

DOMINIC EVANGELISTA PhD

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RESEARCH OVERVIEW

My research focus is the tree of life and I explore ways to: resolve its branching patterns, assess support for its clades, estimate the timing of its events and improve the efficiency with which we can do all of these. My broad findings are applicable to all branches of the tree of life but I specially address the relationships among cockroaches and termites. My methodologies incorporate a set of principles I call “smart-phylogenomics”. My past research includes describing cockroach diversity through: investigations of spatial diversity and taxonomy of living and extinct species.

SUMMARY

Publications	Number of peer reviewed publications = 11; number of 1 st author publications = 9.
Sci-Com	Talks given = 17; invited talks = 11; media interviews (print, TV and radio)
Grants & awards	Grants > \$10K = 2; total obtained = US\$236,355; total number of awards = 12.
Skills	Genomics, bioinformatics, coding, systematics, sci-com., field biology
Other	Subject editor for <i>ZooKeys</i> ; science blogger for Ecotome.

APPOINTMENTS

Rutgers University, Newark, NJ Adjunct professor/Part-time lecturer – Concepts in Biology (200 students)	2019
Le Muséum national d'Histoire naturelle, Paris, France NSF Post-doctoral research fellow (1608559) (Mentor: Frederic Legendre) Project title: <i>Phylogenomics and diversification in Blaberoidea</i>	2018
University of Tennessee, Knoxville, USA Post-doctoral Research Associate (Mentor: Brian O'Meara, Mike Gilchrist) Project title: <i>Assessing gene-tree discordance with a nested codon model of evolution</i>	2018

EDUCATION

Rutgers University and New Jersey Institute of Technology, Newark, NJ Ecology and Evolution PhD	2016
Bachelor of Science with Honors in Biology	2010

REFEREED JOURNAL ARTICLES

Published manuscripts

1. Pringle, Kartzinel ... **Evangelista** ... Losos, Barrett. (2019). Predator-induced collapse of niche structure and species coexistence. *Nature*. doi: 10.1038/s41586-019-1264-6
2. **Evangelista**, Legendre, Juna, Varadinova. (2019) New Blattodea from French Guiana, a hotspot of cockroach biodiversity. *Neotropical Entomology*. doi: 10.1007/s13744-019-00677-6
3. **Evangelista**¹, Wipfler¹, ... Simon (2019) An integrative phylogenomic approach illuminates the evolutionary history of cockroaches and termites (Blattodea). *Proceedings of the Royal Society B*. doi: 10.1098/rspb.2018.2076
4. **Evangelista**, Thouze, Kohli, Lopez, & Legendre. (2018). Topological support and data quality can only be assessed through multiple tests in Blattodea phylogeny. *Molecular Phylogenetics and Evolution*. doi: 10.1016/j.ympev.2018.05.007

5. Cui, **Evangelista**, Béthoux. (2018). Prayers for fossil mantis unfulfilled: *Prochaerododis enigmaticus* Piton, 1940 is a cockroach (Blattodea). *Geodiversitas*. 40:15, 355-362. doi: 10.5252/geodiversitas2018v40a15
6. **Evangelista**, Djernaes, and Kohli. (2017). Fossil calibrations for the cockroach phylogeny (Insecta, Dictyoptera, Blattodea), comments on the use of wings for their identification, and a redescription of the oldest Blaberidae. *Palaeontologia Electronica*. 20.3.1.FC: 1-23.
7. **Evangelista**, Russell, G., Russell, K.N., Bourne, & Ware. (2017). Evidence that dispersal barriers influence blaberoid cockroach assemblages in a neotropical savanna-forest matrix. *Insect Conservation and Diversity*. doi: 10.1111/icad.12246
8. **Evangelista**, Sylvain[§], Mendoza[§] & Guzman[§]. (2016). New and enigmatic cockroaches (Blattodea, Blaberoidea) of Guyana. *Journal of Natural History*. doi: 10.1080/00222933.2016.1193647
9. **Evangelista**, Chan[§], Kaplan[§], Wilson[§], & Ware. (2015) The Blattodea s.s. (Insecta: Dictyoptera) of the Guiana Shield. *ZooKeys*.475. 37-87. doi: 10.3897/zookeys.475.7877
10. **Evangelista**, Bourne, & Ware. (2014). Species richness estimates of Blattodea s.s. (Insecta: Dictyoptera) from northern Guyana vary depending upon methods of species delimitation. *Systematic Entomology*. 39. doi: 150-158. 10.1111/syen.12043
11. ***Evangelista**, Buss, & Ware. (2013) Using DNA barcodes to identify a new invasive cockroach in New York City. *Journal of Economic Entomology*. 106:6. 2275-2279.

Manuscripts in review and preprint

12. **Evangelista** (in review 2019). Entomological Heritage: Frances Ann McKittrick: Revolutionary studies of cockroaches. *American Entomologist*.
13. **Evangelista**, Legendre ... et al. (submitted 2019). Optimized phylogenetic subsampling improves recovery of Blaberoidea phylogeny under the criteria of phylogenetic synecdoche. *BioRxiv*. doi: 10.1101/601237

Published abstracts and book contributions

14. **Evangelista**. (2017). Species account: *Eurycotis blattoides*. In. Suriname: Natural History & Ecology. Ed. H. Hiwat, B. De Dijn, WWF Guianas. 1. 190pp.
15. **Evangelista**, & Ware. (2015). What can we learn from a phylogeny of Blaberoidea? *Metaleptea*. 35. 2-14.

*Cover article; [†]shared first author; [§]undergraduate co-author.

GRANTS

NSF Postdoctoral Research Fellowship in Biology (\$198,000)	2016 – 2018
Rutgers University – Newark – Graduate School Dissertation Fellowship (\$20,000)	2015 – 2016
Rutgers University – Newark – Graduate School Travel Award (< \$5000)	2014, 2015, 2016
Monsanto Student Travel Award (< \$5000)	2014, 2016
Systematics, Evolution and Biodiversity Travel Award (ESA) (< \$5000)	2014
Experiment.com (crowd funding) (< \$5000)	2014
Smithsonian Biodiversity of the Guiana Shield Grant (< \$5000)	2012, 2013
NSF Advance (< \$5000)	2013

PRESENTATIONS

Invited talks

(* - also co-organizer of the symposium)

Optimizing phylogenomics for recovering the phylogeny of Blaberoidea 9th Dresden Meeting on Insect Phylogeny in Dresden, Germany	2019 (anticipated)
Field rearing, injury labels & other techniques to increase natural history value of field collection	2017

Entomological Collections Network Meeting 2017, Denver, CO	
Discovering the origins of Blattodea through fossils and phylogeny	2017
8th Dresden Meeting on Insect Phylogeny in Dresden, Germany	
Cockroach biodiversity in the land of many waters	2016
International Congress of Entomology 2016 in Orlando, Florida	
Phylogenomics and origins of diversity in Dictyoptera (1KITE)	2015
7th Dresden Meeting on Insect Phylogeny in Dresden, Germany	
How does dispersal ability affect the spatial organization of geographic ranges?	2014
Symposium: A Hitchhiker's Guide to the Microcosmos. Ent. Soc. Am., Portland, OR *	
What we can learn from a phylogeny of Blaberoidea	2014
Symposium: Orthopteroid Insects. Ent. Soc. of America, Portland, OR	
The Yamato Cockroach in NYC and applications for genetic barcoding	2014
Long Island Invasive Species Conference – Queens, NY	
What is a species?	2014
Special Event: Honors College, Rutgers University – Newark, NJ	
Measuring species richness of Blattodea in the Guiana Shield	2013
Symposium: Dynamics of tropical ecosystems. Ent. Soc. Of America at Austin, TX	
How to effectively communicate science	2013
C2PRISM Workshop. New Jersey Institute of Technology	
Measuring species richness of Blattodea in Guyana	2012
Symposium: Cockroaches: More than pests. Ent. Soc. Of America at Knoxville, TN *	

Submitted talks (selected)

Optimized subsampling improves recovery of an empirical phylogeny under the criteria of phylogenetic synecdoche	2019 (anticipated)
Evolution 2019, Providence RI, USA	
The evolution of cockroaches and termites through fossils and phylogeny	2018
Social Insects in the North East Regions (SINNERS), Philadelphia, Pennsylvania	
The evolutionary history of cockroaches & termites through fossils and phylogeny	2018
5 th International Palaeontological Congress in Paris, France	
Phylogenomics of cockroaches (Blattodea)	2017
Ent. Soc. Of America 2017 at Denver, Colorado	
How does dispersal ability affect the spatial organization of geographic ranges?	2014
Evolution 2014 in Raleigh, NC	

POSTERS

The implications of over-estimating gene tree discordance on a rapid-radiation species tree	2019 (anticipated)
Evolution 2019, Providence RI, USA	

OTHER SCIENCE WRITING

Self /co-authored blogs

SciFund Challenge – The EcoTome (selected articles)	
Phylogeny of elves finds that Santa's workers are actually dwarves (>19,000 views)	2015
The puzzling case of the twisted sisters	2015
What is a cockroach? (> 5000 views)	2015

Entomology Today

[*A cacophonous case of careless characters*](#)

2016

[*New Checklist of Guiana Shield Highlights Cockroach Diversity in the Americas*](#)

2015

[*How to describe a new species: getting into the "spub nov" club*](#)

2014

[*Vengeful Taxonomy*](#)

2014

Social media

@Roach_Brain (400+ Followers)

2013 – Present

SOFTWARE DEVELOPED

[Phyloinformatica](#)

REFERENCES

Professional/Academic

Brian O'Meara (post-doctoral mentor)

University of Tennessee, Knoxville

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Frédéric Legendre (post-doctoral mentor)

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Jessica L. Ware (PhD advisor)

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Benjamin Wipfler (collaborator/colleague)

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