MISSION STATEMENT

We envision the youth of Manitoba inspired and empowered by the possibilities of science, engineering and technology. We envision a Manitoba where all youth, regardless of background, gender or socio-economic status are enriched in their science, math and technology education. The young people today will become Manitoba’s vibrant and diverse workforce of leaders tomorrow; these youth will be empowered by their knowledge and appreciation for science, engineering and technology.
OUR MANDATE
WISE Kid–Netic Energy works to ignite an interest and life–long passion of science and engineering in all Manitoba youth.
INTRODUCTION

In 1990 WISE (Women in Science and Engineering) Kid-Netic Energy was formed at the University of Manitoba. It has grown to be one of the largest STEM (Science Technology Engineering Math) not-for-profit outreach programs in Canada. Our organization offers science and engineering workshops, clubs and camps to youth from Kindergarten to Grade 12 throughout the entire province of Manitoba. Annually we reach between 25 000 and 50 000 youth depending on funding levels. Our approach is simple – present STEM in messy, memorable and engaging ways so Manitoba youth feel motivated to learn more and more. We reach all Manitoban youth. We particularly target underrepresented youth like girls, Indigenous youth and youth facing socio-economic challenges. There is a saying, “You can’t be what you don’t see”, and in response to this saying we try and get as many youth doing hands-on, experiential activities with amazing young role models pursuing undergraduate degrees in science and engineering. We hope you enjoy reading this annual report. Please contact us if you have any questions or concerns.
Nice to see university students promoting future careers!

Mrs. Myers, Gilbert Plains Elementary, Gilbert Plains, MB
OUR INSTRUCTORS

Our instructors are our champions. All of our instructors are undergraduate university students pursuing engineering, science, or STEM-related degrees. From that pool we preferentially hire women, Indigenous peoples, and other minorities. We pride ourselves on hiring undergraduate students that reflect the diversity of students throughout Manitoba. Each is trained to deliver all of our Manitoba science curriculum-based workshops. They also receive classroom management and Indigenous cultural training. We provide meaningful employment for our instructors to develop strong leadership and presentation skills.

During the fall and winter our instructors work part-time delivering outreach close to Winnipeg to accommodate their classes and labs. In the spring and summer they work full-time and travel extensively to all corners of the province including Churchill, Thompson, Flin Flon, Cranberry Portage and Dauphin in northern Manitoba, dozens of rural communities throughout southern Manitoba, and First Nations communities like Wanipigow, Skownan First Nation, Norway House Cree Nation, Sapotaweyak Cree Nation, and Sagkeeng First Nation.
OUR WORKSHOPS

Showcasing a variety of science and engineering topics, our workshops are highly interactive, and bring technology and hands-on activities to classrooms.

wisekidneticenergy.ca/workshops
Our Workshops

We offer over 20 different hands-on workshops and we had another exceptional year in workshop delivery. Between April 1, 2018 to March 31, 2019 we saw an outstanding 47,371 students. Our hands-on, Manitoba science curriculum-based workshops for Kindergarten to Grade 12 are a hit in classrooms all over the province of Manitoba. Teachers have enthusiastically invited us into their classrooms and we could not be more excited to be working with passionate educators. We offer a wide variety of choices for budding scientists and engineers, and are always updating our programs to keep them current. We facilitate dissections, design-build-test challenges and plenty of fun educational games. We bring all the supplies and clean up afterwards. We charge minimally and offer the same rates for schools within and outside the city of Winnipeg. In November, 2017, we were able to start offering 6 of our workshops for free, thanks to CanCode, a federal government initiative to promote education in digital literacy and computational thinking. We strive to spark curiosity and build momentum towards positive experiential learning. Often the Manitoba Department of Education offers grants to teachers that can be used to further subsidize the cost of workshops. Please go to our website (www.wisekidneticenergy.ca) to view our current workshop catalogue in French and English.

Fun Facts About Workshops

- Total audience of 47,371 from Kindergarten to Grade 12
- Total CanCode audience of 22,014
- 2,217 workshops delivered April 1, 2018 – March 31, 2019
- 995 free CanCode workshops delivered April 1, 2018 – March 31, 2019
My students really enjoyed the workshop! I will definitely be booking other workshops in the future! Thank-you!

Carly Richards, Arthur E. Wright School, Winnipeg, MB
## Workshop Delivery Broken Down by School Division

April 1, 2018 – March 31, 2019

<table>
<thead>
<tr>
<th>Division</th>
<th>Kids Per Division</th>
<th>Division</th>
<th>Kids Per Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borderland</td>
<td>204</td>
<td>Portage la Prairie</td>
<td>1198</td>
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<tr>
<td>Franco-Manitobaine</td>
<td>254</td>
<td>Prairie Rose</td>
<td>1071</td>
</tr>
<tr>
<td>Evergreen</td>
<td>162</td>
<td>Prairie Spirit</td>
<td>231</td>
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<tr>
<td>Flin Flon</td>
<td>274</td>
<td>Red River Valley</td>
<td>845</td>
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<tr>
<td>Frontier</td>
<td>2445</td>
<td>River East Transcona</td>
<td>3824</td>
</tr>
<tr>
<td>Garden Valley</td>
<td>656</td>
<td>Seine River</td>
<td>1268</td>
</tr>
<tr>
<td>Hanover</td>
<td>3782</td>
<td>Seven Oaks</td>
<td>2721</td>
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<tr>
<td>Interlake</td>
<td>526</td>
<td>St. James Assiniboia</td>
<td>1874</td>
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<tr>
<td>Kelsey</td>
<td>276</td>
<td>Sunrise</td>
<td>1501</td>
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<tr>
<td>Lord Selkirk</td>
<td>632</td>
<td>Western</td>
<td>278</td>
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<tr>
<td>Louis Riel</td>
<td>4710</td>
<td>Winnipeg</td>
<td>6256</td>
</tr>
<tr>
<td>Mountain View</td>
<td>679</td>
<td>Other/Private</td>
<td>6647</td>
</tr>
<tr>
<td>Mystery Lake</td>
<td>817</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pembina Trails</td>
<td>2804</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pine Creek</td>
<td>225</td>
<td>TOTAL STUDENTS</td>
<td>47,281</td>
</tr>
</tbody>
</table>
Great variety and love the implementation of Aboriginal perspectives in science.

Chantel Harel, Ecole St. Germain, Winnipeg, MB
OUR CAMPS

Camp programming is fun, interactive, and hands-on. It includes indoor and outdoor activities, and incorporates everything from physical activity to creative design and build challenges, to playing with digital technology.

wisekidneticenergy.ca/camps
My favourite project was the code kits because I got to use my imagination to its fullest.

Camper, Wanipigow, Hollow Water First Nation, MB
CAMP LOCATIONS SINCE 2001

1. CHURCHILL
2. BROCHET
3. SHAMATTAWA
4. THOMPSON
5. FLIN FLON
6. FRONTIER SCHOOL DIVISION CAREER X
7. THE PAS & OPASKWAYAK CREE NATION
8. CROSS LAKE FIRST NATION
9. NORWAY HOUSE CREE NATION
10. WASAGAMACK

11. GARDEN HILL FIRST NATION
12. SWAN RIVER
13. SAPOTAWEYAK CREE NATION
14. SKOWNAN FIRST NATION

15. DAUPHIN
16. PEGUIS FIRST NATION
17. WANIPIGOW
18. LITTLE BLACK RIVER FIRST NATION
19. SAGKEENG FIRST NATION
20. BROKENHEAD OJIBWAY FIRST NATION
21. TYNDALL
22. BEAUSEJOUR
23. WINNIPEG
24. ST. FRANCOIS-XAVIER
25. VIRDEN
26. KILLARNEY
27. CLEARWATER
28. MORDEN
29. WINKLER
30. ALTONA
31. CARMAN
32. STEINBACH

Highlighted locations received week-long camps in Summer 2018

Fly-in location
OUR CLUBS

Our clubs include hands-on activities, field trips, and mentor events on a weekly basis. Club members have the opportunity to interact with professionals, see the heart of the University of Manitoba, and explore science and engineering on a more in-depth level.

wisekidneticenergy.ca/clubs
GIRLS CLUB

Offering quality extra-curricular science and engineering programs is crucial to the development of Manitoba’s future scientists and engineers; making intentional space in these programs for groups who are underrepresented in STEM is a priority for WISE Kid-Netic Energy. We have a well-established Girls Club program that gives kids opportunities to get excited about science and engineering in a setting outside of their science classroom. The Girls Club program saw a few changes in 2018-2019, with a new format for our on-campus Girls Club that enabled the club to accommodate more students, and a reintroduction of our Inner-City Girls Club thanks to a new partnership with Pinkham School. Our on-campus program meets on Saturdays at the University of Manitoba, while our inner-city program meets after school. In both programs, participants meet with their instructors each week to explore a new STEM topic, with a mixture of youth-selected and instructor-selected themes.

Our kiddo loved everything about this program. We were so impressed. The activities were so well done and there was so much variety... Our daughter tells everyone now that she wants to be an engineer when she grows up. We are so thankful she had this opportunity.

Parent of a Girls Club Member
**HYPOTHESIS**
I predict the balloon will need ten strips of tape to reach eight feet because putting more tape can make it bounce higher.

**MATERIALS**
- A balloon
- Clear tape
- Measuring stick
- Paper and pencil to record data
- Glue

**METHOD**
1. Inflate a balloon.
2. Put the 2 feet measurement on the wall.
3. Put tape on the balloon and see how high it goes.

**EXPERIMENT AND OBSERVATION**
When I inflated the balloon, it bounced high over the table and measured how high it bounced.

**DISCUSSION**
1. It went low because I did not use enough tape.
2. I did not measure the balloon in the right position.
3. I used ten strips of tape on the balloon and saw how high it went.

**CONCLUSION**
My hypothesis was correct because it went up high and showed how much tape was used.
In the winter of 2015, we started our All Girls Robot Fight Club, with the goal of having more girls participate in the Manitoba Robot Games programming challenge. This year, we had another great year with seven participants. Over the course of seven 4-hour sessions, the group trained up for the competition, but also got exposed to other computer engineering experiences, including touring university labs. We provided LEGO Mindstorms and computers to train and compete with, along with three female instructors pursuing computer science or engineering degrees. Our teams did great and managed to take 1st, 2nd, and 3rd place in the Manitoba Robot Games!
DISSECTION PROGRAM

The goal of this free enrichment program is to offer students an opportunity to prepare for post-secondary labs and classes, and/or discover whether anatomy, biology and even medical science are areas of potential interest to them career-wise. In our third year we offered two six week sessions at Tec-Voc High School. In the fall we had a record 33 participants, and in the winter we had 19. The students had a chance to dissect a sea cucumber, frog, rat and dogfish. Students who diligently completed the program received a certificate celebrating their accomplishment. Special thanks to Winnipeg School Division for sharing their space, and teacher Leanne Romaniuk, who volunteered to supervise the program.

I enjoyed this program a lot and I learned many new things that will prepare me for my future studies in post-secondary.

Program Member
OUR OUTREACH

WISE Kid-Netic Energy is dedicated to inspiring all youth to explore Science and Engineering. We have special initiatives to provide outreach to underrepresented groups.

wisekidneticenergy.ca/outreach
ADOPT-A-CLASS

Our Adopt-a-Class Program has been offering inner-city, or socio-economically challenged schools free workshops since 2012. This program recognizes the challenges of certain neighbourhoods, and provides programming to schools that might not otherwise be able to access our services. This year’s schools included Brooklands, Champlain, David Livingstone, Dufferin, Elmwood, King Edward, Niji Mahkwa, Norquay, Pinkham, Sisler, Southeast Collegiate and William Whyte. Between September 2018 and March 2019 we have already delivered 75 workshops, and visited 1481 youth. We are so grateful to Actua, The Winnipeg Foundation, and private donors for supporting this initiative. Learn how you can contribute by visiting our website.

Excellent presentation with appropriate background information and a tactile activity that the students could relate to and engage with.

M. Sutherland, Niji Mahkwa School, Winnipeg, MB
INDIGENOUS OUTREACH

In the spring of 2018 we delivered workshops in Skownan First Nation, Norway House Cree Nation, Hollow Water First Nation, and Sagkeeng First Nation. In Pinaymootang First Nation, Skownan First Nation, Hollow Water First Nation and Sagkeeng First Nation we also delivered our camp programming. Camp included our regular STEM camp for Grades 4-6, as well as our Codemakers Camp for Grades 7-9. Unfortunately due to forest fires, we had to move our Sapotaweyak Cree Nation camp from the spring to the summer.

As always we partnered with Frontier School Division to bring Career X to Cranberry-Portage at Fontier Collegiate Institute. Students from small communities throughout the north without high schools joined us in Cranberry-Portage for a week of camp activities.

In addition, during the summer we delivered camp in Norway House Cree Nation, as well as at Ma-Mow-We-Tak Friendship Centre in Thompson.

Finally, thanks to the Carolyn Sifton Foundation, we had another sucessful year of delivering breakfast and STEM programming once a month to the young women at Adolescent Parent Centre.

The students were very engaged and had a lot of fun!

Mrs. Lacquette, Gr. 1/2 teacher at Skownan First Nation, Skownan First Nation
MAKE YOUR MOVE

Make Your Move is a unique annual outreach opportunity that invites young female leaders in Grade 8 to a special event designed to challenge and to inspire them. Engineers Canada has set the ambitious goal of 30 per cent female participation in engineering by the year 2030. In support of this goal, we hope to influence young women attending the event to choose the correct science and math courses for admission into the faculty in the future. At the event each team is matched up with a female engineer mentor. Together they participate in a design-build-test challenge that encourages teamwork, creativity, and ingenuity. In 2019, 60 girls attended the event sponsored by TREK Geotechnical, Manitoba Hydro, FWS, KGS, Macdon, Price Industries, RTDS, Hatch, New Flyer, Standard Aero, Magellan, NSERC Chair for Women in Science and Engineering, Faculty of Engineering, Stantec, and Emergent Biosolutions.

I learned a lot more about what engineers actually do and the different types of engineering there is. I learned about how much engineering really helps the planet and the people living on it.

Make Your Move Participant
OUR OUTREACH
**GO ENG GIRL & GO CODE GIRL**

Go Eng Girl and Go Code Girl are free of charge public events for girls in Grades 7-9 that explore engineering and computer science/engineering. These events are framed in an encouraging and interactive way through hands-on activities and challenges. A key component of each event is also about providing information and resources to the students and their parents about how they can continue in these fields. In November 2018, Go Eng Girl reached 60 participants, and in February 2019, Go Code Girl hosted 64 participants. Thank you to all of the volunteers who help to make these two events extraordinary.

I really enjoyed the really nice ladies at our table. They are really good sports and good role models. This was very fun so I hope we continue this program to inspire girls.

**Go Eng Girl Participant**

I really enjoyed the maze and decoding. Everything was fun! I had a lot of fun with friends, and meeting NEW ONES!

**Go Code Girl Participant**
## OUR FINANCES

### REVENUE: $640,000

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
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<tr>
<td>Sponsors/Donors</td>
<td>45%</td>
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<tr>
<td>University of Manitoba</td>
<td>36%</td>
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<tr>
<td>Income Generated</td>
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<td>Federal Government</td>
<td>5%</td>
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<td>Provincial Government</td>
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</table>
EXPENSES: $657 000*

Non-Student Wages & Benefits – 35%

Student Wages & Benefits – 34%

Travel – 16%

Materials and Supplies – 15%

Note: WISE Kid-Netic Energy was privileged to receive federal government CanCode funding through Actua. Funding had to be spent by fiscal year-end, and is yet to be received in full.
I loved that we got to work together and try to design a project. Everyone was welcoming and kind. I really felt included.

Make Your Move Participant
I loved that we got to work together and try to design a project. Everyone was welcoming and kind. I really felt included.

Make Your Move Participant
OUR SUPPORTERS

2018-2019 FISCAL YEAR FUNDERS

We have many generous supporters that make our work possible.

[Logos of various supporter organizations]
WISE Kid-Netic Energy is a Proud Network Member of Actua

Actua provides training, resources and support to a national network of local organizations offering science and technology education programs. Actua members reach over 250,000 youth per year, in 500 communities nationwide. Please visit Actua on the web at www.actua.ca.

2018 ACTUA NATIONAL FUNDERS

2018 ACTUA MANITOBA FUNDERS
OUR FUTURE

WISE Kid-Netic Energy looks forward to maintaining close ties with the Faculty of Engineering and the Faculty of Science at the University of Manitoba, and aligning ourselves closely with their strategic outreach objectives. We look forward to strengthening our ties with teachers and schools within the province so we can continue to support efforts to attract more youth into careers in Science, Technology, Engineering and Math. Our province has a bright future ahead and we know our talented youth are the conduits to our joint success.