

# Stephanie T. Cheung

✉ stephanie@stephaniecheung.ca • 📄 stephaniecheung.ca • 🐦 steph\_tc

## Research Interests

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- biomedical engineering; auditory-motor coupling; interactive computer play; neurorehabilitation; electrophysiology.

## Education

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**Doctoral Student (Biomedical Engineering & Collaborative Program in Neuroscience)** **Toronto, ON**  
*University of Toronto* *Sept, 2015 - present*

**Dissertation:** Movement through Music: Video Games for Music-Supported Motor Rehabilitation.

**Supervisors:** Dr. Elaine A. Biddiss and Dr. Joyce L. Chen.

**Master's of Applied Science (Electrical & Computer Engineering)** **Hamilton, ON**  
*McMaster University* *Sept, 2012 – Sept, 2014*

**Thesis:** Modelling the Neural Representation of Interaural Level Differences for Linked and Unlinked Bilateral Hearing Aids.

**Supervisor:** Dr. Ian C. Bruce.

**Bachelor of Engineering (Electrical & Biomedical Engineering)** **Hamilton, ON**  
*McMaster University* *Sept, 2008 – April, 2012*

**Capstone:** "MACBot": A Robotic Toy for Children with Autism Spectrum Disorders.

**Thesis:** A Comparison of Wavelet and Short-Time Fourier Transform Techniques for Analysis of Auditory Cortex Beta-Band Activity.

**Supervisors:** Dr. Hubert de Bruin; Dr. Laurel Trainor; Dr. Takako Fujioka

**Associate of The Royal Conservatory of Music (Piano Performance), First Class Honours** **Toronto, ON**  
*The Royal Conservatory of Music* *Conferred Jan, 2009*

Studied with Tanya Tkachenko and Boris Zarankin.

## Awards & Scholarships

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**2015 – present:** Wildcat Graduate Scholarship

**2015 – present:** Bloorview Research Institute Student Fellowship

**2014:** Certificate of Excellence for Outstanding Thesis

**2014:** International Hearing Aid Research Conference Student Scholarship

**2012 – 2014:** McMaster University Graduate Scholarship

**2011:** Ward Family Summer Student Scholarship

**2008:** The General Motors Entrance Scholarship

## Research Experience

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**Research Assistant** **Toronto, ON**  
*PEARL Lab, Bloorview Research Institute* *Nov, 2014 – Aug, 2015*

- Developed sound processing algorithms and protocols for the design and evaluation of music-supported therapy video games.

**Ward Family Research Summer Student** **Toronto, ON**  
*PEARL Lab, Bloorview Research Institute* *May, 2011 – Aug, 2011*

- Worked on a communication interface which converts physiological signals to music for anxiety detection (84% accuracy).

**Research Assistant (Volunteer) & Database Developer** **Hamilton, ON**  
*Infant Studies Group & McMaster Institute for Music and the Mind* *May, 2010 – Jan, 2011*

- Conducted infant and adult EEG studies in music cognition. Developed a digital database for participant recruitment.

## Teaching & Supervising Experience

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### Co-Supervisor, Movement through Music

PEARL Lab, Bloorview Research Institute

**Toronto, ON**

Feb, 2015 – present

- With Dr. Elaine Biddiss, I oversee the work of game developers engaged on my doctoral project.

### Teaching Assistant, “Cellular Bioelectricity”

Dept. of Electrical & Computer Engineering, McMaster University

**Hamilton, ON**

Jan, 2013 – April, 2014

- Sole teaching assistant to cohorts of 30-40 students each (Winter 2013; Winter 2014).
- Topics include: bioelectricity; ionic transport in cellular membranes; cardiac and neural physiology; electrical stimulation.

### Teaching Assistant, “Structure of Biological Materials”

Dept. of Electrical & Computer Engineering, McMaster University

**Hamilton, ON**

Sept, 2012 – Dec, 2013

- Sole teaching assistant to cohorts of 30-40 students each (Fall 2012; Fall 2013).
- Topics include: biomaterials; biocompatibility; biomechanics; physiological fluid mechanics; artificial organs; medical imaging.

## Conference Presentations

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**Cheung, S.T.** & Bruce, I.C. (2015). “Can auditory brainstem and midbrain processing of interaural level difference cues really explain perceptual performance?” at 169th Meeting of the Acoustical Society of America, Pittsburgh, PA. doi: 10.1121/1.4920775

**Cheung, S.T.** & Bruce, I.C. (2014). “Modeling the neural representation of interaural level differences for linked and unlinked bilateral hearing aids.” at International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA.

## Other Presentations

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**Cheung, S.T.** (2015). “PEARL Lab: Interactive media for the home, clinic, and beyond.” at Bloorview Research Trainee Rounds, Bloorview Research Institute, Toronto, ON.

**Cheung, S.T.** & Bruce, I.C. (2014). “Modelling the lateral superior olive response to sound localization cues in impaired and aided hearing.” at Dept. of Electrical & Computer Engineering Seminar Series, McMaster University, Hamilton, ON.

**Cheung, S.**, Han, E., & Biddiss, E. (2011). “Signals to songs: Sonification of physiological data for anxiety detection.” at Ward Summer Student Research Day, Bloorview Research Institute, Toronto, ON.

## Extracurricular Leadership

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### Rounds Coordinator

Bloorview Research Institute Trainee Executive

**Toronto, ON**

October, 2015 – present

- Planning and organizing workshops and activities for Bloorview research trainees.

### Director (various: Communications; External Communications; Member Learning)

McMaster University Chapter, Engineers Without Borders Canada

**Hamilton, ON**

May, 2009 – May, 2012

- Awards: Most Improved Chapter 2010. Chapter of the Year 2011.
- Served on national office's communications advisory panel. Co-chaired Ontario retreat, planned two conferences.

*Last updated Nov 6<sup>th</sup>, 2015.*