Welcome to the monthly IOS Newsletter. We hope that this will serve to keep you informed about the events and developments in the IOS community.

Awards and Recognition

Ken Burch awarded NSERC CREATE grant

The Natural Sciences and Engineering Research Council of Canada (NSERC) recently announced the results of the 2013 CREATE program. We are excited that IOS faculty member Prof. Ken Burch’s project, Taming the Lost Heat, Training and Research in Thermodynamics was one of only 15 successful proposals Canada-wide. The CREATE (Collaborative Research and Training Experience) program provides up to $1.65 million to set up environments that improve the mentoring and training of students by improving communication, collaboration and professional skills, as well as providing experience relevant to both academic and non-academic research settings. Through Prof. Burch’s project, a consortium of engineers, physicists and chemists will train students in making, modelling and measuring thermoelectric devices, which are a key technology to improve the energy efficiency of various devices. More information on the CREATE program is available on the NSERC website, and UofT News has an excellent review of the four CREATE grants awarded to University of Toronto professors.

Entrepreneurship

Pueblo Science summer camp engages children in fun learning
Pueblo Science’s second annual Summer Science Camp was held from August 12 to 23 with 26 students engaging in hands-on activities to learn the science behind some of their favourite experiments. Held in the Department of Chemistry at the University of Toronto, the camp is a unique program specially designed for children in grades 3 to 6. Each day the participants enjoyed several one-hour long experiments that demonstrate concepts in chemistry, physics, biology, and engineering. The event also allowed the students to visit state-of-the-art research facilities at U of T, including Electrical Engineering's anechoic chamber, Prof. Greg Scholes' algae lab in the Dept. of Chemistry, the Holography Lab at the IOS, and U of T’s main Data Center. This year the campers built their own hoover path games, created hot air balloons, manufactured bouncy balls and slime, tested enzymes, discovered chef’s secrets for making fake caviar, played with non-Newtonian fluids, and made liquid nitrogen ice cream!

“The camp provides a great opportunity for students in elementary school to have fun while learning science” says Andrea Nagy, a volunteer instructor at the summer camp and a researcher in the Department of Chemistry. “We aim to engage the children in science through active, hands-on experiments”. Judging by the feedback from happy campers and pleased parents, the Summer Science Camp was a resounding success.

Student Activities

Summer undergraduate researchers present their work

On August 8, undergraduate students working on research projects this summer in IOS labs presented the final summaries of their research to a group of peers and staff. The 18 students, with backgrounds from a number of science and engineering departments, showcased a wide range of research topics including the design of high-end optical instruments, probing the fundamentals of photosynthesis, and the development of science education kits for under-resourced settings. Equipped with new skills learned through the IOS’ Research Skills Program that they had attended in the beginning of summer, each student made excellent use of their time in U of T’s research labs.

Two new undergraduate courses in entrepreneurship and innovation

As part of our mission to expand the understanding of entrepreneurship and innovation in a multidisciplinary environment, we are offering two new undergraduate courses this fall: IMC200 Innovation and Entrepreneurship and IMC390 Internship in New Ventures. The first course is designed to introduce students to the pathway by which fundamental discoveries in science and new knowledge become useful to society as well as highlight key business fundamentals including intellectual property, corporate structure, and others. The second course, Internship in New Ventures, will place students at start-up companies within the University of Toronto network part-time during the 8 month school year or during the 4 month summer session. During the internships, they will work on a specific project and gain a better understanding of the inner workings of a fledgling company.