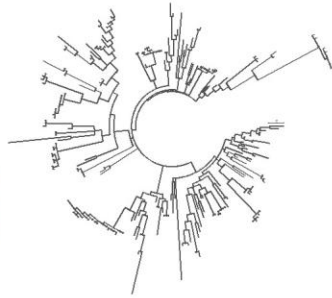


JOEL  
SLADE



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Evolutionary Ecologist

## CURRENT POSITIONS

2017 - **Postdoctoral Research Associate**, BEACON Center  
Michigan State University,  
East Lansing, MI, USA  
Advisor: Dr. Danielle Whittaker; Co-Advisor: Dr. Kevin Theis  
Project: Immunogenetics, chemical ecology, pathogen-host interactions,  
population genetics, and microbial symbionts in songbirds

## ACADEMIC TRAINING

2013-18 **PhD, Biology**, Department of Biology  
University of Western Ontario,  
London, Ontario, Canada  
Advisor: Dr. Elizabeth A. MacDougall-Shackleton  
Dissertation Title: "The major histocompatibility complex in song sparrows:  
immunity, signals, and mate choice"

2010-12 **MSc, Applied Science (Biology)**  
Saint Mary's University, Department of Biology  
Halifax, Nova Scotia, Canada  
Advisor: Dr. Colleen Barber  
Dissertation Title: "Hackle spectral characteristics and their role in mate choice in  
European starlings (*Sturnus vulgaris*)"

- 2005-10      **BSc, Combined Honors in Marine Biology Cooperative Program and Oceanography**  
Dalhousie University, Department of Biology,  
Halifax, Nova Scotia, Canada  
Advisor: Dr. Marty Leonard  
Dissertation Title: “The effect of environmental noise on the probability of begging errors in nestling tree swallows”
- *First Class Honors and Dean’s List (2006 – 2010)*

## SCHOLARSHIPS AND AWARDS

- 2017    Animal Behavior Society Competitive Graduate Student Travel Award (\$500 USD)  
2016    Society of Canadian Zoologists Cas C. Lindsey Prize (\$500 CAD)  
2016    QEII Graduate Scholarship in Science and Technology (\$15,000 CAD)  
2015    AFO/SOC-SCO/WOS Meeting Travel Award (\$588 USD)  
2015    University of Western Ontario, Department of Biology Travel Award (\$300 CAD)  
2015    QEII Graduate Scholarship in Science and Technology (\$15,000 CAD)  
2014    QEII Graduate Scholarship in Science and Technology (\$15,000 CAD)  
2011    NSERC Alexander Graham Bell CGS-M (\$17,500 CAD)  
2011    Saint Mary’s University Faculty of Graduate Studies Graduate Award (\$4,000 CAD)  
2011    Saint Mary’s University Research Proposal Poster Award  
2010    Saint Mary’s University Faculty of Graduate Studies Graduate Award (\$4,000 CAD)  
2009    Dalhousie University Biology Teaching Assistant Award (\$100 CAD).  
2008    Dalhousie University Biology David Andrew Dougall Memorial Bursary (\$800 CAD)  
2007    Dalhousie University In-Course Scholarship (\$500 CAD)  
2005    Dalhousie University Entrance Scholarship (\$1,000 CAD)  
*\*see research section for grant awards*

## RESEARCH

### ***Peer-reviewed publications***

- 3) **Slade, J.W.G.**, Watson, M.J., MacDougall-Shackleton, E.A. 2017. Birdsong signals individual diversity at the major histocompatibility complex. *Biology Letters*, **13**: 20170430.
- 2) **Slade, J.W.G.**, Sarquis-Adamson, Y., Gloor, G.B., Lachance, M-A., and MacDougall-Shackleton, E.A. 2017. Population differences at MHC do not explain enhanced resistance of song sparrows to local parasites. *Journal of Heredity*, **108**(2): 127-134.
- 1) **Slade, J.W.G.**, Watson, M.J., Kelly, T.R., Gloor, G.B., Bernards, M.A., and MacDougall-Shackleton, E.A. 2016. Chemical composition of preen wax reflects major histocompatibility complex similarity in songbirds. *Proceedings of the Royal Society B*, **283**(1842): 20161966.

## Conference presentations

Asterisk indicates presenting author, • indicates poster presentation, and award-winning presentations indicated in **bold text** after reference.

- 17) **Slade J.\***, Watson, M., Kelly T., Bernards, M., Garner, S., MacDougall-Shackleton, E.A. 2018. MHC-mediated mate choice and preen Oil as a chemical signal of MHC similarity in song sparrows (*Melospiza melodia*). *Society of Integrated and Comparative Biology Meeting*, San Francisco, California, USA.
  - **Finalist in the Division of Animal Behavior - Marlene Zuk best student presentation**
- 16) **Slade J.\***, Watson, M., Kelly, T., Gloor, G. Bernards, M., MacDougall-Shackleton, E.A. 2017. Chemical cues of MHC compatibility and acoustic cues of MHC diversity in song sparrows. *Animal Behavior Society Conference*, University of Toronto, Scarborough, ON, Canada.
- 15) **Slade, J.**, Grieves, L., Watson, M., Kelly, T., Gloor, G., Bernards, M., MacDougall-Shackleton, E.A.\* 2017. Smells like preen spirit: avian chemosignaling and the information content of preen oil. *Winter Animal Behavior Conference*, Steamboat Springs, CO, USA.
- 14) **Slade, J.\***, Watson, M., Kelly, T., Bernards, M., Gloor, G., MacDougall-Shackleton, E.A. 2016. Chemical composition of preen oil reflects MHC similarity in songbirds. *Biology Graduate Research Forum*, University of Western Ontario, London, ON, Canada.
- 13) **Slade, J.\***, Watson, M., Kelly, T., Bernards, M., Gloor, G., MacDougall-Shackleton, E.A. 2016. Preen oil as a signal of MHC genotype in a songbird. *Canadian Society of Zoologists' Annual Meeting*, University of Western Ontario, London, ON, Canada.
  - **Society of Canadian Zoologists' annual meeting Cas C. Lindsey Prize for best Ecology, Ethology, and Evolution presentation**
- 12) Watson, M.\*, **Slade, J.**, Gloor, G., MacDougall-Shackleton, E.A. 2016. MHC diversity as a predictor of survival and a correlate of neutral-locus heterozygosity in free-living songbirds. *Canadian Society of Zoologists' Annual Meeting*, University of Western Ontario, London, ON, Canada.
- 11) Kelly, T., **Slade, J.**, Ho, J., Hobson, K., MacDougall-Shackleton, S., MacDougall-Shackleton, E.A.\* 2016. Migration, disease, and birdsong: bridging two worlds? *Winter Animal Behavior Conference*, Steamboat Springs, CO, USA.
- 10) **Slade, J.\***, Sarquis-Adamson, Y., and MacDougall-Shackleton, E.A. 2015. Additive vs. non-additive genetic effects on malaria resistance and the evolution of MHC class I in Song Sparrows (*Melospiza melodia*). *Ornithology Meeting (AFO/SCO/WOS)*, Acadia University, Wolfville, NS, Canada.
- 9) Watson, M.\*, **Slade, J.**, Gloor, G., and MacDougall-Shackleton, E.A. 2015. Individual diversity at MHC as a predictor of survival and a correlate of neutral-locus heterozygosity in free-living Song Sparrows. *Ornithology Meeting (AFO/SCO/WOS)*, Acadia University, Wolfville, NS, Canada.

- 8) • **Slade, J.\***, Sarquis-Adamson, Y., and MacDougall-Shackleton, E.A. 2014. Locally good genes at MHC and resistance to malaria in song sparrows (*Melospiza melodia*). *Interdisciplinary Research Symposium*, University of Western Ontario, London, ON, Canada.
- 7) • **Slade, J.\***, Sarquis-Adamson, Y., and MacDougall-Shackleton, E.A. 2014. Additive vs. non-additive effects at MHC and songbird resistance to malaria. *Biology Graduate Research Forum*, University of Western Ontario, London, ON, Canada.
- 6) • **Slade, J.\***, Sarquis-Adamson, Y., and MacDougall-Shackleton, E.A. 2014. Locally good genes at MHC and resistance to malaria in song sparrows (*Melospiza melodia*). *Animal Behavior Society Conference*, Princeton, NJ, USA.
- 5) • **Slade, J.\***, Doucet, S., and Barber, C. 2012. Hackle spectral characteristics and their role in mate choice in European Starlings. *North American Ornithological Conference V*, University of British Columbia, Vancouver, British Columbia, Canada.
- 4) • Ouedraogo, A., Wright, M., **Slade, J.**, Worth, K., and Barber, C.\* 2012. Role of parental age on European Starling (*Sturnus vulgaris*) brood sex ratios. *North American Ornithological Conference V*, University of British Columbia, Vancouver, British Columbia, Canada.
- 3) • Hornsby, M., Fairn, E., Barber, C., and **Slade, J.\*** 2011. Do male European Starlings use egg spots to make decisions on provisioning effort? *Society of Canadian Ornithologists Annual Meeting*, Université de Moncton, Moncton, New Brunswick, Canada.
- 2) • **Slade, J.\*** 2011. Research proposal on plumage characteristics and their role in mate choice in European starlings (*Sturnus vulgaris*). *Master of Science Proposal Conference*, Saint Mary's University, Halifax, Nova Scotia, Canada.
  - **3<sup>rd</sup> Place Poster Award**
- 1) • **Slade, J.\*** 2010. The effect of environmental noise on the probability of begging errors in nestling tree swallows (*Tachycineta bicolor*). *40th Atlantic Undergraduate Biology Conference*, University of New Brunswick, Fredericton, New Brunswick, Canada.

### **Peer Review for Scientific Journals (alphabetical)**

- Biology Letters
- Scientific Reports (Nature)

### **Collaborations**

*Pls*

**Dr. Gregory Gloor** (University of Western Ontario)

*Downstream analysis of avian MHC through the Illumina MiSeq platform*

**Dr. Mark Bernards** (University of Western Ontario)

*Analysis of avian preen wax through gas chromatography*

### **Graduate Students**

**Matthew Watson** (University of Western Ontario)

*MHC characterization in song sparrows*

## **Research Grants**

- 2018 “Reproductive isolation in action: do rapid changes in scent-producing symbiotic microbes shift host reproductive signals?”
- Whittaker D, Theis K, **Slade J**
  - BEACON Center internal NSF grant (**\$82,518 USD**)
- 2018 “Loss of migratory behavior and parasite-mediated population divergence.”
- **Slade J**, MacDougall-Shackleton E, Whittaker D
  - BEACON Center internal NSF grant (**\$68,250 USD**)
- 2015 “Chemical and acoustic signaling of MHC genotype in Song Sparrows (*Melospiza melodia*)”.
- American Ornithologists’ Union Hesse Research Award (**\$2,500 USD**)
  - Society of Canadian Ornithologists Taverner Award (**\$2,000 CAD**)

## **HQP**

- 2016: Gloria Young Cho –MSc student, University of Western Ontario
  - Genetic sexing of chickadees
- 2014-15: Jennifer Ho – Honors thesis student, University of Western Ontario
  - Avian bioacoustic analysis

## **Invited Seminar Talks**

- 4) “The major histocompatibility complex in song sparrows: immunity and signals”. 2017. *BEACON Center for the Study Evolution in Action*. Michigan State University, East Lansing, MI, USA.
- 3) “The major histocompatibility complex: immunity, signals, and mate choice”. 2016. *Aquatic Behavioural Ecology Laboratory*. McMaster University, Hamilton, Ontario, Canada.
- 2) “From the field to the lab: a look at the application of avian bioacoustics, olfaction, and genetics”. 2014. *DuPage College Field Biology Class*. Queens University Biological Station, Elgin, Ontario, Canada.
- 1) “Pretty feathers and choosing mates in European starlings”. 2012. *Let’s Talk Science Lecture Series*. Halifax Regional Library, Halifax, Nova Scotia, Canada.

## TEACHING

### ***Teaching Development***

2017      **Supported Course Redesign Graduate Assistant**  
*Biology for Sciences I*, University of Western Ontario  
Work to develop course-level learning outcomes, assessments, and learning materials appropriate for a blended course (30% of meaningful student learning occurs in the online learning environment).

2014-15      **Faculty of Science Learning Development Graduate Fellowship**  
*University of Western Ontario*  
Applied interests, teaching experience, and training by working on the Faculty of Science 'bigger picture' initiatives and projects *in lieu* of traditional, department-level TA duties. Performed independent research on undergraduate education.

### ***Lecturing Positions***

2015      **Animal Behavior**, University of Western Ontario  
Lectured 100 3<sup>rd</sup> year undergraduate students two hours per week. Designed and marked written assessments. Supervised three teaching assistants.

### ***Student Advisory Committees***

2016-2017      **Advisory Committee Member**  
*Undergraduate Honors Thesis*, University of Western Ontario  
Currently advising a biology honors student on their thesis project regarding the influence of butterfly color on forest/meadow edge responses.

### ***Student Assessments***

2017      **Evaluator**  
*Biology (4999E) Honors Thesis Talk Day*, University of Western Ontario  
Assessed biology honors student's thesis talks for the Ecology and Evolution stream.

## **Teaching Assistantships**

*Four-month sessions unless otherwise stated*

- 2016            **Tutorial Teaching Assistant**  
*Special Topics in Evolution*, University of Western Ontario  
Taught 24 4<sup>th</sup> year undergraduate students three hours per week. Marked student presentations, participation, and written assessments.
- 2014            **Lab Teaching Assistant**  
*Animal Diversity*, University of Western Ontario  
Guided 60 3<sup>rd</sup> year undergraduate students six hours per week. Performed animal dissections for educational purposes. Designed prelab quizzes. Marked weekly lab assignments.
- 2013            **Tutorial Teaching Assistant**  
*Patterns in Biodiversity*, University of Western Ontario  
Taught 30 3<sup>rd</sup> year undergraduate students two hours per week. Marked written assessments and student presentations.
- 2012            **Tutorial Teaching Assistant**  
*Advanced Cell Biology*, Saint Mary's University  
Directed 30 4<sup>th</sup> year undergraduate students three hours per week.
- 2011-12        **Lab Teaching Assistant**  
*Ecology and Evolution of Fishes*, Dalhousie University  
Taught 60 3<sup>rd</sup> year undergraduate students fish taxonomy and ecology, six hours per week.
- 2011-12        **Lab Teaching Assistant**  
*Introduction to Diversity and Ecological Biology*, Saint Mary's University  
Taught 30 1<sup>st</sup> year undergraduates principles in biodiversity and ecology.
- 2011            **Lab Teaching Assistant**  
*Ornithology*, Saint Mary's University  
Taught 20 4<sup>th</sup> year undergraduate students avian taxonomy three hours per week.
- 2011            **Lab Teaching Assistant**  
*Cell Biology*, Saint Mary's University  
Taught 30 2<sup>nd</sup> year undergraduates basic principles in cell biology.

- 2010-11      **Lab Teaching Assistant**  
*Biology in the Human Environment*, Saint Mary's University  
 Taught 30 1<sup>st</sup> year non-science undergraduates how principles in biology affects the human world.
- 2010          **Lab Teaching Assistant**  
*Behavioral Ecology*, Saint Mary's University  
 Taught 30 4<sup>th</sup> year undergraduates experimental design and analyses in behavioral ecology.
- 2010          **Lab Teaching Assistant**  
*Introduction to Molecular and Cell Biology*, Saint Mary's University  
 Taught 45 1<sup>st</sup> year undergraduates principles in molecular and cell biology.
- 2007-08      **Co-Lab Teaching Assistant (2007), Head Lab Teaching Assistant (2008)**  
*Diversity of Plants and Animals*, Dalhousie University  
 Taught 20 2<sup>nd</sup> year undergraduates comparative anatomy and taxonomy in plants and animals. Gave 20-minute pre-lab lectures (2008). Received Biology Teaching Assistant Award for 2008 position.

### ***Invited Lectures***

- 2017          Undergraduate (4<sup>th</sup> year) Behavioral Ecology (30 students). University of Western Ontario. Topic: *Olfactory signals and MHC*
- 2014          Undergraduate (3<sup>rd</sup> year) Animal Behavior (100 students). University of Western Ontario. Topic: *Mate choice on a visual level, theory and practice*
- 2013          Undergraduate (3<sup>rd</sup> year) Animal Behavior (100 students). University of Western Ontario. Topic: *Methods in studying avian behavior in the field*
- 2012          Undergraduate (1<sup>st</sup> year) Organismal & Ecological Biology (225 students). Saint Mary's University. Topic: *Introduction to animal behavior*
- 2011          Undergraduate (4<sup>th</sup> year) Ornithology (20 students). Saint Mary's University. Topics: (1) *Avian circulation and respiration*, and (2) *avian mate choice*
- 2010          Undergraduate (4<sup>th</sup> year) Behavioral Ecology (30 students). Saint Mary's University. Topic: *Alternative mating strategies*



## PROFESSIONAL RESPONSIBILITIES

- 2016-2017     **University Council on Animal Care, Graduate Student Representative**  
*Appointed by University President & Vice Chancellor, University of Western Ontario*
- 2016           **Teaching Workshop for TAs**  
*Society of Canadian Zoologists' Annual Meeting, University of Western Ontario*
- 2014-15       **Biology Undergraduate Education Committee**  
*Department of Biology & Society of Biology Graduate Students, University of Western Ontario.*
- 2013-14       **Principal Society of Graduate Students Representative**  
*Society of Biology Graduate Students, University of Western Ontario*
- 2010-11       **Graduate Student Representative**  
*Department of Biology, Saint Mary's University*
- 2011           **Graduate Teaching Assistant Representative**  
*First-Year Biology Lab Education Committee, Saint Mary's University*
- 2010           **Graduate Student Representative**  
*Department of Biology Space Committee, Saint Mary's University*

## PROFESSIONAL WORKSHOPS

- 2015           **Mentoring Workshop**  
*Wilson Ornithological Society, Ornithology Meeting*  
Acadia University, Wolfville, Nova Scotia, Canada  
Learned methods in mentoring students in academic research and education.
- 2014           **Mothur Workshop**  
*University of Michigan*  
Detroit, Michigan, USA  
Learned *Mothur* pipeline to process next-generation sequencing data.

## RELEVANT EMPLOYMENT HISTORY

- 2013           **SuperNOVA Science Instructor and Mentor Coordinator**  
*Dalhousie University, Halifax, Nova Scotia, Canada*

2012-13      **Educational and Research Attendant**  
*Merovin Resources, Halifax, Nova Scotia, Canada*

2010          **SuperNOVA Science Camp and Workshop Instructor**  
*Dalhousie University, Halifax, Nova Scotia, Canada*

***Paid Cooperative Positions***

*Four-month sessions*

2009          **Research Assistant**  
Fish accelerometer development (Ocean Tracking Network)  
Dalhousie University, Department of Oceanography  
Halifax, Nova Scotia, Canada  
Supervisor: Dr. Christopher Taggart

2008          **Research Assistant**  
Right-whale feeding ecology  
Dalhousie University, Department of Oceanography  
Halifax, Nova Scotia, Canada  
Supervisors: Dr. Christopher Taggart & Dr. Kimberly Davies

2008          **Lab Assistant**  
Programmed cell death in Madagascar lace plants  
Dalhousie University, Department of Biology  
Halifax, Nova Scotia, Canada  
Supervisor: Dr. Arunika Gunawardena

2007          **Museum Technician**  
Thomas McCulloch Biology Museum  
Dalhousie University, Department of Biology  
Halifax, Nova Scotia, Canada  
Supervisor: Dr. Tatiana Rossolimo

**VOLUNTEER EXPERIENCE**

2017          **Animal Behavior Society Outreach Fair: Songbird Group**  
*Animal Behavior Society Conference, University of Toronto*  
Scarborough, Ontario, Canada

- 2016           **Conference Volunteer (AV & Registration)**  
*Canadian Society of Zoologists' Annual Meeting*, University of Western Ontario  
London, Ontario, Canada
- 2011-12       **Treasurer (2011), Public Relations Manager (2012)**  
*SMU-Q: The LGBTQIA Society*, Saint Mary's University  
Halifax, Nova Scotia, Canada
- 2011           **Science Outreach: The Young Naturalists Club**  
Halifax, Nova Scotia, Canada
- 2011           **Science Mentor: Ornithology for Jr. High Students**  
*SuperNOVA*, Dalhousie University  
Halifax, Nova Scotia, Canada
- 2011           **AV Technician**  
*For Our Birds Conference*, Dalhousie University  
Halifax, Nova Scotia, Canada
- 2008-09       **Co-op Representative**  
*Dalhousie Association of Marine Biology Students*, Dalhousie University  
Halifax, Nova Scotia, Canada