# Annual Report

## Engineering Leaders of Tomorrow

# 2010/11

UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING
Institute for Leadership Education in Engineering

# Contents



**A student reflects...**

> “LOT more than anything has let me explore my own ideas about leadership and myself as a leader. It has helped me to develop the belief that my contribution is significant, and that I have the ability to create systemic change to improve the state of the world. This has helped guide me in my decision to return to Africa after I graduate, to serve humanity to my highest potential by supporting and fostering local leadership.”

lot.engineering.utoronto.ca

# Welcome

We are thrilled to present the Engineering Leaders of Tomorrow (LOT) Program's fifth Annual Report for the year May 1, 2010 to April 30, 2011. Over this past year, our work towards building and sustaining a culture of student leadership continued at full speed.

It is our mission to empower the engineering students of today with leadership education, so that they will be at the forefront of tomorrow's daunting challenges and wondrous opportunities. We are pleased to share our progress with you.

This year marked the first in which LOT existed under its new parent organization, the Institute for Leadership Education in Engineering—ILead. ILead was established in July 2010 as a result of the growth and success of the LOT program. The Institute is committed to research and scholarly work on leadership pedagogy and reaching out to other engineering schools, the profession, and engineering-intensive companies. LOT remains, under the ILead umbrella, as the locus for student engagement.

We thank everyone who has been involved with, and supported, the Engineering Leaders of Tomorrow Program. Your time, commitment, energy, and belief in us are invaluable. We have much to share with you this year.

As always, we welcome your interest and value your feedback.

August 2011

# Executive Summary

The Engineering Leaders of Tomorrow Program (LOT) represents the leading edge of student leadership development and education. We are a unique, comprehensive program within the Faculty of Applied Science & Engineering that has grown prodigiously since we were established as a Faculty-wide initiative in 2006. To extend and expand the work of Leaders of Tomorrow the Institute for Leadership Education in Engineering (ILead) was established July 1, 2010. ILead's mission is pedagogical research, instruction, and outreach (to business, the profession, and other educational institutions). ILead's vision is: "Engineers leading change to build a better world." LOT remains, under the ILead umbrella, as the locus for student engagement.

This year LOT made substantial progress across a number of areas. We held 288 events and meetings, created 8,035 student contacts measured by head counts, making 2010–2011 our most productive year yet.

Student demand for academic courses on engineering leadership remains strong. In 2010–2011 we offered three courses: (1) APS501: Leadership and Leading in Groups and Organizations; (2) APS1010: Cognitive and Psychological Foundations of Effective Leadership; and (3) APS1011: Concepts and Applications of Authentic Leadership. These have received excellent student feedback that we are proud to report in the pages that follow.

We offered our Leadership Infusion Lecture Series for a third year in 2010–2011. We delivered 30 lectures, reaching 2,506 students from all four years of study. This represents our most successful year to date in terms of the number of lectures we were able to deliver, as well as our reach across the Faculty.

We expanded our co-curricular certificate programs with the introduction of Certificate Three: Organizational Leadership, delivered in Winter 2011. This new offering fills an important gap in our existing programming: leadership development geared specifically for student club leaders. We received excellent student feedback this year and will offer it again in 2011–2012.

We also held a number of fantastic events over the year that attracted many students to our leadership development opportunities.

This year we expanded our research platform in a number of exciting areas. We began our Undergraduate Team Skill Study that seeks to examine the pedagogy and practice of effective team skills within the undergraduate curricular experience. We also began the Female Engineering Student Leaders Study that attempts to understand the experiences of female student leaders, to acquire a qualitatively rich understanding of the strengths, challenges, and opportunities that they may encounter in our Faculty. At the end of this academic year, LOT/ILead accepted its first PhD student in engineering leadership.

We sustained remarkable productivity with respect to outreach and communications initiatives. In June 2010 LOT hosted its second annual Summer Leadership Institute, our professional development day for staff and faculty from across the U of T community. We also connected with engineering leadership programs at U.S. schools in workshops in October and April.

In addition to reaching out to other leadership professionals, we have heightened our efforts to communicate to new and current undergraduate students in the Faculty. This year marked a number of advances with respect to our communications efforts to stakeholders. Our website has been redesigned and improved. We introduced Twitter, Vimeo, and YouTube into our roster of social media tools in addition to Facebook. We also produced two informational videos, available for viewing on our website.

Our program underwent significant growth and achieved many successes over the academic year. We reached outward and inward to enhance both our depth and breadth of service. Our office complement has grown and been consolidated. We have a vision of an engineering education that is a lifelong foundation for transformational leaders and outstanding citizens. In 2010-2011, we moved closer towards fulfilling this vision.

# Program Overview

LOT is a unique, comprehensive student leadership development program for engineering students at the University of Toronto. At the heart of our program lies the belief that leadership education will empower engineering graduates to contribute more effectively to positive social change and innovation. Today's complex global issues increasingly demand engineers who are successful problem solvers and responsible leaders. We believe that a world-class engineering program needs to provide leadership education and development opportunities for its students.

## Background & History

LOT began in 2002 in the Department of Chemical Engineering & Applied Chemistry. The success of this initiative to infuse leadership education into the Department led to Provostial funding in 2006, allowing LOT to expand Faculty-wide and take on its ambitious mandate:

1. To strengthen the experience of engineering students by providing coherent, structured and intentional learning opportunities to enhance their leadership development.

2. To enhance the connection between the field of engineering, with all its technical, analytical and problem solving capability, and society, enabling graduates to contribute more fully as engineers and citizens.

LOT offers diverse learning opportunities with multiple points of entry for students. These include academic courses, co-curricular certificate programs, departmental student working groups, guest lectures in formal courses and multiple stand-alone seminars, workshops, panels, and other activities. LOT works to increase the value placed on leadership by offering certificates, awards, and scholarships based on demonstrated criteria. It is our aim to inspire leadership involvement and initiatives throughout the Faculty of Applied Science & Engineering.

Since its Faculty-wide expansion in 2006, LOT and its culture of leadership education has grown every year. In 2010–2011, we've sustained our forward momentum and continued to build relationships and reach out to the Faculty and beyond.

## Survey of General Electric Engineers

Engineering leadership education is important. This message is loudly echoed by industry. On November 2, 2010 we surveyed 52 engineers from General Electric, with an average of over 20 years of work experience, to understand their position on the skills needed to be a successful professional in industry. Those surveyed clearly indicated that leadership, relational, and communication skills were all critical to career success. There was also a significant difference between how these engineers rated their interest in leadership learning during their years of formal education and at their current career stage. This speaks to a need for raising awareness about the importance of leadership education while future engineers are still in the formative stage.

**Figure 1**
Importance of Leadership Skills to Career Success
(1=lowest, 7=highest)

# Our Vision

An engineering education that is a life-long foundation for transformational leaders and outstanding citizens.

# Our Mission

Accordingly, our mission is to design, develop, implement, and evaluate the concepts, strategies, and components of a world-class engineering leadership development program that:

- Enables students to gain knowledge, skills, and experience that increase their ability and motivation to effect positive change and benefit society;
- Provides students with opportunities to develop their leadership ability by observing, experiencing and reflecting on the leadership process within their groups and communities;
- Provides extracurricular, co-curricular, and curricular components for students throughout their undergraduate and graduate experience;
- Engages faculty, staff, and alumni so as to promote a leadership culture across the Faculty and beyond;

So that it promotes development of exemplary local, national, and global citizenship and provides a foundation that will inspire and guide students throughout their lifetimes.

# Core Programming

Our core activities include curricular, co-curricular, and extra-curricular programs. Curricular programming consists of structured, academic learning in the form of academic courses and our leadership infusion lectures. Co-curricular programming consists of our certificate programs as well as a number of stand-alone workshops, seminars, and other forms of delivery that have expressed learning objectives. Extra-curricular programming consists of events with more organic learning objectives. Augmenting these core functions this year were a number of new initiatives, including our Undergraduate Team Skills Study and the Club Leaders Initiative. We also showcase a number of this year's big draw events throughout this report.

## Academic Courses

LOT offered three academic courses in 2010–2011. Dr. **David Colcleugh**, with support from Prof. **Doug Reeve**, taught APS501: Leadership and Learning in Groups and Organizations in the fall. Dr. **Robin Sacks** taught APS1010: Cognitive and Psychological Foundations of Effective Leadership also in the fall. **Nick Evans** and **Wayne Stark** co-instructed APS1011: Concepts and Applications of Authentic Leadership in the winter term.

Our three leadership courses offer highly experiential learning opportunities. Students wishing to take a course are asked to formally express their interest and commitment to leadership development via our website as part of their registration process.

### APS501: Leadership and Leading in Groups and Organizations

This course covers topics ranging from self-leadership, to setting strategic direction, to implementing change in the business enterprise. It is relevant to aspiring leaders of small not-for-profit organizations as well as of large high-tech companies. Students gain skills and competencies in "thinking frameworks" applied to leadership, creating vision and mission statements, understanding leadership character attributes, and engaging in effective teamwork. In collaboration with the LOT Office, this course was designed and taught by Dr. David Colcleugh, former President of DuPont Asia-Pacific and former President, CEO, and Chairman of DuPont Canada. He is a distinguished engineer with over 40 years of leadership experience in industry. APS501 has been offered to a combined class of graduate and undergraduate students four times since 2007.

### APS1010: Cognitive and Psychological Foundations of Effective Leadership

This course investigates the cognitive and psychological foundations of effective leadership. Students explore current theories driving effective leadership practice including paradigms of leadership, neurophysiological

## Leaders on Leadership Panel Discussion

On November 1, LOT hosted the Leaders on Leadership panel discussion. We welcomed five exceptional business and community leaders to U of T Engineering to share their experience with a room full of engaged students. The diverse panel included: (1) Lucio DiClemente, Corporate Director; (2) John van Leeuwen, CEO of Ecosynthetix Inc.; (3) Amanuel Melles, Director of Capacity Building Unit, United Way of Toronto; (4) Douglas Muzyka, Senior Vice President and Chief Science & Technology Officer of DuPont; and (5) Bonnie Schmidt, President of Let's Talk Science. Students from APS501 were integral to this event. While the panel discussion portion of the evening was open to all students across the Faculty, attendance for APS501 students was mandatory. Students were expected to be active participants in the discussion and were given the opportunity to speak to one of the five panelists in small groups after the formal talk, in order to enhance their learning experience.

correlates of leadership, and psychodynamic approaches to leadership. Students learn and apply skills including mental modeling, decision-making, teamwork, and self-evaluation techniques. The course was designed and taught by Dr. Robin Sacks, whose doctoral thesis focused on leadership education.

### APS1011: Concepts and Applications of Authentic Leadership

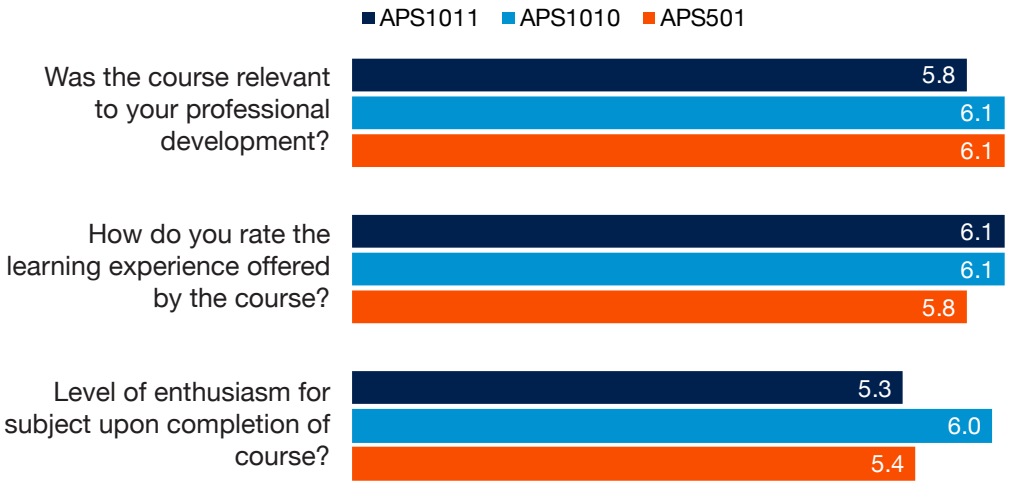
In this course students explore their leadership potential in three modules. The first module teaches students to examine their value system, to identify their aptitudes through self-reflection, and to gain an understanding of their natural approach to working. The second module examines the role of leaders in shaping the work environment and in providing feedback and coaching to others. The final module of the course helps students translate their natural authentic leadership into strategies for change, thereby enabling them to become change agents. The course was designed and taught by management consultants Nick Evans and Wayne Stark.

In the summer of 2010 we produced a short video testimonial wherein APS1011 students spoke about their experience with the course. We posted the video on our website for graduate students who were still confirming their course load. The video received positive feedback, and some students even indicated that the video persuaded them to take the course in 2011. In light of the effectiveness of these videos, we have shot testimonial footage for all three of our courses in the Fall/Winter and will have them ready by summer 2011 for the next academic year.

## Measuring Impact

We value the feedback we receive. In this spirit, we examined the feedback provided by our students through formal course evaluations. Our courses have historically been well-received and this remained the case for 2010–2011. This table presents response averages across some key questions.

**Figure 2**
Selected Results from Formal Course Evaluations
(1=lowest, 7=highest)




## APS1010 Alumni Event

On January 30, 2011, former students of APS1010 organized an alumni event to come together in celebration of their learning with Dr. Sacks (who was also present). The event was not only celebratory, it was also full of learning. Twenty alumni were placed in teams and were challenged in a simulation game to build a medical clinic in a developing nation. Teams had to navigate banking systems, plan real estate, purchase building supplies, and build the clinic while keeping in mind both cultural sensitivity and technical engineering skills. We are delighted to learn that our former students have developed a strong sense of community from taking this course and maintain ties to one another.

# Leadership Infusion Lecture Series

Our Leadership Infusion Lectures Series entered its third year of delivery in 2010–2011. Its main objective is to provide all undergraduate engineering students with a basic understanding and awareness of leadership concepts. They also aim to inspire students to engage with LOT through further leadership development opportunities.

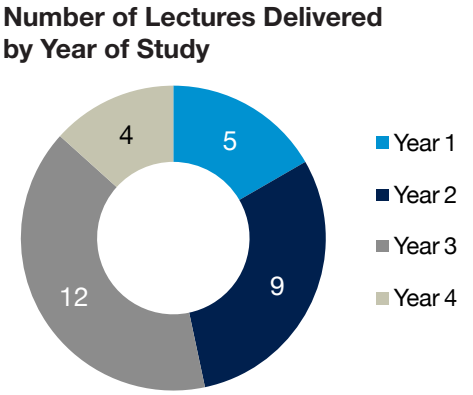
The series consists of six leadership topics delivered by the LOT team. These lectures take place as one-hour guest lectures within regularly scheduled undergraduate engineering courses. The following table provides descriptions of each of our six lectures and their respective learning objectives.

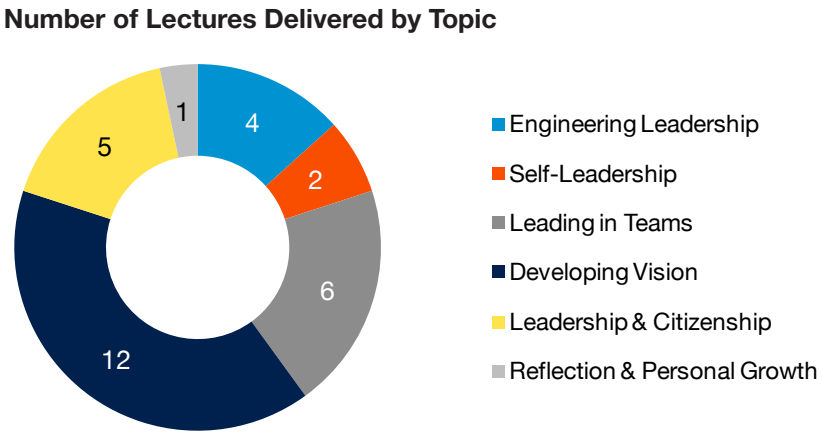
Our goal is that every undergraduate student receives exposure to leadership education via these lectures before graduation. Accordingly, we can expect to give First Year students Lecture One, Engineering Leadership, as a way of broad introduction, and progress to Lectures Five and Six by the time a student reaches his or her fourth year.

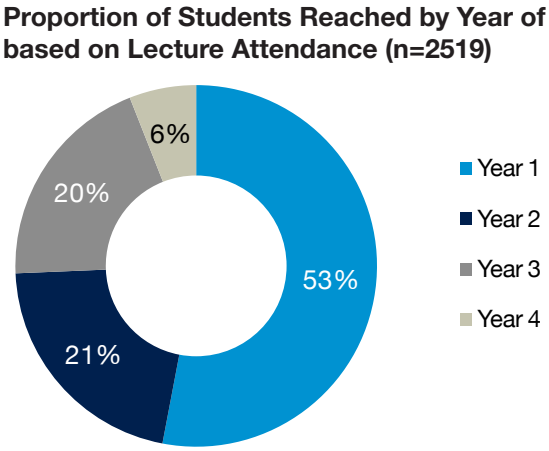
| Lecture | Topic | By attending and participating in this infusion lecture, students will be able to: |
|---|---|---|
| 1 | Engineering Leadership | — Describe how leadership relates to engineering<br>— Use a framework to describe the nature of leadership<br>— Describe how leadership is related to self-awareness<br>— State their values, talents and passions<br>— Identify their leadership style |
| 2 | Developing Your Potential | — Use self-awareness to develop a positive cycle between their choices and activities<br>— Use a framework to describe Emotional Quotient (EQ)<br>— Identify an EQ competency they want to develop and habits to help do that<br>— Determine if they are an introvert or extrovert<br>— Articulate a framework for developing leadership potential |
| 3 | Leadership & Teamwork | — Describe the stages of team development<br>— Use a framework to describe how their leadership type may affect group function<br>— Explain the roles of trust and conflict in effective teamwork |
| 4 | Developing Vision | — Describe how leadership links to vision<br>— Critically analyze a vision statement<br>— Create a compelling vision statement<br>— Use vision as a starting point from which to implement change |
| 5 | Leadership & Citizenship | — Describe elements of citizenship and global citizenship<br>— Connect citizenship to the Social Change Model of Leadership Development<br>— Use a framework to envision putting inspiration into action |
| 6 | Reflection & Personal Growth | — Understand the importance of reflection as a leadership development tool<br>— Utilize various reflection frameworks to reflect upon their personal leadership experiences<br>— Recognize feedback as a key element of reflection within group settings<br>— Begin the process of meaningfully connecting their experiences of self, relational, organizational, and societal leadership |

In 2010–2011, LOT delivered 30 lectures, reaching 2,519 students from all four years of study. This represents our most successful year to date in terms of the number of lectures delivered, as well as our reach across the Faculty.

**Figure 3**
Infusion Lecture Statistics


> “After being involved in LOT, I find that I am more self-aware. I know what my leadership type is and what my tendencies are when working in a group setting. Becoming involved in this program has shown me that I can take on many other extracurricular activities and enrich my academic experience as an undergrad. LOT has given me the opportunity to learn networking, organizational and event-planning skills that are invaluable to the skill set that I have as an engineer.”

## Measuring Impact

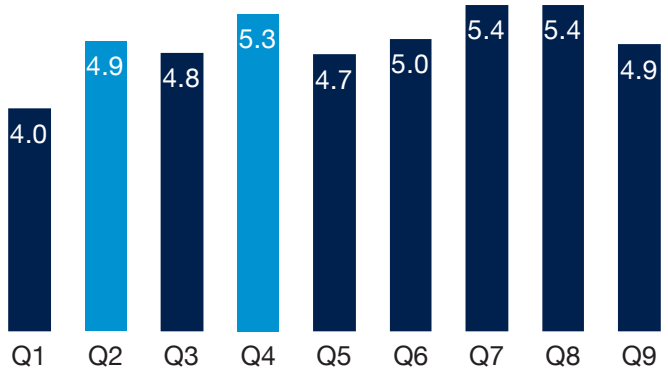
We asked students at the end of each lecture to complete an anonymous feedback form to help us assess our impact. This year we assessed each lecture with nine questions on a scale of one to seven (1=very low, 7=very high). We collected 1,043 surveys over the course of the year.

The responses we received indicated generally positive feedback. We note that students rated their interest in leadership learning higher after the lecture than before it, which we take to be an indication that our pedagogical goals were met (difference is statistically significant at 95% confidence). Furthermore, we point out that students rated their interest in learning about leadership after graduation higher than their interest now (this difference is also significant at 95% confidence).

These findings mirror those from the survey of GE engineers. Both experienced engineers and students alike indicated their interest in leadership learning to be much higher after leaving school rather than during (or in the case of our students, they anticipate that they will be higher). This says to us that students believe leadership education will be of value to them in the future, but there is a disconnect with their formal education.

This reaffirms our need to continue making the case that leadership development during school is an important opportunity and investment in their summative education.

**Figure 4**
Student Lecture Evaluation Feedback




| No. | Question |
|---|---|
| 1 | Your interest in learning about leadership before the lecture was... |
| 2 | Your interest in learning about leadership after the lecture was... |
| 3 | Your interest in learning about leadership while at university is… |
| 4 | Your interest in learning about leadership after graduation is… |
| 5 | The effectiveness of the learning experience was… |
| 6 | The value of the learning experience was… |
| 7 | The delivery of the lecture was… |
| 8 | The relevance of this lecture to your professional development is… |
| 9 | The intrinsic value of the subject matter is… |

## UnERD 2010

The Undergraduate Engineering Research Day (UnERD) took place on August 6, 2010 in the Bahen Centre for Information Technology. UnERD is a student-run, annual research fair that provides undergraduate students the opportunity to showcase their research within the Faculty.

LOT provided logistical support and facilitated meetings to help the student organizing committee see this complex event through to fruition. UnERD 2010 had approximately 30 podium presentations and 44 poster presentations. The event gave students, staff, and faculty the chance to see the wonderful research conducted by its undergraduate students.

**Photos courtesy of Fiona Chye.**

I want to be remembered as the one who listened and understood, the one who focused on the collective emotional intelligence of the group to bring us home a championship, and the one who encouraged us to be as creative and innovative as we can be...

I'm committed to building strong team relationships, motivating the team constantly and keeping myself motivated—Friendship, Self Improving, Fun.

I commit to providing others the same opportunities I have been given in my community.

I commit to empowering others to take initiative and get them to "break out of their shells," "take the next step," "ask for forgiveness, not permission," and "lose sleep for me."

I want to run an informative and challenging design contest for high school students across North America. AND I want my exec team to have fun and enjoy themselves—it's not all work!

I would like to be a guide for my members, to help them find an issue/purpose they can commit to, and to help them make changes, whether big or small.

I'm committed to providing opportunities and removing obstacles to allow Engineering Clubs to reach out to as many students as possible.

I'm committed to creating a space where club members can contribute and implement projects that they are passionate about and that, at the same time, further the organization's mission.

Students who participated in our Club Leaders Initiative set commitments for themselves as leaders that they shared as a group. We present these commitments here.

# Club Leaders Initiative

Until this year, LOT has focused primarily on introducing leadership education to students who did not necessarily have direct experience leading others. In Summer 2010 we launched the Club Leaders Initiative. It addressed the need to deliver support and training to those who were in positions of leadership in student organizations.

The Initiative brought together a group of club leaders from diverse student organizations within the Faculty, such as Engineers Without Borders (U of T Chapter), Formula SAE Race Car, and Eyes of Hope. We wanted to understand students' specific needs and to design an approach to engage and support their growth. We sought to build community with these student club leaders through monthly sessions, bringing them together so that they could learn from each other's experiences. Through an in-depth series of interviews, follow-up discussions, and group facilitation, we examined student experiences and infused this with theories and frameworks from leadership and management resources. The work we developed through this summer initiative formed the basis of curriculum for our Organizational Leadership Certificate Program offered in Winter 2011.

A second result of the Club Leaders Initiative was the publication of our Handbook for Student Leaders. It chronicles and contextualizes the real-life challenges of executive members of student organizations. We believe it is an indispensable resource for emerging student leaders, especially as they take on positions of increased responsibility within their groups. It covers several key topics, including recruitment, team development, transition and succession, and purposeful leadership.

# Co-Curricular Certificate Programs

Our Certificate programs provide co-curricular programming to students wanting structured learning outside of regular class time. Students enrolled in a leadership certificate program attend a weekly, two-hour workshop over a five-week period. Those who successfully complete the program receive a certificate in recognition of their achievement. Since the launch of our first certificate program in Fall 2008, we have met strong demand for these learning opportunities; online applications from students have consistently exceeded the enrolment limit.

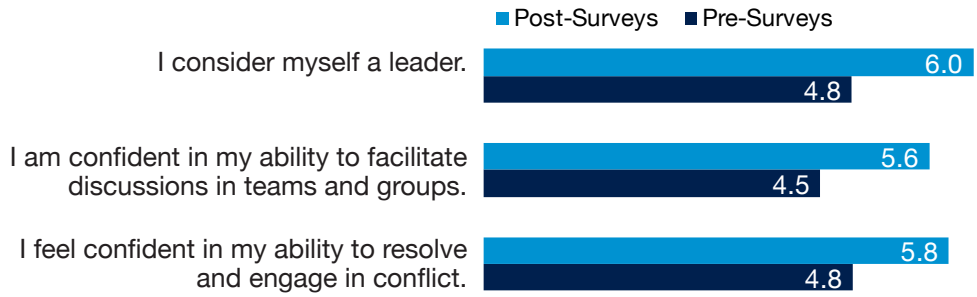
### Certificate One: Team Skills

Our first certificate program "Team Skills" was launched in 2008 and has since been offered four times, most recently this fall. In it, students learn about their personality styles and how this translates into leadership strengths. They also learn about alternative styles and how to adapt their style when working with others who have different values and approaches. They practice conflict resolution techniques, dialogue processes, and acquire tools to address challenging group dynamics. Lastly, they examine and reflect on their own social identities and how their cultural, gender, economic, and sexual identities impact their experience and their leadership. Infused throughout the program is an emphasis on self-reflection. This is meant to fortify insights gained and support students to respond intentionally to future team situations.

## Measuring Impact

We surveyed students before and after the program to understand perceived changes in student competencies. We collected 39 pre-surveys, and 32 post-surveys. Students rated themselves on a scale of one to seven corresponding to their agreement with three statements. The chart below provides average results in which students rated themselves higher after having taken the Certificate Program (differences statistically significant, 95% confidence). We view this as positive indication that our pedagogical goals were met.

**Figure 5**
Team Skills Certificate Program Survey Feedback




"The best part of the program was the engaging activities that provided the opportunity to put our skills to practice right away in a team environment, and also being taught by a professional who truly believed making a positive impact made a difference in the world."

### Certificate Two: Leading from the Inside Out

Our second certificate program titled "Leading from the Inside Out" was developed and first delivered in Fall 2009. It employed arts-based learning to explore four foundational competencies inherent to self-leadership: self-awareness, personal congruence, vision, and comfort with taking risks. Students engage in theatre games, discuss the Jungian concept of the personal shadow, are led through guided visualization, and create a vision-piece which they present to their peers at the final session. Learning is highly interactive, experiential, and reflective. By offering opportunities for reflection, students develop the tools for ongoing reflection they will need to continue developing themselves as leaders. Leading from the Inside Out was not delivered in 2010–2011.

### Certificate Three: Organizational Leadership

In Winter 2011 we launched our newest Certificate Program to fill an important gap in our delivery: programming designed especially for student club leaders. We invited club presidents and executive members of student organizations to apply. We designed curriculum for this third co-curricular certificate after piloting the Club Leaders Initiative over the summer, wherein we offered monthly sessions to student leaders.

The Organizational Leadership Certificate Program involved four experiential sessions: (1) Leader as Visionary; (2) Leader as Facilitator; (3) Leader as Teacher; and (4) Leader as Coach. On the fifth session students presented how they applied their learning directly to their club or organization.

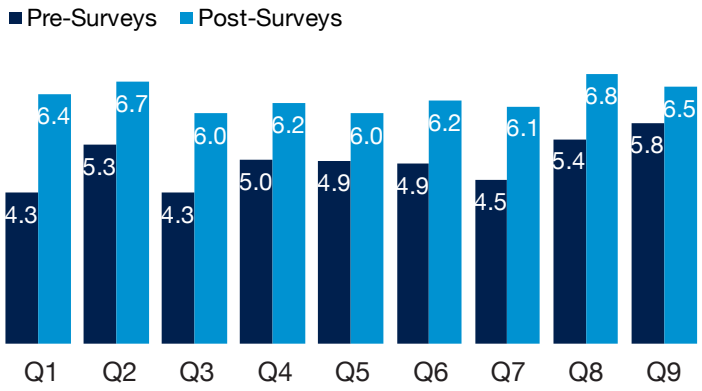
| No. | Question |
|---|---|
| 1 | I can identify the various facets of organizational leadership. |
| 2 | I can explain the relationship between my personal vision and values and those of my organization. |
| 3 | I employ tools to uncover the deeper motivations and values of others. |
| 4 | I implement tools to effectively facilitate meetings and/or processes within a diverse group. |
| 5 | I recognize and demonstrate elements of constructive and empowering feedback with my teammates. |
| 6 | I practice and reflect on communicating clear expectations. |
| 7 | I can identify tools for recognizing and rewarding team members. |
| 8 | I can identify tools for recognizing and rewarding team members. |
| 9 | I consider myself a leader. |

## Measuring Impact

We solicited feedback from students who participated in our first run of Certificate Three: Organizational before and after the program. We collected 32 pre-surveys and 26 post-surveys. We were pleased to receive tremendously positive feedback provided by both quantitative and qualitative measures. Students were demonstrably excited to have had the opportunity to learn organizational leadership skills while also building a sense of community among other student leaders in the Faculty. Students were asked to rate on a scale of one to seven their agreement with nine statements. The chart below provides average results in which students rated themselves higher after having taken the program (differences statistically significant, 95% confidence).

In response to the positive feedback we received, we will again hold sessions for student leaders in Summer 2011 and Certificate Three will be offered again in 2011–2012.

**Figure 6**
Organizational Leadership Certificate Program Survey Feedback



# Undergraduate Team Skills Study

LOT has undertaken significant work on examining the pedagogy and practice of effective team skills within the undergraduate curricular experience. Engineering students frequently engage in group work; indeed, it is not uncommon for a portion of a student's grade to be assigned by how well he or she performs as a group member. Hence, we found it important to understand what effective team work resembles, and how to maximize its efficacy. Through our study, we seek to answer these four questions:

1. What effective teamwork skills should we be teaching to our students?
2. What are we currently teaching in terms of teamwork skills?
3. How should we teach effective teamwork skills?
4. How should we evaluate the effectiveness of teaching teamwork skills?

We began the process of conducting a comprehensive literature review to determine best practices for teaching team skills to students. We piloted and assessed a number of pedagogical tools in CHE230: Environmental Chemistry, including a 360° assessment, a team skills leadership infusion lecture, and a tutorial introduction to effective team development. Looking forward, we are pleased to continue our ongoing study with the research assistance of **Patricia Sheridan**, engineering PhD student in the Faculty.

> "I've always had a hard time making sure that everyone in my club was working towards a shared vision. I applied the things I learned in the visionary workshop, and asked the members to reflect about their own vision and how it fit with their role in the group. In the end, I was able to engage my members and create a more motivated team."

**Organizational Leadership Certificate Program**
**February 2011**

# Department & Division Programs

Our Department & Division Programs are important points of entry for students wishing to get involved directly with LOT and leadership development. Students meet with others within their program to form a leadership "working group," under the guidance of appointed staff and faculty members, who are also from their program, as well as LOT's Leadership Education Specialist. Throughout the year, these student groups engage in leadership development meetings and organize leadership-oriented events. Through this vehicle students build community and gain hands-on leadership experience by taking their ideas and turning them into action. Our office provides support and oversight for the working groups, who operate under the broader LOT umbrella.

## D&D Working Groups

With the addition of Leadership Education Specialist **Estelle Oliva** to the LOT staff team in May 2010, we have been able to provide additional support to the working groups this year. We consulted working group members on team processes and development. We also encouraged working groups to incorporate a learning component within each of their meetings. Furthermore, we increased the level of communication and collaboration between working groups with the introduction of the D&D Newsletter (see "Communications") as well as through more intentional resource sharing. Over the following sections, we share a brief snapshot of the each of the working groups' accomplishments over the year.

### Chemical Engineering & Applied Chemistry

The ChemE LOT working group had a successful year. The group held many events including a leadership training day, a networking workshop, the "Finance Your Education" workshop, the "Build Small, Think Big" panel discussion and case study, the "Ace-the-Interview" mock interview sessions, an annual alumni breakfast, and ChemE-based "Research Days." The annual ChemE LOT Summer Program took place between May and August 2010 and it received positive feedback.

### Mechanical & Industrial Engineering

The MIE LOT working group had a transformative year

ChemE LOT Summer Program 2010

as a team. With a number of their previous members on PEY, the team was mainly composed of new, Second Year members. These individuals brought incredible enthusiasm and passion to the working group. During the fall term, the working group started off each of their meetings with a mini-leadership session that imparted skills that they could apply while planning their events. The major events of their year included a professional networking event facilitated by Colleen Clarke, an effective public speaking event facilitated by Professor Doug Reeve, and a collaborative event with ECE LOT.

### Materials Science & Engineering

This year the MSE LOT working group had a vision of discovering "the growth of an engineer." The group hoped to inspire fellow engineering students to grow on different levels: self-awareness, emotional intelligence, and professional skills. Their major events included well-attended panel events, seminars, and a transition event for their department.

### Electrical & Computing Engineering

The ECE LOT had a successful year with many events geared towards professional and career development. During the summer, the ECE LOT group offered a lunch-and-learn on "Building a Leadership Portfolio." The ECE LOT group offered a variety of workshops: Networking, Dining Etiquette, as well as a community-building socials. Next year, the group is looking forward to fostering more collaborative initiatives with IEEE and Friends of Design.

### Engineering Science

This year the EngSci LOT group revisited their vision and mission, which brought a sense of renewal to their group. Determining their vision for the year was an extensive process. Over the course of three separate meetings, group members were encouraged to reflect upon their own goals and what brought them to the working group. Working with the Leadership Education Specialist, they collected their thoughts and ideas. The group then created events that stemmed from their extensive visioning process. Overall, it was a successful year of strengthening foundations for EngSci LOT.

### Leaders of Tomorrow: Graduate

The graduate student chapter of LOT organized several successful and innovative events this year. The year started off with a welcome barbeque followed by several seminars that promoted inclusivity between graduate students and the community. These included the "Engineers and Public Policy" seminar about the importance of participating in the federal election of 2011. Additionally, their sustainability case competition gave both graduate and undergraduate students the opportunity to work together on a sustainability case.

## TrackOne

**Note:** *The TrackOne program for First Year students is designed to allow entering students the ability to gain broad exposure to the different engineering disciplines prior to choosing a discipline.*

LOT increased its engagement with the TrackOne Program this year to build leadership capacity within the First Year cohort. Throughout the Fall and Winter sessions, LOT guided a group of TrackOne students through a series of leadership activities and workshops. Taking the knowledge they gained over the year, the TrackOne group facilitated a leadership workshop for their peers in April for APS191: Introduction to Engineering. These students plan to implement future initiatives that will enhance leadership development for future TrackOne cohorts.

## Transition & Succession

This year we delivered our workshop Passing the Torch: Transition and Succession for student executives in extra-curricular organizations on March 22. Annual student turnover presents numerous challenges to the exercise of effective leadership. We developed this workshop to help students keep organizational memory alive within their group and to impart the skills needed to facilitate a smooth transition to the next generation of executives within a student organization. Pass the Torch: Transition and Succession was co-developed and co-facilitated by LOT veteran **Sabrina Tang** (1T1 + PEY) and the LOT Office. To complement this workshop, we created *Transition & Succession*, an online document filled with tools and resources that support student leaders in their transition planning. It is available on our website.

# Cross-Faculty Working Group

One of the most vibrant parts of LOT programming are the events organized by the Cross-Faculty student working group.

The Cross-Faculty student working group is comprised of students from each Department and Division in the Faculty as well as a number of students in leadership roles in organizations such as the Engineering Society and Engineers Without Borders. The purpose of this student group, convened by LOT Coordinator Annie Simpson, is to conceive and execute leadership-related events that will engage the larger student body while giving group members opportunities to work across disciplines and reflect on their leadership learning. In 2010 the group had a particularly diverse group with many new members. They invested a significant amount of time to group visioning and deciding on the kinds of competencies that we wanted to foster in students through our events. They decided that they were working towards a future where engineering students:

- Are socially and politically aware and engaged
- Are able to converse and communicate
- Have opportunities to lead a team to implement new ideas
- Are challenged to go beyond self-imposed limits and to question beliefs and assumptions
- Are exposed to multiple approaches to leadership
- Are skilled at asking questions and examining assumptions

To this end the group organized three events that promoted these competencies: "The Art of Powerful Conversations;" "Step Up, Speak Out;" and "Outward Bound Day," a daylong team building day at the Evergreen Brick Works.

# Working Group Retreat

On October 2, 2010, representatives from each of the Department and Division working groups came together during for a retreat facilitated by the LOT office. The retreat offered an invaluable opportunity for students to reinvest in themselves as leaders through intentional learning exercises.

> "...it was really fun, engaging, powerful, informative...each person had an opportunity to demonstrate their leadership style and listen and practice building harmony."

During the morning session, students participated in a drumming and team-building activity facilitated by Rhythmic by Nature. Following lunch, the group learned more about themselves and each other through an interactive Myers Briggs workshop facilitated by Paula Greenwood of the Office of Student Life, and ended with event planning activities. This retreat provided an opportunity for the different working groups to come together, learn from each other, and build a community of support.

# The Art of Powerful Conversations

The LOT-Faculty Office and LOT ChemE Working Group collaborated to bring renowned motivational speaker and author Stuart Knight to U of T Engineering on November 24. Knight spoke to over 100 students about the value and power of personal connections and offered tips and tools to help us engage more frequently with those around us. The event was interactive. Knight got the audience mingling with one another, giving those in attendance a chance to practice relationship-building techniques.

**A leader helps a team to dream**
**To navigate the seas.**
**She instigates, facilitates and fascinates,**
**encouraging them to articulate their desire for change,**
**To rearrange, to estrange.**
**She teaches them to reach,**
**To beseech,**
**and to grow into what they know deep inside.**
**Her passion can't be fashioned to fit a mold.**
**Instead she holds a powerful flame,**
**Born not from fame,**
**Protected from the rain.**
**She gathers people together**
**In spite of the weather,**
**To share the flame that cannot be tamed!**
**Together they captivate, celebrate & perpetuate lasting change.**

—Cross-Faculty Working Group. Poem written May 4, 2011.

**Why do you believe that engineering leadership education is important?**

"Technology is an increasingly pervasive element of our society, yet engineers are by and large unrepresented amongst key decision makers. Leadership education is required to empower engineers to speak up and contribute to these key decision making processes. Engineers must seek to develop themselves as leaders to better understand and influence the effect that the technology they develop has on society."

## Step Up, Speak Out

On January 25 LOT hosted Step Up, Speak Out, one of the year's major events. "What is your vision for the engineer of tomorrow?" We posed this question to members of the Cross-Faculty working group, to which they called for an engineer that is socially and politically aware and engaged. From this visionary crucible Step Up, Speak Out was forged. We invited three community leaders, effecting change at three different stages in their careers, to speak to U of T Engineering students: alumna **Natalia Lizon** (INDY 0T9+PEY), co-founder of Women Empowered in Engineering; Dave Meslin, Toronto civic activist; and Dr. James Orbinski, former International President of Médecins Sans Frontières/Doctors Without Borders and cross-appointed faculty at U of T.

# Celebrating Our Students

Annual Appreciation Night, March 2011

Our program would be nothing without its students. We have the fortune of working with exceptionally bright, young people who have demonstrated enormous potential as leaders. We have committed ourselves this year to recognizing them and their achievements.

## Scholarships & Awards

It is essential to formally recognize students who exhibit exceptional talent as leaders.

We currently offer four Leaders of Tomorrow Awards administered by the Faculty's Office of the Registrar.

- The ECE Leaders of Tomorrow Award for second or third year students.
- The Troost Family Leaders of Tomorrow Award for fourth year students in ChemE.
- The Class of 5T9 Chemical Engineering Leaders of Tomorrow Award for third year students.
- The Professor James W. Smith Chemical Engineering Leaders of Tomorrow Award for second year ChemE students.

Recipients of these awards must demonstrate their potential to become outstanding leaders through participation in student councils, clubs, community organizations, volunteer service both on and off campus, cultural groups, or athletics. Furthermore, recipients have the ability to inspire others to action and to excellence.

In addition to these, the Faculty offers numerous other scholarships and awards to students demonstrating excellent leadership capacity. We encourage readers to view a complete list of these awards through the latest Academic Calendar, published by the Office of the Registrar.

## Holiday Party

We welcomed the U of T Engineering community to our Holiday Video Launch Party on December 2. The aim of this event was to acknowledge the hard work of everyone involved in LOT's many programs, to recognize the achievements of our student working groups, to provide an opportunity to showcase LOT's work over the Summer and Fall terms, to formally launch our promotional videos, and to spread the holiday cheer before the beginning of exams. We were pleased with the excellent turnout, which saw the coming together of students, staff, and faculty.

## Annual Appreciation Night

Our Annual Appreciation Night has become a cherished tradition. Every year, the LOT office hosts a special evening of food and fun to acknowledge and celebrate the hard work of all those involved in making our program a success. This year we held our Annual Appreciation Night on March 31, 2011. We welcomed students, staff, and faculty members who participated in the Department & Division working groups, APS courses, and Certificate Programs. Guests spent the evening playing icebreaker challenges, learning about each other's yearly highlights, and watched a touching slideshow to cap off the event. Our fine emcees, **Ryan Chen** (ECE) and **Alberto Picard-Ami** (MIE), kept everyone spirited by their professionalism, comedic timing, and enthusiasm.

## Shahed Al-Haque

**Define "leadership" before LOT.** Telling everyone else what to do and basically being the boss. **Define "leadership" since LOT.** Influencing others to create positive change. **A "light bulb" moment.** When I figured out the basics of cooking: that you don't have to follow recipes exactly and that you can make up stuff along the way and usually the food turns out okay. **What do you think is the biggest misconception about you?** I think people often think I'm really serious and intense or that I have no sense of humor, which I really hope is not true. **If you were a fruit or vegetable, what would you be and why?** I think I'd be a pomegranate just because I always liked the sound of that word.

# Faculty Five

Faculty Five shines the spotlight on students who have been involved with the LOT program. We ask two students five questions, painting a candid picture of them as student leaders through their responses. Faculty Five features in our D&D Newsletter (see "Communications") as well as on our website. We've re-printed our Faculty Five spotlights in this report. Our aim with the Faculty Five is to not only celebrate our students, but also to depict a more human impact to our program.

**How have you personally changed as a result of your engagement with LOT?**

> "As a result of LOT, I think I've learned more about myself as a person. The experiences within LOT have caused me to reflect on my beliefs and values. I've also learned how to work more effectively in teams and communicate my ideas to others much more clearly and confidently. A lot of these skills may fall under leadership, but I also think they are just life skills everyone needs to learn."


**Define "leadership" before LOT.** Leadership is the process of guiding, motivating and empowering individuals in a group towards a common goal. **Define "leadership" since LOT.** Leadership is the art of guiding, motivating and empowering individuals in a group, with attention to the process and journey in achieving a common goal. Specific to engineering, leadership is a part of every engineer's future, given our role in society and the skills we acquire and continuously refine. **A "light bulb" moment.** While on PEY, I saw firsthand that the saying is true, that there are numerous leadership opportunities available to young and junior staff. Though they may not be apparent immediately, opportunities do exist and they are there for us to seize them. Further, during PEY I gained a great appreciation for the beauty of a good idea and using one's initiative and leadership skills to develop one. **What do you think is the biggest misconception about you?** The biggest misconception about me would be that my relatively petite size conveys fragility, but I am just the opposite. I am a strong and confident young woman ready to take on the world! **If you were a fruit or vegetable, what would you be and why?** I would have to be an apple as we both are homegrown, colourful, sturdy and reliable. A "hello" a day keeps the frowns away!

# Growing Our Community

This year we delivered a flurry of outreach activities both within and beyond the Faculty. We share with you in this section a number of initiatives that connected us to a number of exciting stakeholders: new students, future students, Faculty colleagues, colleagues from the broader U of T community, Canadian peers, and American peers.

## Summer Leadership Institute 2010

LOT hosted "Coaching: A Methodology to Enhance Research, Teaching, and Student Life" on June 9, 2010. This professional development opportunity brought together 42 staff and faculty from across U of T for a full day of learning. We designed this workshop to appeal to research team leaders, instructors, and student life professionals. We conducted the day in three modules: (1) coaching for aspirations, (2) creating clarity and direction, and (3) enabling others to move their ideas forward.

The event was led by management consultants Nick Evans and Wayne Stark, who also teach one of LOT's graduate leadership courses, APS1011: Concepts and Applications of Authentic Leadership.

### { Measuring impact

We asked participants after the event to complete a survey of their experience. When asked "On a scale of one to ten, how would you rate this workshop overall?" respondents rated our event an average of 8.25 (n=24). When asked, "Has this workshop increased your interest in participating in other leadership development opportunities?" 21 of 24 (87.5%) respondents indicated "yes." We also asked what participants enjoyed most about the event. Respondents typically indicated that they liked the experiential, hands-on programming and the high level of interaction between colleagues across campus.

## CEEA 2010

LOT delegates attended the inaugural Canadian Engineering Education Association (CEEA) Conference hosted by Queen's University in Kingston, Ontario from June 7–9, 2010. We delivered three presentations on leadership education: Professor **Doug Reeve** presented on "The Leader-Engineer" and discussed the pressing need to engage engineers as leaders in the world; Professor **Greg Evans** spoke about the Leadership Infusion Lecture Series; and **Annie Simpson** presented on the ChemE Summer Leadership Program. By participating in this conference, LOT formed important relationships and generated much conversation about leadership education.

## ULEAD Lunch & Learn

On March 24 LOT convened a meeting of the University Leadership Educators Association (ULEAD). ULEAD is a community of practice comprised of faculty and staff who are engaged in leadership education and development at U of T. Members come from diverse fields and disciplines including the Faculty of Medicine, School of Public Policy, New College, Office of Student Life, Faculty of Applied Science & Engineering, and Faculty of Physical Education and Health.

We invited Anne Dranitsaris and Heather Hilliard to facilitate a lunchtime session on the "Striving Styles" individual personality theory that they developed. Drawing on both Myers-Briggs Type Indicators and the True Colors model of personality identification, Striving Styles emphasizes the fundamental needs of eight different personality types. This session stimulated conversation and community-building as we discussed the strengths and areas of growth for each of the eight types.

## Clubs Day

For the first time, LOT took part in the Faculty's annual Clubs Fair on September 6 as part of Orientation Week for new undergraduate students. We had a strong booth presence supported by staff and student volunteers, giving hundreds of First Year students the opportunity to learn more about our leadership development opportunities. LOT also delivered a seminar presentation that day to students who wanted more information.

## Faculty Day

LOT showcased its work at Faculty Day, U of T Engineering's annual professional development day for staff and faculty. This year's event, dubbed "Faculty Day 2011: Reconnecting," took place February 25 and focused on renewing relationships and broadening our knowledge of each other's work. LOT maintained an information station in the Bahen Atrium, giving us the chance to showcase our latest initiatives and projects. We want to thank all our LOT student volunteers who offered their time over Reading Week to be ambassadors for our program.

## Galbraith Society Welcome Day

LOT ran a workshop for the Galbraith Society Welcome Day on April 30. At this annual event, U of T Engineering hosts a group of exceptional high school students who have the opportunity to attend the University of Toronto. During LOT's session, we encouraged prospective students to network with others, reflect upon and share their leadership journeys, and engage in a challenging interactive team-building challenge. We look forward to contributing to this event next year, where we will again have the opportunity to reach out to a new cohort of outstanding students.

## University of Tokyo+University of Toronto=UT$^2$

In Summer 2010 LOT was invited to present a leadership workshop to the University of Tokyo School of Engineering. As part of a collaborative partnership between the Universities of Toronto and Tokyo, known as "UT$^2$," two LOT graduate students were geared up to facilitate an interactive workshop to 30 conference delegates.


**Define "leadership" before LOT.** Being a model figure as best I can for others to follow and learn from. Also, it meant to take initiative and take action. **Define "leadership" since LOT.** Leadership after LOT though is more about serving others and giving back to the community, which has made me change my previous goals. I used to strive to be a role model for others, now, I try to help others find the leader in themselves. **A "light bulb" moment.** I was in third grade. There was a very tough question asked to us in class [by the teacher]. My guesses at first were ridiculous and made no sense. I thought, why not try reading the question and actually understanding what the question is asking for. This little inspiration is what gives me the ability to never give up and never back down. **What do you think is the biggest misconception about you?** People think I am just naturally intelligent. To be honest, I might seem that way when you meet me, but deep down, its all about my work ethic and focus. **If you were a fruit or vegetable, what would you be and why?** I would be a watermelon. I might seem big tough from the outside, but from the inside, I am very soft and sensitive.

# U.S. Universities Outreach

This year marked a critical transition in the field of engineering leadership education. While the Engineering Leaders of Tomorrow program is the only comprehensive leadership development program for engineering students in Canada, there are a number of top-tier U.S. schools that recognize the importance of developing engineers as leaders and have substantial programs.

U of T Engineering was the only Canadian school to attend the inaugural Engineering Leadership Meeting, co-sponsored by Pennsylvania State University (Penn State) and the Massachusetts Institute of Technology (MIT). LOT represented the Faculty at this two-day gathering of leadership educators, which took place October 20–21 at State College, Pennsylvania. LOT attended the second gathering of engineering leadership programs hosted by Northeastern University on April 11–13 in Boston, Massachusetts.

Delegates at both gatherings were impressed by our program's creativity and emphasis on personal and societal leadership. We had a number of schools request visits to learn more about the LOT program.

We also undertook a formal visit to the Bernard M. Gordon-MIT Engineering Leadership Program at MIT on April 14 where we observed the program and its students in action. This sparked ideas and dialog that we hope to continue as we move forward.

### Learning Outcomes

One of the most significant outcomes of our trips to U.S. schools was learning about the different approaches of different leadership programs. Some schools have their students focus on developing professional skills, while others have their students focus on product development and engineering innovation. In comparison, our program was most focused on personal and team leadership competencies. Other schools, such as MIT, focus on delivering highly intensive programming to smaller groups of students, whereas we favour offering many levels of entry with varying levels of intensity and commitment. Some programs work closely with professional business schools while ours involves a strong emphasis on experiential learning, self-awareness, and relational intelligence. We were impressed by the work of these other schools and are excited to grow an international community of practice.

More specific outcomes of these gatherings include an intention to articulate our program philosophy, underlying beliefs, and core competencies that we are teaching so we can better assess our progress. Both MIT and Northeastern University have rubrics that identify the leadership skills

and leadership philosophy that they espouse. This concise articulation allows them to give students personalized feedback, which accelerates their development. We are developing ways to integrate more personalized feedback to our students.

The following U.S. schools joined us in the gathering of engineering leadership educators:

- Bernard M. Gordon-MIT Engineering Leadership Program
- Penn State University Engineering Leadership Development Program
- Iowa State University, Engineering Leadership Program
- U.S. Naval Academy, Leadership, Ethics and Law Department
- Southern Methodist University, Bobby B. Lyle School of Engineering
- Tufts University School of Engineering Gordon Institute
- University of California-San Diego, Jacobs School of Engineering, Gordon Engineering Leadership Center
- The Gordon Engineering Leadership Program at Northeastern University

> "The Leaders of Tomorrow Program has been a great complement to my engineering education. The program provides a great opportunity to develop a set of softer skills that otherwise are not as emphasized in the engineering curriculum, such as teamwork, communication, awareness of self, and awareness of others. The skills and tools taught by LOT have enabled me to execute and lead projects much more effectively than I otherwise would have. Thanks to the LOT program, I now feel confident about my ability to become a strong leader in industry and society."

## Outward Bound Day

On March 26, 2011 LOT organized a full-day excursion to Evergreen Brick Works in Toronto's Don Valley with Outward Bound Canada to bring together student leaders from all Department and Division Working Groups for a day of excitement, personal growth, and outdoor activity. Students engaged in team-building activities, explored Toronto's ravines, participated in a cook-out, and practiced communication skills while working with others through challenging ropes courses. The day's activities were designed to challenge students' team dynamic, to teach them the value of interdependence, and to bring them closer as a community. The day's most important lesson was that when teams work together effectively, they can accomplish far more than any single individual. Outward Bound Day was an example of successful programming that pushed the boundaries of conventional learning exercises.

# Communications


Major event posters

We have worked hard over the year to enliven our communications strategy. Our reach and impact depend largely on the extent to which we can convey our message effectively to our stakeholders, the most important of whom are our students. In 2010–2011 we have advanced in a number of areas.

## Web

### Website

One of our goals from the previous year was to develop our online presence so that we can better deliver informative, timely, and relevant information about our program. Our completely redesigned website, launched in September 2010, marks a vast improvement. It now reflects the vibrancy and scope of our program, delivers information more effectively, and harmonizes with the Faculty's visual standards.

{ Measuring impact

During the academic year our website has received 8,353 visits and 30,627 total page views from 73 countries/territories. The average visitor spent three minutes and 23 seconds on our website, viewing four pages during their stay. Statistics generated by Google Analytics.

### Social Media

We have also expanded the reach of our communications strategy to encompass social media technologies this fall. Our Facebook group "Engineering Leaders of Tomorrow" and our Twitter account "@EngineeringLOT" allow us to provide quick updates from our office, send event reminders, and direct visitors to our website for specific content. By incorporating these tools into our workflow, we hope to reach more students and stay connected to the broader flow of user-generated information.

### D&D Newsletter

In the fall of 2010 we launched our D&D Newsletter, a periodic electronic publication. It reaches students, staff, and faculty in the LOT working groups across Departments and Divisions. The D&D Newsletter shares news and information about happenings across the Working Groups to build community. This publication allows the LOT-Faculty Office to acknowledge the fantastic work done by


**Define "leadership" before LOT.** The process of motivating and coordinating people to work together to achieve a shared goal. **Define "leadership" since LOT.** The process of motivating and facilitating people to work together to achieve a shared goal. **A "light bulb" moment.** Realizing that student clubs are a good lab for trying out different business management and leadership strategies—can learn from the successes and failures of the experiments before applying them in the "real" world. **What do you think is the biggest misconception about you?** I find it difficult to think potential misconceptions because in my interactions with others, what people see is what they get. I'm known for wearing my heart on my sleeve. **If you were a fruit or vegetable, what would you be and why?** Grapefruit: Brightly coloured, zesty, sweet and sour—a bundle of potential contradictions.

the working groups, offer resources to support leadership development and programming, as well as share other editorial features of interest. All issues are available online on our website.

## Poster

Our office produces a number of graphic communications tools throughout the year. Print posters are an important part of our promotional strategy for events and workshops. We strategically place our full-colour posters around campus to deliver our message, promote our programs, and to establish an extended physical presence for LOT.

## Video

LOT also released its set of promotional videos in Fall 2010. Our one-minute video is targeted to prospective students and invites them to get involved with the program; our three-minute video is targeted to a general audience and speaks to the greater institutional need for leadership education in engineering. LOT formally launched these videos during our Holiday Party in December 2010. They are available to view on our website, our Vimeo channel, and on YouTube.


## Making the News

As LOT grows in scope and scale, we find ourselves under more and more spotlights showcasing our work. In this section we share points of exposure that have increased our profile to the University community. We believe that developing LOT's footprint within the U of T media ecosystem is important to cultivating student mindshare.

### The Bulletin

The U of T Bulletin featured an article on LOT and its parent organization ILead in its August 24, 2010 issue. Titled "Shaping the Engineers of Tomorrow," the article discusses the birth of the Institute for Leadership


Education in Engineering ("ILead"). Professor Doug Reeve, ILead Director and LOT Co-Leader, discussed his vision for leadership education and the new institute. The article is available electronically through News @ University of Toronto and the Bulletin Archives.

### U of T Homepage

On December 16, 2010 Prof. Doug Reeve, Prof. Greg Evans, and Annie Simpson became the welcoming faces of the University's central homepage. LOT senior leadership was featured on the "World-Class Faculty" banner. This prominent placement has generated great exposure.

### The Engineering Newsletter: Volume 4, Issue 6

The Faculty's Engineering Newsletter featured the article "Leaders of Tomorrow Want Students to Step Up and Speak Out" in their February 17, 2011 issue. This article shined the spotlight on Step Up, Speak Out, our memorable three-person talk featuring Dr. James Orbinski, former International President of Doctors Without Borders/ Médecins Sans Frontières, that took place on January 25, 2011.

### Current Engineering Undergraduates Website: Undergrad news

The Current Engineering Undergraduate website placed the news article, "Take a Look into Leaders of Tomorrow" on March 2, 2010. This article highlighted current events from the office. As the Undergraduate site is one of our top referrers of web traffic, the article also served to keep LOT on students' radar during a busy and stressful period of the academic year.

### Faculty Homepage

The Faculty of Applied Science & Engineering featured "Engineers Leading Change" as one of its leading web banners, beginning April 1, 2011. The banner and accompanying news article featured ILead/LOT's mandate, programming, and offered a short retrospective on its development.

# Looking Forward

In the year ahead, we look forward to building upon our strengths and will continue to deliver innovative work in the field of engineering leadership education.

## Programming

We want to deepen our impact with student club leaders to support their development. Substantial groundwork has been laid in 2010–2011 through the Club Leaders Initiative, Organizational Leadership Certificate Program, and the publication of the Handbook for Student Leaders. We look forward to building upon our progress to better support organizational student leaders.

We will also strive to develop ways of integrating targeted feedback to our students. Through our interaction with U.S. engineering leadership programs, we learned how providing structured, consistent feedback to students can be both feasible and effective. This is an identified gap in our program delivery, one that we aim to fill.

Looking forward, LOT will examine its Department & Division student programming to ensure that it remains an exceptional and lively learning opportunity. We will evaluate the way in which working groups form, grow, and operate. We also hope to explore how we can help address working group-specific needs throughout the year to lend support to their learning and effectiveness.

## Research

We anticipate a research-intensive year to come. In 2010–2011 LOT/ILead initiated a number of research projects that will mature in 2011–2012.

### Female Engineering Student Leaders Study

The Faculty has worked to recruit more female undergraduates and has outlined measures of progress in women's representation in its Annual Report 2010. In spite of the Faculty's efforts, the proportion of both female graduate and undergraduate students is still less than one in four.

Outward Bound Day, March 2011

Our study on female engineering leadership began in August 2010. It sprung out of the realization that few women occupy positions of leadership in student organizations, and those who do must realize their leadership in overwhelmingly male-represented clubs. Our study intends to understand the experiences of female student leaders in engineering given this reality. It aims to acquire a qualitatively rich understanding of the strengths, challenges, and opportunities presented to female student leaders in our Faculty. A substantial amount of research has been conducted this year, and we expect to be able to share our findings in 2011–2012.

### Graduate Student Education

Our research output has until now been restricted by competing demands for programming output. We are pleased to announce that beginning June 2011, LOT/ILead will have its first engineering PhD student pursuing advanced research in the field of engineering leadership education, Patricia Sheridan.

### Online Learning Tools

LOT has always delivered its learning opportunities through face-to-face interaction. We are exploring ways to build our community through online resources. Over the 2010–2011 period, we have provided a number of student resources freely available to download from our website and to use. However, these resources themselves do not serve as interactive or media-rich ways of learning. Over the next year, we will endeavour to develop innovative online tools that students can use to engage with our curriculum and learn about leadership skills.

## Outreach

As LOT matures as a program under ILead, the importance of staying connected to our growing community becomes more vital. To this end, we have, over the year, been developing an electronic system that would allow us to maintain better relationships with our students and alumni. We look forward to implementing our LOT-ILead Registry in Fall 2011. Once operational, the Registry will provide us a more complete understanding of who are our most involved students, how we impact them throughout their time at U of T, and will allow us to stay connected with them once they graduate to become "LOT Alumni."
LOT and ILead look forward to continuing dialog and mutual learning with our U.S. counterparts. This year marked a breakthrough for us, as we were able to meet with representatives of leading U.S. engineering leadership programs. For 2011–2012, we intend to maintain lines of open communication with this growing community of educators.

We have set our sights on corporate outreach to engineering firms. The results of our survey of industry engineers on the importance of leadership skills to professional success reaffirm our belief that building relationships with industry is an essential next step in our program's development. The work of this outreach will allows us to better understand the specific challenges faced by engineers in industry and the specific leadership skills required to advance the profession.

> "Being a citizen of one of the world's least developed countries and having led a relatively privileged life, I have always felt a deep sense of responsibility to help improve our society. As global issues such as climate change, poverty, and sustainable energy reach critical levels, countries like Bangladesh will be hit the hardest. Engineers and specifically engineering leaders are in the best position to address these challenges. That is why I chose engineering and why I continue to strive to become an engineering leader."

# Concluding Remarks

The year has been richly productive. We made a number of significant advances and matured as a program, making our entry into the new decade one of confidence and optimism. With the establishment of ILead we have a new institutional framework to facilitate a new era of growth. Over the past year, LOT/ILead grew outward through its new program initiatives and outreach activities and inward through its efforts to strengthen existing relationships, refine processes, and renew established programming.

LOT/ILead strives to remain at the forefront of engineering leadership education and development. We challenged ourselves in 2010–2011 to reach our vision for "an engineering education that is a life-long foundation for transformational leaders and outstanding citizens." Looking forward, we will continue to expand our reach and deepen our impact. We owe this to the future generation of engineers.

Thank you for all your continued support.

Prof. Doug Reeve
Co-Leader

Prof. Greg Evans
Co-Leader

Annie Simpson
Coordinator

Estelle Oliva
Leadership Education Specialist

Brian Tran
Program Assistant

Deborah Peart
Leadership Assistant

# Appendix

## A. Program Beliefs & Values

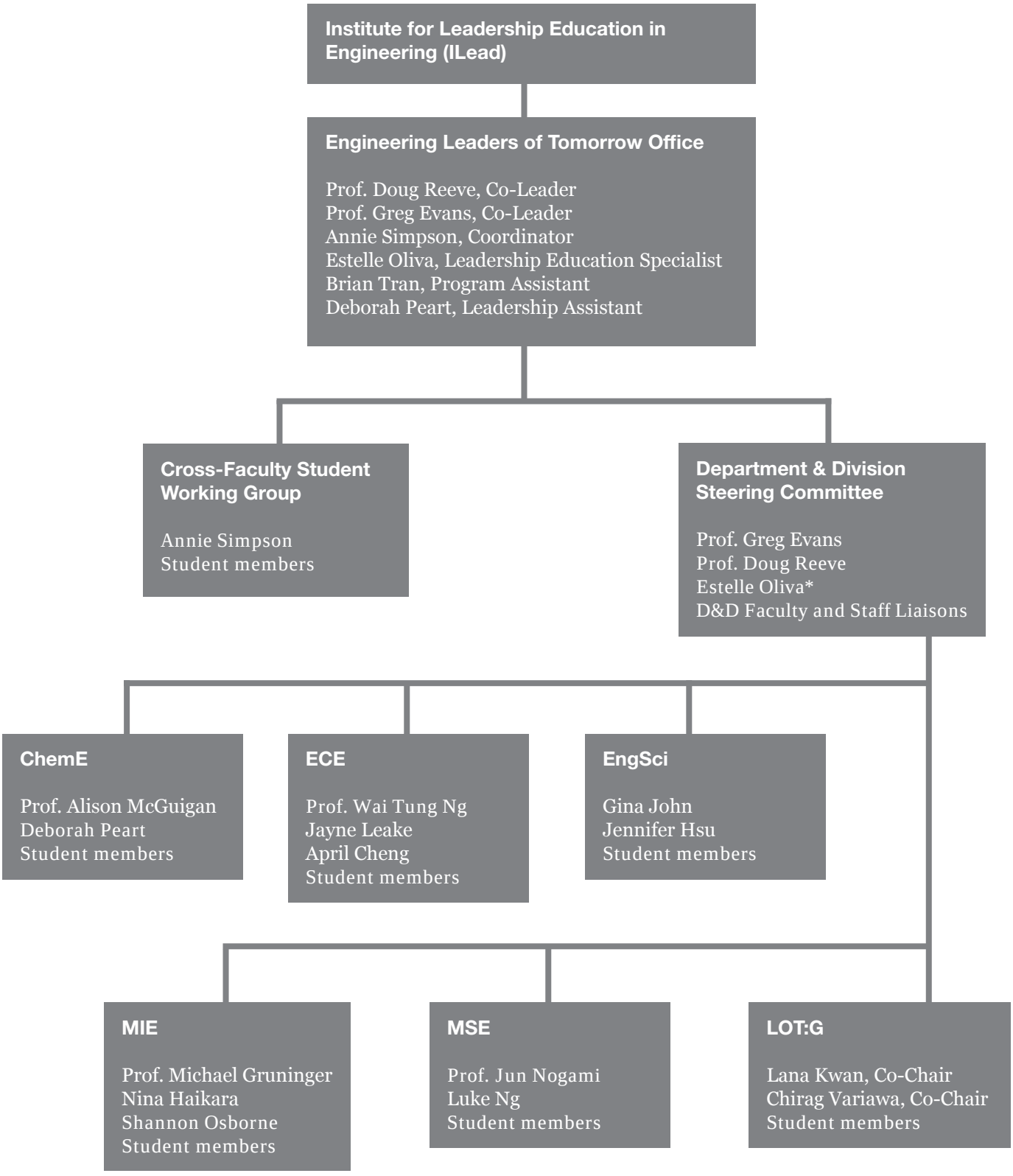
### Our Beliefs

- The full potential of our graduates to contribute to society is not being realized. The full potential of our students, staff and faculty to contribute while at university is not being realized. This represents a substantial untapped resource for our Faculty.
- The role of the Engineering profession in North America must and is evolving.
- Leadership potential/capacity can be learnt and therefore it can be taught.
- Improving their leadership potential will serve our graduates well throughout their professional and personal lives.
- Offering a leadership program will help attract students with an interest in leadership and this self-perpetuating cycle will result in stronger graduates.
- Students who are more engaged will have a better university experience; students who feel they are part of a community will be more engaged. Hence we need to help students to learn how to build communities.
- Engineers with significant leadership skills and attributes contribute more societal value than those without.
- Student engineers exposed to a disciplined, structured learning process in leadership skills/behaviours are more productive contributors to enhanced societal value.
- Today some student engineers gain valuable enhanced leadership skills/behaviours through self-study, volunteering and participating in extracurricular activities and mentoring experiences.
- A structured leadership development component to the student-engineer experience will be an important distinguishing feature for U of T.
- Many student engineers do not appreciate that enhanced leadership skills/behaviour will increase their worth to society.

### Our Values

| | |
|---|---|
| **Service:** | Service to society is a core value of Engineering. |
| **Integrity:** | Personal and professional integrity is a core value of Engineering. |
| **Social responsibility:** | Responsible use of technology is a core value of Engineering. |
| **Teamwork:** | Teamwork is a core competency of Engineering. |
| **Structure:** | Organization (creation of infrastructure) is a core competency of Engineering. |
| **Excellence:** | Excellence is a core value of the University. |
| **Diversity:** | Recognizing the benefits of diverse views and backgrounds is a core value of the University. |
| **Knowledge:** | Creation and preservation of knowledge is a core value of the University. |

# B. Organizational Chart




*Estelle Oliva joined the LOT team on May 10, 2010 as the Leadership Education Specialist. Her role includes: designing and implementing curriculum for our Certificate Programs and workshops; facilitating and delivering meaningful leadership opportunities for students, staff, and faculty; supporting and advising the department and divisional working groups; collaborating with various campus partners on projects and initiatives that enhance the student experience; creating practical applications, resources, and tools from leadership education research and best-practices.

# Engineering Leaders of Tomorrow

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