

# Fábio M. Marques Madeira

## PhD student in Bioinformatics

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### Education

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| 2013 – 2016 | College of Life Sciences – University of Dundee<br><b>PhD in Bioinformatics (expected)</b>  |
| 2008 – 2010 | Faculdade de Ciências e Tecnologia – Universidade Nova de Lisboa<br><b>Master in Molecular Genetics and Biomedicine</b> (17/20, Honours 1 <sup>st</sup> )<br>Merit award from Santander-UNL relative to the 1 <sup>st</sup> academic year |
| 2004 – 2008 | Faculdade de Ciências e Tecnologia – Universidade Nova de Lisboa<br><b>Eurobachelor in Biochemistry</b> (14/20, Honours 2:1)<br>Ranked 2 <sup>nd</sup> in class   |

### Experience & Funding

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| 2012 – 2013 | <b>Mapping the 14-3-3-binding 2R-ohnologue protein families of the human kinome</b> , supervised by Prof. Carol MacKintosh (Division of Cell and Developmental Biology, CLS-UoD), 1 <sup>st</sup> Laboratory Rotation <sup>A</sup>   |
| 2011 – 2012 | <b>CREMA: Constrained Refining of Multiple Alignments to identify correlations between mutations</b> , supervised by Prof. Ludwig Krippahl (CENTRIA-DI, FCT-UNL) <sup>B</sup>  |
| 2011 – 2011 | <b>Glycosylation and Lewis X motif in neuronal tissue</b> , supervised by Dr. Júlia Costa (Glycobiology, ITQB-UNL) <sup>B</sup>  |
| 2009 – 2010 | <b>Production of a stable form of a human phenylalanine hydroxylase: towards the 3D structure determination</b> , supervised by Prof. Maria João Romão (Crystallography, REQUIMTE/CQFB, FCT-UNL) and Prof. Ana Paula Leandro (Metabolism and Genetics, FF-UL) <sup>B</sup> |

### Publications

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| 2012 | Fábio Madeira and Ludwig Krippahl. 2012. <b>PYCOEVOL: A Python workflow to study protein-protein coevolution</b> . Proceedings of the International conference on Bioinformatics Models, Methods and Algorithms - BIOINFORMATICS 2012, pp.143-9.                   |
| 2011 | Marco Correia, Fábio Madeira, Pedro Barahona and Ludwig Krippahl. 2011. <b>Improving Multiple Sequence Alignments with Constraint Programming and Local Search</b> . Proceedings of the Workshop on Constraint Based Methods for Bioinformatics - WCB11, pp.37-44. |
| 2010 | Fábio Madeira. 2010. <b>Estudos Estruturais e Funcionais da Fenilalanina Hidroxilase Humana</b> . Master Thesis in Molecular Genetics and Biomedicine (portuguese).  |

### Posters

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| 2012 | Michele Tinti, Catherine Johnson, Fábio Marques Madeira, Margaret Malcolm and Carol MacKintosh. <b>Evolution of 14-3-3-binding sites and 2R-Ohnologue families</b> . PTMs in Cell Signaling, Copenhagen, Denmark, December 2-5 <sup>th</sup>   |
| 2010 | Paulo Roque Lino, Fábio Madeira, Isabel Tavares de Almeida, and Paula Leandro. 2010. <b>Alternative Answers to Everlasting Problems: Protein Engineering Towards New Approaches for Phenylketonuria Treatment</b> . 2010 SPDM Annual Symposium, Albufeira, Portugal, November 4-5 <sup>th</sup>  |
| 2012 | Catarina Coelho, Fábio Madeira, Paulo Roque Lino, Isabel Tavares de Almeida, Paula Leandro and Maria João Romão. 2010. <b>Crystallization of a Stable Form of Human Phenylalanine Hydroxylase: Towards the 3D Structure Determination</b> . UK-Portuguese Teams Meeting. Protein-protein interaction and Protein folding. FCT-UNL, March 29-31 <sup>st</sup> |

<sup>A</sup> PhD Studentship from the Wellcome Trust PhD Programme in Molecular and Cellular Biology (UK)

<sup>B</sup> Research Studentship from Fundação para a Ciência e Tecnologia (PT)

## Communications & Teaching

- 2012 **Tutorial on Pycoevol.** Practical session of the course in Applied Bioinformatics, Masters in Structural and Functional Biochemistry, Department of Chemistry, FCT-UNL, 4<sup>th</sup> May
- 2012 **Computational Analysis of Protein Coevolution and Interaction.** Knowledge Discovery and Bioinformatics group, INESC-ID, 9<sup>th</sup> March
- 2012 **PYCOEVOL: A Python workflow to study protein-protein coevolution.** International conference on Bioinformatics Models, Methods and Algorithms - BIOINFORMATICS 2012, Vilamoura, Algarve, Portugal, 1-4<sup>th</sup> February
- 2011 **Improving Multiple Sequence Alignments with Constraint Programming and Local Search.** Workshop on Constraint Based Methods for Bioinformatics - WCB11, Perugia, Italy, 12<sup>th</sup> September
- 2010 **Human Phenylalanine Hydroxylase Structure: Towards 3D Structure Determination.** Met&Gen Ph.D. Students Workshop. Inborn Errors of Metabolism: Understanding the Molecular Mechanisms. FF-UL, 26-27<sup>th</sup> November

## Training

- 2012 **The PhD Journey Conference,** Aberdeen, Scotland, November 6-7<sup>th</sup>
- 2011 **Tutorial on Zotero** (Bibliographic Management) with Maria do Rosário at the Library, FCT-UNL, November 30<sup>th</sup>
- 2011 **BPB'11- Bioinformatics using Python for Biologists** at the Gulbenkian Training Programme in Bioinformatics with Allegra Via and Fabrizio Ferrè (Sapienza Università di Roma), IGC, May 2-6<sup>th</sup>
- 2010 **Tutorial on EndNote Web** (Web of Knowledge) with Maria do Rosário at the Library, FCT-UNL, April 21<sup>st</sup>
- 2010 **Advanced Course in Protein Crystallography** at the Crystallography Lab., REQUIMTE/CQFB, FCT-UNL, February 1-5<sup>th</sup>
- 2008 **Trainee on Structural and Computational studies of Metalloproteins** at the Crystallography Lab., under supervision of Prof. Maria João Romão (Crystallography, REQUIMTE/CQFB, FCT-UNL), from September to December, 8 hours per week.

## Skills

**Structural Biology** (X-ray crystallography), **Bioinformatics** (Data-mining, Protein docking, Sequence analysis), **Molecular Evolution** (Protein coevolution, Phylogenetics), **Molecular Biology and Protein Expression & Purification** (Protein expression systems, Gel electrophoresis, Blotting, HPLC, Enzymatic assays), **Cellular Biology** (Western Blot, Tissue Culture, Fluorescence Microscopy), **Computer Programming** (Python, R, Octave, Pascal), **Operating Systems** (Linux-unix, Windows, Mac OS), **Database Management** (MySQL, Microsoft Access), **Web Development** (HTML, Web2py, Wordpress, Joomla), **Molecular & Scientific Illustration** (Photoshop, Molecular Maya, UCSF Chimera, PyMOL), **Utilities** (Eclipse IDE, Microsoft Office, LaTeX, Git, EndNote), **English** (CEF Level C1, EILTS 7.5)

**CLS-UoD** > College of Life Sciences, University of Dundee, Scotland

**FCT-UNL** > Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal

**CENTRIA-DI** > Centre for Artificial Intelligence, Departamento de Informática, Portugal

**REQUIMTE /CQFB** > Rede de Química e Tecnologia, Centro de Química Fina e Biotecnologia, Portugal

**ITQB-UNL** > Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa, Oeiras, Portugal

**FF-UL** > Faculdade de Farmácia, Universidade de Lisboa, Lisboa, Portugal

**INESC-ID** > Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento, Lisboa, Portugal

**IGC** > Instituto Gulbenkian de Ciência, Oeiras, Portugal