

# Will M.C. Jarvis

## Curriculum Vitae

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Email: [wjarv030@uottawa.ca](mailto:wjarv030@uottawa.ca)

Website: <https://willmcjarvis.weebly.com/>

Phone: 647-218-5165

### Education

#### **Ph.D. Biology (2019 – Present)**

**Thesis:** The Evolution of Genetic Constraints and their Influence on Adaptive Divergence

**Advisor:** Dr. Howard Rundle  
University of Ottawa, Ottawa, CA

#### **M.Sc. Integrative Biology (2016 – 2018)**

**Thesis:** Habitat Use, Movement Patterns, and Spatial Population Structure of Polyphenic Sunfish.

**Advisor:** Dr. Beren Robinson  
University of Guelph, Guelph, CA

#### **B.Sc. Environmental Science Honours (*Ecology Major*) (2011-2015)**

**4<sup>th</sup> Year Project:** Flexible mate choice may contribute to ecotype assortative mating in pumpkinseed sunfish (*Lepomis gibbosus*).

**Advisor:** Dr. Beren Robinson  
University of Guelph, Guelph, CA

### Publications

- (4) **Jarvis, W.M.C.**, Peiman, K.S., Cooke, S.J., and Robinsin, B.W. (2020) Low connectivity between sympatric populations of sunfish ecotypes suggests ecological opportunity contributes to diversification. *Evol Ecol.* <https://doi.org/10.1007/s10682-020-10042-4>
- (3) Greyson-Gaito, C. J., Bartley, T. J., Cottenie, K., **Jarvis, W. M.C.**, Newman, A. E., & Stothart, M. R. (2019). Into the wild: microbiome transplant studies need broader ecological reality. *EcoEvoRxiv* <https://doi.org/10.32942/osf.io/yka3z>
- (2) Black, K. L., Fudge, D., **Jarvis, W. M. C.**, and Robinson, B. W. (2019) Functional plasticity in lamellar autotomy by larval damselflies in response to predatory larval dragonfly cues. *Evolutionary Ecology* 33 (2): 257-272. <https://doi.org/10.1007/s10682-019-09979-y>

- (1) **Jarvis, W. M. C.**, Comeau, S. M., Colborne, S. F., and Robinson, B. W. (2017) Flexible mate choice may contribute to ecotype assortative mating in pumpkinseed sunfish (*Lepomis gibbosus*). *Journal of Evolutionary Biology* 30:1810-1820. <https://doi.org/10.1111/jeb.13127>

### **Scholarships and Awards**

- (9) R.C. Lewontin Early Award, Society for the Study of Evolution (\$2470, 2020)
- (8) Alexander Graham Bell CGS Doctoral Scholarship, NSERC (\$105 000, 2020-2022)
- (7) Evolutionary Quantitative Genetics Workshop Travel Grant, *Society for the Study of Evolution* (\$200, 2019)
- (6) University of Ottawa Graduate Admissions Scholarship (\$36 000, 2019-2023)
- (5) Norman James Aquatic Animal Ecology Scholarship (\$4000, 2017)
- (4) Graduate Tuition Scholarship, University of Guelph (\$16 000, 2016-2018)
- (3) 2<sup>nd</sup> Best Lightning Talk, Ontario Ecology, Ethology, and Evolution Colloquium (2016)
- (2) Hart Aquatic Biodiversity Award, University of Guelph (\$5000, 2015)
- (1) 2<sup>nd</sup> Best Poster, Ontario Ecology, Ethology, and Evolution Colloquium (2015)

### **Conference Attendance and Contributions**

Greyson-Gaito, C.J.\*, Bartley, T.J., Cottenie, K., **Jarvis, W.M.C.**, Newman, A.E.M., Stothart, M.R. (2019) Into the wild: understanding the breadth of host-microbiome interactions. Oral Presentation. *Holobiont 2 Montréal* - Montréal, Canada

**Jarvis, W. M. C.\*** and Rundle, H.D. (2019) How do genetic correlations constrain evolution? Poster. *Ottawa-Carleton Institute of Biology Symposium* – Ottawa, Canada.

**Jarvis, W. M. C.\*** and Robinson, B. W. (2018) Testing for phenotype-habitat matching in a phenotypically diverse sunfish population. Oral Presentation. *Canadian Society for Ecology and Evolution* – Guelph, Canada.

**Jarvis, W. M. C.\*** and Robinson, B. W. (2018) Testing for phenotype-habitat matching in a phenotypically diverse sunfish population. Oral Presentation. *Ecology and Evolutionary Ethology of Fishes* – Montréal, Canada.

Robinson, B.W.\*, **Jarvis, W.M.C.**, and Colborne, S.F. (2017) Flexible mate choice may regulate gene flow between sympatric pumpkinseed sunfish ecotypes (*Lepomis gibbosus*). Oral Presentation. *Canadian Society for Ecology and Evolution* – Victoria, Canada.

**Jarvis, W. M. C.\***, Comeau, S. M., Colborne, S. F. and Robinson, B. W. (2017) Flexible mate choice may contribute to ecotype assortative mating in pumpkinseed sunfish

(*Lepomis gibbosus*). Oral Presentation. *Ontario Ecology, Ethology, and Evolution Colloquium* – Kingston, Canada.

**Jarvis, W. M. C.\***, Comeau, S. M., Colborne, S. F. and Robinson, B. W. (2017) Flexible mate choice may contribute to ecotype assortative mating in pumpkinseed sunfish (*Lepomis gibbosus*). Oral Presentation. *Canadian Conference for Fisheries Research* – Montréal, Canada.

**Jarvis, W. M. C.\***, Comeau, S. M., Colborne, S. F. and Robinson, B. W. (2016) Do polyphenic pumpkinseed sunfish express mate choice? Lightning Talk. *Ontario Ecology, Ethology, and Evolution Colloquium* – Toronto, Canada.

**Jarvis, W.M.C.\***, and Robinson, B.W. (2015) Variation in the reproductive behaviour of pumpkinseed sunfish in dissimilar habitats. Poster Presentation. *Ontario Ecology, Ethology, and Evolution Colloquium* – Toronto, Canada.

\* Presenting Co-Author

## **Workshop Attendance**

### **Evolutionary Quantitative Genetics Workshop (Friday Harbor, WA, 2019)**

This workshop was run by Dr. Joe Felsenstein and Dr. Stevan J. Arnold, and covered the basic theory of quantitative genetics, its applications to studying micro- and macroevolution, as well as its relation to comparative methods. Used a combination of lectures, practical coding exercises, and collaborative discussions of the topics. <https://fhl.uw.edu/courses/course-descriptions/course/evolutionary-quantitative-genetics-workshop-2019/>

## **Professional Experience**

### **Research Assistant (05/2015 – 04/2016)**

**Supervisor:** Dr. Beren Robinson, Integrative Biology  
Aquatic Field Work, Stable Isotope Sample Processing, Data Analysis  
University of Guelph, Guelph, CA

### **Work-Study Research Assistant (09/2014 – 04/2015)**

**Supervisor:** Dr. Elizabeth Boulding, Integrative Biology  
Aquatic Invertebrate Rearing, Geometric Morphometric Analysis  
University of Guelph, Guelph, CA

### **Co-Op Placement (01/2013 – 04/2013)**

**Supervisor:** Guy Buller, Geological Survey of Canada  
Database Management, Data Analysis, Python Coding, and GIS Mapping  
Natural Resources Canada, Ottawa, CA

## **Additional Research Experience**

### **Natural Resources Canada Co-Op Placement (01/2013 – 05/2013)**

I gained substantial research, technical, and communication skills during my co-op placement at Natural Resources Canada. I was trained in coding, database management, GIS, and statistics through work on a very large dataset of mineral samples (>200 000 entries). I designed and coded a tool that sorted subsets from the database based on the quality and applicability of the data for further research, saving considerable manual effort. I also developed my communication skills through describing how to use this tool in my co-op work report where I provided a thorough assessment and annotation, increasing its utility for subsequent researchers.

## **Popular Science Media**

**“The extreme tactic of self-amputation means survival in the animal kingdom”**

*The Conversation Canada*, 2019/06

[https://theconversation.com/the-extreme-tactic-of-self-amputation-means-survival-in-the-animal-kingdom-118503?utm\\_source=twitter&utm\\_medium=twitterbutton](https://theconversation.com/the-extreme-tactic-of-self-amputation-means-survival-in-the-animal-kingdom-118503?utm_source=twitter&utm_medium=twitterbutton)

**“One fish, two fish, red fish, blue fish”**

*American Fisheries Society - Ontario Chapter Newsletter*, 2019/06

<http://www.afs-oc.org/volume-xviii-issue-i-the-lateral-line/>

## **Community Involvement and Leadership Experience**

### **OCIB Graduate Student Symposium Co-Chair (09/2019 – 04/2020)**

I was selected to be one of 4 co-chairs for the 2020 Ottawa-Carleton Institute of Biology Graduate Student Symposium. This annual symposium highlights the research of graduate students in Biology at U. of Ottawa and Carleton U., and typically has 150-200 speakers as well as a posters session.

### **CUPE 3913 Departmental Steward, U. of Guelph (09/2017 – 04/2018)**

My job was facilitating communication between the teaching assistant's union CUPE 3913 and Integrative Biology teaching assistants. This involved drafting email communications, meeting with teaching assistants, and raising concerns to the union executive committees. I provide information and support to teaching assistants on topics including the hiring process, the work environment, and benefits.

### **Guelph Bug Day Organizer (08/2017, 08/2018)**

I helped organize and run a public outreach event promoting interest in insects with over 800 attendees in its first year and over 1200 attendees in its second year. The event included live displays, guided collecting hikes, and information sessions on insects as food and their role in agriculture and our environment. See media coverage - <https://kitchener.ctvnews.ca/video?clipId=1471710>

### **Undergraduate Student Curriculum Committee, U. of Guelph (09/2014 – 04/2015)**

I represented the concerns and interests of undergraduate students on courses and programs offered by the Integrative Biology department. The committee was

developing new curriculum in the department and I provided input from a student's perspective in weekly meetings.

## **Mentoring and Supervising Experience**

### **Integrative Biology Undergraduate Mentorship Program (09/2017 – 04/2018)**

I provided mentoring to two undergraduate students on a regular basis for one academic year and helped both find graduate student positions. I gave advice and guidance on developing research and writing skills, understanding the scientific method, and planning career goals.

### **Undergraduate Research Assistant Supervisor, U. of Guelph (05/2017 – 08/2017)**

Supervised an undergraduate student during field work, training them in field sampling techniques including angling, dip-netting, and trapping. Additionally, supervised sample collection for their undergraduate research project titled "Why is there colour and size variation in pumpkinseed sunfish".

### **Lab Volunteer Supervisor, U. of Guelph (09/2015 – 04/2018)**

Trained and supervised three volunteers as they assisted with specimen photography, fish sample dissections, image analysis, and stable isotope sample preparation.

## **Reviewing**

I refereed one paper for *Environmental Biology of Fishes* in 2017.

I refereed one paper for *Ecology and Evolution* in 2019.

## **Teaching Experience**

### **Teaching Assistant, U. of Ottawa (09/2019 – 12/2019)**

BIO\*3113 Population Genetics

### **Teaching Assistant, U. of Ottawa (01/2019 – 04/2019)**

BIO\*2133 Genetics

### **Teaching Assistant, U. of Guelph (09/2017 – 12/2017)**

BIOL\*3450 Introduction to Aquatic Environments

### **Integrative Biology Graduate Seminars, U. of Guelph (03/2017)**

As part of a small group of graduate students I helped design and run two active learning seminars for a graduate statistics class. Our seminar used a combination of illustrative activities, lecturing, and practical examples to teach the fundamental assumptions and capabilities of mark-recapture studies.

**Teaching Assistant, U. of Guelph (09/2016 – 12/2016)**  
BIOL\*2400 Evolution

### **Technical Skills and Certifications**

- Wilderness First Aid (2019)
- Extensive statistical training and experience (R, JMP, SPSS)
- Substantial coding experience (R, Python)
- Substantial GIS experience (ArcGIS)
- Stable Isotope Analysis
- Extensive experience angling and trapping freshwater fish
- Extensive experience conducting aquatic videography
- PADI Open Water SCUBA certification (>20 dives)
- Pleasure Craft Operators License
- Class G Driver's License (Ontario, CA)

### **References**

Dr. Howard Rundle  
Professor of Biology, University of Ottawa  
**Email:** hrundle@uottawa.ca  
**Phone number:** 613-562-5800 ext. 2835

Dr. Beren Robinson  
Professor of Biology, University of Guelph  
**Email:** berenrob@uoguelph.ca  
**Phone number:** 519-824-4120 x58968

Dr. Karl Cottenie  
Associate Professor of Biology, University of Guelph  
**Email:** cottenie@uoguelph.ca  
**Phone number:** 519-824-4120 x52554

Dr. Rob McLaughlin  
Associate Professor of Biology, University of Guelph  
**Email:** rlmclaug@uoguelph.ca  
**Phone number:** 519-824-4120 x53620