

Parte A. INFORMACIÓN PERSONAL

		Fecha del CV	10/01/2025
Nombre	Eloísa		
Apellidos	Herrera González de Molina		

A.1. Cargo actual

Cargo	Profesora de Investigación del CSIC		
Fecha de Inicio	19/02/2021		
Institución	Agencia Estatal Consejo Superior de Investigaciones Científicas		
Centro de Invest	Instituto de Neurociencias		
País	España	Nº de Teléfono	
Línea de Investigación	Generación y Regeneración de Circuitos Neuronales		

A.2. Cargos previos

Periodo	Position/Institution/Country/Interruption cause
2016 - 2021	Investigador Científico / CSIC / Spain
2007 - 2016	Científico Titular / CSIC / Spain
2004 - 2007	Investigadora Ramón y Cajal / CSIC / Spain
2000 - 2004	Investigadora Postdoctoral / Columbia University / USA

A.3. Educación

Licenciatura, Máster y PhD	University/Country	Year
Doctora en Ciencias Biológicas	Universidad Autónoma de Madrid	2000
Master in Biotecnología	Universidad Autónoma de Madrid	1997
Licenciada en Biología	Universidad de Granada	1996

A.4. Indicadores generales de calidad de la producción científica

Tramos de Investigación reconocidos: Sexenios: 4 (1997-2002)(2003-08)(2009-14)(2015-21)
 Quinquenios: 4 (2000-2004)(2005-2009)(2009-2014)(2015-2020)(2020-2025 under evaluation). Tesis Doctorales Dirigidas: 10 defendidas, 3 en curso. Total publicaciones: 51.
 Citas Totales>4500 (Google Scholar). Índice H: 30.

Parte B. Resumen del CV

I am a Research Professor at the Spanish National Research Council (CSIC) and Principal Investigator of the group "Generation and Regeneration of Neural Circuits" at the Institute of Neurosciences (IN) in Alicante. I obtained my PhD in 2000 working on Cancer and Aging at the National Center for Biotechnology in Madrid, earning the "Special Mention" for the best doctoral thesis and contributing to the field with key first-author publications in [PNAS \(1998\)](#), [EMBO J \(1999a, 1999b, 2000\)](#). I then moved to Columbia University (New York, USA) to work as a postdoctoral researcher in the lab of Prof. Carol Mason. There, I identified molecular mechanisms underlying the emergence of binocular vision and published several first-author papers in [Development \(2004\)](#), [CONB \(2004\)](#), and [Cell \(2003\)](#). Since establishing my lab in 2005, my research has focused on three main areas:

- Cellular and molecular mechanisms underlying neurogenesis
- Molecular mechanisms controlling axon guidance
- Mechanisms underlying neural circuit assembly

My group has received uninterrupted funding from national and international agencies, including the HFSP Career Development Award (Human Frontiers Science Program) and a European Research Council (ERC) project. I served as Deputy Coordinator for the Spanish National Research Agency (AEI) (2015–2018). I have been a member of numerous evaluation committees and panels for both national and international funding agencies. I have been invited to speak at more than sixty scientific activities. I have supervised 10 PhD theses (+3

ongoing) and 9 Master's Theses. I serve on the Editorial Board of *IJMS*, *Scientific Reports*, and *Molecular Brain*, and I am Senior Editor of the *European Journal of Neuroscience* (EJN), the official journal of FENS. I have also been invited to write review articles for high-impact journals (see below). In 2021, I coordinated the chapter "Brain, Mind, and Behavior" for the Spanish Research Council's "Scientific Challenges: Towards 2030" initiative. I chaired the Program Committee of the biennial Spanish Society for Neuroscience (SENC-2021) meeting, have served on the program committees of IBRO-2023, FENS-2024 and FENS-2026, and I am currently the President of the Spanish Society for Developmental Biology (SEBD). I have co-organized the international AXON-2019, AXON-2023 and AXON-2025 conferences. As part of my duties at the Institute of Neurosciences (IN), I am a member of the Animal Facility Research Committee, scientific coordinator of the Imaging Facility, and Coordinator of the IN's Research Axis.

Parte C. MERITOS RELEVANTES

C.1. 10 selected publications as corresponding author or co-author (2016–25).

For a complete list of the 26 publications from our lab in the last decade please visit:

<https://eloisahgm.wixsite.com/herrerallab/publications>.

1. Pérez-Ferrer I & **Herrera E***. Novel Insights into the Mechanisms of Growth Cone Dynamics during Axon Pathfinding. *Current Opinion in Neurobiology*. doi: 10.1016/j.conb.2025.103073.
2. Murcia-Belmonte V, Chauvin G, Coca Y, Escalante A, Klein R, **Herrera E*** (2025). EphA4 Mediates EphrinB1-Dependent Adhesion in Retinal Ganglion Cells. *J Neuroscience*. doi: 10.1523/JNEUROSCI.0043-24.2024. Cover caption.
3. Negueruela S, Morenilla-Palao C, Herrera M, Coca Y, Florez-Paz D, López-Cascales MT, Gomis A, **Herrera E*** (2025). Proper Frequency of Perinatal Retinal Waves Is Essential for the Precise Wiring of Visual Axons in Nonimage-Forming Nuclei. *J Neuroscience*. doi: 10.1523/JNEUROSCI.1408-23.2024
4. Barnada SM, Giner de Gracia A, Morenilla-Palao C, López-Cascales MT, Scopa C, Waltrich FJ, Cicardi ME, Karlin J, Peterson KA, Brugmann SA, Santen GWE, McMahon SB, **Herrera E*** & Trizzino M* (2024). ARID1A-BAF coordinates ZIC2 genomic occupancy for epithelial to mesenchymal transition in cranial neural crest lineage commitment *American Journal of Human Genetics*. doi: 10.1016/j.ajhg.2024.07.022.
5. **Herrera E**, Chedotal A and CA Mason (2024). The development of the binocular circuit. *Annual Review in Neuroscience*. DOI:10.1146/annurev-neuro-111020-093230.
6. Fernández-Nogales M, López-Cascales MT (...) **Herrera E*** (2022). Multiomic Analysis of Neurons with Divergent Projection Patterns Identifies Novel Regulators of Axon Pathfinding. *Advanced Science*. doi: 10.1002/advs.202200615.
7. Morenilla-Palao C, López-Cascales MT, López-Atalaya JP, Calvo-Díaz L, Barco A and **Herrera E*** (2020). A Zic2-triggered switch in an alternative Wnt pathway converts attractive responses into repulsive. *Science Advances* doi: 10.1126/sciadv.aaz8797
8. Murcia-Belmonte V, Coca Y, Vegar C, (...), **Herrera E*** (2019). A retino-retinal projection guided by Unc5c emerged in species with retinal waves. *Current Biology* DOI: 10.1016/j.cub.2019.02.052
9. Marcucci F, Murcia-Belmonte V, Wang Q, Coca Y, Ferreiro-Galve S, Kuwajima T, Khalid S, Ross M.E., Mason C, and **Herrera E*** (2016) The Ciliary Margin Zone of the Mammalian Retina Generates Retinal Ganglion Cells. *Cell Reports* doi: 10.1016/j.celrep.2016.11.016. Cover caption.

10. Ruiz-Reig N, Andrés B, Huilgol D, Grove E, Tissir F, Tole S, Theil T, **Herrera E*** and Fairén A* (2016) Lateral Thalamic Eminence: A Novel Origin for mGluR1/Lot Cells. *Cerebral Cortex* doi: 10.1093/cercor/bhw126.

C.2. Selected Invited Talks in the following Scientific Forums (Last 5 years)

1. AXON-meeting. Development, Plasticity and Regeneration of Neural Circuits. 17-19 September, Rotterdam.
2. 20th SENC meeting. 3-5 September 2025.
3. Instituto Cervantes. Charla divulgativa: Avances en Neurociencia y su Impacto en la Sociedad. October 2024. Brussels
4. Aula de Verano "Blas Cabrera" 2023. Universidad Internacional Menéndez Pelayo.
5. Seminar Series. Hebrew University of Jerusalem. 2023. Jerusalem, Israel.
6. The Brain and the Chip. 2022. I. Bioingeniería. UMH, Elche, Spain.
7. Vision Days. 2022. Institut de la Vision, Paris, France.
8. Spontaneous Activity in Brain Development (SPONT-2022). Altea, Spain.
9. FENS 2022 International Neuroscience Conference, Paris, France.
10. Seminar Series in the Center for Developmental Neurobiology, King's College London, UK. 2021.
11. XVI Curso Nacional de Neurociencia. 2021. Carmona, Spain.
12. Redit-SUMMIT. The decade of opportunities and collaboration. 2021. Valencia, Spain.
13. Understanding and reprogramming developmental visual disorders/Ramón Areces Symposium. 2020. Madrid, Spain.

Organization of International Scientific Events (Last 5 years)

1. Co-Organizer of the international meeting AXON-2025. Rotterdam. 2025.
2. Member of the Local Committee FENS-2026. Barcelona, Spain. 2026
3. Member of the Committee program FENS-2024. Vienna, Austria. 2024.
4. Organizer of the international meeting AXON-2023. Altea, Spain. 2023.
5. Member of the Committee program IBRO-2023. Granada, Spain 2023.
6. President of the SENC's Program Committee Meeting. Lleida, Spain. 2021
7. Organizer of the international meeting AXON-2019. Alicante, Spain. 2019
8. Co-director of the Cajal Training Program Course FENS-IBRO "Developmental Neurobiology and Pathologies. Bordeaux, France. 2019

C.3. Projects as PI (last 10 years)

1. PROMETEO/2024-24139. *Transcriptional and Epigenetic Control of Neural Stem Cell Identity and Neuronal Maintenance: Implications for Regenerative Medicine*. FE: GVA – Prometeo Programme for research groups of excellence. 2020-23. **600.000 €**. Proyecto colaborativo entre cuatro grupos de investigación.
2. CelMa-ENVEJECE. *Regulación del agotamiento de las células madre en el cerebro adulto como potencial terapia para el declive cognitivo en el envejecimiento*. Entidad financiadora: Centro Internacional para la de Investigación del Envejecimiento (ICAR). Duración: 01/01/2023 – 31/12/2023. **29.929,50 €**
3. PID2022-138245NB-I00. *Impacto de la actividad perinatal en el ensamblaje y la mielinización de los circuitos neuronales*. FE: MCIN. Plan Nacional. 2024-26. **320.500 €**
4. HR21-00824. *A strategy to guide and promote spinal and visual axons regeneration after injury*. Financing Entity (FE): Fundación La Caixa Health Research. 2021–24. **495.500 €**.
5. PROMETEO/2020/007. *Desregulación transcripcional y epigenética en trastornos del desarrollo del sistema nervioso*. FE: GVA – Prometeo Programme for research groups of excellence. 2020-23. **195.602 €**

6. PID2019-110535GB-I00. *Axon Guidance Regulation: Implications in neuronal regeneration*. FE: Ministry of Science and Innovation. 2020–23. **278.300 €**.
7. 20191956. *Mecanismos moleculares de la holoprosencefalia asociada a Zic2*. FE: Fundación Ramón Areces. 2019–22. **129.545 €**
8. BFU2016-77605-P. *Axon guidance regulation during the formation of neural circuits*. FE: Ministry of economy 2016–21. **338.800 €**
9. PCIN-2015-192-C02-02. *Síndromes de discapacidad intelectual relacionadas con alteraciones en la cromatina*. FE: ERA-NET (EU) 2015–18. **75.000 €**
10. 20142130. *Identificación y caracterización de células madre de retina para su uso en terapias de reemplazo en enfermedades neurodegenerativas de la retina*. FE: Fundación La Marató TV3. 2015–18. **87.500 €**
11. 201/C/2014. *Identificación y caracterización de células madre de retina para su uso en terapias de reemplazo en enfermedades neurodegenerativas de la retina*. FE: F. Tatiana P. de Guzmán el Bueno. 2014–17. **52.250€**
12. BFU2013-47832-P. *Mecanismos que regulan la navegación axonal y la conectividad neuronal*. FE: Ministry of Economy. 2014–17. **302.500€**
13. ERC 282329. Consolidator Grant (ERC-2011-Co_20101109). *Wiring up visual circuits: Interplay between gene expression and spontaneous and experience dependent activity*. 2012–18. FE: ERC European Research Council. **1.500.000 €**.