



Max Skwarma  
'*Cecropia* caterpillar'

Volume 23 | Issue 2 | December 1, 2018

# Entomological Society of Ontario

FALL NEWSLETTER



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This is an exciting time to work with insects! I think that in the next few years we will see a huge growth in research on insect biodiversity, across the province, and North America. At this time in history we are well positioned for this work: with increased access to DNA bar coding tools, free and powerful statistical software and methods, a high rate of mathematical literacy among entomologists and entomology students, and a strong theoretical framework for understanding ecological systems. And perhaps most important of all, to support this anticipated research in biodiversity we have the outstanding Journal of the Entomological Society of Ontario (JESO), the Canadian Journal of Arthropod Identification, excellent new publications from NRC press on a variety of taxa, and new field guides such as the highly anticipated Field Guide to the Flower Flies of Northeastern North America from the Canadian National Collection (CNC).

We are now able to answer more completely some of the most fundamental questions of entomology: what kind of insects are these, why are they here, where else can they be found, how many of them are there? These are not new questions and entomologists have been answering them since the beginning of our discipline. Now, with increased pressure on natural systems due to resource extraction, changes in habitat, and economic expansion, answers are even more urgently needed to inform both conservation and management. And finding the answers will require more field studies, and more field-skilled entomologists.

Conservation and pest management entomologists are in the same trade: both need to know the abundance, distribution, and natural history of the study animals; these data are needed to protect or reduce target species in ways that are the least harmful to non-targets and provide the most thrifty use of limited resources. As we all know, the need to both protect and manage are urgent and increasing.

My own area of specialization is on one of the least lovable species anywhere, stable flies. How nice it would be to work with bees, butterflies, or dragonflies, insects that everyone likes! Yet, even for stable flies – and I think this is true of all IPM entomologists – I have a profound sense of wonder and respect (dare I say affection?) for their adaptive ability. On a different note, as a graduate student one of my ambitions was to have an article appear in JESO, a second ambition was to keep my membership in the ESO alive. The ESO and its two publications JESO and the society newsletter, helped me a lot during graduate school, broadening my interests into taxa that I knew little about. I know from personal experience, that an article in JESO gets noticed by our colleagues, and I encourage everyone to support the Newsletter and JESO, and keep up your ESO membership!

**David Beresford**  
ESO President





## **Amro Zayed**

### **President-elect**

I am an Associate Professor of Biology and York University's Research Chair (Tier II) in Genomics. I completed my doctorate in Biology (PhD 2006) at York University on 'Bee Conservation Genetics', then held a Natural Sciences and Engineering Research Council of Canada's Postdoctoral Fellowship at the University of Illinois' Department of Entomology (2006-2008). I later served as a Fellow for the Institute for Genomic Biology's Genomics of Neural & Behavioral Plasticity Theme at the University of Illinois (2008-2009). I rejoined York University's Department of Biology in 2009, where I lead a research program on the genetics, genomics and behaviour of social insects using the honey bee as a model organism.

My research group has made several important contributions in the field of social insect biology and bee health. Since 2009, I mentored two postdoctoral fellows, 3 PhD students, 9 MSc students, 3 Research Associates, and 38 undergraduate students. Over the same period, I led or co-led grant applications worth over \$8.8 million. I received the Governor General's Gold Medal in 2007, the Ontario Ministry of Research and Innovation's Early Researcher Award in 2010, the Faculty of Science's Early Career Researcher Award in 2014. I was recently awarded the Entomological Society of Canada's Gordon C. Hewitt Award, and YorkU's President's Emerging Research Leader award.

As ESO's president, I will seek to increase the society's membership and status by liaising and coordinating activities with the different entomological groups found within Ontario, and attempting to recruit researchers that work on insects but don't typically consider themselves as 'entomologists'. The latter can be accomplished by broadening the academic programming of the Society's AGMs



## Tracey Baute

### Director

I have been the Field Crop Entomologist with Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) since 2000. I received my MSc at the University of Guelph under the guidance of Mark Sears and Art Schaafsma, when Bt corn was first introduced into Canada for control of European corn borer. Previously, I have held positions at Agriculture and Agri-Food Canada – London Research and Development Centre (with Bruce Broadbent) and at Dow AgroSciences.

My role at OMAFRA has been to proactively prepare the province for any potential emerging or invasive pests that threaten Ontario field crops. This involves a wide range of activities including applied research on pest biology to developing monitoring programs and determining thresholds and pest management options for each new issue. Ontario has had its fair share of new pests including soybean aphids, swede midge, European chafer, western bean cutworm and brown marmorated stink bug, to name a few. Many of these issues have required strong collaborations with other Ontario entomologists or across borders, working closely with other provincial or US colleagues. A good example of this collaboration is the Western Bean Cutworm Trap Network that I have lead for the last ten years, with more than 650 trap locations across Michigan, Ontario, Quebec and new this year, Manitoba and the Maritimes provinces.

I have authored many extension publications and felt strongly in the need to deliver timely pest information to stakeholders that I helped pioneer the use of social media and digital technology in OMAFRA with the Baute Bug Blog, @TraceyBaute and pest management apps including Aphid Advisor (with Rebecca Hallett, UGRC) and Pest Manager (with Mike Cowbrough, OMAFRA).

Most recently my role has focused on research and policy development regarding the role of neonicotinoid insecticides use and pollinator health in Ontario. I have also played a strong role in the development of the National Plant and Animal Health Strategy to better connect the various plant pest monitoring programs and proactively share detection and research information on pests across Canada. I have previously served as an ESO Director in 2003-2005 and have been an active member of the Entomological Society of America since 1997. I look forward to using my skills and experience in helping to promote the role and continued efforts of the Entomological Society in Ontario.



## Jeremy deWaard

### Director

Jeremy deWaard is the Associate Director of Collections at the Centre for Biodiversity Genomics at the University of Guelph. He is responsible for leading a team of twenty staff and students, managing a natural history collection of over three million arthropod specimens, and overseeing all operations and research initiatives linked to the acquisition and processing of specimens for DNA barcode analysis.

His research focuses on biological inventories, ecosystem monitoring, biosurveillance, and the systematics of various terrestrial arthropod groups, particularly macro moths. He is an Adjunct Professor and Instructor at the University of Guelph, a member of the COSEWIC Arthropods Specialist Sub-Committee, an Editor for the journal *Molecular Ecology*, and a Research Associate at the Royal BC Museum.

He enjoys teaching and training the next generation of entomologists, especially in the use of genomic tools. He also likes engaging with the public about nature appreciation and stewardship through the BIObus program and BioBlitz activities.



## **Kaitlyn Fleming**

**Student representative**

My name is Kaitlyn Fleming. I am a PhD candidate at Trent University in the Environmental and Life Sciences program. I study ground beetle biogeography in Northern Ontario. I am determining why ground beetles are where they are and how climate change will influence their distributions.

My MSc work was in an unrelated field, that being forensic anthropology. After completing my MSc, I came to the realization that entomology is where my true research interests lie. Since 2014, I have fully embraced being looked at strangely by many people when I suddenly stop and crouch down to look at one of our six-legged friends. I have been a member of the Canadian Entomological Society, the Entomological Society of Ontario and several other societies since 2015.

Outreach and engagement is incredibly important in encouraging students to enter the field of entomology. As well, both undergraduate and graduate students should have opportunities to engage with other scientists and members of the public about their research. I would love to be the student representative for the Entomological Society of Ontario to help encourage student research and provide opportunities for students to share their research.

On Friday, October 19th, an enthusiastic group of 65 entomologists converged on Bark Lake, a fantastic facility located near Haliburton in Central Ontario, for ESO's 155<sup>th</sup> AGM. Casual discussions and interactions between participants were facilitated because the presentations and meals were all held in the dining lodge.

Michael Runtz, an exceptional naturalist and lecturer at Carleton University, engaged the group the first evening with his natural history quiz. His famous quiz blends natural history with general knowledge of movies, famous people and the like. As an example, when he presented a photo of Newfoundland together with an image of a dominatrix, the answer we were to think of was "Eastern Whip-poor-will"! Through the quiz we met others in our groups interested in insects, a major function of our annual meeting.



Colin Jones led off the conference proper on Saturday morning with his invited talk on the transformation of our understanding of insects that has been spurred by the internet, GPS technology, digital photography, smart phone technology, and on-line naturalist groups like iNaturalist. His examples of the power of iNaturalist and similar platforms to enable identifications while contributing data on the geographical and temporal distribution of all animals was compelling.

Student competition presentations—21 oral and 8 poster—filled the rest of Saturday. Following dinner, Michael Runtz enthralled us with his award-winning photographs that will grace his soon-to-be-published book of Algonquin Park through the seasons. Michael has been photographing nature in Algonquin for several decades, and his photos left us amazed by the beauty of northern Ontario. On Sunday, the regular oral presentations kept us busy up to the Annual General Meeting and the awarding of President's prizes to best student posters and oral presentations. Following lunch, everyone headed home.

Bark Lake Leadership and Conference Centre was the perfect venue for the ESO conference. I heard only positive sentiments about it over the weekend. It is centrally located in Ontario, has exceptional facilities and food, and is in a spectacularly beautiful setting overlooking Bark Lake. In fact, it was so ideal for our needs that we have reserved the centre there on the Nov. 1-3 weekend next year. Please mark your 2019 calendar now and plan to attend!

**- Gard W Otis, School of Environmental Sciences, University of Guelph**



Photos: Antonia Guidotti



## Tyler Audet

President's Prize - Oral (undergraduate)

### ***Effect of landscape disturbance on bee (*Apoidea*) abundance and diversity in the Niagara Region***

Ecosystem disturbance decreases the abundance and diversity of bees in the short term. Most research on disturbance has been on heavily disturbed or chronic disturbances, with less on moderate acute disruptions. We examined the impact of a short, moderate disturbance, mowing and shrub removal, on a bee community at Brock University. We compared bee abundance and diversity in the mowed plot to that in a contiguous, undisturbed control site. Bee abundance was significantly lower in the mowed site. Community composition also differed: in disturbed sites, there were more ground-nesting bees, while in the control site there were more twig-nesting bees.



## Stephanie A. Rivest

President's Prize - Poster

### ***Habitat suitability and dispersal capacity of a newly introduced butterfly, *Polyommatus icarus****

The frequency of species introductions is on the rise globally. One newly introduced species of butterfly, the European Common Blue (*Polyommatus icarus*), is expanding its range around Montréal, QC, faster than expected. To determine the factors that will predict its range expansion in the future, we assessed the dispersal capacity of *P. icarus* and the local habitat characteristics that best predict its abundance. We found that *P. icarus* adults only rarely fly long distances (~900m) and that they are most abundant where there is less canopy cover, greater floral cover, and where their preferred larval foodplant is found.



**Congrats also to the ESO Travel Award Winners:**  
Jarrett Blair, Christine Cock, Alicia Rochette,  
& Tyler Audet

## Christine Cock

### President's Prize - Oral

#### ***Evaluating the suitability of *Diadro collaris* as a biological control agent for Diamondback moth in Canada***

*Diadromus collaris*, a solitary pupal endoparasitoid, has been proposed as a biological control agent for the suppression of Diamondback moth in Canada. The introduction of any new bio-control agent must be undertaken with caution; it is important to evaluate potential unintended impacts on non-target species. To determine whether any non-target lepidoptera are suitable hosts for *D. collaris* and/or whether *D. collaris* affects non-target mortality, female *D. collaris* were exposed to non-target pupae from eight lepidopteran species. The results of these host range tests will help to determine whether *D. collaris* should be considered for introduction in Canada.

## Kurtis Turnbull

### President's Prize - Oral

#### ***How does oxygen availability determine fumigation success?***

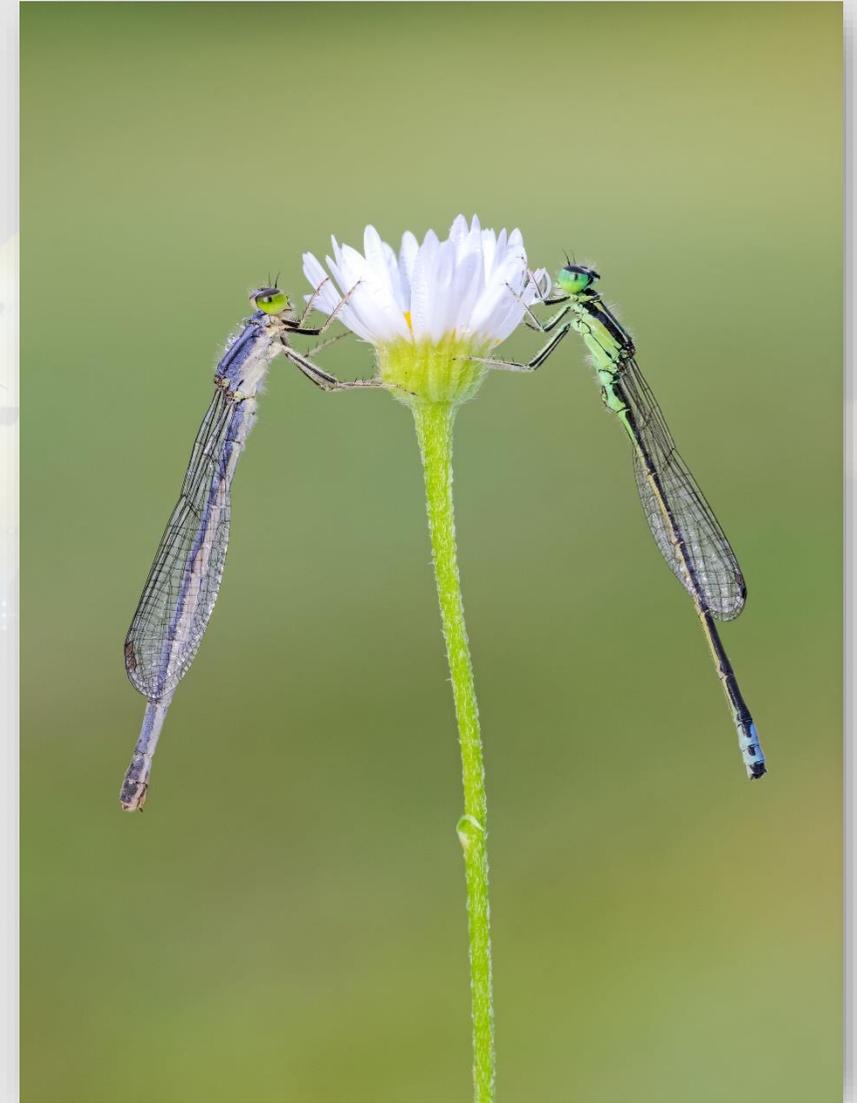
Wood exports are frequently treated with fumigants within hypoxic (i.e. low oxygen) ship holds. However, the impact of modified atmospheres on fumigant efficacy against forest pests is unclear. Here, we use the golden-haired bark beetle, *Hylurgus ligniperda* (Coleoptera: Curculionidae) to test links between oxygen availability, metabolic rate, and fumigant efficacy. We found that metabolic rate varies between life stages and declines under hypoxia. We will determine how hypoxia impacts fumigation, testing if efficacy is a function of metabolic rate and oxygen availability. We discuss applications and limitations of our results to post-harvest fumigation under modified atmospheres.

Thanks very much to the judges, ESO members Morgan Jackson and Sean McCann, and guest judge Christy Pitto. We had a total of 112 excellent entries and the judges had a very difficult time choosing the winners! They considered composition, technical quality, biological interest, and overall aesthetic when judging each photo.

- Catherine Scott      **See the photos at:** [The ESO BugEye Flickr page](#)



**Best Photo honourable mention:** “*Cecropia* caterpillar”  
Max Skwarma



**Best Photo:** “Forktails”  
Leigh Ayres



**Best Ontario Insect:** "Monarch at Rouge River"  
Jordan Cait

**Best Ontario Insect honorable mentions:**



*"Argiope aurantia"*  
Yvonne Metcalfe



*"Pruinose squash bee"*  
Bob Noble



"I took this picture at my grandparents' cottage, near Tweed, Ontario. The bug looks like it's scared but it's being bold and standing up to me even though I'm much bigger than it." - Reed

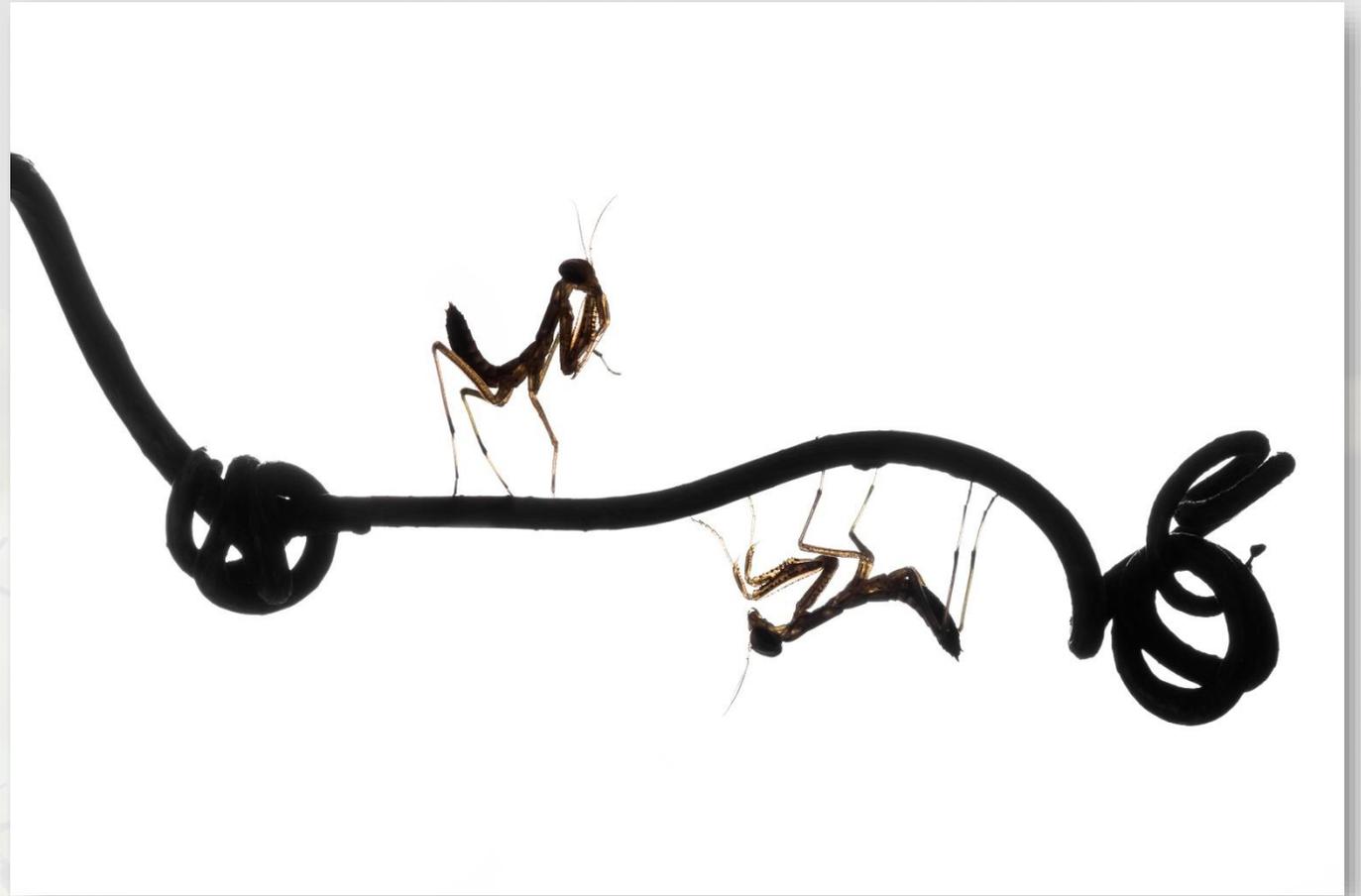
**Best Photo by a Junior Entomologist: "Bug"**  
Reed Fitzsimmons



**People's Choice: "Faceoff"**  
Lou Tyler



**People's Choice honourable mention: "Emerging parasitoid"**  
Brian Robin



**People's Choice honourable mention: "Mantids"**  
Leigh Ayres



# BARK LAKE

LEADERSHIP AND CONFERENCE CENTRE

*“... it is on observation and experiment that we must rely.”*

**- W. R. Thompson, 1955**

Commonwealth Institute of Biological Control, Ottawa, Canada.

We are delighted to announce that the next AGM and conference will again be held at the Bark Lake Conference Centre near Irondale (Haliburton County), the same venue as last year. The dates are Nov 1-3, 2019. Please mark this on your calendars and invite any colleagues who might be interested in coming!

The theme will be: *By observation and experiment: teaching and learning about insect biodiversity.*



Photo: Terry A. McDonald

This year, Bug Day Ottawa took place Saturday, September 8th from 9am to 4pm at the Ottawa Research and Development Centre on the Central Experimental Farm. It was the 6th iteration of the event and the second time that it ran in conjunction with the Ottawa Research and Development Centre Open Doors event which featured horse-drawn plowing demonstrations and wagon rides.



An estimated 3,000 visitors came out to learn all about insects from numerous world renowned bug experts. Throughout the day, entomologists lead guided insect expeditions and showed people of all ages how to spot fascinating insects in the field. The live insect zoo featured a variety of bugs including a large tarantula, Madagascar hissing cockroaches, giant spiny stick insects, giant leaf cockroaches, giant millipedes, and many more locally caught insects.

Pictures contributed by AAFC (Claire Bosnich), Diane Lepage, Ilona Naujokaitis-Lewis, Jayne Yack, Quinn Eggertson, and Marie-Andree Hamel.

The ever popular cockroach races were once again a hit with large crowds cheering on their favourite cockroach to victory. A demonstration garden containing plants and habitat to attract native pollinators complimented displays on bees and other local pollinators. Other displays/activities this year featured soil microarthropods, aquatic insects, good bugs vs bad bugs, micro insects, the Canadian National Collection of Insects Arachnids and Nematodes, scientific illustrations, caterpillar rearing, insect identification and curation, insect themed crafts, and face painting.



Pictures contributed by AAFC (Claire Bosnich), Diane Lepage, Ilona Naujokaitis-Lewis, Jayne Yack, Quinn Eggertson, and Marie-Andree Hamel.



A University of Ottawa lab joined us for the day to inform the public on mosquitoes and ticks as vectors of disease, and a Carleton University lab tested our visitors' knowledge of insect acoustics with various recordings of insect sounds. This year, we provided 1,000 samples of cricket ice cream which ran out before the end of the day. We would like to thank the 90+ volunteers that worked hard to make Bug Day Ottawa possible and such a great success. We would also like to thank our partners, The Ottawa Field-Naturalists' Club, and Agriculture and Agri-Food Canada, for making this event possible.

**- Sophie Cardinale, AAFC/CNC**



Photos: Mitch Zimmer

This year, I had the pleasure of organizing our fifth annual London Bug Day, held (as per tradition!) at the London Children's Museum. With the help of over 20 biology graduate student volunteers, five biology faculty, and a bin full of hissing cockroaches, we were able to introduce 672 guests to the wonderful world of insects!

Some of the stations we ran this year included:

- Edible insects; thanks to Entomofarms for generously donating roasted cricket treats!
- Learn how to ID an insect
- Madagascar hissing cockroach races
- Honeybee hive observatory
- Termite colony viewing
- Insect collections from Western, ran by our in-house entomologist Nina Zitani
- Insect-y crafts and face painting
- Arachnid viewing

As well, our event wouldn't have been such a success without the help of our special guests from the Cambridge Butterfly Conservatory (both mammalian and insect!), Nature London, and amazing help from the London Children's Museum staff. We look forward to next year's event and hope that London Bug Day can continue to grow!

- Jackie Lebenzon, University of Western Ontario



Photo: Brent Sinclair



Photo: Lamees Mohammed

The second annual Guelph Bug Day was an enormous success, with over 1,200 people in attendance!

This year, Bug Day goers could participate in cockroach races, an insect themed obstacle course, entomophagy booths, live and interactive insect zoos, insect crafts, an aquatic insect pool, and much more! We had hikes going throughout the day led by local specialists at the Guelph Arboretum. These walks included pollinator hikes, children specific hikes, and forest hikes.



Events at bug day attracted attention from the Guelph Mercury, CTV Kitchener, and Guelph Mayor Cam Guthrie!

A short documentary about the day was made by one of our volunteers, Charles Etienne-Ferland, and can be seen here: [HERE!](#)

Thank you to our amazing team of undergraduate and graduate students from Guelph and the surrounding area. This event would not be possible without our sponsors: Ontario Agricultural College Richards Trust, The School of Environmental Sciences, The Guelph Arboretum, Crickstart, Entomo Farms, and the Entomological Society of Ontario.

**- Sarah Dolson & Matthew Muzzatti  
University of Guelph**



Photo credits: Rachel Irwin, Lauren Stitt, Micaela Yawney, Aleksandra Dolezal, and Jessica Linton.

Visit and follow us on [Facebook](#) , [Twitter](#) , or [Instagram!](#)

## Publish in JESO this Year to Recognize the 150<sup>th</sup> Anniversary of the 1<sup>st</sup> ESO Journal!



2019 will mark the 150<sup>th</sup> anniversary of continuous publication of annual journal of the Entomological Society of Ontario! The ‘journal’ was initially called *The Annual Report of the ESO*. Records about the first years of publishing this report are somewhat confused, in part because the initial issues lacked volume numbers. However, this oversight was rectified in 1880 with the publication of the *Eleventh Annual Report of the Entomological Society of Ontario, Including Reports on some of the Noxious, Beneficial, and Other Insects in the Province of Ontario*. Doing the math results in the conclusion that the first report of our society was prepared in 1869.

In recognition of this remarkable achievement, the ESO Board of Directors at our meeting in October supported a motion to bring this to the attention of all members. In honour of this achievement, we to encourage all entomologists to submit their manuscripts for publication in Volume 150 of the *Journal of the Entomological Society of Ontario*. Now that our journal is produced digitally there are no cost implications of publishing a large volume of the journal. Moreover, there are no page charges—publishing in *JESO* is free! Let’s make 2019 a banner year for the journal!

Guidelines to authors for *JESO* are available from the ESO website, under “Publications > JESO > Instructions to Authors”.

The direct link is: <https://journal.lib.uoguelph.ca/index.php/eso/about/submissions#authorGuidelines>

*Thanks to Laura Timms, David Beresford, and Christian MacQuarrie for providing details related to the history of our journal.*

**- Gard W Otis**

**School of Environmental Sciences, University of Guelph**



As a volunteer from April 25 to May 13, 2019, I (Charles-Étienne) will accompany a group of 15 students, with instructors Dr. Scott-Dupree and Dr. Marshall from the University of Guelph (U of G), on the 20th anniversary of the field entomology course. The course will take place at the Yanayacu Biological Station in Ecuador.

I plan to shoot and produce a 30-40 minute documentary on entomological research across borders with a focus on systematics and taxonomy, insect behaviour and ecology, and management of insects pests. I'm currently seeking sponsors to fund the project. So far, the U of G has donated \$500.00 and will also be providing support beyond just the monetary. Corteva AgriScience – Agricultural Division of DowDuPont has donated \$1000.00 towards the project. I've submitted a proposal to National Geographic and I have an ongoing crowdfunding campaign: <https://www.gofundme.com/entomology-documentary-in-Ecuador>, and continue to look for other sources of funding!

My goal is to highlight the ecological, behavioral and taxonomic research that is being conducted and to tell a story of how people come to study insects to address contemporary issues of our planet such as climate change, biodiversity loss, land-use changes and chemical pollution. I want to talk about the rich history of this field course and demonstrate the success of outdoors hands-on education in inspiring young students to pursue graduate studies and to become active members of the scientific community. I believe that I can show how much we need entomologists in today's world. In 2018, I had the chance to participate in the same field entomology course in Costa Rica and produce a basic entomology video (<https://youtu.be/txfCLAK4Ktc>). This year, with better preparation, equipment and training in videography (with the Liaison of Independent Filmmakers of Toronto), I am confident that I can narrate a great story about what insects can teach us about the world in which we live.

I anticipate screening the film at the University of Guelph (U of G) and to distribute it online for outreach and education. I also intend to write and publish about my experience.

- Charles-Étienne Ferland

**WANT TO HELP  
THIS PROJECT?**

Visit the [Gofundme](#) page!





# NCB-ESA

North Central Branch of the  
Entomological Society of America  
17-20 March 2019

Join us for the 74th Annual Meeting of the North Central Branch of the Entomological Society of America taking place March 17-20, 2019 in Cincinnati, Ohio. Please visit the website for registration and event information at [HERE](#).

Important Dates:

- December 7 - Deadline for award nominations
- December 17 - Deadline for paper, poster, and student competition submissions
- February 15 - Advance registration and housing deadlines

Follow us on twitter @NCB\_StudentAffairs, @NCBESA



## Southwest Ontario Agricultural Conference

January 3-4, 2019. Ridgeway, ON.

[Conference details](#)



## Forests Ontario Conference

February 8, 2019. Alliston, ON. [@Forests Ontario](#)

[Conference details](#)



## National Invasive Species Forum

Canadian Council on Invasive Species.

February 12-14, 2019. Ottawa, ON.

[Forum details](#)



## Ontario Fruit and Vegetable Convention

February 20-21, 2019. Niagara Falls, ON. [@ofvc1](#)

[Conference details](#)



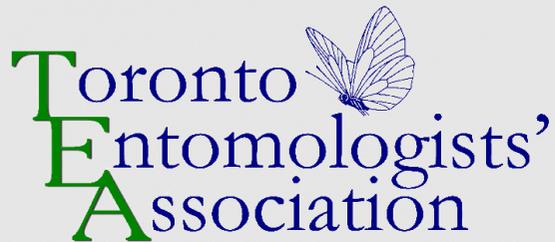
## Canadian Society of Zoologists Conference

May 13-17, 2019. Windsor, ON. [@csz\\_scz](#)

[Conference details](#)



**2019 Ontario Bioblitz - TBA**  
Check the [website](#) soon for details!



## Student Symposium

**March, 2019**

Every year in March, we hold our annual Student Symposium at the Ramsay Wright Zoological Building at the University of Toronto. Graduate students, senior undergraduates and postdoctoral fellows are eligible to present either a talk or a poster. Everyone is welcome to attend. The audience is a good mix of professional and amateur entomologists who provide a large forum for the students. Students interested in participating should contact Doug Currie, academic co-ordinator of the symposium at [dc.currie@utoronto.ca](mailto:dc.currie@utoronto.ca) with a provisional title. See details [HERE](#). **Application deadline:** early March 2018.

## Upcoming meetings

The TEA meets every fourth Saturday of the month, from September to November and from January to April.

- Saturday, January 26, 2019. 1:15 pm. Room 212 Victoria College  
**Sandy Smith** (Forestry, University of Toronto) - TITLE TBA
- Saturday, February 23, 2019. 1:15 pm. Room 212 Victoria College  
**Graham Thompson** (Western University) - TITLE TBA

## HOW GRAD SCHOOL IS JUST LIKE KINDERGARTEN

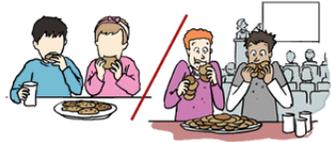
ALL DAY NAPPING IS ACCEPTABLE



THERE IS CONSTANT ADULT SUPERVISION



YOU GET COOKIES FOR LUNCH



MOST COMMON ACTIVITY:  
CUTTING AND PASTING



THERE ARE NO GRADES  
(YOU JUST HAVE TO PLAY WELL WITH OTHERS)



CRYING FOR YOUR MOMMY IS NORMAL



WWW.PHDCOMICS.COM

JORGE CHAM © 2010

## Graduate Student Positions

### MSc Student(s) – Insect chemical ecology and neuroethology

Acadia University (Wolfville, Nova Scotia)

Application deadline: Open until leading applicant(s) identified; Start date: Jan-May 2019. [Details here](#)

### PhD Student – Ecology of host-parasite interactions

Department of Biological Sciences, University of Alberta

Application deadline: February 1, 2019; Start date: Fall 2019. [Details here](#)

### MSc Student for the Prairie Pest Monitoring Network

University of Saskatchewan; AAFC Saskatoon

Application deadline: None listed; Start date: 1 April 2019. [Details here](#)

Find more at: <https://esc-sec.ca/opportunities/> & [www.entsocont.ca/opportunities](http://www.entsocont.ca/opportunities)



## Job postings (incl. postdoc positions)

### Within Canada

See the ESC-SEC jobs page, [here](#)

### International (mostly USA)

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