

## *Curriculum Vitae*

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### Institutional information

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Portugal
- Investigation Centre: Centre for Ecology, Evolution and Environmental Changes (cE3c)
- Research Group: Evolutionary Ecology
- Research Sub-group: “Local Adaptation in *Drosophila*”
- Current Occupation: PhD student in Evolutionary Biology; Research grant in the project “History, chance and selection: a pan-genomic analysis”
- Faculty: Faculty of Sciences, University of Lisbon (FCUL)
- Thesis Title: The role of History, Chance and Selection during adaptation: an integrated perspective
- Advisors: Professor Margarida Matos (FCUL); Professor Mauro Santos (UAB – Universitat Autònoma de Barcelona)

### Education

- February, 2010 to Present – PhD student in Faculty of Sciences, University of Lisbon developing the thesis “The Role of History, Chance and Selection During Adaptation: An Integrated Perspective”.
- October, 2006 to February, 2008 – Master Degree in Evolutionary and Development Biology from Faculty of Sciences, University of Lisbon, with the thesis “Evolutionary changes during laboratory adaptation: Analysis of morphological, behavioral and life history traits”
- September, 2002 to October, 2006 – Graduated in Biology from Faculty of Sciences, University of Lisbon.

### Grants

- 2014 – Research grant in the project “History, chance and selection: a pan-genomic analysis” funded by FCT.
- 2009 – PhD grant from FCT to develop the thesis “Role of History, Chance and Selection in adaptation: a case study in *Drosophila subobscura*”.
- 2009 – Grant from European Research Network program 'Thermal Adaptation in Ectotherms: Linking Life History, Physiology, Behaviour and Genetics' to develop a project entitled “Linking thermal tolerance, size and inversion polymorphisms in *Drosophila subobscura*”.
- 2008 - Technician grant in the project “The genetic basis of adaptation to captivity: the *Drosophila subobscura* model” financed by FCT.
- 2007 - Technician grant in the project “Convergent evolution during local adaptation: comparison of phenotypic and molecular changes of populations founded synchronously” financed by FCT.

### Publications on International and Scientific Journals:

- Bárbaro M., Mira M., Fragata I., Simões P., Lima M., Lopes-Cunha M., Kellen B., Santos J., Varela S.A.M., Matos M. and Magalhães S. 2015. Evolution of mating behavior between two populations adapting to common environmental conditions. *Ecology and Evolution*. 5(8): 1609–1617 doi: 10.1002/ece3.1454

- Matos., Simões P., Santos, M.A., Seabra S.G., Faria G.S., Vala F., Santos J. and Fragata I. 2015. History, chance and selection during phenotypic and genomic experimental evolution: replaying the tape of life at different levels *Frontiers in Genetics*. 6:71.
- Fragata I., Lopes-Cunha M., Bárbaro M., Kellen B., Lima M., Santos M.A., Faria G.S., Santos M., Matos M. and Simões (2014) How much can history constrain adaptive evolution? A real-time evolutionary approach of inversion polymorphisms in *Drosophila subobscura*. *Journal of Evolutionary Biology* **27**, 2727–2738 doi: 10.1111/jeb.12533.
- Fragata I., Simões P., Lopes-Cunha M., Lima M., Kellen B., Barbáro, M., Santos, J., Rose, M.R., Santos, M. and Matos, M. (2014) Laboratory Selection Quickly Erases Historical Differentiation. *PLoS ONE* **9**(5): e96227.
- Santos J., Pascual M., Simões P., Fragata I., Rose M. R. and Matos M. (2013) Fast evolutionary genetic differentiation during experimental colonizations. *Journal of Genetics* **92**, 183-194.
- Santos, J., Pascual, M., Simões, P., Fragata, I., Lima, M., Kellen, B., Santos, M.A., Marques, A., Rose, M. R. and Matos, M. (2012). From nature to the laboratory: the impact of founder effects on adaptation. *Journal of Evolutionary Biology*, **25**: 2607–2622.
- Fragata I., Balanyà J., Rego C., Matos M., Rezende E. and Santos M. (2010). Contrasting patterns of phenotypic variation linked to chromosomal inversions in native and colonizing populations of *Drosophila subobscura*. *Journal of Evolutionary Biology* **23**: 112-123.
- Rego C., Balanyà J., Fragata I., Matos M., Rezende E. and Santos M. (2010). Clinal patterns of chromosomal inversion polymorphisms in *Drosophila subobscura* are partly associated with thermal preferences and heat stress resistance. *Evolution* **64**: 385-397.
- Rezende, E. L., Balanyà, J., Rodríguez-Trelles, F., Rego, C. Fragata, I., Matos, M., Serra, L. and Santos, M. (2010). Climate change and chromosomal inversions in *Drosophila subobscura*. *Climate Research* **43**:103-114
- Santos M.A., Fragata I., Santos J., Simões P., Marques A., Lima M. and Matos M. (2010). Playing Darwin. Part B. 20 years of domestication in *Drosophila subobscura*. *Theory in Biosciences* **129**(2/3): 97-102.
- Simões P., Santos J., Fragata I., Mueller L.D., Rose M.R. and Matos M. (2008). How repeatable is Adaptive Evolution? The role of geographical origin and founder effects in laboratory adaptation. *Evolution* **62**(8): 1817-1829.

#### Workshops and Courses:

- “Bioinformatics for Adaptation Genomics: Adaptation genomics in the realm of Next-Generation Sequencing data analysis” course held at Weggis (Switzerland) from 1<sup>st</sup> March to 7<sup>th</sup> March 2015
- “Bioinformatics Analysis for Next Generation Sequencing Data” course held at Universitat Pompeu Fabra (Barcelona) from September 16<sup>th</sup> to September 20<sup>th</sup> 2013.
- “Multivariate Data Analysis for Ecology and Evolution in R” workshop held at Center for Investigation in Biodiversity and Genetic Resources, University of Porto (CIBIO/UP) from November 5<sup>th</sup> to November 9<sup>th</sup> 2012.
- “Genetic Architecture of Complex Traits” course held at Institute Gulbenkian for Science (IGC) from March 6<sup>th</sup> to March 8<sup>th</sup> 2012.
- “Modelling in Evolution and Population Genetics” course held at Centro de Biologia Ambiental (CBA), University of Lisbon from July 12<sup>th</sup> to 16<sup>th</sup> 2010.
- Theoretical Modelling” course held at Centro de Biologia Ambiental (CBA), University of Lisbon from February 8<sup>th</sup> to 12<sup>th</sup> 2010
- “Populations and Ecological Communities Modeling in R” course held at Faculty of Sciences, University of Lisbon from February 22<sup>nd</sup> to February 26<sup>th</sup> 2007.

#### Participation in International and National Congresses with oral contribution:

- Presentation under the title: “Quick Adaptation to a New Environment Erases Signature of History in Natural Populations” in the 9<sup>th</sup> Portuguese Evolutionary Biology Meeting, Lisbon, Portugal, December 2013.
- Presentation under the title: “Quick Adaptation to a New Environment Erases Signature of History in Natural Populations” in the 14<sup>th</sup> ESEB Congress, Lisbon, August 2013.

- Presentation under the title: “Contrasting patterns of wing size and shape linked to chromosomal inversions in *Drosophila subobscura* populations” in 5<sup>th</sup> Portuguese Evolutionary Biology Meeting, Lisbon, Portugal, December 2009.

Participation in International and National Congresses with poster contribution (selected):

- Santos, J., Schunter, C., Abril, J.P., Fragata, I., Simões, P., Matos, M. and Pascual, M. ‘Transcriptome-wide approaches to laboratory adaptation.’ in SMBE Puerto Rico, June 2014.
- Faria, G., Fragata, I., Santos, M.A., Simões, P., Matos, M. and Varela, S. ‘What makes female *Drosophila* fall in love?’, in 10<sup>th</sup> National Etology Encounter at Lisbon, October 2013.
- Matos, M., Bárbaro, M., Mira, M., Fragata, I., Simões, P., Lima, M., Lopes-Cunha, M., Kellen, B., Santos, J. and Magalhães, S. ‘Can reproductive barriers maintain differentiation in face of global changes? A case study in *Drosophila subobscura*’, in the 14<sup>th</sup> ESEB, Lisbon, Portugal, August 2013.
- Simões P., Fragata I., Lopes-Cunha M., Lima M., Kellen B., Barbáro, M., Santos, J., Santos, M. and Matos, M. ‘The fate of chromosomal inversion polymorphism during adaptation to a novel environment.’ in the 14<sup>th</sup> ESEB, Lisbon, Portugal, August 2013.
- Fragata, I., Simões, P., Lima, M., Lopes-Cunha, M., Kellen, B., Bárbaro A., Santos, J. and Matos, M. ‘Tug of War: the Role of History, Chance and Selection in Adaptation to a New Environment’ in 8<sup>th</sup> ENBE at Lisbon, Portugal, December 2012.
- Simões, P., Fragata, I., Lima, M., Lopes-Cunha, M., Kellen, B., Bárbaro, M., Santos, J. and Matos, M. ‘Addressing clinal variation of inversions: the relative role of evolutionary history and adaptation to a novel environment’, in 7<sup>th</sup> ENBE at Coimbra, Portugal, December 2011.
- Matos, M., Fragata, I., Simões, P., Bárbaro M., Lima, M., Lopes- Cunha, M., Kellen, B. and Santos, J. ‘Clinal differentiation of polygenic traits: How much is expressed in a novel environment and what are the outcomes of adaptation?’, in 12<sup>th</sup> ESEB at Tuebingen, Germany, August 2011.
- Simões, P., Fragata, I., Lima, M., Lopes-Cunha, M., Kellen, B., Bárbaro M., Santos, J. and Matos, M. ‘Addressing clinal variation: the relative role of evolutionary history and adaptation to a novel environment’, in 12<sup>th</sup> ESEB at Tuebingen, Germany, August 2011.
- Santos, J., Fragata, I., Simões, P., Marques, A., Santos, M.A., Matos, M., Santos, M., Pascual, M. and Balanyà, J. ‘Evolution of Chromosomal Polymorphisms During Adaptation to a Novel Environment’, in 11<sup>th</sup> ESEB 2009, at Turim, Italy, August 2009.