

Nuno Luís Barbosa Morais  
*Curriculum Vitae* – September 14, 2017

## Biographical

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Born November 5, 1977 in Viana do Castelo, Portugal  
Portuguese citizenship, male

### Institutional address:

Instituto de Medicina Molecular  
Av Prof Egas Moniz  
Edif Egas Moniz, Sala P3B-34  
1649-028 Lisboa  
Portugal

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URL: <http://imm.medicina.ulisboa.pt/group/compbio/Nuno.html>

### Languages:

Portuguese (native), English (fluent), Spanish (fluent), French (basics)

## Current occupation

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### Research Group Leader

*2015, January -*  
Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa, Portugal

## Education

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**PhD in Biomedical Sciences**, University of Lisbon Medical School (Portugal) *2007*

Thesis: “Bioinformatics Studies on the Complexity of Splicing and Gene Expression”

Supervisors: Professor Samuel Aparício (Univ. Cambridge, UK), Professor Maria do Carmo Fonseca

Classification: *Summa Cum Laude* (unanimous)

**Graduate Program in Biophysics and Biomedical Engineering**, Faculty of Sciences of the University of Lisbon (Portugal) [Classification: 19/20] *2001*

**Degree (“Licenciatura” - Bachelor/MSc) in Technologic Physics Engineering**, Instituto Superior Técnico - Technical University of Lisbon (Portugal) [Classification: 17/20] *2000*

## Professional Experience

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Honorary Senior Research Fellow *2013, October - 2015, April*  
Nuffield Department of Obstetrics and Gynaecology, University of Oxford, UK

Marie Curie Fellow *2013, June - 2014, May*  
Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa, Portugal

Senior Postdoctoral Fellow (Computational Biology) *2010, August - 2013, May*  
The Donnelly Centre, University of Toronto, Canada  
Supervisor: Professor Benjamin J. Blencowe

Research Associate (Computational Biology) *2006, August - 2010, July*  
Department of Oncology, University of Cambridge / Cancer Research UK  
Supervisor: Professor Simon Tavaré

Research Assistant (Computational Biology) *2005, October - 2006, July*  
Department of Oncology, University of Cambridge  
Supervisor: Professor Simon Tavaré

## Visiting Appointments

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Department of Oncology, University of Cambridge (UK) (Aparício Group, Cancer Genomics Programme, as visiting PhD student)	<i>2003, January - 2005, July</i>
Institute of Molecular and Cell Biology (Singapore) (Fugu Informatics Group, as visiting PhD student)	<i>2002, August</i>
European Molecular Biology Laboratory (Heidelberg, Germany) (Valcárcel Group, Gene Expression Programme, as visiting PhD student)	<i>2002, February - May</i>

## Awards and Honors

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EMBO (European Molecular Biology Organization) Installation Grant	<i>2015 -</i>
FCT Investigator Starting Grant	<i>2015 -</i>
Marie Curie International Outgoing Fellowship	<i>2011, June - 2014, May</i>
Canadian Institutes for Health Research Postdoctoral Fellowship	<i>2010, July - 2012, May</i>
EMBO (European Molecular Biology Organization) Short-Term Fellowship (ASTF 44-2005)	<i>2005</i>
Fundação para a Ciência e a Tecnologia, Portugal / European Social Fund (3rd FP) Fellowship PRAXIS XXI SFRH/BD/2914/2000 (PhD)	<i>2001-2004</i>
PRODEP III, Portuguese Min. Education / European Social Fund (3rd FP) Fellowship “Programa de Estágios no Ensino Superior”	<i>2000, March-August</i>

## Other Projects and Grant Support

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EMBO YIP Small Grant (as P.I.)	<i>2017</i>
AstraZeneca Innovate Competition - Translational Research Grant (as P.I.) “Alternative splicing during neuronal development” (awarded to Mariana Ferreira)	<i>2016 - 2017</i>
iMM Directors’ Exploratory Project (as P.I.) “RNA regulation in colorectal cancer: transcriptomic landscapes of metastasis and their clinical implications”	<i>2016 - 2017</i>
FCT Project PTDC/BIM-MED/3295/2014 (co-investigator 15%) “Angiocrine factors as modulators of spinal cord regeneration” (PI: Leonor Saúde)	<i>2016, May 1 - 2019, April 30</i>
FCT Project PTDC/EMS-SIS/0642/2014 (co-investigator 15%) “Personalizing cancer therapy through integrated modeling and decision” (PI: Susana Vinga)	<i>2016, June 17 - 2019, June 16</i>
FCT Project EXPL/EMS-SIS/1954/2013 (co-investigator 15%) “Multiscale modeling for personalized therapy of bone metastasis” (PI: Susana Vinga)	<i>2014, April - 2015, September</i>

## Publications

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### Journal Articles:

(key articles with highlighted numbering)

(39) Cardoso V, Chesn J, Ribeiro H, Garca-Cassani B, Carvalho T, Bouchery T, Shah K, Barbosa-Morais NL, Harris N, Veiga-Fernandes H. “Neuronal regulation of type 2 innate lymphoid cells via neuromedin U”. *Nature*, 2017 Sep 14; **549**(7671):277-281

**(38)** Gallego-Paez LM, Bordone MC, Leote AC, Saraiva-Agostinho N, Ascensão-Ferreira M, Barbosa-Morais NL<sup>+</sup>. “Alternative splicing: the pledge, the turn and the prestige - The key role of alternative splicing in human biological systems”. *Human Genetics*, 2017 Apr 3; doi: 10.1007/s00439-017-1790-y (+ corresponding author)

(37) Rijo-Ferreira F, Pinto-Neves D, Barbosa-Morais NL, Takahashi JS, Figueiredo LM. “Trypanosoma brucei metabolism is under circadian control”. *Nat Microbiol*, 2017 Mar 13; **2**:17032

(36) Liu Y, Noon AP, Cabeza EA, Shen J, Kuk C, Ilczynski C, Ni R, Sukhu B, Chan K, Barbosa-Morais NL, Hermanns T, Blencowe BJ, Azad A, van der Kwast TH, Catto JWF, Zlotta AR, Wrana JL. “Next generation RNA sequencing of archival formalin fixed paraffin embedded urothelial bladder cancer”. *Eur Urol*, 2014 Dec; **66**(6):982-6

(35) Braunschweig U, Barbosa-Morais NL, Pan Q, Nachman EN, Alipahani B, Gonatopoulos-Pournatzis T, Frey B, Irimia M, Blencowe BJ. “Widespread intron retention in mammals functionally tunes transcripts”. *Genome Res*, 2014 Nov; **24**(11):1774-86

(34) Pena AC, Pimentel MR, Manso H, Vaz-Drago R, Neves D, Aresta-Branco F, Ferreira FR, Guegan F, Coelho LP, Carmo-Fonseca M, Barbosa-Morais NL, Figueiredo LM. “Trypanosoma brucei histone H1 inhibits RNA polymerase I transcription and is important for parasite fitness in vivo”. *Mol Microbiol*, 2014 Aug; **93**(4):645-63

(33) Han H, Irimia M, Ross PJ, Sung HK, Alipanahi B, David L, Golipour A, Gabut M, Michael IP, Nachman EN, Wang E, Trcka D, Thompson T, O’Hanlon D, Slobodeniuc V, Barbosa-Morais NL, Burge CB, Moffat J, Frey BJ, Nagy A, Ellis J, Wrana JL, Blencowe BJ. “MBNL proteins repress ES-cell-specific alternative splicing and reprogramming”. *Nature*, 2013 Jun 13; **498**(7453):241-5

(32) Ward MC, Wilson MD, Barbosa-Morais NL, Schmidt D, Stark R, Pan Q, Schwalie PC, Menon S, Lukk M, Watt S, Thybert D, Kutter C, Kirschner K, Flicek P, Blencowe BJ, Odom DT. “Latent Regulatory Potential of Human-Specific Repetitive Elements”. *Mol Cell*, 2013 Jan 24; **49**(2):262-72

**(31)** Barbosa-Morais NL, Irimia M, Pan Q, Xiong HY, Gueroussov S, Lee LJ, Slobodeniuc V, Kutter C, Watt S, Çolak R, Kim T, Misquitta-Ali CM, Wilson MD, Kim PM, Odom DT, Frey BJ, Blencowe BJ. “The Evolutionary Landscape of Alternative Splicing in Vertebrate Species”. *Science*, 2012 Dec 11; **338**(6114):1587-93

(30) Muralidhar B, Winder D, Murray M, Palmer R, Barbosa-Morais N, Saini H, Roberts I, Pett M, Coleman N. “Functional evidence that Droscha overexpression in cervical squamous cell carcinoma affects cell phenotype and microRNA profiles”. *J Pathol*, 2011 Aug; **224**(4):496-507

(29) Ahmed AA, Lu Z, Jennings NB, Etemadmoghadam D, Capalbo L, Jacamo RO, Barbosa-Morais N, Le XF; Australian Ovarian Cancer Study Group, Vivas-Mejia P, Lopez-Berestein G, Grandjean G, Bartholomeusz G, Liao W, Andreeff M, Bowtell D, Glover DM, Sood AK, Bast RC Jr. “SIK2 is a centrosome kinase required for bipolar mitotic spindle formation that provides a potential target for therapy in ovarian cancer”. *Cancer Cell*, 2010 Aug 9; **18**(2):109-21

(28) Dunning MJ, Curtis C, Barbosa-Morais NL, Caldas C, Tavaré S, Lynch AG.. “The importance of platform annotation in interpreting microarray data”. *Lancet Oncol*, 2010 Aug; **11**(8):717

**(27)** Barbosa-Morais NL<sup>+</sup>, Dunning MJ, Samarajiva SA, Darot JFJ, Ritchie ME, Lynch AG, Tavaré S. “A re-annotation pipeline for Illumina BeadArrays: improving the interpretation of gene expression data”. *Nucleic Acids Research*, 2010 Jan 1; **38**(3):e17 (+ corresponding author)

- (26) Lynch AG, Dunning MJ, Iddawela M, Barbosa-Morais NL, Ritchie ME. “Considerations for the processing and analysis of GoldenGate-based two-colour Illumina platforms”. *Statistical Methods in Medical Research*, 2009 Oct;**18**(5):437-52
- (25) White V, Scarpini C, Barbosa-Morais NL, Ikele E, Carter S, Laskey RA, Miller R, Coleman N. “Isolation of stool-derived mucus provides a high yield of colonocytes suitable for early detection of colorectal carcinoma”. *Cancer Epidemiology, Biomarkers & Prevention*, 2009 Jul;**18**(7):2006-13
- (24) Dunning AM, Healey CS, Baynes C, Maia AT, Scollen S, Vega A, Rodriguez R, Barbosa-Morais NL, Ponder BAJ, et al. “Association of ESR1 gene tagging SNPs with breast cancer risk”. *Human Molecular Genetics*, 2009 Mar 15;**18**(6):1131-9
- (23)** Wilson MD\*, Barbosa-Morais NL\*, Schmidt D, Conboy CM, Vanes L, Tybulewicz VLJ, Fisher EMC, Tavaré S, Odom DT. “Species-specific transcription in mice carrying human chromosome 21”. *Science*, 2008 Oct 17;**322**(5900):434-438 (\* equal contributions)
- (22) Grosso AR, Gomes AQ, Barbosa-Morais NL, Caldeira S, Thorne NP, Grech G, von Lindern M, Carmo-Fonseca M. “Tissue-specific splicing factor gene expression signatures”. *Nucleic Acids Research*, 2008 Sep;**36**(15):4823-32
- (21) Dunning MJ, Ritchie ME, Barbosa-Morais NL, Tavaré S, Lynch AG. “A first spike-in validation of the Illumina specific Variance-Stabilizing Transformation”. *BMC Research Notes*, 2008 Jun 4; **1**:18
- (20) Palmer RD, Barbosa-Morais NL, Gooding EL, Muralidhar B, Thornton CM, Pett MR, Roberts I, Schneider DT, Thorne N, Tavaré S, Nicholson JC, Coleman N; On behalf of The Childrens Cancer and Leukaemia Group (CCLG). “Pediatric malignant germ cell tumours show characteristic transcriptome profiles”. *Cancer Research*, 2008 Jun 1;**68**(11):4239-47
- (19) Dunning MJ, Barbosa-Morais NL, Lynch AG, Tavaré S, Ritchie ME. “Statistical issues in the analysis of Illumina data”. *BMC Bioinformatics*, 2008 Feb 6;**9**(1):85
- (18) Driver K, Song S, Lesueur F, Ahmed S, Barbosa-Morais NL, Tyrer J, Ponder BAJ, Easton DF, Pharoah PDP, Dunning AM, for the SEARCH Team. “Association of single-nucleotide polymorphisms in the Cell Cycle genes with breast cancer in the British population”. *Carcinogenesis*, 2008 Feb;**29**(2):333-41
- (17) Conboy CM, Spyrou C, Thorne NP, Wade EJ, Barbosa-Morais NL, Wilson MD, Bhattacharjee A, Young RA, Tavaré S, Lees JA, Odom DT. “Cell cycle genes are the evolutionarily conserved targets of the E2F4 Transcription Factor”. *PLoS ONE*. 2007 Oct 24;**2**(10):e1061
- (16) Chin SF, Teschendorff AE, Marioni JC, Wang Y, Barbosa-Morais NL, Thorne NP, Costa JL, Pinder SE, van de Wiel MA, Green AR, Ellis IO, Porter PL, Tavaré S, Brenton JD, Ylstra B, Caldas C. “High-resolution array-CGH and expression profiling identifies a novel genomic subtype of ER negative breast cancer”. *Genome Biol*. 2007 Oct 9;**8**(10):R215
- (15) Blenkiron C, Goldstein LD, Thorne NP, Spiteri I, Chin SF, Dunning MJ, Barbosa-Morais NL, Teschendorff AE, Green AR, Ellis IO, Tavaré S, Caldas C, Miska EA. “MicroRNA expression profiling of human breast cancer identifies new markers of tumour subtype”. *Genome Biol*. 2007 Oct 8;**8**(10):R214
- (14) Massie CE, Adryan B, Barbosa-Morais NL, Lynch AG, Tran M, Neal DE, Mills IG. “Novel Androgen Receptor genomic targets reveal an interaction with the ETS1 transcription factor”. *EMBO Rep*. 2007 Sep;**8**(9):871-8
- (13) Muralidhar B, Goldstein LD, Ng G, Winder DM, Palmer RD, Gooding EL, Barbosa-Morais NL, Mukherjee G, Thorne NP, Roberts I, Pett MR, Coleman N. “Global microRNA profiles in cervical squamous cell carcinoma depend on Drosha expression levels”. *J Pathol*. 2007 Aug;**212**(4):368-77
- (12) Gama-Carvalho M, Barbosa-Morais NL, Brodsky AS, Silver PA, Carmo-Fonseca M. “Genome wide identification of functionally distinct subsets of cellular mRNAs associated with two nucleocytoplasmic-shuttling mammalian splicing factors”. *Genome Biol*. 2006 Nov 30;**7**(11):R113

- (11) Teschendorff AE, Naderi A, Barbosa-Morais NL, Pinder SE, Ellis IO, Aparicio S, Brenton JD, Caldas C. “A consensus prognostic gene expression classifier for ER positive breast cancer”. *Genome Biol.* 2006 Oct 31;7(10):R101
- (10) Mollet I, Barbosa-Morais NL, Andrade J, Carmo-Fonseca M. “Diversity of human U2AF splicing factors”. (Review) *FEBS J*, 2006 Nov;273(21):4807-16
- (9) Ibrahim AEK, Thorne NP, Baird K, Barbosa-Morais NL, Tavaré S, Collins VP, Wyllie AH, Arends MJ, Brenton JD. “MMASS: an optimised array-based method for assessing CpG island methylation”. *Nucleic Acids Res.* 2006;34(20):e136
- (8) Chin SF, Wang Y, Thorne NP, Teschendorff AE, Pinder SE, Vias M, Naderi A, Roberts I, Barbosa-Morais NL, Garcia MJ, Iyer NG, Kranjac T, Robertson JF, Aparicio S, Tavaré S, Ellis I, Brenton JD, Caldas C. “Using array-CGH to define molecular portraits of primary breast cancer”. *Oncogene*, 2007 Mar 22;26(13):1959-70
- (7) Naderi A, Teschendorff AE, Barbosa-Morais NL, Pinder SE, Green AR, Powe DG, Robertson JF, Aparicio S, Ellis IO, Brenton JD, Caldas C. “A gene-expression signature to predict survival in breast cancer across independent data sets”. *Oncogene*, 2007 Mar 1;26(10):1507-16
- (6) Teschendorff AE, Naderi A, Barbosa-Morais NL, Caldas C. “PACK: Profile Analysis using Clustering and Kurtosis to find molecular classifiers in cancer”. *Bioinformatics*, 2006 Sep 15;22(18):2269-75
- (5) Stamm S, Riethoven JJ, Le Texier V, Gopalakrishnan C, Kumanduri V, Tang Y, Barbosa-Morais NL, Thanaraj TA. “ASD: a bioinformatics resource on alternative splicing”. *Nucleic Acids Res*, 2006 Jan 1;34(Database issue):D46-55
- (4) Barbosa-Morais NL, Carmo-Fonseca M, Aparicio S. “Systematic genome-wide annotation of spliceosomal proteins reveals differential gene family expansion”. *Genome Res*, 2006 Jan;16(1):66-77
- (3) Teschendorff AE, Wang Y, Barbosa-Morais NL, Brenton JD, Caldas C. “A variational Bayesian mixture modelling framework for cluster analysis of gene-expression data”. *Bioinformatics*, 2005 Jul;21(13):3025-33
- (2) Pacheco TR, Gomes AQ, Barbosa-Morais NL, Benes V, Ansorge W, Wollerton M, Smith CW, Valcarcel J, Carmo-Fonseca M. “Diversity of vertebrate splicing factor U2AF<sup>35</sup>: identification of alternatively spliced U2AF1 mRNAs”. *J Biol Chem*, 2004 Jun 25;279(26):27039-49
- (1) Naderi A, Ahmed AA, Barbosa-Morais NL, Aparicio S, Brenton JD, Caldas C. “Expression microarray reproducibility is improved by optimising purification steps in RNA amplification and labelling”. *BMC Genomics*, 2004 Jan 30;5(1):9

#### **Book chapters:**

Lynch AG, Smith ML, Dunning MJ, Cairns JM, Barbosa-Morais NL, Tavaré S. “beadarray, BASH and HULK - tools to increase the value of Illumina BeadArray experiments”. In A. Gusnato, K.V. Mardia, & C.J. Fallaize (eds), *Statistical Tools for Challenges in Bioinformatics*, 2009 pp33-37. Leeds, Leeds University Press

#### **Non-refereed Contributions:**

*Handbook of Circuit Theory and Fundamentals of Electronics*

José Epifânio da Franca & Nuno Morais

Secção de Folhas, Associação de Estudantes do Instituto Superior Técnico - 1999, 2000, 2001

### **Editorial and Refereeing**

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Associate Editor for *BMC Bioinformatics* (2010–) and *BMC Cancer* (2010–).

Reviewer for *Ageing Research Reviews*, *Biological Reviews*, *Briefings in Bioinformatics*, *BMC Bioinformatics*, *BMC Cancer*, *BMC Genomics*, *EMBO Journal*, *Integrative and Comparative Biology*, *International Reviews of Cell and Molecular Biology*, *Molecular Systems Biology*, *Nucleic Acids Research*, *PLoS Computational*

## Supervision

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### Postdoc:

- . Joana Xavier, FCT Postdoctoral Fellow [co-supervisor]  
Maia Lab, Centre for Biomedical Research, University of Algarve, Portugal *2015, November -*  
(main supervisor: Ana Teresa Maia)
- . Lina Gallego, UNESCO-L'Oreal International Fellow (For Women in Science Program)  
Instituto de Medicina Molecular, Lisbon, Portugal *2015, July -*
- . Teresa Maia  
Instituto de Medicina Molecular, Lisbon, Portugal *2016, November - 2017, June*

### PhD supervisor:

- . Joel Indi, Graduate Programme Science for Development (PGCD) [co-supervisor]  
Instituto de Medicina Molecular, Lisbon, Portugal *2017, June -*  
(main supervisor: Eduardo Eyra)
- . Mariana Ferreira, LisbonBioMed PhD Program  
Instituto de Medicina Molecular, Lisbon, Portugal *2017, March -*
- . Marie Bordone, LisbonBioMed PhD Program  
Instituto de Medicina Molecular, Lisbon, Portugal *2015, March -*
- . Marta Amorim, CAML PhD Program  
Instituto de Medicina Molecular, Lisbon, Portugal *2014, April - 2016, August*  
(co-supervised with Sérgio Dias and Pedro Castelo Branco)

### PhD thesis committee member:

- . Saumya Dileep Kumar, Enlight-ten / Marie Sklodowska-Curie Project  
Instituto de Medicina Molecular, Lisbon, Portugal *2016, May -*
- . Helena Brigas, LisbonBioMed PhD Program  
Instituto de Medicina Molecular, Lisbon, Portugal *2016, March -*
- . Vasco Conceição, LisbonBioMed PhD Program  
Instituto de Medicina Molecular, Lisbon, Portugal *2015, March -*
- . Bruno Gonçalves, CAML PhD Program  
Instituto de Medicina Molecular, Lisbon, Portugal *2015, January -*
- . Hugo Santos, BioSys PhD Program  
Faculty of Sciences, University of Lisbon, Portugal *2014, October -*
- . Fernando Martins, CAML PhD Program  
Instituto de Medicina Molecular, Lisbon, Portugal *2013, December -*

### Masters thesis supervisor:

- . Bernardo Almeida, Masters in Oncobiology  
University of Algarve, Portugal *2016, September -*
- . Mariana Ferreira, Masters in Biomedical Engineering  
Instituto Superior Técnico, Lisbon, Portugal *2016, February - October*
- . Ana Carolina Leote, Masters in Biological Engineering  
Instituto Superior Técnico, Lisbon, Portugal *2016, February - October*
- . Teresa Maia, Masters in Bioinformatics and Computational Biology  
Faculty of Sciences, University of Lisbon, Portugal *2015, September - 2016, October*
- . Nuno Agostinho, Masters in Informatics  
Faculty of Sciences, University of Lisbon, Portugal *2015, September - 2016, October*
- . Bárbara Caravela, Masters in Biomedical Engineering  
Instituto Superior Técnico, Lisbon, Portugal *2015*  
(co-supervised with Susana Vinga and Alexandra Carvalho)
- . Pedro Faria, Masters in Biomedical Engineering  
Instituto Superior Técnico, Lisbon, Portugal *2014*  
(co-supervised with Susana Vinga and Alexandra Carvalho)

### Other:

- . Juan Carlos Gomez Verjan, visiting PhD student from UNAM Mexico

Instituto de Medicina Molecular, Lisbon, Portugal	<i>2016, April - July</i>
. Mariana Ferreira, summer trainee (IST Masters in Biomedical Engineering)	
Instituto de Medicina Molecular, Lisbon, Portugal	<i>2015, July - September</i>
. Julie Addison, summer project of MPhil in Computational Biology	
University of Cambridge, UK	<i>2007</i>

## Teaching/training experience

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### Graduation programmes - Lecturer:

“Computational and disease transcriptomics”	
LisbonBioMed PhD Program, Instituto de Medicina Molecular, Portugal	<i>2017, January 10</i>
LisbonBioMed PhD Program, Instituto de Medicina Molecular, Portugal	<i>2016, January 5</i>
“Biologia Computacional: splicing & cancro”	<i>2016, October 29</i>
Masters in Oncobiology, Faculty of Medicine of the University of Lisbon, Portugal	
Bioinformatics Course (coordinator)	
PGCD, Graduate Program Science for Development, University of Cape Verde, Praia, Cape Verde	<i>2016, February 22-26</i>
“RNA-Seq and disease transcriptomics”	
FCT PhD Programme - Medicines and Pharmaceutical Innovation (i3DU), Faculty of Pharmacy of the University of Lisbon, Portugal	<i>2015, September 15</i>
“Analysis of Transcriptional Regulation and RNA Processing from RNA-Seq Data”	
Masters in Bioinformatics and Computational Biology, Faculty of Sciences of the University of Lisbon, Portugal	<i>2015, July 23</i>
LisbonBioMed PhD Program, Instituto de Medicina Molecular, Portugal	<i>2015, January 7</i>
Masters in Bioinformatics and Computational Biology, Faculty of Sciences of the University of Lisbon, Portugal	<i>2014, July 17</i>
PhD Program in BioEngineering - Cell Therapies & Regenerative Medicine, Instituto de Medicina Molecular, Portugal	<i>2014, April 17</i>
LisbonBioMed PhD Program, Instituto de Medicina Molecular, Portugal	<i>2014, February 27</i>
R and Bioconductor Workshop (Computational Biology course)	
Masters in Biomedical Sciences, University of Algarve, Faro, Portugal	<i>2015, April 21-22</i>
“Alternative splicing in evolution and cancer”	
PhD Program in Integrative Biology and Biomedicine, Instituto Gulbenkian de Ciência, Oeiras (Lisbon), Portugal	<i>2015, January 30</i>
“The evolutionary landscape of alternative splicing in vertebrate species”	<i>2013, July 25</i>
Masters in Bioinformatics and Computational Biology, Faculty of Sciences of the University of Lisbon, Portugal	
Functional Genomics course	<i>2007/2008, 2008/2009, 2009/2010</i>
MPhil in Computational Biology, DAMTP, University of Cambridge, UK	
Systems Biology course - Engineering for Life Sciences	<i>2009, 2010</i>
Engineering Tripos, University of Cambridge, UK	
Course in “Microarray Data Analysis using R and BioConductor”	<i>2010, January 11-12</i>
M1GPBIDM option Biotechnology, University of Poitiers, France	
Bioinformatics module - Course in “Regulation of Gene Expression”	<i>2009, April 13-17</i>
GABBA Program (IBMC, Porto), Faculty of Sciences, University of Lisbon, Portugal	
Course in “Analysis of DNA expression microarrays”	<i>2009, March 11-13</i>
PhD Programme in Computational Biology, Instituto Gulbenkian de Ciência, Oeiras (Lisbon), Portugal	

“Splicing & Bioinformatics” module - Course in “mRNA biogenesis”  
Gulbenkian PhD Programme in Biomedicine, Instituto Gulbenkian de Ciência, Oeiras (Lisbon),  
Portugal *2003, October 14-17 & 2004, October 13-19*

“Splicing & Bioinformatics” module - Course in “Genetic Evolution” *2004, March 15-19*  
GABBA Program, Institute for Molecular and Cell Biology, Porto, Portugal

### **High-throughput Data Analysis Courses - Lecturer / Instructor:**

NGS Data Analysis, RNAseq, ChIPseq *2016, March 30-31*  
Instituto Gulbenkian de Ciência, Oeiras (Lisbon), Portugal

X Summer Bioinformatics Course *2014, January 30-31*  
Ribeirão Preto Medical School, University of São Paulo, Brazil

Microarray Data Analysis using R and Bioconductor  
Instituto Gulbenkian de Ciência, Oeiras (Lisbon), Portugal *2010, September 6-10*  
Department of Genetics, University of Cambridge, UK *2010, February 24-26*  
Instituto Gulbenkian de Ciência, Oeiras (Lisbon), Portugal *2009, September 14-18*  
Department of Genetics, University of Cambridge, UK *2009, June 1-3*  
University of Oslo, Norway *2008, December 1-3*  
Instituto Gulbenkian de Ciência, Oeiras (Lisbon), Portugal *2008, September 29 - October 3*

Microarray and high throughput sequencing data analysis with Bioconductor *2010, February 2*  
European Bioinformatics Institute, Hinxton, Cambridgeshire, UK

EMBO Practical Course on Analysis and Informatics of Microarray Data *2009, October 12-17*  
European Bioinformatics Institute, Hinxton, Cambridgeshire, UK

Hands-on training at EBI - Transcriptomics *2009, January 19-22*  
European Bioinformatics Institute, Hinxton, Cambridgeshire, UK

Aveiro Molecular Genomics, advanced course on mRNA profiling using DNA microarrays *2008, July 21-25*  
University of Aveiro, Portugal

Hands-on training at EBI - Transcriptomics *2008, January 29*  
European Bioinformatics Institute, Hinxton, Cambridgeshire, UK

Introductory Course on Microarray Data Analysis *2007, October 15-19*  
Instituto Gulbenkian de Ciência, Oeiras (Lisbon), Portugal

Four 3-day introductory microarray analysis courses *2007, April - 2008, February*  
Cancer Research Institute, Cambridge, UK

“R and Bioconductor” module - Microarray Data Analysis Course *2007, May 24*  
The Norwegian Microarray Consortium, University of Oslo, Norway

“Microarray Technology and Bioinformatics” Summer School *2006, August 28-September 1*  
University of Camerino, Italy

### **Other:**

Teaching/research assistant - Circuit Theory & Fundamentals of Electronics *1999-2001*  
Instituto Superior Técnico - Technical University of Lisbon, Portugal

Lecture on Physics and Chemistry to secondary school students *1998*  
Monserate Secondary School, Viana do Castelo, Portugal

### **Invited Talks**

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<u>Computational biology in the translation of cancer "omics"</u> ReTuBi Joint Summer School, Lisbon, Portugal	2017, May 29
<u>Computational biology, splicing, evolution and cancer</u> IHMT PhD students Retreat, Sesimbra, Portugal	2017, May 28
<u>Alternative splicing landscapes of ageing and neurodegeneration</u> CEDOC, Lisbon, Portugal	2017, April 5
<u>Computational Biology: splicing in evolution and disease</u> X Encontro Nacional dos Estudantes de Engenharia Biomédica, Coimbra, Portugal	2017, March 3
<u>Profiling alternative splicing in evolution and disease</u> International Institute of Molecular and Cell Biology in Warsaw, Poland 2016 Summer School in Computational Biology, University of Coimbra, Portugal	2017, January 19 2016, September 7
<u>My way into Computational Biology</u> Career Path Day, International Institute of Molecular and Cell Biology in Warsaw, Poland	2017, January 19
<u>Gene splicing in evolution and disease</u> Department of Physics, Instituto Superior Técnico, Lisbon, Portugal	2016, November 2
<u>Gene expression profile of Kidney Tumors</u> Novartis Oncology Advanced RCC Preceptorship, Lisbon, Portugal	2016, October 27
<u>Alternative splicing landscapes of cancer</u> Instituto Português de Oncologia, Lisbon, Portugal	2016, October 12
<u>Science &amp; Creativity</u> RedeValor Conference, Rectory, University of Lisbon, Portugal	2016, May 6
<u>Alternative splicing and the dynamics of genomes' coding potential</u> 1st BioSAM, Faculty of Sciences, University of Lisbon, Portugal	2016, April 17
<u>Biologia Computacional: splicing e cancro</u> IV Jornadas de Bioengenharia, Universidade da Beira Interior, Covilhã, Portugal	2016, March 3
<u>Computational Biology in the study of Alternative Splicing in Cancer</u> II Semana da Bioengenharia, Instituto Superior Técnico, Lisbon, Portugal	2016, March 2
<u>Biologia Computacional: Splicing, Evolução e Cancro</u> Conversas: Oncobiologia, Núcleo de Biologia Celular e Molecular, FCT NOVA, Portugal IX Jornadas de Engenharia Biológica, Instituto Superior Técnico, Lisbon, Portugal	2015, December 2 2014, March 18
<u>Alternative splicing in evolution and cancer</u> ICVS - Life and Health Sciences Research Institute, Braga, Portugal	2015, April 27
<u>Alternative splicing landscapes in clear cell renal cell carcinomas reveal novel candidate markers for prognosis</u> The 4th Global Cancer Genomics Consortium Symposium, Kyoto University, Japan	2014, November 14
<u>Bioinformática: a nova era</u> III Jornadas de Bioengenharia, Universidade da Beira Interior, Covilhã, Portugal	2014, May 28
<u>Analysis of Transcriptional Regulation and RNA Processing from RNA-Seq Data</u> Instituto Gulbenkian de Ciência, Oeiras, Portugal Bioinformatics Open Days, University of Minho, Braga, Portugal Statistics Department, Campinas State University (UNICAMP), Brazil Computational Biology and Bioinformatics Seminars, IMM Lisbon, Portugal The 3rd Global Cancer Genomics Consortium Symposium: From Oncogenomics To Cancer Care - Teaching Workshop, IMM Lisbon, Portugal	2014, May 12 2014, February 28 2014, February 3 2013, October 30 2013, September 18

<u>Studying the evolution of tissue-specific alternative splicing using RNA-Seq data</u> Toronto Bioinformatics User Group Trainee Seminar, Canada	2013, April 24
<u>The evolutionary landscape of alternative splicing in vertebrate species</u> Weatherall Institute of Molecular Medicine, Oxford, UK Cheriton School of Computer Science, University of Waterloo, Canada Institute of Molecular Medicine, Lisbon, Portugal BioFIG Seminar - Faculty of Sciences, University of Lisbon, Portugal	2013, March 26 2013, March 13 2012, December 20 2012, December 19
<u>Marie Curie International Fellowships - Case Study</u> Seminar Day - European Programmes for Higher Education and Research: Opportunities for Canadian Institutions, Toronto, Canada	2011, November 8
<u>The Illumina Code: are microarrays telling you the whole truth about cancer?</u> 5th CFGBC Symposium "From Array to Understanding Diseases", Ljubljana, Slovenia Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland 2nd Annual ENBDC Workshop, Weggis, Switzerland	2010, June 16 2010, May 4 2010, April 23
<u>Of trisomic mice and illuminated men (job talk)</u> Harvard Medical School, Boston, MA, USA Koshland Hall, U.C. Berkeley, CA, USA The Donnelly Centre, University of Toronto, Canada Whitehead Institute for Biomedical Research, Cambridge, MA, USA	2009, December 15 2009, December 9 2009, December 4 2009, December 3
<u>Computational Epigenetics</u> Bioinformatics in Genomic and Proteomic Data Conference, Brno, Czech Republic	2009, November 26
<u>Determinants of tissue-specific transcriptional regulation in a transplanted chromosome</u> BioFIG/GABBA Workshop on Gene Expression: From Genes to Systems, Faculty of Sciences, University of Lisbon, Portugal University College London, UK University of East Anglia, Norwich, UK Department of Biology, University of Aveiro, Portugal	2009, April 15 2009, February 18 2009, February 6 2008, July 22
<u>História(s) da Bioinformática</u> Engineering Faculty, Portuguese Catholic University, Lisbon, Portugal	2008, October 2
<u>Computational biology: microarrays and beyond</u> (replacing and on behalf of Simon Tavaré) Workshop "Microarrays in Clinical Oncology - promises and pitfalls", Sociedade de Ciências Médicas, Lisbon, Portugal	2007, June 30
<u>Differential expansion of splicing factors families in eukaryotes</u> Medical Research Council - Biostatistics Unit, Cambridge, UK	2006, March 15
<u>Bioinformatics: sequence analysis and applications</u> Department of Histopathology and Cytology, University of Cambridge, UK	2006, March 15
<u>Splicing &amp; Bioinformatics</u> FCUL Grad. Program in Biophysics and Biomedical Engineering, IMM, Lisbon, Portugal Theoretical Immunology Group, Instituto Gulbenkian de Ciência, Oeiras, Portugal ALGOS Group, Instituto de Engenharia de Sistemas e Computadores, Lisbon, Portugal	2004, January 7 2002, December 12 2002, December 3
<u>História(s) da Biofísica</u> 6ª Semana da Física (NFIST), Instituto Superior Técnico, Lisbon, Portugal	2002, October 17

## Participation in Meetings

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### Organization:

Workshop "Microarrays in Clinical Oncology - promises and pitfalls" (co-organizer)	2007, June 30
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Sociedade de Ciências Médicas, Lisbon, Portugal

## Talks:

*A bioinformatics application for the analysis and visualisation of alternative splicing in cancer*  
4th Post-EURASNET Symposium, Poznan, Poland 2016, September 28

*Alternative splicing landscapes of disease*  
EMBO Young Scientists Forum, Lisbon, Portugal 2016, September 1  
EMBO Young Investigator Meeting, EMBL Heidelberg, Germany 2016, May 13

*Alternative splicing landscapes of cancer*  
EMBO YIP Cancer Meeting, Heraklion, Greece 2016, June 28  
EMBO Young Investigator Meeting, PRBB Barcelona, Spain 2015, May 13

*Species-specific differences in alternative splicing are primarily governed by evolutionary changes in cis-regulatory elements*  
ISMB/ECCB 2011 - Special Interest Group: Alternative Splicing, Austria Centre Vienna 2011, July 15

*Determinants of tissue-specific transcriptional regulation in a transplanted chromosome*  
First Portuguese Forum on Computational Biology FPBC-2008, Instituto Gulbenkian de Ciência, Lisbon, Portugal 2008, July 12

*A Gramática dos Genomas*  
1<sup>st</sup> Meeting in Biomedical Engineering IST/FML, U. Lisbon Medical School, Portugal 2002, October 30

*Heart Rate Variability: Latest News*  
XV International Conference for Physics Students, Zadar, Croatia 2000, August 4-11

*Breathing Physics*  
XIV International Conference for Physics Students, University of Helsinki, Finland 1999, August 14-20

## Poster presentations:

*The evolutionary landscape of alternative splicing in vertebrate species*  
Barbosa-Morais NL, Irimia M, Pan Q, Xiong HY, Gueroussov S, Lee LJ, Slobodeniuc V, Kutter C, Watt S, Çolak R, Kim TH, Misquitta-Ali CM, Wilson MD, Kim PM, Odom DT, Frey BJ, Blencowe BJ  
RNA 2013 - The 18th Annual Meeting of the RNA Society, Davos, Switzerland 2013, June 11-16  
Pacific Symposium of Biocomputing (PSB) 2013, The Big Island of Hawaii, USA 2013, January 3-7  
ICSB - The 13th International Conference on Systems Biology, Toronto, Canada 2012, August 19-23

*Species-specific differences in alternative splicing are primarily governed by evolutionary changes in cis-regulatory elements*  
Pan SQ, Slobodeniuc V, Barbosa-Morais NL, Wilson MD, Kutter C, Han H, Odom DT, Blencowe BJ  
ISMB/ECCB 2011 - Special Interest Group: Alternative Splicing, Austria Centre Vienna 2011, July 15-16

*Establishing determinants of species-specific alternative splicing using mice harboring human chromosome 21*  
Pan SQ, Slobodeniuc V, Barbosa-Morais NL, Wilson MD, Kutter C, Tybulewicz VLJ, Fisher EMC, Odom DT, Blencowe BJ  
Workshop on transcriptional and post-transcriptional regulatory codes, The Drake Underground, Toronto, Canada 2011, May 20  
2nd EURASNET Conference on Alternative Splicing, Granada, Spain 2011, February 28 - March 3

*Re-annotation of microarray probes improves the interpretation of cancer gene expression data*  
Barbosa-Morais NL, Dunning MJ, Samarajiwa SA, Curtis C, Lynch AG, Tavaré S  
RECOMB 2010, FIL, Lisbon, Portugal 2010, August 12-15  
Cambridge Cancer Centre Symposium, CRUK Cambridge Research Institute, UK 2010, June 25  
Cancer-omics: Multilevel interpretation of cancer genome data, CNIO, Madrid, Spain 2009, July 6-8

*Tissue-specific transcription is directed by genome sequence in an aneuploid mouse strain carrying human chromosome 21*

Wilson MD\*, Barbosa-Morais NL\*, Schmidt D, Conboy CM, Vanes L, Tybulewicz VLJ, Fisher EMC, Tavaré S, Odom DT  
First Portuguese Forum on Computational Biology FPBC-2008, Instituto Gulbenkian de Ciência, Lisbon, Portugal  
2008, July 10-12

Gene Expression Profiles of Pediatric Malignant Germ Cell Tumours

Palmer RD, Barbosa-Morais NL, Gooding EL, Muralidhar B, Thornton CM, Pett MR, Roberts I, Schneider DT, Thorne N, Tavaré S, Nicholson JC, Coleman N; On behalf of The Childrens Cancer and Leukaemia Group (CCLG)  
Statistics for Biomolecular Data Integration and Modeling - Workshop, Centro Stefano Franscini, Ascona, Switzerland  
2007, June 10-15

Resemblance between Teleost Gene Duplication and Mammalian Alternative Splicing

Barbosa-Morais NL, Aparício S  
Symposium on Alternative Transcript Diversity, European Bioinformatics Institute, Hinxton, Cambridgeshire, UK  
2004, November 22-23

**Poster judging:**

5th EMBO Meeting, Birmingham, United Kingdom  
2015, September 5-8

**Thesis jury membership**

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**PhD, main examiner:**

Babita Singh, Universitat Pompeu Fabra, Barcelona, Spain  
2017, May 11  
Margherita Francescato, Universidade do Porto, Portugal  
2015, January 20

**PhD, reserve member:**

Marta Magdalena Kameniak, Autonoma University of Madrid, Spain  
2014, April 29

**Masters, main examiner:**

João Diogo Pinto, Universidade de Lisboa, Portugal  
2015, May 20  
Ioana Posa, Universidade de Lisboa, Portugal  
2015, January 12  
Tomás Pires de Carvalho Gomes, Universidade de Lisboa, Portugal  
2014, December 5

**Other academic experience**

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Attendance of EMBO Laboratory Management Course (Leimen, Germany)  
2016, July 12-15

Member of PAPS - Portuguese-American Post-graduate Society

. Member of the Executive Committee  
July 2015 -  
. Co-leader of the Alumni Chapter  
July 2015 - April 2016  
. Leader of the Toronto Chapter  
Jan 2011 - May 2013

Member of the Toronto Bioinformatics User Group (TorBUG) Committee  
2012-2013

Co-organizer of The Donnelly Centre Postdoctoral Fellows' seminar series and symposium  
2012

Member of PARSUK - Portuguese Association of Researchers and Students in the UK

. Attendance of Science Communication Workshop, Oxford, UK  
2010, May 8-9  
. Co-organizer of LUSO 2007 - 1st Meeting of Portuguese Students and Researchers in the UK, Cambridge, UK  
2007, June 9

Students' tutor, Degree in Biomedical Engineering - Instituto Superior Técnico  
2001-2002