



NSERC-CANPOLIN

CANADIAN POLLINATION INITIATIVE

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**HAPPY HOLIDAYS
FROM
NSERC-CANPOLIN**



CANPOLIN gets festive: A Langstroth beehive was CANPOLIN's contribution to a gingerbread building exhibition at the University of Guelph's School of Environmental Sciences. Design and construction by Erika Nardone, Andrea McGraw-Alcock and Cara Dawson.

Dear Friends of CANPOLIN:

Another year has quickly passed and CANPOLIN has once again progressed in great strides. In addition to the large number of ongoing projects taking place across the country, 2011 saw an increase in HQP training and the building of international collaborations - thanks to additional funding from NSERC's Strategic Network Enhancement Initiative (see pg 2 for more details). The Network also held a very successful follow up meeting to last year's workshop with the canola industry on pollination issues in that important crop (pg 3); plans are underway to establish similar linkages with the sunflower and buckwheat industries. Work in the area of biovectoring has led to an exciting opportunity to commercialize technologies developed in part through CANPOLIN.

In other news, it was with great disappointment that we learned our long-awaited proposal on honeybee health has been turned down, after two years in review at AAFC. We will be working with our industry partners to explore other options to carry out this important work. CANPOLIN has also been very active in assisting other organizations with mutual interest in pollination. Relations with not-for-profit organizations, especially Seeds of Diversity, and with private companies in the agricultural, aggregates and plastics sectors are steaming ahead.

As we are poised to enter Year 4 and the "wind down" phase of the Network, we look forward to beginning the cross-country analyses that have been made possible by all of our efforts to date.

Best wishes to all for 2012.

Peter Kevan



SNEI Funds in Action

and building international collaborations. See below for details about some of the events that have already taken place. Activities still in the planning stages include a joint workshop on multiple pressures on pollinator biodiversity and pollination services with colleagues in the Status and Trends of European Pollinators ([STEP](#)) research network (to be held in Italy in early March), and an international workshop on pollination and land rehabilitation (date and location TBD).

INTERNATIONAL POLLINATION BIOLOGY COURSE

CANPOLIN supported the travel of five graduate students to the internationally-recognized Pollination Biology Course in Brazil in late September. The course was held at the Flona de Caxuanã in the state of Para, near the mouth of the Amazon River. A total of 25 students participated in the intensive two-week course, which includes lectures, field excursions and lab demonstrations. Students also carry out individual research projects. The perennially popular course provides a broad base of understanding of pollination biology and is a valuable opportunity for Canadian students to network with their international colleagues. CANPOLIN students attending the course this year included Jason Straka, Alana Taylor Pindar, Jen Muir, Lorraine Adderley and Danielle Stephens. Course alumni Gail MacInnis and Marianna Horn served as monitors.



Collecting insects on the banks of the Amazon River.



Participants in the 2011 International Pollination Biology Course (photos courtesy of G. MacInnis)

HQP EXCHANGE WITH STEP

WG8 graduate student Lina Urbisci (U Guelph) spent a month in France with STEP colleagues at the National Institute for Agricultural Research (INRA) exploring economic issues affecting the beekeeping industry. (Lina's MSc thesis on the economic effects of size and diversity on apiary profits is now available on the CANPOLIN website.)



CANPOLIN graduate student Lina Urbisci in Provence, France

WG7 PhD candidate Nora Szabo (U Ottawa), is also slated to spend a month in the lab of STEP colleagues (at the University of Reading) in early 2012; Nora is examining patterns of bumblebee range shifts with climate change.

CROP POLLINATION WORKSHOP

Cholula, Mexico, was the site of joint Latin-Canadian workshop on crop pollination organized by CANPOLIN and supported by SNEI funds. The workshop brought together approximately 20 researchers from Canada, the US, Brazil, Mexico and the FAO. The all-day discussion laid the groundwork for several follow on activities, including an application to the tri-lateral Commission for Environmental Cooperation to assess the status and value of pollination in North America, and development of a framework to increase international collaboration and improve access to crop-specific information on pollination.



Discussing crop pollination issues in Cholula, Mexico (photo by D. Greene)



CANPOLIN & CANOLA INDUSTRY PARTNER ON POLLINATION RESEARCH

Network researchers met with beekeepers and representatives of the hybrid seed and commodity canola industries in mid-November in Toronto to explore how CANPOLIN's expertise can be harnessed to help meet the needs of one of Canada's most important agricultural industries.

The 1.5 day meeting followed a preliminary workshop held in Calgary in 2010, when researchers and industry representatives discussed the range of research needs in canola. At the 2011 workshop, participants narrowed the focus and laid out the framework for a funding strategy to address the most pressing needs in the industry. Support for the workshop was provided by NSERC's Partnership Program.



Discussing canola pollination at the Hilton Garden Inn in Toronto (photo by D. Guzhva)

CALLING ALL POLLINATOR DATA!

One of CANPOLIN's objectives is to create a nationwide database that will support cross-network synthetic analyses. The database will be accessible on-line (with individual datasets password protected until such time as the data's owner releases them publicly).

The online database is in the works, but in the meantime, CANPOLIN still needs data! A flat file has been developed to aid in data submission, but other formats may also be acceptable. Data collected as part of CANPOLIN projects should be submitted as soon as possible following specimen identification. We also welcome data from non-Network researchers who have sampled pollinators in different locations across Canada.

For more information, please contact WG5 Research Associate Tom Woodcock at twoodcoc@uoguelph.ca. Click [here](#) for CANPOLIN's datasharing policy.

KEVAN RECEIVES TAXONOMIC "HONOUR"

CANPOLIN's Scientific Director has been immortalized in a new species of bee in the genus *Chilicola* (Xeromelissinae) that was discovered in the State of Bahia, Brazil. *Chilicola kevani* was named after Peter Kevan in honour of his efforts to encourage the study of pollinators in Brazil and to highlight their importance. For more details, see the December 9th issue of [Zookeys](#) (doi: 10.3897/zookeys.153.2188).



.....COMINGS AND GOINGS.....

Scott Swinton from Michigan State University is stepping down from his role as external economics advisor on the Scientific Advisory Committee. CANPOLIN extends a warm thank you to Scott for his service.

WG8 Research Associate **Almuhanad Melhim** is leaving CANPOLIN for Springfield, MO, where he will be happily reunited with his recently expanded family. Almuhanad has been with the Network since September 2009; he is looking forward to continuing to build on the collaborations he has established through CANPOLIN.

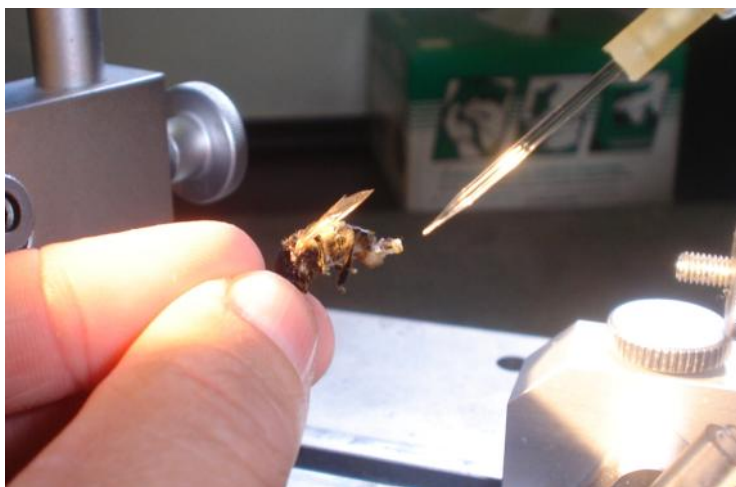
In early January, Network Assistant **Andrea McGraw-Alcock** will leave CANPOLIN to travel the world in pursuit of mayhem and adventure. Thank you, Andrea, for all your hard work over the last three years! You will be missed. Taking over for Andrea is **Cara Dawson**, a recent U of Guelph graduate and budding pollination biologist.



Andrea McGraw-Alcock—soon to be former Network Assistant

NEW BEE DIAGNOSTIC CENTRE TO BE ESTABLISHED IN ALBERTA

Construction will soon begin on Canada's first ever National Bee Diagnostic Services Centre (NBDSC) at Agriculture and Agri-food Canada's Beaverlodge Research Farm in Alberta. The NBDSC, which was made possible in part by new diagnostic technologies developed through CANPOLIN research, will offer comprehensive honeybee diagnostic services and surveillance data to industry and government stakeholders. Currently, only a patchwork of services is available to honey producers and researchers in Canada, and bees are often sent to the U.S. for testing. The new Centre is expected to perform some 1500 diagnostic services annually, and will also conduct research on honeybee pests, pathogens and parasites. The new facility will be operated by the Grand Prairie Regional College in collaboration with AAFC researcher (and CANPOLIN member) Steve Pernal. Funding for the Centre was provided by the federal government (Western Economic Diversification) and the Rural Alberta Development Fund.



Testing a honeybee for Nosema (photo by E. Guzman)



Beaverlodge Research Farm, Beaverlodge, AB (photo courtesy of AAFC)



Research Buzz

New publications and research results now available through the CANPOLIN website under "Publications":

Dombroskie, J.J. 2011. A Matrix Key to Families, Subfamilies and Tribes of Lepidoptera of Canada. Canadian Journal of Arthropod Identification No. 17, 19 July 2011, doi: 10.3752/cjai.2011.17.

Sudarsan, R, C. Thompson, P.G. Kevan and H.J. Eberl. 2011. Flow currents and ventilation in Langstroth beehives due to brood thermoregulation efforts of honeybees. Journal of Theoretical Biology. doi:10.1016/j.jtbi.2011.11.007,

McEwen, J. R., J. C. Vamosi, and S. M. Rogers. 2011. Rapid isolation and cross-amplification of microsatellite markers in *Plectritis cogesta* (Valerianaceae) with 454 sequencing. American Journal of Botany 98(12): 369-371.

Joly, S., and D.J. Schoen. 2011. Migration rates, frequency-dependent selection and the self-incompatibility locus in *Leavenworthia* (Brassicaceae). Evolution 65(8):2357-2369.

Visit www.uoguelph.ca/canpolin for a complete list of publications and theses.



Argynnis aphrodite (top) and *Drasteria adumbrata* (bottom), two species included in the new key to Canadian Lepidoptera published in the Canadian Journal of Arthropod Identification (see left)

COURSE ANNOUNCEMENT: POLLINATION BIOLOGY FIELD COURSE



The geodesic dome houses half an acre of tropical rainforest (photo courtesy of MBOT)

NSERC-CANPOLIN is pleased to announce it will once again be offering a North American edition of the **Pollination Biology Field Course** in 2012. The course will be held April 16-28 in St. Louis, Missouri, at the historic and internationally-renowned Missouri Botanical Garden (MBOT) and Shaw Nature Reserve. Similar to the international version, the course will include daily lectures and discussions, field excursions, lab activities and demonstrations. Each student will also undertake their own short research project. Cost per student is \$600 (price includes accommodation).

For more information, visit : www.uoguelph.ca/canpolin



A succession of over 250 species of wildflowers bloom between March and June at the Shaw Nature Reserve (photo courtesy of MBOT)

A view from the field....



Participants in the 2011 International Pollination Biology Field Course wander through the rainforest in Amazonian Brazil. (photo by Gail MacInnis)

NEW CROP POLLINATION BMP GUIDE AND WEBSITE FOR ONTARIO CROPS

In partnership with the Ontario Ministry of Food and Rural Affairs and Seeds of Diversity, CANPOLIN is developing a "best management practices" guide to crop pollination for Ontario crops. The project will also include a dedicated website where producers (and others interested in pollination) can search for crop-specific recommendations and general information on using managed pollinators effectively, encouraging wild pollinators, preventing pesticide poisonings and creating contracts for pollination services. Watch for the website's launch in early March.



Honeybees are the most common pollinator of choice for apples, but they will not forage below 15°C (photo by S. Bates)

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