



CURRICULUM VITAE (CVA)

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

Part A. PERSONAL INFORMATION

CV date 01/09/25

First name	Beatriz		
Family name	Estrada Martín		

(*) Mandatory

A.1. Current position

Position	Profesor Titular de Universidad		
Initial date	07/07/2023		
Institution	Universidad de Sevilla		
Department/Center	Dept. Biología Celular	Facultad de Biología	
Country	Spain		
Key words	Developmental Biology, organogenesis, myogenesis, genomics, epithelia, cellular processes		

A.2. Previous positions (research activity interruptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
05/2007- 09/2012	Investigadora Contratada Ramón y Cajal, Centro Andaluz Biología Desarrollo (CABD), Universidad Pablo de Olavide (UPO)
09/2012-12/2015	Investigadora Contratada CABD UPO
09/2016-12/2016	Contratada Posdoctoral CABD CSIC
08/12/2016-01/09/2017	Baja maternal y cuidado materno, 9 meses
09/2017-02/2019	Contratada Posdoctoral CABD CSIC
28/06/2019-06/07/2023	Profesor Contratado Doctor Univ. Sevilla

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licenciada en CC Biológicas	Universidad Autónoma de Madrid	1996
Doctor en CC Biológicas	Universidad Autónoma de Madrid	2001

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

1. Scientific contributions

I obtained a Ramón y Cajal contract at the Centro Andaluz de Biología del Desarrollo (CABD) at Universidad Pablo de Olavide in Seville (UPO)(2007). I have been Principal Investigator in two grants awarded by Plan Nacional I+D, where we studied the mechanisms underlying muscle development, both in *Drosophila* and in zebrafish. The research from these two projects has been published in three papers where I am corresponding author, two in *Journal of Cell Science* (2014 and 2017), and one in *Frontiers in Cell and Developmental Biology* (2021). Here, we discovered new molecular mechanisms underlying the process of myofibrillogenesis *in vivo*, the way integrins increment their adhesion and signaling during muscle-tendon junctions, and novel mechanisms on myotube migration respectively. In the first one we collaborated with Dr. Bischoff (Univ. of St. Andrews), an expert in live imaging, which allowed us to visualize muscle migration and tendon attachment *in vivo*. All three publications are part of JJ Perez-Moreno's PhD thesis, which I supervised. Recently (2021), we have also published a related work in with JJ Perez-Moreno in a developmental biology journal.

In collaboration with Dr. Martín-Bermudo and Dr. González Reyes at CABD, I participated in a “Proyecto de Excelencia” from Junta de Andalucía, to study cell-extracellular matrix interactions in stem cells and cell migration, and two additional projects from Plan Nacional I+D. Results from these projects were published in PLoS One (2011) and PLoS Genetics (2018). The first paper supports a role of the α PS1 β PS integrin in the migration of visceral mesodermal cells. The second one uncovered for the first time the role of Nidogen (Entactin) in the assembly of basement membranes *in vivo*, and resulted from a collaboration between Dr. Martín-Bermudo’s and Dr. Pastor-Pareja’s laboratories (Tsinghua University, China).

I also collaborated with Dr. JF de Celis (Centro de Biología Molecular Severo Ochoa) where we investigated the neuromuscular system of *Drosophila* (2018 in Genes, Brain and Behavior). This work identified new molecular factors in the ERK pathway essential for the specification and function of neurons and neuroblasts as well as their role in the locomotor activity of *Drosophila*.

I am currently collaborating with Dr. C. Paradas at the Instituto de Biomedicina de Sevilla (IBiS) in the study of human muscular dystrophies (one of them published in 2016 in EMBO Journal of Medicine). This work reveals that Poglut1 mutations causes a novel muscular dystrophy. It shows that a key pathomechanism for this novel form of muscular dystrophy is Notch-dependent loss of satellite cells. I contributed by helping to unravel the molecular mechanisms underlying this pathology by using *Drosophila* as an *in vivo* model system.

I have been awarded a project “Development of complex computational models to understand tissue organization” funded by “Proyectos de I+D+I en el marco del programa operativo FEDER Andalucía” in collaboration with Dr. LM Escudero, for which we are Co-PIs (2020) at IBiS. I currently participate in the project “Análisis de Imágenes Biológicas basado en IA para investigar los mecanismos de organización de los tejidos (AI-BAMTO)” from Plan Nacional de Investigación (2024).

2. Contributions to society

Two scientific outreach articles in Investigación y Ciencia (2000) and ELSO gazette (2001). One scientific outreach CD for schools “Cómo trabajar la ciencia en un huerto escolar”

Participated at:

- International day for Women and Girls in Science 2020 with an exhibition and outreach talk at the school CEIP Marie Curie of Sevilla.
- Universidad de Sevilla Science Week with the exhibition ‘Exposición mujeres científicas del proyecto CHON: Cambiando Horizontes para Orientar Niñas’(2020).
- Exhibition at museo pedagógico of US with ‘Exposición mujeres científicas en el Museo Pedagógico’(2020)
- Funding from Plan Propio de Divulgación y Transferencia de la US. Jornada de Divulgación Científica sobre Vacunas: Desmintiendo bulos, contra la Posverdad (2021).
- Ayuda para actividades para la Divulgación Científica from U. Sevilla. Heroínas Polinizadoras “La Importancia de las Poblaciones de Abejas para el Ser Humano y el Planeta” (2022).
- Project ‘La ciencia en la mochila’ from US for primary school students in CEIP Marie Curie, Sevilla. ¿Qué son los genes y cómo nos lo enseñan las moscas? (2023).
- Project ‘La ciencia en la mochila’ from US for primary school students in CEIP Marie Curie, Sevilla. Viaje al interior de la célula: el ADN (2023).

3. Training of early career researchers

I supervised the PhD thesis of JJ. Pérez-Moreno (2015) successfully, as his training has allowed him to obtain a Marie Curie fellowship and recently also a Juan de la Cierva Incorporación position. I supervised a JAE intro fellowship of C Santa.Cruz Mateos, whose work during that period is included in our recent 2021 paper in Front Cell Dev. That fellowship helped her obtain a PhD position. She is now a postdoctoral fellow in Cambridge University. I supervised the TFM of GF García Rodríguez, which helped him get a PhD fellowship in Dr. J Cerón’s lab (Bellvitge Biomedical Research Institute).

4. Other contributions: I taught “Mecanismos de Diferenciación Tisular y Morfogénesis” and “Animales Modelo en Biotecnología” in the Masters’ degree of Biotecnología Sanitaria (UPO,

2010-2019). Currently, at the Departamento de Biología Celular (US), I am teaching several theoretical and practical subjects in the field of Cell Biology.

Editorial activity: reviewing editor for Frontiers in Cell and Developmental Biology. Scientific reviewer for BMC Developmental Biology, International Journal of Developmental Biology. Evaluator for funding agencies: Plan Nacional I+D and Israeli Science Foundation.

Part C. RELEVANT MERITS (*sorted by typology*)

C.1. Publications (*see instructions*)

- JJ Pérez-Moreno, A G Espina-Zambrano, CB García-Calderón, **B Estrada***. 2017. Kon-tiki enhances PS2 integrin adhesion and localizes its ligand, Thrombospondin, in the myotendinous junction. J. of Cell Science, 130, 950-962. <https://doi.org/10.1242/jcs.197459>

- C Molnar, **B Estrada**, JF de Celis. 2018. Tay bridge and extracellular-regulated kinase activity are required for motoneuron function in the Drosophila neural system. Genes, Brain and Behavior. 17 (8), e12470. <http://dx.doi.org/10.1111/gbb.12470>

- Jianli Dai, **Beatriz Estrada**, Sofie Jacobs, Besaiz Sánchez-Sánchez, Jia Tang, Mengqi Ma, Patricia Magadan, José C Pastor-Pareja, Maria Dolores Martin-Bermudo. 2018. Dissection of Nidogen function in Drosophila reveals tissue-specific mechanisms of basement membrane assembly. PLoS Genet 14(9):e1007483, bioRxiv, 346270. <https://doi.org/10.1371/journal.pgen.1007483>

- JJ Pérez-Moreno, C Santa-Cruz Mateos, MD Martín-Bermudo, **B Estrada***. 2021. LanB1 cooperates with Kon-tiki during embryonic muscle migration in Drosophila. Frontiers in Cell and Developmental Biology. DOI: 10.3389/fcell.2021.749723. *: autor de correspondencia

C.2. Congress

Juan José Pérez Moreno, Marcus Bischoff, María Dolores Martín Bermudo y **Beatriz Estrada**. The gene *perdido* in Drosophila adult musculature development. Poster. 23rd European Drosophila Research Conference. Barcelona, Spain. 2013

Juan José Pérez Moreno, Marcus Bischoff, María Dolores Martín Bermudo y **Beatriz Estrada**. The conserved transmembrane proteoglycan Perdido/Kon-tiki is essential for myofibrillogenesis and sarcomeric structure in Drosophila. Poster. 55th Annual Drosophila Research Conference. San Diego, EEUU. 2014

Beatriz Estrada. Molecular and Cellular mechanisms underlying the development of the Neuromuscular Junction. Oral. XIII Curso Nacional de Neurociencia. Carmona, Sevilla, 2014.

Beatriz Estrada. Molecular and Cellular mechanisms underlying muscle growth and differentiation. Oral. 2nd Spanish Conference on the Molecular, Cellular and Developmental Biology of Drosophila. Begur, Spain. 2014.

Jianli Dai, **Beatriz Estrada**, Sofie Jacobs, Besaiz Sánchez-Sánchez, Jia Tang, Mengqi Ma, Patricia Magadan, José C Pastor-Pareja, Maria Dolores Martin-Bermudo. Analysis of the role of Nidogen/entactin in basement membrane assembly and morphogenesis in Drosophila. Poster. Sociedad Española de Biología del Desarrollo, Sociedad Francesa de Biología del Desarrollo y Sociedad Portuguesa de Biología del Desarrollo. Porto, Portugal. 2018

Juan José Pérez-Moreno y **Beatriz Estrada**. 2020. Neuromuscular junction development and myofibrillogenesis interlink. Poster. Sociedad Española de Biología del Desarrollo. Virtual.

María J. Gómez-Lamarca*, Elena Bellido, Carmen Gordillo, Marta Barahona Moreno, Sol Sotillos Martin, **Beatriz Estrada**^{1*}, and Luis M. Escudero^{1*}. 2022. Dynamics and molecular regulation of three-dimensional packing of epithelia. Algarve, Portugal. International Society for Developmental Biologists.

María J. Gómez-Lamarca^{1*}, Elena Bellido¹, Carmen Gordillo¹, Marta Barahona Moreno¹, Sol Sotillos Martin², **Beatriz Estrada**^{1*}, Luis M. Escudero^{1*}. 2024. Dynamics and molecular regulation of three-dimensional packing of epithelia. Drosophila Spanish Meeting.

Miriam Gonzaga; Sahiti Caisley; S Peddibhotla; C Chan; **Beatriz Estrada**; AM Pret; Julie Mathew. 2024. Investigating the Role of Cyclin E in Mitophagy-Dependent Quiescence in Drosophila. TAGC24 Genetics Society of America. Washington DC, Estados Unidos de América

C.3. Research projects

- Estudio de los mecanismos genéticos y moleculares que subyacen al desarrollo de la unión miotendinosa en *Drosophila*. Plan Nacional I+D 2008. IP: **B. Estrada**. 2009–2011. 108.900 €.
- Reconocimiento celular, adhesión y mantenimiento de la unión músculo-tendón en moscas y pez zebra. Plan Nacional I+D 2011. IP: **B. Estrada**. 2012 - 2013. 67.760 €.
- Estudio de las interacciones célula-matriz extracelular en el mantenimiento de células troncales y en el control de la migración e invasión celular. Junta de Andalucía – Proyectos de Excelencia. 2010 –2013. IP: M.D. Martín-Bermudo. 236.840 €.
- Canalización de fenotipos inducidos ambientalmente: Traslación de cambios epigenéticos a cambios genómicos. 2014-2015. Explora. IP: I. Gómez-Mestre. 60.000 €.
- A genetic, molecular and cellular approach to identify mechanisms regulating cell migration and invasion. Ministerio de Economía. Enero 2014-Diciembre 2016. IP: M.D. Martín-Bermudo.
- Mutaciones en protein O-glucosyltransferase 1 (POGLUT1) causan un nuevo tipo distrofia muscular asociada a hipoglicosilación de Notch y reducción en la expresión de alfa-distroglicano. Fondo de Investigación Sanitaria. 2015 – 2017. IP: C. Paradas. 146.108 €.
- Caracterización de la distribución espacio-temporal de las células satélite durante el desarrollo y patrón de alteración en la distrofia muscular por mutaciones en el gen POGLUT1. PIER-0100-2019. Consejería de Salud Junta de Andalucía. 2019-2022. IP: E. Serván. 59.800 €.
- Genómica de la evolución adaptativa en el desarrollo de larvas de anfibios (AMPHIGEN). Junta de Andalucía. Proyectos de Excelencia. 2021-23. IP: I. Gómez-Mestre. 168.756.000 €.
- Dynamics and biophysics of scutoids during epithelial morphogenesis. Junta de Andalucía-FEDER. Proyectos Frontera. 2021-23. Co-IPs: LM Escudero and **B Estrada**. 80.000 €.
- Análisis de Imágenes Biológicas basado en IA para investigar los mecanismos de organización de los tejidos (AI-BAMTO)” Ministerio Ciencia Innovación y Universidades. 2024. IP: LM Escudero.