

Date of the CVA

06/09/2023

Section A. PERSONAL DATA

Name and Surname	Jorge Luis Arias Pérez		
DNI	10571689S	Age	67
Researcher's identification number	Researcher ID	N-3714-2014	
	Scopus Author ID	15061114800	
	ORCID	0000-0003-0983-8654	

A.1. Current professional situation

Institution	University of Oviedo Institute of Neuroscience of the Principality of Asturias (INEUROPA).		
Dpt. / Centre	Department of Psychology, Laboratory of Neuroscience		
Address	Plaza Feijoo, s/n, 33003, Oviedo		
Phone	(+34) 985103273	Email	jarias@uniovi.es
Professional category	Professor	Start date	10/04/2008

A.2. Academic education (Degrees, institutions, dates)

Bachelor/Master/PhD	University	Year
PhD in Biology	University of Oviedo	1984
Biological Sciences Degree	Complutense University of Madrid	1981

A.3. General quality indicators of the scientific production

Currently, I have six consecutive six-year research grants, the most recent one awarded in the year 2021. I have directed 23 doctoral theses. The published studies have received a total of 4,452 citations, reaching an average of citations/year in the past five years of 19.6, with an H-index of 32.

Part B. ABSTRACT OF THE CURRICULUM VITAE

Since I joined to the Psychology Department at the University of Oviedo, I put all my efforts in strength the relationship between both sciences, psychology and neuroscience. An example of that is the creation, 36 years ago, of a journal, Psicothema, which is currently Q1. This journal set up the basis for the integration of both sciences which encourage researchers in the field to create collaborations. This new alliances allowed me to establish a Research Group (NEUROCON), which was nationally recognized and awarded as "Excellent" by the Principality of Asturias (2001). He is also a member of the Health Institute of the Principality of Asturias.

NEUROCON interactions with other national and international groups lead to the creation of the Institute of Neurosciences of the Principality of Asturias (INEUROPA) in 2011, which I am directing since, and counts with 150 investigators.

During my professional activity, I have published 347 articles, participated in the edition of 45 books/chapters of books, and directed 23 doctoral theses, most of them awarded nationally and internationally. My interests in teaching drove me to lead the changes in the Psychology degree's content in three occasions, as well as the creation of two Masters, Neurosciences (2009-2012) and Early Attention (2013-present), and a doctorate in Neurosciences which got a mention of high quality standards (1989-2005). Also, when the new regulations of the Spanish government changed, I fostered and collaborated on the creation of a new research master in neurosciences and a doctorate in health sciences in order to carry on delivering the best teaching quality to the Psychology's students.

I have been also extremely involved in the administration of the Department. Indeed, I have held the position of Secretary of the Department of Psychology for 13 years, and I was elected as Director of the Teaching staff at the University of Oviedo (2008-2012) which allowed me to oversee and improve the teaching needs and quality standards of my university.

Since I joined the University of Oviedo in January 1983, I have dedicated my efforts to create a psychobiology laboratory focused on researching learning and memory processes during the postnatal development of the nervous system, demonstrating the maturation process together with the potential dimorphism in these processes, in order to understand how these networks change under neurodegenerative diseases.

In order to improve this cognitive decline in neurodegeneration, it is important to understand the brain changes underlying these diseases. That is why, my lab focused on the study of brain metabolism, the involvement of glial cells and endocrine system in these processes. My ultimate goal is to discover new non-invasive therapies that could improve or delay the appearance of neuropsychological deficits in these patients.

Section B. MOST RELEVANT MERITS (ordered by typology)

B.1. Publications

- Pernia AM, Zorzo C, Prieto MJ, Martinez JA, Higarza SG, Mendez M, **Arias JL**. 2020. Equipment for Repetitive Transcranial Magnetic Stimulation. *IEEE Trans Biomed Circuits Syst.* 14(3):525-534.
- Arias N, Arbolea S, Allison J, Kaliszewska A, Higarza SG, Gueimonde M, **Arias JL**. 2020. The relationship between choline bioavailability from diet, intestinal microbiota composition, and its modulation of human diseases. *Nutrients.* 12(8):E2340.
- Gutiérrez-Menéndez A; Marcos-Nistal M; Méndez M; **Arias JL**. 2020. Photobiomodulation as a promising new tool in the management of psychological disorders: A systematic review. *Neuroscience and Biobehavioral Reviews* 119: 242-254
- Arias, JL**; Méndez, M; Martínez, JA & Arias N. 2020. Differential effects of photobiomodulation interval schedules on brain cytochrome c-oxidase and proto-oncogene expression. *Neurophotonic*, 7(4): 1-11.
- Gutiérrez-Menéndez A, Cid-Duarte S, Banqueri M, Martínez JA, Méndez M, **Arias JL**. 2021. Photobiomodulation effects on active brain networks during a spatial memory task. *Physiol Behav.* 230:113291.
- Banqueri M; Gutiérrez-Menéndez A; Méndez M; Conejo NM; **Arias JL**. 2021. Early life stress due to repeated maternal separation alters the working memory acquisition brain functional network. *Stress.* 24(1):87-95.
- Zorzo C, **Arias JL**, Méndez M. 2021. Hippocampus and cortex are involved in the retrieval of a spatial memory under full and partial cue availability. *Behav Brain Res.* 405:113204.
- Méndez M, Fidalgo C, **Arias JL**, Arias N. 2021. Methylene blue and photobiomodulation recover cognitive impairment in hepatic encephalopathy through different effects on cytochrome c-oxidase. *Behav Brain Res.* 403:113164.

- Zorzo C, **Arias JL**, Méndez M. 2021. Recovering Spatial Information through Reactivation: Brain Oxidative Metabolism Involvement in Males and Females. *Neuroscience*. 459:1-15.
- Higarza SG, Arbolea S, **Arias JL**, Gueimonde M, Arias N. 2021. *Akkermansia muciniphila* and environmental enrichment reverse cognitive impairment associated with high-fat high-cholesterol consumption in rats. *Gut Microbes*. 13(1):1-20.
- Pinos H, Carrillo B, Merchán A, Biosca-Brull J, Pérez-Fernández C, Colomina MT, Sánchez-Santed F, Martín-Sánchez F, Collado P, **Arias JL**, Conejo NM. 2021. Relationship between Prenatal or Postnatal Exposure to Pesticides and Obesity: A Systematic Review. *Int J Environ Res Public Health*. 18(13):7170.
- Biosca-Brull J, Pérez-Fernández C, Mora S, Carrillo B, Pinos H, Conejo NM, Collado P, **Arias JL**, Martín-Sánchez F, Sánchez-Santed F, Colomina MT. 2021. Relationship between Autism Spectrum Disorder and Pesticides: A Systematic Review of Human and Preclinical Models. *Int J Environ Res Public Health*. 18(10):5190.
- Zorzo C, Méndez M, Pernía AM, **Arias JL**. 2021. Repetitive transcranial magnetic stimulation during a spatial memory task leads to a decrease in brain metabolic activity. *Brain Res*. 1769:147610.
- Zorzo C, **Arias JL**, Méndez M. 2022. Functional neuroanatomy of allocentric remote spatial memory in rodents *Neurosci Biobehav Rev*. 136:104609.
- Méndez-Couz M, González-Pardo H, **Arias JL**, Conejo NM. 2022. Hippocampal neuropeptide Y₂ receptor blockade improves spatial memory retrieval and modulates limbic brain metabolism *Neurobiol Learn Mem*. 187:107561.
- Gutiérrez-Menéndez A, Martínez JA, Méndez M, **Arias JL**. 2022. No Effects of Photobiomodulation on Prefrontal Cortex and Hippocampal Cytochrome C Oxidase Activity and Expression of c-Fos Protein of Young Male and Female Rats. *Front Neurosci*. 16:897225.
- Gutiérrez-Menéndez A, Méndez M, **Arias JL**. 2023. Learning and metabolic brain differences between juvenile male and female rats in the execution of different training regimes of a spatial memory task. *Physiol Behav*. 267: 114203
- Menchén-Márquez S, Banqueri M, Gómez-Chacón B, **Arias JL**, Gallo M. 2023. Increased basolateral amygdala metabolic activity during flavor familiarization: an experimental study. *Behav. Brain Funct*. 19(1):2

B.2. Participation in R&D and Innovation projects

- 2021-2024:** “Photobiomodulatory action on postnatal neurodevelopment: effects on learning and memory of spatial orientation” Ministry of Economy and Industry. Main researchers: Jorge L. Arias Pérez. University of Oviedo. 1/09/2021-30/09/2024. Reference number: PID2020-117259RB-I00.
- 2017-2021:** “Remote spatial memory in modified environments: determination of brain networks in both sexes and intervention through electromagnetic induction” Ministry of Economy and Competitiveness. Main researchers: Jorge L. Arias Pérez and Marta Méndez López. University of Oviedo. 31/12/2017-29/06/2021. Reference number: MINECO-18-PSI2017-83893-R.
- 2018-2020:** “Psychobiological Basis of the Interaction between development and lifestyle: Implications for health” Networks of excellence of the State Research Agency. Main researchers: Jorge L. Arias Pérez. University of Oviedo. 1/07/2018-31/12/2020. Reference number: MCIU-18-PSI17-90806-REDT
- 2018-2019:** “Experimental deep brain light stimulation and its application to mental and neurological disorders” Ministry of Economy and Competitiveness. Main researchers: Jorge L. Arias Pérez. University of Oviedo. 1/01/2018-31/12/2019. Reference number: MINECO-17-PSI2015-73111-EXP.
- 2014-2016:** “Functioning of brain networks in spatial strategies: development and plasticity” Ministry of Science and Innovation. Main researchers: Jorge L. Arias Pérez. University of Oviedo. 2/07/2014-31/12/2016. Reference number: PSI2013-45924-P.

B.3. Participation in R&D and Innovation contracts

16/04/2020-30/08/2021: Participation on the development of the European project entitled *"European Artificial intelligence LAB"* in cooperation with Laboral Foundation, Art and Industrial Creation Centre. European Commission.

15/12/2016-15/12/2019: Center Formación Rozona. Collaboration in training laboratory technicians.

C.5, Participation in Evaluation tasks

Reviewer of the National Agency of Evaluation and Prospection (ANEP) from 2010 to the present.

Reviewer of the Agency for the Quality of the university system of Castilla y León (ACUCyL) from 2010 to the present.

Member of the National Evaluating Commission of Research Activity (CNEAI) on Assessment Committee 7: Social Sciences, Policies of Behavior and Education from December 2011 (B.O.E. 304, December 19th, 2011) to December 2013.

Section C. SCIENTIFIC CAREER AND ACCOMPLISHMENTS

C.1. Woks submitted to national or international conferences.

Symposium communications:

2019: *"¿Es la Estimulación Magnética Transcraneal una terapia efectiva y segura?"* in the IV National Psychology Congress. Vitoria, Spain. 21-26 September 2019.

2019: *"Is repetitive transcranial magnetic stimulation a safety neuromodulation therapy?: a neuronal activity and glial density study."* in the III International Psychobiology Congress. Granada, Spain. 29-31 May 2019.

C.2. Scientific Dissemination

2019-2020: Educational innovation project entitled *"Two interventions to improve knowledge of scientific and dissemination articles in first-year university students"* addressed to first-year psychology students. University of Oviedo.

2019: Participation in the organization of *"Scientific Workshops of the International Day of Women and Girls in Science"* organized by AINDACE Foundation.

2016-2021: Member of the Evaluation Commission of Research Projects in Health and Innovation of the General Direction for Scientific Research and Health Innovation, Ministry of Health, Italy

2016: Organizer of the Symposium entitled "Neurodevelopment and behavior at School" within the VII International Congress of Psychology and Education. Alicante. Spain.

2015-2021: Member of the Commission for University Masters and Own Degrees of the University of Oviedo.

2015: Organizer of the 1st International Congress of Psychobiology. Oviedo. Spain.

2014-2021: Member of the Advisory Council of the AINDACE foundation.

2012-2021: Director of the Institute of Neurosciences of the Principality of Asturias (INEUROPA)

2012-2021: Member of the Quality Commission of the Faculty of Medicine and Health Sciences.

1986-2021: Founder and associate director of the Psicothema publication (Q1).

2010-2021: Manuscript reviewer for various international journals such as: Neuroscience, Neurobiology Learning and Memory, Brain Research, Neuroscience Letters, Progress in Neuropharmacology & Biological Psychiatry, Physiology & Behavior, Brain Research Bulletin, European Neuropsychopharmacology, International Neurochemistry, Behavioural Processes, etc.

C.4. Scientific Societies member

2018: Member of the *Spanish Society of Psychobiology*

2010: Member of the *Spanish Society of Neuroscience*

C.5. Professional career. External evaluations.

Six positive evaluations, carried out by CNEAI, of my research results. CNEAI considers six-year terms. The terms under evaluation were: 1985-1990, 1991-1996, 1997-2002, 2003-2008, 2009-2014 and 2015-2020.