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### GOLD





### SILVER

















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### **Dear Sponsors and Partners**

On behalf of the Board of Directors of the Wood Buffalo Youth Science Foundation (WBYSF), it is once again my great privilege to thank our many Sponsors and Supporters. In this short period six years, the Fair and the Foundation have experienced remarkable growth. This of course would not have been possible were it not for the generosity of local companies and the dedication of our community's teachers and scientists. In addition to financial support, our local industries and School Boards supplied the 2012 Regional Fair with over one hundred judges and volunteers. We were also fortunate to have Dr. Don Henderson, Curator of Dinosaurs from the Royal Tyrrell Museum join us to chat with the students and discuss his research on the ankylosaur discovered at the Suncor Millennium Mine at our Opening Talks. We are indebted to all of these individuals and hope that the creativity and enthusiasm exhibited by our participants made the Fair a rewarding endeavour for everyone involved.

The first WBRSF in 2008 was attended by just over seventy students from ten different schools. Lead by dedicated science teachers, the majority of schools in our region now organize their own science fairs, which then feed into our Regional Fair. It's difficult to believe, but since 2006, participation in school science fairs has risen from approximately 250 students in a handful of schools to nearly 3,000 students in over twenty schools. Participation should continue to increase this year as we look forward to the affiliation of additional school fairs, in particular, we are very pleased to be welcoming students from Athabasca Delta Community School in Fort Chipewyan.

Perhaps the best gauge of the Fair's success is the predominance of students that return each year. The quality of the research and the creativity exhibited by these students continues to evolve. This past year we were very pleased to send four students to the Canada-Wide Science Fair in Charlottetown, Prince Edward Island. These representatives of Wood Buffalo competed with over five hundred of their peers from across the country. Our National Finalists returned with a Silver Medal, a Bronze Medal, two Special Awards and several University Entrance Scholarships.

The WBRSF represents a unique opportunity for our community to come together and support curiosity and a hands on approach to learning in our children and young adults. We look forward to continuing this relationship and very much hope you'll join us again at Keyano College on Friday, April 12 and Saturday, April 13 for the 2013 Wood Buffalo Regional Science Fair.

Sincerely,

Andrew Taylor

### **Mission**

Our mission is to promote science education within the Regional Municipality of Wood Buffalo by providing unique opportunities for students to participate in hands-on learning exercises while interacting with local educators, researchers and industry scientists.

### Goals

- To promote, organize, and operate an annual regional science fair for students in grades four through twelve within the Regional Municipality of Wood Buffalo.
- To recognize and reward scientific achievement and to provide students with an opportunity to participate in the Canada-Wide Science Fair.
- To assist local schools in establishing their own science fairs.
- To provide local schools and teachers with opportunities to attend field trips, workshops, scientific talks, and other activities aimed at enhancing school science curricula.
- To foster curiosity, critical thinking, and problem-solving skills in students by providing them with an opportunity to engage in experiment-based science.
- To encourage students to pursue careers in science.
- To build ties between students, educators, local industry and local scientists.

For more information and to view the Wood Buffalo Youth Science Foundation's Constitution, Bylaws and Policies, please consult our website: www.wbrsf.ca

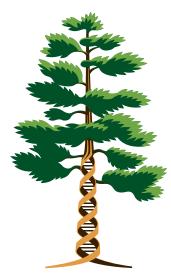
Dr. Don Henderson, Curator of Dinosaurs from the Royal Tyrrell Museum presents a talk to over two hundred local students on his research of the ankylosaur discovered at the Suncor Millennium Mine.



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### **Background**



Representative of Wood Buffalo, our logo depicts a fusion of science and nature.

The notion of founding a new Regional Science Fair in Wood Buffalo took shape nearly twenty years after the loss of the original "Fort McMurray Regional Science Fair". Originally led by only three individuals, the "WBRSF Steering Committee" established an affiliation with Youth Science Canada in late 2006. The committee expanded to seven members as we prepared for our first Fair in the spring of 2008. With the success of the event, it was decided that the organization be re-branded the "Wood Buffalo Youth Science Foundation". The name change reflected the desire of our organization to expand its efforts and fund and organize additional initiatives in hands-on science education within our community. The WBYSF became a registered non-profit organization (BN: 832360226RR0001) in the fall of 2008.

In the past three years the WBYSF has continued to grow. Our Board of Directors now includes fifteen dedicated science enthusiasts from a variety of backgrounds. With the WBRSF as our flagship event, the WBYSF is committed to providing unique educational opportunities for our region's budding young scientists.

### The WBYSF Board of Directors (2011/2011)

#### **Andrew Taylor, President**

(University Studies Biology Instructor, Keyano College)

#### Louis Dingley, Vice President (Academics)

(Chair, University Studies Science and Environ. Tech., Keyano College)

### Adrian Revington, Vice President (Industry)

(Chemical Specialist, Suncor Energy Inc.)

#### **Corey Conroy**

(Teacher, Athabasca Delta Community School)

#### Vicki Dawe

(Teacher, Westwood Community High School)

#### Daron Dix

(Teacher, St. Gabriel School)

### **Connie Farrell**

(Fort McMurray Catholic School Consultant)

#### Raffi Kouyoumdjian

(Teacher, Dr. Clark School)

#### **Brian Harper, Secretary**

(Vice Principal, Dr. Clark School)

### Vincella Thompson, Treasurer

(Chair, University Studies Arts and Humanities, Keyano College)

#### Madonna Macisaac

(Engineer, Suncor Energy Inc.)

#### Donna McCullough

(Teacher, Westview School)

#### **David Smith**

(University Studies Environmental Science Instructor, Keyano College)

#### **Robert van Thiel**

(Teacher, Father Patrick Mercredi Community High School)

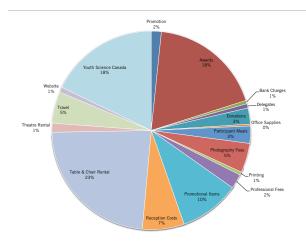
The Board of Directors consists entirely of volunteers and includes local industry scientists, elementary and high school science teachers, university instructors, and other science enthusiasts.

# **Financial Summary**

Revenue	2011	2012
Contributions	59,500	68,545
Expenses		
Advertising & promotion	306	941
Awards to participants	12,200	10,600
Bank charges	341	312
Delegates	-	400
Donations	-	1,500
Entertainment	-	-
Hospitality room	-	-
Medals & Awards	-	-
Office supplies	433	175
Participant meals	901	1,613
Photography fees	2,261	2,753
Printing	206	288
Professional Fees	1,523	1,365
Promotional Items	9,977	5,647
Reception costs	3,378	3,909
School grant	8,500	-
Speaker Fees	2,000	-
Table & chair rental	15,253	13,342
Theatre rental	378	841
Travel	3,704	2,951
Website	798	482
Youth Science Foundation	8,411	10,231
	70,570	57,350
NET SURPLUS (DEFICIT)	(11,070)	11,195
ACCUMULATED SURPLUS (DEFICIT), BEGINNING OF YEAR	(2,072)	(13,142)
ACCUMULATED SURPLUS (DEFICIT), END OF YEAR	(13,142)	(1,947)



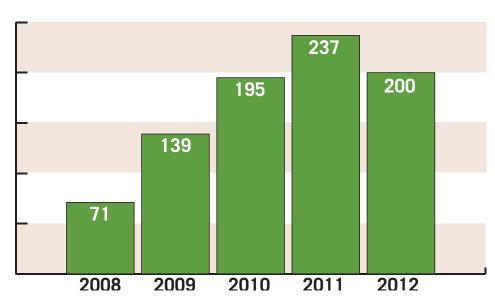
### **Your Dollars at Work**



The majority of the WBYSF budget is used for Fair Day Logistics and Awards, School Grants to support School Science Fairs, and Affiliation Fees to Youth Science Canada which allow us to represent our region at the Canada-Wide Science Fair. Finances are strongly focused on programming and materials for engaging students in science at the school, regional and national levels. As with any event, incidental costs are incurred in order to meet the greater objectives. Our primary goal is fiscal responsibility and the assurance that your funding reaches our target, the students.

### **Participation Trends**

Rapid growth is common with new fairs as they gain a footing in the community and students and parents gain familiarity with the opportunities and benefits of participating in project-based science. Over the past five years we have seen healthy growth across all categories as the reputation and popularity of the Fair has continued to build. The number of participating schools has more than doubled since our first Fair in 2008, while the number of participating students has quadrupled.



Although most area schools are now sending finalists to the WBRSF, we predict an additional 10-15% increase in school science

fair participation over the coming season as the student population of Fort McMurray continues to grow.

Additional funding and resources need to be secured if we are to sustain this rate of growth.

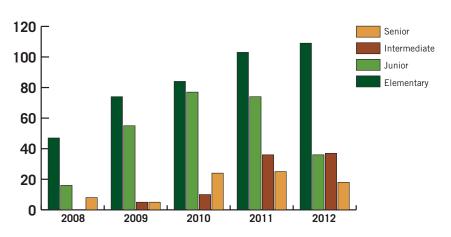
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### Finalist Breakdown 2012

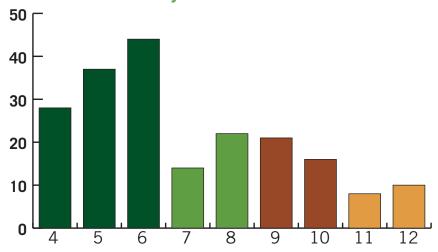
### **Finalists by School**

Active Schools	2012
Beacon Hill School	8
Bill Woodward School	6
Centre Boréal	4
Composite High School	17
Dr. K. A. Clark School	11
École St. Paul School	7
École Dickinsfield School	1
École Fr Beauregard School	5
École McTavish School	13
Father J.A. Turcotte School	4
Fr Patrick Mercredi High School	15
Fort McMurray Christian School	4
Fort McMurray Islamic School	9
Good Shepherd School	8
Greely Road School	5
Holy Trinity High School	11
Sister Mary Phillips School	6
St. Martha School	11
St. Anne School	8
St. Gabriel School	6
Thickwood Heights School	3
Timberlea School	7
Westview School	10
Westwood School	21
Total	200

### **Finalists by Age Category**



### Finalists by Grade - 2012



At our 2012 Fair, we received students from 24 of the region's schools. Nearly all of these schools held their own School Science Fairs and selected finalists to be sent to the Regional level. This year, saw 3 new school fairs sending students to the Wood Buffalo Regional Science Fair. It remains a goal to see all schools in our region engaging students in School-based Science Fairs.



Finalists that attended the Canada Wide Science Fair with President, Andrew Taylor.



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## **Special Award Recipients**

### **Enbridge Award for Excellence in Engineering (\$250)**

Hydraulic Arm

Student: Mirat Sojitra, Pravin Kumar School: Westwood Community High School

### **Suncor Ingenuity Award (\$250)**

Let It Snow!

Student: Ronil Patel

School: Holy Trinity High School

### **Imperial Oil Environmental Science Award (\$250)**

Does Industrial Carbon Dioxide Effect Plant Growth

Student: Cameron Forward

School: Westwood Community High School

### **Suncor Environmental Innovation Award (\$250)**

Greener Green

Student: Sumaiya Asad, Cherry Qian School: Westwood Community High School

### **Nexen Innovation Award (\$250)**

The Acousto-Thermal Effect
Students: Usman Kamran

School: Westwood Community High School

### **WBYSF Dr. Peter Brown Space Science Award (\$250)**

Meteorites and Craters Students: Ethan Piercy School: Timberlea School

## CNRL Mathematics and Computing Award plaque and cheque (\$250)

The Acousto-Thermal Effect Student: Usman Kamran

School: Westwood Community High School

## **Keyano College Consumer Award plaque and cheque** (\$250)

How Healthy is your Oil? Student: Maithili Udupa

School: Westwood Community High School

### **Keyano College Behavioural Sciences Award (\$250)**

Dress to Impress!

Student: Heli Patel, Ashlesha Deshpande School: Westwood Community High School

### **Total Earth Sciences Award (\$250)**

Vanishing Glaciers and Ice Caps

Student: Mihir Gothal School: Timberlea School

### Syncrude Material Sciences Award (\$250 cash)

Shock the World: Electricity for the Future

Students: Rajeshwari Meenakshi

School: Westwood Community High School

### Statoil Young Scientist Award (\$250 cash)

Step It Up: Bring the Blood Sugar Down

Student: Eric Greene School: St. Gabriel School

### WBEA Crystal Clean Award (\$250 cash)

Going Green as you Clean Student: Catharina Venter School: Westview School

Acid Effects

Student: Andrew Hursey, Kory Gaudet

School: Westview School

Does Industrial Carbon Dioxide Effect Plant Growth

Student: Cameron Forward

School: Westwood Community High School

### Health Tech Mobility Health Sciences Award (\$250)

Step It Up: Bring the Blood Sugar Down

Student: Eric Greene School: St. Gabriel School

#### Genome Alberta Award (\$300)

Antibacterial Cinnamon Solution

Student: Monica Montgomery, Destiny Noble School: Westwood Community High School

This list represents only a small number of the awards presented at the WBRSF. For a complete list of all Excellence Medal winners, please consult:

https://secure.ysf-fsj.ca/sfiab/WoodBuffalo/winners.php

### **Canada-Wide Science Fair Finalists**



### **The Acousto-Thermal Effect**

Student: Usman Kamran

School: Westwood Community High School

Abstract: Detailed experiments with acoustic absorbers have inspired suggestive proof of deadened acoustic heating. Not only is this phenomenon detectable but it can be harvested and utilized via the thermoelectric effect. Noting sound's ubiquitous renewable energy potential, this project introduces a novel method of exploiting one of the world's most under utilized resources.

Awards: Silver Medal Excellence Award Senior (\$700)

Canadian Acoustical Association Award (\$1,000) The Manning Innovation Achievement Award (\$500)

Dalhousie University Faculty of Science Entrance Scholarship (\$2,500)

University of British Columbia Science Entrance Award (\$2,000)

University of Ottawa Entrance Scholarship (\$2,000)

Western University Scholarship (\$2,000)

TOTAL: **\$10,700** 



### **Dress to Impress!**

Student: Heli Patel, Ashlesha Deshpande School: Westwood Community High School

Abstract: This experiment was designed to examine the effects of a figure of authority's dressing style on the quality of work of individuals within specific age ranges. Two classes of students in various grades were visited wearing formal and informal clothing, and were given an easy assignment. They were marked based on a rubric detailing several important factors such as completion, organization, and creativity/colouring.

Awards: Bronze Medal Excellence Award Senior (\$300)

University of Ottawa Entrance Scholarship (\$1,000)

Western University Scholarship (\$1,000)

Total: **\$2,300** 



### Fire Shield

Students: Akshaya Lakshmi

School: École McTavish Junior High School

Abstract: My project is to find the best method of making wood fire resistant using Borax and Sodium Bicarbonate. I did the experiment to find the best solution, paint, type of wood to combine with a fire retardant and if it better to use wood treated with fire retardant than wood coated with the fire retardant.

For more information on these students' projects visit:

https://secure.ysf-fsj.ca/virtualcwsf/ (Year:2012, Province: Alberta, Region: Wood Buffalo)



### **Looking Forward to 2013**

The 2012 fair marked our fifth year as a Regional Science Fair for the Wood Buffalo Region. It also celebrated one of our own being honoured at the national level for his contribution to science. Wood Buffalo Youth Science President, Andrew Taylor received the Youth Science Canada Distinguished Service Award, which was presented to him at both the Wood Buffalo Regional Science Fair and the Canada Wide Science Fair in Prince Edward Island. The award annually recognizes up to ten volunteers and staff who have made an outstanding contribution, through innovation, long service, or leadership, to the organization or its programs at any level. Andrew has served as an inspiration to spreading the passion, curiosity and appreciation of scientific discovery. This was achieved through is initiative and tireless effort to visit and meet with teachers, lead professional development opportunities and his ability to provide resources in all forms in order for schools to take part in science fairs. He has been a mentor not only to those students participating at the Canada Wide Science Fair but also to those involved in the Board of Directors. By sending different committee members to the fair we have been able to strengthen the knowledge and readiness of our region in order for us to improve the quality and quantity of projects that are recognized at the national level. When I first met Andrew, I was a new teacher in a new city. The opportunities that I have had through my association with Andrew cannot be measured but have profoundly shaped my career for the better. The outstanding contribution he has provided for students in our region has given them experience to apply their curiosity in a creative way, which in turn has given them the ability, enthusiasm, and appreciation to utilize scientific inquiry for the rest of their lives. Although Andrew is stepping down as president, he will continue his involvement as a director. Myself and the other board members look forward to learning from him and we will strive to be as great an advocate of science as he is.

One of the greatest benefits of belonging to the Wood Buffalo Region is the support of our sponsors. Without this support we would not be able to provide resources for students and teachers, connections between industry, professionals and students or a platform for youth and scientific discovery. We thank you for your support and hope that with your continued support we will continue to make great strides in science inquiry in our region.

Sincerely, Daron Van Lingen WBYSF President



### **Wood Buffalo Youth Science Foundation**

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