



Gabriel José Gonçalves Martins

Born in Bragança (Portugal), 15/7/1971; Married, with 4 children (8-19y).

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Scientific & Academic Curriculum

Academic degrees

2004 PhD in Anatomy & Cell Biology; School Medicine & Biomedical Sciences, State Univ. New York at Buffalo, USA. Thesis: *Bovine Aortic Endothelial Cells in 3D Collagen Matrices: Structural Organization and Role of Microtubules* (2003). Advisor: John P Kolega.

1997 Post-graduation in Dev. Biology; Universidade Lusófona, Lisbon Portugal: Advisor Robert Summers.

1994 Licentiate in Biology; Universidade de Lisboa, Faculdade de Ciências, Portugal

Other qualifications

2018 Laser Safety Officer accreditation (Advanced PhotoBiology course, by adLaser, Portugal)

2010 Animal Experimentation certification (FELASA catC), by FMV-UNL, Portugal

2002 Optical Microscopy and Imaging in the Biomedical Sciences course, Woods-Hole USA

1992 Scientific Illustration (120h) by Sociedade Pt. Biologia, Portugal

Research & Academic Positions

2013-present Head of [Advanced Imaging Facility](#), Instituto Gulbenkian de Ciência

2018-present Assistant Professor (by invitation) - [Fac. Ciências da Universidade de Lisboa \(FCUL\)](#)

2015-present Co-coordinator (south region) of [Portuguese Platform for Biolmaging PPBI](#)

Past positions

2008-2018 Collaborator of FCUL, responsible for teaching the MsC Bioimaging course

2008-2012 "Ciência" Research Auxiliary at CBA-FCUL and coordinator of the FCUL's Microscopy Lab

2009-2010 Member of CBA Executive Committee, FCUL, Portugal

2006-2007 Imaging specialist (invited), Instituto Gulbenkian de Ciência, Portugal

2005-2007 Post-doc, CBA/FCUL, Portugal, supervised by: Solveig Thorsteinsdottir

2004-2005 Visiting Scientist, CBA/FCUL, + Invited Teached @Instituto Piaget, Almada, Portugal

1998-2003 PhD researcher at SUNY Buffalo, NY - USA + Microscopy assistant at confocal Lab.

Grants, awards and review invitations

Grants (last 5y; + participation in 10 other grants since 2004) ([links via ORCID here](#))

2020 EMBO grant for organization of practical course "3D Developmental Imaging" (**30k€**)

2018-2021 FCT "OPenT & Multimodal Optical Mesoscopy" ref 02/SAICT/2017 (Coordinator; **240K€**)

2013-2020 FCT ROTEIRO/0076/2013. "PPBI - Pt Platform for Bioimaging". Roteiro Nacional de Infraestruturas de Investigação de Interesse Estratégico (co-coordinator; **5.15M€**).

2016-2020 COST action 2015 NEUBIAS - A new Network of European Biolmage Analysts to advance life science imaging (co-proponent and WG2 leader; **746K€**)

2016 POR-Lisboa, LISBOA-01-0162-FEDER-001151 - LxCLEM - "Observação e análise correlativa da dinâmica e ultraestrutura celular por mic. óptica e electrónica" (co-proponent; **90K€**)

2015 ESRF "Tomography applied to the study of the first possible crocodilian fossil eggs and embryos" application for beam time Ref. No 33984 (coordinator)

2016-2019 PTDC/AAG-GLO/1926/2014 "SHARKFIT: "Impactos das alterações climáticas no início da ontogenia de tubarões temperados e tropicais" (participant; **150K€**)

2015-2015 RECI/BEX-BCM/0083/2012 Imaging the structure and dynamics of molecules and complexes in living organisms (participant; **400K€**)

Other awards

2008-2018 6x EMBO grants for organization of "3D Developmental Imaging" courses (**6x 30K€**)
 2014 1st prize Nikon Small World in Motion competition + 2 images of distinction
 2013 Best talk award from SPBD/Aquaplast, in joint SPBD & SEBD meeting 2013.
 2005-2007 FCT Post-doctoral fellowship
 2002-2003 UB Research Foundation grant for PhD research
 1998-2002 PhD fellowship - FCT, PRAXIS XXI Ref BD/18496/98
 1998 Post-graduate studies fellowship - FLAD
 1997 Society for Dev. Biology travel grant to attending sea urchin meeting, Woods-Hole, USA
 1996-1997 Lusófona University fellowship for post-graduate practicum
 1996 Travel grant from Univ. Lusófona/Visão for post-graduation work

Invited as reviewer:

- Member of the Scientific Review Panel for CORBEL and COST since 2016
- Reviewer for the journals *Nature Methods*, *PlosONE*, *J Anat Histo & Embryo*, *Optics Letters*, *J Toxicology*, *CRC Press*, *Mic Res Tech.*, *JOVE*, *Nature - Light Sc. Applications*

Scientific publications ([researcherID: A-1538-2012](#); [ORCID-ID ##0000-0002-6506-9776](#))

Peer reviewed (total 35 pub; 16 in last 5y); [Scopus & Google scholar h=16](#); [ResearcherID h-index=15](#))

- Campinho MA, Silva N, **Martins GG**, Anjos L, Florindo C, Roman-Padilla J, Garcia-Cegarra A, Louro B, Manchado M, Power DM, 2018. [A thyroid hormone regulated asymmetric responsive centre is correlated with eye migration during flatfish metamorphosis](#). *Scientific reports* 8: 12267-
- R Gorgulho, R Jacinto, SS Lopes, SA Pereira, EM Tranfield, **GG Martins**,..., 2018. [Usefulness of zebrafish larvae to evaluate drug-induced functional and morphological renal tubular alterations](#). *Archives of Toxicology*, 92:411-423
- A Jerónimo, G Rodrigues, F Vilas-Boas, **GG Martins**, A Bagulho, C Real 2017. [Hydrogen peroxide regulates angiogenesis-related factors in tumor cells](#). *Biochem & Cell Bio* 95: 679-85
- Kota Miura, Julien Colombelli, Fabrice Cordelières, Perrine Paul-Gilloteaux, Sébastien Tosi, Clara Prats Gavalda, Sebastian Munck, Julia Fernandez-Rodriguez, **Gabriel G. Martins**. 2017. [NEUBIAS Conference in Lisbon: A New Venue for Bioimage Analysts](#). *G.I.T. Imaging & Microscopy* 3: 8-9
- Sérgio Ferreira-Cardoso, Ricardo Araujo, Nelson Martins, **Martins GG**, Stig Walsh, Rui Martins, Nikolay Kardjilov, Ingo Manke, André Hilger, and Rui Castanhinha (2017). [Floccular fossa size is not a reliable proxy of ecology and behaviour in vertebrates](#)". *Sci. Reports* 7:2005
- Susana Gomes, Gabriela Rodrigues, **Gabriel G Martins**, Célia Henriques, Jorge Carvalho Silva (2017). [Evaluation of nanofibrous scaffolds obtained from blends of chitosan, gelatin and polycaprolactone for skin tissue engineering](#). *Int J Bio Macromol.* 102: 1174–1185
- Gualda, E.J., Pereira, H., **Martins, G.G.**, Gardner, R., Moreno, N. (2017). [Three-dimensional imaging flow cytometry through light-sheet fluorescence microscopy](#). *Cytometry part A*. DOI: 10.1002/cyto.a.23046
- Pedro M Felix, Ania Gonçalves, Joana R Vicente, Paulo J Fonseca, M Clara P Amorim, José L Costa, & **Martins GG**. 2016. [Optical micro-tomography "OPeNT" allows the study of large toadfish *Halobatrachus didactylus* embryos and larvae](#). *Mech Dev* doi:10.1016/j.mod.2016.03.001.
- N Lebesgue, G Costa, RM Ribeiro, C Ribeiro-Silva, **GG Martins**, V Matranga, A Scholten, C Cordeiro, AJR Heck, R Santos, 2016. [Deciphering the molecular mechanisms underlying sea urchin reversible adhesion: A quantitative proteomics approach](#). *Journal of Proteomics* 138: 61-71.
- MR Parente, JT Monteiro, **GG Martins**, LM Saraiva 2016. [Helicobacter pullorum induces in murine macrophages nitric oxide release that promotes phagocytosis and killing](#). *Microbiology* doi: 10.1099/mic.0.000240.
- Vilas-Boas F, Bagulho A, Tenente R, Teixeira VH, **Martins GG**, da Costa G, ... & Real C 2016. [Hydrogen Peroxide regulates Cell Adhesion through the Redox Sensor RPSA](#). *Free Radical Biology and Medicine* 90:145-157
- Wenwen Zeng*, Roksana M Pirzgalska*, Mafalda MA Pereira, Nadiya Kubasova, Andreia Barateiro, Elsa Seixas, Yi-Hsueh Lu, Albina Kozlova, Henning Voss, **GG Martins**, Jeffrey M. Friedman and Ana I Domingos, 2015. [Sympathetic Neuro-Adipose Connections Mediate Leptin-Driven Lipolysis](#). *Cell*, 163: 84-94.
- Gomes S, Rodrigues G, **Martins GG**, Roberto MA, Mafra M, Henriques CMR, Silva JC. 2015. [In vitro and in vivo evaluation of electrospun nanofibers of PCL, chitosan and gelatin: A comparative study](#). *Materials Science and Engineering: C*: 348-358.
- Mendes R, **Martins GG**, Saude L, 2014. [N-cadherin locks Left-Right asymmetry by ending the leftward movements of Hensen's node cells](#). *Dev Cell*. 30:353-360.
- Ruparelia AA, Simkin JE, Salgado D, Newgreen DF, **Martins GG**, Bryson-Richardson RJ. 2014. [The quail anatomy portal](#). *Database (Oxford)*. 7;2014(0):bau028. doi: 10.1093/database/bau028
- Gualda E. Moreno N, Tomancak P, **Martins GG** 2014. Going "open" with Mesoscopy: a new dimension on multi-view imaging. *Protoplasma* 1-10. 10.1007/s00709-013-0599-3

- Castanhinha R, Araújo R, Júnior LC, Angielczyk KD, Martins GG, Martins RMS, Chaouiya C, Beckmann F and Wilde F 2013. [Bringing dicynodonts back to life: paleobiology and anatomy of a new emydopoid genus from the Upper Permian of Mozambique](#). *PLoS one* 8 (12), e80974.
- Emilio J Gualda, Tiago Vale, Pedro Almada, José A Feijó, **Gabriel G Martins** & Nuno Moreno 2013. [OpenSpinMicroscopy: an open-source integrated microscopy platform](#). *Nature Methods* doi:10.1038/nmeth.2508
- Gomes SR, Rodrigues G, **Martins GG**, Henriques MC, Silva JC (2013). [In vitro evaluation of crosslinked electrospun fish gelatin scaffolds](#). *Materials Science and Engineering C*. 33 (1), 1219–1227.
- **Martins GG** & Kolega J (2012). A role for microtubules in endothelial cell protrusion in 3D matrices. *Biology of the Cell*. DOI: 10.1111/boc.201100088. IF3.64
- Vaz R, **Martins GG**, Thorsteinsdóttir S & Rodrigues G (2012). Fibronectin promotes migration, alignment and fusion in an in vitro myoblast cell model. *Cell and Tissue Research*. DOI: 10.1007/s00441-012-1364-1. IF2.95
- Deries M., Gonçalves AB, Vaz R, **Martins G.G.**, Rodrigues G. & Thorsteinsdóttir S (2012). Extracellular matrix remodelling accompanies axial muscle development and morphogenesis in the mouse. *Dev Dynam* 241:350–364. IF2.92
- **Martins GG**, Rifes P, Amândio R, Rodrigues G, Palmeirim I, Thorsteinsdóttir S. 2009. Dynamic 3D cell rearrangements guided by a fibronectin matrix underlie somitogenesis. *PLoS One* 4(10):e7429. IF4.54
- Vitor R, Correia I, Videira M, Marques F, Paulo A, Pessoa JC, Violac G, **Martins GG**, Santos I, (2008). Pyrazolyl-diamine ligands bearing anthracenyl moieties and their rhenium(I) tricarbonyl complexes: synthesis, characterization and DNA-binding properties. *Chem Bio Chem* 9:131-142. IF3.72
- **Martins GG**, Kolega J (2006) Endothelial cell protrusion and migration in three-dimensional collagen matrices. *Cell Motil Cytoskeleton*. 63(2):101-15
- Bajanca F, Luz M, Raymond K, **Martins GG**, Sonnenberg A, Tajbakhsh S, Buckingham M, Thorsteinsdóttir S. (2006) Integrin alpha6beta1-laminin interactions regulate early myotome formation in the mouse embryo. *Development*. 133(9):1635-44.
- Myers, J. M., **Martins, G. G.**, Ostrowski, J., and Stachowiak, M. K. (2003). Nuclear trafficking of FGFR1: A role for the transmembrane domain. *J Cell Biochem* 88: 2173-91.
- Peng, H., Myers, J., Fang, X., Stachowiak, E.K., Maher, P.A., **Martins, G.G.**, Popescu, G., Berezney, R. and Stachowiak, M.K. (2002). Integrative nuclear FGFR1 signaling (INFS) pathway mediates activation of the tyrosine hydroxylase gene by angiotensin II, depolarization and protein kinase C. *J Neurochem* 81:506-524.
- **Martins, G. G.**, Summers, R. G. and Morrill, J. B. (1998). Cells are Added to the Archenteron During and Following Secondary Invagination in the Sea Urchin *L. variegatus*. *Dev Biol* 198: 330-42.

Book chapters

- **Martins GG**, Rifes P, Amândio R, Campinho P, Palmeirim I, & Thorsteinsdóttir S (2007). 3D visualization and analysis of cell-matrix transformations in whole-mount and live embryos using confocal and multi-photon microscopy. Pp426-433. In "Modern Research and Educational Topics in Microscopy #3 Vol I" A. Méndez-Vilas (Ed.) Formatex - Spain. ISBN-13: 978-84-611-9419-3
- **Martins G.**, Stonebraker AT and Summers R (1999). The Preparation of stereoscopic 3-dimensional Illustrations for Publications and Lectures. v122 Pp385-401. In *Confocal Microscopy Methods and Protocols* vol 122. S. Paddock (Ed) Humana Press. ISBN978-0-89603-526-3 DOI10.1385/1-59259-722-X:385
- **Martins G** 1998. Gastrulação. In "Viagem ao Centro da Vida" Pinto Correia, C. (Ed.). Círculo de Leitores - Lisboa, Portugal.

Theses

- Martins GG 2003. [Bovine Aortic Endothelial Cells in Three-Dimensional Collagen Matrices: Structural Organization and the Role of Microtubules](#). PhD Thesis. SMBS-SUNY Buffalo - USA.
- Martins GG 1997. [Three-dimensional analysis of gastrointestinal tract development during late gastrulation and early larvagenesis in the sea urchin, Lytechinus variegatus](#); Post-graduation thesis. Univ. Lusófona, Lisbon - Portugal.

Other publications

- Martins, GG, and Ciliberto, A. (2002). Mitotic Waves in the Sea Urchin Embryo, in *Cytometry* Vol. 6 CDRom, Purdue Labs Cytometry Labs
- Martins, GG, & Summers, R. G. (1998). 3D reconstruction of Sea Urchin Embryos, in *Image Analysis & 3D Reconstruction* CD-ROM series, Vol1. James B. Pawley & J. Paul Robinson, Eds., Purdue U.

Teaching and training activity

2008-present	Assistant Professor (by invitation), responsible for Bioimaging MsC course @FCUL, 35h (14T+21P), 3 ECTS
2018-present	co-organizer of IGC's Summers School programme, and trainer (<i>Biomaging & Img Analysis</i>)
2008-2018	3D imaging in develop. biology (1hT + 90hP) - EMBO practical course 3D Developmental Imaging
2015-2020	Leader of WG2 (Training) of NEUBIAS, Network of European Bioimage Analysts , co-organization of 10 international training schools, in multiple EU countries
2016-present	Co-organizer of "microWorkshop" series in advanced microscopy + image analysis @IGC
2010-2012	FCUL "microWorkshops" in microscopy and image analysis, Lisboa 2010-09-20
2012	<i>Practical Image Analysis in Biology</i> , organizer of 30h course @FCUL Lisboa (2012-02-13)
2005-2012	@FCUL: Teaching Assistant of "Genes e Moléculas no Desenvolvimento" MsC course (2008-2010) + TA of "Biol. Desenv. Animal" (2008-2012) and of "Histology" courses (2005)
2004-2005	Teacher of "Developmental Biology" undergrad course (60h), Instituto Piaget, 2004-200
2003	TA in "Optical Microscopy & Imaging in Biomed Sciences" course, Woods-Hole, Mass-USA
1998-1998	TA of "Human Gross Anatomy" for medical students, SMS-SUNY/USA

Mentoring Experience:

PhD level

- Maria Rita Pegado (IGC & FCUL, Lab Marítimo da Guia); short practicum, 2018
- Ana Couto (IGC & FCUL, Lab Marítimo da Guia); short practicum, 2015
- Ricardo Araújo (IGC); short practicum, 2014

MsC level

- Catarina Bota (CEDOC/IGC - co-adviser); practicum, 2017-2018 (now a PhD student at CEDOC)
- Hugo Pereira (IGC, UIC staff), since 2016-2018
- Ânia Gonçalves (IGC). IEPF practicum, 2015-2016 (now a PhD student at Univ Bordeaux)
- Nelson Nhamutole (IGC & Mozambique). practicum, 2014-2015
- Nuno P Martins, (IGC, UIC staff), since 2013.
- Pedro Almada (FCUL). practicum, 2012 (PhD @UCL, UK; now Imaging specialist in private sector)
- Ana Raquel Jacinto (FCUL). Thesis "The role of N-cadherin in chick somitogenesis" 2011 (now a post-doc at Fund. Champalimaud, Portugal)
- Joana Mateus (FCUL). Thesis "Effect of polyploidy in Dev & epigenetics in *S. alburnoides*" 2011
- Tomás Azevedo (FCUL). Thesis "Dynamics axis elongation in amniotes vs. anamniotes" 2009 (now a PhD student at Univ Algarve)
- António Temudo (FCUL). Thesis "Mecânica e Mecanismos de Somitogénese" 2008 (now an Imaging specialist at IMM bioimaging facility, Portugal)
- Rita Amândio (FCUL). Thesis "Morphodynamics of somite epithelialisation in chick embryos" 2008. (now a PhD student at EPFL, Switzerland)

Participation on Thesis Jury Committees

PhD

Telmo Pereira, 2017 (PhD, UNL)
Margarida Parente, 2016 (PhD, ITQB/FCT-UNL)
Ricardo Henriques, 2011 (PhD thesis, FMUL)

MsC

Ana Russo, 2016 (Masters, FCUL)
Sergio Cardoso, 2015 (Masters, FCT-UNL)
Cláudia Aragão, 2012 (Licenciature, FCT-UNL)
Pedro Lopes, 2011 (Msc thesis, FCUL/IGC)
Pedro Silva, 2011 (Msc thesis, FCUL/IGC)
Cláudia Mendes, 2010 (Msc thesis, FCUL/IGC)
Joana Lima, 2010 (Msc thesis, FCUL/IMM)
Luis Lopes, 2007 (Msc thesis, FCUL/IGC)
Célia Faria, 2005 (Msc Thesis, Univ Lusófona/IGC)

Organization of scientific events.

- Main organizer of EMBO course "3D Developmental Imaging" 2020 (7 editions since 2008)
- Co-organizer of IGC's [undergraduate Summer School](#) (2018-2020, and MsC internships (2018-2020)
- Local organizer of NEUBIAS2020 Conference, Lisbon, Feb 2017
- Co-organizer of NEUBIAS [training schools](#) (11x), Barcelona 2016, Lisbon 2018, Gothenburg 2017, Szeged 2018, Edinburgh 2018, Luxembourg 2019, Porto 2019, Bordeaux 2020.
- Organizer of the IGC's (2013-2020) and FCUL's (2010-2012) microWorkshops' series
- Organizer of the CBA/FCUL "Practical Image Analysis in Biology" advanced course, 2012
- Organizer of the "Embryo club" meetings of the SPBD between 2005-2010

Presentations by invitation (selected from last 10y; total >100 since 2004)

- ... 7 in 2019 (updating)
- *Presentation @EuroBioimaging* - Industry Board (IBEB), - Image data Workshop EMBL 2018-11-07
- *OPenT, practical workshop @SPAOM* meeting, Granada - Spain, 2018-10-26
- *OPenT, practical workshop @MiFoBio*, France, 2018-10-07
- *Presentation. @Leadership workshop* - COST academy, Brussels, 2018-09-14
- *Light2Numbers, pipelines and pitfalls @BiolSI* workshop, FCUL 2018-07-14
- *NEUBIAS training*. GBI/Elixir Hackathon - Cambridge UK, 2018-05-14
- *Pixels into numbers* - NEUBIAS TS6, Gothenburg, 2017-09-17
- *Training in NEUBIAS* - Focus on Microscopy Meeting - FOM, Bordeaux - France, April 2017
- *3D microscopy* - Plant Imaging workshop, Univ Maryland, April 2017
- *OPENSpin & OPenT mesoscopic img. for cell & dev. biol.* SPAOM2016. October 2016. Bilbao, Spain.
- *Open source mesoscopic imaging and the frontier between bio & medical imaging.* 8th WBME: Workshop on Biomedical Engineering. Faculty of Sciences University of Lisbon. 2016-04-16, Lisbon.
- *Deep revelations...on beams of light.* Academia das Ciências de Lisboa - International Seminar on Light and its applications. Lisbon, 2015-11-23
- *Biology? in fast timing!* FAST COST action TD1401, WG5 meeting, Czech Republic, 2015-04-15
- *Optical Tomography in Developmental Biology - an Open Source approach.* BiolImaging 2014 - 3rd International Symposium in Applied Bioimaging. Porto, 2014-10-16
- *3D imaging in microscopy.* Microspectroscopy course. Wageningen, Holland. 2014-09-08
- *"Haeckaliens" and OPenT. Open source mesoscopic imaging for developmental biologists.* <http://www.bitplane.com/sumo>. Webinar, 2014-06-17
- *METs in vitro and in vivo - Cells into organs.* John Innes Centre, Norwich UK, 2012-05-15
- *Cell Motility, the ECM and EMTs + Imaging EMTs in vitro and in vivo (Lecture and seminar).* ICVS - Univ. Minho, [Fundamentals of Genetics, Development and Neoplasia adv course](#) 2012-01-13
- *Dynamic 3D Cell Rearrangements During Vertebrate Somitogenesis & Role of the Fibronectin Matrix.* Joint Meeting Portuguese & Spanish Dev Biology Socs. Badajoz - Spain, 2010-09-10.
- *Light mic. & Fluorescence + 3D imaging, tracking and visualization.* Quantitative light mic. In living cells - IMM - Harvard Medical School programme, 2010-04-14

Public engagement and appearances in media

- [IGC "Dias Abertos"](#), 2018, [2016](#), 2014, [2012](#), 2006, 2005
- *Science and art installation* at "Belém Art fest", 2015
- Interview for magazine "Gerador", 2016
- Appearances in TV shows 2x "Sociedade Civil" (RTP1) + "Portugal no Coração" (SIC), 2014
- Meeting with the President of Portugal and 30 distinguished professionals, 2014-6-10
- Interviewed by "O Publico", 2014-5-13
- FCUL "Dias Abertos" 2012-05-02, 2010-04-28 + "Semana de Ciência" 2004-11-26
- Palestra na Escola Ibn Mucana, Cascais, 2017-04
- Escola Fernando Teixeira Lopes - "Feira das profissões", 2011-04-08
- *A (in)definição biológica de pessoa @Cadin* Cascais 2007-02-06

Professional societies membership

- ANICT, 2010-2013; Ordem dos Biólogos; 1991-2013; SPBD, 2005-2010; SPMicros, 2004-2006