Curriculum Vitae

Juan Aguilar, PhD
Principal Investigator
Experimental Neurophysiology
Group (Lab i1-05; Office i1-10)
Hospital Nacional de Parapléjicos, Toledo,
Spain ORCID: 0000-0002-8070-3923
SCOPUS ID: 23468570400

ACADEMIC DEGREES:

Ph.D. in Biology (Neuroscience Program), University of Santiago de Compostela (Spain). 2002.
Degree in Biology. University of Seville. (Seville, Spain). 1996

RESEARCH AND PROFESSIONAL EXPERIENCE.

1998-2002. *Predoctoral fellowship*. Fac. Medicine. Univ. Santiago de Compostela. (Spain). Predoctoral Program of Spanish Ministry for Education and Culture.

2003-2005. *Postdoctoral fellowship.* College of Medicine. Drexel University. Philadelphia (USA). Postdoctoral Program of Spanish Ministry for Education and Culture.

2006-2008. *Researcher of National Health System*. Instituto de Salud Carlos III (Miguel Servet program). National Hospital for Paraplegics. SESCAM. Toledo. Spain.

2009-nowadays. *Group Leader.* Experimental Neurophysiology Group. National Hospital for Paraplegics. SESCAM. Toledo. Spain.

Oct-2015 to Feb-2016. *Visiting Researcher* in: Laboratory of Dr. Araque. Department of Neuroscience. University of Minnesota (MN, USA). Granted by Instituto de Salud Carlos III. Spanish Ministry of Economy. Government of Spain.

Current position: *Group Leader* of the Experimental Neurophysiology and Neuronal Circuits lab. National Hospital for Paraplegics. SESCAM. Toledo. Spain.

MAIN RESEARCH LINES

1.- Physiological basis of sensory processing in different levels of the somatosensory system: dorsal column nuclei, thalamus and cortex.
2.- Study of functional reorganization of brain structures as thalamus and cortex after a spinal cord injury.

MAIN COLLABORATIONS and other research lines:

Dr. Oliviero. FENNSI Group. National Hospital for Paraplegics, Toledo, (Spain). Non- Invasive techniques of neuromodulation in humans.

.- Dr. Abad-Rodríguez. Group of Membrane Biology and Axonal Repair. National Hospital for Paraplegics, Toledo, (Spain). Physiological role of Galectin-4 in cortex and hippocampus.

.- Dr. Araque. Dpt. Neuroscience. University of Minnesota (MN,USA.) Interaction Astrocyte-neuron in the somatosensory cortex.

.- Dr. Rivadulla and Dr. Cudeiro. Department of Medicine. University of Coruña. Spain. Use of Static magnetic fields (tSMS) in animal models of epilepsy.

SCIENTIFIC PUBLICATIONS:

2023

58.- Alonso-Calviño E, Fernández-López E, Zaforas M, Rosa JM, **Aguilar J***. (2023). Increased excitability and reduced GABAergic levels in somatosensory cortex under chronic spinal cord injury. Exp Neurol 369, 114504. doi: 10.1016/j.expneurol.2023.114504. **IF: 5.33 Q1**

57.- Miguel-Quesada C, Zaforas M, Herrera-Pérez S, Lines J, Fernández-López E, Alonso-Calviño E, Ardaya M, Soria FN, Araque A, **Aguilar J***, Rosa JM*. (2023). Astrocytes adjust the Dynamic range of cortical network activity to control modality-specific sensory information processing. Cell Rep 42: 112950. doi.org/10.1016/j.celrep.2023.112950 **IF: 9.42 D1**.

56.- Moreno-Jiménez L, Benito-Martín MS, Sanclemente-Alamán I, Matías-Guiu JA, Sancho-Bielsa F, Canales-Aguirre A, Mateos-Díaz JC, Matías-Guiu J, **Aguilar J**, Gómez-Pinedo U. (2023). Murine experimental models of amyotrophic lateral sclerosis: an update. Neurologia (Eng Ed). S2173-5808(23)00018-4. doi: 10.1016/j.nrleng.2021.07.004. **IF: 3,9**

55.- Soto-León V, Díez-Rodríguez E, Herrera-Péres S, Rosa JM, **Aguilar J**, Hernando A, Bravo-Sánchez C, López-González, Pérez-Borrego, Bestmann S, Oliviero A. (2023). Effects of transcranial static magnetic field stimulation over the left dorsal prefrontal cortex on random number generation. Clinical Neurophysiology 149:18-24. doi.org/10.1016/j.clinph.2023.02.163. **IF: 3.7**

2022

54.- Brocca, M.E.; Mora-Rubio, A.; Alonso-Calviño, E.; Fernández-López, E.; Díez-Revuelta, N.; Martos-Pu al, D.; **Aguilar, J**.; Higuero, A.M.; Abad-Rodríguez, J. (2022) Normal Cortical Myelination in Galectin-4-Deficient Mice. Cells 2022,11, 3485. https://doi.org/10.3390/ cells11213485 **IF: 7.66 Q1**

53.- Lines J, Baraibar AM, Frang C, Martin ED, **Aguilar J**, Lee MK, Araque A, Kofuji P. (2022). Astrocyte-neuronal network interplay is disrupted in Alzheimer's disease mice. Glia 70(2):368-378 https://doi.org/10.1002/glia.24112 **IF: 7.54 D1**

2021

52.- Dominguez-Bajo A, Rosa JM*, Gonzalez-Mayorga A, Rodilla BL, Arché-Núñez A, Benayas E, Ocón P, Pérez L, Camarero J, Miranda R, González MT, **Aguilar J**, López-Dolado E, Serrano MC. (2021). Nanostructured gold electrodes promote neural maturation and network connectivity. Biomaterials 279, Dec 2021 1121186 https://doi.org/10.1016/j.biomaterials.2021.121186 **IF:12.4 D1**

51.- Zaforas M, Rosa JM, Alonso-Calviño E, Fernández-López E, Miguel-Quesada C, Oliviero A, **Aguilar J***. (2021). Cortical layer-specific modulation of neuronal activity after sensory deprivation due to spinal cord injury. Journal of Physiology 599(20): 4643-4669. https://doi.org/10.1113/JP281901 **IF:5.182 Q1**

2020

50.- Soto-Leon V, Alonso-Bonilla C, Peinado-Palomino D, Torres-Pareja M, Mendiza-Laiz N, Mordillo-Mateos L, Onate-Figuerez A, Arias P, Aguilar J, Oliviero A. (2020). Effects of fatigue induced by repetitive movements and isometric tasks on reaction time. *Human Movement Science 73:102679.* DOI:10.1016/j.humov.2020.102679 **IF: 2.096**

49.- Lines J, Martin ED, Kofuji P, **Aguilar J*,** Araque* A. (2020). Astrocytes modulate sensory-evoked neuronal network activity. *Nature Communications 11: 3689.* DOI: 10.1038/s4167-020-17536-3 **IF:12.121 ;D1** (*) Corr Author.

48.- Hernando A, Galvez F, García MA, Soto-Leon V, Alonso-Bonilla C, **Aguilar J**, Oliviero A. (2020). Effects of moderate static magnetic fiel on neural systems is a non-invasive mechanical stimulation of the brain possible theoretically?. Frontiers in Neuroscience 14:419 DOI: 10.3389/fnins.2020.00419. **IF: 3.707 Q2**

2019

47.- Fernández-López E, Alonso-Calviño E, Humanes-Varela D, Foffani G*, **Aguilar J***. (2019). Slow- wave activity homeostasis in the somatosensory cortex after spinal cord injury. Experimental Neurology. 322:113035. doi: 10.1016/j.expneurol.2019.113035. **IF: 4.56 Q1**(*) Corr Author.

46.- Mordillo-Mateos L, Soto-León V, Torres-Pareja M, Peinado-Palomino D, Mendoza-Laiz N, Alonso-bonilla C, Dileone M, Rotondi M, **Aguilar J**, Oliviero A. (2019). Fatigue in multiple sclerosis: general and perceived fatigue does not depend on corticospinal tract dysfunction. Fronties in Neurology 10:339 doi: 10.3389/fneur.2019.00339. **IF: 2.635**

45.- Durkee CA, Covelo A, Lines J, Kofuji P, **Aguilar J**, Araque A. (2019). Gi/o protein-coupled receptors inhibit neurons but activate astrocytes and stimulate gliotransmission. Glia 67:1076-1093 doi: 10.1002/glia.23589 **IF: 5.829 Q1**

2018

44.- Jutzeler CR, Streijger F, **Aguilar J**, Shortt K, Manouchehri N, Okon E, Hupp M, Curt A, Kwon BK, Kramer JLK. (2018). Sensorymotor plasticity after spinal cord injury: a longitudinal and translational study. Annals of Clinical and Translational Neurology. 6(1):68-82 doi:10.1002/acn3.679 **IF: 4.656**

43.- Rivadulla C*, **Aguilar J***, Coletti M, Aguila J, Prieto S, Cudeiro J. (2018). Static magnetic fields reduce epileptiforme activity in anesthetized rat and monkey. Scientific Reports 8(1):15985 doi:10.1038/s41598-018-3308-x **IF:4.525**

42.- Jiménez S, Mordillo-Mateos L, Dileone M, Campolo , Carrasco-López C, Moitinho-Ferreira F, Gallego-Izquierdo T, Siebner HR, Valls-Solé, J, Aguilar J, Oliviero A. (2018). Effects of patterned peripheral nerve stimulation on soleus spinal motor neuron excitability. PLoS One Feb 16; 13(2):e0192471 doi:10.1371/journal.pone.0912471 **IF: 2.77**

2017

41.- Lozano-Soto E, Soto-León V, Sabbarese S, Ruiz-Alvarez L, Sanchez-Del-Rio M, **Aguilar J**, Strange BA, Foffani G, Oliviero A. (2017) "Transcranial static magnetic field stimulation (tSMS) of the visual cortex decreases experimental photophobia". Cephalalgia Jan 1:333102417736899. doi: 10.1177/0333102417736899. **IF:4.438**

40.- Martin-Fernandez M, Jamison S, Robin LM, Zhao Z, Martin ED, **Aguilar J**, Benneyworth MA, MArsicano G, Araque A. (2017). Synapse-specific astrocyte gating of amygdala-related behavior. *Nature Neuroscience 20(11):1540-1548 doi:10.1038/nn.4649* **IF: 14.98 D1**

39.- Liu C, Foffani G, Scaglione A, **Aguilar J**, Moxon KA. (2017). Adaptation of thalamic neurons provides information about the spatiotemporal contexto of stimulus history. *The Journal of Neuroscience 37(41):10012-10021.* doi: 10.1523/JNEUROSCI.0637-17.2017 **IF: 5.998 Q1**

38.- Valero M, Arvekin RG, Fernandez-Lamo I; **Aguilar J**, Lopez-Pigozzi D, Brotons-Mas JR, Cid E, Tamas G, Menendez de la Prida L. 2017. Mechanisms for selective single-cell reactivation during offline sharp-wave ripples and their distortion by Fast ripples. *Neuron*. *94(6):1234-1247.* doi:10.1016/j.neuron.2017.05.032 **IF: 14.024 D1**

37.- Mordillo-Mateos L, Dileone M, Soto-León V, Brocalero-Camacho A, Pérez-Borrego YA, Onate-Figuerez A, **Aguilar J**, Oliviero A. (2017). Effects of transcranial direct current stimulation on temperature and pain perception. Scientific Reports.7(1)2946 doi:10.1038/s41598-017-03173-2 **IF:4.847**

36.- Cudeiro-Blanco J, Onate-Figuerez A, Soto-León V, Avendaño-Coy J, Mordillo-Mateos L, Brocalero-Camacho A, Esclarín A, Rotondi M**, Aguilar J**, Arias P, Oliviero A. (2017). Prevalence of Fatigue and Associated Factors in a SCI population: data from an internet based and face-to-face surveys. *Journal of Neurotrauma epub ahead of print. Doi:10.1089/neu.2016.4950* **IF:5.19**

35.- Humanes-Valera D, Foffani G*, Alonso-Calviño E, Fenández-López E, **Aguilar J*.** (2017). "Dual cortical plasticity after spinal cord injury". *Cerebral Cortex 27(5):2926-2940 doi: 10.1093/cercor/bhw142*. **IF: 8.66** Q1 (*) Corr Author.

2016

34.- Alonso-Calviño E, Martínez-Camero I, Fernández-López F, Humanes-Valera D, Foffani G, **Aguilar J*.** (2016)."Increased responses in the somatosensory thalamus immediately after spinal cord injury". *Neurobiology of Disease 87:39-49. doi:10.1016/j.nbd.2015.12.003* **IF: 5.078 Q1** (*) Corr Author.

2015

33.- Valero M, Cid E, Averkin RG, **Aguilar J**, Sanchez-Aguilera A, Viney TJ, Gomez-Dominguez, Bellistri E & Menendez de la Prida L. (2015). "Determinants of different deep and superficial CA1 pyramidal cell dynamics during sharp-wave ripples. *Nature Neuroscience 18(9):1281-90. doi:10.1038/nn.4074* **IF:14.98 D1**

2014

32.- Humanes-Valera D, Foffani G*, **Aguilar J*.** (2014). "Increased cortical responses to forepaw stimuli immediately after peripheral deafferentation of hindpaw inputs". *Scientific Reports*. 4, 7278; DOI:10.1038/srep07278 **IF: 5.08** (*) Corr Author.

31.- Moxon KA, Oliviero A, **Aguilar J**, Foffani G*. (2014)."Cortical reorganization after spinal cord injury: always for good?. *Neuroscience. Vol 283:78-94 doi: 10.1016/j.neuroscience.2014.06.056)* **IF: 3.33**

30.- Yague JG, Humanes-Valera D, **Aguilar J**, Foffani G. (2014). " Functional reorganization of the forepaw cortical representation immediately after thoracic spinal cord hemisections in rats". *Experimental Neurology 257:19-24.* **IF:4.62 Q1**

2013

29.- Humanes-Valera D, **Aguilar J***, Foffani G*. (2013). "Reorganization of the intact somatosensory cortex immediately after spinal cord injury". *PlosOne8(7):*e69655. doi:10.1371/journal.pone.0069655. **IF: 3.53**

28) Bellistri E, **Aguilar J**, Brotons-Mas JR, Foffani G, Menéndez de la Prida L. (2013) "Basic properties of somatosensory-evoked responses in the dorsal hippocampus of the rat". *Journal of Physiology.* 591.(10) pp: 2667-2686 **IF: 4.38 Q1**

2012

27.- Morales-Botello ML, **Aguilar J*** and Foffani G*.(2012). "Imaging the spatio-temporal dynamics of supragranular activity in the rat somatosensory cortex in response to stimulation of the paws". *PloSOne 7(7) e40174. doi:10.1371/journal.pone 0040174* **IF: 3.53** (*) Corr Author.

26.- A. Oliviero, A. Arevalo-Martin, M Rotondi, D Garcia-Ovejero, L Mordillo-Mateos, A Lozano-Sicilia, I Panyavin, L Chiovato, **J Aguilar**, G Foffani. V Di Lazzaro, E Molina-Holgado. (2012). "CB1 receptor antagonism/inverse agonism increases motor system excitability in humans". *European Neuropsycopharmacology 22(1): 27-35* **IF:3.68**

2011

25.- Scaglione A, Moxon KA, **Aguilar J** and Foffani G. (2011). "Trial-to-trial variability in the responses of neurons carries information about stimulus location in the rat whisker thalamus". *PNAS vol108 nº36 pp:14956-14961.* **IF: 9.81 Q1**

24.- **Aguilar J*,** Pulecchi F, Dilena R, Oliviero A, Priori A and Foffani G*. (2011)
"Spinal direct current stimulation modulates the activity of graciles nucleus and primary somatosensory cortex in anesthetized rats". *Journal of Physology 589.20 pp: 4981-4996* IF: 4.38 (*) Corr Author.

23.- A Oliviero, L Mordillo-Mateos, Arias P, Panyavin I, Foffani G and **Aguilar J**. (2011). "Transcranial static magnetic field stimulation (tSMS) of the human motor cortex". *Journal of Physiology 5891.20 pp:4949-4958* **IF: 4.38 Q1**

22.- Y Perez-Borrego, V Soto-Leon, **J Aguilar**, G Foffani, M Rotondi, S Bestmann and A Oliviero. (2011). "Studying plasticity of sensory function: insight from pregnancy". *Experimental Brain Research 209 (2): 311-316* **IF: 2.17**

21.- Foffani G*, Humanes-Valera D, Calderón-Muñoz F, Oliviero A, **Aguilar J***. (2011)
"Spinal cord injury immediately decreases anesthetic requirements in rats". *Spinal Cord, 49:822-826* **IF: 1.7** (*) Corr Author.

20.- Yagüe JG, Foffani G*, **Aguilar J*.** (2011). "Cortical hiperexcitability in response to preserved spinothalamic inputs immediatlety after spinal cord hemisection". *Experimental Neurology. 227: 252-263* **IF: 4.62** Q1 (*) Corr Author.

2010

19.- **Aguilar J*,** Humanes-Valera D, Alonso-Calviño E, Yagüe JG, Moxon K, Oliviero A, Foffani G*. (2010). "Spinal cord injury immediately changes the state of the brain".
Journal of Neuroscience 30:7528-7537. **IF: 6.75** Q1 (*) Corr Author.

18.- Merzagora A.C, Foffani G, Payavin I, Mordillo-Mateos L, **Aguilar J**, Onaral B, Oliviero A. (2010). "Prefrontal hemodynamics change produced by anodal direct current stimulation". *Neuroimage 49:3204-10.* **IF: 6.13 D1**

2009

17.- Hirata A, **Aguilar J** and Castro-Alamancos MA. (2009). "Influence of subcortical inhibition on barrel cortex receptive fields". *Journal of Neurophysiology*. 102:437-450 **IF: 3.04**

16) Foffani G, Morales-Botello ML and **Aguilar J***. (2009). "Spike Timing, Spike Count, and Temporal Information for the Discrimination of Tactile Stimuli in the Rat Ventrobasal Complex". *Journal of Neuroscience 29:5964 –5973*. **IF:6.75 Q1** (*) Corr Author.

15.- G. Miscio, E. Milano, **J. Aguilar**, G. Savia, G. Foffani, A. Mauro, L. Mordillo-Mateos, J. Romero-Ganuza , A. Oliviero. (2009). "Functional involvement of central nervous system at high altitude". *Experimental Brain Research 194:157–162* **IF: 2.17**

2008

14.- **J. Aguilar*,** Morales-Botello M.L. and G. Foffani*. (2008). "Tactile responsesof hindpaw, forepaw and whisker neurons in the thalamic ventrobasal complex of anesthetized rats". *European Journal of Neuroscience. 27:378–387.* **IF. 3.67** (*) Corr Author.

13.- K.A. Moxon, L.L. Hale, **J. Aguilar**, G. Foffani. (2008). "Responses of infragranular neurons in the rat primary somatosensory cortex to forepaw and hindpaw tactile stimuli". *Neuroscience 156: 1083-1092.* **IF: 3.33**

2007

12.- A. Oliviero , M. Rubio-Esteban , G. Foffani , **J. Aguilar** , E. Lopez-Dolado , T. Arzoz-Lezaun, J.A. Godino-Duran a, J.M. Gómez-Argüelles, Y. Pérez-Borrego, F. Sebastián de la Cruz, V. Di Lazzaro. (2007). "Effects of baclofen on temperature perception in humans". *Neuroscience Research 59:89–92.* **IF: 2.15**

2006

11.- A. Hirata, **J. Aguilar**, and M.A. Castro-Alamancos. (2006). "Noradrenergic activation amplifies bottom-up and top-down signal-to-noise ratios in sensory thalamus". *Journal of Neuroscience. 26:4426 –4436*. **IF:6.75 Q1**

2005

10.- **JR. Aguilar** and MA Castro-Alamancos. (2005). "Spatiotemporal gating of sensory inputs in thalamus during quiescent and activated states". *Journal of Neuroscience. 25:10990 –11002*. **IF:6.75 Q1**

2004

9.- C. Soto, J. **Aguilar**, F. Martín-Cora, C Rivadulla and A Canedo. (2004). "Intracuneate mechanisms underlying primary afferent cutaneous processing in anaesthetized cats". *European Journal of Neuroscience. 19: 3006-3016*. **IF: 3.67**

8.- E. Sánchez**, J. Aguilar**, C. Rivadulla and A. Canedo. (2004). "The role of glycinergic interneurons in the dorsal column nuclei". *Neurocomputing 58-60: 1049-1055.* **IF: 2.01**

2003

7.- **J. Aguilar**, C. Rivadulla, C. Soto, and A. Canedo. (2003). "New corticocuneate cellular mechanisms underlying the modulation of cutaneous ascending transmission in anesthetized cats". *Journal of Neurophysiology* 89: 3328 –3339. **IF: 3.04**

2002

6.- **J. Aguilar**, C. Soto, C. Rivadulla and A. Canedo. (2002). "The lemniscal-cuneate recurrent excitation is suppressed by strychnine and enhanced by GABAA antagonists in the anaesthetized cat". *European Journal of Neuroscience*. *16: 1697-1704*. **IF: 3.6**

2001

5.- J. Mariño, J. **Aguilar**, C. Soto, A. Canedo. (2001). "La corteza cerebral modula la transmisión cutánea a través de los núcleos de los cordones posteriores". *Revista de Neurología. 33:448-454* IF: 0.93

2000

4.- Canedo and **J. Aguilar**. (2000) "Spatial and cortical influences exerted on cuneothalamic and thalamocortical neurons of the cat".*European Journal of Neuroscience. 12:2515-2533*. **IF: 3.67**

3.- A. Canedo, J. Mariño and **J. Aguilar**.(2000). "Lemniscal recurrent and transcortical influences on cuneate neurons". *Neuroscience. 97: 317-334* **IF: 3.33**

2.- J. Mariño, A. Canedo and **J. Aguilar**.(2000). "Sensorimotor cortical influences on cuneate nucleus rhythmic activity in the anesthetized cat". *Neuroscience 95: 657-673* **IF: 3.33**

1999

1.- J. Mariño, **J. Aguilar** and A. Canedo. (1999). "Cortico-subcortical synchronization in the chloralose-anesthetized cat". *Neuroscience.93: 409-411.* **IF: 3.33**

GRANTED RESEARCH PROJECTS:

12.-Title: Piezo4Spine: Piezo-driven theramesh: A revolutionary multifaceted actuator to repair the injured spinal cord (GA No. 101098597). HORIZON-EIC-2022-PATHFINDEROPEN-01. Principal Investigator WP4 leader: Juliana M Rosa (*in vivo* evaluation); **Co-Researcher Juan Aguilar**. Hospital Nacional de Parapléjicos. Start-End Date: 01/01/2023 – 31/12/2026.

11.- Title: Deciphering the role of GABAergic neuronal populations in the cortical reorganization after spinal cord injury (GABA in CoRe). Funding Entity: Ministerio de Economía y Competitividad. Dirección General de Investigación Científica y Técnica. 2020-2023. **PI: Juan Aguilar**

10.- Title: Heterogeneidad espacial y temporal de la plasticidad neuronal provocada por una lesión medular en la corteza somatosensorial. Ref: BFU2016-0665-P. Funding Entity: Ministerio de Economía y Competitividad. Dirección General de Investigación Científica y Técnica. 2017-2019. **PI: Juan Aguilar**

9.- Title: Efectos fisiológicos inmediatos producidos por una lesión medular en el tálamo somatosensorial: Importancia de alteraciones del ritmo y sincronía. Ref: SAF2012-40109 Entity: Ministerio de Economía y Competitividad. Dirección General de Investigación Científica y Técnica. 2013-2015 **PI: Juan Aguilar**

8.- Title: Immediate cortical reorganization after spinal cord injury in rats. Ref P120. 2011-2012 Entity: International Foundation for Research in Paraplegia.-IRP. PI: Guglielmo Foffani; Collaborator Investigator: Juan Aguilar

7.- Title: Estudio comparativo de los efectos que se producen sobre la actividad de la corteza somatosensorial por una lesión de nervio periférico y por una lesión medular. Ref: PI-2010/027 Hospital Nacional de Parapléjicos. 2010-2012 Entity: Fundación para la Investigación Sanitaria en Castilla-La Mancha. FISCAM. **PI: Juan Aguilar.**

6.- Title: Estudio de los cambios tempranos en las respuestas fisiológicas de las neuronas tálamo-corticales en el núcleo ventral posterior lateral de la rata después de una lesión medular. Ref:PI 08/1810 Entity: Fondo de Investigaciones Sanitarias del Instituto de Salud Carlos III. Ministerio de Ciencia e Innovación Hospital Nacional de Parapléjicos. 2009-2011. **PI: Juan Aguilar.**

5.- Title: Development and applications of signals processing techniques to extract information from complex neuronal activities. Acción Integrada España-Italia. (Ref: HI 2006-0068). 2007-2008. Entity: Ministerio de Educación y Ciencia. Gobierno de España
Investigador Principal: Guglielmo Foffani. Collaborator Investigator: Juan Aguilar .

4.- Title: Reorganización somatosensorial tálamo-cortical después de lesión medular en un modelo animal de rata. Ref:CP 05/00311. Contrato de Investigador del Sistema Nacional de Salud. Fondo de Investigaciones Sanitarias del Instituto de Salud Carlos III. Ministerio de Sanidad y Consumo. Hospital Nacional de Parapléjicos. 2006-2008 **PI: Juan Aguilar**

3.- Title: Reorganización cortical de la información táctil y de dolor después de lesión medular aguda y crónica en un modelo animal de rata: estudio intracelular in vivo. (ref: PI-2006/50). 2007-2009. Entity: Fundación para la Investigación Sanitaria en Castilla-La Mancha (FISCAM**). PI: Juan R Aguilar.**

2.- Title: Estudio diferencial de la reorganización de la información táctil y de dolor en la corteza somatosensorial de la rata después de lesión medular. Entity: Consejería de Sanidad de la Junta de Comunidades de Castilla-La Mancha. España: 2006-2008 Investigador Principal: Guglielmo Foffani. Collaborator Investigator: Juan R Aguilar.

1.- Title: Reorganización cortical de la información táctil y de dolor después de lesión medular aguda y crónica en un modelo animal de rata: estudio intracelular in vivo. 2006-2008 Entity: Fundación Mutua Madrileña Automovilista. **PI: Juan Aguilar.**

DIRECTOR OF THESIS AND MASTER IN NEUROSCIENCE

Director of PhD dissertations:

Author: Elisa Bellistri.
Title "Basic mechanisms of somatosensory processing by the hippocampus".
Universidad Pablo de Olavide. Sevilla. Nov 2012.

Author: Desiré Humanes-Valera
Title: "Estudios de los cambios tempranos en la actividad de la corteza somatosensorial primaria tras una lesion medular en ratas anestesiadas".
Universidad Pablo de Olavide. Sevilla. Jul 2013

Author: Mª Luz Morales-Botello
Title: " Fisiología Tálamo-cortical en respuesta a estimulación somatosensorial de las extremidades en rata anestesiada".
Universidad Pablo de Olavide. Sevilla. Jan 2016

Author: Marta Zaforas Rodríguez
Title: “Caracterización fisiológica de la reorganización cortical después de una lesión medular: evolución temporal de la actividad neuronal en las diferentes capas corticales”.
Universidad de Castilla-La Mancha. Toledo. March 2023

Supervisor of Master Degree in Neuroscience:

1.- Author: María de la Luz Morales Botello. Master en Neurociencia y Biología del Comportamiento. Universidad Pablo de Olavide. División de Neurociencias. Title: Estudio neurofisiológico-computacional del complejo ventrobasal talámico en ratas anestesiadas. Universidad Pablo de Olavide. División de Neurociencias. June 2009.

2.- Author: Elisa Bellistri. Master en Neurociencia y Biología del Comportamiento. Universidad Pablo de Olavide. División de Neurociencias. Title: Respuestas evocadas en el hipocampo a estímulos somatosensoriales en rata anestesiada” June 2010.

3.- Author: Desiré Humanes-Valera. Master en Neurociencia y Biología del Comportamiento. Universidad Pablo de Olavide. División de Neurociencias. Title: Estudio de los cambios tempranos en la actividad de la corteza somatosensorial primaria tras una lesión medular en ratas anestesiadas”. June 2010 .

4.-Author: Irene Martínez Camero. Master en Neurociencia y Biología del Comportamiento. Universidad Pablo de Olavide. División de Neurociencias. Title: Cambios tempranos en las respuestas fisiológicas del núcleo ventral posterior lateral de la rata después de la lesión medular completa. June 2012.

TEACHING

Associate Professor of Human Physiology. Faculty of Physiotherapy and Nursing. University of Castilla-La Mancha. (Spain) 2019-nowadays.

-Professor in Universidad de A Coruña (Spain): Máster Interuniversitario de Neurociencias. (2014-nowadays). Teaching techniques of electrophysiology (extra-cranial recordings EEG, intra-cranial extracellular recordings of single units and multi-units, intracellular recordings)

Professor in Universidad Pablo de Olavide (Sevilla, Spain): Máster de Neurociencas y Biología del Comportamiento (2011-nowadays). Teaching structure and functions of the somatosensory system and Sensory-motor integration.

-Professor in Universidad Europea de Madrid (Spain): Máster Fisioterapia Neurológica. 2010. Teaching structure and functions of the somatosensory system and Sensory-motor integration.

-Professor in Universidad Pablo de Olavide, (Sevilla, Spain): X Curso Nacional de Neurociencias 2008; 2012 and 2018.

-Professor in Universidad de A Coruña (Spain): V Encuentros Atlánticos de Neurociencia (2006).

Invited talks and seminars cycle in the following Institutions:

2018-2021. Doctorate and Master Program in Neuroscience. Faculty of Biology. University of Seville (Spain).
2018. ICORD: International Collaboration in Repair Discoveries. Seminar Series. Vancouver (Canada). 11th September
2017. International Graduate School of Neuroscience at the Ruhr University of Bochum (Germany). September.
2012 and 2020. Instituto de Neurociencias de Castilla y León (INCyL)/ Institute of Neuroscience of Castilla and Leon. (Salamanca, Spain).
2012. Institute of Neuroinformatics. ETH and University of Zürich. (Switzerland).

2011. Center for Neuroprosthetics. Distinguished Lecture Series. Ècole Polytechnique Fédérale de Lausanne. (Switzerland).
2011. Institute of Neurology. University College de London (London, UK)
2011. Dpto Neurobiology, Yale School of Medicine. Yale University (New Haven, USA)
2011. Drexel University (Philadelphia, USA).
2011. Fac de Medicine, College of Medicine. Autonomous University of Madrid (Spain) .
2009. Dpto. Neuroscience University Pablo de Olavide (Seville. Spain).
2009, 2013,2014. 2019. Dpto of Psychology. University of Seville (Spain) . INVITED LECTURES:
.-XIVth Meeting of SENC (Spanish Society for Neuroscience): Symposium: "Research with animals. Impact of the new EU directive on Neuroscience".
Lecture: "*Animals for research, from the curiosity to the necessity. A link between the basic knowledge and the cure for human illness*". (Salamanca 2011).

.-Brain Awareness Week (Toledo 2012): Modelos Animales para entender el cerebro humano. (Animal models for a better understanding of the human brain).

.- Symposium: *Sensory Physiology, a window to the brain.* Title: *Functional changes in the somatosensory system after spinal cord injury.* In the Federation of European Physiological Societies and Spanish Physiological Society Scientific Congress 2012. Santiago de Compostela.

.- Symposium: *In vivo Electrophysiology and Imaging to unveil Neural Network Functioning.* Title: The neurophysiological puzzle of the cortical plasticity after a spinal cord injury. At The Spanish Society for Neuroscience (SENC). September 2017 Alicante (Spain).

OTHER SCIENTIFIC ROLES:

Peer Reviewer for ANEP (National Agency for Science Evaluation in Spain) 2010 - 2021.
Editorial board for Neuroscience in Scientific Reports. Frontiers in Neuroscience
Reviewer for Scientific Journals: Cerebral Cortex; Spinal Cord; PLoS One; Journal of Pain Research; Frontiers in Systems Neuroscience; Frontiers in Neuroanatomy; Neurobiology of Disease; Neuroscience; Annals of Neurology. Journal of Neuroscience Methods.
-Organizer committee. 1st International Workshop on Brain Reorganization after Spinal Cord Injury. Toledo (Spain) 2011.
9th Cajal Winter Conference. "Neuroscience today: advancing the future". Sansenxo. Pontevedra. Spain April 2016