

## Curriculum Vitae

### Personal Data

Title	Prof. Dr.
First name	Ana
Name	Pombo
Current position	Full professor (W3-S)
Current institution(s)/site(s), country	Institute of Biology, Humboldt University of Berlin; and Max Delbrück Center, Berlin, Germany
Identifiers/ORCID	0000-0002-7493-6288

### Qualifications and Career

Stages	Periods and Details
Degree programme	1987-1992, Biochemistry, diploma, Univ. of Lisbon, PT
Doctorate	1994-1998, D.Phil., Sites of transcriptional activity in the nucleus of mammalian cells, supervisor: Professor Peter R. Cook, Sir William Dunn School of Pathology, University of Oxford, UK
Stages of academic/professional career	<p>2022 - today, Vice-speaker, Program-Oriented Funding (POF) on 'Systems-wide and Cardiovascular Diseases' of the Helmholtz Association, Max Delbrück Centre for Molecular Medicine (MDC), Berlin, DE</p> <p>2019 - today, Deputy Scientific Director, Berlin Institute for Medical Systems Biology (BIMSB), MDC, Berlin, Germany</p> <p>2013 - today, Group Head (tenured), BIMSB, MDC, Berlin, DE</p> <p>2013 - today, Professor in Epigenetic Regulation and Genome Architecture (W3-S), Institute of Biology, Humboldt University of Berlin, Germany</p> <p>2012, Chair, Integrative Biology Section, MRC London Institute for Medical Sciences (MRC-LMS), London, UK</p> <p>2011 - 2015, Professor in Cell Biology, Institute of Clinical Sciences, Imperial College London, UK</p> <p>2007 - 2011, Honorary Reader in Cell Biology, Division of Clinical Sciences, Imperial College London, UK</p> <p>2002 - 2007, Honorary Senior Lecturer, Div. Clinical Sciences, Imperial College London, UK</p> <p>2000 - 2013 MRC Program Group leader, MRC-LMS, London, UK (tenure awarded in 2007)</p> <p>1998 - 2002, Royal Society Dorothy Hodgkin Fellow, Sir William Dunn School of Pathology, University of Oxford, Oxford, UK</p> <p>1997 - 2000, Hayward Junior Research Fellow, Oriel College, University of Oxford, Oxford, UK</p>

## Supplementary Career Information

1 child, \*2003; 11/2003 – 04/2004 (100% Parent time)

### Engagement in the Research System

Selection of editorial board duties - journals: J. Cell Biol., Cell, Dev. Cell, Curr. Op. Cell Biol.  
 Selection of referee duties - funding agencies: The Wellcome Trust (UK) and DFG (Germany)  
 grant review boards, ERC, MRC, BBSRC (UK)  
 Selection of referee duties - journals: Nature, Science, Cell, Mol Cell, Nat Genet, Nature Meth.  
 Selection of conference organization: CSHL meeting on "*Genome Organisation and Nuclear Function*" (2020, 2022, 2024), Gordon Research Conference, "*Genome Architecture*" (2023, 2025), Abcam conference on "*Epigenetics in the nervous system: development & disease*" (2018, 2020, 2023)

### Supervision of Researchers in Early Career Phases

<i>BSc students</i>	Supervised 7 students, Humboldt University of Berlin, University of Bremen, University of Barcelona
<i>MRes students</i>	Supervised 10 students, University of London (UK)
<i>MSc students</i>	Supervised 13 students, Humboldt University of Berlin (DE), Univ. Milan (IT), Utrecht (NL), Sapienza of Rome (IT), Torino (IT), Radboud Univ. (NL)
<i>PhD students</i>	
2000 - 2004	Sonya Martin, University of London, UK
2003 - 2007	Miguel R. Branco, University of London, UK
2003 - 2007	Julie K. Stock, University of London, UK
2007 - 2011	Emily Brookes, University of London, UK
2007 - 2011	Inês de Santiago University of London, UK
2008 - 2012	Liron Mark Lavitas, University of London, UK
2008 - 2012	Kelly J. Morris, University of London, UK
2008 - 2012	Inês de Castro, University of London, UK
2009 - 2013	Kedar N. Natarajan, University of London, UK
2011 - 2015	Robert A. Beagrie, University of London, UK
2010 - 2016	João Dias, University of Oporto, Portugal
2012 - 2017	Elena Torlai Triglia, Humboldt University of Berlin, Germany
2013 - 2018	Dorothee Kraemer, Humboldt University of Berlin, Germany
2014 - 2018	Giulia Caglio, Humboldt University of Berlin, Germany
2014 - 2020	Ana M. Fernandes, Humboldt University of Berlin, Germany
2014 - 2020	Rieke Kempfer, Humboldt University of Berlin, Germany
2015 - 2021	Gesa Loof, Humboldt University of Berlin, Germany
2017 - 2023	Thomas M. Sparks, Technical University of Berlin, Germany
2017 - 2023	Izabela Harabula, Humboldt University of Berlin, Germany
<u><i>Present</i></u>	
2018 - present	Silvia Carvalho (GABBA PhD program)
2019 - present	Luna Zea Redondo (DFG-IRTG Humboldt-Duke joint PhD school)
2019 - present	Dominik Szabó
2020 - present	Dominika Vojtasova (DFG-IRTG Humboldt-Duke joint PhD school)
2021 - present	Andréa Willémin (MDC International PhD Program)
2023 - present	Frederic Carew (DFG-IRTG Humboldt-Duke joint PhD school, jointly with Kerstin Kaufmann, Humboldt University of Berlin)
2023 - present	Berta Jimenez Hacha

## Scientific Results

71 peer-reviewed papers (currently 4 papers on preprint server)

Hirsch Index: 52 (Web of Science, 30/07/2024)

Full list of publications: <https://www.ncbi.nlm.nih.gov/myncbi/ana.pombo.1/bibliography/public/>

### Category A (<sup>1</sup>shared correspondence):

1. Beagrie RA, Thieme CJ, et al., Welch LA<sup>1</sup>, Nicodemi M<sup>1</sup>, **Pombo A**<sup>1</sup> (2023) Multiplex-GAM: genome-wide identification of chromatin contacts yields insights not captured by Hi-C. *Nature Methods* 20, 1037-1047. <https://doi.org/10.1038/s41592-023-01903-1>
2. Winick-Ng W<sup>1</sup>, Kukalev A, Harabula I, Zea Redondo L, Szabó D, et al., **Pombo A**<sup>1</sup> (2021) Cell-type specialization in the brain is encoded by specific long-range chromatin topologies. *Nature* 599: 684-691. doi: 10.1038/s41586-021-04081-2
3. Skourti-Stathaki N<sup>1</sup>, Torlai Triglia E, Warburton M, Voigt P, Bird A, **Pombo A**<sup>1</sup> (2019) R-loops enhance Polycomb repression at a subset of developmental regulator genes. *Mol Cell* 73: 1–16. doi: 10.1016/j.molcel.2018.12.016
4. Ferrai C<sup>1</sup>, Torlai Triglia E, et al., Ungless MA<sup>1</sup>, **Pombo A**<sup>1</sup> (2017) RNA polymerase II primes Polycomb-repressed developmental genes throughout terminal neuronal differentiation. *Mol Sys Biol* 13: 946. doi: 10.15252/msb.20177754
5. Barbieri M, Xie SQ, et al., Nicodemi M<sup>1</sup>, **Pombo A**<sup>1</sup> (2017) Active and poised promoter states drive folding of the extended HoxB locus in mouse embryonic stem cells. *Nat Struct Mol Biol* 24: 515-524. doi: 10.1038/nsmb.3402
6. Beagrie RA, Scialdone A, et al., Nicodemi M<sup>1</sup>, **Pombo A**<sup>1</sup> (2017) Complex multi-enhancer contacts captured by genome architecture mapping. *Nature* 543: 519-524. doi: 10.1038/nature21411
7. Brookes E, de Santiago I, et al., Teichmann SA, **Pombo A** (2012) Polycomb associates genome-wide with a specific RNA polymerase II variant, and regulates metabolic genes in ES cells. *Cell Stem Cell* 10: 157-70. doi: 10.1016/j.stem.2011.12.017.
8. Stock JK, Giardrossi S, et al., Fisher AM<sup>1</sup>, **Pombo A**<sup>1</sup> (2007) Ring1B-mediated ubiquitination of H2A restrains poised RNA polymerase II at bivalent genes in ES cells. *Nat Cell Biol* 9: 1428-1435. doi: 10.1038/ncb1663
9. Branco MR, **Pombo A** (2006) Intermingling of chromosome territories in interphase suggests role in translocations and transcription-dependent associations. *PLoS Biology* 4: e138. doi: 10.1371/journal.pbio.0040138
10. Jackson DA, **Pombo A** (1998) Replicon clusters are stable units of chromosome structure: evidence that nuclear organization contributes to the efficient activation and propagation of S phase in human cells. *J Cell Biol* 140: 1285-1295. doi: 10.1083/jcb.140.6.1285.

### b) Patents

2015, Patent '*Genome Architecture Mapping*'. **Pombo A**, Edwards PAW, Nicodemi M, Scialdone A, Beagrie RA. EP 3,230,465 B1, US 10,526,639 B2, PCT/EP2015/079413

2020, Patent application '*Method for nucleic acid detection by oligo hybridization and PCR-based amplification*'. **Pombo A**, Sparks TM. EP 20,203,357.7, PCT/EP2021/079393.

## Category B

### **Publications on preprint server:**

1. Loof G, et al., **Pombo A** (2022) 3D genome topologies distinguish pluripotent epiblast and primitive endoderm cells in the mouse blastocyst. *bioRxiv* 2022.10.19.512781
2. Stein J, et al., **Pombo A**, Church GM, Wu C.-t. (2024) Cryosectioning-enabled super-resolution microscopy for studying nuclear architecture at the single protein level. *bioRxiv* 2024.02.05.576943

3. Irastorza-Azcarate I<sup>1</sup>, et al., **Pombo A**<sup>1</sup> (2024) Extensive folding variability between homologous chromosomes in mammalian cells. bioRxiv 2024.05.08.591087.
4. Szabó D, Franke V, et al., Winick-Ng W<sup>1</sup>, **Pombo A**<sup>1</sup> (2024) A single dose of cocaine rewires the 3D genome structure of midbrain dopamine neurons. bioRxiv 2024.05.10.593308

### Academic Distinctions

1994 - 1997	4-Year PhD Fellowship, JNICT, Programa Ciência, Portugal.
1997 - 2000	Hayward Junior Research Fellowship, Oriel College, Oxford, UK.
1998 - 2002	Royal Society Dorothy Hodgkin Fellowship, Univ. Oxford and MRC-LMS, UK.
2007	Robert Feulgen Prize, Society for Histochemistry.
2013 - 2018	Helmholtz Distinguished Professorship, Helmholtz Association, DE.
2018	Elected EMBO member.
2022	Elected member, European Academy of Sciences.

### Other Information

2021 - present	Steering committee co-chair, NIH 4D-Nucleome consortium, US
2019 - present	Co-coordinator, DFG Priority Program SPP2202.
2018 - present	Strategy Advisory Board, MRC Human Genetics Unit, Edinburgh, UK.
2017 - present	Senior academic editor, 'Journal Cell Biology', Rockefeller University Press.
2015 - present	Member, NIH 4D-Nucleome consortium, US.

### Data protection and consent to the processing of optional data

If you provide voluntary information (marked as optional) in this CV, your consent is required. Please confirm your consent by checking the box below.

I expressly consent to the processing of the voluntary (optional) information, including “special categories of personal data”<sup>1</sup> in connection with the DFG’s review and decision-making process regarding my proposal. This also includes forwarding my data to the external reviewers, committee members and, where applicable, foreign partner organisations who are involved in the decision-making process. To the extent that these recipients are located in a third country (outside the European Economic Area), I additionally consent to them being granted access to my data for the above-mentioned purposes, even though a level of data protection comparable to EU law may not be guaranteed. For this reason, compliance with the data protection principles of EU law is not guaranteed in such cases. In this respect, there may be a violation of my fundamental rights and freedoms and resulting damages. This may make it more difficult for me to assert my rights under the General Data Protection Regulation (e.g. information, rectification, erasure, compensation) and, if necessary, to enforce these rights with the help of authorities or in court.

I may **revoke** my consent in whole or in part at any time – with effect for the future, freely and without giving reasons – vis-à-vis the DFG ([postmaster@dfg.de](mailto:postmaster@dfg.de)). The lawfulness of the processing carried out up to that point remains unaffected. Insofar as I transmit “special categories of personal data” relating to third parties in this CV, I confirm that the necessary legitimation under data protection law exists (e.g. based on consent).

I have taken note of the DFG’s Data Protection Notice relating to research funding, which I can access at [www.dfg.de/privacy\\_policy](http://www.dfg.de/privacy_policy) and I will forward it to such persons whose data the DFG processes as a result of being mentioned in this CV.

<sup>1</sup> Special categories of personal data are those “revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and (...) genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person’s sex life or sexual orientation” (Article 9(1) GDPR).