GVRSF 2015
Annual Report

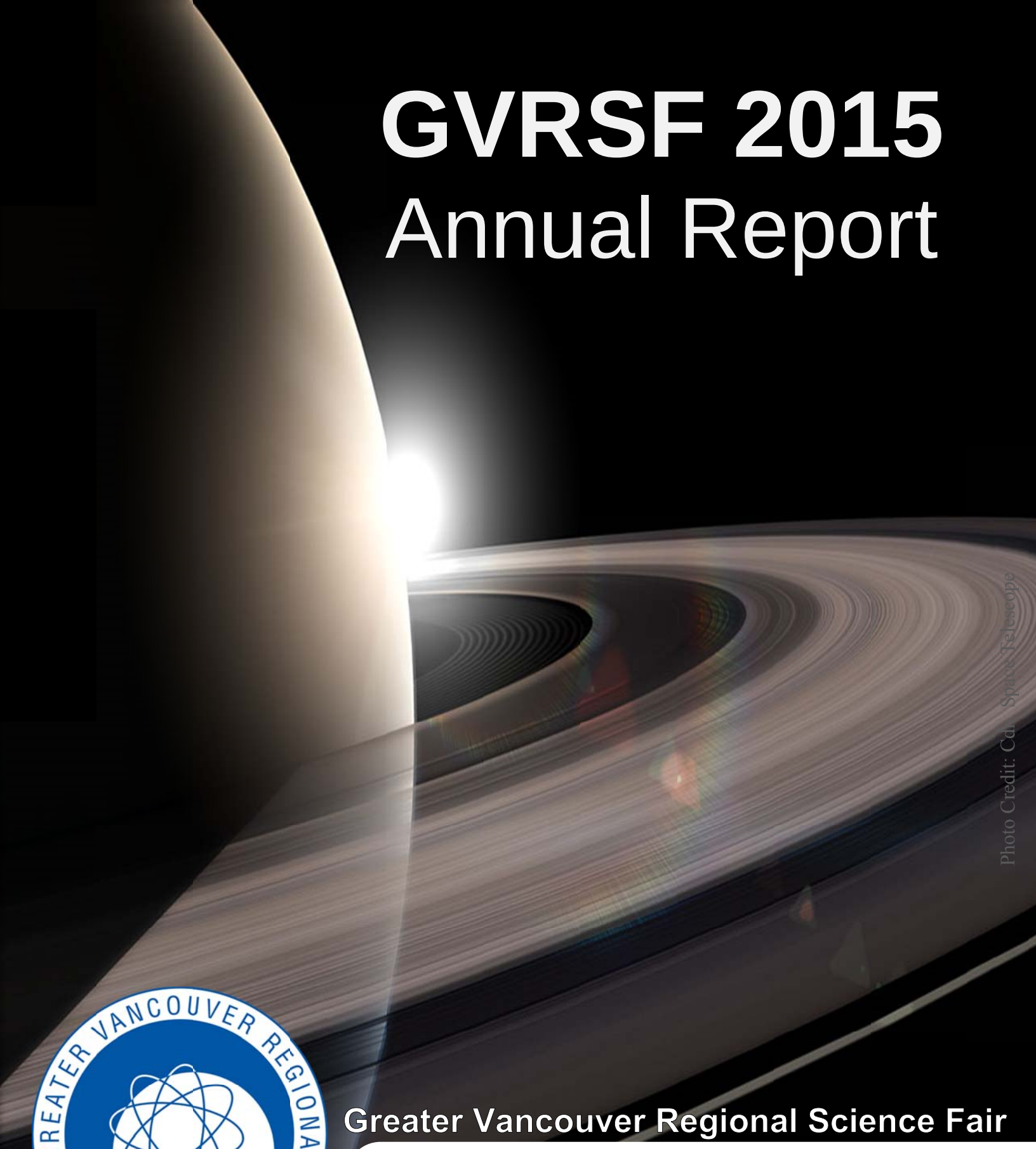

Photo Credit: Ca... Space Telescope

Greater Vancouver Regional Science Fair

Sponsored and Supported by:

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Dr. John Hepburn
UBC Vice President Research,
GVRSF Honourary Chair

UBC Science,
Dr. Simon Peacock, Dean

www.gvrsf.ca

About GVRSF

The Greater Vancouver Regional Science Fair (GVRSF) is the regional science fair for the Greater Vancouver area. It encompasses upwards of 10 school districts – Vancouver, Richmond, North Vancouver, West Vancouver, New Westminster, Burnaby, Coquitlam, Maple Ridge, Sunshine Coast (Sechelt etc.), and Howe Sound. The GVRSF is open to over 100,000 students from grades 7 to 12 attending public, separate, independent, private and home schools. The GVRSF is a registered not-for-profit charity run by a diverse group of dedicated committee volunteers drawn from the science, business, education, and industry sectors.

Mission

To promote project-based science and encourage youth to conduct research and experimentation in areas of science, technology, engineering, and mathematics.

Major Activities

In 2015, the GVRSF committee volunteers organized and staged the 33rd Annual Regional Science Fair at the University of British Columbia in Vancouver.

The University of British Columbia's administration and staff offered excellent support, cooperation and assistance to the GVRSF Organizing Committee and provided a warm welcome to all of our students, volunteers, judges, and visitors.

This year the GVRSF continued its fifth year running a Post-Secondary Workshop, available to Grade 11 and 12 students participating in the GVRSF, informing students of future prospects in academia. In addition, GVRSF continued to host a Teacher Meet-and-Greet session on the Friday of its fair to build a network of teachers interested in the Science Fair Movement. This year, we continued to extend the invitation to parents for the Teacher Meet-and-Greet session. Presentations and discussions at this session were on 'Ethics' and its role within science fair.

In addition, the 2015 GVRSF continued its CWSF Prep Program (formerly known as the CWSF Alumni Mentorship Program). This program was initiated in 2012 by alumni committee members with the goal of helping prepare those advancing to the Canada-Wide Science Fair with any improvements to their projects, project reports and presentations. The program proves to be highly effective given the exceptional results at the CWSF this year and student feedback.

Chair's Message

I am honoured to have chaired the Greater Vancouver Regional Science Fair Organizing Committee since February 2012. Having served as a member of the committee since 2008 and been a part of the science fair community since 2004, I am proud to be associated with a society that is focused on engaging our community's youth in Science, Technology, Engineering and Mathematics, through project-based science.

This year, the Greater Vancouver Regional Science Fair celebrated its 33rd annual fair. This has been made possible thanks to the continued support from our sponsors and the dedication of our hard-working volunteers and committee members.

Students from across the Greater Vancouver Area truly showcased and proved that a young mind can accomplish anything. The results from Team Greater Vancouver at the 2015 Canada-Wide Science Fair (CWSF) and students from our Region at the 2015 Intel International Science & Engineering Fair (ISEF) brought in the top prestigious awards including: Two Platinum awards and Best in-Fair at the CWSF along with First and Second Place at the ISEF! All of us at the GVRSF are proud to have supported and have been a part of the path of these brilliant young scientists.

Leading into the 34th Annual GVRSF in 2016, we will be looking to have more of a presence within the Media to showcase the bright young students doing astonishing research. We will also continue to build our sponsorship base to help facilitate future changes to the fair and hopefully provide better support to our CWSF Finalists. For 2016, we will be moving to a new larger venue – The *Great Hall* inside the *New UBC AMS Student Union Building – The Nest*.

The GVRSF committee welcomes greater participation and appreciates further assistance from all backgrounds, disciplines and specialties. We encourage you, or any of your connections, to contact us (Chair@gvrsf.ca) if interested in helping the science fair movement in Vancouver, British Columbia, and Canada.

There is still much more progress to be made, and as we move forward with long-term visioning and planning, we are committed to enabling the youth of the Greater Vancouver Area to strive for success in Science, Technology, Engineering and Mathematics.

Brian Le, B.Sc. | Committee Chair 2012 - 2015

Science Fair Operation

The Greater Vancouver Regional Science Fair Society is a committee of over 30 volunteers, who meet 6 times per year, whose purpose is to plan, and discuss logistics for the Greater Vancouver Regional Science Fair. This year's fair was held on April 9, 10, and 11, 2015 at the University of British Columbia.

The University of British Columbia (UBC) hosted the 2015 Greater Vancouver Regional Science Fair (GVRSF), as it has since 1993, in the Student Union Building (SUB). The UBC Faculty of Science's generous annual donation to the Society includes, among other things, the cost of this venue. All participating Science Fair projects are displayed in the SUB Ballroom and Party Room, where judging takes place. School groups are invited to tour the exhibit on the Friday of the fair. Furthermore, the general public is invited for their viewing on the Saturday morning of the fair.

This year there were 311 student participants from 44 schools. Given our venue size, this is an ideal number of students to manage and supervise.

Project registration is done by the students, with help from their teachers and parents, through our website www.gvrsf.ca and http://reg.gvrsf.ca. The website and database are maintained by designated committee members. Registration this year continued to be $50.00 per student which all goes back towards supporting awards and recognition for students.

The Faculty of Science at UBC is the main coordinating on-campus body for the annual GVRSF. With their promotion and coordination efforts, up to 21 departments and research units across various UBC Faculties support the Science Fair. In addition, a choice of one out of 14 science laboratory tours was offered to each Science Fair student this year. The lab tours are led by university teachers and researchers, and last one hour each. Committee members, undergraduate volunteers and parents help chaperone students on the UBC campus. The range of subjects covered is diverse and includes many hands-on activities to engage students in a variety of scientific disciplines.

Science and Technology industry professionals along with faculty members and graduate students from UBC, SFU, and several local colleges act as the judges for this Regional Science Fair. The GVRSF continues to use a CUSP judging system to rank projects for divisional awards.

Students' feedback about their judging experience continues to be positive. Students felt that the question and answer time with the judges was adequate and that they came away with good ideas and a better understanding of the scientific process.

2015 GVRSF Registration Statistics

	Students	Projects
Junior	138	95
Intermediate	130	85
Senior	43	35
Total	**311**	**215**

50 Schools had students in the 2015 Greater Vancouver Regional Science Fair.

Fair Highlights

Over **$35,000** in cash, prizes, trips, scholarships and participation awards.

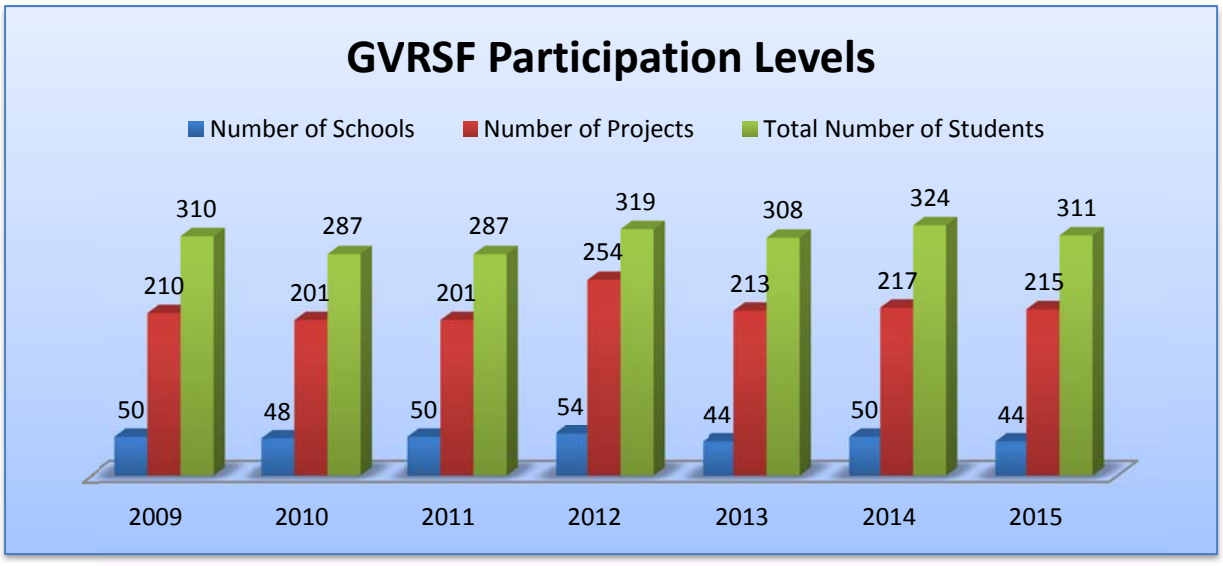
113 Projects received Merit Awards

40 special awards were awarded, totalling $4,100 cash plus $20,000 in scholarships

17 students won trips to compete in the 2015 Canada-Wide Science Fair held in Fredericton, New Brunswick this year.

4 students advanced to the 2015 Intel International Science and Engineering fair in Pittsburgh, Pennsylvania.

Chemistry Science Show
By Dr. Sophie Lavieri, SFU
The Friday of GVRSF is an outreach event for both GVRSF participants and Grade 7 -12 students designed to create interest in Science and the GVRSF for future fairs. This is an opportunity for schools within the Greater Vancouver area to come in and tour the exhibit halls. This year, Dr. Sophie Lavieri put on a Chemistry Science Show that also captivated the minds of our participants.



GVRSF Committee Member Recognition

The Greater Vancouver Regional Science Fair Society has grown significantly in numbers over the past five years. With this growth, we see many science fair alumni returning and giving back to the community that offered them so much.

Preceding and guiding the exciting new changes over the years are the committee members who have contributed time, thoughts and passion towards the Science Fair movement in BC and Canada. Many of these members were acknowledged at the 2015 GVRSF Awards Ceremonies.

Science Fair Foundation of BC's Certificates of Appreciation
The Science Fair Foundation of BC offered our region the opportunity to recognize our volunteer and committee members.
Certificates of Appreciation were awarded for the recipient's contributions to Science Fairs in the Province. This year the Greater Vancouver Regional Science Fair acknowledged the following members with the SFF BC Certificate of Appreciation: Stephanie Chong, Dr. Leonard Foster, Kristin Lee, and Robert Young.

Youth Science Canada's Distinguished Service Award
This 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. Nominations are submitted by any two volunteers or staff at any level (by January 31) and selection of the recipients is made by the National Science Fair Committee.

This year, we are proud to acknowledge that Caedmon Nash, co-Chief Judge, is one of six nationwide recipients of the Youth Science Canada Distinguished Service Award. Congratulations, Caedmon and thank you!

Competition Results

Our top 17 students won a grand prize trip to the Canada-Wide Science Fair (CWSF) in Fredericton, New Brunswick to represent Team GVRSF and Team BC. This year, Team GVRSF brought back **$102,500 in cash and scholarships**!

National Competition Results – 2015 Canada-Wide Science Fair

Austin Wang (Grade 11, David Thompson Secondary) — Best Project Award, Platinum and Gold Medal $31,250 in cash and scholarships
A Novel Method to Identify Genes in Electron Transfer of Exoelectrogens

Rebecca Baron
(Grade 9, Prince of Wales Secondary, Vancouver) — Platinum and Gold Medal $5,250 in cash and scholarships
Root Microbiomics: The Next Big Thing?

Ray Liu
(Grade 11, R C Palmer Secondary) — Gold Medal $27,250 in cash and scholarships
Microcontroller Controlled Laser Area Denial (M-CLAD)

Ariana Auyeung
(Grade 11, York House School, Vancouver) — Silver Medal $11,000 in cash and scholarships
The Implementation of Nanoparticles to Eliminate Aspergillus Fungi

Chloe Chen
(Grade 9, West Point Grey Academy, Vancouver) — Silver Medal $2,000 in cash and scholarships
Smart Speed & Smart Intersection

David Tobias Holcer
(Grade 8, David Thompson Secondary, Vancouver) — Silver Medal $2,000 in cash and scholarships
Benford's Law

Willa Pepin
(Grade 10, Collingwood School, Vancouver) — Silver Medal $2,000 in cash and scholarships
Kinesiology Plus - A Biofeedback Device for Retraining Harmful Muscle Memories

Elizabeth Suen
(Grade 11, York House School, Vancouver) — Silver Medal $11,000 in cash and scholarships
Isolating Genes for Gastric Carcinoma Treatment via Expression Meta-Analysis

Yoyo Ding
(Grade 11, Crofton House) — Bronze Medal $4,000 in cash and scholarships
Inmeshtigation: comparison of water vapour collection of 3mesh sizes

Elina Frie (Grade 9, Prince of Wales Secondary, Vanc.)	Bronze Medal $1,000 in cash and scholarships *Ancient Solutions*
Olivia Li (Grade 9, Southridge Senior Secondary, Surrey)	Bronze Medal $1,000 in cash and scholarships *Lead it Go: Purifying Lead Contaminated Water with Common Seashells*
Emily Mittertreiner (Grade 9, Prince of Wales Secondary, Vanc.)	Bronze Medal $1,750 in cash and scholarships *Ancient Solutions*
Roselyn Thom (Grade 10, Lord Byng Secondary, Vanc.)	Bronze Medal $1,000 in cash and scholarships *OUCH That Vaccination Hurt! Convert the Hurt With Single Sensory Distraction.*
Joy Wang (Grade 11, York House School, Vanc.)	Bronze Medal $2,000 in cash and scholarships *ATP Starvation: Targeting Cancer Glucose Metabolism Using Metformin And MCT4 ASO*

For Project Details please visit:
http://www.sciencefairs.ca/About/Media/2015-CWSF-Project-Details-BC.aspx

For a summary of all Team BC/Yukon Results please visit:
http://www.sciencefairs.ca/About/Media/2015-CWSF-Results-BC.aspx

Competition Results (cont.)

This year the Greater Vancouver Regional Science Fair had four students who were selected to join Team Canada at the 2015 Intel International Science and Engineering Fair held in Pittsburgh, Pennsylvania.

International Competition Results – Intel International Science and Engineering Fair

Raymond Wang
(17, St. George's School, Vancouver, Canada)

ENMC043I - *Aircraft Cabin Airflow: Curbing Disease Transmission*

• The Gordon E. Moore Award	Gordon E. Moore Award $75,000
• Engineering Mechanics	Best of Category Award of $5,000 First Award of $3,000
• Intel Foundation Cultural and Scientific Visit to China Award	Travel Award
• National Aeronautics and Space Administration	Third Award of $1,000
• Society of Experimental Test Pilots	First Award of $1,000
• United Technologies Corporation	$3,000 in shares of UTC common stock

Nicole Sabina Ticea

(16, York House School, Vancouver, Canada)	BMED082I - *Low-Cost Disposable Device for Point-of-Care Nucleic Acid Testing of HIV: Sample-to-Answer in 60 Minfor Less than $5.00*
• Intel Foundation Young Scientist Award	Young Scientist Award of $50,000
• Biomedical and Health Sciences	Best of Category Award of $5,000 First Award of $3,000
• Intel Foundation Cultural and Scientific Visit to China Award	Travel Award
• China Association for Science and Technology (CAST)	Award of $1,200
• U.S. Agency for International Development	USAID Global Development Innovation Award of $10,000

Duncan Bayard Stothers

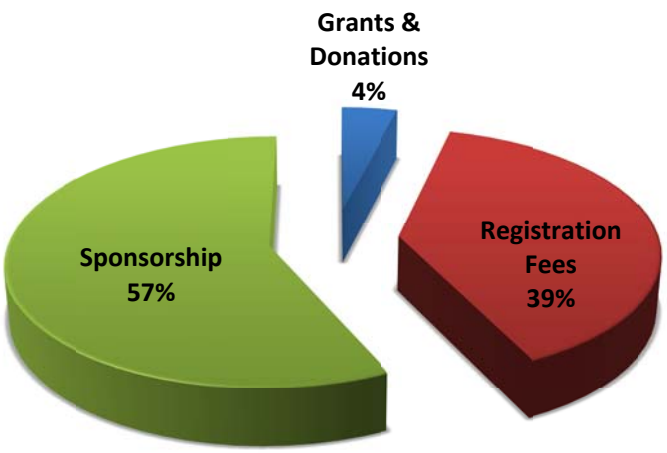
(17, St. George's School, Vancouver, Canada)	ENMC039I - *The FIRST Frame: Personalized Front Impact Reduction System for Bicycles*
• Engineering Mechanics	Second Award of $1,500
• Alcoa Foundation	Sustainable Design In Transportation, First Award of $2,500
• Society of Experimental Mechanics, Inc.	Second Award of $1,500

Janice Pang

(17, Pinetree Secondary School, Coquitlam, Canada)	BMED073I - *miRNAs as Biomarkers of IAPP-induced Inflammation in Type 2 Diabetes*
• Biomedical and Health Sciences	Fourth Award of $500

Financial Highlights – Statement of Operations

GVRSF Revenue



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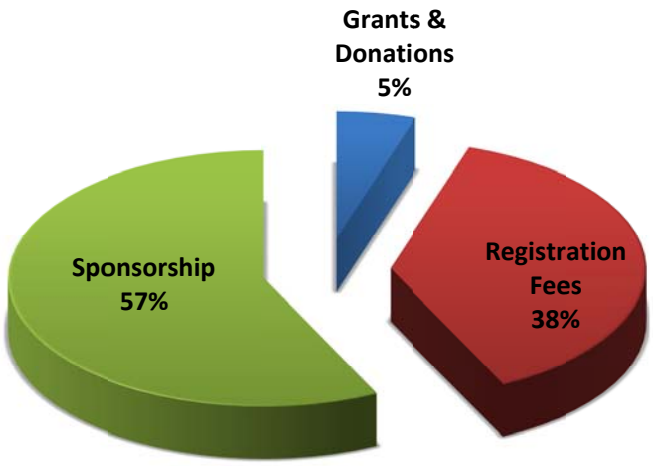
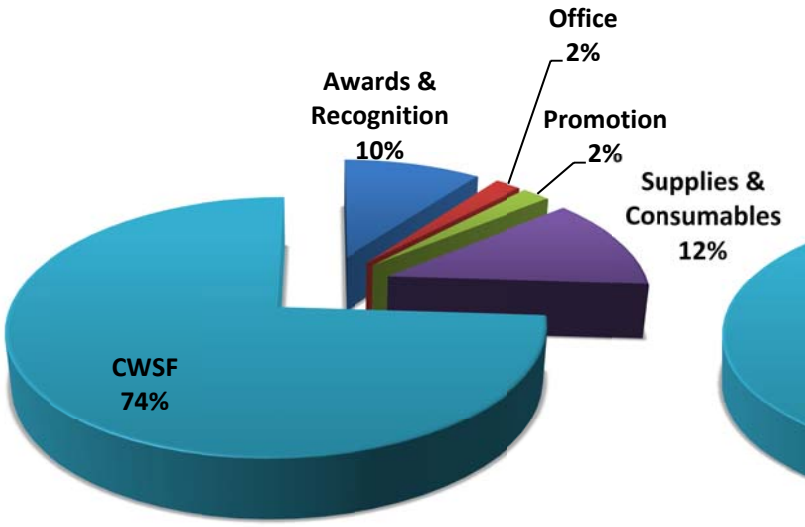


2015

GVRSF Expenses



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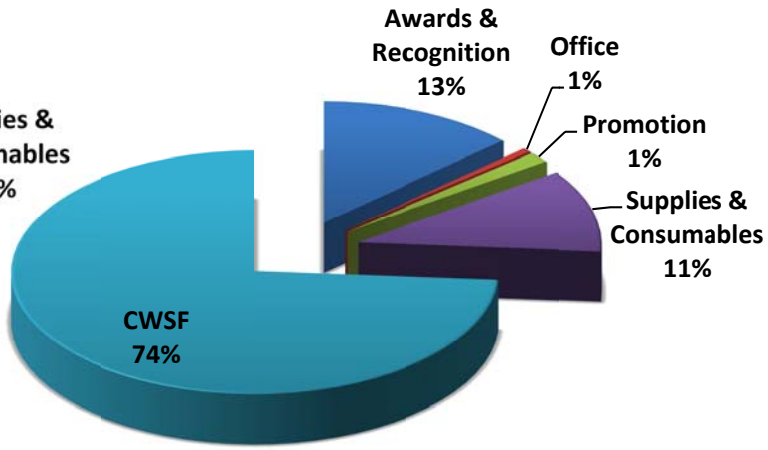

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Join us for the 34th Annual Greater Vancouver Regional Science Fair 2016
Dates: April 7-9, 2016
Location: The University of British Columbia (New Student Union Building – The Nest)

GREATER VANCOUVER REGIONAL SCIENCE FAIR

Greater Vancouver Regional Science Fair
c/o HR MacMillan Space Centre
1100 Chestnut Street
Vancouver, BC V6J 3J9

chair@gvrsf.ca www.gvrsf.ca

Science Fair Foundation BC

Executive Committee (Table Officers)

Brian Le (Electronic Arts/Avantheon), Chairman

Anne-Marie Simard, M.Sc. (Science Educator), Vice-Chair

Jessica Zhang (UBC), Treasurer

Arooj Hayat (UBC Undergraduate), Secretary

Dr. Leonard Foster (UBC), Chief Judge

Committee/Society members:

Dr. Megan Barker (UBC)

Dr. Andrew Blaber (SFU) – Associate Professor

Stephanie Chong (Vancouver Aquarium)

Edward Chu (Spartan Controls) – Engineer

Kit Doan – Retired Teacher

Dennise Dombroski (York House School) – Teacher

Carol Dou (UBC AMS) – Student

Claire Edgcumbe (UBC Undergraduate) – Student

Philip Edgcumbe (UBC MD/PhD) – Student

Dr. Hamid Ghanbari (IRC Building Sciences Group) – APEGBC Representative

Dr. David Grant (Altera)

Madeleine Guinette (SFF BC) – Administrative Assistant

Taneille Johnson (UBC Medicine) – Student

Jaclyn Ko (School District #36) – Teacher

Kristin Lee (Science World)

Patti Leigh O.B.C. (SFF BC) – Executive Director

Ianick Leroux (École Jules-Verne) – Teacher

Jeffrey Ma (UBC Undergraduate) – Student

Andrea Merson (Marketing Consultant)

Ceddy Nash (Science Educator)

Michael Peters (UBC Undergraduate) – Student

Len Reimer (YSC Board of Directors) – Educator

Devon Ross (School District #43) – Principal

Kevin Shi (UBC Undergraduate) – Student

Lisa Stevenson

Vanessa Tam (Stratford Hall) – Teacher

Ana Ver (Stratford Hall) – Teacher

Kenzo Vlasman (Canucks for Kids Fund) – Student

Tina Wang (UBC Undergraduate) – Student

Clara Westwell-Roper (UBC MD/PhD) – Candidate

Jieqing Xu (UBC Medicine) – Student

Robert Young (LightIntegra) – Engineer-in-training