

## ***Curriculum Vitae***

Name: Maria Teresa Monteiro da Rocha Bravo Ferreira

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Birth date: March 10, 1982

Nationality: Portuguese

**Objective:** Post-doctoral scholarship

### **Academic Qualification**

**2008-2011:** Awarded a PhD degree at the University of Florida, Department of Entomology and Nematology under the supervision of Dr. Rudolf Scheffrahn resulting in a Doctoral dissertation titled: “The origin and spread of the West Indian drywood termite *Cryptotermes brevis* (Walker) in the Azores using genetic markers, and testing of colony foundation preventative measures to control its further spread.”  
Graduation date – December 20, 2011.

**2007-2008:** Awarded a Master of Science degree in Urban Entomology by the University of Florida, Department of Entomology and Nematology, under the supervision of Dr. Rudolf Scheffrahn resulting in a Master thesis titled: “Dispersal flight, post flight behavior, and early colony development of the West Indian drywood termite *Cryptotermes brevis* (Walker) (Isoptera: Kalotermitidae).”

**2000-2005:** Degree in Biology Applied to Terrestrial Resources by the Faculty of Sciences of Lisbon University (FCUL- Faculdade de Ciências da Universidade de Lisboa), with a final paper on “Diversity of Diptera (Insecta) along an altitudinal gradient in Lagoa do Fogo, S. Miguel Açores”.

### **Professional Experience**

**January 2018 – Present:** Postdoctoral Researcher at the University of Azores with the Regional Directorate for Science and Technology with the project: “In situ effects of climate change (rising temperature, and altered precipitation patterns) across different trophic groups in Azorean Orchards”, performing applied research. Grant proposal writing, and manuscript preparation.

**2016–2017:** Services rendered to the Regional directorate of Environment (Direção Regional do Ambiente), through direct treaty towards the project “Monitorização da infestação por térmitas na RAA”, performing monitoring of termite population in buildings in several islands of the Azorean archipelago. Elaboration of workshops, trainings, and integrated pest management plans for the termite species.

**2012 -2015:** Postdoctoral Research Assistant at the University of the Azores with the Regional Science Foundation for the European project ImpactBio – “Implications of climate change for Azorean Biodiversity”, performing field research and collection of arthropods, biomass measurements, and diversity of species in the Azorean Laurissilva forest; managing and updating the Azorean biodiversity database; running climate change models; grant proposal writing, and research manuscript preparation.

**2012 April – August:** Postdoctoral Research Collaborator at the Azorean Biodiversity group (CITA-A) at the University of the Azores. Working with data modeling for trophic chains, and biodiversity in the Laurisilva forest of the Azores, incorporated in the European project Netbiome.

**2012 January and February:** Research at the Molecular laboratory performing DNA amplification and sequencing, at the Fort Lauderdale Research and Education Center, Department of Entomology and Nematology, University of Florida.

**2008-2011:** Laboratory research in molecular biology of termites, developing research with DNA extraction, amplification (PCR), sequencing analysis, microsatellite analysis experience with phylogenetic analysis.

**2009:** Teaching Assistant for the “Termite Biology and Control” class at the Fort Lauderdale Research and Education Center, Department of Entomology and Nematology, University of Florida.

**2007-2011:** Experience with extension work, helping to identify insect pests, both urban and agricultural at the Fort Lauderdale Research and Education Center. Experience with organization, preparation, and support for the annual School of Structural Fumigation, at the University of Florida Fort Lauderdale Research and Education Center. Maintaining and rearing of termite colonies.

**2007-2008:** Laboratory work involving behavioral, ecological, developmental, and insecticide bioassays, using alates of the drywood termite *Cryptotermes brevis*. Maintaining and rearing of termite colonies.

**2006:** Research Assistant in an investigation project about “The control of termites (Isoptera) in the Azores with emphasis in the Terceira Island” under the supervision of Dr. Paulo Borges and the participation of Dr. Rudolf Scheffrahn and Dr. Timothy Myles. Duties included preparation of chemical and behavioral bioassays with termites, training of interns, organization and participation of workshops, and grant writing.

**2004-2005:** Academic apprenticeship in the field area of Biology applied to terrestrial resources, supervised by Prof. Eugénia Ribeiro, identifying arthropods to order level, and identifying diptera to family, genus and species level when applicable.

**2003-2004:** Voluntary laboratory work, in the entomology area, performing triage of Arthropods to an order level, and family level.

### **Research skills**

Extensive knowledge of molecular tools: primer design, PCR, sequencing, preparation of samples for sequencing, analysis of sequenced data using softwares such as MEGA, Sequence scanner, Structure, Muscle, Arlequin, Genepop, and Past. Proficiency in statistical analysis using various statistical softwares: SAS, STATISTICA, SPSS, and R. Experience with GIS analysis using ArcGIS. Experience with MATLAB.

### **Presentations**

#### **Invited Guest Communications:**

**August 2016:** “Sessão de esclarecimento: as térmitas nos Açores – o caso de Santa Maria” – Ciclo do Parque Aberto 2016, Açores

**September 2010:** “Origem e extensão da infestação pela térmita de madeira seca *Cryptotermes brevis* (Walker) nos Açores.” – Conference Cycle Knowing and protecting nature: 2010 International Year of Biodiversity, Azores.

**Oral Communications:**

**July 2016:** “Effects of climate change on the distribution of indigenous species in oceanic islands (Azores)” – Island Biology 2016: International Conference on Island Evolution, Ecology and Conservation.

**September 2012:** “*Cryptotermes brevis* (Isoptera: Kalotermitidae) in the Azores: using genetic markers to determine its introduction to the islands.” – 15<sup>th</sup> Iberian Entomology Congress.

**May 2010:** “Origin of the infestation by the West Indian drywood termite *Cryptotermes brevis* (Walker) in the Azores Islands” – National Conference on Urban Entomology.

**December 2009:** “*Cryptotermes brevis* (Isoptera: Kalotermitidae) alate attraction to different light wavelengths in South Florida and the Azores Islands.” – Entomological Society of America Annual Meeting.

**July 2008:** "Dispersal behavior of the West Indian drywood termite *Cryptotermes brevis* (Walker)." - 91st Annual Meeting of the Florida Entomological Society

**May 2008:** “Efficacy of chlorfenapyr-treated wood to prevent colonization by dealates of the West Indian drywood termite, *Cryptotermes brevis* (Walker).” – National Conference on Urban Entomology.

**July 2007:** "Efficacy of chlorfenapyr-treated wood to prevent colonization by dealates of the West Indian drywood termite, *Cryptotermes brevis* (Walker)." - 90th Annual meeting of the Florida Entomological Society

**December 2006:** “Wood Consumption and production of fecal pellets by the Kalotermitid species *Kalotermites flavicollis* and *Cryptotermes brevis* in the Azores” in the Workshop entitled “Measures to manage and combat the termites in the Azores” at the University of Azores, in Angra do Heroísmo.

**May 2003:** “An approach to Xenotransplants” at the IV National Bioethics Congress - Lisbon.

**Poster presentations:**

**August 2014 -** M.T. Ferreira, S. Chakrabarti, P.A.V. Borges, and R. Scheffrahn. "Introduction of the invasive species *Cryptotermes brevis* (Walker) (Isoptera: Kalotermitidae) in the Azores: using genetic markers to determine its origin. 10th European Congress of Entomology, York UK.

**July 2014** – Ferreira, M. T. P. Cardoso, E. B. Azevedo, P. A. V. Borges, R. Gabriel, F. Reis, and R. B. Elias “Implications of climate changes for Azorean Biodiversity” in: Island Biology. 2014 Meeting, Hawaii, USA.

**November 2008:** "Light attraction behavior of the alates and dealates of the West Indian Drywood Termite *Cryptotermes brevis* (Walker)." - Entomological Society of America annual meeting.

## **Publications**

### **Peer Reviewed Journals:**

**Ferreira M.T**, Cardoso, P., Borges, PAV., Gabriel, R., Azevedo, EB., Reis, FV., Araújo, M., Elias, RB. **2016**. Effects of climate change on the distribution of indigenous species in oceanic islands (Azores). *Climatic Change* 138: 603-615.

**Ferreira, M.T.**, P.A.V. Borges, L. Nunes, T. G. Myles, O. Guerreiro, & R.H. Scheffrahn. **2013**. Termites (Isoptera) in the Azores: an overview of the four invasive species currently present in the archipelago. *Arquipelago - Life and Marine Sciences* 30: 39-55.

**Ferreira, M. T.**, P.A.V. Borges, & R.H. Scheffrahn. **2012**. Attraction of alates of *Cryptotermes brevis* (Walker) (Isoptera: Kalotermitidae) to different light wavelengths in South Florida and the Azores. *Journal of Economic Entomology* 105(6): 2213-2215.

**Ferreira, M.T.** & Scheffrahn. R.H. **2011**. Light attraction and subsequent colonization behaviors of alates and dealates of the West Indian Drywood termite (Isoptera: Kalotermitidae). *Florida Entomologist* 94(2):131-136.

Borges P.A., O. Guerreiro, **M.T. Ferreira**, A. Borges, F. Ferreira, N. Bicudo, L. Nunes, R.S. Marcos, A.M. Arroz, R.H. Scheffrahn, T.G. Myles. **2014**. *Cryptotermes brevis* (Isoptera: Kalotermitidae) in the Azores: Lessons After 2 yr of Monitoring in the Archipelago. *Journal of Insect Science*. doi: <http://dx.doi.org/10.1093/jisesa/ieu034>

Guerreiro, O., P. Cardoso, J. M. Ferreira, **M. T. Ferreira**, P.A.V. Borges. **2014**. Potential Distribution and Cost Estimation of the Damage Caused by *Cryptotermes brevis* (Isoptera: Kalotermitidae) in the Azores. *Journal of Economic Entomology* 107(4): 1554-1562. DOI: 10.1603/EC13501.

Nunes, L., Gajun M., Krecek, J., **Ferreira, M.T.**, and Bach de Roca, C. **2010**. First records of urban invasive *Cryptotermes brevis* (Isoptera: Kalotermitidae) in continental Spain and Portugal. *Journal of Applied Entomology*. 134, pp. 637-640.

### **Book Chapters:**

**Ferreira, M.**, Myles, T.G., Borges, A. Guerreiro, O. & Borges, P.A.V. **2007**. Consumo de madeiras e produção de partículas fecais pelas espécies de térmitas açorianas da família *Kalotermitidae*: *Kalotermites flavicollis* e *Cryptotermes brevis*. In: P.A.V. Borges & T. Myles (eds.), *Térmitas dos Açores*. Princípiã, pp. 47-61, Lisboa.

Borges, P.A.V., Myles, T., Lopes, D., Simões, A., Rodrigues, A., **Ferreira, M.** & Bettencourt, S. **in press**. Introdução da térmita *Cryptotermes brevis* (Walker) no

arquipélago dos Açores. Estudo da distribuição e gestão da praga na cidade Património Mundial Angra do Heroísmo (ilha Terceira). *In: L. Fontes (Ed.), O cupim Cryptotermes brevis (Walker)*. São Paulo, Brasil.

Myles, T.G., Borges, P.A.V., **Ferreira, M.**, Guerreiro, O., Borges, A. & Rodrigues, C. **2007**. Filogenia, biogeografia e ecologia das térmitas dos Açores. *In: P.A.V. Borges & T. Myles (eds.), Térmitas dos Açores*, Princípiã, pp. 15-28, Lisboa.

Guerreiro, O., Myles, T.G., **Ferreira, M.**, Borges, A. & Borges, P.A.V. **2007**. Voo e fundação de colónias pelas térmitas dos Açores, com ênfase na *Cryptotermes brevis*. *In: P.A.V. Borges & T. Myles (eds.), Térmitas dos Açores*. Princípiã, pp. 29-46, Lisboa.

Myles, T.G., Borges, A., **Ferreira, M.**, Guerreiro, O., & Borges, P.A.V. **2007**. Eficácia de diferentes insecticidas no combate à *Cryptotermes brevis*. *In: P.A.V. Borges & T. Myles (eds.), Térmitas dos Açores*. Princípiã, pp. 62-75, Lisboa.

Lopes, D.H., Borges, A., Guerreiro, O., **Ferreira, M.**, Myles, T.G. & Borges, P.A.V. **2007**. Comportamento de diferentes tipos de madeiras face à aplicação de diferentes produtos de combate às populações de térmitas de madeira seca (*Cryptotermes brevis*) nos Açores. *In: P.A.V. Borges & T. Myles (eds.), Térmitas dos Açores*. Princípiã, pp. 76-84, Lisboa.

Borges, A., Guerreiro, O., **Ferreira, M.**, Myles, T.G. & Borges, P.A.V. **2007**. Tratamento das mobílias atacadas por *Cryptotermes brevis* com calor, fumigantes sólidos e gases inertes. *In: P.A.V. Borges & T. Myles (eds.), Térmitas dos Açores*. Princípiã, pp. 85-95, Lisboa.

Borges, P.A.V., Myles, T.G., Lopes, D.H., **Ferreira, M.**, Borges, A., Guerreiro, O. & Simões, A. **2007**. Estratégias para combate e gestão das térmitas nos Açores. *In: P.A.V. Borges & T. Myles (eds.), Térmitas dos Açores*. Princípiã, pp. 112-122, Lisboa.

#### **Other publications:**

**Ferreira, M.T.**, S. Chakrabarti, P.A.V. Borges & R.H. Scheffrahn. **2014**. Mitochondrial and nuclear markers highlight population diversity and introduction of *Cryptotermes brevis* (Walker) (Isoptera: Kalotermitidae) in the Azores. (in prep.)

**Ferreira, M.T.** **2011**. The origin and spread of the West Indian drywood termite *Cryptotermes brevis* (Walker) in the Azores using genetic markers, and testing of colony foundation preventative measures to control its further spread. University of Florida. Doctorate Dissertation. 144p.

**Ferreira, M.T.**, S. Chakrabarti, & R.H. Scheffrahn. **2010**. Origin of the infestation by the West Indian drywood termite *Cryptotermes brevis* (Walker) in the Azores Islands. *In: [Ed] Susan C. Jones. Proceedings of the 2010 National Conference on Urban Entomology*. 235p.

**Ferreira M.T. & R.H. Scheffrahn. 2008.** Efficacy of Chlorfenapyr-treated wood to prevent colonization by dealates of the West Indian drywood termite, *Cryptotermes brevis*. In: [Ed] Susan C. Jones. Proceedings of the 2008 National Conference on Urban Entomology. 144p.

**Ferreira, M. 2008.** Dispersal flight, post flight behavior, and early colony development of the West Indian drywood termite *Cryptotermes brevis* (Walker) (Isoptera: Kalotermitidae). University of Florida. Master Thesis. 54p.

### **Grants and fellowships**

**September 2009:** “The West Indian drywood termite *Cryptotermes brevis* (Walker) in the Azores: Monitorization of dispersal flights and prevention of colonization”. Submitted to the Direcção Regional para a Ciência e Tecnologia (DRCT) - fully funded.

**May 2009:** “The West Indian drywood termite *Cryptotermes brevis* (Walker) in the Azores: population dynamics, dispersal flights, and prevention of colonization.” Submitted to Fundação Luso-Americana para o Desenvolvimento (FLAD) - partially funded.

**November 2008:** “Efficacy of chlorantraniliprole, and new methods of application using a foaming agent, and heat for spot treatment against the West Indian drywood termite”. Submitted to the Florida Department of Agriculture and Consumer Services (FLAD).

**August 2006:** “Caste development, colony foundation, and source of origin of the West Indian drywood termite, *Cryptotermes brevis* (Walker) (Isoptera: Kalotermitidae), in the Azores Islands”. Submitted to Fundação para a Ciência e Tecnologia (FCT) – fully funded.

### **Awards**

**November 2008:** Student Competition for the President’s Prize Poster presentation– First Place. Entomological Society of America Annual Meeting.

**July 2008:** Student Competition for Master Students- Third Place. Florida Entomological Society Annual Meeting.

**July 2007:** Student Competition for Master Students – Second place. Florida Entomological Society Annual Meeting.

### **Professional Development**

**April 2013-present:** Executive Board member of the Environmental Nucleus of the University of the Azores (NAUA- Núcleo do Ambiente da Universidade dos Açores).

**June-September 2012:** Organization committee member of the XV Iberian Entomology Congress in Terceira, Azores, September 2-6, 2012.

**December 2006:** Organization committee member and participation in the Workshop entitled “Measures to manage and combat the termites in the Azores” at the University of Azores, in Angra do Heroísmo.

**June 2006:** Attended a course in ‘Biodeterioration and conservation of Cultural Patrimony’ given by Doctors Dennis Allsopp and Christine Gaylarde at University of the Azores.

**May 2003:** Attended the IV National Bioethics Congress.

**October 2002:** Attended the IV National Etology Congress.

**March 2002:** Participating in an Arachnology Workshop, as part of the VI National Biology Student Meeting.

**Languages:**

Portuguese – Main language

English – Excellent knowledge both written and spoken

French – Good knowledge written and spoken

Spanish – Good knowledge written and spoken

**Affiliations:**

Member of the Azorean Biodiversity group (GBA).

Member of the Platform for Enhancement of Ecological Research and Sustainability (PEERS).

Member of the Entomological Society of America (ESA).

Member of the Florida Entomological Society (FES).

Member of the Portuguese Entomological Society (SPEN).

Board Member of the Environmental Nucleus of the University of the Azores (NAUA)

Board Member of the Azorean Mycology group.