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# Entomological Society of Ontario

## SPRING NEWSLETTER





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**President  
Joel Gibson**  
University of Guelph  
jfgison@uoguelph.ca



**Past-President  
Ian Scott**  
AAFC  
ian.scott@agr.gc.ca



**President-elect  
Gard Otis**  
University of Guelph  
gotis@uoguelph.ca



**Secretary  
Michelle Locke**  
AAFC, CNC  
michellemlocke@gmail.com



**Treasurer  
Shiyu Li**  
AAFC  
sli@nrcan.gc.ca



**Webmaster  
Trevor Burt**  
Carleton University  
CNC  
trevburt@gmail.com



**JESO Editor  
Chris MacQuarrie**  
CFS - GLFC  
chritian.macquarrie@nrcan.gc.ca



**JESO Assoc. Editor  
Jeff Skevington**  
AAFC, CNC  
jhskevington@gmail.com



**JESO Assoc. Editor  
Andrew Bennett**  
AAFC, CNC  
andrew.bennett@agr.gc.ca



**JESO Technical Editor  
Thomas Onuferko**  
York University  
onferko@yorku.ca



**Director 2014-16  
Wayne Knee**  
AAFC, CNC  
whknee@gmail.com



**Director 2014-16  
Antonia Guidotti**  
Royal Ontario Museum  
Antoniag@rom.on.ca



**Director 2015-17  
David Beresford**  
Trent University  
davidberesford@trentu.ca



**Director 2015-17  
Jocelyn Smith**  
University of Guelph, Ridgetown Campus  
jocelynleighsmith@gmail.com



**Director 2016-18  
Laura Timms**  
CVC, ROM  
laura.timms@mail.mcgill.ca



**Director 2016-18  
Alex Smith**  
University of Guelph  
salex@uoguelph.ca



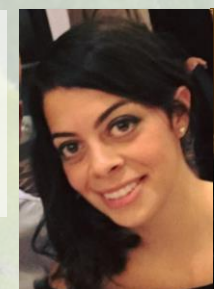
**ESC Rep. to ESO  
Sophie Cardinal**  
AAFC, CNC  
sophie.cardinal@agr.gc.ca



**Student Rep.  
Casey Peet-Paré**  
Carleton University  
cpeetpare@gmail.com



**Student Rep.  
Andrew Young**  
CNC  
a.d.young@gmail.com



**Newsletter Co-editors  
Lauren Des Marteaux**  
Western University  
ldesmart@gmail.com  
**Kruti Shukla**  
Ryerson  
kruti.shukla@gmail.com

# Officers of the ESO





Fellow Entomologists,

Winter turns to Spring turns to Summer, just as the phases of metamorphosis make themselves known amongst our favourite insect species. Or, it's getting nice out and some gross bug just turned into some other gross bug.

"Brand recognition and promotion" is a modern concept used by politicians, athletes, celebrities, institutions, and faceless corporations. Establishing a name in the mind of a target audience is the focus of huge amounts of effort and money. While I am not advocating a new marketing line item within the ESO budget, I am suggesting that this concept can be employed by our ESO membership. Our abundance of successful ESO events, both past and present, never fail to promote the ESO as both sponsor and active scientific society. I speak here of our Annual Meetings and Bug Days (cast your gaze to Sault Ste. Marie, London, and Ottawa for these in the near future). In addition to these larger events, however, I humbly suggest adding more personal promotion of the ESO.

# President's address



For a minor annual fee (still \$0 for students!), we all get to call ourselves members of one of the oldest scientific societies in North America. Why not spread this collective entomo-pride every chance you get? We have a “brand” (a fancy logo at the very least) and a message (“Insects are vital to our environment and are worthy of scientific study”), all we need is to bring them to the audience. When you give a talk, mention that you first came up with your experimental design after reading a paper in *JESO*. Reminisce in the coffee room about how your best memories as a student were presenting at an ESO AGM. In your next performance review, tell the powers that be that you love entomology because of the look of wonder you see on the faces of children at a Bug Day. Whether true or not, these little moments are chances to tell others of the value of the ESO. Promote our brand!

In other news, I have been in regular contact with Chris MacQuarrie, the new editor of the *Journal of the ESO*. We are working to make ALL past articles from *JESO* (and *PESO* and *arESO* before that) fully searchable and downloadable. Keep your eyes on this space (and the ESO website) for future developments. In regards to *JESO*, the journal continues to publish first-rate Entomological Science. I encourage any and all members to submit their own research, their students’ research, or encourage departmental colleagues to submit any scientific manuscripts relating to insects. Complete open access at a cost of \$0 cannot be beat. Also, we encourage distribution and self-archiving through personal websites, social networks, and lunch room bulletin boards.

Thanks and don’t forget to wear sunscreen,

**Joel Gibson**  
**ESO President**

# President’s address





## Antonia Guidotti

### Presidential candidate

I have been with the Royal Ontario Museum since 1994, first as a volunteer, then a student, next as an employee on various contracts until 2000 when I was hired as a fulltime entomology technician. My passion for insects was sparked in university during field courses that examined behaviour and evolution and continued through my early years at the ROM. I love the diversity of insects, their shape, colour, form. I consider myself fortunate in that I truly enjoy my work! My Master's work at the University of Toronto focussed on the review of the systematics of the Rhopalosomatidae, a relatively unknown family of parasitic wasps.

In addition to assisting curators with the preparation of manuscripts and aiding in their research, I respond to general inquiries about insects from members of the public and other museums and institutions by providing identification and information of specimens or images sent to me. Every day I learn more, sometimes with the assistance of entomologists around the province who are experts in a particular group and help me with identifications. In addition to these duties, I often handle requests from the media to comment on the particular insect "story of the day". If I am unable to provide them with the information that they seek, then I am happy to refer them to other colleagues. .

I feel it is important for me to communicate my passion for insects to others. I was a member of the awesome working group that wrote the "Butterflies of Toronto: A Guide to Their Remarkable World", part of the City of Toronto Biodiversity Series. After 5 years of considerable effort, I was thrilled—and relieved— when, in 2014, we published the "ROM Field Guide to Butterflies of Ontario"; this project truly was a labour of love. I have also enjoyed planning and participating in the Ontario Bioblitzes around the GTA in the last 5 years. In my "spare" time, I am the Program Coordinator for the Toronto Entomologists' Association, a fantastic group of dedicated individuals with a passion for insects.

Why am I running for president of the ESO? This may sound odd but I often think of myself as a spider sitting in its own web with each silk line pulling me in different directions. Rather than trying to do too many things at once, I have learned to pull back, connect the lines and pull like-minded people together to work to a common goal. I see the ESO as an important organization for spreading the word about insects and building the entomological community. I believe that with my past experience, I can contribute to this community building and would be an asset to the ESO.

# Board nominees – President





## Amando Roe (@docaroe)

### Director candidate

I have always loved insects. Right from the beginning. As a child I hated dolls; instead I had a bucket of “squirmies” and these were my prized possessions. My two young daughters have inherited this first collection as well as my passion for bugs, nature, and dirty hands. I grew up on a farm in southern Alberta and only recently moved to Ontario six years ago. While I have always loved bugs I did not fully recognize my passion for insects until I started building my insect collection for my Insect Taxonomy course at the University of Alberta. Upon completion of my undergraduate degree in Environmental Biology (Hons) in 2001, I started a PhD with Dr. Felix Sperling at the University of Alberta. My PhD thesis focused on the molecular ecology of a group of cone and seed pests called coneworms (Lepidoptera: Pyralidae: *Dioryctria*). I defended my PhD in 2006 and started the first of three postdoc positions. Since flexibility is paramount as a postdoc, I have worked in a wide diversity of systems – three different Kingdoms in fact. I have studied higher level systematics in Lepidoptera at the University of Minnesota (2006-2007, NSF ATOL project), mountain pine beetle fungal symbionts at the University of Alberta (2008-2010, Genome Canada TRIA project), and poplar tree hybridization with the Canadian Forest Service (2010-2013). Insects, though, are my true love. Luckily my persistence has paid off and I was recently hired as a research scientist with the Canadian Forest Service (NRCan) at the Great Lakes Forestry Centre this spring. My current focus is on the population genomics and molecular ecology of forest pests. I am currently working on the invasive Asian longhorned beetle and brown spruce longhorned beetle, as well as the spruce budworm.

Education and public outreach have always been an important component of my professional life. I volunteered as a as an outreach educator at the University of Alberta, bringing bugs into classrooms throughout Alberta. My passion for outreach led me to help found Entomica, the smallest insectarium and science centre in Canada where I currently sit on the Board of Directors. Entomica uses insects as a catalyst for public engagement and to encourage lifelong learning. One of our innovative outreach programs called Science for Seniors recently received national recognition from the Canadian Association of Science Centres. Last year I helped organize the public outreach component of the ESO AGM, which was a great success. In addition to my work with Entomica, I have had multiple opportunities to teach as a part time faculty at Algoma University here in Sault Ste. Marie. I look forward to being actively involved with the Entomological Society of Ontario and continuing to promote the wonders of bugs!

# Board nominees - Director





## Joel Kits

### Director candidate

My first natural history interest was in birds, which lead to a university summer job conducting breeding bird surveys. I started looking at butterflies during the ornithologically slow afternoons, and have been hooked on insects since. I met Steve Marshall while doing a BSc at the University of Guelph, and went on to do a PhD with him, studying the systematics of a diverse and little-known group of Neotropical dung flies. Later, I moved to Ottawa to do a postdoc at the Canadian National Collection of Insects, doing molecular projects on bee pathogens and plant bugs. I recently started a position as a research scientist at the CNC, with a responsibility for the taxonomy and systematics of Auchenorrhyncha (leafhoppers, planthoppers, and relatives). I am interested in using both traditional morphology as well as modern molecular tools to unravel the amazing diversity of these insects.

I've been a member of ESO for about 10 years. I would be proud to serve as a director of a society with such a rich history, and would do my best to help the society continue its important role in promoting entomology in the province.

# Board nominees - Director





## Roselyn Labbe

### Director candidate

Roselyne Labbe is the new Greenhouse Entomologist at the AAFC Harrow Research and Development Centre, having started in July 2015. Roselyne holds PhD and HBS degrees from Western University in insect physiology and insect population dynamics. Her doctoral work, also done at the AAFC London Research and Development Centre, focused on the analysis of resistance traits in the greenhouse pest, *Trichoplusia ni*, the cabbage looper moth. Her HBS thesis work focused on *Lygus hesperus* population dynamics in Ontario apple orchards. During her MSc degree from the faculty of Agricultural and Food Sciences at Laval University, Roselyne served as a contributing member in training for Canada's Biocontrol Network through which she collaborated with scientists at the AAFC Agassiz Research and Development Centre. Here she studied interactions between multiple greenhouse biological control agents including predators, parasitoids and entomopathogens and developed best management practices for greenhouse whitefly biological control. She has also worked as a postdoctoral researcher at Wayne State University and the University of Toronto which included work studying invertebrate transcriptomics.

Roselyne's current work at the HRDC focuses on the development of biological control strategies for greenhouse pest management on short season greenhouse crops under supplemental LED lighting. She has also begun exciting work on the development of novel agents for new invasive pests in Canadian greenhouses.

# Board nominees - Director





## Catherine Scott

### Student representative

I'm a PhD student at University of Toronto Scarborough in Maydianne Andrade's lab. I study sexual communication in western black widows (*Latrodectus hesperus*). My MSc work was focused on female pheromones, and now for my PhD I am switching to the other side of the conversation, studying chemical signals and cues produced by males. When I'm not doing research on black widows, I spend time outside looking for spiders, tweet about spiders (I'm [@Cataranea](https://twitter.com/Cataranea) on twitter) and blog about spiders at [www.spiderbytes.org](http://www.spiderbytes.org).

Strictly speaking I am an arachnologist, but I have found the Canadian entomological community very welcoming despite my study organism's extra pair of legs. I have been an active member of the Canadian Entomological Society since 2010 and a member of the ESBC during my MSc degree at Simon Fraser University. One of the first things I did upon moving to Ontario was to join the ESO and attend the 2015 AGM. As I expected to, I met a fantastic group of fellow insect and spider enthusiasts at the meeting, and I feel lucky to be part of such a vibrant local society.

I would be honoured to serve the ESO as a student representative. I feel strongly that students should have opportunities to communicate their research to both other scientists and to the public, learn skills that will serve them as scientists and professionals whether inside or outside academia, and be part of a supportive community of peers. I would love to help make sure that the ESO continues to provide great opportunities to students and to make and maintain connections among entomology students across Ontario and beyond.

# Board nominees – Student rep.





## Kaitlyn Fleming

### Student representative

I am currently studying the biogeography of carabids in Northern Ontario for my Ph.D. at Trent University. My research is focusing on how disturbance affects carabid distributions.

I am running for the position of Student Representative on the Entomological Society of Ontario Board because I want to represent my fellow student members of ESO in a formal manner. I have been a member of ESO for over a year and have enjoyed being a member, but would like to take on a more active role in the society.

I have excellent organizational, planning, and interpersonal skills. I have strong verbal and written communication skills. I am capable of making constructive suggestions and working in a team environment to find appropriate solutions. Along with these skills, I have experience working on committees and societies. In 2015, I was the Artistic Director and Social Media Director of the Trent University Biology Undergraduate Society. During my Master of Science at the University of Toronto I was a founding member of the Graduate Student Mental Health Committee and a Member-at-Large for the Anthropology Graduate Student Union Executive.

My experiences on these committees have provided me with opportunities to develop and hone a specific skill set which I believe will be of great benefit to the role of Student Representative and support acting as the liaison between students and the Entomological Society of Ontario Board.

# Board nominees – Student rep.





## Sarah Dolson

### Student representative

I grew up spending my summers listening to cicadas and staring at bugs. When I read *Letters to a Young Scientist* by E.O. Wilson I knew that there were few things on earth as cool as insects and I wanted to study them. Since then, I have been heavily involved in arthropod work throughout my undergraduate degree at the University of Guelph. Between my classes of Insect Biology, Insect Behavior, and Field Entomology, I completed 2 independent research projects. I studied the relationship between spider diversity and elevation under the supervision of Alex Smith. I also was fortunate enough to spend a summer in Vietnam researching beetles in honeybee hives for work with Gard Otis.

In the fall I will be starting my graduate studies with Alex Smith looking at beetle phylogenetic structure, diversity, and conservation across a Neotropical elevation gradient.

I believe science communication and outreach are critical to encouraging student participation and research in entomology. What do we love about the scientific community we work in? Let's celebrate it. What can be improved about our community? Let's talk about it and work towards solutions. This dialogue is especially necessary for the ESO since organizations such as this serve important roles to the encouragement of young scientists. I would love to be your next ESO student representative in order to encourage these discussions and promote sharing knowledge of our six-legged friends.

# Board nominees – Student rep.





The ESO ran two insect outreach events at the London Children's Museum (coordinated by Lauren Des Marteaux). We participated in Boo-Seum (the annual museum-wide event at Halloween) that attracted 700 visitors. Lauren Des Marteauxn ran an insect-tasting booth, while Susan Anthony (also facepainter) and Kyle Doward displayed an impressive collection of live tarantulas!

We also teamed up with Western University to run a mini Bug Day during the March break event at the Children's museum. Nina Zitani showed off beautiful pinned displays from the Western University zoological collections, and Mhairi McFarlane distributed native seed packets from the Nature Conservancy. We also had live cockroaches and tarantulas, edible insects, and facepainting. Thanks to volunteers Susan Anthony, Kyle Doward, Jackie Lebenzon, Brent Sinclair, Joanne Tang!





Every 17 years in various northern regions of the eastern United States, cicadas with exceptionally long lives emerge by the billions. This year, the emergence of these beautiful insects is relatively close to “home” for those of us living in Ontario. Brood V that emerges in 2016 can be encountered in eastern Ohio, SW Pennsylvania, most of West Virginia, and a few counties in Ohio (see map, pg 14). There is a small localized Brood V population on Long Island, NY.

The cicadas emerging this summer developed from eggs laid in batches on branch tips in 1999. Upon hatching from the oviposition groove that a female makes in a branch tip, the nymphs feed briefly on the sap of the tree. Their feeding causes the branch tips to die—later this summer dead leaves on branch tips will be evident across their range.

Within a few weeks, the nymphs drop to the ground where they seek out tree roots upon which they feed for the entirety of their underground lives. The cicadas emerge in densities of 6-150 per square metre (often more than one million per acre). They measurably depress the growth of some trees (e.g., oaks) in the year of their emergence as adults (Koenig & Liebhold, 2002). Adults are fed upon by birds of many different species, including robins, starlings, blue jays, and common grackles that become satiated after eating 20-54 individual cicadas per day (Karban, 1982)! Mammals from mice and shrews to raccoons and coyotes feast on the food bonanza provided by the cicadas, and deer mice exhibit changes in breeding in response to the cicadas (Vandergrift & Hudson, 2009). When the adult cicadas die, the nutrients in their bodies stimulate the growth of detritivores and microbial communities and nitrogen in the soil increases (Yang, 2006). Periodical cicadas have substantial, cascading effects on the ecosystems they inhabit.

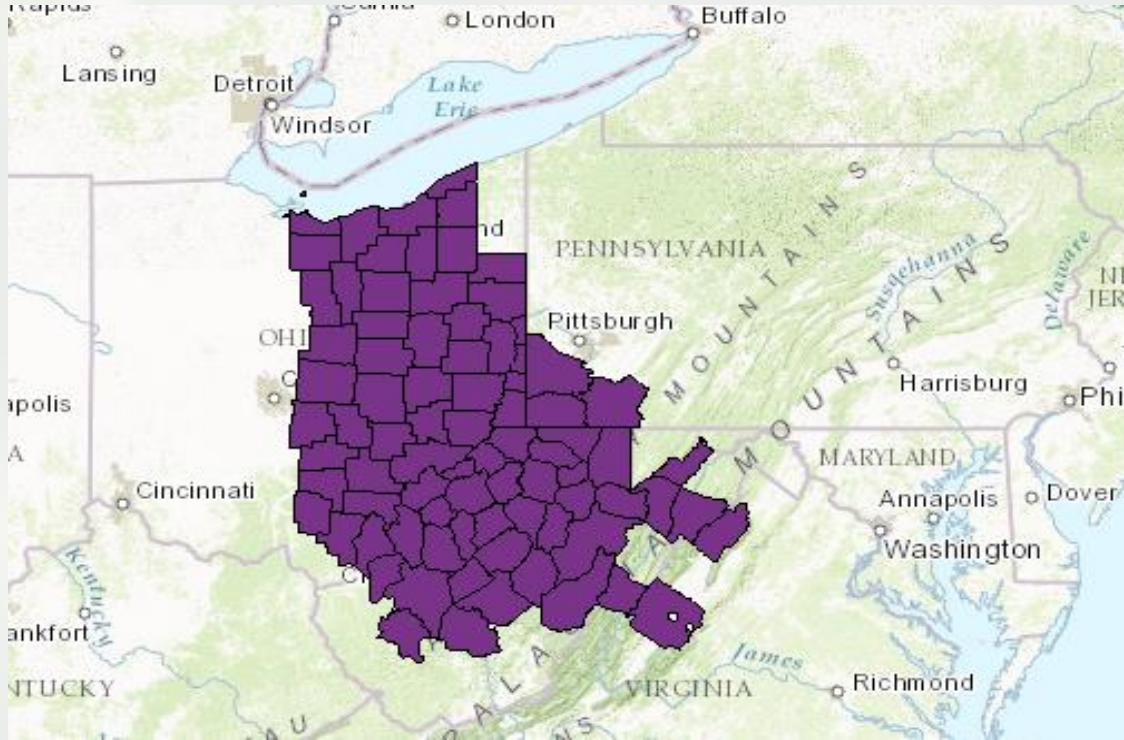


Hyungwon Kan/ Reuters

# 17-year cicada emergence



To add to the complexity, there are also four species of 13-year cicadas with generally more southern distributions, with the closest relative of each 13-year species being a species with a 17-year life cycle! The unique life cycle of these insects—the longest life cycles known (other than unusually delayed emergences in a few wood-feeding beetles; Zeng, 1995)—have drawn numerous researchers to study them. Good summaries that will serve as starting points to the biology of *Magicicada* are provided by Heliovaara *et al.* (1994) and Williams and Simon (1995), as well as the website <[www.magicicada.org](http://www.magicicada.org)>, the source of much of the information presented here.



B. Resnick (2016)

The emergence of periodical cicadas this year has begun: the first report from southern Ohio was on 7 May. They will continue to emerge into June and their loud choruses will annoy non-entomologists from mid-May to the end of June. I am leading a field trip for naturalists through The Arboretum of the University of Guelph to Morgantown, WV (May 26-29), where there was a strong emergence of cicadas in 1999. They are reported from many sites in eastern Ohio, with Chris Simon specifically mentioning Athens, OH. If you don't get to experience these amazing insects this year, the next major emergences of 17-year cicadas close to us in Ontario will be in 2019 (Brood VIII, in west central Pennsylvania) and in 2021 (Brood X, in Michigan, Indiana, western Ohio, and SE Pennsylvania).

**Gard Otis**

**University of Guelph - School of Environmental Science**

# 17-year cicada emergence



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# 17-year cicada emergence



We of the Entomology lab at Trent University believe that entomology courses should include a hands-on environment that allows students to apply the lessons they learn in lecture. Identifying a specimen to the species level may seem easy in concept, however actually using a dichotomous key is much more difficult and instills the required skills to do so in the students. As well, learning how to create and set up traps is easier in theory than in the field.

There can be disconnect between 'the what, the where, why, and how'. Hands-on entomology provides students with the opportunity to make connections between the insects they are studying and the where, why and how of each species; that insects do not come from a sterile environment but a real place; and that insects interact with the environment in complex ways. For example, we think purchasing insects in bulk from biological supply companies is less enjoyable for students than students having the opportunity to find their own specimens.

At Trent University we use the campus in our entomology courses, often going outside of the lab. The required insect collection allows students to apply different collecting methods, including sweep netting, pit fall traps, baited traps for necrophilous insects, and sugaring for moths and butterflies. One of our lab assignments begins by having students catch grasshoppers in the fields beside the campus, and bring these into the lab to kill humanely, and be dissected in order to examine insect anatomy. In another lab, during the winter when many insects lay dormant, students are still outdoors drilling holes in the ice of a small storm water pond on campus to find benthic invertebrates.



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# Entomology outdoors



The, Dave Beresford (the entomology professor at Trent) brings students to a nearby farm where they use mark-recapture method to track dispersal behaviour and find the population of caddisfly larvae. Our courses also use flight mills with live blowflies to assess the invasive potential of flying insects, and our Forensic Entomology course we set out several carcasses which students use to understand insect successional changes throughout the decomposition process.

This year Trent is offering a field course at Algonquin Provincial Park. As one of the largest parks in Ontario (7,630 km<sup>2</sup>), Algonquin offers a very biologically diverse, and an ideal place to study insects in several different habitats. For the first week students will live at the University, and learn the skills needed to conduct their own study during the second week at the park. Students will have the opportunity to explore, collect, and learn about insects that are found in forested, marsh, fen, aquatic, and terrestrial open country and woodland ecosystems. By the end of the course, students will have experienced a hands on approach for learning basic entomological sampling methods, field techniques, research methods, and identifications of insects in the park.

We think that students really enjoy this type of learning and the feedback from the field style experience is very positive. It is not just about learning about insects in the abstract, but the role of different insects in their habitats as well. Putting the facts we learn in the classroom in the context of the environment not only reminds students of the bigger picture as they learn about the specifics of the science, but reinforces that science is in fact something you can hold in your hands and see with your eyes. Science is a thing we can all do, not just the people you read about in a textbook!



[http://www.explore-mag.com/Roundup\\_The\\_Best\\_of\\_Algonquin](http://www.explore-mag.com/Roundup_The_Best_of_Algonquin)

**Sarah Langer, Kaitlyn Fleming, and Sherri DeGasparro**  
Trent University

# Entomology outdoors



As an undergraduate student majoring in Biology at the University of Guelph, I developed a strong interest in entomology during evolution and ecology classes. I am fascinated by insect diversity and distribution, as well as ecology, behavior, and the environmental factors that influence all of these.

In collaboration with Professor Gard Otis (School of Environmental Science), we applied for a Mitacs Globalink Research Award. The award enabled me to travel to Vietnam after my 3<sup>rd</sup> year of undergraduate study to conduct research for 3 months on *Platybolium alvearium*, a beetle associated with honeybees. This poorly known beetle species is found frequently in hives containing colonies of Asian honeybees (*Apis cerana*). We sought to understand the ecological and behavioral relationship between *P. alvearium* and the honeybees with which they associate. To do this, I first conducted a survey of the beetle in honeybee colonies. This field work involved visiting apiaries, inspecting the bees, and recording the numbers of beetles and their locations within the hives. Moving between apiaries involved riding on the back of a motor bike for hours on end through the rural agricultural landscape about two hours west of Hanoi. My Vietnamese host and I frequently stopped enjoy quaint tea breaks with farmers and their families. I collected live beetles and returned them to a laboratory in Hanoi where I assessed their attraction to bee products through several bioassays we designed. Through these activities I was able to intimately experience the research culture of a different part of the world.



# MITACS research project in Vietnam



Throughout my time in Vietnam I lived in the capitol, Hanoi. There I experienced a different side of Vietnamese life and was constantly surprised by the kindness of strangers. I spent my time searching for local wildlife and navigating through the city amidst the swarms of motorbikes.

Since this project required close collaboration with Vietnamese beekeepers and researchers, I was immersed in Vietnamese culture, language, and thinking. I feel that the hands-on experience I gained with international collaboration and science communication will be important for my future success in scientific research. My project also helped promote international partnerships between Dr. Otis, several Vietnamese researchers, and myself which could benefit future research efforts if concerns over the global decline of honeybee populations continues to grow. International collaboration, in particular, is necessary given the issues with invasive species that cause significant damage to honeybee colonies.

Through our research, we discovered that *P. alvearium* beetles are distinct in its behaviour and ecology from other insects known to be associates of honeybees because (1) they are more common in stronger colonies than weak colonies; (2) they prefer bee products over non-bee products (e.g., beeswax vs. paraffin); and (3) they caused no harm to the bee colonies. This novel type of association will be presented at a meeting of social insect researchers this September.



[www.phuquocbeefarm.com](http://www.phuquocbeefarm.com)



[www.flickr.com](http://www.flickr.com)

# MITACS research project in Vietnam



The Mitacs Globalink Research Award allowed me to gain invaluable knowledge about insect behavior and ecology and also provided important insights into bee associates in general. Immersing myself in this project turned my general passion for insects into tangible experiences. I was able to put my knowledge from various undergraduate classes into actual field experience and the design of ecological and behavioural studies, experiences which are only gained through direct research activities. This experience inspired me to continue entomology work in areas of the world where we have a limited understanding of biodiversity, and to strive to learn new ways to approach research questions for which there are not yet answers.

**Sarah Dolson**

University of Guelph, Department of Integrative Biology  
dolsons@mail.uoguelph.ca



For more information on the Mitacs Globalink program, please check out:

<https://www.mitacs.ca/en/programs/globalink/global-research-award>

Applicants must be full-time students who will return to their Canadian institution for full time study. The award (\$5000, to be used for travel, accommodation, and research expenses) can applied to projects in India, Mexico, mainland China, and Brazil; applicants must spend 12-24 weeks abroad in the partner country. Senior undergraduate and graduate students with a B average in their last 2 semesters of study are eligible to apply. Students of any academic discipline may apply. The deadline for applications for the Fall 2016 semester is 10 June, 2016.

# MITACS research project in Vietnam



# Submit a photo to the 2016 Bug Eye photo contest!

## Instructions:

Ontario residents includes international students living in Ontario. Copyright for the photo remains with the photographer, use must be granted for ESO promotional material. Images must be of insects or closely related arthropod species (e.g. mites, spiders, etc). All submissions must be as a digital files. The judging criteria will be based on: a) image composition; b) visual impact of image; c) subject interest; d) sharpness of subject; e) difficulty of image acquisition; and f) lighting.

You may submit up to 3 unique images, but can only win one prize plus the People's Choice Award. Submit the image file by creating a digital file that is the equivalent of 7.5 inches by 10 inches (19.5cm by 25.4cm), at 300 dpi, formatted as a jpg. Create a filename using **an appropriate title, underscore, your last name, underscore, first initial (e.g. dragonfly\_smith\_j)**. Images may be either "landscape" or "portrait" in orientation. Images recorded on film must be digitally scanned and then edited according to the prescribed resolution (i.e. 7.5" by 10", at 300 dpi) for submission.



**Last Year's Winner (2015) - Andrea Brauner**

# BugEye 2016 photo contest



### Instructions (continued):

Photographic enhancement is allowed as long as it is something that could also be achieved in a real darkroom with a color or black & white negative (e.g. adjustment of contrast, color enhancement, cropping, etc.). However, very dubious enhancements will be negatively scored.

The best pictures submitted will be selected by judges and entered into the People's Choice Award competition. The selected pictures will be posted on the ESO website and/or on a photo sharing website such as flickr for the community to vote on. The pictures will also be displayed at the Annual Meeting of the Entomological Society of Ontario. If you do not wish for your pictures to be posted in such a way, you can choose to not participate in the People's Choice Award.

Please include a short description of your entries (where they were taken, why you like them, etc.) and whether the picture is of an Ontario insect and if you are a child under the age of 13. You must also indicate if you would like to be considered for the People's Choice Award. Do not forget to include your complete address.



#### **Prizes for:**

**Best photo (\$50)**

**Best photo of an Ontario insect (\$50)**

**Best photo by a junior entomologist under 13 (1<sup>st</sup> \$25, 2<sup>nd</sup> \$20, 3<sup>rd</sup> \$10)**

**People's Choice Award (\$50)**

**Open to all Ontario residents, no entry fee**

**Submission deadline: September 12th, 2016**

**Submit photos to: [esophotos@gmail.com](mailto:esophotos@gmail.com)**

**Winners announced: October 16th, 2016**

# BugEye 2016 photo contest



# ESO AGM 2016

Great Lakes Forestry Centre  
Sault Ste. Marie, ON

October 14th - 16th, 2016

Please keep an eye on the  
ESO website for more  
information

[www.entsocont.ca](http://www.entsocont.ca)

Join us at the **2016 ESO  
Annual General Meeting** in  
the Sault!

The ESO AGM is an intimate  
and affordable conference,  
and always great for  
students!



Amanda Roe  
[amanda.roe@canada.ca](mailto:amanda.roe@canada.ca)

Chris MacQuarrie  
[christian.macquarrie@canada.ca](mailto:christian.macquarrie@canada.ca)

# 2016 AGM





<http://www.wintergreenstudios.com/bioblitz/>

## Wintergreen Studios 2<sup>nd</sup> Annual Bioblitz

**Saturday, June 4th (2pm) – Sunday June 5th (2pm)**

**Wintergreen Studios (9780 Canoe Lake road, South Frontenac, ON)**

Come one, come all for a 24-hour identification extravaganza! We will be hosting hikes, kids' events, and ID workshops with live critters. The event is free, with the purpose of educating participants on wildlife ID, as well as giving us a snapshot of the biodiversity of the site. We would love for any ESO members to attend part of the weekend, and help identify the hundreds of insect species on Wintergreen's property. Finally, if anyone would like to run an ID workshop, **we have 2 workshop slots available**. Email Kate Belmore ([1khhb@queensu.ca](mailto:1khhb@queensu.ca)) if you are interested, we would love to have you!

## Ontario BioBlitz in the Credit River Watershed

**Saturday June 11<sup>th</sup> and Sunday June 12<sup>th</sup>**

**The Riverwood Conservancy (4300 Riverwood Park Ln, Mississauga, ON L5C 2S7)**

This 2016 flagship event will survey the species of the Credit River watershed. With an area of a thousand square kilometres and a human population of almost one million, the Credit watershed is still home to a vast diversity of plants, animals and fungi. Once again we will have teams taking inventories of this biodiversity from the headwaters of the river, up atop the Niagara Escarpment, right down to where it meets the Lake Ontario Shoreline.



Upcoming events





[outdoorontario.net](http://outdoorontario.net)

## Spider Identification Workshop

**Saturday, July 9<sup>th</sup> 8:00 am – 12:00 pm**

**Royal Botanical Gardens, Nature Centre ( 680 Plains Rd W, Burlington)**

An opportunity to acquire skills identifying spiders . Registration information can be found at <http://www.ontarionature.org/connect/blog/event/spider-id-workshop-royal-botanical-gardens/>



<https://nanopod.tv/entomology/>

## Insect and Spider Preparation Courses

**Friday, August 26<sup>th</sup> and Saturday, August 27<sup>th</sup>**

**nanopod: Hybrid Studio (322 Harbord Street, Toronto, ON M6G 1H1)**

The nanopod: Hybrid studios are offering two opportunities teaching the basics of insect and spider specimen preservation. For more information and registration, please visit

<https://nanopod.tv/entomology/>

Upcoming events





## PUBLISH IN JESO!

The Journal of the Entomological Society (JESO) is the second oldest entomological journal in North America.

Papers on any aspect of entomology are accepted, and do not need to be restricted to Ontario! Both French and English manuscripts are welcome. At least one author must be a member of the ESO. To submit, please see the [Instructions for Authors](#) page.



Editor  
**Chris MacQuarrie**  
chritian.macquarrie@  
nrcanrncan.gc.ca



Assoc. Editor  
**Jeff Skevington**  
jhskevington@gmail.com



Assoc. Editor  
**Andrew Bennett**  
andrew.bennett@  
agr.gc.ca



Technical Editor  
**Thomas Onuferko**  
onerko@yorku.ca

# ESO membership



# Entomological Society of Ontario



Join our Facebook group!



Visit our website:  
[www.entsocont.ca](http://www.entsocont.ca)



## Who are we?

Formed in 1863, the ESO aims to further entomology through annual meetings, publications, and public outreach.

## What do we do?

In addition to holding interactive events like Bug Day, we also have an annual meeting, a society journal, and publish a biannual newsletter.



## Why should you join?

Membership is FREE for students!

Becoming a member entitles you to:

- Newsletters sent to your email
- A subscription to the Journal of the Entomological Society of Ontario
- Access to entomology job postings, student resources, and opportunities to network with other entomologists



## How can you join?

Just fill out the form on our website and email or mail it to us!

## JOIN THE ESO!

For ESO membership, complete the [Membership form](#) (also available on the ESO website)

**Canadian student, amateur, and retiree memberships are FREE!** Email Michelle for membership renewal (must be done each year): [entsocont.membership@gmail.com](mailto:entsocont.membership@gmail.com)

**Regular members: NEW** - A one-time payment of \$150 secures you a 5 year membership! For payment options, including PayPal, please visit [www.entsocont.ca](http://www.entsocont.ca), or mail your invoice and payment to:



**Michelle Locke (ESO Secretary)**

Vista Centre 1830 Bank St.  
PO Box 83025 Ottawa, ON  
K1V 1A3 Telephone:  
(613) 759-1727