Part A. PERSONAL INFORMATION

First name	**Alfonso**		
Family name	**Fernández Álvarez**		
Gender	Male	Birth date	
DNI			
e-mail		URL Web	
Open Researcher and Contributor ID (ORCID)			

A.1. Current position

Position	**Científico Titular CSIC**		
Initial date	10/12/2021		
Institution	CSIC		
Center	**Instituto de Biología Funcional y Genómica (CSIC/USAL)**		
Country	Spain	Phone	
Key words	Meiosis, yeast, *Schizosaccharomyces pombe*, telomere bouquet		

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

Period	Position/Institution/Country/Interruption cause
2018-2021	Ramón y Cajal Grant/ Pablo de Olavide University/ Seville, Spain
2014-2018	Senior Postdoc/National Institutes of Health, NIH/Bethesda, Maryland, USA
2011-2014	Postdoc EMBO fellowship/Cancer Research UK/ London, UK
2009-2011	Profesor Ayudante/Pablo de Olavide University/Seville, Spain
2005-2009	FPU fellowship/ Pablo de Olavide University/Seville, Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD, Molecular Biology	Pablo de Olavide University	2011
DEA, Biotechnology	Pablo de Olavide University	2006
Ldo. Ciencias Ambientales	Pablo de Olavide Univeristy	2004

Part B. CV SUMMARY

At the end of my degree at Pablo de Olavide University, I was awarded the "Premio Mejor Expediente de Licenciatura" and the "Primer Premio Nacional" for my academic record. I began my scientific career in J.I. Ibeas' lab at the Andalusian Center for Developmental Biology (CABD), where I received an FPU fellowship (2005–2009) to study protein glycosylation in Ustilago maydis virulence. During my PhD (2011), I published four first-author articles (The Plant Cell (2), PLOS Pathogens (1), Plant Signaling & Behavior (1)), a first-author review (Fungal Genetics and Biology), and three co-authored papers (PLOS Pathogens (2), The Plant Cell (1)). My Thesis was recognized with the "Premio Extraordinario de Doctorado" and the award for the best doctoral thesis in Science (2012) by both Seville City Council and UPO. I later secured a position as "Profesor Ayudante" at UPO, co-supervised a PhD student whose work was published in PLOS Pathogens, and in 2021 published a final PhD-related article in Journal of Fungi as sole corresponding author.

After my PhD in 2011, I resigned from my UPO position to pursue a postdoc abroad, deepening my expertise in microtubule spindle formation and chromosome segregation. I joined Julie Cooper's lab at the London Research Institute (LRI, Cancer Research UK) as part of an ERC Advanced Grant project on telomere biology in *Schizosaccharomyces pombe*. I was later awarded an EMBO fellowship (2012–2014) to investigate the role of the telomere bouquet. In 2014, Dr. Cooper relocated her lab to the NIH National Cancer Institute (USA), where I continued as a senior postdoc (2014–2018). During my postdoc, I published three first-author research papers (Journal of Cell Biology, Cell Cycle, and Developmental Cell—the latter as co-corresponding author) and a first-author review (Trends in Cell Biology). I also collaborated on a Nature Cell Biology study on centromere assembly.

In 2018, I returned to Spain as a "Ramón y Cajal" researcher at UPO and as a "Springboard" researcher at CABD, establishing my own lab to study telomere function in meiosis. My work was funded by PGC2018-098118-A-I00 (Ministerio de Ciencia e Innovación) with an FPI-funded PhD student, Proyecto de Excelencia de la Junta de Andalucía (P18-FR-1285), a FEDER-UPO project, and other institutional funding. My research as a Springboard researcher led to my appointment as "Científico Titular del CSIC" at the Institute of Functional and Genomic Biology (IBFG) in Salamanca, where I collaborate with three meiosis-focused research groups. One such collaboration, with Sergio Rincón's lab, has resulted in a manuscript currently under review at PLOS Genetics.

Since 2018, I have published ten articles as a corresponding author, most of them authored entirely by my lab members. My work has focused on developing quantitative cell biology tools to study chromosome dynamics in meiotic prophase, particularly telomere bouquet formation and centromere behavior. We developed ChroMo (https://chromo.cloud/), an unsupervised platform to detect subtle chromosomal movement changes, and designed a system in *S. pombe* for meiosis-specific self-assembled spindle formation. Currently, we integrate predictive models, convolutional neural networks, and high-throughput genome-wide analysis with systems biology approaches. Our lab has grown significantly, publishing foundational methodology papers in Molecular Biology of the Cell and Journal of Cell Science, and more recently in Nature Communications (2025). These works consolidate our findings from the lab's initial grants and set the stage for future research. Additionally, unpublished data from the first two PhD theses (2024, 2025) include the discovery of Motif C, soon to be available on bioRxiv (García-Sánchez et al., 2025).

As "Ramón y Cajal" and "Científico Titular," I have supervised two postdocs (one with a Juan de la Cierva fellowship), 16 Master's students across various programs, and two undergraduate students. I have also hosted three Paris University Master's students. Beyond research, I actively participate in outreach activities like the European Researchers' Night and Women in Science initiatives.

My work has been selected for over 27 oral presentations at conferences in Japan, Canada, France, Switzerland, the U.S., Italy, and the UK. I have also been invited as an external speaker at research institutes in Brighton, Paris, and several Spanish cities, helping build a strong international research network, particularly with collaborators in the U.S., Japan, and Europe.

Part C. RELEVANT MERITS

C.1. Publications

1) Jiménez-Martín A, Pineda-Santaella A, Martín-García R, Esteban-Villafañe R, Matarrese A, Pinto-Cruz J, Camacho-Cabañas S, León-Periñán D, Terrizzano A, Daga RR, Braun S, **Fernández-Álvarez A**[#] (2025). Centromere positioning orchestrates telomere bouquet formation and the initiation of meiotic differentiation. ***Nature Communications*** Jan 20;16(1):837. doi: 10.1038/s41467-025-56049-9. AC[#]

2) Pinto-Cruz J, Correas M, Mendoza-Madrigal R, León-Periñán D, **Fernández-Álvarez A**[#] (2024). Identifying Chromosome Movement Patterns During Meiosis Using ChroMo. ***Methods in Molecular Biology***, Ed. Springer. 2818:271-288. ISBN: 978-1-0716-3905-4. doi: 10.1007/978-1-0716-3906-1_18. AC[#]

3) **Fernández-Álvarez A**[#] (2023). Beyond tradition: exploring the non-canonical functions of telomeres in meiosis. ***Frontiers in Cell and Developmental Biology***. Nov 13;11:1278571. doi: 10.3389/fcell.2023.1278571. AC[#]

4) Pineda-Santaella A, Martín-García R, **Fernández-Álvarez A**[#] (2023). Analyzing self-assembled spindle dynamics in fission yeast meiosis using in vivo fluorescence imaging. ***STAR Protocols***. Cell press. Dec 15;4(4):102655. doi: 10.1016/j.xpro.2023.102655. AC[#]

5) Jiménez-Martín A, Pineda-Santaella A, Pinto-Cruz J, León-Periñán D, García-Sánchez S, Delgado-Gestoso D, Marín-Toral L, **Fernández-Álvarez A**[#] (2022). The Rabl chromosome configuration masks a kinetochore reassembly mechanism in yeast mitosis. ***Molecular Biology of the Cell***. May 1;33(5):br8. doi: 10.1091/mbc.E20-09-0600. AC[#]

6) León-Periñán D, **Fernández-Álvarez A**[#] (2021). *ChroMo*, an Application for Unsupervised Analysis of Chromosome Movements in Meiosis. ***Cells***. Aug 6;10(8):2013. doi: 10.3390/cells10082013. AC[#]
7) Pineda-Santaella A, Fernández-Castillo N, Jiménez-Martín A, Macías-Cabeza MDC, Sánchez-Gómez Á, **Fernández-Álvarez A**[#] (2021). Loss of kinesin-8 improves the robustness of the self-assembled spindle in Schizosaccharomyces pombe. ***J Cell Sci***. Aug 15;134(16):jcs253799. doi: 10.1242/jcs.253799. AC[#]
8) Pineda-Santaella A, **Fernández-Álvarez A**[#] (2019). Spindle assembly without spindle pole body insertion into the nuclear envelope in fission yeast meiosis. ***Chromosoma***. Sep;128(3):267-277. doi: 10.1007/s00412-019-00710-y. AC[#]
9) **Fernández-Álvarez A**[#], Bez C, O'Toole ET, Morphew M, Cooper JP[#] (2016). Mitotic Nuclear Envelope Breakdown and Spindle Nucleation Are Controlled by Interphase Contacts between Centromeres and the Nuclear Envelope. ***Dev Cell***. Dec 5;39(5):544-559. doi: 10.1016/j.devcel.2016.10.021. AC[#]
10) Klutstein M, Fennell A, **Fernández-Álvarez A**, Cooper JP (2015). The telomere bouquet regulates meiotic centromere assembly. ***Nat Cell Biol***. 2015 Apr;17(4):458-69. doi: 10.1038/ncb3132.

C.2. Congress

1) **Fernández-Álvarez, A.,** Jiménez-Martín, A., Pineda-Santaella, A., Martín-García, R., León-Periñán, D., Terrizano, A., Braun, S. Centromere positioning governs telomere bouquet formation. 11th International Fission yeast meeting, Hiroshima, **Japan**, May 28th, June 2, 2023. *Comunicación Oral*.
2) **Fernández-Álvarez, A.,** Pineda-Santaella, A., Fernández-Castillo, N., Jiménez-Martín, A., Macías-Cabeza, C., Villadangos-Benavides, C., Sánchez-Gómez, A., Rincón, A. S., Martín-García, R. Molecular basis of self-assembled spindles in fission yeast meiosis. EMBO meiosis meeting, Pamhagen, **Austria**, 18-23 June 2023. *Comunicación Oral*.
3) **Fernández-Álvarez, A.,** Jiménez-Martín, A., Pineda-Santaella, A., Martín-García, R.,Fine-tuning control of long-distance heterochromatic regions: impact of centromere positioning on telomere silencing, Southbridge, MA, **USA**, July 17-21th, 2022. *Comunicación Oral*.
4) **Fernández-Álvarez, A.,** Pineda-Santaella A, Jiménez-Martín A. Loss of kinesin-8 improves the robustness of the self-assembled spindle. EMBO Centrosomes and Spindle Pole Bodies. Copenhagen, **Denmark**, October 12th 2021. *Comunicación Oral*.
5) **Fernández-Álvarez, A.,** Pineda-Santaella A. Spindle assembly without spindle pole bodies in fission yeast meiosis. LMO13, Rheinau, **Switzerland**, September 11-14, 2018. *Comunicación Oral*.
6) **Fernández-Álvarez, A.** Chromosomes orchestrate their own liberation. French Pombe Club, Montpellier, **France**, March 15-16, 2018. *Comunicación Oral*.
7) **Fernández-Álvarez, A.**, Hou, H. and Cooper, JP. CDK-1 chromatin-mediated recruitment to the SPB controls its insertion into the nuclear envelope. EMBO Centrosomes and Spindle Pole Bodies EMBO. Heidelberg, **Germany**, Sep 2017. *Comunicación Oral.*
8) **Fernández-Álvarez, A.,** Hou, H. and Cooper, JP. Telomeric control of Nuclear Envelope Disassembly in Meiosis. EMBO meiosis meeting, Hvar, **Croatia**, August 2017. *Comunicación Oral.*
9) **Fernández-Álvarez, A.,** and Cooper, JP. Rabl configuration during interphase directly regulates nuclear remodeling at mitotic onset. The 9th International Fission yeast Meeting, Banff, Alberta, **Canada**, May 2017. *Comunicación Oral*.
10) **Fernández-Álvarez, A.**, Fennell, A., Bez, C., Toole, ET., Morphew, M. and Cooper, JP. Centromeric control of the centrosome. EMBO Meiosis Conference 2015, Oxford, **UK**, September 2015. *Comunciación Oral*.

C.3. Research projects
National grants

1) Title: Control telomérico de la meiosis, REF. PID2021-127232NB-I00
IP: Alfonso Fernández Álvarez
Financing entity: Ministerio de Ciencia e Innovación, Gobierno de España
Funding (€): **140.000 (costes directos)**
From: 01/09/2022 to: 30/09/2025
2) Title: Mecanismos moleculares de coordinación entre los cromosomas, los centrosomas y la envoltura nuclear que coordinan la progresión del ciclo celular en mitosis y meiosis, REF. PGC2018-098118-A-I00
IP: Alfonso Fernández Álvarez
Financing entity: Ministerio de Ciencia e Innovación, Gobierno de España
Funding (€): **105.000 (costes directos) + FPI**
From: 01/01/2019 to: 30/09/2022
3) Title: Dinámica de cromosomas en meiosis, REF. RyC-2016-19659
IP: Alfonso Fernández Álvarez
Financing entity: Ministerio de Economía y Competitividad, Gobierno de España
Funding (€): **40.000 + salary=308.000 euros**
From: 02/02/2018 to: 01/02/2023

Regional Grants

4) Title: Estrategias de mejora de fertilidad en la gametogénesis femenina, REF. UPO 1831636
IP: Alfonso Fernández Álvarez
Financing entity: Junta de Andalucía (FEDER)
Funding (€): **22.700**
From: 01/06/2021 to: 31/12/2022
5) Title: Mecanismos de ensamblaje del huso de microtúbulos sin centrosomas en gametogénesis, REF. P18-FR-1285
IP: Alfonso Fernández Álvarez
Financing entity: Proyectos Excelencia Junta de Andalucía (PAIDI 2020)
Funding (€): **119.500**
From: 01/01/2019 to: 31/12/2022

Intamural Grants

6) Title: Identificación de los cambios de fosforilación en el complejo LINC inducidos por los cromosomas que controlan la rotura de la envuelta nuclear, REF. PP.2018-31
IP: Alfonso Fernández Álvarez
Financing entity: Plan Propio de Investigación Universidad Pablo de Olavide
Funding (€): **7.500**
From: 01/01/2019 to: 31/12/2020
7) Title: Meiosis in fission yeast
Financing entity: María de Maetzu at the CABD
IP: Alfonso Fernández Álvarez
Funding (€): **20.000 euros**
From: 01/09/2019 to: 31/12/2021
8) Title: Springboard position for young investigator, starting up.
Financing entity: Andalusian Center for Developmental Biology (CABD)
Funding (€): **15.000 euros**
From: 01/09/2018 to: 31/12/2021

Other funding

9) Title: Identification of regulators of the Rabl chromosome configuration, short-term Fellowship 8346
Financing entity: EMBO Scientific Exchange Grant
Funding (€): **3.920 euros**
From: 29/07/2019 to: 09/09/2019
10) Title: Molecular mechanisms of the interaction between chromosomes and the spindle assembly machinery during meiosis, REF-ALTF-2012
Financing entity: EMBO
Funding (€): **60.000 euros (salary)**
From: 01/07/2012 to: 30/06/2014