

INSPIRING LEADERSHIP 2014/15

The Institute for Leadership Education in Engineering



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WELCOME

When students ask me how they can make a difference, I tell them: “The first act of leadership is to put up your hand.” That is to say, have the courage to step up and contribute.

At the Institute for Leadership Education in Engineering (ILead) we have the privilege of working with hundreds of brilliant U of T Engineering students every year, students who strive to better themselves and ultimately those around them. In this publication we share some of their thoughts.

On July 1, 2015 ILead turned five years old as an organization. To mark this milestone, we undertook a year-long process of review by Faculty senior management, self study and strategic planning for 2015–2020. I’m pleased to share highlights of our year, a year of renewal, experimentation and expansion.

A handwritten signature in black ink, appearing to read 'D. Reeve'.

Professor Doug Reeve, PhD, PEng
Director, Institute for Leadership Education in Engineering

LEADERSHIP COURSES

We more than doubled the number of academic courses on engineering leadership from six in 2013–2014 to thirteen in 2014–2015. To deliver these new courses, we had the good fortune of adding talented, experienced instructors to our teaching staff: Haig Baronikian, Daniel Cushing, Penny Kinnear, Mark Franklin and Annie Simpson.

This growth means that more students than ever are linking their excellent technical education with leadership education to become well-rounded, career-ready graduates.

COURSES OFFERED IN 2014–2015

- APS343: *Engineering Leadership*
- APS442/APS1010: *Cognitive and Psychological Foundations of Effective Leadership*
- APS444/APS1026: *Positive Psychology for Engineers (AKA The Happy Engineer)*
- APS445: *The Power of Story: Discovering Your Leadership Narrative*
- APS446/APS1019: *Leadership in Project Management*
- APS1011: *Concepts and Applications of Authentic Leadership*
- APS1027: *Engineering Presentations*
- APS1029: *The Science of Emotional Intelligence and its Application to Leadership*
- APS1030: *Engineering Careers: Theories and Strategies to Manage Your Career for the Future*
- APS1501: *Leadership and Leading in Groups and Organizations*

ENROLMENT IN LEADERSHIP COURSES



Combined undergraduate and graduate enrolment figures.

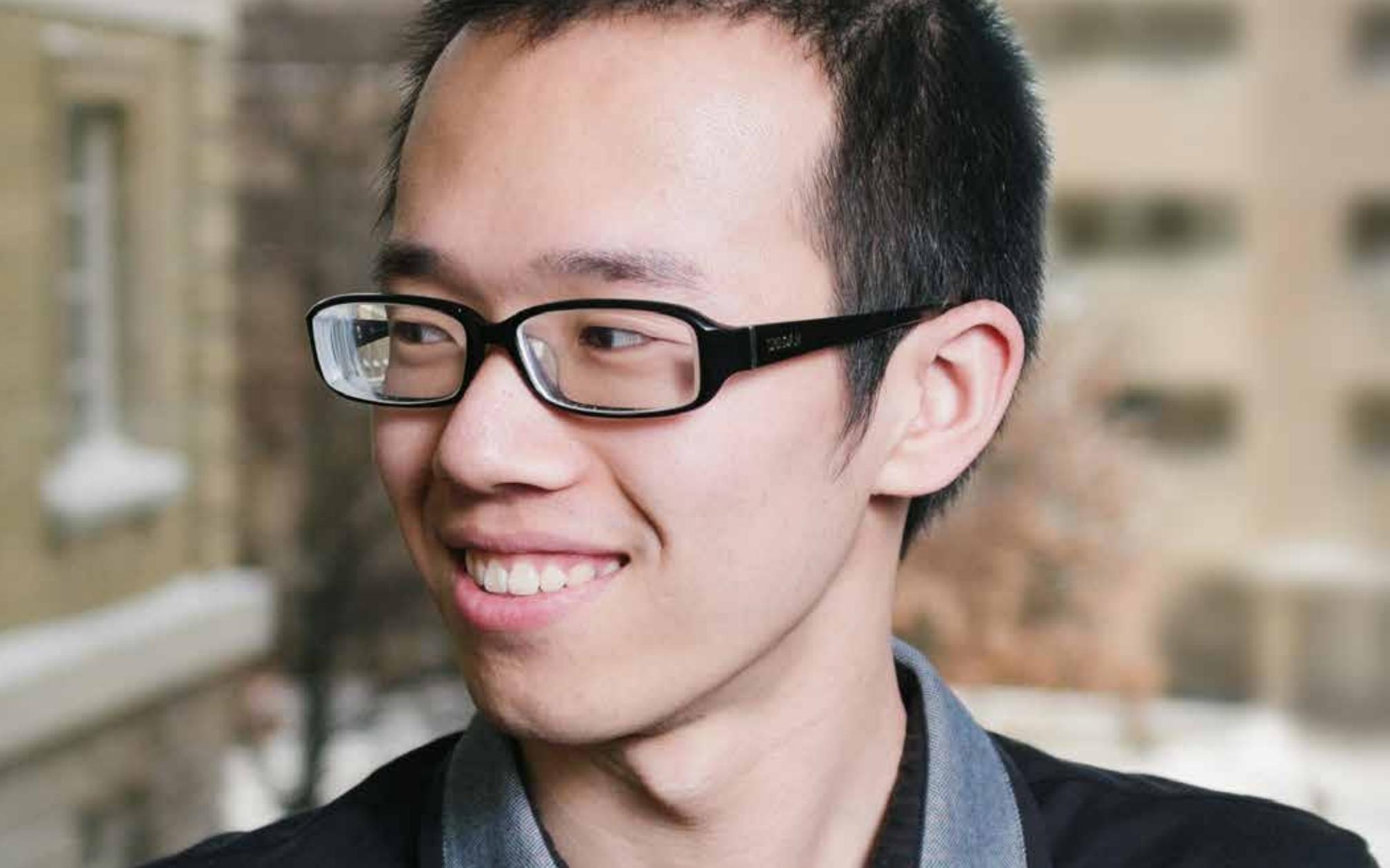
OPPOSITE: Students take part in “Up Close & Personal” class with guest speaker Bonnie Rose, President, Standards, CSA Group.





MELISSA GREEFF
EngSci 1T6

Melissa, campus ambassador and chess enthusiast, took APS445: *The Power of Story: Discovering Your Leadership Narrative*.
“Leadership encompasses having a clear vision and the ability to allow people to grow in order to achieve this vision. I had not appreciated the extent to which leadership starts with personal growth and the stories that shape us until I took this course. Understanding the personal and political narratives that shape our worldview is critical to having real impact in society.”



ODO WANG
Chem116

Odo, an international student from China, took APS343: *Engineering Leadership*.

“The reason I chose to pursue engineering was because of my love for innovative design and my willingness to take on challenges while being creative with them. APS343 has been the most valuable class I have ever taken in university so far. It has really shed a whole new light on how I should live my life.”

THE GAME

We challenged twenty-four students in September to pursue passion projects through an immersive new program called “The Game.” This opportunity engaged teams of students in a year-long journey to explore issues in societal leadership.



Under the direction of Leadership Programming Consultant Mike Klassen, we provided participants with mentorship, workshops and guest speakers that allowed students to tackle complex problems spanning engineering and other fields.

At the end of the program in March, the team that presented the most coherent, informed and impactful idea received \$5000 to fund their project.

Our students demonstrated extraordinary work ethic and creativity. We could not be more proud of our first cohort of “gamers.” Furthermore, we are excited to take our experiences from this pilot and refine it for next year’s participants.

OPPOSITE: The Game participants take part in conflict resolution workshop with coach Julie Diamond.





THE GAME
Final Presentations

The winning team is pictured here with their internal mentor Prof. Robin Sacks at the final presentation ceremony in March. Their project, canACT, seeks to connect individuals with volunteer opportunities most aligned with their values. On her experience, Deniz Jafari (EngSci 1T5+PEY), part of the winning team, writes “The Game taught me the importance of setting team values and staying true to them in the face of challenges.”



MOMENTS FROM THE GAME

1. The Game winners with ILead team. From left: Annie Simpson, Mike Klassen, Bowen Le (ChemE 1T6), Noor Shaikh (EngSci 1T6), Deniz Jafari (EngSci 1T5+PEY), Amy Li (CivE 1T5+PEY), Omar Khan (ECE 1T7), Prof. Doug Reeve. 2. Students with subject matter expert Julie Diamond. 3. From left: Mike Klassen moderates guest panel comprising Geoff Frost (EngSci 0T9+PEY), Marianne Touchie (CivE 0T9, PhD 1T4), Marc-Etienne Brunet and Amir Allana (EngSci 1T2). 4. Winning team member Bowen Le presents his team's project canACT.

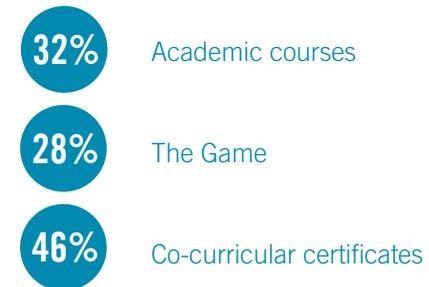
CULTIVATING THE NEXT GENERATION OF FEMALE ENGINEERING LEADERS

Women face different barriers and challenges to leadership in the engineering context. We have therefore worked hard to build a culture that welcomes diverse experiences and perspectives. ILead has consistently attracted female students at both the undergraduate and graduate levels to our programs. Below we share gender statistics in our programs for 2014–2015 and compare them with those of the Faculty.

FEMALE STUDENT ENROLMENT ACROSS ENGINEERING FACULTY



FEMALE STUDENT ENROLMENT ACROSS ILEAD PROGRAMS



Figures for 2014–2015 combine undergraduate and graduate enrolment.

We believe that as our leadership programs grow and become further embedded in the U of T Engineering experience, more and more female students will take advantage of these opportunities to develop their leadership skills.

OPPOSITE: (From right) Hiba Ali, Melissa Greeff, Katie Gwozdecky and Jaquelyn Monis Rodriguez.





JAQUELYN MONIS RODRIGUEZ
IndE 1T5 + PEY

Jaquelyn is Director of Events at the Women in Science and Engineering Conference. She's participated in several ILead programs.
“Leadership is an ongoing process that starts with self-understanding—powered by values, empathy and knowledge—and ends with reaching a better state. Leadership education is important because it provides students with the necessary structure and tools to become better individuals for the community, as it encourages students to better understand themselves and others in order to influence the environment around them.”



HIBA ALI
CivE 1T5

Hiba took APS444: *The Happy Engineer* and APS442: *Cognitive and Psychological Foundations of Effective Leadership*.

“Leaders bring out empathy and create teams that work together toward a goal. These courses motivated me to look deeper into my biases and beliefs and to want better for myself. They highlighted the fact that I should continuously look beyond my expectations of a situation to perceive different perspectives and to better understand people’s values.”

OUTREACH & RESEARCH HIGHLIGHTS

Our outreach and research initiatives aim to bolster our thought-leadership in both academia and industry. This year we advanced relationships with our community of engineering leadership practitioners and developed tools to better serve U of T Engineering students in innovative ways.

COMMUNITY OF PRACTICE TAKES FLIGHT

We engaged with companies to determine how best to connect engineering leadership professionals in industry with our work. Through consultation with partners and supporters, our community of practice took shape towards the end of 2014–2015. We have agreements-in-principle with four companies to join this network. We anticipate more growth in the year ahead as we deliver opportunities for members to exchange best practices and make a contribution to education of the next generation of leader-engineers.

LEADERSHIP SOFTWARE GETS INTEGRATED INTO ENGINEERING CURRICIULUM

The Team-effectiveness Leadership System, the brainchild of ILead's PhD candidate Patricia Sheridan, was tested on all First Year engineering students this year through integration with their core design courses. The software helps students to develop team skills early in their academic career through online feedback generated by their peers.

ETHICS & EQUITY PROJECT INITIATES TOUGH QUESTIONS

ILead won funding from the Dean's Engineering Instructional Innovation Program to generate case studies that will help students navigate ethical issues they will face in their careers. Using interviews with professionals in industry, our Research Associate Cindy Rottmann developed six case studies that challenge students to problem-solve ambiguous, complex situations. This material will form the basis of a new ethics course grounded in the experiences of Canadian engineers.

OPPOSITE: ILead instructor Daniel Cushing (centre) speaks to U of T Engineering colleagues at ILead open house event.





JUSTIN TOBIA
EngSci 1T4+PEY

Justin took APS444: *The Happy Engineer* and APS445: *The Power of Story: Discovering Your Leadership Narrative*.

“Leadership isn’t something that can be appointed or taken; it’s earned from building trust and respect between the leader and the people they lead. As an aspiring professional engineer, I have a lot of power to drive change. I believe the best way I can make positive change is to do what I do best and use my strengths to empower communities and others looking to make positive change.”



FAIZAN AKBANI
MechE 1T7

Faizan served on the Engineering Society's Board of Directors. Like Justin, he's taken APS445: *The Power of Story*.

"Leadership is what sets you apart. Most large projects require us to work in teams consisting of individuals from different backgrounds and experiences. The one quality that is recognized and appreciated across the world, no matter what the profession, is leadership. This is why leadership education is more important now than ever, to allow students to discover and develop their style of leadership early on."

THE FUTURE

We invested significant energy this year in setting the course for strategic growth. The developments that we will implement in the upcoming year will enable us to scale our efforts to reach more students, professionals and educators.

REIMAGINING CO-CURRICULAR PROGRAMS

Students need multiple entry points for learning opportunities appropriate to their experience. We will therefore introduce new Leadership Labs for First and Second Year students to reach them at the departmental level. To engage more experienced student leaders, we will develop a new roundtable program geared toward club executives. For those ready for high-intensity engagement, we will begin to formally mentor students to become Leadership Lab facilitators as well as summer fellows.

BUILDING A NETWORK FOR LEADERSHIP PRACTITIONERS AND PROFESSIONALS

We will aggressively grow our burgeoning community of practice of engineering industry professionals. We target October 2015 to be our first members' gathering. By establishing U of T as the hub of this network, we can better translate industrial experience into learning opportunities for our students.

EXPANDING LEADERSHIP EDUCATION IN CORE ENGINEERING COURSES

While we have grown our academic offerings substantially this year, we will continue to integrate leadership learning into the engineering curriculum. To do so, we will build relationships with faculty members who show an interest in adopting our pedagogical tools such as the Team Effectiveness Learning System and to enhance core courses by offering innovative methods of integrating leadership and team learning. Our aim is to establish leadership education as a defining feature of the U of T Engineering experience.

OPPOSITE: Students complete visioning exercise in the Leading from the Inside Out co-curricular certificate program.







DREAM. LEARN. DO.

The confluence of technology and globalization with human systems will create opportunities for engineers to lead in unprecedented ways. That is why the Institute for Leadership Education in Engineering exists—to prepare tomorrow's engineers for a world that needs them to be brilliant and bold.

Learn more about what we do today and make an impact on future generations. Together we can turn our vision into reality:

Engineers leading change to build a better world.

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ENGINEERS LEADING CHANGE TO BUILD A BETTER WORLD.



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