

## **CURRICULUM VITAE**

**Alexander M. Shephard**

### **CONTACT INFORMATION**

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**Correspondence Language:** English

**Sex:** Male

**Date of Birth:** January 13<sup>th</sup> 1993

**Country of Citizenship:** Canada

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Roseville MN USA  
55113

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### **CURRENT ACADEMIC POSITION**

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PhD Student  
Department of Ecology, Evolution and Behavior  
University of Minnesota

Adviser: Emilie Snell-Rood

## **EDUCATIONAL BACKGROUND**

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<b>Degree</b>	<b>Institution</b>	<b>Date Granted</b>
MSc (Biology) Adviser: C. David Rollo	McMaster University	August 2017
BSc (Honours Integrated Science; Biology Concentration) Senior thesis advisor: Paul W. Andrews	McMaster University	June 2015

### **Teaching Experience**

University of Minnesota  
Saint Paul, MN, USA  
Graduate Teaching Assistant  
College of Biological Sciences  
Courses taught:  
Foundations of Biology for Biology Majors, Part II (Fall 2020)  
Introduction to Animal Behavior (Spring 2021)

September 2020 – Present

McMaster University  
Hamilton, ON, Canada  
Graduate Teaching Assistant  
Department of Biology  
Courses taught:

September 2015 – August 2017

Fundamental and Applied Ecology (Fall 2015)  
Invertebrate Form and Function (Winter 2016)  
Organismal Ecology and Evolution (Winter 2016/Winter 2017)  
Introductory Cellular and Molecular Biology (Fall 2016/Summer 2017)

## **Academic Employment History**

Optimizing roadside nutrition for pollinators                      September 2018 – August 2020  
Department of Ecology, Evolution, and Behavior  
Research Assistantship  
University of Minnesota  
Advisor: Emilie C. Snell Rood

Hospital for Sick Children    May 2015 – August 2015  
Toronto, ON, Canada  
Undergraduate Summer Intern  
Department of Neuroscience and Mental Health  
Advisor: Dr. O. Carter Snead III

McMaster University    May 2014 – August 2014  
Hamilton, ON, Canada  
Undergraduate Summer Intern  
Department of Psychology, Neuroscience and Behaviour  
Advisor: Dr. Paul W. Andrews

## **SCHOLARSHIPS AND AWARDS**

### **Scholarships**

Interdisciplinary Doctoral Fellowship                                      2021-2022  
University of Minnesota  
\$25,000

Ecology, Evolution and Behavior Graduate Fellowship                      2020  
University of Minnesota  
\$7,310.80

Ecology, Evolution and Behavior Excellence Fellowship                      2017  
University of Minnesota  
\$30,000

Ontario Graduate Scholarship    2017  
McMaster University

\$15,000

\*Awarded but not accepted due to funding conflict

McMaster Graduate Scholarship September 2015

Dean's Honours List McMaster University 2012  
(Undergraduate Academic Excellence) 2013  
2014  
2015

McMaster University Entrance Scholarship September 2011

### Grants

Bell Museum Natural History Award 2019  
Wallace and Mary Lee Dayton Fund  
\$2500

EEB Research Award 2019  
University of Minnesota  
\$1500

Graduate Research Excellence Grant 2018  
R.C. Lewontin Early Award  
Society for the Study of Evolution  
\$2008

Bell Museum Natural History Award 2018  
James W. Wilkie Fund  
\$2500

Florence Rothman Research Fellowship 2018  
University of Minnesota  
\$1464

McMaster University Biology Travel Grant 2017  
McMaster University  
\$500

Canadian League Against Epilepsy 2015  
Undergraduate Summer Student Award  
\$5000

Epilepsy Canada 2015  
Undergraduate Summer Student Award  
\$5000  
\*Awarded but not accepted due to funding conflict

## **PUBLICATIONS**

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### **Publications (Peer reviewed)**

**Shephard A.M.**, Zambre A.M., Snell-Rood E.C. 2021. Evaluating costs of heavy metal tolerance in a widely distributed, invasive butterfly. Accepted manuscript in press. *Evolutionary Applications*.

**Shephard A.M.**, Mitchell T.S., Henry S, Oberhauser K.S., Kobiela M.E., Snell-Rood E.C. 2020. Assessing zinc tolerance in two butterfly species: consequences for conservation in polluted environments. *Insect Conservation and Diversity*, 13(2): 201 – 210.

Mitchell T.S., **Shephard A.M.**, Kalinowski C., Kobiela M.E., Snell-Rood E.C. Butterflies do not alter oviposition or larval foraging in response to anthropogenic increases in sodium *Animal Behavior*, 154: 121 – 129.

Snell-Rood E.C., Kobiela M.E., Sikkink K.L., **Shephard A.M.** 2018. Mechanisms of plastic rescue in novel environments. *Annual Review of Ecology, Evolution, and Systematics*, 49: 331 – 354.

**Shephard A.M.**, Aksenov V., Tran J., Nelson C.J., Boreham D.R., Rollo C.D. 2018. Hormetic effects of early juvenile radiation exposure on adult reproduction and offspring performance in the cricket (*Acheta domesticus*). *Dose-Response*, 16(3).

**Shephard A.M.**, Aksenov V., Rollo C.D. 2018. Conspecific mortality cues mediate associative learning in crickets, *Acheta domesticus* (Orthoptera: Gryllidae). *Journal of Orthoptera Research*, 27: 187.

**Shephard A.M.**, Bharwani A., Durisko Z., Andrews, P.W. 2016. Reverse engineering the febrile system. *Quarterly Review of Biology*, 91(4): 419-457.

Blichowski M., **Shephard A.**, Armstrong J., Shen L., Cortez M.A., Eubanks J.H., Snead O.C. III. 2015. The GIRK2 subunit is involved in IS-like seizures induced by GABAB receptor agonists. *Epilepsia*, 56(7): 1081-1087.

### **Manuscripts in review**

**Shephard A.M.**, Mitchell T.S., Snell-Rood E.C. Monarch caterpillars are robust to roadside sodium and zinc pollution. In review. *Conservation Physiology*.

**Shephard A.M.**, Agnew L., Herdtle A., Mitchell T.S., Borer E.T., Snell-Rood E.C. Traffic patterns, more than landscape context, influence element content of roadside forbs for insect pollinators. In review. *Journal of Applied Ecology*.

### **Research Presentations and Conference Submissions**

**Shephard A.M.**, Snell-Rood E.C., January 2019. Costs of adaptive plastic responses to stressors: genetic variation in hormetic responses to heavy metals in a butterfly. (Invited Talk). *Society for Integrative and Comparative Biology Annual Meeting* Tampa, Florida.

**Shephard A.M.**, Aksenov V., Tran J., Boreham D.R., Rollo C.D., April 2017. Low-dose radiation exposure in early life stimulates reproductive performance in a short-lived model of ageing: compensation for a bad start? (Invited Poster). *The 16<sup>th</sup> Annual International Dose-Response Conference* Amherst, Massachusetts.

**Shephard A.M.**, Aksenov V., Rollo C.D., February 2017. Dose-response effects of early life ionizing radiation exposure on female reproductive allocation strategies (Accepted Poster Abstract). *McMaster Biology Graduate Research Day* McMaster University, Hamilton, ON, Canada.

**Shephard A.M.**, February 2017. Hormesis and life-histories: Can organisms have it all? (Invited Seminar). *VOX Physiologica Seminar Series* McMaster University Department of Biology, Hamilton, ON, Canada.

Aksenov V, **Shephard A.M.**, Rollo C.D., November 2016. Necromones for Agricultural Pests (Invited Poster Presentation). *McMaster University Innovation Showcase* Hamilton, ON, Canada.

**Shephard A.M.** Andrews P.W. April 2015. Fever: evidence of adaptation for the coordination of the immune system to fight pathogens (Invited Seminar). *Synthesis: the Integrated Science Symposium* Hamilton, ON, Canada.

**Shephard A.M.** November 2014. Gut helminths: friends or foes? (Invited Poster). *McMaster University Introductory Immunology Poster Seminar* Hamilton, ON, Canada.

**Shephard A.M.**, Colgoni A. April 2014. Investigating time management and lifestyle in interdisciplinary programs at McMaster University: A pilot study (Invited Seminar). *Synthesis: the Integrated Science Symposium* Hamilton, ON, Canada.

**Shephard A.M.**, Han H.A., Shen L., Cortez M.A., Snead O.C. III. July 2012. The effects of GHB in the GIRK2 knockout mouse (Invited Poster Presentation). *Sick Kids Summer Research Program Poster Symposium* Toronto, ON, Canada.

## **SERVICE AND EXTRACURRICULAR INVOLVEMENT**

### **Academic Community and Extracurricular Involvement**

Organizational Committee EEB Behavior Group Seminar	2018 - 2019
International Society for Behavioral Ecology 2018 Meeting Organizational Committee	2018
McMaster Biology Graduate Student Society Event Coordinator (Executive)	September 2016 – April 2017
Oral Presentation Judge Biology Undergraduate Symposium McMaster University	2017

Abstract Reviewer 2017  
Department of Biology Graduate Research Day  
McMaster University

Senior Coeditor-in-Chief 2014 – 2015  
*The iScientist: McMaster Integrated Science Program*  
*Undergraduate Interdisciplinary Science Journal*

Founding Editorial Board Member 2013-2014  
*The iScientist: McMaster Integrated Science Program*  
*Undergraduate Interdisciplinary Science Journal*

High School Workshop Event Coordinator 2014  
Synthesis: McMaster University 2013  
Integrated Science Student Symposium 2012

McMaster Integrated Science Student Mentor 2012

### **Outreach**

CBS High School Outreach Fair 2020  
“Brainy Butterflies Outreach Session”

Public Outreach Presentation at Minnesota Zoo 2019  
Title: “Planting for Pollinators along America’s Roadways”

Minnesota State Fair 2017 - 2018  
Pollinator Education Tent

### **Blogging**

*Monarchs, Milkweed and Metal: Is roadside zinc pollution harming butterflies?*  
Blog contributed to: Life in the City: Evolution in an Urbanizing World  
Published March 31<sup>st</sup>, 2020



**Peer Review Service**

*Chemoecology, Ecotoxicology and Environmental Safety, Insect Conservation and Diversity, Functional Ecology (2), Ecology and Evolution*