

Spencer A. Arbuckle

Ph.D. Candidate in Neuroscience
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Education

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|--------------|-------------------------|--------------------|--|
| 2016–present | Ph.D. Neuroscience | Western University | advisors: Jörn Diedrichsen & Andrew Pruszynski |
| 2010–14 | B.Sc. (Hon.) Psychology | Queen's University | advisor: Ingrid Johnsrude |

Awards & Scholarships

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| 2020 | Western University Neuroscience Research Day award (\$100) |
| 2019 | Primate Systems Neuroscience Summer School Travel Award (€500) |
| 2018 | NSERC PGS-D Postgraduate Scholarship (\$63,000) |
| 2018 | Ontario Graduate Scholarship (\$15,000) – <i>declined</i> |
| 2017 | Western University Neuroscience Conference Travel Award (\$500) |
| 2017 | <i>CoSMo</i> Summer School – Best overall group project |
| 2017 | Brain Canada Travel Scholarship to attend <i>CoSMo</i> Summer School (\$1,500) |
| 2017 | BMI Postdoc Collaborative Research Grant: Ejaz, Weiler, & Arbuckle (\$2,296) |
| 2013–14 | Queen's University Dean's Honour List |
| 2010 | Queen's University Entrance Scholarship |

Workshop Participation

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| 2019 | Representational Similarity Analysis 3.0 Workshop. Collingwood, ON (Canada). |
| 2019 | Primate Systems Neuroscience Summer School. Bad Bevensen (Germany). <i>Travel grant awarded.</i> |
| 2017 | Computational Sensorimotor Neuroscience (<i>CoSMo</i>). University of Minnesota (USA). <i>Travel grant awarded.</i> |

Selected Teaching Experience (lecturing, workshops, TAs)

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| 2020 | Intro to Neural Networks (psyc 9221B / app math 9624B) | Western University |
| 2019– | Regular contributor at the Computational Core Methods Lunches | Western University |
| 2017 | Information Systems (compsci 1032) | Western University |
| 2016 | Statistics for Science (stats 2244) | Western University |
| 2016 | Introduction to Statistics (stats 1024) | Western University |
| 2012–14 | Principles of Psychology (psyc 100) | Queen's University |

Invited Talks

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| 03/2018 | <i>Can fMRI be used to make inferences on neural representations?</i> Dept. of Cognitive, Linguistic, & Psychological Sciences, Brown University (Providence RI, USA). |
| 04/2017 | <i>An introduction to pattern component modeling.</i> BLAM Lab, Dept. of Neurology, Johns Hopkins University School of Medicine (Baltimore MD, USA). |

Publications

- [5] **Arbuckle SA**, Weiler J, Kirk EA, Rice CL, Schieber MH, Pruszynski JA, Ejaz N, Diedrichsen J. (2020). Structure of population activity in primary motor cortex for single finger flexion and extension. *Submitted*
- [4] **Arbuckle SA**, Yokoi A, Pruszynski JA, Diedrichsen J. (2019). Stability of representational geometry across a wide range of fMRI activity levels. *NeuroImage* 186: 155-163.
- [3] Yokoi A, **Arbuckle SA**, Diedrichsen J. (2018). The role of human primary motor cortex in the production of skilled finger sequences. *JNeuroscience* 38: 1430-1442.
- [2] Diedrichsen J, Yokoi A, **Arbuckle SA**. (2018). Pattern Component Modeling: A flexible approach for understanding the representational structure of brain activity patterns. *NeuroImage* 180: 119-133.
- [1] Lambert C, **Arbuckle SA**, Holden R. (2016). The Marlow-Crowne Social Desirability Scale outperforms the BIDR Impression Management Scale for identifying fakers. *Journal of Research in Personality* 61: 80-86.

Conference Talks

- [5] **Arbuckle SA***, Pruszynski JA, Diedrichsen J. Integration of tactile information from multiple fingers in human primary sensory cortex measured using high-resolution fMRI. *Robarts Research Retreat*, 2020.
- [4] **Arbuckle SA**, Weiler J, Kirk EA, Saikaley M, Rice C, Schieber M, Diedrichsen J, Ejaz N*. Representation of fingers and finger movement direction in the primary motor cortex. *Society for the Neural Control of Movement*, 2018.
- [3] Liu M*, **Arbuckle SA**, Okorokova L, Herrera* A, Kaiser A. Does S1 spiking activity encode sensory feedback for goal-directed movements in a grasping task? *Advances in Motor Learning & Motor Control (SfN satellite symposium)*, 2017.
- [2] **Arbuckle SA***, Weiler J, Kirk EA, Saikaley M, Rice C, Schieber M, Diedrichsen J, Ejaz N. Extension and flexion representations in M1 spatially cluster around the moving finger. *Advances in Motor Learning & Motor Control (SfN satellite symposium)*, 2017.
- [1] Ritz H, **Arbuckle SA**, Wild C, Johnsrude I.* Enhanced recognition memory for acoustically degraded sentences. *39th MidWinter Meeting of the Association for Research in Otolaryngology*, 2015.

*indicates primary speaker

Conference Posters

- [7] **Arbuckle SA***, Pruszynski JA, Diedrichsen J. Integration of tactile information from multiple fingers in human primary sensory cortex measured using high-resolution fMRI. *Neuroscience Research Day (UWO)*, 2019.
- [6] **Arbuckle SA***, Pruszynski JA, Diedrichsen J. Integration of tactile information from multiple fingers in human primary sensory cortex measured using high-resolution fMRI. *Society for Neuroscience*, 2019.
- [5] **Arbuckle SA***, Weiler J, Kirk EA, Saikaley M., Rice C, Schieber M, Diedrichsen J, Ejaz N. Representation of fingers and finger movement direction in the primary motor cortex. *Canadian Student Health Research Forum*, 2018. ***nominated to attend by the Western Neuroscience graduate program.*
- [4] **Arbuckle SA***, Weiler J, Kirk EA, Saikaley M., Rice C, Schieber M, Diedrichsen J, Ejaz N. Representation of fingers and finger movement direction in the primary motor cortex. *Mechanisms of Dexterous Behaviour (HHMI Janelia Conference)*, 2018.
- [3] **Arbuckle SA***, Yokoi A, Diedrichsen J. Is representational similarity analysis stable across a broad range of overall fMRI activity levels? *Organization for Human Brain Mapping*, 2017. *(travel grant awarded).*
- [2] **Arbuckle SA***, Yokoi A, Diedrichsen J. Stability of representational similarity analysis across a large range of overall activation levels. *Society for Neuroscience*, 2016.
- [1] Diedrichsen J*, **Arbuckle SA**, Yokoi, A. Studying the representational structure of simple and complex hand movements in the human motor cortex. *Neural Control of Movement*, 2016.