

Jean-Philippe Lessard

Department of Biology, Concordia University
Montreal, QC, H4B-1R6
CANADA

i. BIOGRAPHICAL INFORMATION

Academic Positions

2014 – present **Assistant Professor**
Department of Biology, Concordia University

Education

2012 – 2014 **Postdoctoral Fellow**
Quebec Centre for Biodiversity Science, McGill University

2010 – 2012 **Postdoctoral Fellow**
Center for Macroecology, Evolution and Climate, University of Copenhagen

2006 – 2010 **PhD in Ecology and Evolutionary Biology**
University of Tennessee

2001 – 2004 **BSc in Agricultural and Environmental Sciences (Zoology)**
McGill University

Honours and Awards

2016 Concordia Research Fellow (\$5,000)

2013 FQRNT Étudiants Chercheurs Étoiles Award (\$1,000)

Language Proficiency

French: Fluent

English: Fluent

ii. RESEARCH ACTIVITIES

A.1. Publications (#equal contribution, *mentored student)

31. Daru BH, Holt BG, Lessard JP, Yessoufou K, Davies TJ. Phylogenetic regionalization of marine plants reveals close evolutionary affinities among disjunct temperate assemblages. *Biological Conservation* (in press) <http://dx.doi.org/10.1016/j.biocon.2016.08.022>
30. Lessard JP, Weinstein B, Borregaard MK, Marske KA, Rojas, D, McGuire JA, Parra JL, Rahbek C, Graham CH. Process-based species pools reveal the hidden signature of biotic interactions amid the influence of temperature filtering. *The American Naturalist* 187:75-88.
29. Davidai N*, Westbrook J, Lessard JP, Hallam T, McCracken G. (2015) The importance of natural habitats to Brazilian free-tailed bats in intensive agricultural landscapes in the Winter Garden Region of Texas, United States. *Biological Conservation* 190:107-114
28. Jønsson KA, Lessard JP, Ricklefs RR. (2015) The evolution of morphological diversity in continental assemblages of passerine birds. *Evolution* 69: 879-889
27. Blonder B, Nogués-Bravo D, Borregaard MK, Donoghue J, Jørgensen PM, Kraft NJB, Lessard JP, Morueta-Holme N, Sandel B, Svenning JC, Violle C, Rahbek C, Enquist BJ. (2015) Linking environmental filtering and disequilibrium to biogeography with a community climate framework. *Ecology* 96:972-985
26. Gibb H, Sanders NJ, Dunn RR, Photakis M, Abril S, Andersen AN, Angulo E, Armbrecht I, Arnan X, Baccaro FB, Boulay R, Castracani C, Del Toro I, Delsinne T, Diaz M, Donoso DA, Enríquez ML,

- Fayle TM, Feener Jr. DH, Fitzpatrick MC, Gómez C, Grasso DA, Groc S, Heterick B, Hoffmann BD, Lach L, Lattke J, Leponce M, Lessard JP, Longino J, Lucky A, Majer J, Menke SB, Mezger D, Mori A, Paknia O, Pearce-Duvet J, Pfeiffer M, Philpott S, de Souza JLP, Tista M, Vonshak M, Parr CL. (2015) Climate regulates the effects of disturbance on ant assemblage structure. *Proceedings of the Royal Society B* 282: 20150418
25. Wells K, O'Hara R, Morand S, Lessard JP, Ribas A. (2015) The importance of spill-over effects and parasite geography for global patterns of host-parasite associations. *Diversity and Distributions* 21:477-486
 24. Fowler D*, Lessard JP, Sanders NJ. (2014) Niche filtering rather than partitioning shapes the structure of forest ant communities. *Journal of Animal Ecology* 83:943-952
 23. Bewick B, Stuble KL, Lessard JP, Dunn RR, Adler FR, Sanders NJ. (2014) Predicting future coexistence in a North American ant community. *Ecology and Evolution* 4:1804-1819
 22. Fabre PH, Moltensen M, Fjeldsà J, Irestedt M, Lessard JP and Jønsson KA. (2014) Multiple waves of colonization by monarch flycatchers across the Indo-Pacific and their implications for coexistence and speciation. *Journal of Biogeography* 41:274-286
 21. Carstensen DW, Lessard JP, Borregaard MK, Holt BG, Rahbek C. (2013) Introducing the biogeographic species pool. *Ecography* 36:1310-1318
 20. Stuble KC, Chick LD, Rodriguez-Cabal MA, Lessard JP, Sanders NJ. (2013) Fire ants are drivers of biodiversity loss: a reply to King and Tschinkel (2013). *Ecological Entomology* 38:540-542
 19. Xu X, Wang Z, Rahbek C, Lessard JP, Fang J. Evolutionary history influences the effects of water-energy dynamics on oak diversity in Asia. *Journal of Biogeography* 40:2146-2155
 18. Holt B[#], Lessard JP[#], Borregaard MK, Fritz SA, Araújo MB, Dimitrov DD, Fabre PH, Graham CH, Graves GR, Jønsson KA, Nogués-Bravo D, Wang Z, Whittaker RJ, Fjeldsà J, Rahbek C. (2013) Response to comment on "An update of Wallace's zoogeographic regions of the world. *Science* 341:343
 17. Dawson MN, Algar AC, Antonelli A, Dávalos LM, Davis E, Early R, Guisan A, Jansson R, Lessard JP, Marske KA, McGuire JL, Stigall AL, Swenson NG, Zimmermann NE, Gavin DG. (2013) An horizon scan of biogeography. *Frontiers of Biogeography* 5:130-157
 16. Holt B[#], Lessard JP[#], Borregaard MK, Fritz SA, Araújo MB, Dimitrov DD, Fabre PH, Graham CH, Graves GR, Jønsson KA, Nogués-Bravo D, Wang Z, Whittaker RJ, Fjeldsà J, Rahbek C. (2013) An update of Wallace's zoogeographic regions of the world. *Science* 339:74-78
 15. Lessard JP, Belmaker J, Myers JA, Chase JM, Rahbek C. (2012) Inferring local ecological processes amid species pool influences. *Trends in Ecology and Evolution* 27: 600-607 (featured on the front cover of the November 2012 issue)
 14. Lessard JP, Borregaard MK, Fordyce JA, Rahbek C, Weiser MD, Dunn RR, Sanders NJ. (2012) Strong influence of regional species pools on continent-wide structuring of local communities. *Proceedings of the Royal Society B* 279: 266-274
 13. Lessard JP[#], Reynolds WN[#], Bunn WA, Genung MA, Cregger MA, Felker-Quinn E, Barrios-Garcia MN, Stevenson ML, Lawton RM, Brown CB, Patrick M, Rock JH, Jenkins MA, Bailey JK, Schweitzer JA. (2012) Equivalence in the strength of deer herbivory on above and below ground communities. *Basic and Applied Ecology* 13: 59-66
 12. Lessard JP, Sackett TE, Reynolds WN, Fowler DA[§], Sanders NJ. (2011) Determinants of the detrital arthropod community structure: the effects of temperature, resources, and environmental gradients. *Oikos* 120: 333-343
 11. Jenkins CN, Sanders NJ, Andersen AN, Arnan X, Brühl CA, Cerda X, Ellison AM, Fisher BL, Fitzpatrick MC, Gotelli NJ, Gove AD, Guénard B, Lattke JE, Lessard JP, McGlynn TP, Menke SB, Parr CL, Philpott SM, Vasconcelos HL, Weiser MD, Dunn RR. (2011) Global diversity in light of climate change: the case of ants. *Diversity and Distributions* 17: 652-662

10. Weiser MD, Sanders NJ, Agosti D, Ellison AM, Fisher BL, Gibb H, Gotelli NJ, Gove AD, Guenard B, Janda M, Kaspari M, Lessard JP, Longino JT, Majer JD, Menke SB, McGlynn TP, Parr CL, Philpott SM, Retana J, Suarez A, Vasconcelos HL, Yanoviak SP, Dunn RR. (2010) Canopy and litter ant assemblages share similar climate–species density relationships. *Biology Letters* 6: 769-772
9. Genung MA, Lessard JP, Brown CB, Bunn WA, Cregger MA, Reynolds WN, Felker-Quinn E, Stevenson ML, Hartley AS, Crutsinger GM, Schweitzer JA, Bailey JK. (2010) Non-additive effects of genotypic diversity increase floral abundance and abundance of floral visitors. *PLoS ONE* 5: e8711
8. Lessard JP, Fordyce JM, Gotelli NJ, Sanders NJ. (2009) Invasive ants alter the phylogenetic structure of native communities. *Ecology* 90: 2664-2669
7. Lessard JP, Dunn RR, Sanders NJ. (2009) Temperature-mediated coexistence in temperate forest antcommunities. *Insectes Sociaux* 56: 149-156
6. Dunn RR, Agosti D, Andersen AN, Bruhl CA, Cerda X, Ellison AM, Fisher BL, Fitzpatrick MC, Gibb H, Gotelli NJ, Gove AD, Guenard B, Janda M, Kaspari M, Laurent EJ, Lessard JP, Longino JT, Majer JD, Menke SB, McGlynn TP, Parr CL, Philpott SM, Pfeiffer M, Retana J, Suarez AV, Vasconcelos HL, Weiser MD, Sanders NJ. (2009) Climatic drivers of hemispheric asymmetry in global patterns of ant species richness. *Ecology Letters* 12: 324-333
5. Sanders NJ, Lessard JP, Dunn RR, Fitzpatrick MC. (2007) Temperature, but not productivity or geometry, predicts elevational diversity gradients in ants across spatial grains. *Global Ecology and Biogeography* 16: 640-649
4. Davidson DW, Lessard JP, Bernau CR, Cook SC. (2007) Tropical ant mosaic in a primary Bornean Rain Forest. *Biotropica* 39: 468-475
3. Lessard JP, Dunn RR, Parker CR, Sanders NJ. (2007) Rarity and diversity in forest assemblages of Great Smoky Mountains National Park. *Southeastern Naturalist (special issue)* 1: 215-228
2. Dunn RR, Sanders NJ, Fitzpatrick MC, Laurent E, Lessard JP et al. (2007) Global ant biodiversity and biogeography - a new database and its possibilities. *Myrmecological News* 10: 77-83
1. Lessard JP, Buddle CM. (2005) The effects of urbanization on ant assemblages associated with the Molson Nature Reserve, Quebec. *Canadian Entomologist* 137: 215-225

A.2. Publications (in review)

- Beaudrot L, Acevedo M, Lessard JP et al. Rapid elevational shifts in tropical forest mammals: Synergistic effects of temperature and biotic interactions. *Nature*
- Mazel F, Wüest RO, Lessard JP, Renaud J, Ficetola GF, Lavergne S, Thuiller W. The imprint of plate tectonics on the composition of vertebrate assemblages worldwide. *PNAS*
- Holt BG, Costa GC, Penone C, Lessard JP, Brooks TM, Davidson AD, Hedges BS, Radeloff VC, Rahbek C, Rondinini C, Graham CH. Environmental variation is a major predictor of global trait turnover in mammals. *Journal of Biogeography*
- Chick LD, Lessard JP, Dunn RR, Sanders NJ. The geography of ecology: the interplay between biotic and abiotic factors on species distributions and diversity. *Journal of Animal Ecology*

A.3. Publications (in preparation)

- Arrowsmith J*, Prakash S, Turgeon J, Lessard JP. Acidity gradients shape the phylogenetic structure of odonate communities across three biomes. For *Ecological Monographs*

A.4. Non-Refereed Publications

- Lessard JP. (2010) Ant ecology at large. *Ecology* 91: 3428–3429 (review of the book Ant Ecology)

B.1. Presentations at Conferences (*mentored student)

Lessard J-P, Arrowsmith J*. (2016) Acidity gradients shape the phylogenetic structure of odonate communities across three biomes. *International Congress of Entomology*. Orlando, USA (Invited Symposium)

Arrowsmith J*, Lessard J-P, (2016) Acidity gradients shape the phylogenetic structure of odonate communities across three biomes *Canadian Society for Ecology and Evolution*. St. John's, Canada

Lessard J-P. (2015) Improving phylogenetic and trait-based inference of biotic interactions with process-based species pool definitions. *Canadian Society for Ecology and Evolution*. Saskatoon, Canada (Invited Symposium)

Lessard J-P. (2015) Temperature Shapes ant Communities Across Scales. **Entomological Society of Canada. Montreal, Canada** (Symposium)

Lessard J-P. (2015) Improving phylogenetic and trait-based inference of biotic interactions with process-based species pool definitions. *Canadian Society for Ecology and Evolution*. Saskatoon, Canada (Invited Symposium)

Lessard J-P. (2015) Process-based species pools reveal the hidden signature of biotic interactions. *EU Macro*. Copenhagen, Denmark.

Lessard J-P. (2015) New outlook on the spatial organization of biological diversity: global to local patterns of phylogenetic structure. **Congreso Colombiano de Zoología**. Cartagena, Colombia. (Invited Symposium)

B.2. Departmental Seminars

72013 **Université du Québec à Montréal** – Dept. of Biological Sciences

2013 **McGill University** – Dept. of Biology

2013 **University of Connecticut** – Dept. of EEB

2013 **Université de Sherbrooke** – Dept. of Biology

2013 **Concordia University** – Dept. of Biology

2012 **University of Copenhagen** – Section for Ecology & Evolution

2011 **East Carolina University** – Dept. of Biology

2011 **Université de Moncton** – Dept. of Biological Sciences

B.3. Invited Participation in Working Groups, Workshops & Symposiums

2016 Early Career Scientists Symposium at the University of Michigan, “Improving phylogenetic and trait-based inference of biotic interactions with process-based species pool definitions”

2015 Centre sur la biodiversité de l'Université de Montréal, “Canadian Biodiversity Science and Information Workshop” (funded by NSERC)

2014 Colorado State University, “Training in Bayesian Modeling for Practicing Ecologists” (funded by US NSF)

2012 National Evolutionary Synthesis Center (NESCent), NC, USA. "Tracking the biotic response to global climate change through genomic analysis".

C.1. Funding

2016 – 2017	MITACS accelerator (\$30,000)
2015 – 2016	QCBS research related events (\$3,000)
2015 – 2016	QCBS seed grant (\$5,000)
2015 – 2016	CEN logistic support (\$3,500)
2015 – 2016	CEN seed grant (\$5,304)
2015 – 2016	FRQNT New Researchers Grant; Equipment (\$38,731)
2015 – 2017	FRQNT New Researchers Grant; Operation (\$40,000)
2015 – 2020	NSERC Discovery Grant (\$100,000)
2015 – 2020	NSERC Discovery Grant Young Investigator Award supplement; (\$25,000)

iii. TEACHING ACTIVITIES**Teaching**

FALL 2015, 2016 — Field Ecology (BIOL 451)

WINTER 2015, 2016 — Communities and Ecosystems (BIOL 353)

Mentoring

CURRENT: Tonia de Bellis (Visiting Researcher, 2015-present); Katherine Hébert (NSERC PGS, MSc, 2015- present); Daniella LoScerbo (NSERC USRA, BSc, 2016-2017); Javier Ibarra (NSERC CREATE, PhD, 2016-present); Sergio Vega (MITACS, MSc, 2016-present); Sarah Ouimette (MSc, 2016-présent); Frédérique Larichelière (MSc, 2016-présent); François Brassard (MSc, 2016-présent)

PAST: Julie Arrowsmith (MSc, 2014-2016); Katherine Hébert (NSERC USRA, BSc, 2012-2015); Sean-Anthony DiPaolo (BSc, 2015-2016); Victoria Pompa (BSc, 2015-2016)

Student Committees (Concordia student unless indicated)

Laura Roch (MSc), April Martinig (MSc), Franco Alo (MSc), Justin Strong (MSc), Ola Khawasik (MSc), Richard Di Rocco (MSc), Gaspar Legendre (MSc), Kathleen Church (PhD), Mariolys Rivas (PhD), Florent Mazel (PhD, Grenoble), Crystal Ernst (PhD, McGill), Patrick Thompson (PhD, McGill), Amanda Winegardner (PhD, McGill), Renato Silva (PhD, UQAM)

iv. ACADEMIC SERVICES**Editorial services**

Subject Editor for *Ecography*

Review of scientific articles

P.N.A.S., Ecology Letters, American Naturalist, Proceedings of the Royal Society B, Ecology, Ecological Monographs, Ecosphere, Journal of Animal Ecology, Journal of Ecology, Oecologia, Oikos, Ecography, Global Ecology and Biogeography, Journal of Biogeography, Diversity and Distributions, Biological Invasions, PLoS ONE, Ecoscience, Journal of Arid Environments, Forest Ecology and Management, Journal of Tropical Ecology, Insect Conservation and Diversity, Insectes Sociaux, Myrmecological News

Organization of professional meetings

2015 Entomological Society of Canada, Montreal. (Scientific Committee)

2013 Special meeting of the International Biogeography Society, Montreal (Co-Organizer)

Organization of Symposiums

2015 Causes and Consequences of Arthropod Diversity in a Changing World, Joint annual meeting of the Entomological Society of Canada, 2015

Evaluator on Grant Panels

2015 FRQNT New Researcher Grant

Reviewer for Granting Agencies

2015 NSERC Discovery Grant (1 application)

2015 QCBS Excellence Award (10 applications)

Services within Concordia University

2015-2016 Chair of hiring committee for Tier 1 CRC in Global Change Biology

2014-present Coordinator of Ecology seminar series in Biology