

# SUMMARY OF THE 52<sup>ND</sup> ANNUAL CANADIAN UNDERGRADUATE PHYSICS CONFERENCE AT DALHOUSIE UNIVERSITY IN OCTOBER 2016

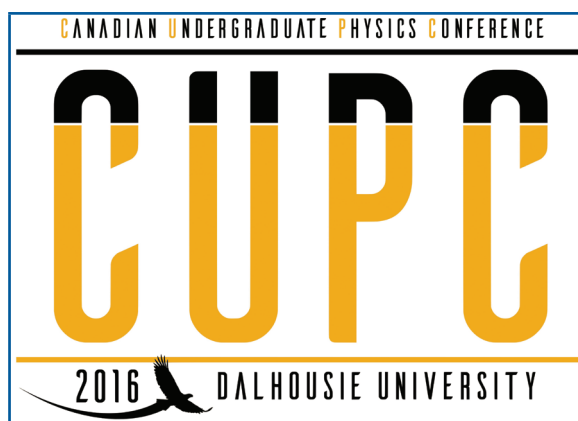
BY CARMEN LEE, DALHOUSIE UNIVERSITY

The Canadian Undergraduate Physics Conference (CUPC) was held at Dalhousie University from October 13-16, 2016. There were 124 undergraduate attendees who represented 29 universities from across Canada. The CUPC is an annual research conference targeted toward undergraduate physics student which is organized by fellow students.

Academic conferences like the CUPC provide excellent opportunities for students to present their research, network with their peers and to engage with members of the scientific community. Often, this is one of the first academic conference that many aspiring physicists attend.

The conference included talks given by both students and four plenary lecturers. Student presentation topics ranged from astrophysics, applied physics, biophysics and soft condensed matter, quantum condensed matter, and particle and nuclear physics. Prizes were awarded for the best presentations in each of these categories, as well as for the student poster fair. As many students were presenting from different research labs from across Canada, the breadth of field of the areas of physics covered was extensive.

The four plenary lectures were given by Andrew Rutenberg (Dalhousie University) on “Watching spherical cows die: the physics of aging”, a presentation on using physics to predict mortality rates. Arthur Carty (Waterloo Institute for Nanotechnology) presented on “Building a World Class Nanotechnology Institute: Meeting the Challenges of Interdisciplinary Culture and Innovation in WIN”. In this talk, Dr. Carty discussed the Waterloo Institute for Nanotechnology and the efforts that went into its conception. Eden Full Goh (SunSaluter) presented a lecture



entitled “A Work in Progress”, where she discussed her technology for using solar power to filter water, and the non-profit organization that has made to deploy it to developing nations. The final plenary lecturer was Eli Yablonovitch who presented a talk on “Optoelectronics: Is there anything it cannot do; Can Opto-Electronics Provide the Motive Power for Future Vehicles?”, who discussed the principle behind solar cells and how the most efficient are also the best LEDs.

Attendees were invited to ask questions from our career panel composed of four individuals with careers in physics or engineering. Panelists included Eden Full Goh, Jordan Kyriakidis, Kimberley Brewer, and Jeff Dahn. Breakout sessions offered students perspectives on grad school, politics in science, and diversity in physics. This was one of the activities that received the most positive response from participant feedback. These were new to the conference this year, and provided attendees with an informal opportunity to discuss graduate studies, diversity in physics and politics in science. Four Dalhousie physics professors led these and encouraged open discussion and questions about the topics at hand. These professors were Rachel Chang, Kevin Hewitt, Theodore Monchesky and Thomas Duck. We hope to see these sessions continue with future CUPCs.

While on Dalhousie campus, students toured 6 different research labs whose area of focus ranged from ultrafast

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Carmen Lee  
<carmen.lee@dal.ca>  
Department of  
Physics and  
Atmospheric  
Science, Dalhousie  
University, Halifax,  
NS B3H 3R2

optics, biophysics and even marine biology. Students interacted with graduate representatives from about 20 Canadian Universities at the grad fair, a valuable resource for those students considering graduate school. Students experienced the Halifax nightlife during organized social events. We embarked on a tour of Citadel Hill, a historic site overlooking downtown Halifax. The conference was capped off with a banquet, where student awards were announced, and the conference came to a close. Response from our participants has been generally positive, with one stating that, “It was well organized, awesome hotel, good food, Halifax was an excellent city to be in, lots of interesting presentations given. I particularly enjoyed the plenary lecture at the banquet dinner.”

The organizing committee of CUPC 2016 would like to extend our gratitude toward our generous sponsors including the Fields Institute, the Canadian Association of Physicists, Dalhousie University, the Canadian Astronomical Society, TRIUMF, the Canadian Light Source and the Canadian Journal of Physics.



Opening night of CUPC 2016 before the Plenary lecture given by Dr. Rutenberg.



Plenary speaker Dr. Yablonovich (left) and CUPC committee member Michael Lynch (right) at the CUPC banquet.