

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	María		
Family name	Olmedo López		
Gender (*)		Birth date	
Social Security, Passport, ID number			
e-mail		URL Web	
Open Researcher and Contributor ID (ORCID)			

(*) Mandatory

A.1. Current position

Position	Profesora Titular de Universidad		
Initial date	25/04/2024		
Institution	Universidad de Sevilla		
Department/Center	Department of Genetics		
Country	Spain	Teleph. number	
Key words	Development, <i>C. elegans</i> , Nutrient sensing, Quiescence, Arrest		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
1/07/21-24/04/24	Profesora Contrarada Doctora / Department of Genetics / Universidad de Sevilla/ Spain
1/07/16–30/06/21	“Ramón y Cajal” contract/ Department of Genetics Universidad de Sevilla/ Spain
1/07/14–30/06/16	Marie Curie Postdoctoral Fellow (IEF) Universidad Pablo de Olavide, Sevilla/ Spain
1/04/12–31/03/14	Postdoctoral researcher Ludwig-Maximilians University, Munich/ Germany
1/10/08–31/03/12	Postdoctoral researcher University of Groningen, Groningen/ The Netherlands
1/09/01–30/09/08	PhD student/ Department of Genetics Universidad de Sevilla/ Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Molecular and Cellular Biology	Universidad de Sevilla	2008
Bachelor in Biology	Universidad de Sevilla	2000

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Postdoctoral period:

(2008-14) After my PhD I moved to the U. of Groningen (The Netherlands), where I started to work on biological timing in the model organism *C. elegans*, with special interest on how environmental factors shape these processes. Related to circadian rhythms, we found different variables that show circadian oscillations in *C. elegans* and described a circadian rhythm in a conserved metabolic marker of the circadian clock. In this project, I led the efforts to establish the model in the lab, where *C. elegans* was not yet used for research. I established methods and protocols and was involved in determining the direction of the project. As such, I am corresponding author in the main publication from that period (Olmedo *et al.*, 2012, *PNAS*). I presented this work in several international conferences (section C.2).



In parallel, I participated in the international collaboration that showed that the hyperoxidation of Peroxiredoxin is a conserved marker of circadian rhythms in organisms from bacteria to humans, resulting in a publication as co-first author (Edgar *et al.*, 2012. *Nature*). After moving with the group to Munich, I focused on developmental timing, developing a new high-throughput method to measure development. We published this method in an article (Olmedo *et al.*, 2015. *Genetics*) where I am corresponding author and presented it at the European *C. elegans* Meeting (section C.2). **(2014-16)** In 2014, I returned to Sevilla with a **Marie Curie IEF fellowship** to continue my work on *C. elegans* development at the Andalusian Center for Developmental Biology (CABD). During this period, I focused on the relationship between metabolism and developmental timing. I also established international collaborations, contributing to the analysis of development with the assay I previously developed, that yielded several publications (Zhang *et al.*, 2019. *Cell Host & Microbe*; Marsac *et al.*, 2018. *Genetics*).

Period as Principal Investigator:

(2016-present) In July 2016, I moved to the University of Sevilla (US) as a **group leader with a Ramón y Cajal contract**, and immediately attained funding from the national program (I+D Excelencia 2016). From that moment, I am running an independent lab at the Department of Genetics. My main research interest is to understand the genetic pathways that control cell proliferation and arrest in response to the nutritional state of multicellular organisms, using *C. elegans* development as a model system. Within this line of research, I have already published original papers as corresponding author (Olmedo *et al.*, 2020. *Aging cell*; Mata-Cabana *et al.*, 2020. *Front Cell Dev Biol*; Mata-Cabana *et al.*, 2022. *BMC Biology*), and some reviews and collaborative work. Since October 2021, I am associate professor at the Department of Genetics. Over this period, I have attained funding as a principal investigator from the national system (3 projects: I+D Excelencia 2016, PID2019, PID2022), the regional government (JA-PAIDI-2020) and the US (FEDER-US-2020).

I have participated or established multiple collaborations with national and international groups. The most recent collaborators of the lab include: Jeroen van Zon (AMOLF, Amsterdam), Maria Ermolaova (Leibniz Institute on Aging), Ben Lehner (CRG, Barcelona), Antonio Miranda Vizueté (IBIS, Sevilla) and Julian Cerón (IDIBELL, Barcelona).

During my career, I have participated in outreach activities to transfer the scientific knowledge to society. I have contributed to the European Researcher's Night in 2020 and 2015, respectively with a virtual activity and a discussion session about the use of model organisms in Biology. I also took part of the activities of the "Week of Science" at the University of Sevilla in 2019 (QUIFIBIOMAT), and at the University Pablo de Olavide, with several activities in 2014 and 2015, and I took part of a discussion table for the activity "Coffee with science" (2014).

During all these stages, I have contributed to training young scientists. At the university of Groningen, I supervised undergraduate and master students at the department of Chronobiology. At the University Ludwig-Maximilians in Munich, I co-supervised a PhD student, Dr. Bala S.C. Koritala, who currently holds a position as Assistant Professor at the University of Cincinnati (USA). As a PI at the University of Sevilla (US), I supervised a postdoctoral researcher, who recently gained a position for stabilization at the Department of Genetics of the US and will continue working in the group. At the moment, I supervise another postdoc and two PhD students. I have also supervised 9 undergraduate theses (TFG), and 9 master theses (TFM). All of these were experimental works that contributed to the hands-on scientific training of the students. Importantly, several of these students already are or will soon be co-authors in publications of the lab.

Part C. RELEVANT MERITS

C.1. Publications (*selected items*)

(2025) Demirbas, B., O Filina, T Louise, Y Goos, MA Sánchez-Romero, M Olmedo (AC), J van Zon (AC). Control of *C. elegans* growth arrest by stochastic, yet synchronized DAF-16/FOXO nuclear translocation pulses. Accepted in ***Nature Communications***. bioRxiv DOI: doi.org/10.1101/2023.07.05.547674.



(2025) Melero, I., VG Castiglioni, MJ Olmo-Uceda, M Olmedo, R González (AC), SF Elena (AC). The interplay between *Caenorhabditis elegans* larval development and Orsay virus infection. Accepted in *iScience*. *bioRxiv* DOI: doi.org/10.1101/2025.05.23.655711

(2024) **Preprint**. Romero-Expósito FJ, A Moreno-Rivero, M Muñoz-Barrera, S García-Sánchez, F Rodríguez-Peris, N Gritti, F Sartor, M Merrow, JS van Zon, A Mata-Cabana, **M Olmedo (CA)**. Transient arrest allows resynchronization between developmental timers in *C. elegans*. Under evaluation in *Cell Reports* (performing experiments requested by the reviewers). *bioRxiv* DOI: doi.org/10.1101/2024.03.31.587169

(2022) Mata-Cabana, A, FJ Romero-Expósito, M Geibel, FJ Romero-Expósito, M Merrow and **M Olmedo (CA)**. Deviations from temporal scaling support a stage specific regulation for *C. elegans* postembryonic development. *BMC Biology*, 20:94,1-15. DOI:10.1186/s12915-022-01295-2.

(2021) Perez MF, M Shamalnasab, A Mata-Cabana, S Della Valle, **M Olmedo**, M Francesconi (CA), B Lehner (CA). Neuronal perception of the social environment generates an inherited memory that controls development and generation time in *C. elegans*. *Current Biology*,31(19): 4256-4268. DOI: 10.1016/j.cub.2021.07.031.

(2020) Mata-Cabana, A (CA), L Gómez-Delgado, FJ Romero-Expósito, MJ Rodríguez-Palero, M Artal-Sanz, **M Olmedo (CA)**. Social Chemical Communication Determines Recovery from L1 Arrest via DAF-16 Activation. *Front Cell Dev Biol*, 8:58868, 1-15. DOI: 10.3389/fcell.2020.588686.

(2020) **Olmedo M (CA)**, A Mata-Cabana, MJ Rodríguez-Palero, S García-Sánchez, A Fernández-Yañez, M Merrow and M Artal-Sanz (CA). Prolonged quiescence delays somatic stem cell-like divisions in *Caenorhabditis elegans* and is controlled by insulin signaling. *Aging Cell*, 19:e13085,1-13. DOI: 10.1111/accel.13085.

(2019) Zhang, J, X Li, **M Olmedo**, AD Holdorf, Y Shang, M Artal-Sanz, LS Yilmaz, and AJM Walhout (CA). A Delicate Balance between Bacterial Iron and Reactive Oxygen Species Supports Optimal *C. elegans* Development. *Cell Host and Microbe*, 26(3):400-411. DOI: 10.1016/j.chom.2019.07.010.

(2018) Rodríguez-Palero MJ, A López-Díaz, R Marsac, JE Gomes, **M Olmedo (CA)** and M Artal-Sanz (CA). An automated method for the analysis of food intake behaviour in *Caenorhabditis elegans*. *Scientific Reports*, 8:3633,1-10. DOI: 10.1038/s41598-018-21964-z.

(2015) **Olmedo M (CA)**, M Geibel, M Artal-Sanz and M Merrow (CA). A high-throughput method for the analysis of larval developmental phenotypes in *Caenorhabditis elegans*. *Genetics*, 201(2): 443-448. DOI: 10.1534/genetics.115.179242.

(2012) **Olmedo M (CA)**, JS O'Neill, RS Edgar, UK Valekunja, AB Reddy and M Merrow (AC). Circadian regulation of olfaction and an evolutionarily conserved, nontranscriptional marker in *C. elegans*. *PNAS*, 109(50): 20479-20484. DOI: 10.1073/pnas.1211705109.

(2012) **(Co-first author)** Edgar RS*, EW Green*, Y Zhao*, G van Ooijen*, **M Olmedo***, X Qin, Y Xu, M Pan, UK Valekunja, KA Feeney, ES Maywood, MH Hastings, NS Baliga, M Merrow, AJ Millar, CH Johnson, CP Kyriacou, JS O'Neill and AB Reddy. Peroxiredoxins are conserved markers of circadian rhythms. *Nature*, 485(7399): 459-464. DOI: 10.1038/nature11088.

C.2. Congress (10 selected items)

- Invited speaker. [EMBO Workshop](#). Developmental timing across species: From mechanisms to evolutionary insights. **M Olmedo**. Paris, France. 2025.
- Invited seminar. AMOLF Institute. Amsterdam, The Netherlands. 2025.
- Invited seminar. Institute of Cell Biology, University of Bern. Bern, Switzerland. 2025.



- Invited seminar. Joint seminar Ludwig Maximilians University. Institutes of Cell and Developmental Biology, Medical Psychology and Neuroanatomy. Munich, Alemania. 2023.
- Invited speaker at the VIII Spanish *C. elegans* Meeting. Logroño, Spain. October 2022.
- Oral presentation at the European Worm Meeting 2020. Virtual. June 2020.
- Invited seminar at the University of Geneva, Department of Cell Physiology & Metabolism. Geneva, Switzerland, January 2019.
- Oral presentation at GENiE (Group of Elegans New Investigators in Europe) PI meeting. Prague, Czech Republic. September 2017.
- Oral presentation at the European *C. elegans* Meeting. Berlin, Germany. May 2014.
- Oral presentation at the EMBO Conference series: *C. elegans* Neurobiology. Heidelberg, Germany. June 2012.

C.3. Research projects

- PID2022-139009OB-I00 “Papeles del receptor de insulina DAF-2 en la quiescencia en L1 y la proliferación en *C. elegans* (*INSL1*). Ministerio de Ciencia e Innovación. Proyectos I+D+I 2022. Start date: 01/09/2023 End date: 31/08/2026 Total amount: 175,000 €
Contribution: **Principal Investigator**
- FEDER_US-1381282 “Roles of TOR signalling in the control of cell proliferation and arrest in *C. elegans*”. Proyectos de I+D+i en el marco del Programa Operativo FEDER. Start date: 01/01/22 End date: 31/05/2023 Total amount: 80,000 €
Contribution: **Principal Investigator 1** (of 2) Co-IP: Raúl V. Durán (CABIMER)
- PY20-01248 “Roles of the tumor suppressor DAF-18/PTEN in the control of cell proliferation in *C. elegans*”. Ayudas a la I+D+i PAIDI2020. Start date: 05/10/21 End date: 30/06/2023 Total amount: 85,000 €
Contribution: **Principal Investigator**
- PID2019-104632GB-I00 “Mechanisms for cell quiescence maintenance and recovery in *Caenorhabditis elegans*”. Ministerio de Ciencia e Innovación. Proyectos I+D+I 2019. Start date: 01/06/2020 End date: 31/05/2023 Total amount: 145,200 €
Contribution: **Principal Investigator**
- BFU2016-74949-P “Control nutricional de la recuperación de la quiescencia del desarrollo en *C. elegans*”. Ministerio de Economía y Competitividad. Proyectos I+D Excelencia 2016 Start date: 30/12/2016 End date: 29/12/2020 Total amount: 145,200 €
Contribution: **Principal Investigator**
- PIEF-GA-2013-627263 “Circadian timing of metabolism in *C. elegans* – TiMetab”. Marie Curie IEF-2013 FP7. European Commission. Start date: 1/07/2014 End date: 30/06/2016 Total amount: 223,002 € (including salary)
Contribution: **Principal Investigator** (shared with fellowship supervisor, Dr. Marta Artal-Sanz)

C.4. Contracts, technological or transfer merits.

Contracts with companies (Arts. 68/83 LOU): Development of consistent immunoassays based on chemiluminescence and fluorescence detection for protein arrays ([3723/0539](#) - Equipo Trabajo)

Contracts with companies (Arts. 68/83 LOU): Genotipado de cepas de hongos productoras de compuestos de interés industrial ([4974/2037](#)- Person in charge)