



2007 Final Report



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Our Vision To provide all of the children and youth of British Columbia with the opportunity to investigate engineering, science, and technology in a fun, educational and safe environment.

Our Mission GEERing Up! UBC Engineering & Science for Kids is a non-profit, student-run organization dedicated to promoting science, engineering and technology to the children and youth of British Columbia through fun, innovative and hands-on experiments and projects. GEERing Up! also strives to reach all children and youth, regardless of gender, ethnicity, culture or socio-economic status, with special outreach for those groups traditionally underrepresented in the sciences. GEERing Up! provides valuable work experience to its employees, and enriches the University and community.

A Proud Member of Actua

Actua's mission is to build science literacy among Canadian youth by providing them with positive hands-on experiences that inspire them to become learners for life and develop self confidence, creativity and critical thinking skills.

Actua supports a growing network of members across Canada who offer hands-on summer camps, workshops and community outreach initiatives to over 225,000 youth in 375 communities annually. Membership in Actua gives GEERing Up! the opportunity to access Actua's vast resource base and support through programs such as member funding (for programs such as girls' camps, Aboriginal Outreach and bursaries), training, national conferences, project development materials, and the opportunity to network with other Actua members. Please visit Actua's website at www.actua.ca for more information.

For more information on our programs and initiatives, please contact us or check out our website.

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A Word from the Co-Directors

Having reached the end of GEERing Up!'s 12th summer, one can't help but be reflective. We have grown so much since our humble roots over a decade ago, and one wonders whether the GEERing Up! of today is as the original creators, Ms. Christine Yeung and company, foresaw it to be. Have we taken the right steps and towards the right direction?

We certainly think we have. It's been an amazing year for GEERing Up!, and we're very proud of the work we have been able to accomplish. This summer has been about raising company standards. Administratively, we are more organized than ever before. Financially, we have proven once again that we are a stable and thriving entity, dispelling clouds of doubt that haunted us years ago. The job quality that we offer our Instructors was amazing, and we hope that they tell all they know how great working for GEERing Up! is.

Our other yardstick this summer has been our growth. With the addition of more staff members, GEERing Up! has reached out to nearly 6000 children; a major growth compared to the 4000 from last year. Indeed, it has been a very busy summer, and the youth of Vancouver are better off, if we do say so ourselves.

Of course, none of this would have been possible without the community's involvement. As always, the Faculty of Applied Science is a strong supporter of what we do. We're pleased with the relationships that we've built with local sponsors, whose financial support could not be over-emphasized. Our amazing staff and volunteers have put in a tremendous amount of effort in the running of GEERing Up!, and if it is said that our summer was a relatively smooth one, it would be because of them. Our appreciation to all who has been involved with GEERing Up! is immeasurable.

It has been a fruitful year, and we are pleased at how far we've come, and we hope that it will continue to bloom in the future. We have both been fortunate to have been a part of this wonderful program, and we hope that all of you, like us, are proud of the work that GEERing Up! has accomplished.

We suspect that Ms. Christine Yeung and company approve.



Belinda Li and Nasir Zulkafly
Co-Directors



Our History



From our beginnings in 1995, GEERing Up! has evolved from an idea to its current form, with in-school workshops in May and June, and summer camps in July and August. YES became YES-VACC, which then became Actua, a national network of science, engineering and technology camps. We launched our Aboriginal Outreach and all-girls programs in 2000, which have both become huge successes. In 2002, GEERing Up! changed the subtitle of its name to UBC Engineering and Science for Kids to reflect the change of focus from engineering to both pure and applied sciences.



In early 1995, Dr. Ian Gartshore, then Associate Dean of Students in the Faculty of Applied Science at UBC, brought YES Camps to the attention of Christine Yeung, a UBC Mechanical Engineering student. An interest in having a YES camp at UBC was sparked, and Christine and several other students incorporated the planning of camp project ideas into a design project for one of their courses.

During the summer of 1995, a volunteer committee was formed with the intention of designing and implementing a YES camp called GEERing Up! UBC Engineering for Kids for the summer of 1996. Their goal was to show youth in the community that engineering was not just building bridges and driving trains, but incorporated fun science concepts in order to design and construct structures, chemicals, vehicles, and computers.



With continued support, we will grow to meet the demands for high-quality, educational programs for youth. In 2004, we launched our Junior Engineer Leadership Training Volunteer Program, which we renamed to be simply Junior Instructors. In 2005, we introduced a Special Needs Integration Support Instructor. The summer of 2006 marked the debut of Technology Camp, where campers gained hands-on experience with computer-based projects. This year we expanded our girls outreach with Girl Guide Workshops. Our instructors visited groups of Girl Guides in the Lower Mainland, leading fun engineering and science activities at their meetings.

The summer of 2007 marked GEERing Up!'s 12th year of success engaging youth across the Greater Vancouver area. We have developed the resources and skills necessary to deliver programs that are fun, innovative, and relevant to the formal school curriculum.

2007 - Year in Review



Elementary School Workshops

In May and June, we delivered in-school workshops to elementary schools to six school districts in the Lower Mainland. Workshops are by far our best outreach initiative due to the large number of students that are involved. Workshops were aimed at promoting engineering and science to youth at a young age in hopes of sparking interest and generating excitement for each discipline.

This year, we delivered 228 workshops to 4526 students from grades K-7, a huge increase from the 3500 students we reached last year. Teachers had the option of choosing senior or junior versions of four workshop topics:

- Food Frenzy,
- Operation Planet Earth,
- Super Science Sleuths, or
- The Wonderful World of Water.

Each workshop was approximately two hours in length and incorporated a host of demonstrations, activities, and a hands-on take-home project to aid in the learning of concepts and theories. Following each workshop, classrooms are given a yearly subscription to either YES! or KNOW! Science Magazine, Canada's only science, engineering, and technology magazine for kids.

Community Outreach

GEERing Up! participates in various Community Outreach events during the year. This year, our highlights are:

- Hosting a booth at APEGBC's E-Fest at the Vancouver Public Library
- Volunteering at APEGBC's Popsicle Stick Bridge Building Contest
- Environmental-themed activities for over 1000 students at Delta Landfill's Open House
- Science of Magic Show at a Harry Potter Book Launch

Community outreach events allow us to promote our program to more parents and kids, and they are a great way to reach the general public to interest them in engineering and science.

- 2 Co-Directors**
- 9 Instructors**
- 1 Special Needs Integration Support Instructor**
- 32 Junior Instructors**



- 27 Summer Camps**
- 2 Girls Only! Camps**
- 1 Aboriginal Outreach Camp**



- 1550 Adults and Youth at Community Outreach Events**



- 590 Campers**
- 222 Female Campers**
- 21 Aboriginal Outreach Campers**



- 228 Workshops**
- 4526 Students**
- 21 Elementary Schools**
- 4 Workshop Topics**

Summer Day Camps at UBC

On-campus summer camps operate in July and August. We hosted 26 camps in 7 weeks for children and youth aged 6-16. We had 569 participants this year, of which 38% were female. Our week-long program was completely developed by our Instructors and covered a wide breadth of various science and engineering topics. Some of the highlights of this year include:

- Pop Bottle Rockets,
- Water Wheels,
- Lego Mindstorms NXT Robots,
- Earthquake Structures, and
- Egg Drop Parachutes.

In addition to our Instructors, we also incorporated lab tours and special guest mentors into the camps. The tours and mentors allow campers to experience how the theories they are learning are applied in real life situations, and learn about possible careers in engineering and science. This year, the campers had the opportunity to visit many facilities at UBC:

- Two different Robotics Lab,
- UBC Animal Care Facility,
- Vertebrate Museum,
- Anaechoic Chamber,
- Wind Tunnel,
- Biodiesel Lab,
- Faculty of Forestry, and
- Hydraulics Lab.

BC Hydro Powersmart

Energy efficiency and sustainability was a central theme this year for GEERing Up! and we once again partnered with BC Hydro Power Smart. Two representatives came into our camps every week to teach campers about energy efficiency and being 'Power Smart'. Campers wrote pledges on how they would be more energy efficient in their own lives on reusable lunch bags supplied by the Power Smart team.

YES and KNOW Magazine

GEERing Up! is proud to continue to offer subscriptions to YES and KNOW Mag, Canada's only science, engineering and technology magazine for kids, to our campers at a significant discount. YES! Mag provides a valuable tie to the fun side of science year-round and promotes reading and independent investigation through experiments and projects.

2007 - Year in Review

Aboriginal Outreach Camp

We returned to Comox for a week of Aboriginal Outreach in August. Our Instructors had an amazing time there, and the feedback was phenomenal. It was our best year yet, with testimonials from parents describing the marked improvement from previous years.

We were able to reach 21 kids this year, and the experience was very rewarding for the three of us who went. The campers had great potential and were keen and eager to learn. It was extremely encouraging and exciting to see how excited and intrigued they were about science and engineering! Their comments about how fun the camp was, and how they could not wait to get out of bed in the morning to come to camp were amazing to hear!

Next year, we hope to return to Comox for another week of great fun. We also hope to reach at least one other community for Aboriginal Outreach. It is our passion to continue promoting hands-on engineering and science to kids who may not receive much exposure otherwise.

Bursaries and Inner-City Workshops

GEERing Up! strives to make our programs accessible to all youth regardless of their financial status. This year, GEERing Up! offered more than \$3000 of bursaries to campers from low-income families with the help of Actua, Urban Systems, the GET to Camp Fund, and personal donations. We also offered free and discounted workshops to inner-city schools. We look forward to offering more bursaries to expand our reach to youth who would otherwise be unable to attend our camps.



Girls Only! Programs

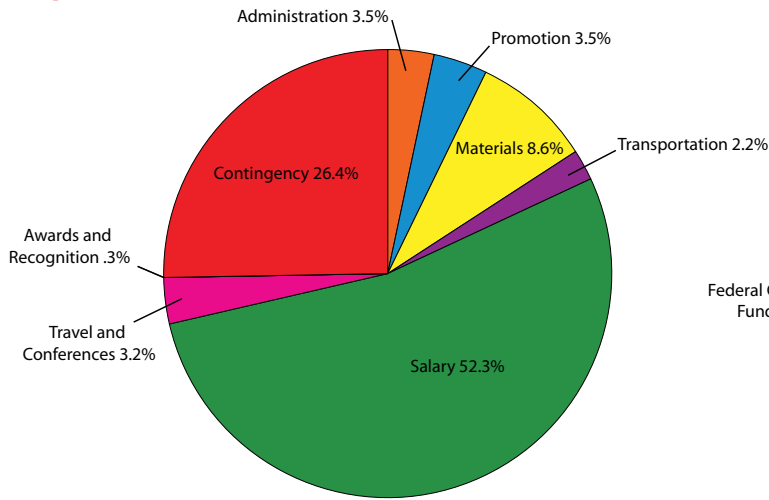
GEERing Up! offered two Girls Only! camps during the summer. The teaching materials and projects were very similar to regular co-ed camps, but are taught in a girls only environment. Studies have shown that girls are more likely to feel more comfortable learning about engineering and science in an all-girls environment, which empowers them to explore their potential.

Outside of the Girls Only! camps, we maintain our one female and male Instructor ratio to promote gender equality in engineering and science, as well as to dispel the perception of males being more dominant in these fields. We want our girls to know that they can be great scientists and engineers too!

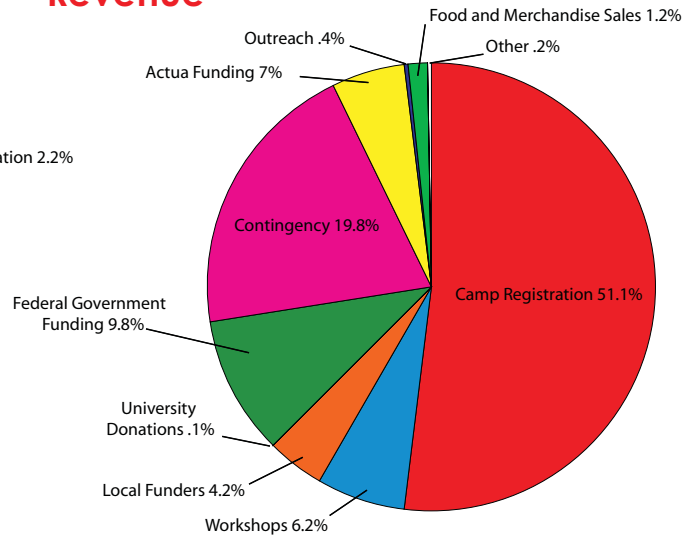
During our workshop season, we piloted a new Girl Guide Workshop Program. Teams of instructors visited groups of Girl Guides in the Lower Mainland, leading activities related to their STEM (Science, Technology, Engineering and Math) modules. The girls were engaged in engineering and science and earned some badges along the way!

Fiscal Highlights

Expense



Revenue



| 2006 Actual | 2007 Projected* | 2008 Budgeted | Description |
|---------------------|---------------------|---------------------|----------------------------|
| REVENUE | | | |
| \$80,205.00 | \$101,047.00 | \$100,000.00 | Camp Registration |
| \$7,730.00 | \$12,320.00 | \$12,000.00 | Workshops |
| \$18,855.00 | \$8,330.00 | \$10,000.00 | Local Funders |
| \$5,750.00 | \$160.00 | \$2,000.00 | University Donations |
| \$4,480.00 | \$19,320.00 | \$10,000.00 | Federal Government Funding |
| \$24,339.41 | \$39,172.19 | \$52,121.94 | Incoming Contingency |
| \$7,107.24 | \$13,750.00 | \$10,000.00 | Actua Funding |
| \$1,250.00 | \$700.00 | \$700.00 | Outreach |
| \$2,075.89 | \$2,446.61 | \$2,500.00 | Food and Merchandise Sales |
| \$207.32 | \$535.76 | \$500.00 | Other |
| \$151,999.86 | \$197,781.56 | \$199,821.94 | TOTAL REVENUE |
| EXPENSE | | | |
| \$5,343.02 | \$6,949.95 | \$9,000.00 | Administration |
| \$8,157.99 | \$7,091.80 | \$8,000.00 | Promotion |
| \$15,028.98 | \$17,045.36 | \$20,000.00 | Materials |
| \$669.83 | \$4,403.46 | \$7,000.00 | Transportation |
| \$78,975.30 | \$103,311.74 | \$105,000.00 | Salary |
| \$3,946.55 | \$6,345.42 | \$6,500.00 | Travel and Conferences |
| \$706.00 | \$511.89 | \$600.00 | Awards and Recognition |
| \$39,172.19 | \$52,121.94 | \$43,721.94 | Forwarding Contingency |
| \$151,999.86 | \$197,781.56 | \$199,821.94 | TOTAL EXPENSE |

Overall revenue for the 2007 fiscal year is up from 2006. Revenue in registration and workshop fees was significantly higher due to our growth of our programs. We received less local funding contributions and university donations due to the fact that a major portion of last year's funding came from one-time gifts. However, we received much more Federal Government Funding from Canada Summer Jobs as a result in our growth in staff.

| Amount | Description |
|--------------------|--------------------------|
| \$2,450.00 | National Bursary Fund |
| \$1,000.00 | Aboriginal Outreach Fund |
| \$2,500.00 | Girls Outreach Fund |
| \$500.00 | Summer Enviro Fund |
| \$300.00 | Travel Subsidy |
| \$7,000.00 | BC Provincial Partners |
| \$13,750.00 | TOTAL |

Overall expense also increased from 2006. We hired two more Instructors this year, as well as paid our Co-Directors part-time from January to April. The majority of the increase in Transportation was from renting a van for workshops instead of relying on the Instructors' personal vehicles.

In 2008, we would like to offer more discounted workshops and bursaries to low-income schools. We hope to increase our support from local funders and university donations. Due to the large Canada Summer Jobs grant this year, we do not expect as much funding from the Federal Government in 2008.

Regarding expenses for next year, we increased the Administration budget for an online registration/payment system, the Transportation budget for a second rental van for workshops, and the Materials budget to improve the quality of our projects.

* Includes actual revenue and expense to October 1, 2007 and anticipated revenue and expense to December 31, 2007.

Staff and Volunteers



Our Instructors

We are thrilled to have hired nine amazing Instructors this year, and loved the fact that half of them had a science background, which injected a strong science flavor to what is traditionally an engineering-dominated camp. The diversity of their academic backgrounds provides more depth to the development of our workshops and camp curriculum. The creativity, dedication, and passion of our Instructors were evident at workshops and camps each and every day. We are very grateful to have assembled such a great team!

Junior Instructors

Each year, GEERing Up! invites high school students in grades 11 and 12, as well as university students to volunteer as Junior Instructors at our summer camp. This year, we had a total of 32 Junior Instructors, several of whom were past campers. The role of a Junior Instructor is very diverse and ranges from assisting the camp Instructors in teaching camp projects, to organizing games at breaks. Our Junior Instructors are a very valuable part of our camp. GEERing Up! would not have been able to function without their help, and so we would like to extend our gratitude to the students who volunteered this summer.

Special Needs Integration Support Instructor (SNIS)

The Special Needs Integration Support Instructor position was first introduced in 2005, and due to its success, it is now a permanent part of our program. The SNIS Instructor's main role is to help integrate youth with exceptionalities into our regular camp program. Our SNIS instructor this year, Maxime, is extremely knowledgeable and experienced in dealing with special needs children. Prior to the start of camp, she provided us with a training session on Exceptionalities. These exceptionalities range from mild to severe and encompass exceptionalities anywhere from learning disabilities, to ESL, Autism, Asperger's, and physical disabilities. She provided support to campers with special needs during camps, working closely with parents, Instructors, and Junior Instructors. The SNIS Instructor gives GEERing Up! confidence in our ability to deliver fun and exciting camps to all our campers regardless of ability.

Acknowledgements

2007 Local Funders

Platinum

Canada Summer Jobs, with support from the UBC Faculty of Applied Science

Gold

Association of Professional Engineers and Scientists of British Columbia
Weyerhaeuser

Silver

Urban Systems
Associated Engineering

Bronze

Fluor Canada, Ltd.
Sandwell International

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GEERing Up! Board of Advisors

UBC Faculty of Applied Science

UBC Classroom Services

UBC Custodial Services

UBC Department of Mechanical Engineering

UBC Department of Civil Engineering

UBC Pottery Club

GET to Camp Fund

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Dr. Jon Nakane

Dr. Naoko Ellis

Dr. Rex Kenner

Dr. Shahram Tafazoli

Dr. Violeta Martin

Sasamat Pizza

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