Ricardo Henriques

Instituto Gulbenkian de Ciência
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Born 20/05/1980; Portuguese

OVERVIEW

My laboratory focuses on advancing the boundaries of optical microscopy, with the aim of establishing novel technologies to address cell biology and biophysical questions, both in health and disease. We are recognized by our open-source and widely available contributions to the optical microscopy community, as well as our translational work with industry. For example, we have established the novel SRRF super-resolution approach that underpins Andor Technology's latest super-resolution spinning disk microscopes. In cell biology, we tackle broad questions through links with collaborating laboratories, in fields such as virology, host-pathogen interactions, immunology, cell signaling and evolution. We do so by establishing new classes of fluorescent probes, high-speed cell friendly super-resolution methods and computational modelling approaches that, although designed to answer questions of interest in the lab, have extensive applications in cell biology.

EDUCATION

PhD in Biophysics 2008-2011
Faculdade de Medicina Universidade de Lisboa
"Beyond Rayleigh's limit: achieving real-time super-resolution fluorescence microscopy"
Thesis advisor: Dr. Musa Mhlanga (CSIR, Pretoria, South Africa; IMM, Lisbon, Portugal)

Diploma in Physics 1998-2005
Faculdade de Ciências Universidade de Lisboa
Research advisors: Dr. Nuno Moreno and Prof. José Feijó (IGC, Portugal)

PROFESSIONAL HISTORY

Research Group Leader 2020-
Instituto Gulbenkian de Ciência, Oeiras, Portugal

- Research: technology development for super-resolution microscopy, computational bioimaging, machine learning, structural modelling, viral host-pathogen interactions
- Honorary Professor at *University College London*
- Affiliate Group Leader at *The Francis Crick Institute* with a Satellite Laboratory

Professor Chair of Computational and Optical Biophysics 2019-2020
MRC-Laboratory for Molecular Cell Biology, University College London

Associate Professor 2013-2019
MRC-Laboratory for Molecular Cell Biology, University College London

Postdoctoral Fellow 2011-2013
Institut Pasteur Paris, Department of Cell Biology and Infection

- Research at Zimmer Lab: super-resolution microscopy, T-cell immunological synapse formation, HIV-1 intracellular trafficking and uncoating.

Systems Developer and Consultant 2009-2019
Andor Technology (US and Northern Ireland)

- Scientific advisor, software developer, optical design consultant

Bioimaging Facility Manager 2005-2008
Instituto de Medicina Molecular and Instituto Gulbenkian de Ciência

- Teaching-on and maintenance-of optical microscopy equipment

OTHER APPOINTMENTS [since 2013]

Affiliate Group Leader at the Francis Crick Institute, Satellite Lab	2017-2020
Co-Director, Wellcome Trust-UCL Optical Biology PhD Programme	2020-
Wellcome Trust Multi-user Equipment Grants Committee Member	2020-2023
bioRχiv affiliate and advocate	2019-
Advisory board member of FocalPlane by Company of Biologists	2019-
MRC-LMCB Athena Swan Committee	2017-2018
UCL Advanced Microscopy Strategy Board	2017-2020
BBSRC Grants Committee, panel D and TRDF	2016-
Royal Microscopy Society Light Microscopy Committee	2014-2016
UCL Super-Resolution Microscopy Steering Board	2013-2020
MRC-LMCB Microscopy Committee	2013-2020
MRC-LMCB IT Committee	2013-2020

Academic Editor for: Scientific Reports (editorial board), Journal of Physics D [1] (guest)
Reviewer for: Nature Biotech, Nature Methods, Nature Communication, Nature Protocols, PNAS, Scientific Reports, PloS One, Journal of Microscopy, Optics Express, Traffic, Journal of Biophotonics, Light: Science & Application, Methods, Bioinformatics, Nanoscale
Grant reviewer for: ANR, BBSRC, CRUK, EPSRC, ERC, FCT, la Caixa Foundation, Leverhulm Trust, MRC, Netherlands Org. Sci. Res., Royal Society, Wellcome Trust

PRIZES, AWARDS AND HONOURS

Research highlighted by *Nature Methods*[1]	2021
Research highlighted by *Expresso* (Portuguese printed news)[1]	2021
ERC CoG and EMBO IA awards highlighted by *Publico* (Portuguese news) [1][2]	2021
Research highlighted by *Nature News* ("Deep learning takes on tumours") [1]	2020
Research highlighted by *MRC* (UK's Medical Research Council) [1]	2019
Research highlighted by *Clubic* (French Technology Magasine) [1]	2019
Made Fellow of the Royal Microscopy Society	2018
Research highlighted by *The Times* [1]	2018
Research highlighted by *The Scientist* twice [1][2]	2018
Research highlighted by *This Week in Virology (TWiV)* [1]	2018
Spirit of SLMS award for Scientific Excellence, Nils Gustafsson (PhD student)	2018
Ref. case study for UCL-Consultancy, "UCL pioneers algorithm in microscopy"	2017
Cirklo Prize Best Concept for Scientific Facilities, Pedro Almada (PhD student)	2015
Pasteur Roux Post-doctoral Fellowship	2013
FCT Doctoral Research Fellowship	2010

COLLABORATIONS

P = Joint Authorship; G = Joint Funding; R = Joint Researchers

Andela Šarić, UCL, UK [1P,1G]; **Ann-Christin Lindas**, Stockholm Univ., Sweden [2P,1G]; **Ashley Cadby**, Univ. Sheffield, UK; **Buzz Baum**, UCL, UK [5P,2G,3R]; **Christophe Leterrier**, Aix University, France [3P]; **Christophe Zimmer**, Pasteur, France [5P,1G]; **Dylan Owen**, KCL, UK [1P]; **Ed Cohen**, Imperial College, UK [1P]; **Ethan Garner**, Harvard Univ., USA [1G]; **Eva Frickel**, Crick Institute, UK [1P]; **Ewa Paluch**, Cambridge Univ., UK [1R]; **Fabrice Agou**, Pasteur, France [1P]; **Florian Jug**, MPI-CBG, Germany [2P]; **Gabriel Martins**, IGC, Portugal; **Giuseppe Battaglia**, UCL, UK; **Guillaume Charras**, UCL, UK [1P,1R]; **Guillaume Jacquemet**, Åbo Akademi University, Finland [2P]; **Jake Baum**, Imperial College, UK; **Jan Löwe**, LMB, UK [1G]; **Jason Mercer**, UCL, UK [5P,1G,3R]; **Joe Grove**, Royal Free, UK [1P]; **Johanna Ivaska**, University of Turku, Finland [1P]; **Jonas Ries**, EMBL, Germany [2P]; **Jost Enninga**, Pasteur, France [1P]; **Loïc Royer**, CZ-Biohub, USA [2P]; **Maria Carmo-Fonseca**, IMM, Portugal [1P]; **Mary Collins**, Okinawa IST, Japan [1P]; **Maria Mota**, IMM, Portugal [1P]; **Mariana Pinho**, ITQB, Portugal [1G,1R]; **Mark Marsh**, UCL, UK [2P,2R]; **Maximiliano Gutierrez**, Crick Institute, UK [1R]; **Mike Heilemann**, Goethe University Frankfurt, DE [1P,1R]; **Mohan Balasubramanian**, Warwick Univ., UK [1G]; **Musa Mhlanga**, UCT, South Africa [7P,2G]; **Nick Robinson**, Lancaster University, UK [1P]; **Nuno Moreno**, IGC, Portugal [1G]; **Pavel Tomancak**, MPI-CBG, Germany [1P]; **Ralf Jungmann**, MPI Biochemistry, Germany; **Serge Mostowy**, Imperial College, UK [2P]; **Seamus Holden**, Newcastle Univ., UK [2P]; **Steven Lee**, Cambridge Univ., UK [1P]; **Simon Foster**, Univ. Sheffield, UK [1P]; **Thijs Ettema**, Univ. of Uppsala, Sweden [1G];

GRANTS AND FUNDING [since 2013, ≈16M/8yr]

23. **CZI** Visual Proteomics Imaging, "VP-CLEM-KIT: a pipeline for democratising volumetric visual proteomics", £3M (Co-PI, 12/21 - 06/24).

22. **EMBO** Installation Grant, "Unveiling live-cell viral replication at the nanoscale", £150K (PI, 01/21 - 01/24).

21. **ERC** Consolidator, "Enabling Live-Cell 4D Super-Resolution Microscopy Guided by Artificial Intelligence", £2M (PI, 09/21 - 09/26).

20. **BBSRC** ALERT, "Benchtop, turnkey super-resolution microscopy for biology, biophysics and biotechnology", £200K (Co-PI, 05/20 - 04/21).

19. **Wellcome Trust** 4-year PhD Programme in Science, "Optical Biology", £6M (Co-Director, 08/21 - 08/25).

18. **Wellcome Trust**, "Understanding cellular organisation: from archaea to eukaryotes", £1.1M out of £4M (Co-PI, 12/16 - 12/21).

17. **Royal Society** International Exchanges 2019 (UK-Ireland), "An international joint collaboration to develop and democratise high-accessible open-source AI controlled microfluidics to enable unprecedented nanoscale cell biology research", £12K (Henriques and Reynaud labs partnership, 08/19 - 08/21).

16. **UCL-Osaka** Strategic Partner Fund, "Establishing collaborative research between UCL and Osaka University", £10K (Henriques and Nagai labs partnership, 08/19-08/20).

15. **UCL** Cities Partnership Programme & **EMBO** Short-Term Fellowship, "Establishing collaborative research between UCL and Institut Curie", £7K (Application by Dr. Romain Laine - PDRA, 06/19).

14. **UCL** Capital Equipment Call (CEF3), "4D Super-Resolution Proteomics: Establishing a unique Super-Resolution Microscope capable of automatically mapping a theoretically unlimited number of proteins in space-and-time", £150K (PI, 06/19 - 07/20).

13. **MRC** Skills Development Fellowship (Sponsor), "Dr. Romain Laine", £288K (PI, 01/20 - 01/23).

12. **BBSRC** iCASE Studentship, "Content Aware AI Driven Driven Super Resolution Microscopy", £107K (PI, 10/18 - 09/22).

11. **BBSRC** TRDF, "Democratising Live-Cell Adaptive Super-Resolution Microscopy based on SRRF", £151K (PI, 01/19 - 02/20).

10. **BBSRC** TRDF, "An accessible framework to achieve multi-dimensional live-cell super-resolution high-content screening", £151K (PI, 12/17 - 12/18).

9. **BBSRC** ALERT, "Enabling Live-Cell Super Resolution Imaging Through Lattice Light Sheet Microscopy", £513K (Co-PI - main writer, 01/17 - 05/18).

8. **BBSRC** NIRG, "Super-Beacons and Beacon-STORM: a new generation of small tunable photoswitching probes and Super-Resolution approaches.", £364K (PI, 01/16 - 12/18).

7. **MRC** Next Generation Optical Microscopy Initiative, "Super Resolution Imaging for Cell Biology and Neuroscience at UCL", £220K out of £1.1M (not named PI but main contributor to grant impact and outcomes, 02/13 - 11/18).

6. **FCT** Research and Development Projects, "Imaging the structure and dynamics of molecules and complexes in living organisms", £500K (Co-PI, 01/13 - 01/16).

5. Industrial R&D Collaboration with **3i**, "Adapting of SRRF to light-sheet", £300K (PI, 09/16 - 12/19).

4. **NVidia** GPU Grant Programme, "Developing AI for Microscopy", £5K (PI, 12/18).

3. **Marie-Curie** Postdoctoral Fellowship (Sponsor), "Dr David Albrecht", £150K (Co-PI, 05/17 - 05/19).

2. Sir Henry **Wellcome** Postdoctoral Fellowship (Sponsor), "Dr Theo Sanderson", £250K (Co-PI, 06/17 - 05/21).

1. **UK-SA Commonwealth** PhD Studentship (Sponsor), "Caron Jacobs", £112K (PI, 09/14 - 03/18).

RECENT INVITED TALKS [showing selected out of 49]

Annually Invited: Advanced Imaging Course, EMBL Heidelberg, Germany	2012-
Annually Invited: ESRIC Super-Resolution Summer School, Edinburg, UK	2017-
Keynote: SPAOM, Valencia, Spain	2020
Keynote: Lifetime Unconference 2, Montpellier, France	2019
Keynote: Microscopy Society of Ireland Symposium, Dublin, UK	2019
Keynote: RMS Frontiers in BioImaging, Glasgow, UK	2018
Keynote: Single Mol. Approaches in Imaging, Ghent, Belgium (declined)	2018

Keynote: Scott. Microscopy Group Annual Symposium, Glasgow, UK	2017
Keynote: Spanish-Portug. Meeting Advanced Optical Microscopy, Bilbao, Spain	2016
Webinar: Global Bioimaging [1]	2021
Webinar: Crick-EMBL PostDoc symposium [1]	2021
Webinar: Cell Press [1]	2021
Webinar: EMBO YIP meeting	2021
Webinar: Physics of Life - University of York [1]	2021
Webinar: Physics Department - Faculdade de Ciências Universidade de Lisboa [1]	2021
Webinar: Living Systems Institute - University of Exeter [1]	2021
Webinar: CFCT - Faculdade de Ciências Universidade de Lisboa [1]	2021
Webinar: GDR - Imaging viruses, from single molecule to diagnosis [1]	2021
Webinar: CFCT - Faculdade de Ciências Universidade de Lisboa [1]	2021
Webinar: EuroBioImaging Virtual Pub [1]	2021
Webinar: Abbelight Academia Webinar [1], Paris, France	2020
Webinar: Labroots Cell and developmental Biology Webinar [1]	2020
Webinar: Invited speaker for Science/AAAS Technology Webinar Series [1]	2018
Invited: Alexander Fleming Institute, Paris, France [1]	2021
Invited: Institut Curie, Paris, France [1]	2021
Invited: Center for Research in Myology, Paris, France	2021
Invited: Living Systems Institute, University of Exeter, UK	2021
Invited: From Images to Knowledge with ImageJ & Friends, Janelia Farm, US	2020
Invited: University of Oxford, Oxford, UK	2020
Invited: 3D Single-Mol. Localization Workshop, The Francis Crick Institute, UK	2020
Invited: Data Science in Cell Imaging Workshop, Company of Biologists, UK	2020
Invited: Quantitative Methods in Biology, Imperial College, UK	2019
Invited: Vlaams Instituut voor Biotechnologie, Ghent, Belgium	2019
Invited: MRC Weatherall Institute of Molecular Medicine, Oxford, UK	2019
Invited: University of Birmingham, Birmingham, UK	2019
Invited: University of Oxford, Oxford, UK	2019
Invited: University of Cambridge, Cambridge, UK	2019
Invited: UZH and ETH Advanced Microscopy Winter School, Zurich, Switzerland	2019
Invited: The Institute of Cancer Research	2018
Invited: MiFoBio - Functional Microscopy in Biology, Seignosse, France	2018
Invited: 84th Harden Conference: Single-Molecule Bacteriology, Oxford, UK	2018
Invited: First UK/Japan Super-resolution Bioimaging Meeting	2018
Invited: EMBO Course 3D Developmental Imaging, IGC, Portugal	2018
Invited: Focus on Microscopy international meeting, Singapore	2018
Invited: Biochem. Society Harden Conf. Single Mol. Bacteriology, Oxford, UK	2018
Invited: University of Bern, Bern, Switzerland	2018
Invited: University of Cambridge, Cambridge, UK	2018
Invited: Institut Pasteur, Paris, France	2018
Invited: 7th Single Molecule Localization Microscopy Symposium, London, UK	2017
Invited: ICFO, Barcelona, Spain	2017
Invited: Queen's College London, UK	2017
Invited: University of Liverpool, UK	2017
Invited: UK Membrane-Trafficking Meeting, London, UK	2016
Invited: Pharmac. Summer Course, Univer. Menéndez Pelayo, Santander, Spain	2016
Invited: Summer School on Molecular-Scale Engineering, Sheffield, UK	2016
Invited: University of Edinburgh, UK	2016
Invited: University of Sussex, UK	2016
Invited: Royal Society UK–SA Imaging in Host-Path. Interact., South Africa	2014

PI position interview: University of Oxford (offered), UK 2019
PI position interview: University of Birmingham (offered), UK 2019
PI position interview: Crick satellite programme (offered), UK 2016
PI position interview: MRC-LMCB at UCL (offered), UK 2013
PI position interview: MRC-LMB (offered), UK 2013

INDUSTRIAL PARTNERSHIPS

R&D with Andor Technology: developed the SRRF-Stream technology 2016-2019
R&D with 3i: host lab of UKs eng. team, developed SRRF for Lattice Light-Sheet 2016-
R&D with Abbelight: implementation of microfluidics in super-resolution 2018-
Reference lab for Cairn Research: test of prototype equipment 2017-
Reference lab for Mizar Imaging: test of prototype equipment 2018-

SCIENTIFIC MEETINGS ORGANISED [since 2013]

Bi-monthly London Super-Resolution Group Meetings, London, UK 2013-
EMBO Practical Course "3D development(all) imaging", Oeiras, Portugal 2020
ASCB Workshop "Optogenetics Imaging Techniques", Washington DC, USA 2020
7th Single Molecule Localization Microscopy Symposium, London, UK 2017
Super-Res. Microscopy in Infection and Immunity Symposium, IGC, Portugal 2015
UCL Super-Resolution Symposium, London, UK 2015
Royal Society UK–SA Imaging in Host-Path. Interactions, South Africa 2014

THESES SUPERVISED

5. Robert Gray – PhD (PI, 2015-18) - "Understanding vaccinia virus entry by super-resolution and particle averaging." *Now computational biologist at Sixfold Bioscience.*

4. Jerzy Samolej – PhD (Co-PI, 2015-18) - "Identification of anti-poxviral agents by high-throughput image-based screening." *Short-term postdoc finishing publications with us.*

3. Caron Jacobs – PhD (PI, 2014-18) - "The nanoscale organisation of HIV cell surface receptors CD4 and CCR5." *Now postdoc at University of Cape Town, South Africa.*

2. Pedro Bento Almada – PhD (PI, 2014-17) - "Developing highly multiplexed technology for high-throughput Super-resolution Fluorescence Microscopy." *Now scientific consultant for Almada Scientific Services, UK.*

1. Nils Gustafsson – PhD (PI, 2014-17) - "Enabling live-cell super-resolution microscopy by computational analysis and fluorescent probe design." *Now postdoc at Ludwig-Maximilians-Universität, Germany.*

PhD examinations: 1) Garth Burn - Andrew Cope and Dylan Own Lab, KCL, UK [2014]; 2) Frederico Leon - Achillefs Kapanidis Lab, Univ. Oxford, UK [2015]; 3) Timothée Verdier - Martin Castelnovo, ENS - Lyon, France [2015]; 4) Adela Staszowska - Susan Cox Lab, KCL, UK [2016]; 5) Samuel Barnett - Neil Hunter and Ashley Cadby Lab, Univ. Sheffield, UK [2017]; 6) Pedro Silva - Jorge Carneiro Lab, IGC, Portugal [2017]; 7) Anna Bove - Guillaume Charras and Alan Lowe Lab, UCL, UK [2018]; 8) Jennifer Francis - Raphaël Levy Lab, Univ. Liverpool, UK [2018]; 9) Teodor Viktorov Boyadzhiev - Simon Ameer-Beg, KCL, UK [2019]; 10) Marco Fantham - Clemens Kaminsky Lab, University of Cambridge, UK [2019]; 11) Sohaib Abdul Rehman - Kevin O'Holleran Lab, University of Cambridge, UK [2019]; 12) Dimitrios Kiagias - Miguel Juarez

Lab, University of Sheffield, UK [2019]; 13) Yiangos Psaras - Matthew Daniels Lab, University of Oxford, UK [2020]; 14) Krystian Ubych - Robert Neely Lab, University of Birmingham, UK [2020]; 15) Maria Arista Romero - Lorenzo Albertazzi Lab, Institute for Bioengineering of Catalonia, Spain [2021];

PUBLIC ENGAGEMENT AND OUTREACH

Public engagement and outreach is a major focus of our research laboratory. We particularly engage projects tackling gender equality and helping students from disadvantaged backgrounds. We are also extremely present in social media, using platforms such as Twitter (∼6K followers) and Public Press [1][2][3] to promote our scientific research and engage a global audience. **Projects and Actions**:

- 2013: Co-founder of AGRAFr - Association des Diplômés Portugais en France - created by a group of Portuguese researchers in Paris, AGRAFr aims to develop multidisciplinary synergy covering all areas of knowledge and to foster exchange of experiences and contacts between Portugal and France.
- 2013: Joined the MRC-LMCB public engagement programme: *School visits* - annual programme where students are given background information on cell biology research, exposed to a range of lab-based activities and provided with a careers Q&A; *Back to school* - visit schools to promote knowledge in our research and science as a career; *Labathon* - open activities showcasing essential manual skills required to carry out science (e.g. pipetting, cell counting, measuring solutions by eye), which highlights the fun element of producing science to young members of the public; *Science Festivals* – science open days that include activities and workshops focused around disseminating knowledge of cell biology.
- 2015: Recurring Speaker in Pint of Science [1][2] - a science festival that brings researchers to local pubs to present their scientific discoveries.
- 2017: Joined MRC-LMCB Athena SWAN committee (Gold Award) - an initiative to foster gender equality, role models, career events, skills exchange and staff well-being.
- 2017: Joined In2ScienceUK as host lab (3 students) - an award winning initiative which empowers students from disadvantaged backgrounds to achieve their potential and progress to STEM and research careers through high quality work placements and careers guidance.

TEACHING [Since 2013]

Beyond local teaching at UCL, our group participates in some of the most highly recognise international courses in advanced and super-resolution microscopy. We particularly target to train multidisciplinary researchers in quantitative advanced imaging and critical thinking in microscopy, including its limitations.

Selected UCL teaching:

- Advanced Molecular Cell Biology (previously CELL3050, now CELL0016);
- Analysis of Biological Complexity (CoMPLEX PhD Programme)
- Mammalian Physiology (PHOL1001);
- MRes Modelling Biological Complexity;

- MSci in Biological Physics;
- MSci Cell Biology (CELLM102);
- Personal Tutor BioMedical Sciences (5 students per year);
- Principles of Biology (BBSRC LIDo PhD Programme);
- Super-Resolution Microscopy and Image Analysis (IPLS PhD Programme);
- Super-Resolution Microscopy and Image Analysis (MRC-LMCB PhD Programme);
- SysMIC course (BBSRC LiDO PhD Programme);

Selected international teaching:

- Edinburgh Super-Resolution Imaging Consortium Summer School, UK (Week-long Course) [2017, 2018, 2019];
- EMBO 3D Developmental Imaging, Portugal (Week-long Course) [2018];
- EMBL Advanced Fluorescence Imaging Techniques (Week-long Course) [2013, 2014, 2015, 2016, 2017, 2018, 2019];
- PhD Programme Lecture - Instituto de Medicina Molecular, Portugal [2015];
- PhD Programme Lecture - Instituto Gulbenkian de Ciência, Portugal [2017];
- SRRF Workshop MPI-CBG, Germany (Two-day Course) [2018];
- SRRF Workshop University of Bern, Switzerland (Two-day Course) [2018];
- Focus on Microscopy Tutorial, Singapore (Invited Lecture) [2018];

SOFTWARE DEVELOPMENT

7. ZeroCostDL4Mic - GNU GPL (PI - 2021): von Chamier et al., N. Comm., 2021 - *Democratising deep learning for microscopy with ZeroCostDL4Mic.*
6. NanoJ - GNU GPL (PI - 2018): Laine et al., J. Phys. D, 2019 - *High-performance open-source super-resolution microscopy toolbox, capable of GPU acceleration.*
5. NanoJ-Fluidics - MIT License (PI - 2018): Almada et al., Nat. Comm., 2019 - *Automating multimodal microscopy through inexpensive LEGO based syringe pumps.*
4. NanoJ-SQUIRREL - GNU GPL (PI - 2018): Culley et al., Nat. Meth., 2018 - *Quantitative mapping and minimization of super-resolution artifacts. Commercially adapted by Abbelight.*
3. NanoJ-SRRF - GNU GPL (PI - 2016): Gustafsson et al., Nat. Comm., 2016 - *New analytical super-resolution approach, led to the first super-resolution cameras by Andor Technology.*
2. NanoJ-VirusMapper - GNU GPL (PI - 2016): Gray et al., Sci. Rep., 2016 - *First open-source algorithm for Single-Particle Analysis in super-resolution microscopy.*
1. QuickPALM - GNU GPL (PI - 2010): Henriques et al., Nat. Meth., 2010 - *First open-source software for super-resolution analysis (PALM and STORM), one of the most used analytical packages in the Super-Resolution field.*

PUBLICATIONS [Google Scholar]

* co-corresponding author; ± equal contribution; this list is often outdated, please visit our laboratory website for recent publications

60. Christoph Spahn*, Romain F Laine, Pedro M Pereira, Estibaliz Gómez-de-Mariscal, Lucas von Chamier, Mia Conduit, Mariana G Pinho, Séamus Holden, Guillaume Jacquemet, Mike Heilemann*, Ricardo Henriques, "DeepBacs: Bacterial image analysis using open-source deep learning approaches", *bioRχiv, in review* (2021).

59. Mario Del Rosario, Hannah S Heil, Afonso Mendes, Vittorio Saggiomo, Ricardo Henriques*, "The Field Guide to 3D Printing in Optical Microscopy for Life Sciences", *Advanced Biology* (2021).

58. Romain F Laine, Ignacio Arganda-Carreras, Ricardo Henriques, Guillaume Jacquemet, "Avoiding a replication crisis in deep-learning-based bioimage analysis", *Nat. Methods* (2021).

57. Bruno M Saraiva, Ludwig Krippahl, Sérgio R Filipe, Ricardo Henriques, Mariana G Pinho, "eHooke: a tool for automated image analysis of spherical bacteria based on cell cycle progression", *Biological Imaging* (2021).

56. Bruno M Saraiva, Ludwig Krippahl, Sérgio R Filipe, Ricardo Henriques, Mariana G Pinho, "eHooke: a tool for automated image analysis of spherical bacteria based on cell cycle progression", *Biological Imaging* (2021).

55. Kevin D Whitley, Calum Jukes, Nicholas Tregidgo, Eleni Karinou, Pedro Almada, Yann Cesbron, Ricardo Henriques, Cees Dekker, Séamus Holden, "FtsZ treadmilling is essential for Z-ring condensation and septal constriction initiation in Bacillus subtilis cell division", *Nat. Communications* (2021).

54. Lucas von Chamier, Romain F Laine, Johanna Jukkala, Christoph Spahn, Daniel Krentzel, Elias Nehme, Martina Lerche, Sara Hernández-Pérez, Pieta K Mattila, Eleni Karinou, Séamus Holden, Ahmet Can Solak, Alexander Krull, Tim-Oliver Buchholz, Martin L Jones, Loïc A Royer, Christophe Leterrier, Yoav Shechtman, Florian Jug, Mike Heilemann, Guillaume Jacquemet*, Ricardo Henriques*, "Democratising deep learning for microscopy with ZeroCostDL4Mic", *Nat. Communications* (2021). ***Key publication.***

53. Emma Touizer*, Christian Sieben*, Ricardo Henriques*, Mark Marsh*, Romain F Laine*, "Application of super-resolution and advanced quantitative microscopy to the spatio-temporal analysis of influenza virus replication", *Viruses* (2021).

52. Lena Harker-Kirschneck, Anne E Hafner, Tina Yao, Andre Arashiro Pulschen, Fredrik Hurtig, Christian Vanhille Campos, Dawid Hryniuk, Sian Culley, Ricardo Henriques, Buzz Baum, Andela Saric, "Physical mechanisms of ESCRT-III-driven cell division in archaea", *bioRχiv, in review* (2021).

51. Yue Yuan, Cardon A Jacobs, Isabel Llorente Garcia, Pedro M Pereira, Scott P Lawrence, Romain F Laine, Mark Marsh, Ricardo Henriques*, "Single-Molecule Super-Resolution Imaging of T-Cell Plasma Membrane CD4 Redistribution upon HIV-1 Binding", *Viruses* (2021).

50. Alexander Spark, Alexandre Kitching, Daniel Esteban-Ferrer, Anoushka Handa, Alexander R Carr, Lisa-Maria Needham, Aleks Ponjavic, Ana Mafalda Santos, James McColl, Christophe Leterrier, Simon J Davis, Ricardo Henriques, Steven F Lee, "vLUME: 3D virtual reality for single-molecule localization microscopy", *Nat. Methods* (2020).

49. Gautam Dey, Siân Culley, Scott Curran, Uwe Schmidt, Ricardo Henriques, Wanda Kukulski, Buzz Baum, "Closed mitosis requires local disassembly of the nuclear envelope", *Nature* (2020).

48. Gabriel Tarrason Risa, Fredrik Hurtig, Sian Bray, Anne E Hafner, Lena Harker-Kirschneck, Peter Faull, Colin Davis, Dimitra Papatziamou, Delyan R Mutavchiev, Catherine Fan, Leticia Meneguello, Andre Arashiro Pulschen, Gautam Dey, Siân Culley, Mairi Kilkenny, Diorge P Souza, Luca Pellegrini, Robertus AM de Bruin, Ricardo Henriques, Ambrosius P Snijders, Anđela Šarić, Ann-Christin Lindås, Nicholas P Robinson, Buzz Baum, "The proteasome controls ESCRT-III–mediated cell division in an archaeon", *Science* (2020).

47. Andre Arashiro Pulschen, Delyan R Mutavchiev, Siân Culley, Kim Nadine Sebastian, Jacques Roubinet, Marc Roubinet, Gabriel Tarrason Risa, Marleen van Wolferen, Chantal Roubinet, Uwe Schmidt, Gautam Dey, Sonja-Verena Albers, Ricardo Henriques, Buzz Baum, "Live imaging of a hyperthermophilic archaeon reveals distinct roles for two ESCRT-III homologs in ensuring a robust and symmetric division", *Current Biology* (2020).

46. Guillaume Jacquemet*, Alexandre F. Carisey*, Hellyeh Hamidi, Ricardo Henriques*, Christophe Leterrier*, "The cell biologist's guide to super-resolution microscopy", *Journal of Cell Science* (2020).

45. Andre Arashiro Pulschen, Delyan R Mutavchiev, Siân Culley, Kim Nadine Sebastian, Jacques Roubinet, Marc Roubinet, Gabriel Tarrason Risa, Marleen van Wolferen, Chantal Roubinet, Uwe Schmidt, Gautam Dey, Sonja-Verena Albers, Ricardo Henriques, Buzz Baum, "Live Imaging of a Hyperthermophilic Archaeon Reveals Distinct Roles for Two ESCRT-III Homologs in Ensuring a Robust and Symmetric Division", *Current Biology* (2020).

44. Pedro M. Pereira, Nils Gustafsson, Mark Marsh, Musa M. Mhlanga, Ricardo Henriques*, "Super-Beacons: Open-Source Probes With Spontaneous Tuneable Blinking Compatible With Live-Cell Super-Resolution Microscopy", *Traffic* (2020). ***Key publication.***

43. Aki Stubb, Romain F Laine, Camilo Guzmán, Ricardo Henriques, Guillaume Jacquemet, Johanna Ivaska, "Fluctuation-Based Super-Resolution Traction Force Microscopy", *Nano Letters* (2020).

42. Kalina L Tosheva, Yue Yuan, Pedro M Pereira, Siân Culley*, Ricardo Henriques*, "Between Life and Death: strategies to reduce phototoxicity in super-resolution microscopy", *J. Phys. D* (2020).

41. Robert Gray, David Albrecht, Corina Beerli, Gary Cohen, Ricardo Henriques*, Jason Mercer*, "Nanoscale Polarization of the Vaccinia Virus Entry Fusion Complex Drives Efficient Fusion", *Nat. Microbiology* (2019). ***Key publication.***

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