

Antônio Freire de Carvalho Filho, D.Sc.

Curriculum Vitae (February 2019)



Personal data

Name Antônio Freire de Carvalho Filho

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Education and training

- **PhD in Science (Evolutionary Genetics and Molecular Biology).** 2011 – 2014. Federal University of São Carlos, SP, Brazil.
 - Sandwich period at The City University of New York, City College. 2013 –2014.
- **Masters in Genetics and Molecular Biology.** 2009 – 2010. State University of Santa Cruz, Ilhéus, BA, Brazil.
- **Bachelor in Biological Sciences.** 2005 – 2008. State University of Santa Cruz, Ilhéus, BA, Brazil.

Postdoctoral experience

Ecology and Biodiversity Conservation Graduate Program. May 2016 – August 2017. CAPES fellowship. State University of Santa Cruz, Ilhéus, BA, Brazil.

Genetics and Molecular Biology Graduate Program. December 2014 – April 2016. CAPES fellowship. State University of Santa Cruz, Ilhéus, BA, Brazil.

Professional experience

Instituto Nacional da Mata Atlântica – Fellow Researcher. July 2019 – current.

Faculdade de Ilhéus – Lecturer. August 2017 to June 2019.

CEO – Brainstorm Academic Consulting. September 2017 to March 2018.

Non-governmental organization (NGO) Instituto Viver da Mata

2007 – Co-founder of the environmental institute

2007 – 2008 – Chairman of the Fiscal Council

2008 – 2009 – Finance Coordinator

2015 – 2016 – Head of Institute

Reviewer of scientific journals

1. Neotropical Entomology – since 2011
2. Sociobiology – since 2013
3. Biodiversity and Conservation – since 2015
4. Global Change Biology – since 2016
5. Conservation Genetics – since 2016
6. Conservation Genetics Resources – since 2020

Courses taught

Human Parasitology – undergraduate level (Nutrition and Nursing courses)

Evolutionary Ecology – undergraduate level (Biological Sciences)

Molecular Phylogenetics – graduate level (Genetics and Molecular Biology)

Molecular and Cell Biology – undergraduate level (Agronomy)

Cytology and Embryology – undergraduate level (Veterinary Medicine)

Tropical Forest Ecology – undergraduate level (Biological Sciences)

Practices in Genetics – undergraduate level (Biological Sciences)

Publications

1. Miranda, E. A.; Carvalho, A. F.; Miranda, J. J. G.; Souza, C. R.; Costa, M. A. (2019) Priority areas for conservation of orchid bees (Apidae, Euglossini) in the Atlantic Forest. **Journal of Insect Conservation**, 23: 613-621.
2. Santos, R. P.; Mariano, C. S. F.; Delabie, J. H. C.; Costa, M. A.; Lima, K. M.; Pompolo, S. G.; Fernandes, I. O.; Miranda, E. A.; Carvalho, A. F.; Silva, J. G. (2018): Genetic characterization of some *Neoponera* (Hymenoptera: Formicidae) populations within the *foetida* species complex. **Journal of Insect Science**; 18(4): 1–7.
3. Menezes, R. S. T.; Brady, S. G.; Carvalho, A. F.; Del Lama, M. A.; Costa, M. A. (2017): The roles of barriers, refugia, and chromosomal clines underlying diversification in Atlantic Forest social wasps. **Scientific Reports**; 7(1): 7689.
4. Miranda, E. A.; Batalha-Filho, H.; Congrains, C.; Carvalho, A. F.; Ferreira, K. M.; Del Lama, M. A. (2016): Phylogeography of *Partamona rustica* (Hymenoptera, Apidae), an Endemic Stingless bee from the Neotropical Dry Forest Diagonal. **PLOS ONE**, v. 11: e0164441.
5. Congrains, C.; Carvalho, A. F.; Miranda, E. A.; Cumming, G. S.; Henry, D. A. W.; Manu, S. A.; Abalaka, J.; Rocha, C. D.; Diop, M. S.; Sá, J.; Monteiro, H.; Holbech, L. H.; Gbogbo, F.; Del Lama, S. N. (2016): Genetic and paleomodelling evidence of the population expansion of the cattle egret *Bubulcus ibis* in Africa during the climatic oscillations of the Late Pleistocene. **Journal of Avian Biology**, 47: 1–12.
6. Santos, I. S.; Mariano, C. S. F.; Delabie, J.H.C.; Costa, M. A.; Carvalho, A. F.; Silva, J. G. (2016): “Much more than a neck”: Karyotype differentiation between *Dolichoderus attelaboides* (FABRICIUS, 1775) and *Dolichoderus decollatus* SMITH, 1858 (Hymenoptera: Formicidae) and karyotypic diversity of five other Neotropical species of *Dolichoderus* LUND, 1831. **Myrmecological News**, 23: 61-69.
7. Menezes, R. S. T.; Brady, S. G.; Carvalho, A. F.; Del Lama, M. A.; Costa, M. A. (2015): Molecular Phylogeny and Historical Biogeography of the Neotropical Swarm-Founding Social Wasp Genus *Synoeca* (Hymenoptera: Vespidae). **PLOS ONE**, v. 10, p. e0119151.
8. Carvalho, A. F.; Del Lama, M. A. (2015): Predicting priority areas for conservation from historical climate modelling: stingless bees from Atlantic Forest hotspot as a case study. **Journal of Insect Conservation**, v. 19, p. 581-587.
9. Carvalho, A. F.; Menezes, R. S. T.; Somavilla, A.; Costa, M. A.; Del Lama, M. A. (2015): Polistinae biogeography in the Neotropics: history and prospects. **Journal of Hymenoptera Research**, v. 42, p. 93-105.
10. Carvalho, A. F.; Menezes, R. S. T.; Somavilla, A.; Costa, M. A.; Del Lama, M. A. (2015): Neotropical Polistinae (Vespidae) and the progression rule principle: The round-trip hypothesis. **Neotropical Entomology**, v.44, p. 596– 603.
11. Somavilla, A.; Schoeninger, K.; Carvalho, A. F.; Menezes, R. S. T.; Del Lama, M. A. ; Oliveira, M. L. (2015): Records of Parasitoids in nests of social wasps (Hymenoptera: Vespidae: Polistinae). **Sociobiology**, v. 62, p. 92-98.
12. Miranda, E. A.; Carvalho, A. F.; Andrade-Silva, A. C. R.; Silva, C. I.; Del Lama, M. A. (2015): Natural history and biogeography of *Partamona rustica*, an endemic bee in dry forests of Brazil. **Insectes Sociaux**, v. 63, p. 1-9.
13. Menezes, R. S. T.; Carvalho, A. F.; Correia, J. P. S. O.; Silva, T. S.; Somavilla, A.; Costa, M. A. (2014): Evolutionary trends in the chromosome numbers of swarm-founding social wasps. **Insectes Sociaux**, v. 61, p. 385-393.
14. Carvalho, A. F.; Santos, G. M. M.; Menezes, R. S. T.; Costa, M. A. (2014): The genetic diversity of *Angiopolybia pallens* (Lepeletier) (Hymenoptera, Vespidae, Polistinae) explained by the disjunction of South American rainforests. **Genetics and Molecular Research**, v. 13, p. 89-94.
15. Menezes, R. S. T.; Silva, T. M.; Carvalho, A. F.; Andrade-Souza, V.; Silva, J. G.; Costa, M. A. (2013): Numerical and structural chromosome variation in the swarm-founding wasp *Metapolybia decorata* Gribodo 1896 (Hymenoptera, Vespidae). **Genetica** v. 141, p. 273-280.
16. Menezes, R. S. T.; Carvalho, A. F.; Silva, J. G.; Costa, M. A. (2011): Molecular characterization of constitutive heterochromatin in three species of *Trypoxylon* (Hymenoptera: Crabronidae: Trypoxylini) by CMA3/DAPI staining. **Comparative Cytogenetics**, v. 5, p. 71-80.
17. Menezes, R. S. T.; Andena, S. R.; Carvalho, A. F.; Costa, M. A. (2011): First records of *Synoeca septentrionalis* Richards, 1978 (Hymenoptera, Vespidae, Epiponini) in the Brazilian Atlantic Rain Forest. **Zookeys**, v. 151, p. 75-78.
18. Carvalho, A. F.; Costa, M. A. (2011): Cytogenetic characterization of two species of *Frieseomelitta* Ihering, 1912 (Hymenoptera, Apidae, Meliponini). **Genetics and Molecular Biology**, v. 34, p. 237-239.

19. Menezes, R. S. T.; Carvalho-Filho, A. F.; Raw, A.; Costa, M. A. (2010): *Epipona media* Cooper (Hymenoptera: Vespidae), a Social Wasp New to the Brazilian Atlantic Forest. **Neotropical Entomology**, v. 39, p. 1046-1047.

Grants and Fellowships

- **Idea Wild Foundation.** \$600,00. 2016 – 2017.
- **State University of Santa Cruz Research Award.** R\$10.000,00. 2009 – 2011.
- **FAPESP Research Award.** R\$363.684,00 + \$93,593.00. 2012 - 2014.
- **State University of Santa Cruz Research Award.** R\$10.000,00. 2009 – 2011.
- **State University of Santa Cruz Research Award.** R\$10.000,00. 2005 – 2006.

Fellowships

- CNPq, National Council for Scientific and Technological Development. Programa de Capacitação Institucional – PCI-DA. 2019 – 2023.
- CAPES Research Award. Post-doctoral fellowship, 2016 – 2018.
- CAPES Research Award. Post-doctoral fellowship, 2014 – 2016.
- FAPESP, São Paulo Research Foundation. Sandwich Fellowship, August, 2013 – January, 2014.
- FAPESP, São Paulo Research Foundation. D.Sc.'s Student Fellowship, December 2011 – 2014.
- CNPq, D.Sc.'s Student Fellowship, 2011.
- CAPES, Coordination for the Improvement of Higher Education Personnel. M.Sc.'s Student Fellowship, 2009 – 2011.
- UESC, State University of Santa Cruz. University Extension Fellowship, 2008.
- FAPESB, The Bahia State Research Support Foundation. Scientific Initiation Fellowship, 2007-2008.
- FAPESB, The Bahia State Research Support Foundation. Scientific Initiation Fellowship, 2006-2007.

Skills and expertise

In-situ insect conservation (mostly stingless bees), stingless beekeeping (i.e., meliponiculture), enemies control, systematics and taxonomy, DNA extraction, PCR, PCR-RFLP, DNA sequencing, DNA sequence editing, genotyping, Bayesian phylogenetics, niche modelling (MaxEnt), cytogenetics (FISH), insect collection (pinning, maintenance), GIS (ArcGis, Diva, Q-Gis), Corel Draw, Adobe Photo Shop, Wordpress.

Idioms

Portuguese (native), English (advanced), Spanish (Basics)

Presentations

Invited talks at scientific symposia or colloquia - 10
Poster presentations - 22

Student co-supervision finished

Undergraduate students – two
M.Sc. students – four
D.Sc. students – one

Member of committees (qualification and defense)

Doctorate theses – 1 qualification, 8 defenses
Master dissertations - 1 qualification
Monographies – 2 defenses

Additional Professional Contributions

Field work experience. 2005-2020. Raised funds, organized, and led field trips to collect specimens of bees and wasps, processing thousands of vouchers both in the field and in the laboratory. Localities include multiple sites along Brazilian Atlantic rainforest, cerrado, *caatinga* and Amazonia.

Organization of scientific events

7 events including national and international congresses.

Referees

Dr Marco Antonio Del Lama, Full Professor, Federal University of São Carlos, São Carlos, São Paulo, Brazil.
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Dr^a Luciana Iannuzzi, Associate Professor, Federal University of Pernambuco, Recife, Pernambuco, Brazil.
Telephone +55 (81) 2126-8353.

Dr James M. Carpenter, Curator, American Museum of Natural History, Division of Invertebrate Zoology, New York, New York, USA. Telephone +1 212-769-5611, e-mail carpente@amnh.org.