MATTHEW LEIGHTON

matt@matthewleighton.com

EDUCATION

Dalhousie University, Halifax, Canada *September 2016-Present*
B.Sc. in Mathematics & Physics *Expected Graduation Date: May 2020*
Current GPA: 4.17/4.3
Member of the Varsity Track team *2016-2018*
Choral Scholar with the University of King's College Chapel Choir *2016-Present*

Chalmers University of Technology, Gothenburg, Sweden *January 2019-June 2019*
Exchange Program, Studying Mathematics and Statistics

EXPERIENCE

Undergraduate Researcher May 2018 - Present
Dalhousie University, supervised by Andrew Rutenberg *Halifax, NS*

· Worked with Professor Andrew Rutenberg on mathematical and computational modelling of host-pathogen dynamics. More specifically, developed an agent-based stochastic model for invasion of host cells by Salmonella bacteria. Using this model we were able to gain a quantitative understanding of the impact of the ruffling mechanism on the statistics and dynamics of invasion. A paper detailing these results is currently begin finalized.

· Currently working on a coarse grained liquid-crystal elastomer model of cross-linked collagen fibrils as part of an honours thesis. The goal is to better understand how intermolecular cross-linking determines the elastic properties of a fibril.

Business Analyst May 2017-April 2018
INETCO Systems *Vancouver, BC*

· Reported directly to the vice-president of product management. Responsibilities included developing financial models to determine pricing structures for new products, writing marketing documents, competitive analysis, managing marketing campaigns, and communicating with customers. Undertook the design and planning for the release of a major new product (a cloud-based transaction monitoring system for small banks and credit unions); wrote and presented the business plan at a quarterly board meeting for board approval. As a result, was hired to stay on as a consultant during the school year.

Instructor March 2015-August 2016
Pedalheads *Vancouver, BC*

· Worked as an instructor teaching young children (aged 4-13) beginner to advanced biking skills.

Volunteer

· Head coach for a Vancouver Hawks youth field hockey team. *Spring 2015/16/17*
· Assistant coach for one of Kitsilano Secondary School's junior ice hockey teams. *2015-2016*

AWARDS

NSERC Undergraduate Summer Research Award (May 2018)

U-Sports Academic All-Canadian (2016/17 and 2017/18)

Dalhousie Archibald Physics Prize (May 2017)

Dalhousie Chancellor's Scholarship (2016-2020)

Helen Roby Choral Scholarship (2016-Present)

TALKS

'Modelling Cross-Linking in Collagen Fibrils', *American Physical Society (APS) March Meeting, March 2020*

'Constructing a Coarse-Grained Model for Cross-Linked Collagen Fibrils', *Atlantic Undergraduate Physics and Astronomy Conference (AUPAC), February 2020*

'Modelling Cross-Linking in Collagen Fibrils', *Canadian Undergraduate Physics Conference, November 2019*

'Stochastic modelling of cellular *Salmonella* infection', *Dalhousie Bioblast Seminar, August 2018*