



**WISE Kid-Netic Energy**  
ENGINEERING FOR SCIENCE



# Annual Report

2016–2017



UNIVERSITY  
OF MANITOBA

## 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.



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## 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 35 000 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.





Great presentation! Really knew her stuff, friendly and patient/encouraging with the students. Thanks so much – excellent experience for the kids.

Woodlands Colony, MB

## OUR INSTRUCTORS

Our instructors are our champions. All of our instructors are University of Manitoba students pursuing engineering or science-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 and deliver

outreach close to Winnipeg to accommodate their classes and labs. In spring and summer they work full-time and travel extensively to all corners of our province including northern Manitoba (Churchill, Dauphin, Flin Flon, etc.), southern Manitoba (Steinbach, Killarney, Morden, etc.) and First Nations communities (Wanipigow, Skownan First Nation, Norway House Cree Nation, etc.). We teach our instructors to consciously consider the grade level they are presenting to so students are able to easily understand, and relate. We also believe having underrepresented peoples as ambassadors of science and engineering in classrooms dispels barriers associated with underrepresented groups excelling in technical fields.





# 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](http://wisekidneticenergy.ca/workshops)

## OUR WORKSHOPS

We offer over 20 different hands-on workshops and we had another tremendous year in workshop delivery. Between April 1, 2016 to March 31, 2017 we saw an outstanding 26 046 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. 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. 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](http://www.wisekidneticenergy.ca)) to view our current workshop catalogue in French and English.

### FUN FACTS ABOUT WORKSHOPS

- Total audience of 26 046 from Kindergarten to Grade 12
- 1 180 workshops delivered



The DNA extraction – very cool and messy! That's a good thing!

M. St. Pierre, Springfield Collegiate Institute, MB



## WORKSHOP DELIVERY BROKEN DOWN BY SCHOOL DIVISION

DIVISION	KIDS PER DIVISION	DIVISION	KIDS PER DIVISION
Evergreen	257	Prairie Rose	135
Franco-Manitobaine	214	Prairie Spirit	178
Flin Flon	425	Red River Valley	701
Frontier	944	River East Transcona	988
Garden Valley	182	Rolling River	230
Hanover	2 147	Seine River	108
Interlake	116	Seven Oaks	1 816
Kelsey	395	St. James Assiniboia	1 308
Lord Selkirk	379	Sunrise	306
Louis Riel	1 373	Turtle Mountain	58
Mountain View	406	Winnipeg	2 751
Mystery Lake	1 174	Other/Private	7 317
Pembina Trails	1 063		
Portage la Prairie	368	<b>TOTAL STUDENTS</b>	<b>26 046</b>

Students were all engaged. The presenter explained things very well and clearly – Got kids “hooked” on electricity.

**Jamie Throop**, HBOIERC, Norway House Cree Nation, 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.

[wisekidneticenergy.ca/camps](http://wisekidneticenergy.ca/camps)

## OUR CAMPS

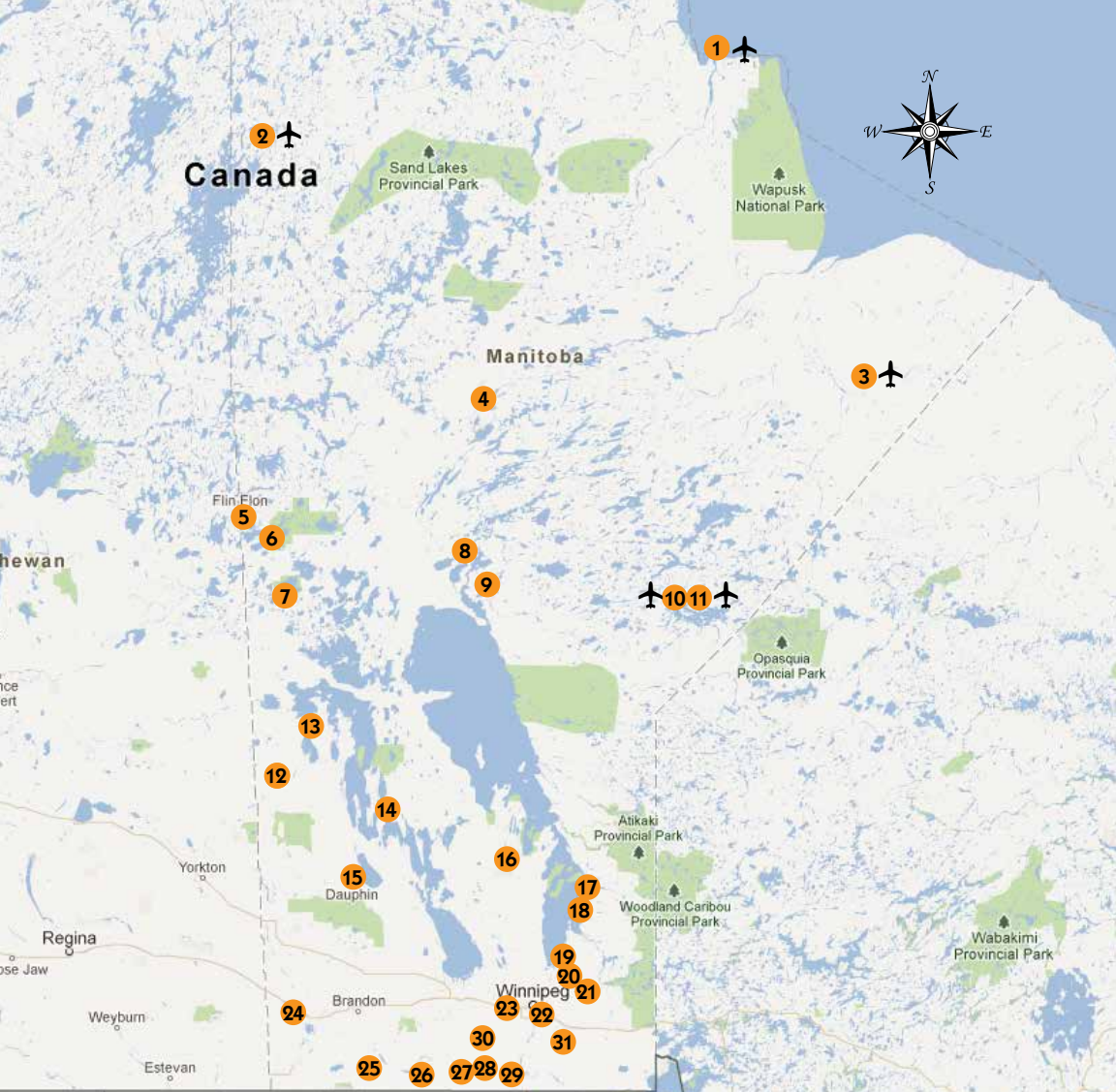
We run week-long science and engineering camps in northern Manitoba (Churchill, Flin Flon, Dauphin), southern Manitoba (Steinbach, Morden, Killarney), First Nations communities (Wanipigow, Skownan, Norway House, Brokenhead Ojibway First Nation, Sapotaweyak), and within Winnipeg through the Boys and Girls Club of Winnipeg, Immigrant and Refugee Community Organization

of Manitoba. Each day, boys and girls within Grades 4, 5 and 6 experience a new career path. In summer 2016 participants were exposed to different themes in Cardiology, Plants & Fungi, Construction, Forensic Science, and Marine Biology. Our lesson plans maximize hands-on learning.

Yesterday at dinner my daughter told us she wants to become a mechanical engineer! Thanks so much for introducing her to exciting new career ideas.

**Parent of a camper,** Dauphin, MB





## CAMP LOCATIONS SINCE 2001

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| 1. CHURCHILL                         | 15. DAUPHIN                         |
| 2. BROCHET                           | 16. PEGUIS FIRST NATION             |
| 3. SHAMATTAWA                        | 17. WANIPIGOW                       |
| 4. THOMPSON                          | 18. LITTLE BLACK RIVER FIRST NATION |
| 5. FLIN FLON                         | 19. BROKENHEAD OJIBWA FIRST NATION  |
| 6. FRONTIER SCHOOL DIVISION CAREER X | 20. TYNDALL                         |
| 7. THE PAS & OPASKWAYAK CREE NATION  | 21. BEAUSEJOUR                      |
| 8. CROSS LAKE FIRST NATION           | 22. WINNIPEG                        |
| 9. NORWAY HOUSE CREE NATION          | 23. ST. FRANCOIS-XAVIER             |
| 10. WASAGAMACK                       | 24. VIRDEN                          |
| 11. GARDEN HILL FIRST NATION         | 25. KILLARNEY                       |
| 12. SWAN RIVER                       | 26. CLEARWATER                      |
| 13. SAPOTAWEYAK CREE NATION          | 27. MORDEN                          |
| 14. SKOWNAN FIRST NATION             | 28. WINKLER                         |
|                                      | 29. ALTONA                          |
|                                      | 30. CARMAN                          |
|                                      | 31. STEINBACH                       |

Highlighted locations received week-long camps in Summer 2016

fly-in location



## SPACE ADVENTURE CAMP

WISE Kid-Netic Energy continues to provide the promotional and administrative support for the Manitoba Space Adventure Camp, a Manitoba Aerospace initiative. The enrichment camp designed for students in Grades 9-11 explores various aerospace, flight, physics and space topics. Students participate in hands-on activities such as rocket builds, extensive lab tours in the Faculty of Engineering and drive a race car—a simulator of course!



The activity I enjoyed the most was soldering the robot because I got to learn a new skill that I could possibly use in the future. **Camper**

Tracy Hunt, P.Eng (Far left)  
Kimberly Norrie, P.Eng (Second from right)





## OUR CLUBS

Each week exciting hands-on activities, tours, field trips and mentor events are hosted. 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](http://wisekidneticenergy.ca/clubs)

## GIRLS CLUB

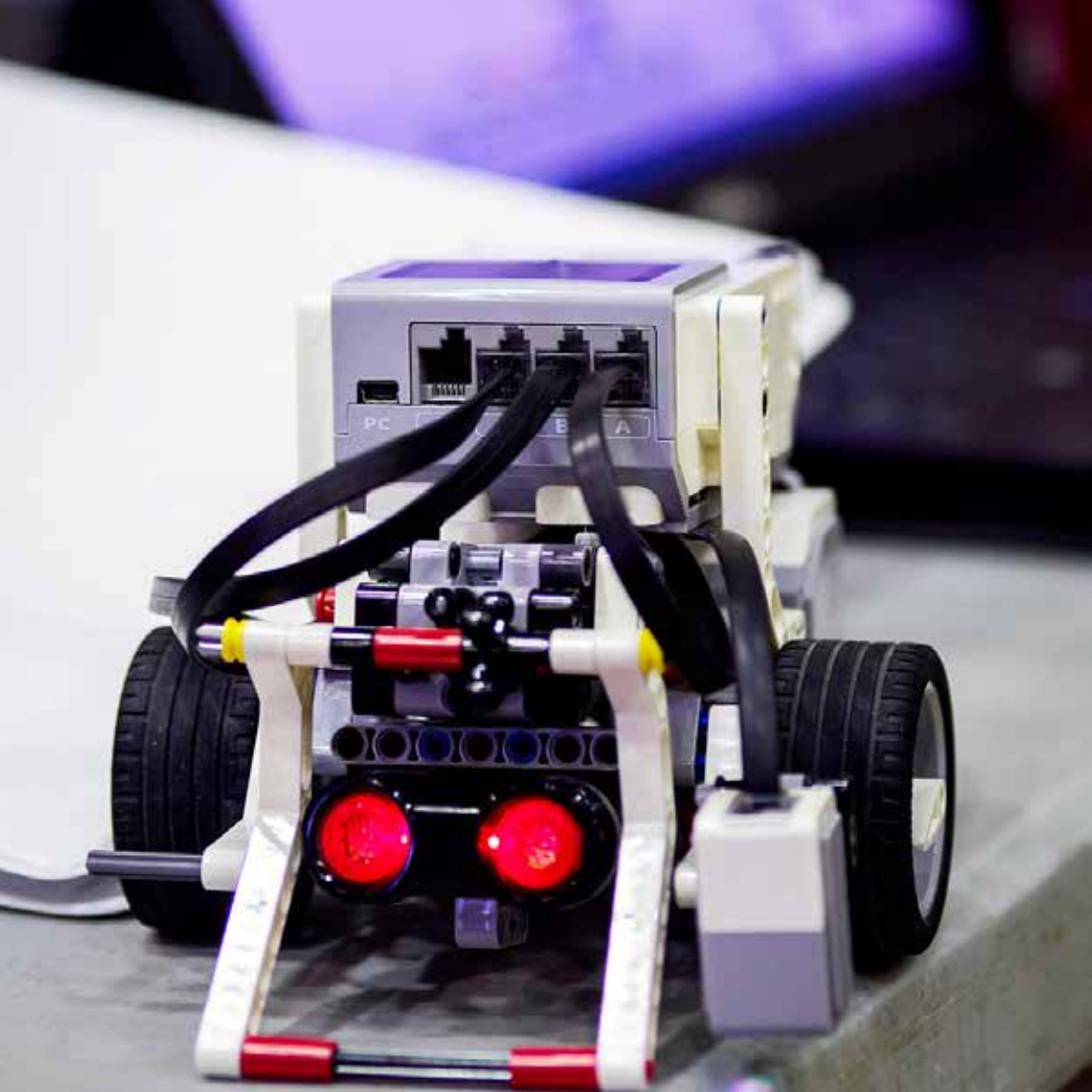
Offering quality extra-curricular science and engineering programs is crucial to the development of Manitoba's future scientists and engineers, and we offer two girls clubs that run throughout the school year to support local interest. Every week the girls meet with their instructors, and develop their skills and interests through participation in competitions, field trips and mentorships.



I really can't decide what my favourite activity was this year. All the things we did were really fun and really creative. I really enjoyed when we did Dinosaur Day. **Girls Club member**

My favourite field trip was the Aviation Museum. **Girls Club member**





## ROBOT FIGHT CLUB

We would like to see more girls compete in the Manitoba Robot Games programming challenge with LEGO Mindstorms. In the winter of 2015, we started a club called “All Girls Robot Fight Club”. This year the club met for seven 4-hour sessions to train for the challenge. We provided the LEGO Mindstorms and the computers to train and compete with. We also provided them with female instructors pursuing computer science degrees and/or engineering degrees. We had another great year with ten participants. Two of our teams even managed to take first and second place!





# 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](http://wisekidneticenergy.ca/outreach)



## ADOPT-A-CLASS

By far the most meaningful new project we started in September 2012 was our Adopt-a-Class program. We recognized that we could do more to make our workshops accessible in areas of Winnipeg with socio-economic challenges. We asked the Boys and Girls Club of Winnipeg, and ENGAP (Engineering Access Program for Indigenous students) to nominate schools which would receive our workshops at no cost. This year's schools

were Brooklands, David Livingstone, Dufferin, Elmwood, Kind Edward, Niji Mahkwa, Norquay, Pinkham, Sisler, South East, and William Whyte. Between September 2016, and March 2017 we had already seen 1098 students. We are so grateful to Actua and The Winnipeg Foundation for supporting this initiative. Find out more online. We hope you are as excited as we are.

 [wisekidneticenergy.ca/adopt-a-class](http://wisekidneticenergy.ca/adopt-a-class)





## INDIGENOUS OUTREACH

In the fiscal year of 2016-2017 we were very engaged on First Nations reserves. We delivered our science and engineering camps in Skownan First Nation, Norway House Cree Nation, Hollow Water First Nation, Opaskwayak Cree Nation, Brokenhead Ojibway Nation and Sapotaweyak Cree Nation. In addition,

we delivered hands-on science and engineering workshops to Sagkeeng First Nation. We also visited Leaf Rapids in partnership with Frontier School Division Middle Years Career Days. A number of surrounding communities such as South Indian Lake and Lynn Lake participated in this event.



One student told me she is now interested in taking the university courses in science that the presenter took. Fabulous!

**Cynthia Gardewine**, Sergeant Tommy Prince School, Brokenhead First Nation, MB



## 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

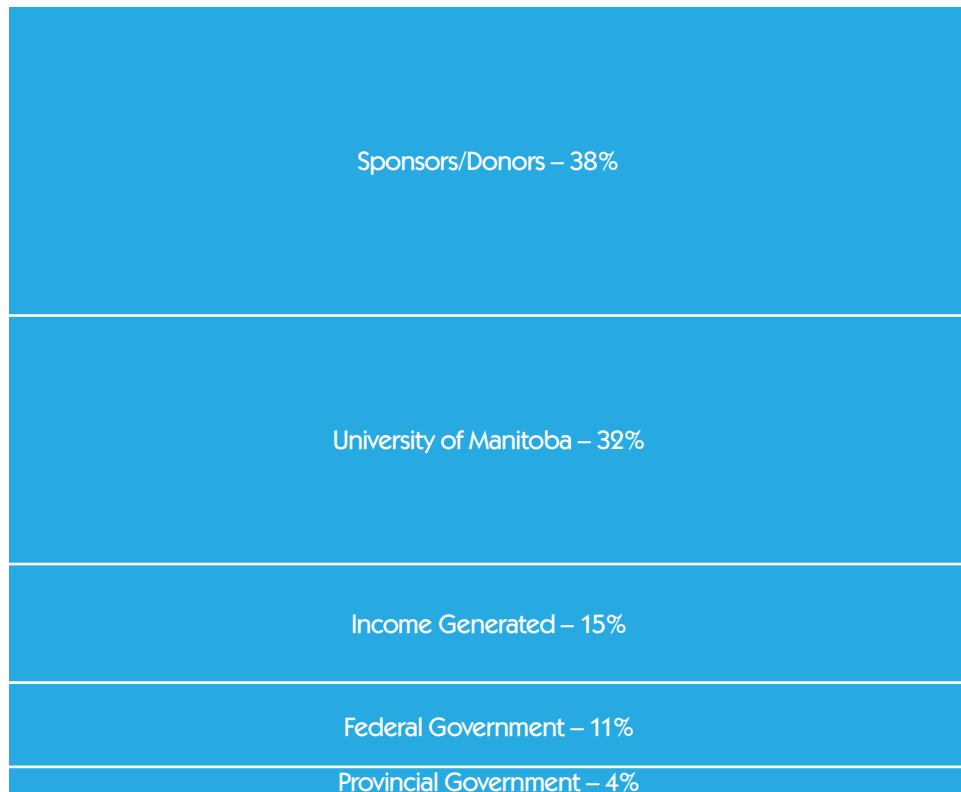
participate in design-build-test challenges that encourage teamwork, creativity, and ingenuity. Last year 60 girls attended the event sponsored by KGS Group, FWS Group, Emergent BioSolutions, Standard Aero, Price Industries, NSERC Chair of Women in Science and Engineering, MTS, Macdon, RTDS, Manitoba Hydro, Government of Manitoba, Stantec, and Magellan Aerospace. Special thanks to Faculty of Engineering for sponsoring two teams. We were honoured to have Minister Squires speak to the participants as well.

I liked everything about Make Your Move, but mostly the challenge we had to do. The teamwork, thinking, creating, experimenting, testing... just like a real engineer!

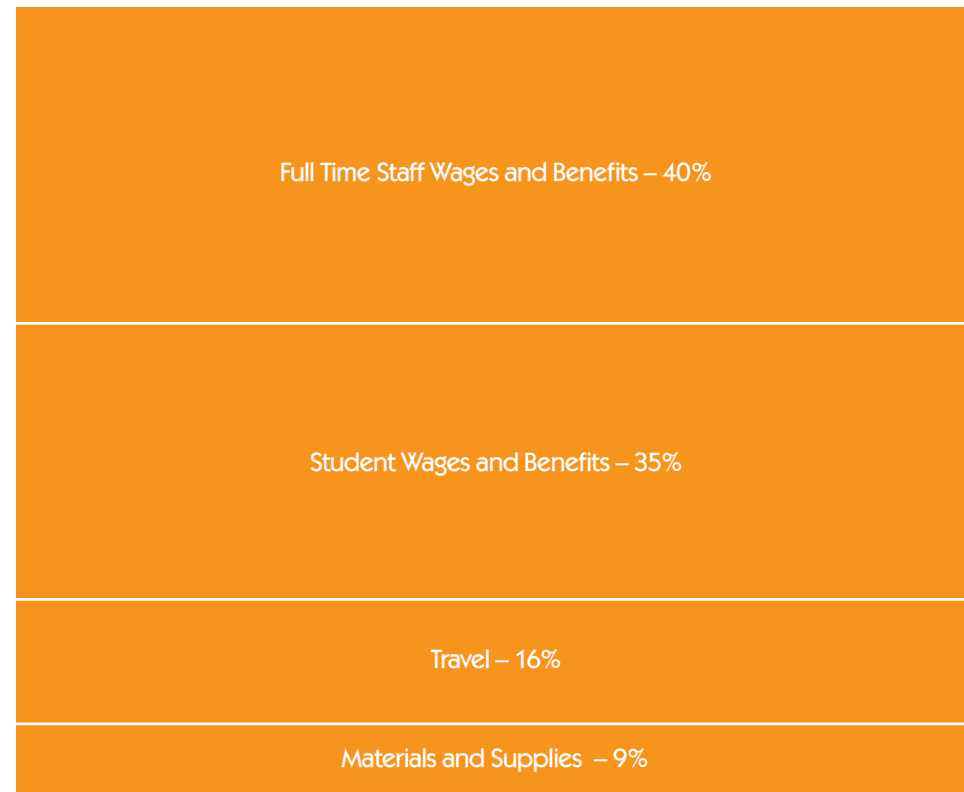
**Make Your Move Student Participant**

# OUR FINANCES

## REVENUE: \$550 000



## EXPENSES: \$550 000



Our presenter was eager, well prepared, and great with kids! I've always been impressed with the WISE presentations.

A. Fernie, Edmund Partridge Community School





## OUR SUPPORTERS

### 2015-2016 FISCAL YEAR FUNDERS

We have many generous supporters that make our work possible.



UNIVERSITY OF MANITOBA | Faculty of Engineering



# WISE Kid-Netic Energy is a Proud Network Member of Actua

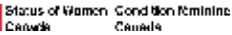
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Actua provides training, resources and support to a national network of local organizations offering science and technology education programs. Actua members reach over 200 000 youth per year. Please visit Actua on the web at [www.actua.ca](http://www.actua.ca).

## 2016 ACTUA NATIONAL FUNDERS



## 2016 ACTUA MANITOBA FUNDERS



RICHARDSON FOUNDATION





## 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.







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