

Curriculum Vitae

Madeleine Isabelle Robin Brodbeck, PhD Candidate

Advanced Facility for Avian Research
Department of Psychology
University of Western Ontario
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Education

- 2018 - Present PhD, Psychology, Cognitive and Developmental Brain Sciences,
University of Western Ontario.
- 2017 Master of Science, Psychology, Behavioural and Cognitive
Neuroscience, University of Western Ontario.
- 2015 Bachelor of Science (Honours), Psychology, Algoma University.

Publications

Theses

Brodbeck MIR (2015). The short term effects of action and non-action video game play on attention. Undergraduate Honour's Thesis.

Brodbeck MIR (2017). Development of new methods to investigate the role of the avian hippocampus in memory formation in brown-headed cowbirds. Master's Thesis.

Peer-Reviewed

Brodbeck MIR, Bingman VP, Cole LJ, Sherry DF & MacDougall-Shackleton SA. (2023). Neuronal activation in the geomagnetic responsive region Cluster N covaries with nocturnal migratory restlessness in white-throated sparrows (*Zonotrichia albicollis*). *The European Journal of Neuroscience*. [In Review].

Brodbeck MIR, & Dupuis P. (2020). The Short Term Effects of Action and Non Action Videogame Play on Attention. *Intersect: The Stanford Journal of Science, Technology, and Society*, 14(1).

Brodbeck DR, **Brodbeck MIR**, & Rosso K. (2019). Domestication and cognitive complexity. *Animal Sentience*, 4(25), 32.

Brodbeck DR, & **Brodbeck MIR**. (2017). Cognitive continuity in cognitive dissonance. *Animal Sentience: An Interdisciplinary Journal on Animal Feeling*, 1(12), 8.

Brodbeck MIR & Brodbeck DR. (2015). It's just evolution. Commentary: A crisis in comparative psychology: where have all the undergraduates gone? *Front. Psychol.* 6:1873. doi: 10.3389/fpsyg.2015.01873

Conference Presentations & Posters

Brodbeck MIR, Rodrigo S, Groom DJE, Gerson AR, MacDougall-Shackleton SA & Sherry DF. Are cognitive and perceptual brain regions activated during flight of migratory songbirds? *Annual International Conference on Comparative Cognition*, April 2023, Melbourne Florida, USA.

Brodbeck MIR & Samuels B. (2021). Perspectives on environmental enrichment for wild songbirds used in research. *International Student Symposium on Animal Behaviour and Cognition*, May 2021, The University of Western Ontario, Virtual.

Brodbeck MIR, Huang NX, Sherry DF, & MacDougall-Shackleton SA. (2020). Male brown-headed cowbirds outperform females on a touchscreen task. *Annual Conference of the Animal Behaviour Society*, July 2020, Virtual.

Brodbeck MIR. Nocturnally migrating songbirds and neural processing of Earth's magnetic field: What activates Cluster N? *International Student Symposium on Animal Behaviour and Cognition*, December 2019, Kyoto University, Kyoto, Japan.

Huang NX, **Brodbeck MIR**, & MacDougall-Shackleton SA. (2019). Sex-specific differences in brown-headed cowbirds' (*Molothrus ater*) use of featural and geometric cues in an allocentric spatial memory task. *Ontario Ecology, Ethology and Evolution Colloquium*, May 2019, McMaster University, Hamilton, Ontario, Canada.

Bingman PV, **Brodbeck MIR**, Yuan S, & MacDougall-Shackleton SA. (2019). Cluster N activity in migrating nocturnal birds: circadian control or facultative regulation? *RIN Conference on Animal Navigation*, April 2019, Royal Holloway College, UK.

Brodbeck MIR, Bingman VR, Yuan S, & MacDougall-Shackleton SA. (2019). Migratory songbirds and the Earth's magnetic field: What activates Cluster N? *Annual International Conference on Comparative Cognition*, April 2019, Melbourne Florida, USA.

Brodbeck MIR, Bingman VR, Yuan S, & MacDougall-Shackleton SA. (2018). What happens in the brain of nocturnally migrating birds? *Ontario Ecology, Ethology and Evolution Colloquium*, May 2018, University of Western Ontario, London, Ontario, Canada.

Brodbeck MIR, Lomber SG, MacDougall-Shackleton SA & Sherry DF. (2018). Using reversible brain deactivation to understand the function of the avian hippocampus. *Ontario Ecology, Ethology and Evolution Colloquium*, May 2018, University of Western Ontario, London, Ontario, Canada.

Brodbeck MIR, Bingman VR, Yuan S, & MacDougall-Shackleton SA. (2018). What happens in the brain of nocturnally migrating birds? *Southern Ontario Neuroscience Association*, May 2018, University of Guelph, Guelph, Ontario, Canada.

Brodbeck MIR, Lomber SG, Sherry DF, & MacDougall-Shackleton SA. (2017). The role of the hippocampus in encoding, retention, and retrieval of spatial memory in brown-headed cowbirds. *Annual Conference of the Animal Behaviour Society*, June 2017, University of Toronto's Scarborough Campus, Ontario, Canada.

Brodbeck MIR, Lomber SG, Sherry DF, & MacDougall-Shackleton SA. (2017). Cryoloops in an avian species: A Method to reversibly deactivate the hippocampus. *Annual International Conference on Comparative Cognition*, April 2017, Melbourne Florida, USA.

Brodbeck MIR & Bloomfield L. (2015). Attention to acoustic features in a spatial task. *Annual International Conference on Comparative Cognition*, April 2015, Melbourne Florida, USA.

Invited Presentations & Panels

Guest Lecture. “Spatial Navigation and Orientation at night”, Animal Cognition, Psychology Department, Brescia University, January 2023.

Guest Lecture. “Spatial navigation and orientation in non-human animals”, Individual Differences in Cognitive Neuroscience, Psychology Department, The University of Western Ontario, November 2021.

Panel Member. “Perceptions of Scholarly Publishing” (virtual), *The Canadian Association of Learned Journals*, March 2021.

See panel: <https://www.youtube.com/watch?v=v9M-jR38-q0&>

Invited Presentation. “Magnetic field perception in a non-migratory bird (*Taeniopygia guttata*): What activates Cluster N?”, The Cognitive and Behavioural Neuroscience Seminar, Psychology Department, Wilfrid Laurier University (virtual), January 2021.

Rotman Dialogue Commentator. “Enactivism, pragmatism...behaviorism?”, The Rotman Institute, Department of Philosophy, The University of Western Ontario, October 2019.

See commentary: <https://youtu.be/vjFbb085DU4>

Guest Lecture. “What is Graduate School?”, Psychology Research Methods, Psychology Department, Brescia University College, March 2018.

Guest Lecture. “What is Graduate School?”, Psychology Research Methods, Psychology Department, Brescia University College, April 2017.

Research Experience

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|---------------------------------|----------------------------------|---|---|
| January 2018 – Present | University of Western Ontario | Dr. David Sherry & Dr. Scott MacDougall- Shackleton | Doctoral work on magnetoreception in songbirds |
| September 2015 – August 2017 | University of Western Ontario | Dr. David Sherry & Dr. Scott MacDougall- Shackleton | Master's work on spatial memory in brown-headed cowbirds |
| September 2014 – May 2015 | Algoma University | Dr. Paul Dupuis | Undergraduate Honour's Thesis on video games and visual attention |
| May 2014 – August 2015 | Algoma University | Dr. Laurie Bloomfield | Research Assistant working on chickadee communication |
| June 2013 – August 2013 | Algoma University | Dr. Dwayne Keough | Research Volunteer working on motor control in golfing |
| May 2012 – August 2012 | Algoma University | Dr. Dwayne Keough | Research Assistant working on motor control in singers |

Awards

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| The Journal of Experimental Biology Travelling Fellowship | Cambridge University | April 2020 |
| Society of Graduate Students Travel Subsidy | University of Western Ontario | January 2020 |
| Third Place Talk at the International Student Symposium on Animal Cognition and Behaviour | Kyoto University | December 2019 |
| Graduate Research Awards Fund | University of Western Ontario | April 2019 |
| Canadian Council of Departments of Psychology Teaching Assistant's Award | University of Western Ontario | June 2018 |
| First Place Lighting Talk at Ontario Ecology, Ethology and Evolution Colloquium 2018 | University of Western Ontario | May 2018 |
| Award of Excellence in Psychology (science honours) | Algoma University | June 2015 |
| The Governor General's Academic Medal (Silver) | Algoma University | June 2015 |
| NSERC Undergraduate Student Research Award | Algoma University | Summer 2015 |
| NSERC Undergraduate Student Research Award | Algoma University | Summer 2014 |

Scholarships

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|---|-------------------------------|--------------|------------------------------|
| NSERC CGS-D (National) | University of Western Ontario | \$90000 | January 2021 – December 2022 |
| NSERC PGS-D (National) *upgraded to CGS-D | University of Western Ontario | \$21000 | January 2020 – December 2020 |
| Western Graduate Research Scholarship (Institutional) | University of Western Ontario | | January 2018- Present |
| Ontario Graduate Scholarship (Provincial) | University of Western Ontario | \$15000 | January 2019 - December 2019 |
| Ontario Graduate Scholarship (Provincial) | University of Western Ontario | \$15000 | January 2018 – December 2018 |
| Western Graduate Research Scholarship (Institutional) | University of Western Ontario | | September 2015- August 2017 |
| Ontario Graduate Scholarship (Provincial) | University of Western Ontario | \$15000 | September 2016- August 2017 |
| NSERC Canada Graduate Scholarship - Master's (National) | University of Western Ontario | \$17500 | September 2015 - August 2016 |
| NSERC Canada Graduate Scholarship – Master's (National; not accepted) | Dalhousie University | \$17500 | Not accepted |
| Edward and Frank McGrath Award of Excellence (Institutional) | Algoma University | \$3750/ year | September 2011 – May 2015 |

Teaching Experience

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| May 2023 – August 2023 | University of Western Ontario | Course Instructor | Evolution and Psychology |
| January 2023 – April 2023 | University of Western Ontario | Course Instructor | Evolution and Psychology |
| May 2022 – August 2022 | University of Western Ontario | Course Instructor | Evolution and Psychology |
| January 2022 – April 2022 | University of Western Ontario | Teaching Assistant | Statistics for Psychology |
| September 2021- December 2021 | University of Western Ontario | Teaching Assistant | Special Topics: Individual Differences in Cognitive Neuroscience |
| September 2020 - December 2020 | University of Western Ontario | Teaching Assistant | Hormones & Behaviour |
| May 2020 - August 2020 | University of Western Ontario | Grader | Introduction to Psychology |
| September 2019 – December 2019 | University of Western Ontario | Teaching Assistant | Hormones & Behaviour |
| January 2019 – April 2019 | University of Western Ontario | Teaching Assistant | Animal Behaviour |
| January 2018 – April 2018 | University of Western Ontario | Teaching Assistant | Animal Behaviour |
| January 2017 – April 2017 | University of Western Ontario | Teaching Assistant | Animal Behaviour |
| January 2016 – April 2016 | University of Western Ontario | Teaching Assistant | Psychoneuroimmunology |
| September 2014 – April 2015 | Algoma University | Head Teaching Assistant | Advanced Univariate Statistics, Sensation and Perception |
| September 2012 - April 2014 | Algoma University | Teaching Assistant | Introduction to Psychology, Cognition, Scientific Methods and Analysis, Developmental Psychology, Introduction to Statistics |

Supervisory Experience

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| September 2022 - Present | Undergraduate honour's student (Animal Biology) | Mentoring independent research project on enrichment for captive songbirds |
| September 2020 - April 2021 | Undergraduate honour's thesis student (Psychology) | Mentoring honour's thesis project on correlation between flight length and Cluster N activation in yellow-rumped warblers |
| September 2019 – April 2020 | Undergraduate honour's thesis student (Neuroscience) | Mentoring honour's thesis project on developing Cluster N immunohistochemistry techniques in white-throated sparrows |
| September 2018 – April 2019 | Undergraduate honour's thesis student (Biology) | Mentoring honour's thesis project on spatial memory sex differences in brown-headed cowbirds |
| January 2018 – April 2023 | Volunteer and work study student supervision | Supervised multiple undergraduate volunteers on bird care, microscope work, and immunohistochemistry procedures |
| September 2015 – August 2017 | Volunteer and work study student supervision | Supervised 5 undergraduate students on bird care & behavioral testing with brown-headed cowbirds |

Service

Conference and Workshop Organization

The International Student Symposium on Animal Behaviour and Cognition organizing committee Chair, International Virtual Symposium, The University of Western Ontario, October 2020 - May 2021.

Writing Group Organizer and Chair, The Advanced Facility for Avian Research, The University of Western Ontario, May 2020 – October 2020.

Reviewer for

Acta Ethologica. September 2021.

The Western Undergraduate Psychology Journal. Graduate Reviewer. September 2017-December 2020.

Judge for

Biology Graduate Research Forum. Animal biology session talk judge. November 2021.

The Western Student Research Conference. Lightning talk judge in Social and Health Sciences. March 2021.

Volunteer for

London Pride Festival, London, Ontario. June 2018.

London Pride Festival, London, Ontario. June 2017.

Committees

Psychology Colloquium Committee Co-Chair, University of Western Ontario, September 2020 – April 2021.

PSAC Local 610 Departmental Steward, November 2018 – August 2021.

PSAC Local 610 Health and Safety Committee, September 2020 - January 2021.

Science Rendezvous Communications and Promotions Committee Co-chair, November 2019-April 2020 (event cancelled due to COVID-19).

Animal Communications Committee, January 2019-April 2019.

Science Rendezvous Communications Committee, November 2018-May 2019.

PSAC Local 610 Mental Health Committee, Summer 2018.

Workshops attended

Young Researchers Symposium: Magnetoreception & Navigation (virtual), SFB 1372: Magnetoreception and Navigation in Vertebrates, University of Oldenburg, Oldenburg, Germany, November 26th, 2021 – November 27th, 2021.

Stereology using stereo investigator webinar (virtual), MBF Bio Science, June 2021.

Data Analysis in R: From Zero to Hero (virtual), Department of Biology, The University of Western Ontario, April 20th, 2020 – May 4th, 2020.

International Ecology of Migration Course, CanMove at Lund University, Sweden, November 4th – November 15th, 2019.

Skills

Immunohistochemistry
Microscope slide preparation
Microscopy
Stereology
Perfusion
Bird Anesthesia
ImageJ
Graphpad Prism

Media Coverage

Western Graduate and Post-Doctoral Studies. September 2016. Meet Madeleine Brodbeck, MSc candidate in Psychology.
http://grad.uwo.ca/prospective_students/programs/program_NEW.cfm?p=129

Western News. December 3, 2016. Work takes flight with new idea on bird brains.
<http://news.westernu.ca/2015/12/work-takes-flight-with-new-idea-on-bird-brains/>

Soo Today. August 20, 2015. About Madeleine and the cool stuff she's going to do with \$17,500. <https://www.sootoday.com/local-news/about-madeleine-and-the-cool-stuff-shes-going-to-do-with-17500-182608>

Northern Hoot. June 20, 2015. Madeleine Brodbeck: "Do What You Love."
<http://northernhoot.com/madeleine-brodbeck-do-what-you-love/>

Sault Online. June 14, 2015. Largest Number of Graduates Ever!
<http://saultonline.com/2015/06/largest-number-of-graduates-ever/>

Soo Today. June 9, 2015. Whoohoo Madeleine! <https://www.sootoday.com/local-news/whoohoo-madeleine-181079>