

Luisa F. Pallares

luisa.pallares@tuebingen.mpg.de
pallareslab.org

Max Planck Research Group Leader

Friedrich Miescher Laboratory
of the Max Planck Society
Max-Planck-Ring 9
72076 Tübingen, Germany
Phone: +49 (0) 7071 601 810

Curriculum Vitae

Education

- 2015 **PhD in Evolutionary Biology** (*summa cum laude*)
Max Planck Institute for Evolutionary Biology, Plön, Germany
Christian-Albrecht-Universität zu Kiel, Kiel, Germany
Advisor: Prof. Dr. Diethard Tautz
- 2010 **BSc in Biology**
Universidad Nacional de Colombia, Bogotá, Colombia
Advisor: Prof. Dr. Joao Muñoz

Appointments

- 2022-present **Max Planck Research Group Leader** (W2), Friedrich Miescher Laboratory of the Max Planck Society, Tübingen, Germany
- 2022-2025 **Visiting Research Collaborator**, Princeton University, USA
- 2022-2024 **Visiting Scientist**, HHMI Janelia Research Campus, USA - Stern Lab
- 2019-2021 **Visiting Postdoctoral Associate**, HHMI Janelia Research Campus, USA - Stern Lab
- 2017-2021 **HFSP Postdoctoral Researcher**, Princeton University, USA - Ayroles Lab
- 2015-2016 **Postdoctoral Researcher**, MPI for Evolutionary Biology, Plön, Germany - Tautz Lab

Publications (*equal contribution)

Phipps-Tan J, Alishayeva S, Xu H, Ayroles JF, **Pallares LF**. Environmental perturbation increases gene expression variability and unmasks genetic regulation for transcriptional robustness. *bioRxiv* <https://doi.org/10.64898/2026.02.18.706644>

Wolf S, Abhyankar V, Melo D, Ayroles JF, **Pallares LF**. From GWAS to signal validation: An approach for estimating SNP genetic effects while preserving genomic context. *bioRxiv* <https://doi.org/10.1101/2023.03.09.531909>

Tautz D, **Pallares LF**, Andersson L, Barghi N, Barton N, Bay R, Chan YF, Hancock A, Kaiser TS, Koenig D, Kontarakis Z, Liedvogel M, de Meaux J, Nordborg M, Palmer AA, Purugganan M, Schlötterer C, Schmid K, Stainier DYR, Weigel D, Wolf JBW, Ebert D, Gibson G. (2026) Beyond Mendel: a call to revisit the genotype–phenotype map through new experimental paradigms. *Genetics*, iyag024

Pallares LF, Melo D, Wolf S, Cofer EM, Abhyankar V, Peng J, Ayroles JF. (2025) Saturating the eQTL map in *Drosophila melanogaster*: genome-wide patterns of cis and trans regulation of transcriptional variation in outbred populations. *Cell Genomics* 5, 101033

Brasó-Vives M, Hartasánchez DA, Ayroles JF, Bucio CF, Furlan-Magaril M, Majic P, **Pallares LF**, Phipps-Tan J, Rogers TF, Ruiz-Herrera A, Santos-Rodríguez G, Vellnow N, Wilcox JJS, Rodríguez JA. (2025) The Genomic Kaleidoscope: On the Hidden Dimensions of Within-Species Genomic Diversity. *Genome Biology and Evolution*, Volume 17, Issue 11, November 2025, evaf204

Forsberg SKG, Melo D, Wolf SW, Grenier JK, Tang M, Henry LP, **Pallares LF**, Clark AG, Ayroles JF. (2025) Longitudinal sequencing reveals polygenic and epistatic nature of genomic response to selection. *PNAS*, U.S.A. 122 (25) e2410452122

Li XC, Srinivasan V, Laiker I, Misunou N, Frankel N, **Pallares LF**, Crocker J. (2024) TF-High-Evolutionary: in vivo mutagenesis of gene regulatory networks for the study of the genetics and evolution of the *Drosophila* regulatory genome. *Molecular Biology and Evolution*, msae167

Melo D, **Pallares LF**, Ayroles JF. (2024) Reassessing the modularity of gene co-expression networks using the Stochastic Block Model. *PLOS Computational Biology* 20(7): e1012300

Abraham JO, Lin B, Miller A, Henry LP, Demmel M, Warungu R, Mwangi M, Lobura PM, **Pallares LF**, Ayroles JF, Rubenstein D, Pringle RM. (2024) Determinants of microbiome composition: insights from free-ranging hybrid zebras (*Equus quagga* × *grevyi*). *Molecular Ecology*, 00, e17370

Wolf S, Melo D, Garske KM, **Pallares LF**, Lea AJ, Ayroles JF. (2023) Characterizing the landscape of gene expression variance in humans. *PLOS Genetics*, 19(7): e1010833

Pallares LF*, Lea AJ*, Han C, Filippova EV, Andolfatto P, Ayroles JF. (2023) Dietary stress unmasks cryptic genetic variation regulating lifespan in outbred *Drosophila*. *Nature Genetics* 55, 123–129

Werkhoven Z, Bravin A, Skutt-Kakaria K, Reimers P, **Pallares LF**, Ayroles J, de Bivort BL. (2021). The structure of behavioral variation within a genotype. *eLife*, 10, e64988

Tautz D, Reeves RG, **Pallares LF**. (2020) New experimental support for long standing concepts of poly-genic genetics implies that the Mendelian genetic paradigm needs to be revised. In: The New (Old) Genetics, Halle, eds. Wittinghofer, A. and Jäckle, H., *NAL-live* 2020.1, v1.0

Pallares LF, Picard S, Ayroles JF. (2020) TM3’seq: a tagmentation-mediated 3’ sequencing approach for improving scalability of RNA-seq experiments. *G3: Genes, Genomes, Genetics* 10: 143-150

Pallares LF. (2019) Genetic Variation: Searching for solutions to the missing heritability problem. *eLife* 8: e53018

Varón-González C, **Pallares LF**, Debat V, Navarro N. (2019) Mouse Skull Mean Shape and Shape Robustness Rely on Different Genetic Architectures and Different Loci. *Frontiers in Genetics* 10:64

Škrabar N, Turner LM, **Pallares LF**, Harr B, Tautz D. (2018) Using the *Mus musculus* hybrid zone to assess covariation and genetic architecture of limb bone lengths. *Molecular Ecology Resources* 18: 908– 921

Pallares LF*, Ledevin R*, Pantalacci S, Turner LM, Steingrimsdóttir E, Renaud S. (2017) Genomic regions controlling shape variation in the first upper molar of the house mouse. *eLife* 6: e29510

Pallares LF, Turner LM, Tautz D. (2016) Craniofacial shape transition across the house mouse hybrid zone: implications for the genetic architecture and evolution of between-species differences. *Development Genes and Evolution* 226, 173-186

Pallares LF, Carbonetto P, Gopalakrishnan S, Parker CC, Ackert-Bicknell CL, Palmer AA, Tautz D. (2015) Mapping of craniofacial traits in outbred mice identifies major developmental genes involved in shape determination. *PLoS Genetics* 11(11): e1005607

Pallares LF, Harr B, Turner LM, Tautz D. (2014) Use of a natural hybrid zone for genome-wide association mapping of craniofacial traits in the house mouse. *Molecular Ecology* 23, 5756-5770

Boell L, **Pallares LF**, Brodski C, Chen Y, Christian JL, Kousa YA, Kuss P, Nelsen S, Novikov O, Schutte BC, Wang Y, Tautz D. (2013) Exploring the effects of gene dosage on mandible shape in mice as a model for studying the genetic basis of natural variation. *Development Genes and Evolution* 223, 279-287

Honors, Grants, and Awards

2025	Grant from the Deutsche Forschungsgemeinschaft (DFG) [€473,000] SPP 2349 – Gevol, joint project with Dr. Dirk Metzler, LMU)
2024	Grant from the SMBE to organize the SMBE Satellite Meeting on Biological Noise [€20,000]
2019	Visiting Scientist Grant [\$30,420] from Janelia Farm Research Campus (HHMI) (Joint project with David Stern, PhD)
2018	Writing in Science and Engineering Fellowship from Princeton University Writing Program
2018	Young Investigator Travel Award [\$2,000] from the Society for Molecular Biology and Evolution - SMBE
2017	HFSP Postdoctoral Fellowship [\$161,000] from the Human Frontier Science Program
2015	Doctoral Dissertation awarded <i>summa cum laude</i> by the Christian-Albrecht-Universität zu Kiel, Germany
2013	Best talk in the annual retreat of the International Max Planck Research School.
2013	Best talk in the Symposium of the Max Planck Institute for Evolutionary Biology.
2012-2015	Travel award [€1,000 each year] from the International Max Planck Research School
2011	PhD Fellowship from the International Max Planck Research School for Evolutionary Biology –IMPRS
2011	PhD Fellowship “Francisco Jose de Caldas” from the Colombian Administrative Department of Science, Technology and Innovation. [<i>Declined for the Max Planck Fellowship</i>]
2011	Young Researcher Grant [\$10,000] from the Colombian Administrative Department of Science, Technology and Innovation.

Invited Talks

- 2026 (upcoming) **University of Basel**, Switzerland
- 2026 (upcoming) **University of Lausanne**, Switzerland
- 2026 **Plenary speaker, VIII Colombian Symposium for Evolutionary Biology**, Bogotá, Colombia
- 2026 **Seminar series in ecology and evolution - SEEM**, Montpellier, France
- 2026 **Johannes-Gutenberg-University**, Mainz, Germany
- 2026 **University of Bielefeld**, SFB NC³ seminar series, Bielefeld, Germany
- 2025 **EvoSur summer school**, Playa Verde, Uruguay
- 2025 **Helsinki University**, HiLIFE Seminar, Helsinki, Finland
- 2025 **Freie Universität Berlin**, Institute of Biology, Berlin, Germany
- 2025 **Senckenberg Biodiversity and Climate Research Centre**, Frankfurt, Germany
- 2025 **Quantitative Biology Winter School on Polygenic Adaptation**, Paris, France
- 2025 **Vetmeduni**, Vienna Graduate School of Population Genetics, Vienna, Austria
- 2025 **Konrad Lorenz Institute for Evolution and Cognition Research**, Klosterneuburg, Austria
- 2025 **Bonn University**, Biological Colloquium, Bonn, Germany
- 2024 **Ludwig-Maximilians-Universität München – LMU**, EES seminar series, München, Germany
- 2024 **Institute for Science and Technology Austria – ISTA**, Vienna
- 2024 **Polygenic adaptation meeting - ICTS**, Bangalore, India
- 2024 **University of Strasbourg**, France
- 2024 **University of Tübingen**, Institute for Evolution and Ecology, Tübingen, Germany
- 2023 **University of Edinburgh**, Institute of Ecology and Evolution, Edinburgh, Scotland
- 2023 **Graduate school retreat of the MPI for Evolutionary Biology**, Leck, Germany
- 2023 **IHA-CLOE Symposium - University College London**, London, England
- 2023 **Max Planck Institute for Evolutionary Biology**, Plön, Germany
- 2022 **Graduate school retreat of the MPI for Biology**, Untermarchtal, Germany
- 2022 **Mind the Gap meeting: from genotype to phenotype and the role of modelling, genomic prediction, and development**, Göttingen, Germany
- 2021 **Universidad Nacional de Colombia**, Biology Department, Bogotá, Colombia
- 2021 **University of Oldenburg**, joint Colloquium of the Institute for Biology and Environmental Science and Department of Neuroscience, Oldenburg, Germany
- 2021 **Evolutionary Mismatch in the Genomics Era** meeting, Princeton, USA
- 2021 **Max Planck Institute for Developmental Biology**, Tübingen, Germany.
- 2021 **Princeton University**, Colloquium Department of Ecology and Evolutionary Biology, Princeton, USA.
- 2021 **Max Planck Society**, Selection Symposium in Biomedical Sciences.
- 2021 **Max Planck Institute for Molecular Cell Biology and Genetics**, Dresden, Germany.
- 2018 **Second symposium of Geometric Morphometrics**, Bogotá, Colombia.
- 2017 **University of Vienna**, Colloquium of the Center for Organismal Systems Biology, Vienna, Austria.
- 2016 **Euro Evo Devo meeting**, Uppsala, Sweden.
- 2016 **Friedrich Miescher Laboratory**, Tübingen, Germany.
- 2015 **Wild Genomics Meeting**, Selbu, Norway.
- 2014 **Wild Mice Workshop**, Plön, Germany.
- 2014 **University of Lyon**, Lyon, France.
- 2014 **External Evaluation of the Graduate School**, MPI for Evolutionary Biology, Plön, Germany.

Teaching

- 2022-present **Lecturer**, Introductory course for PhD students, Max Planck graduate school, Tübingen
- 2024-2026 **Lecturer**, Masters course on Model Organisms, Tübingen University, Germany
- 2023,2025 **Lecturer/Instructor**, EMBO course: Drosophila genetics and genomics, Heidelberg, Germany
- 2024 **Lecturer**, Masters course on Developmental Genetics. Tübingen University, Germany
- 2023-2024 **Lecturer**, Masters course on Advanced concepts in Cell Biology. Tübingen University, Germany
- 2022 **Lecturer**, Masters course on *Drosophila* genetics. Tübingen University, Germany
- 2020,2022 **Lecturer**, graduate course EEB521 “Tropical Biology” with fieldwork in Kenya. Princeton University, USA
- 2018 **Lecturer**, graduate course “Reading and Writing about the Scientific Literature”. Princeton University, USA
- 2018 **Lecturer**, undergraduate course “The past, present, and future of human genomics”. Princeton University, USA
- 2014 **Instructor**, “Geometric morphometrics, methods and applications”. Universidad Nacional de Colombia, Bogotá
- 2011 **Instructor**, “Geometric morphometrics, methods and applications”. Universidad Nacional de Colombia, Bogotá
- 2009 **Teaching assistant**, undergraduate course “Darwin 200 years”, Universidad Nacional de Colombia, Bogotá
- 2009 **Teaching assistant**, undergraduate course “Transgenic crops, Frankenstein or Prometheus”, Universidad Nacional de Colombia, Bogotá

Service and Outreach

- 2026-2028 **Scientific advisory board member**, Vienna Doctoral School of Ecology and Evolutionary Biology (VDSEE), University of Vienna
- 2025-2027 **Coordination team** of the DFG SPP 2349 – Gevol
- 2025 **Invited speaker** in the round table “Are species like Linnaeus defined them?”, Universidad del Norte, Barranquilla, Colombia
- 2025 **Co-organizer**, SMBE Satellite Meeting on “Origin, Maintenance, and Evolution of Biological Noise”, Tübingen, Germany
- 2024 **Co-chair**, Drosophila Community Session “Environmental Genomics”, TAGC meeting, Washington, US.
- 2023-2024 **Speaker** for the Independent Max Planck Research Groups, Friedrich-Miescher Laboratory of the Max Planck Society.
- 2022-2024 **Co-organizer**, weekly Distinguished Speaker Seminar Series – DSSS of the MPI Biology and Friedrich-Miescher Laboratory
- 2022-present **Mentor** in the Virtual Lab Meeting Training Program from the SMBE
- 2022-present **Mentor** in the Athene Mentoring Program for women in science, University of Tübingen, Germany (<https://athene-mentoring.jimdosite.com/>)
- 2022 **Invited talk**, first symposium of Biology alumni, Universidad Nacional de Colombia, Bogotá
- 2021 **Symposium organizer**, “GxE interactions in the genomics era”. Virtual SMBE meeting.
- 2021 **Invited Article**, Special Issue on Colombian Women in Science of the Fulica Magazine, Colombia.

- 2020-2021 **Postdoctoral Representative** to the Committee on *Climate for All* involved in increasing diversity and inclusivity in the Department of Ecology and Evolutionary Biology, Princeton University, NJ, USA
- 2018 **Invited Researcher** to the “Women in STEM” meeting at New York City College of Technology (NYCCT), NY, USA
- 2017-2020 Participant in the **Skype a Scientist** program to share science with primary and high school students (skypeascientist.com)
- 2016 **Invited talk** to celebrate the Biologist Day at Universidad Nacional de Colombia, Bogotá.
- 2016 **Popular Science Talk** for the administration and technical staff of the Max Planck Institute, Plön, Germany
- 2015 **Symposium organizer**, “Micro-evo-devo: using natural variation to explain the how and why of phenotypic evolution”. SMBE meeting. Vienna, Austria.
- 2015 **Organizer**, 1st TEDxKielUniversity, Kiel, Germany.
- 2012-2014 **Graduate Student representative**, International Max Planck Research School for Evolutionary Biology
- 2012 **Organizer**, annual symposium of the Max Planck Institute for Evolutionary Biology, Plön, Germany
- 2010-2011 **Designer of the test** for the evaluation of high school quality – Biology section. Colombian Institute for the Promotion of Higher Education–ICFES.
- 2007-2009 **President of organizing committee**, II National Congress of Biology Students, Bogotá, Colombia
- 2006-2007 **Organizer**, I National Congress of Biology Students, Bogotá, Colombia

Editorial work

Editor: Journal of Molecular Evolution
 Guest editor: eLife

Journal

Reviewer: Science, eLife, PNAS, Genetics, Molecular Biology and Evolution, Evolution, Frontiers in Evolutionary Biology, Frontiers in Zoology, Genes, Molecular Ecology, G3, Heredity, Molecular Ecology Resources, Philosophical Transactions of the Royal Society B, Open Science, Scientific Reports, Science Advances, PLoS One, PLoS Biology, Genome Biology and Evolution, PCI.
 [See details at <https://www.webofscience.com/wos/author/record/86474>]

Grant

Reviewer: European Research Council – ERC, starting and consolidator grants
 Max Planck-Weizmann Postdoctoral Program

Languages

Spanish (native), English (fluent), German (intermediate)