

## Susana Santos Lopes CV

### PERSONAL INFORMATION

Name: Lopes, Susana Santos

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ORCID ID: <http://orcid.org/0000-0002-6733-6356>

Date of birth: 01-11-1970

Nationality: Portuguese

URL for web site: <http://cedoc.unl.pt/cilia-regulation-and-disease/>

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### EDUCATION

- 1999–2003 PhD Department of Biology and Biochemistry, University of Bath, UK.  
1996-1997 MSc. Department of Biology, University of Plymouth, UK.  
1990-1995 Degree (5 years) Marine Biology and Fisheries, University of the Algarve, Portugal

### CURRENT POSITION

- 2012-2018 **FCT Investigator** 5 year contract at Chronic Diseases Research Centre, CEDOC, NOVA Medical School / Nova University of Lisbon, Group leader of the 'Cilia Regulation and Disease' laboratory

### PREVIOUS POSITIONS

- 2006–2011 **Postdoctoral fellow at Leonor Saúde lab** Instituto Gulbenkian de Ciencia and Institute of Molecular Medicine IMM, Faculty of Medicine, Lisbon, Portugal.  
2004–2006 **Postdoctoral fellow at Domingos Henrique lab** Institute of Molecular Medicine IMM, Faculty of Medicine, Lisbon, Portugal.

### FELLOWSHIPS AND AWARDS

- 2014 Young PI Travel award to attend the PI fish meeting in Israel, award received from EuFishBioMed 500€.  
2012 Internal award from FCM-CEDOC 10,000€  
2007 Postdoc Transition Fellowship Instituto Gulbenkian de Ciência 4,500€  
2010 Travel grant to attend Keystone symposia. Fundação Calouste Gulbenkian 1,500€  
2007-2012 Postdoc fellowship SFRH/BPD/34822/2007, FCT, Lisbon Portugal  
2003-2007 Postdoc fellowship SFRH/BPD/14644/2003, FCT, Lisbon Portugal

### SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

I have supervised 14 Master students, 2 PhD students, 2 Postdoc fellows. I am currently supervising 3 PhD students and 1 Master student. I have acted as jury in 4 PhD defenses and in 6 Master Thesis defenses.

### FUNDING (as project coordinator)

- 2015 -2019 FCT-PTDC/BEX-BID/1411/2014- The role of fluid dynamics in the molecular mechanisms of organ laterality. 153,689€  
2012- 2016 FCT-ANR/BEX-BID/0153/2012- Quantitative analysis of asymmetric gene expression in the left-right organizer in response to flow forces: what comes downstream of cilia driven flow? 249,000€  
2008 -2013 FCT-PTDC/SAU-OBID/103981/2008 - Investigation of a new signaling pathway linking deltaD to ciliogenesis and its impact on left-right development. 2010-2013. 140,000€

### TEACHING EXPERIENCE

- 2017-2018 'Molecular Mechanisms of Disease' 5<sup>th</sup> year undergraduate medical students  
2017-2018 Nova Biomedical Research Master Programme – several modules along the year  
2017-2018 'Tissues cells and molecules' lab classes 1<sup>st</sup> year medical undergraduate students  
2013-2018 Co-organizer of the 'Chronic Diseases' module from PhD Programme ProRegeM

- running between the University of the Algarve and NOVA Medical School, Nova University of Lisbon.
- 2013 - 2018 Lecturer on Rare diseases and Developmental Biology modules from PhD Programme ProRegeM between Nova Medical School and Univ. Algarve.
- 2014 – 2017 Lecturer in the Nova Medical School PhD programme for Medical Doctors in Ciliopathies and in Animal Models.
- 2015 - 2017 Lecturer in the IGC PhD programme in Biophysics
- 2012 - 2014 Lecturer in the IGC PhD programme in Animal models – zebrafish

### ORGANISATION OF SCIENTIFIC MEETINGS

- 2018 Co-organizer Cilia 2018 EMBO workshop to be held in Copenhagen October 2-5, 2018
- 2018 Main organizer COST Beat-PCD held in Lisbon at NMS-NOVA February 6-9, 2018
- 2016 Co-organizer 4th European Zebrafish Principal Investigator Meeting, March 2016, Lisbon
- 2013 Workshop on Biophysics of the Left-right organizer IGC/CEDOC, June, Oeiras, Portugal
- 2008 Workshop on Biophysical Mechanisms of Development IGC, May 24-27, Oeiras, Portugal

### PUBLICATIONS

- 2017 New era in Primary Ciliary Dyskinesia diagnosis C. Constant, R. Sousa, A. Pinto, J.F. Moura Nunes, P. Sampaio, **SS. Lopes**, T. Bandeira and L. Pereira. Accepted on the 16th November 2017
- 2017 Usefulness of zebrafish larvae to evaluate drug-induced functional and morphological renal tubular alterations. Gorgulho R, Jacinto R, **Lopes SS**, Pereira SA, Tranfield EM, Martins GG, Gualda EJ, Derks RJE, Correia AC, Steenvoorden E, Pintado P, Mayboroda OA, Monteiro EC, Morello J. Arch Toxicol. 2017 Sep 20. doi: 10.1007/s00204-017-2063-1.
- 2017 Notch/Her12 signalling modulates motile/immotile cilia ratio downstream of Foxj1a in zebrafish left-right organizer. Barbara Tavares, Raquel Jacinto, Pedro Sampaio, Sara Pestana, Andreia Pinto, Andreia Vaz, Mónica Roxo-Rosa, Rui Gardner, Telma Lopes, Britta Schilling, Ian Henry, Leonor Saúde and **Susana Santos Lopes**. Published pdf online on 6 September 2017. doi: 10.7554/eLife.25165.
- 2017 Dynamics of cilia length in left–right development. P. Pintado, P. Sampaio, B. Tavares, T. D. Montenegro-Johnson, D. J. Smith, **S. S. Lopes**. R. Soc. open sci. 2017 4 161102; doi: 10.1098/rsos.161102. Published 8 March 2017.
- 2016 T.D Montenegro-Johnson, D.I. Baker, D.J. Smith and **S.S. Lopes**. Three-dimensional flow in Kupffer's Vesicle. J. Math Biol. Online 29 January 2016. doi: 10.1007/s00285-016-0967-7.
- 2016 Report of the 4th European Zebrafish Principal Investigator Meeting. **Lopes SS**, Distel M, Linker C, Fior R, Monteiro R, Bianco IH, Portugues R, Strähle U, Saúde L. Zebrafish. 2016 Dec;13(6):590-595. Epub 2016 Sep 14.
- 2015 Mónica Roxo-Rosa, Raquel Jacinto, Pedro Sampaio and **Susana Santos Lopes**. The zebrafish Kupffer's vesicle as a model system for the molecular mechanisms by which the lack of Polycystin-2 leads to stimulation of CFTR. Biology Open (2015) 4, 1356-1366 doi: 10.1242/bio.014076.
- 2015 Quanlong Lu, Christine Insinna, Carolyn Ott, Jimmy Stauffer, Petra Pintado, Juliati Rahajeng, Ulrich Baxa, Vijay Walia, Adrian Cuenca, Yoo-Seok Hwang, Ira Daar, **Susana S. Lopes**, Jennifer Lippincott-Schwartz, Peter Jackson, Steve Caplan, and Christopher Westlake". Early steps in primary cilium assembly require EHD1/EHD3-dependent ciliary vesicle formation". Nature Cell Biology. Accepted 13<sup>th</sup> January 2015.

doi: 10.1038/ncb3109.

- 2014 Pedro Sampaio, Rita R. Ferreira, Adán Guerrero, Petra Pintado, Bárbara Tavares, Joana Amaro, Andrew A. Smith, Thomas Montenegro-Johnson, David Smith and **Susana S. Lopes**. Left-Right Organizer Flow Dynamics: How Much Cilia Activity Reliably Yields Laterality? **Developmental Cell**, Vol. 29, Issue 6, p716–728. doi: 10.1016/j.devcel.2014.04.030.
- 2014 Smith Dj, Montenegro-Johnson T, **Lopes S.S.**. Organized chaos in Kupffer's vesicle: How a heterogeneous structure achieves consistent left-right patterning. May-Jun;4(3):119-25. **Bioarchitecture** doi: 10.4161/19490992.2014.956593.
- 2014 Cristina Casalou, Cecília Seixas, Ana Portelinha, Petra Pintado, Mafalda Barros, José S Ramalho, **Susana S Lopes**, Duarte C Barral. Arl13b and the non-muscle myosin heavy chain IIA are required for circular dorsal ruffle formation and cell migration. **Journal of cell science**, jcs. 143446. doi: 10.1242/jcs.143446.
- 2013 Bárbara Tavares and **Susana S Lopes**. Importance of Zebrafish in Biomedical Research. **Acta Med Port.** Sep-Oct;26(5):583-592
- 2010 **Lopes SS**; R. Lourenço; Pacheco, L; Moreno, N.; Kreiling J. and Saúde, L. A novel role for Notch signalling in left-right determination through ciliary length control. **Development**. Nov;137(21):3625-32. Impact Factor 6,273 (Recommended by the Faculty 1000).
- 2010 R Lourenço, **SS Lopes**. Left-right function of *dmrt2* genes is not conserved between zebrafish and mouse. **PLoS one** 5 (12), e14438. Impact factor 3,534
- 2009 Rocha SF, **Lopes SS**, Gossler A, Henrique D. Dll1 and Dll4 function sequentially in the retina and pV2 domain of the spinal cord to regulate neurogenesis and create cell diversity. **Developmental Biology**. Apr1; 328(1): 54-65. Impact factor 3,637.
- 2008 **Lopes SS**, Yang X, Müller J, Carney T, McAdow AR, Rauch G, Jacoby AS, Hurst LD, Delfino-Machin M, Haffter P, Geisler R, Johnson SL, Ward A, Kelsh RN. Leukocyte tyrosine kinase functions in pigment cell development. **PLoS Genetics** 4(3):e1000026. Doi: 10.1371/journal.pgen.1000026. Impact Factor 8,167.
- 2000 DM Parichy, EM Mellgren, JF Rawls, **SS Lopes**, RN Kelsh, SL Johnson. Mutational Analysis of Endothelin Receptor b1 during Neural Crest and Pigment Pattern Development in the Zebrafish *Danio rerio*. **Developmental biology** 227 (2), 294-306.
- 2001 Kirsten A Dutton, Angela Pauliny, **Susana S Lopes**, Stone Elworthy, Tom J Carney, Jörg Rauch, Robert Geisler, Pascal Haffter, Robert N Kelsh Zebrafish colourless encodes *sox10* and specifies non-ectomesenchymal neural crest fates. **Development** 128 (21), 4113-4125.
- ACCEPTED** To appear in 2019. Symmetry breaking cilia-driven flow in embryogenesis. D. J. Smith, T. D. Montenegro-Johnson, and **S. S. Lopes**, Annual Reviews of Fluid Mechanics. Preprint available at [http://tomonjon.com/sdm\\_downloads/](http://tomonjon.com/sdm_downloads/)
- UNDER REVISION** J. Solowiej-Wedderburn , D. J. Smith , **S. S. Lopes** , T. D. Montenegro-Johnson. Wall stress enhanced exocytosis of extracellular vesicles as a possible mechanism of left-right symmetry-breaking in vertebrate development.

## **ORAL COMMUNICATIONS**

Total of **12** oral communications, 8 at national level and 4 internationally, including 2015 Gordon Conference on Cilia, Mucus & Mucociliary Interactions in Galveston, TX, USA and the last from the FASEB TGF-beta signaling meeting, in Lisbon June 2017. Invited for the FASEB Summer Research Conference ‘The Biology of Cilia and Flagella’ to be held July 28 –August 2, 2019 in Keystone, Colorado.

## **INSTITUTIONAL RESPONSIBILITIES**

2015-present CEDOC Fish facility Manager

2014- present Organizer PI ChalkTalk seminar series, CEDOC/ NOVA Portugal

## **JOURNAL PEER-REVIEWING ACTIVITIES**

Developmental Cell; Mammalian Genome; BMC Developmental Biology; Cilia journal; Nature communications; Scientific Reports.

## **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

Portuguese Society of Developmental Biology; EuFishBioMed European Network; ERA-EDTA

## **COLLABORATIONS**

Ivo Telley	Micromanipulations and fluidics. <b>Instituto Gulbenkian Ciência, Oeiras</b>
Adán Guerrero	3D flow Imaging. <b>Laboratorio Nacional de Microscopia Avanzada, Mexico</b>
Thomas Johnson-Montenegro	Simulations for cilia beating and flow. <b>School of Mathematics, U. of Birmingham, UK</b>
Christopher Westlake	Primary cilium assembly. <b>NCI-Frederick National Laboratory, USA.</b>
David Smith	Simulations fluid flow. <b>School of Mathematics, U. of Birmingham, UK</b>
Carla Quintão	Software. Department of Physics from <b>FCT-NOVA, Portugal</b>
Duarte Barral	Cellular Traffic. CEDOC. NOVA Medical School. Portugal
Paulo Pereira	Exosome biology. CEDOC. NOVA Medical School. Portugal

## **CAREER BREAKS**

2001 Maternity leave 1<sup>st</sup> child (April to September); 2003 Maternity leave 2<sup>nd</sup> child (March to September)