

# Curriculum Vitae

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## Miguel Paulo Machado

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Portugal

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Date of birth: June 14, 1987



## Academic Qualifications

PhD student in Evolutionary Biology

Since 2011

*“Sex determination and differentiation in cyprinids: the case study of Iberian species and the puzzling sex bias in *Squalius alburnoides* complex”*, FCT PhD grant SFRH/BD/73335/2010

*Faculty of Science of University of Lisbon (FCUL), University of Lisbon (UL), Portugal*

Master degree in Evolutionary and Developmental Biology (2 years)

2010

*“New data on the reproductive strategy of *Squalius alburnoides* complex: a histological and molecular approach”*

Final grade: **18**/<sub>20</sub>

*Faculty of Science of University of Lisbon (FCUL), Portugal*

Undergraduate degree in Biology (3 years)

2008

*Faculty of Science of University of Lisbon (FCUL), Portugal*

Final grade: **15**/<sub>20</sub>

## Professional Experience

### Research Fellowship:

Jan. to Dec. 2010

*“The genetic control of sex determination in the *Squalius alburnoides* complex: new insights into the role of hybridization and genome interaction”*, FCT project PTDC/BIA-BDE/65586/2006 – PI: M.M. Coelho

- Evolutionary Genetics Group, CBA, Portugal – PI: M.M. Coelho (Genes, Gene Expression and Evolution subgroup)

Paternity testes in dogs and horses with microsatellites

Jan 2009 to Jun 2009

- Applied Genetics Lab, CBA, Portugal – Responsible M.M. Oom

Volunteer training to study the genomic composition of *S. alburnoides* in Quarteira river basin with RFLPs

Sept 2008 to Aug 2009

- Evolutionary Genetics Group, CBA, Portugal – PI: M.M. Coelho (Genes, Gene Expression and Evolution subgroup)

## Courses/Workshops

Course in Fish Identification of River Ecosystems of Portugal

May 2013

*National Museum of Natural History and Science (MUHNAC), Lisbon, Portugal*

32h

1<sup>st</sup> International Winter School on Evolution

Mar 2013

Module “Symbiogenesis, Lateral Gene Transfer and Hybridization” by Michael Arnold

10h

*Applied Evolutionary Epistemology Lab, Faculty of Science of University of Lisbon (FCUL), Portugal*

Course in Automatic Functional Annotation and Data Mining <i>The Gulbenkian Training Programme in Bioinformatics, Instituto Gulbenkian de Ciência, Oeiras, Portugal</i>	Feb 2011 14h
Course in Animal Research (researcher category B) <i>Portuguese Society of Laboratory Animals Science (SPCAL), Lisbon, Portugal</i>	2010 and 2012 40h
Workshop in Developmental Biology <i>Université Pierre et Marie Curie (UPMC), Paris, France</i>	Sept 2009 to Oct 2009

### Technical Skills

- *Next Generation Sequencing* analysis: transcriptome *de novo* assembly, gene expression analysis (by transcriptome *de novo* assembly and genome mapping), gene annotation
- Gene sequence evolution analysis
- DNA extraction, PCR, real-time PCR, microsatellites, sequences analyse of nuclear and mitochondrial genes, RFLP
- RNA extraction, semi-quantitative RT-PCR, real-time RT-PCR
- Flow cytometry analysis
- Histology analysis
- Paternity testes with STRs
- Fish breeding, and fish facility maintenance
- Electrofishing (field work)

### Soft Skills

- Financial project management (budget managing, purchase orders and subsistence allowances elaborations)
- Laboratory management (stocks managing, equipment maintenance)
- Scientific reports elaboration
- Meetings organization

### Publications

- Matos, I., Machado, M.P., Scharl, M., and Coelho, M.M. (2015). Gene Expression Dosage Regulation in an Allopolyploid Fish. *PLoS ONE* 10(3): e0116309
- Matos, I., Sucena, E., Machado, M.P., Gardner, R., Inácio, A., Scharl, M., and Coelho, M.M. (2011). Ploidy mosaicism and allele-specific gene expression differences in the allopolyploid *Squalius alburnoides*. *BMC Genetics*, 12:101
- Matos, I., Machado, M.P., Sucena, E., Collares-Pereira, M.J., Scharl, M., and Coelho, M.M. (2010). Evidence for Hermaphroditism in the *Squalius alburnoides* Allopolyploid Fish Complex. *Sexual Development* 4, 170-175
- Inacio, A., Matos, I., Machado, M.P., and Coelho, M.M. (2010). An easier method to identify the individual genomic composition of allopolyploid complexes. *Journal of Fish Biology* 76, 1995-2001

### Oral Communications

- Machado M.P., Matos I., Grosso A.R., Scharl M., Coelho M.M.. Differential expression of sex determining genes and gonad differentiation genes in an allopolyploid fish, the *Squalius alburnoides* complex. *International Conference on Sex Determination and Differentiation in Fishes - genes, environment and behaviour*, September 2014, Lisbon, Portugal
- Machado M.P., Matos I., Pinho J., Scharl M., Coelho M.M.. Assessment of possible hybridization impact in the ancestral sexual cascades. *11<sup>th</sup> International Congress on the Biology of Fish*, August 2014, Edinburgh, Scotland, UK

**Posters Communications**

- Machado M.P., Pinho J., Matos I., Grosso A.R., Inácio Â., Scharl M., Coelho M.M.. Transcriptome characterization of tissues involved in sexual mechanisms could suggests a distinct pattern of sex players. *11<sup>th</sup> International Congress on the Biology of Fish*, August 2014, Edinburgh, Scotland, UK
- Machado M.P., Inácio Â., Pinho J., Grosso A.R., Matos I., Scharl M., Coelho M.M.. Transcriptome characterization by SSH-seq and RNA-seq of specific tissues involved in sexual mechanisms in an endemic Iberian cyprinid fish. *XIV Congress of the European Society for Evolutionary Biology*, August 2013, Lisbon, Portugal
- Machado M.P., Matos I., Sucena E., Coelho M.M.. New data on the reproductive strategy of *Squalius alburnoides* complex: a histological and molecular approach. *The International Meeting on the Genetics of Polyploids*, November 2010, Lisbon, Portugal
- Machado, M.P., Matos, I., Sucena, E., Coelho, M.M.. The role of *sox9*, *dmrt1* and *figla* genes in sexual differentiation in an allopolyploid context. *9<sup>th</sup> International Congress on the Biology of Fish*, July 2010, Barcelona, Spain