

Thomas Donoghue

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Languages: English (native), French (professional proficiency)

Areas of Specialization

Cognitive Neuroscience - Electrophysiology - Brain-Computer Interfaces

Education

- 2014 - *current* **Ph.D., Cognitive Science**
UC San Diego, La Jolla, California, USA
- 2011- 2014 **Bachelors of Arts and Sciences (BA&Sc) Honours Cognitive Science**
McGill University, Montreal, Quebec, Canada
Major: Honours Cognitive Science; Minor: Philosophy
Graduated First Class Honours with Distinction
- 2008 - 2011 **Diplome D'Etudes Collegial (DEC) Double Diploma in Science & Social Science**
John Abbott College, Sainte Anne de Bellevue, Quebec, Canada
In Quebec, a DEC is a necessary intermediary degree between high school & university
- 2003 - 2008 **High School Diploma**
Laurentian Regional High School, Lachute, Quebec, Canada

Research Experience

- 9/2014-*current* **Advisor: Dr. Bradley Voytek** (Graduate Student Researcher)
UC San Diego, Department of Cognitive Science, Cognitive & Neural Dynamics Lab
Investigating mechanisms of neural communication using electrophysiological measures such as electroencephalography (EEG) and electrocorticography (ECoG), and computational modelling. Investigating the role of neuronal oscillations in cognition.
- 3/2015-*current* **Advisor: Dr. Virginia De Sa** (Graduate Rotation Student)
UC San Diego, Department of Cognitive Science, Natural Computation Lab
Developing EEG based brain-computer interfaces (BCIs) to investigate the role of neural oscillations in cognition. Assisting with BCI speller systems for motor disease patients.
- 1/2015-3/2015 **Advisor: Dr. Jaime Pineda** (Graduate Rotation Student)
UC San Diego, Department of Cognitive Science, Cognitive Neuroscience Lab
Using MEG and EEG to investigate neural correlates of autism, and the effect of neurofeedback training as a potential therapeutic intervention.
- 11/2013 **Advisor: Dr. Ghislaine Dehaene-Lambertz** (Visiting Scholar)
Neurospin, INSERM-CEA Cognitive Neuroimaging Unit, Neurospin, Saclay, France
Implementing connectivity and network analysis tools for electroencephalography recordings from infants in order to investigate neural underpinnings of language and cognition.
- 5/2013-6/2014 **Advisor: Dr. Sylvain Baillet** (Research Assistant)
Montreal Neurological Institute, Department of Neurology & Neurosurgery
Global networks and functional connectivity during sleep, using magnetoencephalography and polysomnography. Developing methods for cross-frequency coupling in neural data.

9/2012-9/2014 **Advisor: Dr. Kris Onishi** (Research Assistant)
McGill University, Department of Psychology - McGill Infant Development Cluster (MIDC)
Psycholinguistics: investigating language perception in adults. Developmental psychology:
designing and implementing a study investigating statistical learning in infants.

Conference Abstracts & Posters

2015 Goodman M, Sharma R, Datko M, Gougelet R, **Donoghue T**, Castro N, Sloan M, Gomez D, Courelli A, Onder Y, & Pineda J. Paving the Way for Real-Time Functional Imaging in Autism: Preliminary Results from a Combined Neurofeedback and Biofeedback Intervention.
Real-time Functional Imaging & Neurofeedback, Gainesville, FL, USA, 2015

Honours, Awards & Fellowships

3/2014 **Owens Scholar Award, Johns Hopkins University** - Declined
18 000\$ USD additional funding over 3 years offered with admission to Johns Hopkins

11/2013 **Samuel de Champlain Quebec Program for International Collaboration**
Funds provided by my research supervisor (Dr. Baillet) for travel to NeuroSpin in France

Presentations

2/2015 **Introduction to EEG for BCI Applications**
UCSD Cognitive Science Student's Society, La Jolla, CA, USA
Presented an introduction to EEG for the Open BCI Hackathon event.

11/2013 **Introduction to *Brainstorm* Software for MEG/EEG analysis**
NeuroSpin Research Institute, Saclay, France

10/2013 ***Brainstorm* software for MEG/EEG analysis**
Universite de Montreal - Scale-free dynamics and networks in neurosciences conference
Assisted with an interactive workshop presenting Brainstorm data analysis software

Science Outreach

1/2014-current **Science Writer, Useful Science Organization** (non-profit - <http://usefulscience.org>)
Writing clear, concise and useful summaries of scientific research for a general audience

9/2014-current **Penpal, Mary Fey Pendleton School**, Oceanside, CA, USA
Penpal with grade 7-8 students, as a mentor and to foster an interest in science as a career

6/3/2015 **Career Day Presenter, Feaster Charter School**, San Diego, CA, USA
Assisted with presentation & demonstrations of brain-computer interfaces

2/2013-2/2014 **High School Presenter, Brain Awareness Organization**
Gave presentations on how the brain works and the neural effects of drugs

Academic Activities & Volunteering

6/2013-5/2014 **Co-President**, Student Association of Cognitive Science, McGill University
Provided events, activities and support to all Cognitive Science undergraduate students

9/2012-5/2013 **VP Internal**, Student Association of Cognitive Science, McGill University
Internal affairs and organizing events for the undergraduate cognitive science community

9/2011-5/2012 **Volunteer English and Math Tutor**, Agence Ometz (non-profit), Montreal, Quebec, Canada
1-on-1 tutoring and classroom partner for students with academic difficulty

9/2009-5/2010 **English Tutor**, John Abbott College Writing Center
Drop in tutoring and scheduled student tutoring for help with reading and writing in English

Teaching Experience

Summer 2015 **Instructor, UC San Diego**, Academic Connections
Introduction to Cognitive Science

Spring 2015 **Teaching Assistant, UC San Diego**, Department of Cognitive Science
Introduction to Computing (Prof. Bradley Voytek)

Winter 2015 **Teaching Assistant, UC San Diego**, Department of Cognitive Science
Systems Neuroscience (Prof. Douglas Nitz)

Fall 2014 **Discussion Group Leader, McGill University**, Department of Philosophy
Introduction to History and Philosophy of Science, Topic: Cognitive Science (Prof. Ian Gold)

Programming Skills

Data Analysis: Matlab, R
Scripting Languages: Python, Shell Script