

Faculty of Applied Science and Engineering  
University of Toronto



Report of the  
Outreach Task Force

Members: Prof. Susan McCahan (Chair)  
Prof. Grant Allen  
Prof. Will Cluett  
Ms. Nelly Pietropaolo  
Ms. Lisa Simpson-Camilleri  
Prof. Tony Sinclair  
Ms. Darlee Gerrard

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## 1. Introduction

In May 2008 the Report of the Task Force on Outreach Activities at the University of Toronto was released (<http://www.provost.utoronto.ca/Assets/Reports/outreachrep2008.pdf>). This report identified outreach programs across the University and recommended that:

1. A review of current outreach programs should be undertaken, particularly with the goal of aligning outreach programming with the University's mission.
2. There should be some oversight of outreach programming, and effectiveness should be measured.
3. Resources should be allocated to outreach programs that have the most potential for impact.
4. The University should work collaboratively with other institutions and organizations to interest students in post-secondary education.
5. Centrally funded programs should be cross-divisional and tri-campus.

In January 2009 the Faculty of Applied Science and Engineering convened a Faculty level Task Force to follow up on these recommendations (see Appendix 8.1). The Task force met from January through May 2009 to examine the current outreach programs in the Faculty and develop recommendations for the evolution of outreach programming at the Faculty level. In particular the Task Force was asked to define the activities that constitute *pre-university* outreach within the Faculty; develop a system for coordinating on a Faculty-wide basis all outreach activities relating to our mission as a rigorous, academic-focused and research-intensive program; and identify ways of measuring the success of our outreach activities.

## 2. Definition of Outreach

The Task Force developed the following definition of outreach:

Pre-University Outreach is a program(s) sponsored or supported by the Faculty that connects our current students and faculty with members of the community. There are three primary purposes of Pre-University Outreach:

- Recruitment of undergraduate students
- Enhancement of the student experience for our current undergraduate and graduate students
- Development of positive relationships between the University and communities for the purpose of:
  - Building a positive image for Engineering at the University of Toronto
  - Educating pre-university students about what engineering is and what engineers do
  - Educating pre-university students about engineering research at the University of Toronto
  - Supporting community programs in science, technology, engineering and math (STEM) education

### **3. Description of Current Programs**

Our current mix of programs aims to engage the public in science and engineering. A description of these programs can be found in Appendix 8.2.

### **4. Framing the Issues**

In discussing current and future outreach programs, the Task Force identified a number of issues of importance. Following on from the University wide report on Outreach, the Faculty level Task Force identified the alignment of current outreach programs with the Faculty's mission as an important factor. There are many programs which we could run, but we should select programs to resource that fit our mission, complement our student's interests, and attract top students to the Faculty from a broad diversity of constituencies. The current programs were assessed with this in mind, and future programs should be vetted to determine whether the goals align with the Faculty's mission.

The benefits of student involvement in outreach programs emerged as an important theme in our discussions. This pertains not only to our current undergraduate students, but also to the potential benefits for our graduate students. A number of positive outcomes that can be achieved through this involvement were identified. These include leadership, team and communication skills as well as an improved understanding of the basic principles underlying engineering. Engineering student involvement of this kind promotes the ability to teach in one's area of expertise and gives a person the opportunity to share enthusiasm for an area of engineering. This can be an extremely valuable addition to a traditional engineering education and the impact on our students' experience is significant.

From a recruitment point of view, outreach programs are an important means for engaging potential students. The experience is more experiential, i.e. it gives potential applicants to our Faculty a better sense of what engineering is about, in contrast to a typical recruitment presentation. Because of this, it has the potential to engage students who would not typically be drawn to engineering, i.e. under-represented groups such as women. Outreach programming can also draw students into a relationship with the Faculty long before they are thinking about university per se. This may encourage students to think more broadly about their career opportunities when making crucial decisions about courses to take in high school. Overall, we have concluded that the potential for recruitment of top students and students from under-represented groups is an important factor to consider when designing and evaluating outreach programs. Furthermore, the efficacy of programs in terms of recruitment is relatively easy to measure, and should be tracked.

Community impact, in contrast, is perhaps the most difficult to measure. The relationship between the University and society is complex. The Faculty, as a world leader in engineering education, has a role to play in creating a positive perception of engineering and engaging with society. However, it is difficult to weigh the impact of community oriented activities in the absence of other outcomes such as recruitment or student experience. Furthermore the definition of "community" can be local, regional, national, or even international in scope. Overall, it is important when considering outreach programming that is aimed at community impact to examine the alignment with the institutional goals, the potential for impact on current students and recruitment, and explore opportunities for collaboration with other institutions and organizations that would multiply the impact of the effort. This approach is in agreement with the University level Report on Outreach.

In addition safety and risk are important factors in considering outreach programming. The Task Force met with a representative from the Risk Management and Insurance Department to discuss this issue. The opinion is that we should not refrain from running outreach programs, but we do need to perform due diligence in terms of oversight. People running outreach programs that are associated with the University should be trained and activities should be checked for safety. The younger the target audience, the more important this becomes.

#### *4.1. Recruitment, Student Experience and Community*

In examining the multiple aspects of outreach programming, we conclude that the primary purposes of outreach in our Faculty revolve around recruitment, student experience and community impact. These three mission themes were reiterated by virtually all of the people the Task Force consulted. However, the relative importance of each of these three areas of mission was contentious. Many of the people consulted held very strong beliefs that one of these three areas was essential, but there was no general agreement among people on which one. This led to the conclusion that all three are important, and each program needs to be examined with respect to these three areas.

The Task Force undertook an exercise to quantitatively evaluate the current existing Faculty outreach programs in these three essential areas. The results are shown in Appendix 8.3. In many cases it is difficult to compare and contrast programs because of their qualitative differences. For example, the Robotx program is highly oriented toward recruitment but reaches a small number of students who have already shown an interest in engineering related activities, whereas the Girls Club reaches a larger number of students who may be less likely to apply to an engineering program. Both of these activities were given 2 out of 5 on recruitment, but for very different reasons. To better understand the impact of these programs a discussion of each program, including a qualitative analysis of its merit in the three mission areas, is given in Appendix 8.2.

#### *4.2. Enrichment versus Proactive Programs*

The current outreach system in the Faculty is comprised of a mix of proactive and enrichment programming. The enrichment programming is designed for people in grades 1 through 12 who are interested in a science or engineering related experience (e.g. DEEP, Robotx etc.). These programs are typically fee based and the intention is to recover the cost of the program, or even to make a small profit that could be used to subsidize the proactive programming. While these programs may attract students in disadvantaged or under-represented groups, this is not an explicit goal of the enrichment programs. The primary purpose of these programs is to:

- Interest grade 1 through 12 students in science and engineering with the goal of recruiting them into engineering either here or at another university.
- Involve our current students in science and engineering teaching and leadership

At the upper years (grades 9 through 12) the goal becomes more explicitly recruitment into our Faculty. Generally these programs also serve the purpose of educating people, both students and parents, about engineering and the exciting opportunities in this profession. However, these programs for the most part attract students who may have other opportunities to explore science

through private, or other types, of enrichment programs offered in Toronto. From this perspective their community impact is relatively low.

The proactive programming is designed for people in grades 1 through 12 who are in disadvantaged groups or groups that are under-represented in engineering (e.g. women). Some of these programs charge a small fee, but most are heavily subsidized. Examples of current proactive programming include the Regent Park Camp, the Girls Club etc. The subsidies are provided through government programs, non-profit groups (e.g. Actua), or by the Faculty. The Faculty supports these programs in two ways: first, the staff that are paid through the enrichment programs also run the proactive programs; and second, the revenues from the enrichment programs may be used to subsidize the proactive programs.

These programs may attract students into engineering, but it is not clear how many students who participate in these programs end up in engineering, or specifically at the University of Toronto. We do know that we get relatively few students from disadvantaged communities, in part because of poor academic preparation. In terms of recruitment of women, there is perhaps better recruitment potential. However, we do not have statistics on the recruitment of girls who have participated in an APSC outreach program which would allow us to draw a conclusion. It is recommended that if the Faculty retains, or introduces new, programming of this type, that statistics be collected routinely on recruitment such that the impact of this programming can be evaluated on this important metric.

The proactive programs in general score fairly to very high on student experience and community impact. Many of these programs involve our current students in teaching and leading science and engineering related activities. Some of the programs only involve a few of our current students, but the experience is exceptional. These programs also have the potential to reach pre-university students and parents who would not otherwise have an opportunity to explore the potential of a future in science or engineering.

#### *4.3. Student Organization involvement in Outreach*

Currently a number of the Faculty's student organizations are involved in outreach activities. These programs are typically organized and run by the organization with little direct involvement from the Faculty, but occasionally utilize staff time or funding directly for an activity. Examples of this include the National Society of Black Engineers (NSBE) Youth Legacy Program, the CESA Little Engineers program, and the annual Space Design Competition. The Faculty will continue to support student groups and a number of these groups have included outreach to elementary and high school students as part of their mission. However, currently the Faculty maintains little to no oversight over these activities and does not get involved in monitoring. There is some concern that groups that we support financially to some degree, and that carry the University of Toronto affiliation, are engaging with young students in the community without oversight. There also appears to be a real opportunity here to leverage interest by these groups, and their connections with their communities, to reach out to under-represented communities.

The major concern expressed by the Task Force is in the area of safety, both in terms of the activities and the training of the people running them. The activities run by the students should be vetted for safety by a professional. This may be happening. The activities may be reviewed at the national level by the parent organization to our student chapters, but our Faculty does not regularly check on

this or keep records of it. We also do not check to see if our students who are running the activities have received training. If we are providing funding for these activities, we should be asking if safety checks and training have been done. We also have at our disposal a large database of well developed science and engineering activities that have been checked. These could be made available to the student groups.

A second concern is that our students may be inadvertently giving incorrect information about engineering to the community, or behaving in a manner that reflects poorly on the university. Again, proper training and oversight would minimize these risks.

There is a very substantial opportunity to facilitate the outreach activities of our student organizations. These students often have substantial and close connections with their “home” community. The experience of giving back to their community is valuable and gives our students the opportunity to practice their teaching and leadership skills. We should be encouraging our students to get involved in this way, and the potential value for recruitment is significant. Many of our students are excellent role models and good communicators who can excite high school and elementary school students about engineering.

#### *4.4. Resources and Alignment with Mission*

We recognize that engineering is often poorly understood by the general public and that we would like to do everything possible to improve the profile of engineering in general, get students excited about a career in engineering, give our students every opportunity to reach out to the community, and connect with prospective students as deeply and broadly as possible so that they perceive that our Faculty should be their first choice for university. However, we also recognize that every activity possible does not necessarily fit well with our mission. Outreach is one of many important activities in our Faculty, and it should be sized and fitted to who we are as a research intensive institution whose goal is to attract and educate the best students from a broad range of communities. It is also not possible to resource every possible activity, and the resources that are put into outreach activities should be appropriately balanced and result in substantial outcomes.

Resources, in this context, refer not only to direct funding but also to the indirect costs of staff time, energy, space, etc. In the quantitative table shown in Appendix 8.3 the Task Force attempted to gage the costs, primarily indirect, of the current existing outreach programs. In this table a high number (e.g. 5) represents a program that requires minimal resources and a low number (e.g. 1) represents a program that requires very substantial resources. Generally programs that are run off-campus, particularly those that require a great deal of organization for a few events, are the most resource intensive. For example, the in-school workshops that require close communication with the school, individual scheduling of the instructor, and transportation of the instructor and all materials are the most resource intensive. Programs that are run as courses on campus have the least resource needs. The timing, space and enrolment are all controlled by us and once you have students enrolled and the curriculum set the implementation is relatively straightforward. This is not to say that we should not run resource intensive programs if there is sufficient rationale. However, this is an issue that should be factored into strategic planning.

While it is possible to recover costs by passing them down to the participants, the indirect costs are not always easily recoverable. In addition, we should not be in competition with private companies

who offer similar services simply to make money or because there is a demand. We should bear in mind that we are a non-profit institution. Furthermore, the Faculty of Applied Science and Engineering should consider which activities are best led by our Faculty and which should be led by other Faculties. We have limited collaborative outreach programs currently, and this may be an area that is worth exploring in the future. The choice of programs must, first and foremost, match our mission and be appropriate to the Faculty.

## **5. Prioritization of Programming**

The Task Force conducted a pairwise comparison of the existing outreach programs to identify priorities. It should be noted that this exercise considered only programs in their current state. It did not consider programs as they could be if they were restructured (e.g. we considered Sci-Camp at its current size). See Appendix 8.4 for the results.

A few observations about this list: The programs that ranked highest on the list are generally aimed at high school and middle school students. These programs typically are viewed as both recruitment opportunities as well as opportunities for our current students to be involved in teaching and leadership. The DEEP Summer Academy was widely viewed as the best outreach program we offer in terms of alignment with our mission as a research intensive institution, student experience opportunity (specifically at the graduate student level), and recruitment opportunity. This program has been highly successful and it is a distinctive “brand” that is associated with the University of Toronto. It is also a program that would be difficult to duplicate outside of the university, or in another faculty because of the nature of the courses offered.

Of the “girls only” programs, Skule Sisters ranked relatively high on the list. This program is specifically aimed at recruitment but also involves our current students as mentors. The mentoring experience along with the recruitment of an under-represented, and important, group of people were cited as major contributors to the relatively high evaluation of this program. The Go Eng Girl program was left off the prioritization list because this program is run by PEO. We felt that we would definitely participate in this program for as long as it is being run by PEO. The Girls Club was ranked somewhat lower on the list because it requires relatively high resources and has low student involvement and recruitment value. This is a good example of a program that could be “picked up” by a student organization such as WISE and evolved into a student run outreach program.

It was also noted by the Task Force that many of the programs can offer “girls only” sections if the parent program is sustained. For example Jr. DEEP and the Saturday Science and Engineering Academy (SSEA) can offer “girls only” sections and this would be easy to do if Jr. DEEP and SSEA are operating. Operation of a parent program by the Faculty also would allow student organizations that are interested in outreach to access safety checked curriculum components and training that are maintained for the parent program, thus leveraging the resource input to these programs.

## **6. Management Structure for Outreach Programs**

The Task Force considered a number of different possible management structures for outreach in the Faculty. Our recommendation is to create an Outreach Office (name to be determined). The Associate Director of the office should report to the Chair of First Year.

While outreach is closely connected to recruitment it is, and should be, also closely connected to several other areas of the Faculty. In particular, we would like to see a closer connection between outreach and student experience. In recruitment we use students in our implementation (at events, etc.). However, in outreach we would like students and particularly student organizations, to take on leadership roles and have a higher level of involvement. Therefore we are recommending that the Outreach Office remain separate from recruitment, but report to the First Year Chair because of the proximity of the outreach activities to the mission of recruitment.

In this new structure, the primary purpose of the Outreach Office would be to run the “core” outreach activities in the Faculty, e.g. DEEP. During the development of the office, and in consultation with the senior administration in the Faculty, the Outreach Office would undertake to re-organize the core programs. This allows continuity of our current programs where appropriate.

The Outreach Office would also become the central unit for interacting with student organizations on outreach activities. We suggest that this office implement a “grant” program that would fund student organization outreach activities. The current system, that has student groups shopping around to departments to find funding, has the potential to impede student motivation toward outreach and is a system that lacks oversight (e.g. safety and training checks). The new Outreach Office would serve as “one-stop-shopping” for groups looking for funding for these types of projects. It would also allow us to:

- Require that a plan for safety and training be included in the proposal
- Require that we get “outcomes” data to allow us to evaluate impact for funding renewal decisions.
- Allow us to build relationships with these student organizations so we can facilitate their outreach activities and provide them with high quality curriculum (drawn from our core programs) if they want it.

In this model we envision a grant proposal process that would take place once or twice a year. This allows us to compare and contrast proposals so that we can make decisions about the best use of our resources. We envision a relatively easy application form that specifically asks the organization to briefly explain the value of their program in the three key areas (student experience, community impact, recruitment); requires them to have a plan for safety checks and training; and asks them to track simple metrics (e.g. number of participants, hours, type of experience).

Overall, the mission of the new outreach office would be to continue to modify existing programs toward enhanced impact in all three areas while ensuring that the programs we offer align with the Faculty’s mission and are making best use of resources. We see this as an opportunity to tap into the enthusiasm and energy our students have and enhance their experience through these types of activities. Ultimately this type of service to the community presents a huge opportunity for our students to enrich their university experience and give back to their communities.

## **7. Recommendations**

### Recommendation #1:

We recommend that the Faculty adopt the following definition of outreach:

Pre-University Outreach is a program(s) sponsored or supported by the Faculty that connects our current students and faculty with members of the community. These activities should align with the mission, values, and resources of the Faculty.

Recommendation #2:

There are three primary purposes of Pre-University Outreach: Student experience, recruitment, and community impact. We recommend that outreach programs be evaluated for success based on impact in these three areas.

Recommendation #3:

We recommend that a Faculty Outreach Office be established that will report to the Chair of First Year. The primary purpose of the Office will be to manage and administer the core outreach programs that are central to the Faculty. The Office would also be responsible for monitoring outreach programs being run through student organizations. It is recommended that the Office collect outcome data on all outreach activities in the Faculty to be used for measuring program success. The Office should report annually on outreach activities to Faculty leaders.

Recommendation #4:

Initially, the Faculty Outreach office should continue to support the programs that ranked high on the list of priorities and/or that are at a relatively small scale. In particular, we recommend support of: DEEP Summer Academy; Saturday Science and Engineering Academy Grades 8 to 12; Skule Sisters; Jr. DEEP; and, RobotX. We should also continue our involvement with the Go Eng Girl program. We recommend that other programs be evaluated for the longer term. In addition, the office should setup a granting program that would facilitate student groups with outreach activities.

Recommendation #5:

Of the current outreach programs Sci-Camp, formerly called Science Outreach, is the program with the longest history in the Faculty. It has historically served as a feeder program to the other outreach programs mentioned above. The Task Force sees merit in Sci-Camp, particularly in terms of the valuable experience it affords our current students who serve as counselors. However, we recommend that if the Faculty decides to run a Sci-Camp type program in the future that the structure be significantly overhauled.

## 8. Appendices

### 8.1. Terms of Reference



## UNIVERSITY OF TORONTO FACULTY OF APPLIED SCIENCE & ENGINEERING

### MEMORANDUM

2009-02

**To:** All Members of the Faculty  
**From:** Cristina Amon, Dean, Faculty of Applied Science and Engineering  
**Date:** January 19, 2009  
**Re:** **Appointment of an Outreach Task Force**

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#### Purpose

Following from the *Report of the Task Force on Outreach Activities at the University of Toronto, May 27, 2008\**, the Faculty of Applied Science and Engineering (FASE) is appointing an Outreach Task Force to:

- i. Define the activities that constitute *pre-university* outreach within the Faculty;
- ii. Coordinate on a Faculty-wide basis all outreach activities relating to our mission as a rigorous, academic-focused and research-intensive program; and
- iii. Identify ways of measuring the success of our outreach activities.

#### Time Frame

The work of the Task Force will begin by the end of January with a view to reporting to the Dean by May 1, 2009.

#### Membership

- |           |                   |  |
|-----------|-------------------|--|
| 1. Susan  | McCahan           | Chair First Year (Chair)                         |
| 2. Grant  | Allen             | Vice-Dean, Undergraduate                         |
| 3. Will   | Cluett            | Chair, Division of Engineering Science           |
| 4. Nelly  | Pietropaolo       | Administrative Staff, Civil Engineering          |
| 5. Lisa   | Simpson-Camilleri | Assistant Dean, Academic HR and Diversity        |
| 6. Tony   | Sinclair          | Chair, Mechanical and Industrial Engineering     |
| 7. Darlee | Gerrard           | Outreach Programs Coordinator, PDC               |
| 8. Jan    | Haugan            | Executive Assistant to the Vice-Dean (Secretary) |

## **Mandate**

1. Define the term “outreach” within the context of the Faculty of Applied Science and Engineering, addressing questions such as whether activities should be targeted specifically to reach groups traditionally under-represented in Engineering (e.g., women, aboriginals, Afro-Canadians); whether an attempt should be made to foster an interest in Engineering among students before they reach high school, etc.
2. Identify the current outreach activities of FASE, including stated goals, resources, funding and measures of success.
3. Review the inventory of outreach activities of the U of T as a whole and other U of T Faculties (see Report\*), taking into account the ways in which they complement or compete with FASE activities and identifying useful models.
4. Identify outreach activities of other Engineering Faculties in Canada, taking into account the ways in which they complement or compete with FASE activities and identifying useful models.
5. Identify the strengths and weaknesses of current FASE outreach activities, recommending the types of activities on which we should focus in the future, identifying specific goals and possible operational structures and the associated resources required to implement them.
6. Identify metrics for assessing our outreach activities.

\*<http://www.provost.utoronto.ca/Assets/Reports/outreachrep2008.pdf>

## *8.2. Program List with Comments*

### SCI-Camp

The SCI-Camp program began in 1989 and is a hands-on science and engineering program targeted to youth grades 1 through 6. It runs for 8 weeks through July and August and is offered on all three campuses of the University as well as 15 satellite locations in the GTA. The program reached over 5534 participants in 2008 and provided summer employment opportunities to over 100 undergraduate student instructors, from science and engineering programs. This program offers low direct recruitment value due to the age of the campers but encourages the involvement of a large number of undergraduate students. It is fairly resource intensive because of its size. It is generally very well received by the public and ranks high in community impact. There are bursaries available for students who need financial assistance.

### In-School Workshops

This program has been steady in its size and scope and has been the largest university-run workshop program of its kind in Canada. In May and June of 2008, the program delivered 532 workshops to schools across Ontario, reached approximately 19,000 K-8 students and employed 30 undergraduate instructors. This program offers low direct recruitment value but does rank fair in student experience and fair in community impact. Organizing these workshops can take a fair amount of effort making this a more resource intensive program.

### March Break Science Safari

The March Break Science Safari is offered to grades 1 to 8 students. 2008 was the third annual March Break Science Safari and it had 135 individual participants, the equivalent of 400 individual day registrants. The program employs up to 8 students and offers low direct recruitment value and employs a relatively low number of students but is well received by the public.

### Saturday Science & Engineering Academy: Grades 3 to 8 and Grades 8 to 12

Saturday Science and Engineering Academy is an advanced academic program for students in grade 3 through 12. SSEA runs over 7 weeks during the fall and spring and had 300 students participate this past academic year. It employs approximately 12 undergraduate and graduate students each term. This program offers low direct recruitment value for the younger grades and high direct recruitment value for high school aged students. It employs a relatively low number of students and ranks fair in community impact.

### Jr. DEEP

Junior DEEP is a transition program into the DEEP Summer Academy program for high school students. Offered to grade 7 and 8 students in conjunction with the SCI-Camp program, Junior DEEP courses are one week in length and utilize the staff employed as part of the SCI-Camp program. This program offers some recruitment value due to the age of the campers and encourages the involvement of a large number of undergraduate students. It is very well received by the public and ranks high in community impact.

### DEEP Summer Academy

The DEEP Summer Academy provides gifted and highly motivated high school students from across the world with the opportunity for advanced study in a variety of engineering, technology, business and science disciplines. This program had 411 high school students participate in 2008. It employs

over 30 graduate level instructors and enables the participation of over 40 undergraduate volunteers and club leaders. This program offers high direct recruitment value due to the age of the participants and encourages the involvement of a relatively large number of graduate and undergraduate students. Because of the logistics involved (international participants, large number of unique activities offered each year) this is a fairly resource intensive program, but ties more closely to research activities than other outreach programs.

#### DEEP In-school workshops

DEEP In-School Workshops have been offered to high school classes in the GTA. A few dozen workshops would typically be held in the Spring. The program has employed about 10 undergraduate and graduate level students, with a reach of several hundred students annually. This program offers high direct recruitment value due to the age of participants; encourages the involvement of a relatively small number of graduate and undergraduate students; and ranks fairly high in community impact. However, the work required to organize the workshops makes this program more resource intensive.

#### RobotX

RobotX is a week-long, live-in robotics competition for high school students to build and test their own battlebots. The program briefly employs approximately a half-dozen undergraduate and graduate students in the capacity of advisors and residence staff. This year's program will welcome 16 high school students. RobotX offers high direct recruitment value due to the age of participants, involves a fairly small number of students, encourages the involvement of a relatively small number of graduate and undergraduate students and ranks low in community impact.

#### Girls Club

The goal of Girls Club is to nurture the interests of female students in the areas of science, technology and engineering. Girls Club is for female students in grades 3 to 8, who attend the program for 5 weeks in the fall and five weeks in the spring for a relatively low cost. The program reaches approximately 110 students each year, employs 5 female undergraduate students and provides volunteer opportunities for a half dozen additional students. This proactive program offers low direct recruitment value due to the age of the participants and employs a relatively low number of students but is very well received by participants and the public.

#### Girls week (SCI-Camp/Jr. DEEP)

SCI-Camp hosted its 12th annual Girls Week at each of the U of T campus camp locations in 2008. This is basically a section of SCI-Camp run for girls only. Girls Week typically involves over 200 female participants in grades 1 through 8. This program engages special female guest speakers and utilizes existing SCI-Camp staff and curriculum. This program is run in conjunction with SCI-Camp/JR DEEP.

#### Go Eng Girl

Go Eng Girl is one day event for Grade 7-10 girls across Ontario to visit their local university to learn more about engineering. It is coordinated by PEO. This program has typically involves a few undergraduate student volunteers. Last year, the GTA location of Go Eng Girl welcomed approximately 40 students to this one day event. This proactive program offers fair direct recruitment value, involves a relatively low number of students but is well received by the public and ranks high in community impact.

### Skule Sisters

Skule™ Sisters pairs grade 10 female students with 2nd year engineering females and has them continue in a 3 year partnership. There are currently 63 undergraduate students involved (i.e. acting as mentors) in this program. The program offers a few face to face events that take place through the year and is largely mediated electronically. This proactive program offers a high recruitment value, and ranks fairly low in community impact because of the small number of high school students involved. The resource implications for this program are very low.

### Community based camps: Visions of Science Camp and Regent Park Science Camp

The Community Science Camps were developed to assist local high-need, at-risk communities. Camps were held in Kingston/Galloway, Rexdale and Regent Park and had 436 campers from grades 1 through 8. This program was offered free of charge to all participants and employed approximately 10 undergraduate students. This program offers low direct recruitment value due to the age of the campers but encourages the involvement of a number of undergraduate students in meaningful work. This proactive program ranks high in community impact.

### Workshops in Northern ON

For two weeks each June, In-School Workshops visited Central Northern Ontario and remote First Nations communities around Ontario. In 2008, the program delivered 38 workshops in First Nations communities in South-Central and North-Western Ontario reaching approximately 875 First Nations youth. This workshop program has been fully-funded by Actua and the Ontario Trillium Foundation in previous years and utilizes 30 Instructors hired and trained for the spring In-School workshop program. This program offers low direct recruitment value but does rank fairly well in student experience and community impact, with proximity to the University an important consideration.

### Summer Mentorship Program

The Summer Mentorship Program is a four-week summer program that provides up to 20 high school students with the opportunity to explore university education and obtain hands-on experience through experiments, lectures and special projects. The program is lead by an undergraduate or graduate level student with an interest in teaching and facilitating. This proactive program offers low direct recruitment value due to academic history provided by the participants. It employs a small number of students but is very well received by participants and ranks high in community impact.

### NSBE (and outreach through other undergrad student organizations)

The National Society of Black Engineers offers a range of outreach opportunities to students at the high school level and pre-high school. University student involvement varies from year to year but the society includes an outreach officer who develops this mandate. There are a number of other similar outreach programs run by other student organizations (e.g. the "Little Engineer" program run by the Chinese Engineering Students Association).

### TSTOP/YSTOP

The Youth Science and Technology Outreach Program is a grant-based program offered through the Ministry of Research and Innovation. The program aims to connect tomorrow's researchers with today's leaders in science and technology and is designed to inspire young people - particularly high school age youth - to choose careers in science and technology. Workshops and hands-on activities have been organized for youth when this funding has been received. Both of these programs are no longer funded.

### 8.3. Evaluation Table of Existing Outreach Programs

Note: this table was formulated based on the current version of each program. If the programs were to change significantly a reassessment would need to be made.

1 is low and 5 is high

Note: a low score in Resources means a lot of resources are required

Enrichment programs are fee based and are not targeted at disadvantaged or under-represented groups  
Proactive programs are targeted at disadvantaged or under-represented groups, they are often subsidized by us, government, or other programs (such as Actua).

Activity	Recruitment	Student Experience	Community	Resources	Enrichment/ Proactive
SCI-Camp	1	3	4	2	E
In-School Workshops	1	3	3	2	E
March Break Science Safari	1	3	4	2	E
Saturday Science & Engr Academy					
Grades 3 to 8	1	3	3	3	E
Grades 8 to 12	4	4	3	4	E
Jr. DEEP	1	3	4	2	E
DEEP Summer Academy	5	5	3	2	E
DEEP in-school workshops	5	5	4	1	E
RobotX	2	2	1	3	E
Girls Club	2	1	3	3	P
Girls week (SCI-Camp/Jr. DEEP)	Same as SCI-Camp/Jr. DEEP				P
Go Eng Girl	3	2	5	4	P
Skule Sisters	5	3	2	4	P
Community based camps					
Visions of Science Camp	1	3	4	3	P
Regent Park Science Camp	1	3	4	3	P
Workshops in Northern ON	1	4	4	2.5	P
Summer Mentorship Program	2.5	0-1	4.5	4	P
NSBE (and outreach through other undergrad student organizations)	varies	4	4	4	P, sometime E
TSTOP	No longer exists				
YSTOP	Grant is finished				

#### *8.4. Pairwise Comparison Results*

Order of Priority based on pairwise comparison:

1. DEEP Summer Academy
2. Saturday Science and Engineering Academy Grades 8 to 12
3. Skule Sisters
4. Jr. DEEP
5. RobotX
6. Sci-Camp
7. Girls Club
8. Tie: Community based camps  
March Break Science Safari
9. Tie: In-School Workshops  
Saturday Science and Engineering Academy Grades 3 to 8
10. Northern Ontario Workshops

### 8.5. Meetings and Consultations

Chair: Susan McCahan

Members: Grant Allen, Will Cluett, Darlee Gerrard, Nelly Pietropaolo, Lisa Simpson-Camilleri,  
Tony Sinclair

MEETING:	FORMAT
January 28, 2009: 1-2pm in GB173	Planning Meeting
February 10, 2009: 4-5pm in GB173	Guest Speaker: <ul style="list-style-type: none"> <li>○ Trevor Cuddy, Professional Development Centre</li> </ul>
February 18, 2009: 1-2pm in GB173	Guest Speakers: <ul style="list-style-type: none"> <li>○ CAO Catherine Gagne re: resources for Outreach activities</li> <li>○ Eric Fleming, Risk Management, re: scenarios re: liability for Outreach activities</li> </ul>
February 19, 2009: 2-3pm in GB204	Guest Speaker: <ul style="list-style-type: none"> <li>○ Dawn Britton, Acting Outreach Programs Manager</li> </ul> (On secondment to PDC for past 6 mos; 'outside Faculty' perspective)
February 25, 2009:	Meeting Cancelled until feedback received
February 26, 2009: 2-3pm in GB204	Update Re: More resources to consult with committee
February 27, 2009: 1-2pm in GB173	Task Force to break into subgroups to discuss matrix
March 16, 2009: 3-4:30pm in GB202	
April 24, 2009: 10-Noon in GB173	
May 5, 2009 3:30-5pm in GB173	
May 14, 2009 2-4pm in GB202	