

CURRICULUM VITAE (CVA)

Part A. PERSONAL INFORMATION

		CV date	12/03/2024
First name	Jesús		
Family name	Fernández Abascal		
Gender (*)	Male	Date of Birth	19/07/1987
ID number	28835202X		
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Open Researcher and Contributor ID (ORCID)	0000-0002-9558-8331		

A.1. Current position

Position	Ramón y Cajal Associate researcher		
Initial date	01/04/2023		
Institution	CABD. University Pablo de Olavide		
Department	Department of Molecular Biology and Biochemical Engineering		
Country	Spain	Phone Number	+34 604295988
Keywords	prohibitins; neurodegeneration; ageing; neuron-glia interaction; mitochondrial stress.		

A.2. Previous positions (research activity interruptions)

Period	Position/Institution/Country/Cause of the interruption
21/11/2022 – 12/03/2023	Paternity leave (4 months)
01/07/2022 – 31/03/2023	Postdoctoral Researcher / UPO-CABD / Spain
24/06/2018 – 15/06/2022	Postdoctoral associate / University of Miami / USA
01/10/2014 – 30/09/2017	Ph.D. Student / University of Siena / Italy
12/09/2016 – 12/12/2016	Visiting Scientist / TBSI – Trinity College Dublin / Ireland
12/01/2014 – 14/09/2014	Graduate Master Student / CABIMER / Spain
22/05/2014 – 31/08/2014	Teacher / Academia Mendez Núñez / Spain
12/09/2012 – 30/06/2013	Undergraduate Student / CABIMER / Spain
12/01/2011 – 30/03/2011	Undergraduate Student / University of Western Brittany / France

A.3. Education

PhD, Graduate Degree	University / Country	Year
Ph.D. in Life Sciences	University of Siena / Italy	2018
Master in Physiology and Neuroscience	University of Sevilla / Spain	2014
Degree in Biochemistry	University of Sevilla / Spain	2013
Degree in Biology	University of Sevilla / Spain	2012

Part B. CV SUMMARY

I obtained international research experience in biochemistry and neuroscience across top labs worldwide. My career began at Prof. Lancien's lab (University of Western Brittany, France) through an **ERASMUS fellowship**, researching the renin-angiotensin system in trout. Later, at Prof. Alvarez-Dolado's lab (CABIMER, Spain), I focused on treating neurodegenerative diseases using bone-marrow stem cells in mice, continuing this line of research in my master's thesis. This has broadened my understanding of physiology, neuroscience, and neurodegenerative models.

In 2014, I was awarded the prestigious **Marie Skłodowska-Curie (MC) fellowship** to pursue my Ph.D. studies. The doctoral project aimed at providing excellent training in neuroscience to young researchers of outstanding potential and to support exceptional and highly innovative students in the pursue of their doctoral degree. I joined Prof. Valoti's lab (University of Siena), one of the 9 interdisciplinary research teams in the network that created a critical mass for cutting-edge research in the field of dopaminergic neurons, and where I acquired techniques in pharmacology and mitochondrial neurodegeneration. During this time, I also did a research stay at the **TBSI** (Dublin, Ireland) as part of the MC program to promote **international networking and knowledge transference between academy and industry**. In Dublin, I acquired experience in confocal microscopy and image analysis and studied mitochondrial kinetics in a Parkinson's disease model. I also obtained leadership skills by supervising 3 degree thesis. Moreover, I actively **contributed to society** by promoting

internationalization and outreach as an MC ambassador, which included presenting the project to young students in seminars and press interviews. After 3 years, I graduated with **international mention** and highest grade for my studies on the role of CYP450 system in neurodegeneration and toxicology and demonstrated in a cellular model of PD that mitochondrial metabolism plays a key role in regulating oxidative stress and fission events. As a result, I published **2 articles as first and corresponding author** (*JMS*) as well as 3 posters at international conferences. This reflects my independence, teamwork, leadership, and project management qualities.

I then joined Prof. Bianchi's lab (University of Miami), a world-leading lab focusing on ion channels and neuron-glia interaction using *C. elegans*. Over 4 postdoc years (including the COVID-19 pandemic), I published one co-first author article (*J. Neurophysiol*); 4 first author articles (***Neuron***, *PLoS Genet.*, *STAR Protocols* (co-corresponding), *microPubl*); one first author book chapter (***Ed. Springer Nature***); and two collaborations (*iScience* and ***Neuron*** (second-last author)). The primary findings of my research were published in the major journal of the neuroscience field (***Neuron***). The publication presented, for the first time, evidence of a glial chloride channel as a primary regulator of nociceptive neurons. This reflects my outstanding work production in a short amount of time. I also attended to several international conferences (5 posters, 1 award for best postdoc poster) and enhanced my leadership skills by mentoring 5 undergraduate students and 4 rotating PhD students. Additionally, I taught first- and second-year medical students and contributed to the internationalization of my research through seminars at several universities. Furthermore, I improved my analytical and reviewing skills through article reviews in 7 different journals/editorials.

Altogether, I have shed light into the understanding of central nervous system diseases and helped to suggest novel therapeutic approaches. In 2021, I was awarded with the prestigious **Lois Pope Fellowship** in recognition of my research trajectory in the field. In 2022, I obtained a "**Maria Zambrano**" contract of excellence aimed to recruit international talent, and joined Prof. Artal-Sanz's lab (UPO, Spain), where I published a review as first and corresponding author (*Front. aging*) and mentored a degree thesis. Shortly after that, I gathered my own fundings as **Principal Investigator** with a **Ramón y Cajal** contract, the most prestigious Spanish postdoctoral grant to consolidate my career towards research independence, under which I have a publication under review as co-first author (***Nat. commun***). I am also strengthening my leadership and teaching skills by mentoring 5 degree, 1 master and 1 Ph.D. theses, and teaching the biochemistry and metabolism subject at the biotechnology degree. Finally, I have also contributed to society in workshops for kids between the ages of 10-12 promoting science and gender equality. Summarizing, I extensively **contributed to the scientific community** with high quality hypotheses and results published in top journals, obtained my **own fundings, contributed to society** by mentoring student and engaging with communities, and achieved international recognition and fostering **leadership**.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (including books)

CA: Corresponding author; (n° x / n° y): applicant's position / total authors

- 1 Research paper. Bianca Graziano; Lei Wang; Olivia R. White; Daryn H. Kaplan; **Jesus Fernandez-Abascal**; Laura Bianchi. (5/6). 2024. Glial KCNQ K+ channels control neuronal output by regulating GABA release from glia in *C. elegans*. ***Neuron***. 112:1-16 DOI: <https://doi.org/10.1016/j.neuron.2024.02.013>
- 2 Review. **Jesus Fernandez-Abascal** (CA) and Marta Artal-Sanz (CA) (1/2). 2022. Prohibitins in neurodegeneration and mitochondrial homeostasis. ***Frontiers in Aging***. 3:1043300. DOI: <https://doi.org/10.3389/fragi.2022.1043300>
- 3 Research paper. Lei Wang, Bianca Graziano; Nicole Encalada; **Jesus Fernandez-Abascal**; Daryn H Kaplan; Laura Bianchi. (4/6). 2022. Glial regulators of ions and solutes required for specific chemosensory functions in *Caenorhabditis elegans*. 25(12):105684. ***iScience***. DOI: <https://doi.org/10.1016/j.isci.2022.105684>
- 4 Research paper. **Jesus Fernandez-Abascal**; Lei Wang; Bianca Graziano; Christina K Johnson; Laura Bianchi. (1/5). 2022. Exon-dependent transcriptional adaptation by exon-junction complex

proteins Y14/RNP-4 and MAGOH/MAG-1 in *Caenorhabditis elegans*. *PLoS Genetics*.

18(10):e1010488. DOI: <https://doi.org/10.1371/journal.pgen.1010488>

- 5 Research paper. **Jesus Fernandez-Abascal** (CA) and Laura Bianchi (CA) (1/2). 2022. A protocol for imaging calcium and chloride in *C. elegans* glia upon touch stimulation. **STAR Protocols**. 3(2):101282. DOI: <https://doi.org/10.1016/j.xpro.2022.101282>
- 6 Research paper. **Jesus Fernandez-Abascal**; Christina K Johnson; Bianca Graziano; Lei Wang; Nicole Encalada; Laura Bianchi. (1/6). 2021. A glial CIC Cl⁻ channel mediates nose touch responses in *C. elegans*. **Neuron**. 110(3):470-485.e7. DOI: <https://doi.org/10.1016/j.neuron.2021.11.010>.
- 7 Book chapter. **Jesus Fernandez-Abascal**; Bianca Graziano; Nicole Encalada; Laura Bianchi. (1/4). 2021. Glial chloride channels in the function of the nervous system across species. Ion channels in Biophysics and Physiology. **Springer Nature**. ISBN: 978-981-16-4253-1. DOI: <https://doi.org/10.1007/978-981-16-4254-8>.
- 8 Research paper. **Jesus Fernandez-Abascal** (CA); Elda Chiaino; Maria Frosini; Gavin P Davey; Massimo Valoti. (1/5). 2020. β -naphthoflavone and ethanol reverse mitochondrial dysfunction in a parkinsonian model of neurodegeneration. **International Journal of Molecular Sciences**. Multidisciplinary Digital Publishing Institute (MDPI). 21(11):3955. DOI: <https://doi.org/10.3390/ijms21113955>.
- 9 Research paper. Christina K Johnson*; **Jesus Fernandez-Abascal***; Ying Wang; Lei Wang; Laura Bianchi. (2/5). 2020. The Na⁺-K⁺-ATPase Is Needed in Glia of Touch Receptors for Responses to Touch in *C. elegans*. **Journal of Neurophysiology**. American Physiological Society. 123(5):2064-2074. DOI: <https://doi.org/10.1152/jn.00636.2019>. *Equal contribution
- 10 Research paper. **Jesus Fernandez-Abascal** (CA); Mariantonia Ripullone; Aurora Valeri; Cosima Leone; Massimo Valoti. (1/5). 2018. β -Naphthoflavone and Ethanol Induce Cytochrome P450 and Protect Towards MPP⁺ Toxicity in Human Neuroblastoma SH-SY5Y Cells. **International Journal of Molecular Sciences**. Multidisciplinary Digital Publishing Institute (MDPI). 19(11):3369. DOI: <https://doi.org/10.3390/ijms19113369>.

C.2. Congresses

- 1 Poster. **Jesus Fernandez-Abascal**; Blanca Hernando-Rodriguez; Maria Jesus Rodriguez-Palero; Marta Artal-Sanz. (1/4). **24th International C. Elegans Conference. GSA**. Glasgow, UK. June 2023.
- 2 Abstract. Lei Wang, **Jesus Fernandez-Abascal**, Bianca Graziano; Laura Bianchi (2/4). **Indo-US Meeting on Neuron-Glia Interactions in Ocular Development and Diseases**. Online. January 2022.
- 3 Poster. Bianca Graziano; Lei Wang; **Jesus Fernandez-Abascal**; Nicole Encalada; Laura Bianchi. (3/5). **23rd International C. Elegans Conference. GSA**. Online. June 2021.
- 4 Poster. Lei Wang, Nicole Encalada; Bianca Graziano; **Jesus Fernandez-Abascal**; Laura Bianchi. (4/5). **23rd International C. Elegans Conference. GSA**. Online. June 2021.
- 5 Poster. **Jesus Fernandez-Abascal**; Lei Wang, Bianca Graziano; Nicole Encalada; Laura Bianchi. (1/5). **23rd International C. Elegans Conference. GSA**. Online. June 2021.
- 6 Poster. **Jesus Fernandez-Abascal**; Christina K Johnson; Laura Bianchi. (1/3). **22nd International C. Elegans Conference. GSA**. Los Angeles, USA. June 2019.
- 7 Poster. **Jesus Fernandez-Abascal**; Christina K Johnson; Laura Bianchi. (1/3). **Florida Worm Meeting. FIT**. Melbourne, USA. 1st position best poster award. May 2019.
- 8 Poster. **Jesus Fernandez-Abascal**; Massimo Valoti. (1/2). **6th MNS Conference. Mediterranean Neuroscience Society**. Malta. June 2017.
- 9 Poster. **Jesus Fernandez-Abascal**; Massimo Valoti. (1/2). **XXXIX SEBBM congress. SEBBM**. Salamanca, Spain. September 2016.
- 10 Poster. **Jesus Fernandez-Abascal**; Massimo Valoti. (1/2). **Federation of European Neuroscience Societies (FENS)**. Copenhagen, Denmark. July 2016.

C.3. Research projects and contracts.

PRE2023-PID2022-139772NB-I00: Mitochondrial stress signalling: the role of histone deubiquitination in ageing regulation" (MITDUBAGE). Spanish Ministry of Science and Innovation, Agencia Estatal de Investigación (AEI). PI: Marta Artal-Sanz (University Pablo de Olavide). 01/09/2023 – 31/08/2026). 175.000€. Participation: **Researcher**

RYC2021-031269-I. Mitochondrial prohibitins in nervous system degeneration and ageing (MiNervA). PI: **Jesús Fernández Abascal**. Spanish Ministry of Economy and Competitiveness, Agencia Estatal de Investigación (AEI). 01/04/2023 – 31/03/2028. 136.350,00€.

Maria Zambrano. Program of excellence funded by the European Union “NextGenerationEU” and the plan for recovery, transformation, and resilience of the Ministry of Universities. 01/07/2022 – 31/03/2023. 51.500 €. **Recipient of the contract.**

1R01NS105616-01A1: *Glial ion channels in glia/neurons interactions.* National Institute of Health. PI: Prof. Laura Bianchi. (Miller School of Medicine, University of Miami). 01/06/2018 – 31/05/2023. \$1.829.586,10. Participation: **Researcher.**

608381: *Training in Neurodegeneration, Therapeutic Intervention, and Neurorepair (TINTIN).* ITN European Union's Research funding framework. PI: Prof. Gavin Davey. (Trinity College Dublin). 01/01/2013 - 31/12/2017. 3.800.000 €. Participation: **Researcher**

C.4. Knowledge transfer activities, scientific communications, teaching, and outreach

- **Outreach.** Workshop for kids between the ages of 10-12 promoting science and gender equality. February 14, 2024.
- **Teaching.** University Pablo de Olavide. Degree in Biotechnology. Biochemistry and metabolism subject. (45 hours/year). Academic year 2023-2024.
- **Oral presentation.** University Pablo de Olavide. Master of fundamental and translational neuroscience. December 13, 2023.
- **Dissemination.** Online platform showcasing high impact research publications. May 10, 2022. <https://jrnlclub.org/research-films/glial-clc-touch>
- **Invited seminar.** Institute of Neurosciences. University of Salamanca. February 11, 2022.
- **Invited seminar.** Pablo de Olavide University. *C. elegans* group meetings. December 15, 2020.
- **Oral presentation.** University of Seville. Master of Physiology and Biophysics, and Ph.D. program in Molecular Biology, Biomedicine and Research at the University of Seville. April 11, 2019.
- **Small group interactive sessions.** University of Miami. First- and second-year medical students. Discussion of scientific literature. (24 hours/year).
- **Press Interview** at the platform for scientific education and outreach “AcercaCiencia”. Interview focused on the internationalization and promotion of the MSCA TINTIN project. July 12, 2018. <https://www.acerciencia.com/2016/09/05/de-la-curiosidad-a-la-neurociencia/>
- **Invited seminar** at the XXXIX SEBBM Conference as MSCA ambassador for the promotion and internationalization of the MSCA programs to young students. September 5, 2016. Salamanca, Spain.

C.5. Awards

- **Lois Pope Fellowship Award.** University of Miami (USA). December 2, 2021.
- **Best poster award.** First position. Florida Worm meeting, Melbourne (USA). May 18, 2019.
- **First Price Award of Mathematical Inventiveness.** Institute San Isidoro, Seville (Spain). June 1, 2006.
- **Marie Curie PhD Fellowship.** European Commission. October 1, 2014.
- **ERASMUS Fellowship.** University of Seville (Spain). March 5, 2010.

C.6. International research stays

- **Postdoctoral associate.** University of Miami (USA). May 2018 – June 2022.
- **Ph.D. student.** Trinity Biomedical Sciences Institute (Dublin, Ireland). Sept. 2016 – December 2016.
- **Ph.D. student.** University of Siena (Italy). October 2014 – January 2018.
- **Undergraduate student.** University of Western Brittany (Brest, France). January 2011 – March 2011.

C.7. Memberships

- **Genetic Society of America.** 09/04/2019 – 01/01/2022. Membership.
- **Mediterranean Neuroscience Society.** 28/02/2017 – 07/02/2018. Membership.
- **Spanish Society of Biochemistry and Molecular Biology.** 13/04/2016 – 06/02/2018. Membership.
- **Spain-Portugal chapter of the Marie Curie Alumni Association.** 27/07/2016 – Current. Membership.

C.8. Reviewer activities

- *Frontiers in neuroscience.* Editorial: Frontiers
- *International Journal of Molecular Sciences.* Editorial: MDPI.
- *Biomedicines.* Editorial: MDPI.
- *Nutrients.* Editorial: MDPI.
- *British Journal of Pharmacology.* Editorial: British Pharmacological Society.
- *eLife.* Editorial: eLife Sciences Publications Ltd.
- *Journal of General Physiology.* Editorial: Rockefeller University Press.