



## North Bay Regional Science Fair - Expo Sciences Régionale de North Bay P.O. Box 24007, 66 Josephine St., North Bay, Ontario P1B 0C7

### *Science... a lifelong inspiration!*

Every year, NBRFSF sends five students to the Canada-Wide Science Fair.  
Presented here are the stories of two of those exceptional finalists!

#### **Morgan Lafontaine**

In 2014, Morgan Lafontaine and Emma Vanderlee, Grade 12 students from St. Joseph Scollard Hall Catholic SS, won numerous awards at the North Bay Regional Science Fair, and were two of the five students from this region to attend the Canada-Wide Science Fair in Windsor, Ontario.

It was not the first time that Morgan had entered the NBRFSF. She began in grade 6 (2007) while attending St. Hubert elementary school.

Her project covered the various vitamin C concentrations in store-bought juices. In grade 7 her project was on the harmful effects of cellphone radiation, and in grade 8 it was on the harmful effects of artificial sweeteners, particularly in sodas. After a two-year break, Morgan entered science fair as a grade 11 student - that project was on the potential use of xenotransplantation to treat diabetes.



Emma (left) and Morgan with their 2014 regional project.

#### **2014 - Project Description**

"Urtica Dioica: Effect on Locomotor Function in a *Drosophila* Model of Chronic Oxidative Stress" tested the antioxidative effects of Urtica Dioica (Stinging Nettle) in the in vivo in the model organism SOD null *Drosophila Melanogaster* (fruit flies). After testing different concentrations of Urtica Dioica and collecting results regarding the locomotor effects, the results were inconclusive but suggested that, in concentrated doses, Urtica Dioica could reduce oxidative stress.

**Regional Awards:** At the North Bay Regional Science Fair this project won the Shulman Travel Award, the University of Ottawa Scholarship Award, and a gold medal in the Senior Life Sciences category.

**CWSF Awards:** At CWSF, They won a Senior Silver Medal sponsored by Youth Science Canada, that came with a \$300 cash award and was accompanied by \$2000 scholarships to Dalhousie University, UBC, University of Ottawa, and Western University.

*Morgan... continued on pg 4*

#### **Erik von Stackelberg**

Erik von Stackelberg and Nick Klassen enhanced a project that they had worked on the previous year, and in 2004 the Grade 12 students of West Ferris SS were selected to go to CWSF in St. John's, Newfoundland.

In 2002, Erik and Nick entered the regional fair with a project focused on an engineering challenge. They sought to develop a structure that could better serve as a sound dampening material. Their 2003 project, which they took to CWSF in Calgary, Alberta, was the first iteration of their 2004 winning project.



Nick (left) and Erik with their 2004 regional project.

#### **2004 - Project Description**

"Coffee in Kyoto" looked at the aggregate environmental impact of consumer transport, specifically in the context of fast-food drive-throughs. The project was a statistical analysis with a very specific message. The question was asked—how much greenhouse gas could be eliminated if every commuter in Canada stopped using drive-throughs? Knowing that people often need a financial incentive to change their behaviour, the project also exposed the true cost of coffee (the cost of the coffee plus wasted fuel) to help encourage behavioural change in our local communities.

In essence, a simple change was proposed to a widely-accepted, innocuous routine in a context where more widely-publicized, but difficult changes (like walking to work every day or giving up certain food categories altogether) were struggling with adoption.

**Regional Awards:** "Coffee in Kyoto" won the Captain Barry Armstrong Memorial Trophy for a Conservation Related Exhibit, the TransCanada Award of Excellence, and a gold medal in the Senior Biotechnology category.

**CWSF Awards:** At CWSF, this project won the AECL Award for Excellence in Science, that came with a \$1,000 cash award, and the project also won the OPG Renewable Energy Award, which came with a \$1,500 cash award.

*Erik... continued on pg 3*

# 56th Annual North Bay Regional Science Fair



**Date:** April 11, 2018  
**Time:** 8:00 a.m. to 8:00 p.m. (Awards ceremony at 6:30 p.m.)  
**Place:** Nipissing University, Athletic Centre, Gym A  
100 College Drive, North Bay, ON

## 56e foire scientifique annuelle de la région de North Bay

**Date :** le 11 avril 2018  
**Heures :** De 8 h à 20 h (cérémonie de remise des prix à 18:30 h)  
**Endroit :** Université Nipissing, Le Centre athlétique, le Gymnase UN  
100, College Drive, North Bay (Ontario)



**Want to Help?  
Support your regional students!**

Consider being a sponsor for our regional fair. Go to the fundraising link at [www.nbrsf.com](http://www.nbrsf.com) or contact us at [sciencefairNB@gmail.com](mailto:sciencefairNB@gmail.com)

### Registration and Late Entries

**Late entries will not be accepted!** The official Registration Form may be accessed and completed online starting on March 6th. Applications must be completed and received by 6:00 pm April 6, 2018.

### Exhibit Size Limitations

Putting together a science project is a very exciting and creative endeavour. Yet, you must pay attention to some very specific guidelines. For the North Bay Regional Science Fair, the maximum physical exhibit size is:

**1.2m Wide x 0.8m Front to Back x 2.0m High**

Students going to the Canada-Wide Science Fair will have the opportunity to modify their exhibit to conform to the CWSF regulations. Backboards will be provided for all students at CWSF—check out [www.nbrsf.com/Resource Centre/Backboard Policy](http://www.nbrsf.com/Resource Centre/Backboard Policy), or go to:

[www.youthscience.ca](http://www.youthscience.ca)



**Everything you need to know about Project Development or the Science on the Wall competition can be found at [www.nbrsf.com/Start Your Project/](http://www.nbrsf.com/Start Your Project/)**

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**More from Erik...****Why did you want to enter the regional fair?**

Nick and I were part of an enriched science & technology track at West Ferris called ST21. Science Fair was a natural fit for the program—a self-directed opportunity to apply methods and ideas to a topic of interest. Historically, I had taken part in Science Fair annually in elementary school, so it was very much tradition. But we also loved the challenge of academic competition, especially in an environment (it was high school, after all) where athletics dominated the landscape.

**How did you come up with the idea for the project?**

We first explored the world of drive-through idling in 2003 (2004 extended the original project, bolstered with additional data and insights.) Given the recent Kyoto Protocol, we felt the environmental undercurrent of the topic still had legs in 2004; incidentally (and unfortunately) it still seems relevant today given the sheer inability for world leaders to solve for the environmental trajectory we're on.

Originally, the idea arose in conversation with one of our science teachers, who had previously reviewed a project that analyzed residue oil left in cans at gas stations. He had a theory that a cup of coffee costs the consumer much more if you factor in the fuel wasted while idling at a drive-through. In our minds, the idea of communicating scale was interesting, but the true cost of a cup of coffee needed a connection to a broader cause. We adapted the idea to focus more heavily on greenhouse gasses and environmental impact, calculating the aggregate volume of emissions across Canada.

**How did you feel when it was announced that you were going to CWSF?**

I was ecstatic! CWSF represented a new tier of competition. Moreover, the opportunity to travel and meet people from across the country was very exciting.

**What was your overall impression of CWSF experience?**

My CWSF 2003 & 2004 reviews talk a lot about the people. For someone growing up in a reasonably secluded and fairly homogenous community, winning the opportunity to meet great minds from across the country and truly experience the diversity of Canada was priceless. It was also a lot of fun and incredibly inspiring!

**Did your involvement with Science Fair influence your career path?**

Science Fair has definitely influenced my mindset when it comes to my craft. With respect to my career path, Science Fair revealed that while I was definitely passionate about science, theory, and academia, the design of communication was a challenge I was destined to tackle. In other words, Science Fair taught me a lot about the scientific method. But it taught me more about how to use an impactful message and the art of communication to inspire others to make change. Design is how I can best achieve that in the world today, so that's where I focus my energy.

**Where did you go to university? Why that institution?**

I completed my undergraduate degree at the University of Western Ontario. I chose Western for its reputation, but also for the nature of a collaborative program offered between the university and Fanshawe College. The program blended media theory with design and computer science practice, which I felt was incredibly important. I wanted to learn to apply my knowledge to make something in the world.

**How did you pursue your career?**

I always say that I only have a job because I was an avid volunteer in university. In the final years of undergrad, I began volunteering heavily to support local organizations and campus groups with design. I gained a lot of 'street' business experience, connected with many interesting people, and built a portfolio of work grounded in real-world design practice. I also met the folks with whom I would later co-found and lead a 90-person software studio in downtown Toronto called Myplanet. All told, it's been a lot of entrepreneurial effort and figuring things out as I've gone along—not unlike my experience with Science Fair.



Erik working his magic

**What lasting impressions / memories do you have of your CWSF experience?**

I remember distinctly that the originality of a project idea seemed to be the biggest challenge and barrier to entering a Science Fair. Having developed our idea out of others' perspectives, I also recall feeling consistently concerned that our idea wasn't sufficiently unique or original. We obsessed over the backstory, concerned that we'd be discredited if someone else somewhere had conjured a similar concept. Fast-forward 15 years and I've come to realize that we really had it all wrong.

There's this great Ed Catmull quote from *Creativity, Inc.*, the story of Pixar: "If you give a good idea to a mediocre team, they will screw it up. If you give a mediocre idea to a brilliant team, they will either fix it or throw it away and come up with something better."

In reality, an innovation or adaptation can often do just as much, if not much more, for the world than a purely original idea—if you put it in the right hands. Nick and I took our idea and poured our blood and sweat into exploring everything it could be. And we became the very best salespeople we could for the message we were trying to send. After CWSF, we met with transit organizations in North Bay, gave talks, and really tried to make an impact. In my opinion, we didn't win medals at CWSF because of the utter originality of our idea, but because we had solid data that backed up a powerful message that the community needed to hear.

Also, I remember the video dance parties. You can't go wrong with a video dance party.

*Erik... continued on pg 5*

**More from Morgan...****Why did you want to enter the regional fair?**

I had been involved in the North Bay Regional Science Fair since elementary school and had always enjoyed participating. The atmosphere of the regional fair was always fun and engaging. Plus, I aspire to pursue medical school so the research that science fair requires provides valuable experience and knowledge.

**How did you come up with the idea for the project?**

With the intent of attending Nipissing University in the following year, Emma and I contacted the biology department about collaborating on a research project for science fair. Dr. Tony Parkes at Nipissing University had agreed to work with us in his genetics lab at the university. Dr. Parkes had just began doing research into the anti-oxidative properties of organic compounds when we met him, and suggested that we examine a compound of interest. Anti-oxidative treatments are used with the intent of slowing down the degeneration of cells in an organism's body (human and fruit fly alike) and have potential to play an important role in the control of neurodegenerative diseases such as Parkinson's and Alzheimer's. After much research, stinging nettle was selected as our antioxidant and we ran motor function and longevity trials to mimic the effects of the neurodegenerative diseases.

**How did you feel when it was announced that you were going to CWSF?**

I was absolutely ecstatic! I'd been dreaming of that moment since I started entering the regional fairs and was heartbroken in the prior years when I didn't get the chance to go. I couldn't stop smiling - it didn't feel real.

**What was your overall impression of CWSF experience?**

I really enjoyed the CWSF experience!

North Bay is a fairly small city so the research opportunities can be more limited, but witnessing the research experiences of students from across the country was very interesting. The CWSF judges have really interesting credentials and are great to network with. One of our judges was a professor at Western University's medical school and it was very helpful getting a chance to talk to him. The week of CWSF is packed with fun, interactive activities - I am happy to say that I got to experience Point Pelee National Park. Plus, our delegate made sure our week ran smoothly.

**Where did you go to university? Why that institution?**

Science fair influenced where I chose to do my undergraduate degree! I went to Nipissing University in North Bay for a Bachelor of Science in Honours Biology. This is a great program in an even better school... After meeting with professor Corina Irwin in grade 11 for my science fair project, I knew that Nipissing University was where I wanted to be. When I applied to medical school this year, science fair added a very strong aspect to my resume. I absolutely recommend both to any student

looking to pursue a career in the sciences!

**What opportunities have you been able to take advantage of, as a result of your involvement with science fair?**

This past year, I was involved with a science camp from May through Aug. Twenty to thirty students, 8 to 12 years old, were exposed to engineering, environmental sciences, earth & space, etc., in conjunction with their outdoor education.

In two previous years, I've spent time at Gros Morne National Park, in Newfoundland, studying moose and measuring forest health indicators. Approx. 15 students were at each of the sessions, and most recently, I was the teaching assistant for one group.

**Have you mentored any of your younger acquaintances to attend the regional fair?**

I had the opportunity to spend some time mentoring a pair of students that attended the regional fair and later CWSF in 2017. The two students

were actually working on an extension of my 2014 project, so it was really neat to see the research continued.

**Do you plan to pursue a career in North Bay?**

Who knows where the future will take me! North Bay will always be home and I would be honoured to work here. After attending medical school, it would be really amazing to give back to the community I grew up in and provide research opportunities for the next generation.

**What lasting impressions / memories do you have of your CWSF experience?**

I fondly talk about the learning experiences that CWSF provided at many job and school interviews. Working on a science fair project at the national level is an intricate and demanding job, but the rewards outweigh all of the work. I wish I could rewind and go back to CWSF - I really enjoyed this experience.

**What advice / insights can you offer for our regional students?**

Consult university/college professors and students in your research! Even if you just need help figuring out a topic, professors and students are often very interested in helping. Furthermore, the CWSF judges often require some statistical analysis in your project which is something you may not learn in high school/elementary school but university students would be glad to help with. Plus, this provides a great opportunity for you to network and build relationships.

**How did science fair impact your life?**

Science fair prepared me with many conflict solving and team building skills that I would not have otherwise acquired. In addition,



Morgan @ Gros Morne

*Morgan... continued on pg 5*

**More from Morgan...**

the professors that I worked with during science fair have been very helpful throughout my university career. Science fair made me a more well rounded student and greatly contributed to my success in university.

**Are you still in touch with any of the people you met at CWSF?**

I am lucky enough to still be in touch with our delegate, and I ended up being roommates with my most recent science fair partner!



**Getting to CWSF 2018**

Up to five students may be selected to represent the North Bay Region at the Canada-Wide Science Fair in Ottawa, ON in May 2018. It is the goal of the North Bay Regional Science Fair Committee to fully fund the 'Best of Fair' project and offer 50% funding for each other project selected to represent North Bay at the CWSF. It is possible that this goal may not be achieved.

**Therefore, individual school boards, schools and students should be prepared to share in the expense of sending regional winners to the CWSF.**

**Everything you need to know about Project Development or the Science on the Wall competition can be found at [www.nbrsf.com/Start Your Project/](http://www.nbrsf.com/Start Your Project/)**

**Email us at: [sciencefairNB@gmail.com](mailto:sciencefairNB@gmail.com)**

**For More Information:**

Students wishing to enter a project in the Regional Fair should first speak with their school science teacher or principal. For more information please contact David Jackowski, Chair, at (705) 845-1470.

**Pour plus d'information :**

Les élèves qui souhaitent participer à la foire régionale doivent d'abord s'adresser à leur enseignant/enseignante de sciences ou au directeur/à la directrice de leur école. Pour obtenir de plus amples renseignements, veuillez communiquer avec David Jackowski, Chair, at (705) 845-1470.

**More from Erik...**

**What advice / insights can you offer our regional students?**

Science Fair takes a lot of extra work. But I strongly maintain that Science Fair—or any independent, self-directed project for that matter—will push you to be resourceful, adaptive, and strategic, more than any in-class work ever can. If you have any desire to lead, found, drive, or otherwise run *something* in the future, Science Fair is the sandbox for that experience. It's also a ton of fun and will create memories to last a lifetime. This might sound counterintuitive, but if you pursue Science Fair, don't get too caught up in the science—it's much more than that.

**How did Science Fair impact your life?**

My colleagues often joke that I'm "the engineer's designer" because I'm more interested in efficiency and problem-solving than the glitz of a creative concept. While I now work heavily in the world of the creative industries, as a designer, I apply the scientific method consistently in my own work and I push for rigour and a strong methodology in our design practice at Myplanet. Science Fair didn't drive me to become a scientist, but it did teach me about the intersection of entrepreneurship, a critical and methodical mindset, and the value of a strong team.

**Are you still in touch with any of the people you met at CWSF?**

My Science Fair partner and close friend, Nick, passed away in 2009 due to complications from the H1N1 virus. In his memory, I partnered with Nick's sister Erin and our close friend Kurtis to create an organization called the Plaid Shirt Society. Annually, we raise funds for local organizations that embody the grassroots ambition and social justice that Nick aspired to achieve. I remember admiring this spirit in Nick at the Canada-Wide Science Fair, and I'll never forget his drive to help make a difference in the world around him.



von Stackelberg's: Katie, Erik and dog Maggie

**An extensive listing of resources is available at "Links" at [www.nbrsf.com](http://www.nbrsf.com)**

*You never know where a science fair project will take you!*

