# SUMMARY OF THE 51ST ANNUAL CANADIAN UNDERGRADUATE PHYSICS CONFERENCE AT TRENT UNIVERSITY

BY JAMES GODFREY

The Canadian Undergraduate Physics Conference (CUPC) is an annual conference hosted by undergraduates across Canada, with the host university changing annually. CUPC is an important event in the Canadian undergraduate physics community, having run annually for the last 51 years. CUPC brings together some of Canada's brightest young minds for 4 days of enriching plenary lectures and undergraduate research presentations, and to strengthen attendees' passion for physics as a whole. Indeed, CUPC has been known to create lifelong bonds between young physicists. This year, Trent University had the honour of hosting the CUPC from October 22nd to 25th, for the first time ever since the conference's inception in 1965.

[C]ANADIAN [U]NDERGRADUATE [P]HYSICS [C]ONFERENCE

2015

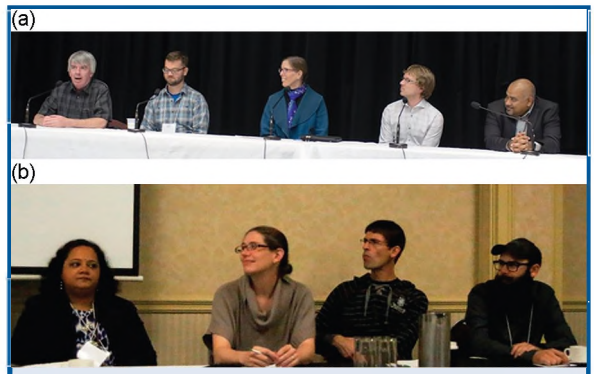
TRENT UNIVERSITY

Co-Chairman Alan Godfrey welcoming delegates during the Thursday evening reception.


## SUMMARY

**The annual conference has an impressive history of having been organized by a team of undergraduate students at various schools across the country for the past 50 years. CUPC 2015 continued that proud tradition, at Trent University.**


Poster and lecture presentations of undergraduate delegates' research, the core of CUPC, were incredibly diverse, with presenters traveling from all across Canada to present their original work. It is empowering to see that young physicists can significantly impact their field so




(a) (*left to right*) Dr. Robert Blyth, Stephen McMurtry, Prof. Rachel Wortis, Julian Atfield, and Dr. Suresh Narine taking questions from delegates during the 2nd Annual Career Panel on Saturday afternoon.
(b) (*left to right*) Dr. Chitra Rangan, Dr. Lilian Childress, Prof. James Fraser and Sean Arruda answering delegates' questions during the 2nd Graduate Studies Panel on Sunday morning.

James Godfrey, Trent University, Co-Chair of CUPC 2015 and CAP's Councillor Representing Undergraduate Student Affiliates

### CUPC 2015 BY THE NUMBERS

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|---|---|
| Attendees (Undergraduates): | 198 |
| Student Talks: | 114 |
| Plenary Speakers: | 4 |
| Panelists: | 9 |
| Attendees (Total): | 227 |
| Posters: | 30 |
| Booths at Graduate and Career Fair: | 37 |
| Sponsors: | 19 |

early in their careers. The Graduate Studies and Career Fair on Sunday morning, a pillar event, was very well-attended, both in terms of delegates and representatives from academic and industrial institutions.

Two panel events introduced last year, the Career and Graduate Studies Panels, were continued in this year's iteration of CUPC. This year's Career Panel featured Prof. Rachel Wortis of Trent University; Dr. Robert Blyth, Science Projects Manager at Canadian Light Source; Julian Atfield, Trent U. alumnus and Reactor Physicist at Canadian Nuclear Laboratories; Dr. Suresh Narine, Director of the Trent Centre for Biomaterials Research; and Stephen McMurtry, Trent U. alumnus and Data Visualization Specialist. The Graduate Panel featured Prof. James Fraser (Queen's), Dr. Chitra Rangan (U. Windsor), Dr. Lilian Childress (McGill), and MSc candidate Sean Arruda (Queen's). Both events were entirely driven by delegates' questions for the panelists; topics covered included panelists' pursuits of a career in physics, life in academia and industry, and many others. Both events were very well-received by delegates, with the length of the Career Panel being doubled from last year.

### CUPC 2015 EVENT SUMMARY

Thursday, October 22, 2015
- Registration
- James Fraser: Keynote

Friday, October 23, 2015
- Patricia Burchat: Keynote
- Student Research Talk Block 1
- Patricia Burchat: Seminar
- Student Research Talk Block 2
- CUPC Pub Crawl

Saturday, October 24, 2015
- Student Research Poster Block
- Lab Tours
- Paul Torrey: Keynote
- 2nd Annual CUPC Career Panel

Sunday, October 25, 2015
- 2nd Annual CUPC Grad. Studies Panel
- Graduate Studies & Career Fair
- Student Research Talk Block 3
- General Meeting/Bids for CUPC 2016
- Paul Corkum: Keynote
- Banquet
- Presentation Awards

One of the co-founders of CUPC, Dr. Calvin Kalman, delivered an opening address at the Thursday night reception, sharing his account of CUPC's humble beginnings: a story of what has blossomed into a celebrated tradition in Canada's undergraduate physics community, from a small conference involving only 3 universities. Following Dr. Kalman's address, Prof. James Fraser (Queen's) delivered a plenary lecture briefly discussing his research in coherent imaging, depth-controlled laser welding and physics education, as well as discussing the importance of keeping an open mind when thinking about career paths in the coming years and physics in general.


(a) Prof. James Fraser delivering a plenary lecture the opening night of CUPC 2015.
(b) Dr. Paul Torrey lecturing on cosmological simulations on Saturday afternoon, prior to the Career Panel.
(c) Dr. Paul Corkum speaking to delegates Sunday night at the closing banquet. *Not pictured: Dr. Calvin Kalman and Dr. Patricia Burchat.*

Co-chairmen Alan Godfrey (*bottom left*) and James Godfrey (*bottom, 2nd from left*), and the CUPC 2015 organizing committee. *Pictured: (left to right, top row) Julian Christopher, Emily Korfanty, Paul Schell, Jessica Auchterlonie, Eamonn Corrigan, Taylor Armitage, Andrew Grace, Cale Fortin; (left to right, bottom row) Brayden Hull, Edward Sweeny, Yuchen Song. Not pictured: Jeet Trivedi, Matthew Cole, Jayme Stabler.*

Prof. Patricia Burchat (Stanford) delivered a plenary lecture on Friday morning, discussing the building, capabilities, and underlying physical principles of the Large Synoptic Survey Telescope. The afternoon of the same day, Prof. Burchat also delivered a very informative and interactive seminar on applying to graduate schools in North America and abroad. Preceding the Career Panel on Saturday, Dr. Paul Torrey (MIT) delivered a keynote talk about his work with cosmological simulations and the future of high performance computing, sharing both his wisdom and gorgeous deep sky images. At the closing banquet dinner on Sunday evening, Dr. Paul Corkum gave an enlightening talk about molecular orbital 'selfies' and the foundational principles of attosecond physics, an extremely relevant area in physics today.

In summary, CUPC 2015 was an incredibly inspiring and worthwhile weekend for all in attendance. The organizing committee could not be happier with the result: an uncompromising, enriching, financially sustainable, and extremely well-received conference organized entirely by undergraduate physics students. Trent University's CUPC 2015 Organizing Committee wishes the best for the coordinators of CUPC 2016 at Dalhousie University. We are confident that this illustrious piece of undergraduate physics tradition will thrive for years to come.