CV date	October 2021

Part A. PERSONAL INFORMATION

First and Family name	Gertrudis Perea Parrilla		
Social Security, Passport, ID number	26229428K	Age	44
Researcher codes	WoS Researcher ID *(*)*	V-3308-2017	
	SCOPUS Author ID*(*)*	6602110037	
	Open Researcher and Contributor ID (ORCID) **	0000-0001-5924-9175	

(*) At least one of these is mandatory
(**) Mandatory

A.1. Current position

Name of University/Institution	Instituto Cajal / Spanish Research Council (CSIC)		
Department	Functional and Systems Neurobiology		
Address and Country	Av. Doctor Arce, 37. Madrid. Spain		
Phone number	+34 915854710	E-mail	gperea@cajal.csic.es
Current position	Staff Scientist of the Spanish Research Council (CSIC)	From	2016
Key words	Neuron-glia interactions, astrocytes, synaptic physiology		

A.2. Education

PhD	University	Year
Neuroscience	Universidad Autónoma de Madrid (UAM)	2006

A.3. JCR articles, h Index, thesis supervised…

Number of scientific contributions: 34 (30 peer review papers, 4 book chapters)
Total citations: 6233 (3318 since 2016; Google Scholar reference). H index: 28
Publications in the first quartile (Q1): 26
Publications in the first decile (D1): 24
Thesis supervised: 4
Sara Mederos, November 2019. *Cum Laude.*
Candela González Arias, estimated defense in 2022.
Andrea Sánchez Ruiz, estimated defense in 2024.
Faezeh Ashouri, estimated defense in 2024
Master Thesis supervised: 7
Quinquenios: 2, Sexenios: 3

Part B. CV SUMMARY

I am a CSIC Researcher and Head of the “Neuron-Glia Networks Lab” at the Cajal Institute (Madrid, Spain) since 2015. Our interest is focused in understanding the role of astrocytes, a glial cell type, in the neural coding underling brain activity and complex animal behaviors. Neuron-astrocyte signaling encompass a broad spectrum of functions, from the ion homeostasis to metabolic fuel for neuronal activity, with relevant physiological consequences for the nervous system. The location of astrocyte processes facing synapses places them in a strategic position to regulate synaptic transmission, which is known as tripartite synapses. Our results have contributed to consolidate the concept of **Tripartite Synapse** in Neuroscience, showing that astrocytes can modulate neuronal activity targeting presynaptic and postsynaptic receptors, being involved in plasticity processes. Then, from the point of view of information coding, neuron-astrocyte signaling can provide to neural circuits an additional layer of computation, expanding the capabilities of single neurons to transmit information.

Combining molecular approaches, electrophysiology, imaging techniques and behavioural test, we investigate the role of astrocytes in the synaptic and circuits function and dysfunction underlying brain diseases.

Part C. RELEVANT MERITS

C.1. Publications (including books)

Selected publications (10 out of 21 since 2014):

1- Mederos S; et al. (6/6) **2021** GABAergic signaling to astrocytes in the prefrontal cortex sustains goal-directed behaviors. ***Nat Neurosci.*** 24(1):82-92. doi: 10.1038/s41593-020-00752-x. *Corresponding author.*
2- Escartin C; et al (consoritum) **2021**. Reactive astrocyte nomenclature, definitions, and future directions. ***Nat Neurosci***. 2021 Mar;24(3):312-325. doi: 10.1038/s41593-020-00783-4.
3- Larramona-Arcas R; et al (3/15) **2020**. Sex-dependent calcium hyperactivity due to lysosomal-related dysfunction in astrocytes from APOE4 versus APOE3 gene targeted replacement mice. ***Mol Neurodegener***. 9;15(1):35. doi: 10.1186/s13024-020-00382-8.
4- Mederos S; et al. (8/8). **2019**. Melanopsin for precise optogenetic activation of astrocyte-neuron networks. ***Glia***. 67(5):915-934. doi: 10.1002/glia.23580. *Corresponding author.*
5- Mederos S; et al. (3/3). **2018**. Astrocyte–Neuron Networks: A Multilane Highway of Signaling for Homeostatic Brain Function. ***Front Synaptic Neurosci****. 10: 45. doi: 10.3389/fnsyn.2018.00045. Corresponding author.*
6- Gomez-Gonzalo M; et al. (14/13). **2017**. Neuron-astrocyte signaling is preserved in the ageing brain. ***Glia***. ISSN: 1098-1136. 65-4, pp.569-580. *Co-corresponding author*.
7- Fernandez AM; et al. (21/19) **2017** Insulin Regulates Astrocytic Glucose Handling Through Cooperation With IGF-I. **Diabetes**. 66(1):64-74. doi: 10.2337/db16-0861.
8- Perea G; et al. (19/1). **2016**. Activity-dependent switch of GABAergic inhibition into glutamatergic excitation in astrocyte-neuron networks. ***eLife***. ISSN: 2050-084X. doi: 10.7554/eLife.2. *Co-corresponding author.*
9- Martin R; et al. (5/4). **2015**. Circuit-specific signaling in astrocyte-neuron networks in basal ganglia pathways. ***Science***. ISSN: 1095-9203. 349-6249, pp.730-734.
10- Perea G; et al. (4/1). **2014**. Optogenetic astrocyte activation modulates response selectivity of visual cortex neurons in vivo. ***Nature Communications***. ISSN: 2041-1723. 5:3262: 10.1038/ncom. *Co-corresponding author.*

C.2. Research projects and grants

1. Fundación La Marató TV3 Project: “Gliotransmissors i receptors de cannabinoides en l¿origen dels dèficits cognitius i de plasticitat sinàptica en la malaltia de Huntington" (# 225619). Private funding. Co-PI. 11/05/2021 – 10/05-2025. 95.187,50 € (319.708,75 € total grant).
2. Program for research assistant contracts of the Community of Madrid 2020 (#PEJ-2020-AI/BMD-18675). 01/01/2021 – 31/12/2022. Plan Regional de Investigación Científica e Innovación Tecnológica de Madrid (2016-2020). 45.000,00 €
3. Disruptive materials, technologies & approaches to unravel the role of Astrocytes in brain function and dysfunction: towards to Glial interfaces (#956325; H2020-MSCA-ITN-2020). Marie Sklodowska-Curie Actions. 01/11/2020 – 31/10-2024. 250.904,88 €
4. Role of serotonergic-driven astrocyte signaling in cognitive functions (SER_Astrocyte) (#PID2019-106579RB-I00). MICINN (Spain). 01/06/2020- 31/05/2023). 263.538,00 €

5. PV+ interneuron and Astrocyte signaling: impact on the inhibitory synaptic transmission of cortical circuits (#BFU2016-75107-P). MINECO (Spain). PI: Gertrudis Perea. 30/12 /2016 - 31 / 12/2020. € 210,000.
6. Astrocyte-Interneuron signaling and the information processing by neural networks (#BFU2013-47265-R). MINECO (Spain). PI: Gertrudis Perea. 01/01 / 2014-31 / 12/2016. € 163,000.
7. Brain dysfunction during aging: relevance for Alzheimer's disease. MINECO (Spain). (#CONSOLIDER-Ingenio Program 2010). WP leader: Gertrudis Perea. 30/12/2010-30/6/2016. 500.000 €.
8. Role of astrocytes in neuronal network function in visual cortex. (FP7 PEOPLE. NEUGLIANET #253635). Marie Skłodowska-Curie Actions. European Commission. (Picower Institute for Learning and Memory, MIT and Cajal Institute, CSIC). PI: Gertrudis Perea. 01/08/2010-31/01/2014. 234.337,9 €.

C.5, C.6, C.7… (e. g., Institutional responsibilities, memberships of scientific societies…)

Scientific Management Activities:
- *Referee ad hoc for Scientific Journals (selected)*: Science, Nature Communications, Cerebral Cortex; Molecular Psychiatry; Glia; Current Opinion in Neurobiology; PLoS Computational Biology; Epilepsy; Neuroscience; NeuroPharmacology; PLoS ONE; Journal of Neurochemistry; Brain Research Reviews; Frontiers in Neural Circuits; FEBS Letters; American Journal Physiol-Cell Physiology; Experimental Cell Research; NeuroChemical Research.

- *Referee ad hoc in Research Grants*: H2020, European Union. ANEP, Spain. The Wellcome Trust, UK. Independent Research Fund Denmark | Medical Sciences. Biotechnology and Biological Sciences Research Council (BBSRC), UK. NEURON ERANET:NEURON, European Union. Israel Science Fundation, Israel. French National Research Agency (ANR). Comisión Sectorial de Investigación Científica (CSIC), Uruguay. Fundación Clemente Estable, Uruguay. Comisión Nacional de Investigación Científica y Tecnologica (CONICYT), Chile. Agencia Andaluza del Conocimiento (AAC). Junta de Andalucía, Spain.

- *Associate Editor for*: **Glia** (since September 2019); **Frontiers in Cellular Neuroscience** - Non-Neuronal Cells (since April 2019); **Brain Sciences**, NeuroGlia section (since March 2019).

- Secretary of the Spanish Society of Neuroscience (SENC). 2017-2019.
- Vicepresident of the Spanish Society of Neuroscience (SENC). 2019- 2021.
- Head of the Functional and Systems Neurobiology Department, Instituto Cajal (September 2019-June 2021).

Invited speaker (selected):
- *Gordon Research Conferences*. Glial Biology: Functional interactions among glia &neurons. 2007. March 11-16. Ventura, CA. U.S.A.
- Annual Meeting of the Society of Biology of Chile. 2007. November 21-24. Pucón, Chile
- 8th European Congress on Epileptology. 2008. September 21-25. Berlin, Germany.
- Invited Foreign Expert to annual meeting of the Priority Program of the DFG. 2008. Germany.
- 9th European Meeting on Glial Cells in Health and Disease (EuroGLIA). 2009. September 8-12. Paris, France.
- IBRO's 2011 World Congress of Neuroscience. 2011. July 14-17. Florence, Italy.
- ISN Advance School. 2012. July 11-13. Barcelona , Spain.
- Invited Speaker to the German Neuroscience Society. 2013. March 13-16. Goettingen, Germany.
- Achucarro Basque Center for Neuroscience. 2013. May 31. Bilbao. Spain.
- PhD Course on Neuron Glia Interactions. Panum Institute. 2013. June 24-27. Copenhagen, Denmark.
- European Federations of Neurosciences (FENS). 2014. July 5-9. Milan, Italy.

- International Astrocyte School (IAS). 2015. April 12-18. Bertinoro, Italy.
- 23rd Annual Symposium of the French Club of Glial Cells. 2016. June 1-3. Carry-Le-Rouet, France.
- New opportunities for NIH-CSIC collaboration. May 24th, 2017. Madrid. Spain.
- International Symposium on Metabolic and Redox Interactions between Neurons and Astrocytes in Health and Disease. 2017. June 26-28. Salamanca, Spain.
- Bonn Lecture Series in Neuroscience. University of Bonn. 2018. April 6th. Bonn, Germany.
- 16th Annual Conference of the Hungarian Neuroscience Society. 2019. January 17-18. Debrecen, Hungary.
- *Gordon Research Conference*. Glial biology: functional interactions among glia and neurons, 2019, March 3-8, Ventura, California.
- 14th European Meeting on Glial Cells in Health and Disease (EuroGLIA). 2019. July 10-13. Porto, Portugal.
- European Federations of Neurosciences (FENS). 2020. July 11-15. Glasgow, UK (*virtual forum*).
- Glial cells-neuron crosstalk in CNS health and disease. International workshop. October 2020. Turin, Italy.
- PhD Course on Neuron Glia Interactions. University of Copenhagen. 2021. May 10-12. Copenhagen, Denmark. *Co-organizer*

Mentoring:
- Sara Mederos. Master student. Universidad Autónoma de Madrid (2014-2015). PhD student 2015-2019. PhD Cum Laude. **Best Thesis Award 2019 by Universidad Complutense de Madrid (UCM). Alberto Rábano Award to the Best Thesis in Neuroscience 2019 by Fundación Romanillos**. **FENS EJN Young Investigator Prize 2022 winner.**

- Candela González Arias. Master student. Universidad Autónoma de Madrid (2016-2017). PhD student 2017-. Estimated defense in 2022.
- Andrea Sánchez Ruiz. Master student. Universidad Autónoma de Madrid (2020-2021). PhD student 2021-. Estimated defense in 2024.
- Faezeh Ashouri. PhD student 2021. H2020-MSCA-ITN-2020. Estimated defense in 2024.
- Lucia de Arancibia Casillas. Research assistant 2021-2023 (#PEJ-2020-AI/BMD-18675)

- Cristina Sánchez Puelles. Postdoc (2018).
- José Jorge Ramírez Franco. Postdoc (2017).
- Alicia Hernandez Vivanco. Postdoc (2014-2016).

Master Students:
1. Mario Fernández de la Puebla García-Peñuela. Master student. Universidad Autónoma de Madrid (2016-2017).
2. Irene Serra Cueto. Master student. Universidad Autónoma de Madrid (2017-2018).
3. Patricia Torres Vidal. Master student. Universidad Complutense de Madrid (2017-2018).
4. Maria Priego Ojeda. Master student. Universidad Pablo de Olavide, Seville (2019).
5. Julio Esparza Ibañez. Master student. Imperial College London, UK (2020-2021).

Director of the Master course: "Neurobiologia Celular. Fisiologia de las Membranas Excitables". Master in Neuroscience. Dept. Anatomy, Histology and Neuroscience, Faculty of Medicine, Universidad Autónoma de Madrid and Instituto Cajal (CSIC), since 2014.

Fellowships and Awards:
- Tenure-Track position "Ramón y Cajal Program". RYC-2012-12014.
- Marie Curie Postdoctoral Fellowship. 2010. (PIOF-GA-2009-253635).
- Human Frontiers Science Program. Posdoctoral Fellowship. 2010. DECLINED
- Best PhD Thesis Award in 2006 of Faculty of Medicine, Universidad Autómona de Madrid.
- "Scientific Highlight of the Year 2007 (FENS)". Perea,G and Araque, A (Science, 2007).
- Pfizer Fundation Award Basic Research 2008.