this by partnering with youth-serving organizations that engage at-risk youth, new Canadians, and youth facing other socio-economic challenges. We are grateful for the partnerships we have built with local Boys and Girls Clubs, YM/YWCA's, Family Service Centres and community centres. These organizations open their doors to Actua programs each year, making it possible for 30,000 underserved youth to access our transformational STEM education programming. Network members are taking this program to a new level with several innovative strategies for engaging Syrian refugees and other New Canadians and their families in dynamic hands-on STEM experiences. The key to this success is effective partnering.

National Girls Program

We inspire girls to explore their important and unique roles in STEM. We encourage girls to take risks, invent, and communicate their learning with others in an all-girl environment, inspired by accomplished women role models and mentors.

With support from a grant from Status of Women Canada, Actua is now leading an innovative three-year project entitled Transformational Computer Science Programming for Girls. The objective of this project is to develop evidence-based models of successful practices in building digital literacy while equipping girls with digital skills that prepare them for their future roles as future innovators and informed, safe, digital citizens.

Our National Girls Program plays an important role in building girls' self-efficacy, resilience, and future economic independence. Each year, Actua reaches over 10,000 girls annually through our high impact, all-girl initiatives.



Codemakers

Codemakers is a national program delivered by Actua, in partnership with Google Canada to transform the way youth engage with computer science. In the first two years of the program from 2015-2017, over 80,000 youth across Canada were engaged in digital skill building experiences, moving them from being consumers of technology to producers of technology. We are thrilled to continue to pair the creative minds of Canadian Google engineers with Actua's top computer science thinkers and develop dynamic new computer science and technology experiences for youth. With hands-on learning, Codemakers inspires young Canadians to learn computer science as a pathway to invention and future discovery and to participate in new and emerging careers.



"Wonder where Canada's next great inventor, creator or startup founder might come from? Look no further than Actua's workshops, classrooms and maker mobiles. With programs like Codemakers, Actua is inspiring this country's next generation of technology builders. Google is proud to continue its support of Actua's important work."

– Aaron Brindle,
Head of Public Affairs, Google Canada

Actua in the North

Every year, Actua reaches 8,500 youth in 35-40 communities spanning the Yukon Territory, Nunavut, and the Northwest Territories. We build sustainable, meaningful relationships with Northern communities to ensure that the STEM content we deliver is reflective of local cultural and economic needs.

Through direct connections with local industry, researchers, and education institutions, we facilitate exposure to northern career opportunities. These connections are made possible through partnerships with institutions like the Canadian High Arctic Research Station, Ocean Networks Canada, the Nunavut Arctic College and the Nunavut Research Institute, plus others, that work with us in the development of unique program content and experiential learning opportunities.

We help youth and their families make sense of the development that is happening around them and equip youth with the problem solving, collaboration and critical thinking skills that prepare youth for their future role as informed community leaders and decision makers.

“Our community looks forward to these camps as it is another tool to encourage learning outside of a school setting. The value of these camps may not always be seen right away but the impact on the community can be seen in many different ways. STEM education is much needed not only here in Kugluktuk, but for the entire north. The potential for learning and the direction that the youth can gain from the camps is extremely important. This program gives youth the chance to learn more about STEM and guide them into a future career that will help benefit the community in the future.”



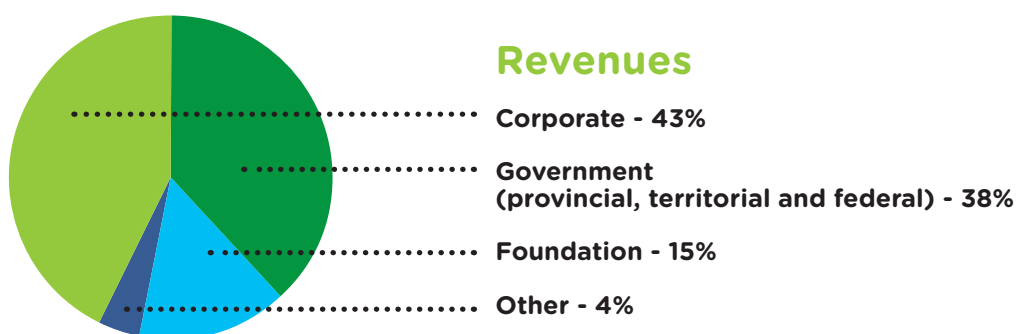
Through opportunities to role play as scientists, researchers, engineers, and more, youth work together to solve simulated real-world challenges, and become better equipped to form Canada's in-demand skilled workforce. Actua in the North inspires northern youth to be Canada's current and future innovators and entrepreneurs, guiding economic development in the North.

This year we are doing more to deepen the impact of our work throughout the school year. At a regional professional development conference we provided 40 teachers in Nunavut with training on effective ways to incorporate digital skills through the delivery of interdisciplinary hands-on activities. As a result 3,000 students get to build digital skills throughout the year!

- Community Contact, Kugluktuk, NU

Financial Summary

The majority of our resources are directed to program development and implementation. This includes supporting the critical services delivered by our network of 35 network member organizations located at universities and colleges across Canada. In 2016, our budget was \$3.82million. This does not include the local operating budgets of our 35 network members.



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