

Insect Biotech Conference – 2013

Conference Schedule

Wednesday Evening – June 5

- 6:00 pm **Registration:** Outside Newman Room
- 7:00 pm **Plenary Talk:** Newman Room
Dr. Fiona F. Hunter, Professor of Biological Sciences, Brock University, St.
Catharines, Ontario, L2S 3A1, Canada
**CANADA'S MOSQUITOES: MORE DANGEROUS THAN THEY USED
TO BE?**
- 7:45 – 9:00 pm **Reception:** Outside Newman Room (Pizzeria, Beer and Wine)

Thursday, June 6

- 7:45 – 9:00 am **Breakfast:** Topaz Room (The All Canadian)
- 9:00 am **Opening Remarks:** Ian Orchard
- Session Chair:** **Ian Orchard**
- 9:10 am **USING INSECT MODEL SYSTEMS TO STUDY MECHANISMS OF
SPREADING DEPRESSION.** [Page 1]
Spong, K.E., Rochon-Terry, G, Rodriguez, E.C, and Robertson, R.M.
Department of Biology, Queens University, Kingston, ON, Canada
- 9:30 am **THE INTERACTION OF CENTRAL AND PERIPHERAL CLOCKS
REGLATES RHYTHMIC ECDYSTEROID LEVELS IN THE INSECT
RHODNIUS PROLIXUS.** [Page 2]
Cardinal-Aucoin, M., and Steel, C.G.H
Department of Biology, York University, Toronto, ON, Canada
- 9:50 am **AMMONIA EXCRETION BY ANAL PAPILLAE OF THE LARVAL
MOSQUITO, Aedes Aegypti.** [Page 3]
Ionescu, A.¹, Bui, P.¹, Weihrauch, D.², and Donini, A.¹
¹Department of Biology, York University, Toronto, ON, Canada.
²Department of Biological Sciences, University of Manitoba, Winnipeg, MB, Canada.
- 10:10 am **THE RECTUM OF LARVAL CHIRONOMUS RIPARIUS IS AN IMPORTANT
OSMOREGULATORY ORGAN.** [Page 4]
Jonusaite, S., Kelly, S., and Donini, A.
Department of Biology, York University, Toronto, ON, Canada.
- 10:30 – 10:50 am **Coffee Break:** Outside Newman Room

Session Chair: Angela Lange

10:50 am **SALINITY RESPONSIVE AQUAPORIN EXPRESSION IN THE ANAL PAPILLAE OF THE LARVAL MOSQUITO, *AEDES AEGYPTI*.** [Page 5]
Akhter, H. Bui, P. and Donini, A.
Department of Biology, York University, Toronto, ON, Canada.

11:10 am **TRANSPORT OF Na⁺, K⁺ and H⁺ ACROSS THE POSTERIOR MIDGUT OF BLOOD-FED MOSQUITOES (*AEDES AEGYPTI*).** [Page 6]
Pacey, E. K., and O'Donnell, M. J.
Department of Biology, McMaster University, Hamilton, ON, Canada.

11:30 – 12:10 pm **Short Exposures** (5 minute talks plus questions)

IDENTIFICATION AND CHARACTERIZATION OF NUCLEAR RECEPTORS FROM THE EMERALD ASH BORER (EAB). [Page 7]

Jun Duan^{1,2}, Tim Ladd¹, Peter J. Krell² and Guoxing Quan¹

¹ Natural Resources Canada, Great Lakes Forestry Centre, Sault Ste. Marie, ON, P6A 2E5, Canada; ² Department of Molecular and Cellular Biology, University of Guelph, ON, N1G2W1, Canada.

INVESTIGATING THE EFFECTS OF PROCTOLIN AT THE *DROSOPHILA* LARVAL NMJ. [Page 8]

Ormerod, K. G. and Mercier, A. J.

Department of Biological Sciences, Brock University, St. Catharines, ON, Canada.

THE EFFECT OF SALINITY STRESS ON SODIUM AND POTASSIUM TRANSPORT ACROSS THE ALIMENTARY CANAL OF *AEDES AEGYPTI* LARVAE. [Page 9]

Browne, A. A., and O'Donnell, M.J.

Department of Biology, McMaster University, Hamilton, ON, Canada.

INNERVATION OF THE OSMOREGULATORY ORGANS IN *CHIRONOMUS RIPARIUS* AND THE ASSOCIATION OF FGLa/AST WITH THESE TISSUES.

[Page 10]

Robertson, L., and Donini, A.

Department of Biology, York University, Toronto, ON, Canada.

12:10 – 1:20 pm **Lunch Break:** Topaz Room (Bagel Bar)

Session Chair: Andrew Donini

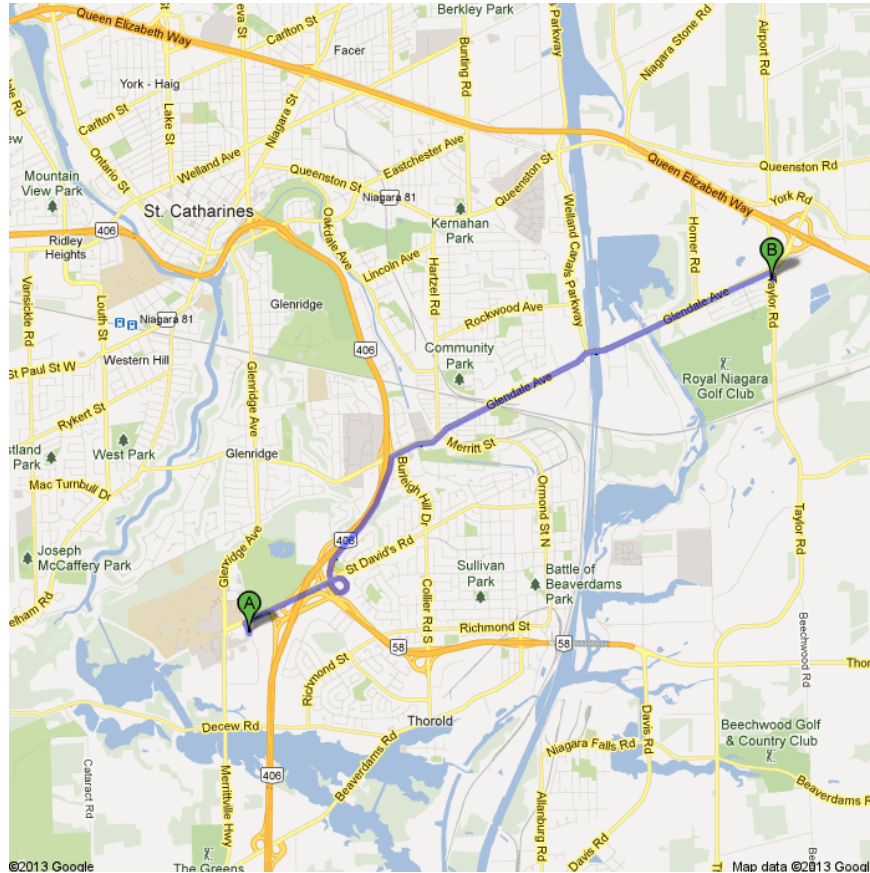
- 1:20 pm **INJECTION OF CHITIN DEACETYLASE GENE DOUBLE-STRANDED RNA CAN INDUCE RNA INTERFERENCE (RNAI) IN SPRUCE BUDWORM, *CHORISTONEURA FUMIFERANA*. [Page 11]**
Guoxing Quan¹, Tim Ladd¹, Jun Duan^{1,2}, Fayuan Wen^{1,2}, Daniel Doucet¹, Michel Cusson^{3,4} and Peter J. Krell²
¹ Natural Resources Canada, Great Lakes Forestry Centre, Sault Ste. Marie, ON, P6A 2E5, Canada; ² Department of Molecular and Cellular Biology, University of Guelph, ON, N1G2W1, Canada; ³ Natural Resources Canada, Laurentian Forestry Centre, Québec, G1V 4C7, Canada; ⁴ Département de biochimie, et de microbiologie et bio-informatique, Université Laval, Québec, G1V 0A6, Canada.
- 1:40 pm **VIRAL TRANSCRIPTION IN CATERPILLAR GUT INFECTED WITH THE *MAMESTRA CONFIGURATA* NUCLEOPOLYHEDROSIS VIRUS. [Page 12]**
Only, B.C.^a, Theilmann, D.A.^b, Hegedus, D.D.^c, Baldwin, D.^c and Erlandson, M.A.^c
^a Southern Crop Protection & Food Research Centre, AAFC, London, ON, Canada
^b Pacific Agri-Food Research Centre, AAFC, Summerland, B.C. Canada
^c Saskatoon Research Centre, AAFC, Saskatoon, SK, Canada
- 2:00 pm **BIRTH OF THREE STOWAWAY-LIKE MITE FAMILIES VIA MICROHOMOLOGY-MEDIATED MINIATURIZATION OF A TC1/MARINER ELEMENT IN THE YELLOW FEVER MOSQUITO. [Page 13]**
Guojun Yang
Department of Biology, University of Toronto Mississauga, Mississauga, ON.
- 2:20 pm **HIGH-THROUGHPUT RNA SEQUENCING REVEALS CANDIDATE GENES ASSOCIATED WITH FREEZE TOLERANCE IN *EUROSTA SOLIDAGINIS*. [Page 14]**
Udaka, H.¹, Dennis, A.² and Sinclair, B.J.¹
¹Department of Biology, University of Western Ontario, London, ON, Canada.
²Landcare Research, Auckland, New Zealand.
- 2:40 – 3:00 pm **Coffee Break**
- Session Chair:** Cam Donly
- 3:00 pm **FGLa/AST ACTION AT THE LOCUST HINDGUT: THE ROLE OF TWO FGLa/ASTS ON MUSCLE CONTRACTION AND K⁺ TRANSPORT [Page 15]**
Robertson, L.¹, Donini, A.¹, and Lange, A.B.²,
¹ Department of Biology, York University, Toronto, ON, Canada.
² Department of Biology, University of Toronto Mississauga, Mississauga, ON, Canada.
- 3:20 pm **EFFECTS OF DH31, DROSOKININ, AND ALLATOSTATIN A ON EPITHELIAL K⁺ TRANSPORT AND TISSUE CONTRACTIONS IN THE LARVAL *DROSOPHILA* GUT [Page 16]**
Vanderveken, M.J., O'Donnell, M.J.
Department of Biology, McMaster University, Hamilton, ON, Canada
- 3:40pm **End of Session**

5:00 pm

Niagara College, 135 Taylor Rd., Niagara-on-the-lake, L0S 1J0 (Wine Tour & Tasting)

6:30 pm

Conference Dinner, Benchmark Restaurant, Niagara College, 135 Taylor Rd., Niagara-on-the-Lake, Ontario, LOS 1J0



Four Points by Sheraton Saint Catharines Niagara Suites
 3530 Schmon Pkwy, Thorold, ON L2V 4Y6

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|---|---------------------------|
| 1. Head northwest on Schmon Pkwy toward St David's Rd/Regional Road 71 | go 130 m total 130 m |
| ➤ 2. Take the 1st right onto St David's Rd/Regional Road 71 Continue to follow St David's Rd About 2 mins | go 1.1 km total 1.2 km |
| ➤ 3. Take the ramp onto ON-406 N About 1 min | go 1.7 km total 3.0 km |
| ➤ 4. Take the Regional Road 89/Glendale Avenue exit | go 350 m total 3.4 km |
| ➤ 5. Turn right onto Glendale Ave/Regional Rd 89 About 6 mins | go 4.7 km total 8.1 km |
| ➤ 6. Turn right onto Taylor Rd/Regional Rd 70 Destination will be on the left | go 120 m total 8.2 km |



Benchmark
 135 Taylor Rd, Niagara-on-the-Lake, ON L0S 1J0

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.
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Friday, June 7

7:45 – 9:10 am **Breakfast:** Topaz Room (The All Canadian)

Session Chair: **Guoxing Quan**

9:10 am **A NEW CELL LINE FROM THE EMERALD ASH BORER, *AGRILUS PLANIPENNIS* AND TRANSCRIPTIONAL RESPONSE AFTER AZADIRACHTIN TREATMENT [PAGE 17]**
Wen Fayuan^{1,2}, Caputo Guido¹, Hooey Sharon¹, Bowman Susan¹, Duan Jun^{1,2}, Quan Guoxing¹, Arif, Basil¹, Krell, Peter², Michel Cusson³, and Doucet, Daniel¹
¹ Great Lakes Forestry Centre, Sault Ste. Marie, ON, Canada.
² Department of Molecular and Cellular Biology, University of Guelph, Guelph, ON, Canada.
³ Laurentian Forestry Centre, Quebec, QC, Canada.

9:30 am **USING RNA-SEQ TO UNDERSTAND THE EVOLUTION OF COLD TOLERANCE IN NEW ZEALAND STICK INSECTS. [Page 18]**
Sinclair, B.J.¹, Dennis, A.B.^{2,4}, Dunning, L.T.^{2,3,4}, and Buckley, T.R.^{2,3,4}
¹ Dept. Biology, University of Western Ontario, London, ON, Canada
² Landcare Research NZ, Auckland, NZ
³ University of Auckland
⁴ Allan Wilson Centre for Molecular Ecology & Evolution

9:50 am **TRANSCRIPTOMIC ANALYSIS OF EMERALD ASH BORER ANTENNAE. [Page 19]**
Doucet, Daniel¹, Sohail Qazi¹, Michel Cusson³, Krell, Peter², Omprakash Mittapalli⁴, Duan Jun^{1,2}, and Quan Guoxing¹
¹ Great Lakes Forestry Centre, Sault Ste. Marie, ON, Canada.
² Department of Molecular and Cellular Biology, University of Guelph, Guelph, ON, Canada.
³ Laurentian Forestry Centre, Quebec, QC, Canada.
⁴ OARDC, Ohio State University, Wooster, Ohio

10:10 – 10:30 am **Coffee Break:** Outside Newman Room

Session Chair: **Jean-Paul Paluzzi**

10:30 am **THE FUNCTIONAL ANALYSIS OF NEUROPEPTIDE CRUSTACEAN CARDIOACTIVE PEPTIDE AND ITS RECEPTOR IN ECDYSIS BEHAVIOUR OF *RHODNIUS PROLIXUS*. [Page 20]**
Lee, DH and Lange, AB
Department of Biology, University of Toronto Mississauga, Mississauga, Ontario, Canada

10:50 am **DISTRIBUTION AND PHYSIOLOGICAL EFFECTS OF ADIPOKINETIC HORMONE (AKH), CORAZONIN AND AKH/CORAZONIN-RELATED PEPTIDE (ACP) IN THE KISSING BUG, *RHODNIUS PROLIXUS*. [Page 21]**
Himali Patel and Lange, A.B.
Department of Biology, University of Toronto at Mississauga, Mississauga, ON, Canada.

- 11:10 am **MYOINHIBITORS IN THE BLOOD-GORGING INSECT, *RHODNIUS PROLIXUS*. [Page 22]**
Sedra, L. and Lange, A.B.
 Department of Biology, University of Toronto Mississauga, Mississauga, ON, Canada.
- 11:30 - 12:00 noon **Check out of hotel rooms**
- 11:45 – 1:00 pm **Lunch Break:** Topaz Room (Pasta Buffet)
- Session Chair:** **Brent Sinclair**
- 1:00 pm **FUNCTIONAL CHARACTERIZATION AND TRANSCRIPT EXPRESSION PROFILE OF THE MYOINHIBITING PEPTIDE RECEPTOR IN THE BLOOD-FEEDING HEMIPTERAN, *RHODNIUS PROLIXUS*. [Page 23]**
Paluzzi, J.P. and Lange, A.B.
 Department of Biology, University of Toronto Mississauga, Mississauga, ON, Canada
- 1:20 pm **FUNCTIONAL CHARACTERIZATION OF CALCITONIN-LIKE DIURETIC HORMONE RECEPTORS IN *RHODNIUS PROLIXUS*. [Page 24]**
Meet Zandawala^{a, b}, Shizhong Li^b, Frank Hauser^b, Cornelis Grimmelikhuijzen^b and Ian Orchard^a
^a Department of Biology, University of Toronto Mississauga, Mississauga, ON, Canada.
^b Center for Functional and Comparative Insect Genomics, Department of Biology, University of Copenhagen, Copenhagen, Denmark.
- 1:40 pm **EFFECTS OF PROTEIN-RICH VERSUS SUCROSE-RICH MEALS ON HAEMOLYMPH ION HOMEOSTASIS AND MIDGUT ION TRANSPORT. [Page 25]**
D’Silva, N.M. and O’Donnell, M.J.
 Department of Biology, McMaster University, Hamilton, ON, Canada
- 2:00 pm **MOLECULAR CHARACTERISATION, EXPRESSION ANALYSIS, AND PHYSIOLOGICAL ROLES OF ALLATOTROPIN IN *RHODNIUS PROLIXUS*. [Page 26]**
Maryam Masood and Orchard, I.
 Department of Biology, University of Toronto at Mississauga, Mississauga, ON, Canada.
- 2:20 – 2:30 pm **Closing Remarks**
- 2:30 pm **End of Conference**