VISION 2015 OF SCIENCE 2016

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ANNUAL REPORT

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Network for Learning
Visions of Science has continued to build the capacity of youth who are underrepresented and often underestimated in STEM. This year we were able to impact over 500 youth and the depth of that impact goes far beyond the numbers. When youth are given the inspiration and tools to succeed, their potential is limitless. That is how we view our youth - with limitless potential.

This year has been one of exponential growth. Our programs have expanded in reach, our partnerships have deepened and we officially became a registered charity! Our first fundraising gala put on entirely by volunteers, served to catalyse our growth and celebrate the collective impact that our partners support.

A huge reason for our growth has been the unwavering dedication of our staff and volunteers who are representative of the communities that we serve. I am always in awe of the authenticity and commitment that they bring to their communities, week after week, year after year. Youth are seeing themselves as STEM leaders and community builders through the dedication of these facilitators, mentors and community advocates.

As this year represents the achievement of a personal milestone for me as I completed my PhD in Chemistry, it also represents the beginning of a new adventure as I dedicate my time to building this organization full-time. Moving forward, I am deeply encouraged as we look towards building a better future for youth in our communities through STEM.

Eugenia Duodu, Ph.D.
Chief Executive Officer
Visions of Science
Twitter: @EugeniaDuodu

Visions of Science lives up to its name. There is true vision in its creation, in its execution and in its desire for continued growth and involvement.

Our Youth volunteers have grown up participating in our weekly science clubs. Their loyalty is perhaps the best testament to the vitality and the relevance of our work. Our staff and volunteers, led with such dedication, intelligence and agency by Dr. Eugenia Duodu, provide young people from our diverse communities of Toronto and surrounds with an introduction not only to the practice and language of science and technology, but also to critical thinking, problem solving and awareness of the need for our collective active role in the world today and into the future. And we continue to grow! Three new science clubs joined our family this year – two in Brampton and one in the surrounding Peel District. The obvious success and clear vision of Dr. Duodu and her staff and volunteers have resulted in highly successful fundraising. New supporting stakeholders include: NSERC PromoScience, The Laidlaw Foundation, The Ontario Trillium Foundation, University of Toronto Mississauga, J.L. Larson Foundation and “The Propeller Project” of Toronto Pearson Airport.

We look forward to strengthening our relationship with community partners and funders as we move forward. The board is excited and understandably extremely optimistic about the work that we are doing toward the success of all our young people – the citizens who will lead our society in the future.

Hooley McLaughlin, Ph.D.
Adjunct Professor
Faculty of Information
University of Toronto
Who We Are

THE CAUSE

The Issue:
There is a growing amount of evidence to support the idea that youth require early exposure to and a strong foundation in Science, Technology, Engineering and Math (STEM) in order to be connected to future success. Canada’s future top jobs will require STEM-based literacy and skills. However, youth from low income communities often face barriers to meaningful engagement in STEM.

Our mission is to intentionally support young people through eliminating common barriers to engagement. We do this by providing free, on-going opportunities to access fun, hands-on STEM learning directly within their communities.

We believe that if we provide youth with ongoing support, inspiration and STEM learning opportunities, they can become well prepared to succeed and positively contribute to a constantly evolving society.

The Result:
There has been a persistent underachievement and underrepresentation of youth from low-income communities in STEM fields and research.

“Numerous societal problems are waiting to be solved - and I realize more and more that we need untapped and underestimated minds to be among those creating the solutions.”

ERIKA HAIRSTON, SOFTWARE ENGINEER & PRESIDENT OF THE BLACK STUDENT ALLIANCE AT YALE UNIVERSITY

Youth from the summer learning camp with Lay-Up Youth Basketball
Our Impact

History of Impact...
Since our incorporation (2004), we have engaged over 10,000 youth in STEM activities and continues to have a strong commitment to supporting economically disadvantaged youth across the Greater Toronto Hamilton Area (GTHA). We are currently the only STEM-based organization in Southern Ontario that delivers programming directly within low-income communities in collaboration with social housing partners such as Toronto Community Housing and Peel Housing Corporation.

Our programs and initiatives create an accessible and supportive STEM learning network. This support ensures that our participants are engaged, skilled and knowledgeable in STEM fields as they progress from childhood, to adolescence, and into adulthood.

Our Programs:
- Create hands-on learning environments where youth can engage in scientific thinking and experimentation with the freedom to learn from their mistakes
- Reduce financial (and other) barriers to make STEM learning accessible and fun
- Encourage youth to solve real world STEM problems so they better understand how they can contribute to society
- Provide a forum for leadership and positive youth development within a STEM learning environment
- Help parents, caregivers and program supporters understand STEM learning
- Bring STEM learning to life by connecting youth to professionals and exposing them to a variety of career options

OUR STRATEGY

COMMUNITY STEM CLUBS
We sustain interest in STEM by offering youth ongoing opportunities to explore STEM within their community.

SUMMER LEARNING CAMPS
We spark interest in STEM through engaging youth from target communities in summer workshops.

STEM LEADERSHIP
We support positive youth development in communities through STEM-based leadership opportunities and mentorship.

IN-SCHOOL ENRICHMENT
We support STEM education in elementary and secondary schools through the development and facilitation of STEM curricula.
MEANINGFUL ENGAGEMENT & CONSISTENCY

We are committed to building long-standing relationships within our communities.

Each youth served through our programs receives an average of 60 hours of STEM learning time per year. Collectively, that’s approximately 30,000 STEM learning hours!

Our community-based, volunteer-driven programming model actively engages over 500 youth across 25 different communities, on a yearly basis.

OUR COMMUNITY STEM CLUBS HAVE AN AVERAGE 50% YEARLY RETENTION RATE

60 [HRS] \( \frac{(500 \text{ YOUTH})}{1 \text{ YR}} \) = 30,000 [HRS]
BRINGING STEM TO THE COMMUNITY

Community STEM Clubs

Our Community STEM Clubs (CSC) program works directly within social housing communities to bring hands-on, inquiry-based STEM learning to youth on a weekly basis. The program thrives through partnerships between housing providers, post-secondary institutions and community-based groups and organizations. Together, we act as a “learning network” within communities supporting the promotion, delivery and evaluation of the program.

Through the CSCs, participants engage in experiments across a range of themes and disciplines, from renewable energy to the principles of electricity! Throughout the year, each club welcomes a variety of guest workshops from STEM organizations who enrich the program experience and bring new insights to STEM learning.

This year, we took STEM learning beyond the community by taking 150 club participants to the Ontario Science Centre. Youth explored several exhibits and had a great time, none of which would have been possible without the Ontario Science Centre’s Community Pass Program.

Beyond STEM learning, the consistent engagement within the Community STEM Clubs increases our depth of immersion with youth and fosters positive youth development through strengthening social and emotional learning.

Growth of CSCs:

This year we expanded the program to 3 new communities for a total of 16 clubs! Our expansion into the Peel region was supported by the University of Toronto Mississauga and enabled us to impact new communities in Brampton!

Year End Event 2016:

The annual Year End Event celebration brings together community STEM clubs from across the GTHA to showcase their learning to parents, community supporters and partners. Each club works together to present an experiment of their choice to the general audience in a science fair format. The 4th annual celebration was held in Ryerson University’s Sears Atrium with the keynote speaker, Dan Riskin of Discovery Channel’s Daily Planet. Riskin inspired all participants, volunteers and guests alike through sharing his journey with science discovery and his research on bats! The event also included an announcement of funding support from the Ontario Trillium Foundation for the CSC program along with greeting from Minister Mitzie Hunter.

“IT BECAME A REGULAR ROUTINE ON OUR MONDAY MORNINGS, AS WE CIRCULATED AROUND THE SCHOOL TO TOUCH BASE WITH OUR STUDENTS, TO HEAR ALL THE GREAT THINGS THAT OUR STUDENTS IN THE VISIONS OF SCIENCE PROGRAM ACCOMPLISHED ON THEIR SATURDAY MEETING. THEY ARE ALWAYS SO EXCITED TO SHARE THE LATEST EXPERIMENTS AND INTERESTING FACTS THAT THEY EXPLORED. MANY OF THOSE STUDENTS WOULD DRAW ON THESE EXPERIENCES IN THEIR DAILY LEARNING AS SEVERAL TEACHERS COMMENTED ON SOME OF THE IDEAS BEING DISCUSSED IN GROUP WORK. THE PASSION FOR STEM WAS CERTAINLY CONSOLIDATED WITH THE STUDENTS IN THE 7 MONTHS THAT THEY WERE INVOLVED.”
Our in-school enrichment program supports the development and facilitation of inquiry-based STEM learning within the classrooms of our target communities. The program seeks to create sustainable change by increasing STEM teaching capacity within the classroom. We have delivered this program since May 2014 with the teachers and administration at Nelson Mandela Park Public School (NMPPS) in Regent Park. By supporting the STEM teaching staff, we were able to impact the students on a weekly basis and help build a STEM learning culture within the school.

To further enhance the STEM learning experience at NMPPS, we teamed up with the Faculty of Science from Ryerson University to implement a pilot mentorship program that connected eight grade 7/8 students from NMPPS with Ryerson graduate students in STEM research fields. Students worked on science fair projects and received training in the scientific method, invention and research presentation. Students also received project support and mentorship from Ryerson undergraduate/graduate students in respective fields of study and had the opportunity to work in lab spaces on campus. The culmination of the pilot enabled students to present their projects at the Toronto Science Fair in April 2016. 100% of the students in the program reported an increased interest in science and confidence in presenting science as a result of the program.

We appreciate the efforts of the teachers and admin of NMPPS, Dr. Emily Agard and her team at the Office and Science Enrichment and Outreach at Ryerson, and the Laidlaw Foundation for supporting this program!
BUILDING CAPACITY

Summer Learning Camps

The summer learning camp program enables us to reach youth that normally would not attend our community STEM clubs program. In the summer of 2016, we teamed up with the Lay-Up Youth Basketball program which provides free, high-quality basketball programs to youth throughout Toronto.

ENGAGING YOUTH

MAX DAVIAU, FOUNDER, LAY-UP YOUTH BASKETBALL

“All of Lay-Up’s programs have a focus on developing participants both as basketball players and as community leaders, off-the-court. This past summer, all of Lay-Ups 5 programs had a daily VoSNL workshop aimed at developing participants understanding and interest in science. Ultimately, the program was a huge success and many of Lay-Up’s 150+ participants reported the VoSNL workshop as their favorite part of the program. Lay-Up and VoSNL are actively looking for other ways to collaborate and further grow the relationship.”

The STEM Design Project

The STEM Design Project engaged seven youth from our communities to learn and develop skills in technology through learning the fundamentals of video game design. Youth participated in workshops led by a facilitator from OCAD University and learned how to draw and model 3D characters. At the end of the program, youth each developed a 3D character and presented their learning at the Year End Event celebration.

The STEM Design Project was supported by ArtReach Toronto and the Toronto Arts Council.
“Collaborating with Visions of Science on their program evaluation has been absolutely amazing! Visions of Science has shown true dedication to evaluating their youth program in order to gain a deeper understanding of the participant’s experience and potential impacts of this initiative. As a result of their hard work and commitment to youth program evaluation, Visions of Science were the winners of our Knowledge to Action Conference Excellence award for the Central (Greater Toronto Area) hub!”

**ENGAGING YOUTH Program Outcomes**

Evaluation: In order to deliver evidence-based programming, we sought to improve evaluation methods in order to measure whether program outcomes amongst youth were being met as intended. We hoped to gain a deeper understanding of the youth’s experiences with the program and strategies for improving program delivery. In January, we started working with the Youth Research and Evaluation Exchange (YouthRex) through the Customized Evaluation Support program. Together, we are working on creating and implementing an integrated framework for the evaluation of our programs.

Look out for our CSC program report and manuscript for more details on the impact of our programs!
Volunteers & Alumni

Our volunteers devote their time and bring their passion to ensuring that youth in our communities have the best experience. They act as facilitators, mentors and community members. They are the backbone of our organization and we would not be here without their dedication and support.

2015-2016 Staff

Eugenia Duodu, Ph.D.  
Chief Executive Officer

Trisha Hosein  
Programs Manager

Sara da Silva, Ph.D.  
Curriculum Development

Mawahib Yusuf  
Program Coordinator (In-School)

Sabiour Baray  
Program Coordinator (STEM Clubs)

Carolyn Nazareth  
Volunteer Coordinator

Yusuf Yusuf  
Outreach Coordinator

Yi Lu  
Admin Coordinator (Programs)

Our Community

THANK YOU TO OUR VOLUNTEERS FOR A GREAT YEAR!!!

Volunteers +90

EACH CONTRIBUTE AN AVERAGE 80 HOURS OF THEIR TIME ON AN ANNUAL BASIS!

Board of Directors

Hooley McLaughlin, Ph.D.

Winston Klass, Ph.D.

Adnan Syed

Keddone Dias

Annelies Groen

“I began volunteering with VoS in September of 2012. At this time, I was two years into my undergraduate studies and although I always loved school and learning, I was beginning to become disenchanted with the redundancy of my daily routine. Funny enough, I came across VoS for the first time while reading through somebody’s resume! I quickly looked into the organization and learned about the great work they were doing, and I knew I wanted to get involved somehow. A few months later, I began volunteering as a club facilitator at the Bleecker Street location. Though I love children, I did not have extensive work experience with them prior to this position. However, the team at VoS provided excellent training to help me seamlessly assume and embrace my role as a facilitator. I was so happy to be able to share my love for science with kids who were so receptive and eager to learn. I was always so impressed with the creative thinking that I witnessed and the complex questions the children would ask (I was stumped on more than one occasion!). I eventually became the lead facilitator at the Bleecker Street location, a role that I was very honoured to fill. A year later, I passed on the torch to another volunteer because I was beginning a new stage of my life at UofT medical school. I still keep in close contact with the organization and every Saturday I smile and think of VoS and the incredible work that they are doing.”

CASSANDRA DEGASPERIS, VOLUNTEER ALUMNUS

“2015/16 ANNUAL REPORT
Financial Summary

REVENUE

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<th>Source</th>
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EXPENDITURES

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For a full copy of 2015 our audited financial statements with notes please contact: eugenia.duodu@vosnl.org.

REVENUE GROWTH

Over the last few years, VOSNL has experienced rapid financial growth and with growing support, we expect our impact to be far reaching!

Support & Partners

SUPPORTERS

PROGRAM PARTNERS

Thank you to our in-kind sponsors and donors who gave anonymously. For more information about contributing to Visions of Science, please contact us at 416.266.6464 or email eugenia.duodu@vosnl.org.

Charitable #: 861043370 RR0001
Looking Ahead

STEM Community Leaders: With an extension of our CSC program, we will engage youth in grades 9 to 12 through the official launch of the STEM Community Leaders program. Youth will gain leadership skills and opportunity as well as access to experiential STEM leaning.

We will continue to support children and youth through STEM and we are excited for what the future will hold!