

# BENOIT GUÉNARD

School of Biological Sciences  
University of Hong Kong  
Kadoorie Biological Sciences Building,  
The University of Hong Kong,  
Pok Fu Lam Road, Hong Kong SAR, China

**Phone :** 22990665

**Email :** [zeroben@gmail.com](mailto:zeroben@gmail.com)  
[bguenard@hku.hk](mailto:bguenard@hku.hk)

**Website :** <http://benoitguenard.wordpress.com/>

*Citizenship:* French

*Birth Date:* 26/01/1981

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## CURRENT POSITION (since September 1<sup>st</sup> 2014)

Assistant Professor, School of Biological Sciences, University of Hong Kong, Hong Kong.

## EDUCATION

2012 (*Feb.*)- Post-Doctoral researcher in Dr. Evan Economo's laboratory of Biodiversity and  
2014 (*Aug.*) Biocomplexity, Okinawa Institute of Science and Technology

2007-2011 **PhD** (Biology) North Carolina State University  
*Committee members:* Dr. Robert R. Dunn (*advisor*), Dr. James F. Gilliam, Dr. Jules Silverman, Dr. Andrew V. Suarez, Dr. Edward L. Vargo.  
*Dissertation:* Ant diversity from local to global scales: effects of environmental conditions, community structure and biological invasions.

2003-2006 **Master's degree** (Biology) Université du Québec à Montréal  
*Committee members:* Dr. Eric Lucas (*advisor*), Dr. André Francoeur (*co-advisor*), Dr. Jacques Brodeur, Dr. Denis Réale  
*Thesis:* Ant-aphid mutualism and aphidophagous guild associated: the case of furtive predation.

2003 **B.S.** (Biology) Université du Québec à Montréal

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## PUBLICATIONS

2014 **Guénard B**, A Cardinal-de Casas & RR Dunn (2014) High diversity in an urban habitat: Are some animal assemblages resilient to long-term anthropogenic change? *Urban Ecosystems* DOI 10.1007/s11252-014-0406-8.

2013 **Guénard B** & TP McGlynn (2013) Intraspecific thievery in the ant *Ectatomma ruidum* is mediated by food availability. *Biotropica* 45(4), 497-502.

**Guénard B**, B Blanchard, C Liu, DR Yang, & EP Economo (2013) Rediscovery of the rare ant genus *Bannapone* (Hymenoptera: Formicidae: Amblyoponinae) and description of the worker caste. *Zootaxa* 3734(3), 371-379.

**Guénard B** (2013) An overview of species and ecological diversity of ants. *Encyclopedia of Life Sciences*, John Wiley & Sons Ltd: Chichester DOI: 10.1002/9780470015902.a0023598.

Jenkins C, **B Guénard**, SE Diamond, MD Weiser & RR Dunn (2013) Global conservation planning for ant and vertebrate diversity. *Diversity and Distribution* 19(8), 1084-1092.

Bertelsmeier C, **B Guénard** & F Courchamp (2013) Current and future potential distribution of the invasive Asian needle ant. *PlosOne* 8(10), e75438. doi:10.1371/journal.pone.0075438.

Lucky A, MD Trautwein, **B Guénard**, MD Weiser & RR Dunn (2013) Tracing the rise of ants-out of the ground. *PlosOne* DOI: 10.1371/journal.pone.0084012.

Sarnat E, B Blanchard, **B Guénard**, J Fasi, & EP Economo (2013) Checklist of the ants of the Solomon Islands and a new survey of Makira island. *Zookeys* 257, 47–88.

2012 **Guénard B**, MD Weiser & RR Dunn (2012) Global models of ant diversity suggest regions where new discoveries are most likely are under disproportionate deforestation threat. *Proceedings of the National Academy of Sciences* 109(19), 7368-7373. (*PhD thesis chapter*).

**Guénard B** & RR Dunn (2012) A checklist of the ants of China. *Zootaxa* 3558, 1-77. (*PhD thesis chapter*).

**Guénard B**, KA McCaffrey, A Lucky, & RR Dunn (2012) Ants of North Carolina: an updated list (Hymenoptera: Formicidae). *Zootaxa* 3552, 1-36.

**Guénard B** & A Poitras Lariviere (2012) Social life. In Messier C, LA Giraldeau & B Beisner, editors, *Nature all around us: a guide to urban ecology*. University of Chicago Press, USA.

Rodriguez-Cabal MA, KL Stuble, **B Guénard**, RR Dunn, & NJ Sanders (2012) Disruption of ant-seed dispersal mutualisms by the invasive Asian needle ant (*Pachycondyla chinensis*). *Biological Invasions* 14(3), 557-565.

2011 **Guénard B** & J Silverman (2011). Tandem-carrying, a new foraging strategy in ants: description, function and adaptative significance relative to other described foraging strategies. *Naturwissenschaften* 98(8), 651-659 (*PhD thesis chapter*).

**Guénard B** & A Lucky (2011) Improved method to collect ground dwelling insects and its implication for large scale comparison. *Environmental Entomology* 40(6), 1523-1529.

Menke SB, **B Guénard**, JO Sexton, MD Weiser, RR Dunn & J Silverman (2011) Urban areas may serve as habitat and corridors for dry-adapted, heat tolerant species; an example from ants. *Urban Ecosystems* 14, 135-163.

Roura-Pascual N, C Hui, T Ikeda, G Leday, DM Richardson, S Carpintero, X Espadaler, C Gómez, **B Guénard**, S Hartley, P Krushelnycky, PJ Lester, MA McGeoch, SB Menke, JS Pedersen, J Pitt, J Reyes, NJ Sanders, AV Suarez, Y Touyama, D Ward, PS Ward & SP

Worner (2011) The relative roles of climatic suitability and anthropogenic influence in determining the pattern of spread in a global invader. *Proceedings of the National Academy of Sciences* 108(1), 220-225.

Jenkins CN, AN Andersen, X Arnan, CA Brühl, X Cerda, AM Ellison, BL Fisher, MC Fitzpatrick, NJ Gotelli, AD Gove, **B Guénard**, JE Lattke, JP Lessard, TP McGlynn, SB Menke, CL Parr, SM Philpott, NJ Sanders, MD Weiser & RR Dunn (2011) Global diversity in light of climate change: the case of ants. *Diversity and Distributions* 17(4), 652-662.

2010 **Guénard B** & RR Dunn (2010) A new (old), invasive ant in the hardwood forests of eastern North America and its potentially widespread impacts. *PlosOne* 5(7), e11614. doi:10.1371/journal.pone.0011614 (*PhD thesis chapter*).

**Guénard B**, MD Weiser & RR Dunn (2010) Global generic richness and distribution: new maps of the world of ants with examples of their use in the context of Asia. *Asian Myrmecology* 3, 21-28 (*PhD thesis chapter*).

**Guénard B**. 2010. Book review: Adventures among ants - A global safari with a cast of trillions by Mark W. Moffett. *Integrative and Comparative Biology*, 50(5), 914.

Yashiro T, K Matsuura, **B Guénard**, M Terayama RR Dunn (2010) On the evolution of the species complex *Pachycondyla chinensis* (Hymenoptera: Formicidae: Ponerinae), including the origin of its invasive form and description of a new species. *Zootaxa* 2685, 39-50.

Weiser MD, NJ Sanders, D Agosti, A Ellison, A Andersen, B Fisher, H Gibb, N Gotelli, A Gove, K Gross, **B Guénard**, M Janda, M Kaspari, JP Lessard, JT Longino, J Majer, SB Menke, TP McGlynn, C Parr, S Philpott, J Retana, AV Suarez, H Vasconcelos, S Yanoviak & RR. Dunn (2010) Canopy and litter ant assemblages share similar climate-species density relationships. *Biology Letters* 6(6), 769-772.

2009 Dunn RR, D Agosti, A Andersen, C Bruhl, X Cerda, A Ellison, B Fisher, MC Fitzpatrick, H Gibb, N Gotelli, A Gove, **B Guénard**, M Janda, M Kaspari, E Laurent, JP Lessard, JT Longino, J Majer, TP McGlynn, SB Menke, C Parr, S Philpott, M Pfeiffer, J Retana, AV Suarez, H Vasconcelos, MD Weiser & NJ Sanders (2009) Climatic drivers of hemispheric asymmetry in global patterns of ant species richness. *Ecology Letters* 12, 324-333.

Dunn RR, **B Guénard**, MD Weiser, & NJ Sanders (2009) Geographic gradients in the diversity, abundance, size, and ecological consequences of ants. *In*: L. Lach C. Parr and K. Abbot, editors, *Ant Ecology*. Oxford University Press.

2007 Dunn RR., NJ Sanders, MC Fitzpatrick, E Laurent, JP Lessard, D Agosti, A Andersen, C Bruhl, X Cerda, A Ellison, B Fisher, H Gibb, N Gotelli, A Gove, **B Guénard**, M Janda, M Kaspari, JT Longino, J Majer, TP McGlynn, S Menke, C Parr, S Philpott, M Pfeiffer, J Retana, AV Suarez & H Vasconcelos (2007). Global ant biodiversity and biogeography: a new database and its possibilities. *Myrmecological News* 10, 77-83.

2006 **Guénard B** & A Poitras Lariviere (2006) La vie en société. *In* Messier C, LA Giraldeau & B Beisner, editors, *L'écologie en ville*. Fides. Montréal, Canada.

## MANUSCRIPTS IN REVIEW

**Guénard B**, V Perrichot, & EP Economo. Integration of global fossil and modern biodiversity data reveals dynamism and stasis in ant macroecological patterns. *Submitted to Journal of Biogeography*.

Weiser MD, **B Guénard**, CN Jenkins, NJ Sanders & RR Dunn. Compositional similarity and biogeographic provincialism of ants. *Submitted to PlosOne*.

Savage A, B Hackett, **B Guénard**, E Youngsteadt & RR Dunn. Fine-scale heterogeneity across Manhattan's urban habitat mosaic is associated with variation in ant composition and richness. *Submitted to Insect Conservation and Diversity*

## TECHNICAL REPORTS

**Guénard B** & CA Drew (2011) Ant species of MacKay Island and Back Bay National Wildlife refuges: results of opportunistic sampling in diverse habitats in July 2010. Prepared for Mackay Island National Wildlife Refuge, U. S. Fish and Wildlife Service.

Drew CA & **B Guénard** (2009) Collection of *Crematogaster atkinsoni* (Wheeler) on Mackay Island National Wildlife Refuge, Knotts Island, North Carolina. Prepared for Mackay Island National Wildlife Refuge, U. S. Fish and Wildlife Service.

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## GRANTS AND AWARDS

2010 Global Change Fellow, awarded by the Southeast Climate Science Center

2009 Grant from the Keck center for behavioral biology

2008-09 Best presentation award, Graduate Student Symposium Department of Biology, NCSU (\$ 200)

2008 NSF International research and education: planning: visits and workshops (\$ 8484): Understanding the factors that govern invasion (and coexistence), a case study with an anomalous Asian ant\*

2008 Harkema grant, Zoology department, NCSU (\$ 650)

2005 Excellence Grant, UQAM foundation (\$ 1500)

\*I was lead writer on this grant, on which my advisor, RR Dunn, was officially PI.

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## SCIENTIFIC MEETINGS (NATIONAL AND INTERNATIONAL)

2014 **Guénard B**, M. Weiser & E Economo. Ant global diversity: opening new possibility in ant-biology. *International Union for the Study of Social Insects*, Cairns, Australia (oral presentation).

- Economo E., E. Sarnat, **B. Guénard**, & L. Knowles. Island communities in the context of global hyperdiversification. *International Union for the Study of Social Insects*, Cairns, Australia (oral presentation).
- Liu C., **B. Guénard**, & E. Economo. How do agricultural practices in South China affect ant communities? *International Union for the Study of Social Insects*, Cairns, Australia (poster).
- 2013 **Guénard B**, V Perrichot & E Economo. Modern and historical ant biotas reveal dynamic processes in the formation of communities. *International Biogeography Society conference*, Montréal, Canada (oral presentation).
- Guénard B**, V Perrichot & E Economo. Global ant biogeography and the importance of Asia in its modern and past diversity history. *ANeT 9<sup>th</sup> International conference*, Kota Kinabalu, Sabah, Malaysia (oral presentation).
- Guénard B**, V Perrichot & E Economo. Global distribution and extinction dynamics in ant communities. *Recent advances of entomology in the Kyushu-Okinawa region*, Okinawa, Japan (poster).
- 2011 Frank S, Widney S\*, M Green\*, W Blankenship\*, **B Guénard**, I McAreavy\*, DM Sorger\*, H Stansell\*, M Thoemmes\* & RR Dunn. Urbanization creates a hostile environment for native tree. *Ecological Society of America*, Austin, USA (poster).
- 2010 **Guénard B**, MD Weiser and RR Dunn. Where are the last frontiers for ant new discoveries? *International Union for the Study of Social Insects*, Copenhagen, Denmark (poster).
- 2008 **Guénard B**, J Silverman, & RR Dunn. Consequences of a cryptic invasive ant - Local extinctions mediated by behavior? *International Union for the Study of Social Insects*, breakout meeting, Puerto Rico (oral presentation).
- 2006 **Guénard B**, A Francoeur, & É Lucas. Entretien des colonies aphidiennes par les fourmis, un bénéfice pour les prédateurs furtifs? *French section of the International Union for the Study of Social Insects* (oral presentation).
- 2005 **Guénard B**, A Francoeur, & É Lucas. Annual meeting of *Quebec's Society of Entomology* (SEQ), Montréal (oral presentation).
- 2005 **Guénard B**, A Francoeur, & É Lucas. *International Organization for Biological and Integrated Control of Noxious Animals and Plants* (IOBC) (oral presentation).
- 2004 **Guénard B** & É Lucas. Annual meeting of *Quebec's Society of Entomology* (SEQ), Montréal (oral presentation).
- 2004 **Guénard B** & É Lucas. Annual meeting of *Quebec's Society for the Biological Study of Behavior* (SQEBC), Sherbrooke (oral presentation).
- 2003 **Guénard B** & É Lucas. Annual meeting of *Quebec's Society of Entomology* (SEQ), Québec (oral presentation).
- 2003 **Guénard B** & É Lucas. Annual meeting of *Quebec's Society for the Biological Study of Behavior* (SQEBC), Montréal (oral presentation).

### SCIENTIFIC PRESENTATIONS (INVITED)

- 2014 **Guénard B.** Global to local diversity patterns in insects: understanding the little things that run the world and their consequences. 20<sup>th</sup> June 2014, Departmental Seminar, Department of Environmental Sciences and Technology, University of the Ryukyus.
- 2014 **Guénard B., P. Wepfer, & E. Economo.** Historical and environmental factors influencing diversity patterns and community composition in Japanese islands. 61st meeting of the Ecological Society of Japan, 14-18th March 2014, Hiroshima, Japan.
- 2013 **Guénard B.** Global to local diversity patterns in insects: understanding the little things that run the world and their consequences. 13<sup>th</sup> December 2013, School of Biological Sciences, Hong Kong University, Hong Kong.
- 2013 **Guénard B.** Global diversity of ants: past, modern and future distributions and their importance for conservation. Xishuangbanna Tropical Botanical Garden Departmental Seminar, Chinese Academy of Sciences, China.
- 2012 **Guénard B.** Spread and consequences of an unusual invasive ant species: the case of *Pachycondyla chinensis*. Invited speaker at the symposium on evolutionary community ecology of biological invasion: a lesson from social insects; 59<sup>th</sup> meeting of the Ecological Society of Japan, Kyoto, Japan.
- 2012 **Guénard B.** Challenges pour la biodiversité dans un monde qui fourmille. Institut de Biologie et d'Ecologie Appliquée, Université Catholique de l'Ouest, France.
- 2011 **Guénard B.** Global to local ant diversity patterns: understanding our ignorance to reduce biodiversity loss. Museum of Comparative Zoology/ Pierce Lab/ Ant Room Harvard, USA.
- 2011 **Guénard B.** Ant diversity: from global to local patterns: understanding our ignorance to reduce biodiversity loss. Grand Valley State University, USA.
- 2010 **Guénard B.** Invited participant to the *Hymenoptera Anatomy Ontology* meeting of the *Encyclopedia of Life Biodiversity Synthesis Group*.
- 2007 **Guénard B.** Graduate school of Environmental Science, Okayama University, Japan.

### SCIENTIFIC PRESENTATIONS (In-House)

- 2011 **Guénard B., MD Weiser & RR Dunn.** Graduate Student Research Symposium, Department of Biology, NCSU (oral presentation).
- 2011 Robertson\* KE, **B Guénard** (mentor), & RR Dunn. Summarizing NC State University Undergraduate Research Symposium.
- 2010 Cardinal-De-Casas\* A.R., **B Guénard** (mentor), and RR Dunn. NC State University Undergraduate Research Symposium.
- 2009 **Guénard B., & T McGlynn.** Graduate Student Research Symposium, Department of Biology, NCSU (oral presentation).
- 2009 **Guénard B., & T McGlynn.** W.M. Keck Student and Post-doc Symposium, NCSU (oral presentation).
- 2008 **Guénard B., J Silverman, & RR Dunn.** Graduate Student Research Symposium, Department of Biology, NCSU (oral presentation).
- 2008 **Guénard B., J Silverman, & RR Dunn.** W.M. Keck Student and Post-doc Symposium,

- NCSU (oral presentation).
- 2007 **Guénard B**, J Silverman, & RR Dunn. Graduate Student Research Symposium, Department of Biology, NCSU (oral presentation).
- 2006 **Guénard B**. NCSU Social Insect Group (oral presentation).
- \* Mentored undergraduate students.
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## **TEACHING**

### Course taught (as teaching assistant)

#### *North Carolina State University*

- 2010 Field Ecology and Methods (BIO 460)
- 2009 Field Ecology and Methods (BIO 460)
- 2008 Field Ecology (ZO 495)

#### *Université du Québec à Montréal*

- 2005 Animal Diversity (BIA 1601)
- 2005 Methodology in Ecology (BIA 3010)
- 2004 Animal Diversity (BIA 1601)
- 2004 Methodology in Ecology (BIA 3010)
- 2004 Statistics (BIA 1601)

### Courses developed and taught (as sole instructor)

2010 *Ant Taxonomy and Systematics*. Ant phylogeny, morphology and identification. Taught in January and October 2010 at NCSU to students, post-doctoral students and technicians from several departments and other universities (12 to 15 participants).

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## **PROFESSIONAL MEMBERSHIPS AND SERVICES**

Memberships: American and French sections of the International Union for the Study of Social Insects, ANeT, Association for Tropical Biology and Conservation, Ecological Society of Japan, Quebec's Society of Entomology (SEQ), Students representative SEQ (2004-2005).

Reviewer for: *Asian Myrmecology*, *Biological Invasions*, *Check List*, *Diversity and Distributions*, *Ecography*, *Ecological Applications*, *Ecological Entomology*, *Halteres*, *Insect Conservation and Diversity*, *Journal of Biogeography*, *Journal of Insect Behavior*, *Journal of the Torrey Botanical Society*, *Michigan Journal of Sustainability*, *Myrmecological News*, *Naturwissenschaften*, *Northeastern Naturalist*, *Oecologia*, *Oikos*, *PLoS ONE*, *Raffles Bulletin of Zoology*, *Web Ecology*, *Zoological Studies*.

Editor for: *Asian Myrmecology*, *Check List* (subject editor for Hymenoptera).

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## **TRAINING AND PROFESSIONAL DEVELOPMENT**

- 2013 Workshop on Quebec Center for Biodiversity Science, Biodiversity Science Intensive School, McGill University, Montreal, Canada, 25<sup>th</sup> Nov – 6<sup>th</sup> Dec.
- 2011 Workshop in Canopy Biology, Raleigh, USA 11-13 May
- 2010 Tropical Biology: an Ecological Approach OTS course, January - March. Costa Rica.
- 2008 Ant course, Venezuela, August, training in ants' ecology, field collection techniques, systematics and taxonomy.
- 2004 Introduction to ants' systematics with Dr. André Francoeur, Université du Québec à Chicoutimi, Canada
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## **PUBLIC OUTREACH AND PROFESSIONAL WEBSITES**

- 2012-13 Tutor for the School of Sciences program (6-9 years old children), August 12-13<sup>th</sup>.
- 2013-14 Presentations of research developed at OIST to high-school students (OIST).
- 2010 Invited speaker at the Audubon Society, Greensboro, NC.
- 2010 Scientific presentation at the Museum of Natural History, Raleigh.
- 2009-11 Bug fest at the Museum of Natural History, Raleigh.
- 2009 Wiley Science Night, Wiley Elementary School.
- 2005 Insectarium of Montreal.
- 2004 Summer Camp supervisor, Biodôme de Montréal.
- 2004 Outdoor supervisor of Corvée du Mont-Royal, Montréal.
- 2004 Member of the scientific jury, Sciences Festival, Montréal.
- 2004 Promotion of entomology and sciences in different schools of Montreal (2004-2006).

*Ant Genera of the World*: distribution maps of all extant ant genera. Led by Guénard, in collaboration with Dr. Mike D. Weiser. Design by Neil McCoy.

[http://www.antmacroecology.org/ant\\_genera/index.html](http://www.antmacroecology.org/ant_genera/index.html)

This work is also displayed on the Encyclopedia Of Life ([EOL.org](http://EOL.org)), [Antwiki.org](http://Antwiki.org) and the Map of Life Project ([mappinglife.org](http://mappinglife.org)).

*Ants of China*: Checklist of the different species of ants found in China. <http://www.antweb.org/china.jsp>

*Ants of North Carolina*: Checklist of the different species of ants found in North Carolina with pictures illustration.

<http://www.antweb.org/northcarolina.jsp>



## **FIELD EXPERIENCE**

Australia (2007), Borneo (2013-2014), Canada (2002-2006), China (Yunnan, 2013), Costa Rica (2008, 2010), France (2006), Hong Kong (2014), Japan (2007- 2009, 2012-2014), Panama (2010), USA (2006-2011), Venezuela (2008).

*Language:* French (fluently), English (fluently), Spanish (proficiency).

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## **REFERENCES**

**Dr. Rob R. Dunn**, Associate Professor, Department of Biology, North Carolina State University.

*E-mail:* [rob\\_dunn@ncsu.edu](mailto:rob_dunn@ncsu.edu)

*Phone Number:* 919.513.7569

*Website:* <http://robdunnlab.com/>

**Dr. Evan Economo**, Assistant Professor, Biodiversity and Biocomplexity Unit, Okinawa Institute of Science and Technology.

*E-mail:* [evaneconomo@gmail.com](mailto:evaneconomo@gmail.com)

*Phone Number:* (+81) 098-966-8850

*Website:* <http://arilab.unit.oist.jp/>

**Dr. Jules Silverman**, Charles G. Wright Distinguished Professor, Department of Entomology, North Carolina State University.

*E-mail:* [jules\\_silverman@ncsu.edu](mailto:jules_silverman@ncsu.edu)

*Phone Number:* 919.513.2468

*Website:* <http://www.cals.ncsu.edu/entomology/silverman/>

**Dr. Edward Vargo**, Professor and Interim Department Head, Department of Entomology, North Carolina State University.

*E-mail:* [ed\\_vargo@ncsu.edu](mailto:ed_vargo@ncsu.edu)

*Phone Number:* 919.513.2743

*Website:* <http://www4.ncsu.edu/~elvargo/>