KELSEY ALLEN

PERSONAL INFORMATION

Citizenship	Canadian
email	krallen@mit.edu
website	http://web.mit.edu/krallen/www

EDUCATION

2014 - Present — Massachusetts Institute of Technology

PhD

GPA: 5.0/5.0 · *Brain and Cognitive Sciences* ·
ADVISOR: Joshua Tenenbaum

2014 — The University of British Columbia, Vancouver

BSc

GPA: 3.85/4.0 · *Honours Physics* · *Minor: Computer Science*
THESIS: *Searching for high-mass dilepton resonances with ATLAS*
ADVISOR: Prof. Oliver Stelzer-Chilton

PUBLICATIONS

Journal Publications

E. Pless, J. Queriolo, N. Pinter-Wollman, S. Crow, **K. Allen**, D.M. Gordon. "Interactions increase foragers availability and activity in harvester ants". PLoS One. DOI: 10.1371/journal.pone.0141971. 2015.

ATLAS Collaboration (listed author)."Search for high-mass dilepton resonances in pp collisions at s=8TeV with the ATLAS detector". Phys. Rev. D **90**, 052005, 2014.

Peer-Reviewed Conference Publications

K. Allen, I. Yildirim, J.B. Tenenbaum. "A model of familiar and unfamiliar face processing". NIPS Workshop on Black Box Inference and Learning. Spotlight Presentation. 2015.

K. Allen, M.S. Goldman. "Context-dependent filtering as an emergent property of high dimensional networks". Society for Neuroscience. Poster. 2015.

K. Allen, J. Jara-Ettinger, T. Gerstenberg, M. Kleiman-Weiner, J.B. Tenenbaum. "Go fishing! Responsibility judgments when cooperation breaks down". In Proceedings of the 37th Annual Conference of the Cognitive Science Society. Poster. 2015.

K. Allen, G. Carenini and R. Ng. "Detecting Disagreement in Conversations using Pseudo-Monologic Rhetorical Structure". In Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP), pages 1169 - 1180. 2014.

ATLAS Collaboration. "Search for high-mass dilepton resonances in 20 fb-1 of pp collisions at s = 8 TeV with the ATLAS experiment". Moriond, 2013.

Conference presentations

K. Allen, J. McGuirk. "A tunable tapered amplifier laser for spin wave research". Canadian Undergradate Physics Conference. Poster. 2011.

Theses

"Search for high-mass dilepton resonances with ATLAS". Undergraduate Thesis.

RESEARCH

Dec 2013 - June 2014 — Research Assistant

UC Davis Stanford

SUPERVISORS: Prof. Mark Goldman (UC Davis), Prof. Deborah Gordon (Stanford)
PROJECT: I will be investigating harvester ant colony behaviour using well established models in neuroscience, such as the leaky integrate-and-fire model (applied to individual ants), and vessicle trafficking models (for pools of ants). The relevant parameters for these models in the context of ant colony behaviour will be determined experimentally.

May 2013 - May 2014 NSERC Student Research Award/Research Assistant

University of British Columbia

SUPERVISOR: Prof. Giuseppe Carenini
PROJECT: I have been conducting research in the field of Natural Language Processing. Specifically, my work has been centered around using rhetorical structure to identify controversial topics in conversational data. Over the course of my work term, I have also worked on topic modelling algorithms for conversation, and opinion labelling in review datasets.

Sept 2012 - June 2013 Honours Thesis Project

TRIUMF

SUPERVISOR: Prof. Oliver Stelzer-Chilton
PROJECT:I conducted a parallel analysis of the 2012 ATLAS data to search for new high mass dilepton resonances with the Exotics group. This involved detector resolution studies to increase the acceptance-efficiency of the dimuon analysis and updating the Z' Minimal Model framework. Results were then presented in both an oral presentation and a final written thesis, for which I received the top mark in the department.

May 2012 - Aug 2012 NSERC Undergraduate Student Research Award

University of Toronto Chair's Scholar

SUPERVISOR: Prof. Aephraim Steinberg
PROJECT: My project involved improving the magneto-optical trap (MOT) in order to increase the density of trapped ultra-cold Rubidium atoms in our set-up for atom based quantum information processing. I additionally assisted with simulations of the experiment, and helped with the set-up and initial characterization of a new laser.

Sept 2011 - May 2012 R&D Co-op Student

MDA Corporation

SUPERVISOR: Dr. Ron Caves
PROJECT: I developed and researched algorithms for manipulating, visualizing, and analyzing radar images. I implemented change detection, land classification and filtering algorithms, and improved previous algorithms to work on larger data sets more efficiently.

May 2011 - Aug 2011 NSERC Undergraduate Student Research Award

Simon Fraser University

SUPERVISOR: Prof. Jeff McGuirk
PROJECT: I constructed a high powered, widely tuneable laser for imprinting optical potentials onto ultra-cold gases in order to study spin wave dynamics. This involved building a temperature control servo, assembling electronics, machining protective casings, and characterizing the laser beam parameters using a spectrometer and Fabry-Perot cavity.

AWARDS

2014 Singleton Fellowship
NSERC CGS-M (Declined)
Rudi Haering Medal (top graduating student in Physics)
Carl Bradford Robertson Premier Undergraduate Scholarship

2013 Wesbrook Scholar, for leadership, academics and service
TREK Scholarship, awarded to top 5% of faculty of Science for academics
Thomas and Evelyn Hebb Memorial Scholarship
ARTA TW Insurance Scholarship for community service, communication and scholastic achievement
Arthur Crooker Prize for best aptitude for experimental physics

2009-2013 Dean's Honour List

2012 Chair's Scholar - University of Toronto

2011 Best poster - SFU
Bruce Marshall Prize
Co-op scholarship for valuable team contribution at MDA

2010 Stuart Olson Dominion Education Bursary

TEACHING AND RELATED WORK EXPERIENCE

Jul 2014 - Aug 2014 Assistant for Methods in Computational Neuroscience

Woods Hole, MA

Provided administrative assistance for the Methods in Computational Neuroscience course in Woods Hole.

Attended lectures given by experts in computational models for neuroscience, and also performed administrative duties such as organizing a boat trip, barbeques, the year end dinner, morning snacks, and managing supplies.

Jan 2013 - May 2013 Teaching Assistant

UBC Computer Science

Assisted with CPSC 101, a course for students who have never taken a computer science course before. Worked in the lab with students, held office hours, and assisted with grading.

Sept 2012 - Dec 2013 Review Session Lecturer

Physics Society

I helped deliver 3 hour lectures to 50-70 first year students on the topics of Fluids, Waves, Electricty and Magnetism, and Optics to prepare them for their final exam

2009-2011 Jones' Open Mind Academy

North Vancouver

Tutored grades 6 - 12 students in Physics, Math and Chemistry.

VOLUNTEERISM

Sept 2013 - Present GIRLsmarts SAP Student Leader

SAP

As a student leader for the brand new GIRLsmarts grade 7 program, partnered with SAP, I am helping to design a Music & Technology workshop for grade 7 girls. This includes interviewing students, organizing groups of SAP volunteers for workshop creation, and overseeing the activity in February.

Sept 2013 - Present Lecture Series Coordinator

Physics Society

I am responsible for inviting and organizing speakers from both academia and industry to talk to our undergraduate Physics and Engineering Physics students about their work. These lectures occur monthly, with food and drink being provided to students.

Sept 2012 - Present Mentorship Coordinator

Physics Society

I designed a mentorship program for junior students in Physics to connect to upper years students. This involved matching students with relevant mentors who had expertise in the student's area of interest, as well as organizing networking events.

Sept 2013 - Present Student Teacher

Let's Talk Science

I am designing and supervising workshops on science - from engineering windmills, to investigating cryptography, for 10 and 11 year old students.

Oct 2013 - Present Physics and Astronomy Head Committee

UBC Physics

I am the undergraduate representative for the committee searching for a new UBC Physics and Astronomy department head.

May 2013 - Present Vancouver Aquarium Research Presenter

Vancouver Aquarium

I talk to members of the public both about the animals at the Aquarium, as well as current research projects which the Aquarium is involved with. I also talk about their exciting conservation programs, and how these are impacting our communities.

Feb 2013 - Mar 2013 Reading Week Leader

Strathcona Elementary

I designed a one hour static electricity workshop for students in grades 5-7 in a low-income school district. This included choosing appropriate activities, buying materials, and improvising new activities for curious students.

Dec 2011 - Feb 2012 GIRLsmarts Volunteer

GIRLsmarts

Assisted with the creation and implementation of two workshops for girls in grade 6 to learn programming in a fun environment.

Dec 2011 - Feb 2012 Physics Olympics

Physics Olympics

Assisted in the planning and development of activities for the Physics Olympics at UBC, a competition for

high school students.

Sept 2010 - Apr 2011 Astronomy Club Webmaster

Astronomy Club Maintained the website of the Astronomy Club at UBC, including adding video, photos and links to social media.

Sept 2009 - Apr 2010 Science Undergraduate Society Representative

Math Club Represented the Math Club at Science Undergraduate Society meetings. This included advocating for increased funding, and voting on various issues related to students in science.

OTHER INFORMATION

Coursera Courses

2013 · Computational Neuroscience · 100%

2013 · Machine Learning · 100%

December 7, 2015