Jeremy Thomas, B.Sc. (Hons)

Edmonton, Alberta
jjthomas@ualberta.ca

Education

B.Sc. (Honours), Neuroscience, University of Alberta   2015-2019

M.Sc., Psychology, University of Alberta   2019-present

Research Skills

- Proficient in MATLAB and R, working knowledge of Python, working knowledge of JavaScript.
- Proficient in statistics and data analysis.
- Experience with qRT-PCR.
- Experience with immunofluorescence, confocal microscopy, western blot.
- Experience with growth and maintenance of eukaryotic cell culture.

Academic Experience

Master's thesis (ongoing), Department of Psychology,
University of Alberta, Edmonton, AB
September 2019-Present

- Programmed computerized memory experiments in MATLAB, Python and JavaScript.
- Performed statistical analyses in JASP and R.
- Research involved updates to mathematical models of association memory. These models use concepts in linear algebra and probability theory to simulate memory behaviour.
- Programmed and fit these models to empirical data.
- Thesis: 1) the role of order memory in paired associate learning (e.g., memory for word pairs), and how this informs current mathematical models. 2) Examined the role of mental imagery in association memory.

Summer studentship, Department of Pharmacology,
University of Alberta, Edmonton, AB
May 2018-August 2018

- Studied gene expression of mice suffering from a model of Multiple Sclerosis.
- Performed wet lab techniques, such as qRT-PCR.
- Wrote MATLAB script to sort through gene expression data of mice and identify the GO (Gene Ontology) terms that describe the most dysregulated genes in diseased mice.

Summer studentship, Department of Physiology,
University of Alberta, Edmonton, AB
May 2017-August 2017

- Examined kidney membrane protein (KAE1) that causes acidosis when mutated.
- Grew and maintained eukaryotic cell culture.
- Learned techniques such as western blot, immunofluorescence and confocal microscopy.

Publications

Thomas, J.J., Kluger, F.E., and Caplan, J.B. (submitted). The relationship between interactive-imagery instructions and association memory.

Awards and Distinctions

- NSERC: Alexander Graham Bell Canada Graduate Scholarship: $17,500
  May 2020- April 2021

- Walter H. Johns Graduate Fellowship: $5800
  May 2020- April 2021

- Alberta Innovates Health Solutions Summer Studentship: $6000
  Summer 2018

- Alberta MS Network Summer Studentship: $6000
  Summer 2018, declined

Presentations at Academic Conferences

Thomas, J.J. and Caplan, J.B. (2021). Modelling order within associations in symmetric models of association memory. *Annual joint meeting of the Society for Mathematical Psychology and the International Conference on Cognitive Modeling,* virtual conference.

Thomas, J.J. and Caplan, J.B. (2021). Can interactive imagery instructions increase association-memory without imagery? *Royce-Harder Research Conference*, virtual conference, hosted in Edmonton, AB, Canada.

Thomas, J.J. and Caplan, J.B. (2021). Four models of ordered, symmetric associations. *Australasian Mathematical Psychology Conference*, Newcastle, NSW, Australia.

Thomas, J.J. and Caplan, J.B. (2020). Representing ordered associations in symmetric models of memory. *Society for Mathematical Psychology Satellite Meeting*, virtual conference.

Thomas, J.J. and Caplan, J.B. (2020). Memory for the order within associations is unaffected by interactive imagery. *Psychonomics*, virtual conference.

Thomas, J.J. and Caplan, J.B. (2020). Imagery ability does not predict memory-success with interactive-imagery. *Context and Memory Symposium.* virtual conference, hosted in Philadelphia, PA, USA.

Caplan, J. B. and **Thomas, J. J.** (2019). Visual imagery ability and memory for word pairs. *Psychonomics,* Montreal, QC, Canada.

Thomas, J.J. and Caplan, J.B. (2019). The role of imagery ability in the effectiveness of interactive imagery. *Banff Annual Seminar in Cognitive Science,* Banff, AB, Canada.

Thomas, J.J. and Caplan, J.B. (2019). The nature of interactive imagery as a strategy for association memory. *Royce-Harder Research Conference*, Edmonton, AB, Canada.

Thomas, J.J. and Cordat E. (2017). Characterizing Novel Mutations in Kidney Anion Exchanger 1 that Cause Distal Renal Tubular Acidosis. *Faculty of Medicine & Dentistry 50th Annual Summer Students' Research Day*, Edmonton, AB, Canada.

Academic Employment

- Teaching Assistant, Introductory Psychology (Psyco 104A3), Fall 2019, University of Alberta
- Teaching Assistant, Introductory Psychology (Psyco 104X50), Winter 2020, University of Alberta
- Teaching Assistant, Introductory Psychology (Psyco 104B1), Winter 2020, University of Alberta
- Teaching Assistant, Introductory Psychology (Psyco 104A2), Fall 2020, University of Alberta.
- Teaching Assistant, Introduction to Research Methods (Psyco 221B1), Winter 2021, University of Alberta.

Academic Interests

- Episodic memory and its basis in the brain.
- The effect of both neurotransmitters and exogenous chemicals on cognition.

Volunteer Work

- Organized University of Alberta Psychology department's Cognition Seminar in Fall 2020.
- Administrator for lab website: http://www.psych.ualberta.ca/~cml/index.html