

actüaTM

Youth · STEM · Innovation
Jeunesse · STIM · Innovation

ACTUA 2017/2018 ANNUAL REPORT

Preparing Canadian Youth
for the Future of Work



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WHO WE ARE

Actua is Canada's leading science, technology, engineering and mathematics (STEM) education outreach organization. Our 37 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 Canada's most underserved and underrepresented 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 innovation, economic and social competitiveness and prosperity.

Actua is incredibly proud to support and represent a network of 37 members located at universities and colleges across Canada. All network members share the mandate of developing essential employability skills and confidence in youth in STEM. Actua network members deliver on and off-campus programming in over 500 communities covering every province and territory in Canada.

British Columbia

Thompson Rivers University,
Kamloops
EUREKA! Science Program

University of British Columbia,
Vancouver
Geering Up

Simon Fraser University,
Burnaby
Science ALIVE

University of Victoria,
Victoria
Science Venture

Coast Mountain College,
Prince Rupert
Digi Camps

Yukon

Yukon College,
Whitehorse
YC Kids Camps

Alberta

University of Lethbridge,
Lethbridge
Destination Exploration

University of Calgary,
Calgary
Minds in Motion

Red Deer College,
Red Deer
Red Hot Science at RDC

Saskatchewan

University of Saskatchewan,
Saskatoon
SCI-FI Science Camps

University of Regina,
Regina
EYES

First Nations University of Canada,
Regina
FNUniv Science Outreach Programs

Manitoba

University of Manitoba,
Winnipeg
WISE Kid-Netic Energy

University of Winnipeg,
Winnipeg
Adventure Kids

Brandon University,
Brandon
Mini University

Nunavut

Nunavut Research Institute,
Iqaluit
Simply Science

Ontario

University of Ottawa,
Ottawa
uOttawa Engineering Outreach

University of Guelph,
Guelph
Creative Encounters

Western University,
London
*Western Engineering
Outreach Programs*

University of Toronto,
Toronto
Engineering Outreach

University of Waterloo,
Waterloo
Engineering Science Quest

Queen's University,
Kingston
ASUS Summer Camps

York University,
Toronto
Science Engagement

Queen's University,
Kingston
Queen's Engineering Outreach

Lakehead University,
Thunder Bay
Superior Science

Trent University,
Peterborough
TRACKS Youth Program

University of Ontario
Institute of Technology,
North Oshawa
UOIT Engineering Outreach

McMaster University,
Hamilton
Venture Engineering and Science

Carleton University,
Ottawa
Virtual Ventures

Nipissing University,
North Bay
NUScience Explorations

Quebec

École Polytechnique de Montréal,
Montréal
Folie Technique

Université du Québec à Trois-Rivières,
Trois-Rivières
Génitrucs

Centre d'interprétation des
Biosciences,
Laval
Musée Armand-Frappier

New Brunswick

University of New Brunswick,
Fredericton
Worlds UNBound

Nova Scotia

Dalhousie University,
Halifax
SuperNOVA

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

Newfoundland and Labrador

Memorial University,
St John's
Memorial Engineering Outreach

MESSAGE FROM THE CHAIR



Knowledge and skills in science, technology, engineering and math (STEM) are more important than ever before. With the rise of automation in jobs in all fields and rapid advancements in artificial intelligence, we need to ensure that Canada's next generation is prepared for the future of work. This is exactly what Actua has been doing for over two decades: equipping Canadian youth with critical skills and confidence in STEM, and I'm so proud to be affiliated.

Actua and its many supporters recognize that empowering all underrepresented populations with skills and knowledge will strengthen our workforce, our communities, our institutions and, ultimately, our country. The development of these skills is essential for the economic and social prosperity of our nation and represent a necessary priority for all of us.

One of the most effective ways Actua's network engages youth of all backgrounds is by hiring diverse teams of undergraduate students who, as instructors, serve as role models and mentors and share first hand experiences on how they overcame barriers to success. I had the opportunity of spending an afternoon with the dynamic instructors of Actua's Outreach Team before they departed for delivery in the North.

Seven of the outreach instructors this year are Indigenous and all of them represent a different part of Canada. Between March and August, this impressive team traveled to 60 communities in Nunavut, the Northwest Territories, Alberta, Ontario, Northern Quebec and Labrador.

We are happy to welcome our newest network members at Trent University in Peterborough, Ontario and the University of Ontario Institute for Technology in Oshawa, Ontario whose teams will contribute to Actua's mission of engaging youth in STEM in and from these communities.

The Board of Directors looks forward to continuing its work of supporting Actua's mission of contributing to reconciliation and working toward creating a truly inclusive 21st century workforce.

Paul Ledwell
Chair, Actua Board of Directors

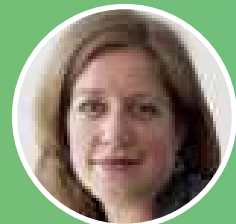
[BOARD OF DIRECTORS →](#)

BOARD OF DIRECTORS



Paul Ledwell (Chair)

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



Susan Holt (Vice-Chair)

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



Jennifer Flanagan (Secretary)

CEO, Actua



Kim Warburton (Director)

Strategic Communications Executive, GE Canada



Trevor Cuddy (Director)

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Executive Vice President, Downstream, Suncor Energy



Marshall Shelf (Director)

Director, Integrated Solutions (Finance, Government, Travel) at Google



Tyler Wish (Director)

CEO, NAC Bio



Karen Kabloona (Director)

Associate Deputy Minister, Quality of Life, Government of Nunavut



Jan O'Donnell (Director)

Independent Contract (CFO)

MESSAGE FROM THE CEO →

MESSAGE FROM THE CEO

This year was another exciting year of significant growth for Actua and our network of member organizations. In January 2018, we were extremely proud to receive \$10 million of the the Government of Canada's unprecedented investment of \$50 million into CanCode, supporting development of coding and digital skills for youth.

The support from both government, as well as from our wonderful long-standing corporate sector partners, could not come at a more critical time. We need to ensure Canadian youth, especially those facing barriers have access to experiences that build their skills and confidence in STEM in order for them to be able to contribute and compete in an innovation economy. While we don't know what the future of work will look like, we do know that all jobs will require a combination of digital skills, STEM literacy and foundational competencies (like flexibility and problem solving). Actua continues to focus on enhancing its impact with underrepresented and underserved audiences of youth. We are deeply committed to implementing the Truth and Reconciliation Commission calls to action through our Indigenous

Youth in STEM program. Beyond having Indigenous representation at all levels of our organization, from our instructors, to our board of directors, we are working with Indigenous community partners year after year to not only engage over 35,000 Inuit, First Nation and Métis youth, but to ensure this engagement is sustainable and build on the strength of Traditional Knowledge.

Actua's network is also continuing to push the agenda on the inclusion and advancement of girls and women in STEM. I'm proud to say that collectively, we are engaging over 150,000 girls a year in skills and confidence building STEM experiences. This continues to be a major priority, especially as we see continued questioning of these efforts in the media.

I look forward to another great year of growth for Actua's network, who are inspiring the next generation of great innovators.

Jennifer Flanagan
Actua President and CEO

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ACTUA'S DELIVERY MODEL

We mobilize the dynamic enthusiasm and skills of young leaders across Canada who share their passion for STEM with Canada's youth.



LEADERSHIP

Board members from the public and private sectors provide strategic leadership. Actua's national team provides on the ground training, resources and support to our network members.



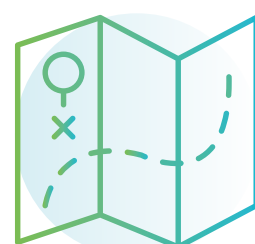
NATIONAL IMPACT

Together, we are engaging and inspiring 250,000 Canadian youth in 500 communities across every province and territory!



NETWORK MEMBERS

37 network members located at universities and colleges across Canada engage **1,000 undergraduate students** in science and engineering fields as instructors and **1,400 high schools students** as volunteers who serve as incredible role-models for youth.



OUTREACH TEAM

A team of highly trained instructors from across Canada are equipped to deliver programming in rural and remote areas not yet served by our network members and incubate new programs and growth opportunities for Actua.



TWO MILLION FACE TO FACE HOURS

Actua's network delivers two million face-to-face hours of high impact programs each year.

HIGHLIGHTS OF 2017/2018

ACTUA RECEIVES \$10M IN CANCODE FUNDING

In January 2018, the Government of Canada announced Actua as a recipient of **\$10 million in CanCode program funding**. The two year program was designed to support organizations like Actua to engage Canadian youth in coding and digital skills learning opportunities. This funding is supporting Actua's 37 university and college based network member programs and Outreach Team's delivery of coding and digital skills camps clubs and workshops in 500 communities.

It is also supporting **Actua's National Teacher Training Program** which will engage over 8,500 teachers across Canada in the 2017-2019.

FOR-CREDIT INSTEM HIGH SCHOOL COURSE

This year Actua, the Ottawa Carleton District School Board and the University of Ottawa's Engineering Outreach Program partnered to deliver a for-credit high school Indigenous youth in STEM course, the first initiative of its kind in Ontario. The course taught students about STEM by applying engineering, Indigenous Science and Western Science principles to real world issues.

With Actua's support, in the past 18 months, our school has offered for-credit courses in Indigenous STEM to over 25 students. I believe such innovation has not materialized in public schools in a more powerful way across our province or country. Our urban Indigenous students are learning Science, Technology, Engineering and Math in a culturally responsive and supportive way within a public school setting, every day, alongside their non-Indigenous peers. I challenge you to identify more positive, powerful and forward-looking work that is happening with our urban Indigenous children that is tangibly increasing student graduation rates.

- Paula Hall, Vice Principal, Gloucester High School

GOOGLE.ORG 1.5 MILLION RE-INVESTMENT IN ACTUA

In April 2018, at the opening of Google's new Kitchener-Waterloo community space, Google officially announced its **\$1.5 million re-investment into Actua's Codemakers program**. This is the first time Google.org has re-invested in a Canadian charity.



RESEARCH FROM ACTUA

Coding the Future Survey I: What Canadian youth and their parents think about coding

In February 2018, Actua commissioned Abacus data to conduct a first of its kind survey in Canada called *Coding the Future: What Canadian youth and their parents think about coding*. The survey sampled 1,500 Canadians ages 14-18 and their parents. Here were some of the top takeaways from the report:

- **50% of boys** are interested in careers involving coding or digital programming compared to only **27% of girls**
- Boys were twice as likely as girls to have participated in a coding experience outside of school
- **9 in 10 Canadian parents, guardians and children** believe that knowing how to use digital technologies, and more than **7 in 10** believe that coding skills, will be important for future careers.
- **Only a third of students** say that their schools offer opportunities to learn coding and more than half say they would like to see more.

[READ THE REPORT](#)

Coding the Future II: How income affects digital skills and opportunities

In June 2018, Coding the Future part two was released. This report focused specifically on income and how it affects Canadian youth access to opportunities in digital skills development. These were some of the takeaways from the report:

- Young Canadians from all income groups are equally interested in coding and digital technologies, but those in lower-income households are less likely to say they have access to digital technologies and learning opportunities.
- Students in lower-income households are **14 percent** less likely than those from higher-income households to say their schools offer courses on coding and programming.
- Students from lower-income households are **5 to 13 percent** less likely to say they have access to certain digital technologies like smartphones, tablets and computers.

[READ THE REPORT](#)





NETWORK MEMBERS AND AWARD RECOGNITION

Actua's 37 network members at universities and colleges across Canada are the forefront of innovative delivery of STEM programming. Actua's national awards recognize network members for their excellence, innovation and success.

The **Actua 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 2017 Actua Award for Excellence was awarded to WISE Kid-Netic Energy at the University of Manitoba.

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 Indigenous youth with The Actua Experience Award - InSTEM program, and the 2017 winner was Queen's Engineering Outreach at Queen's University.



INDIGENOUS YOUTH IN STEM (INSTEM) PROGRAM

Inclusion and Reconciliation - Inspiring ALL Youth Through STEM

Actua's national Indigenous youth in STEM outreach 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.



GO WHERE KIDS ARE PROGRAM

The Go Where Kids Are program recognizes that many youth do not have the opportunity to attend a STEM outreach program, even if the program is offered at no cost. In order to engage these hard to reach youth, Actua and our network members partner with youth serving organizations such as family resource centres, immigrant community organizations, Boys and Girls Clubs, YM/YWCAs, and others who already have these youth engaged. This model allows us to annually engage over 30,000 underrepresented and underprivileged youth. Our commitment is to provide sustained programming in these locations, returning each year to strengthen the impact of the programming on the youth we reach.



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. For the first time ever, Google Canada has re-invested in a Canadian charity for another 3 years of programming. 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.

Actua has been inspiring the innovators and leaders of tomorrow with their programs, camps and workshops across the country. Encouraging Canadian youth to build STEM and computer science skills through engaging programs like Codemakers is critical. Google is a proud supporter of Actua's work.

– Aaron Brindle,
Head of Public Affairs,
Google Canada



NATIONAL GIRLS PROGRAM

We inspire girls to explore their important and unique roles in STEM through our inquiry-based, girl-led content. We encourage girls to take risks, invent, and communicate their learning with others in the safety of 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.





ACTUA IN THE NORTH

Every year, Actua reaches 8,500 youth in over 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 development.

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, Yukon College, and the University of Alberta 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.

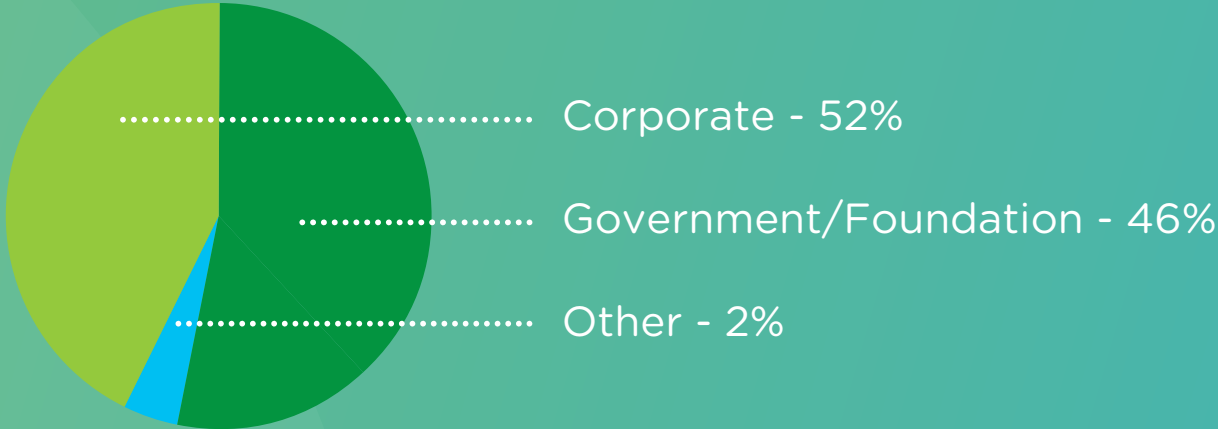
This year we are doing more to deepen the impact of our work throughout the school year. At a regional professional development conference we provided 40 teachers in Nunavut with training on effective ways to incorporate digital skills through the delivery of interdisciplinary hands-on activities. As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

FINANCIAL SUMMARY

The majority of our resources are directed to program development and implementation. This includes supporting the critical services delivered to our network of 37 member organizations located at universities and colleges across Canada.

In 2017, our budget was \$5.1 million. This does not include the local operating budgets of our 37 network members.

REVENUES



EXPENSES



ACTUA SUPPORTERS

INNOVATOR



CORNERSTONE



AMBASSADOR



MAJOR PATRON



PATRON

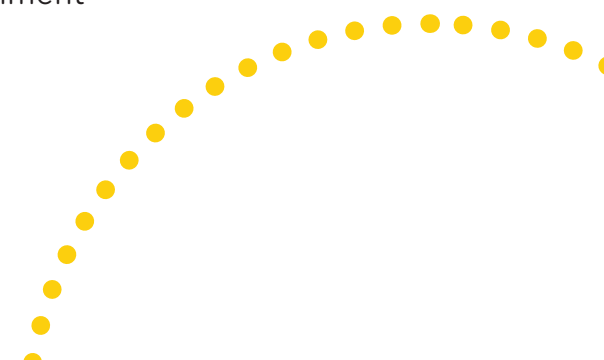


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Shopify
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Government of Nunavut, Department
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Kakivak Association

Nunatsiavut Government
Accenture
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