MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	Raquel		
Family name	Iglesias Fernández		
Gender (*)		**Birth date**	
Social Security, Passport, ID number		**URL Web** https://www.cbgp.upm.es/index.php/es/el-cbgp/raquel-iglesias	
e-mail	Raquel.iglesias@upm.es		
Open Researcher and Contributor ID (ORCID) (*)		0000-0003-4773-7176	

(*) Mandatory

A.1. Current position

Position	Associate Professor (Profesor Titular de Universidad)		
Initial date	July 24th, 2023		
Institution	Universidad Politécnica de Madrid (UPM)		
Department/Center	Biotechnology-Plan Biology	Centro de Biotecnología y Genómica de Plantas (CBGP, **UPM-INIA/CSIC**)-Centro de Excelencia Severo Ochoa (2017-2025) Escuela Técnica Superior de Ingeniería Agronómica, Alimentaria y de Biosistemas (ETSIAAB)	
Country	Spain	Teleph. number	910679166
Key words	*Arabidopsis thaliana L.*, Autophagy, *Brachypodium distachyon, Chenopodium quinoa,* Gene Regulation, *Hordeum vulgare,* Seed maturation and germination, Transcriptional regulation		

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

Period	Position/Institution/Country/Interruption cause
Aug 2021 – July 2023	Assistant Professor (Profesor Contratado Doctor Indefinido)
Sep 2016- Aug 2021	Profesor Ayudante Doctor /UPM (Dpt. Biotech. -Plant Biology, CBGP-ETSIAAB)/ Spain
Jan 2015- Jun 2016	Post-Doctoral Researcher (Project EXPLORA: BFU2013-49665; P.I. Jesús Vicente Carbajosa)/ UPM (CBGP)/ Spain
Jan 2014- Dec 2014	Post-Doctoral Researcher UPM (Project BFU2009-11809; P.I. Pilar Carbonero) /UPM (CBGP)/ Spain
Jan 2011- Dec 2013	Post-Doctoral Researcher **Juan de la Cierva (MICINN)**-/ UPM (CBGP)/ Spain
Oct 2009- Dec 2010	Post-Doctoral researcher (Consolider Project: CSD2007-00057; Coordinator: J. Paz-Ares; P.I. P. Carbonero) / UPM (CBGP)/ Spain
May 2005- Dec 2009	Predoctoral contract (**FPI-Fellowship MICINN;** Prof. A. Matilla) / Universidad de Santiago de Compostela (USC; Dpt. Plant Physiology)/ Spain
May 2006- Dec 2006	Pre-Doctoral Visiting Fellow (Prof. Henk Hilhorst)/Wageningen University/ The Netherlands
Sep 2003- June 2004	Undergraduate Collaboration fellowship (Prof. I. Zarra)/USC (Dpt. Plant Physiology)/ Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Biology (Biotechnology)	Universidad Santiago de Compostela (USC) **Sobresaliente *cum laude*** and **Extraordinary award**	2009
Licenciatura en Biología	USC	2004

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

I studied biology (5-yrs licensed) at USC, and pursued *PhD* studies at the Dept. of Plant Physiol. (**FPI program,** supervisor Prof. Matilla). At this time, I demonstrated the importance of ethylene/GAs in the loss of dormancy during the after-ripening (AR), a very poorly understood process of seed biology (*J. Exp. Bot.*, 2009; *Planta*, 2010). During this period, I was a visiting *PhD* student (8 months granted by MICINN) at **Wageningen University** (The Netherlands), where I was able to learn advanced seed physiological and molecular techniques at Prof. Hilhorst´s lab. My *PhD* thesis was graded ***Summa cum laude* with an extraordinary award**.

In October 2009, I started postdoctoral research in Prof. Carbonero´s group at the CBGP **(Centre of Excellence Severo Ochoa)**. During this period, besides being financed by Spanish government projects I obtained a highly competitive **Juan de la Cierva Post-doc MICINN Fellowship** (2011-2013). In 2016, I achieved a position as *Prof. Ayudante. Doctor* at UPM, and later a **permanent position** as *Prof. Contr. Doctor* (2021: 2 *Sexenios de investigación* and 1 *Quinquenio de docencia* granted). In April 2020, I achieved the **I3 certificate**. In **March 2022,** I reached the positive ANECA accreditation for ***Prof. Titular de Univ.*** Since June 2022, I am **Principal Investigator** (**PI**) of the **Emerging Research Group "Seed Environmental Perception and Adaptation"** at the CBGP.

I have published 25 SCI papers (1 *Nature Plants*, 1 *Plant Cell*, 1 *Plant Physiol.*, 1 *Plant J.*, and 6 *J. Exp. Bot., etc.),* being First and/or Corresponding author in 16 of them. These papers accumulate many citations (Scopus: 834 citations, *h*-index 17, Oct-2023). I have also published 1 book chapter, and contributed to 44 international and national congresses (9 oral communications at international and 7 at national conferences). The Universidad Nacional de Rosario (Argentina, 2020) and the INIA (Perú, 2022) invited me as a speaker in a postgraduate course and in an international symposium, respectively.

Throughout my career, I have been focusing on **(1)** the molecular and functional characterization of endo-beta-mannanase (*MAN*) genes during the Triticeae and Brassicaceae seed development (*Planta*, 2011, 2018*; *J. Exp. Bot.*, 2012, 2015*, *Front. Plant Sci.*, 2020*). Part of this data is included in the ***PhD* thesis** of N. Carrillo-Barral, defended in 2016, **co-supervised** by me, and graded ***Summa cum laude* with an extraordinary award**; he currently is lecturer at *Univ. da Coruña*. **(2)** I also conducted research on the role of transcription factors in activating and repressing genes upon seed development in *Arabidopsis thaliana* and *Hordeum vulgare* (*Plant J.,* 2013*; *J. Exp. Bot.*, 2014*;* 2017; *Plant Cell*, 2014; *Plant Physiol*., 2016). I have been also part of the international team for the annotation of the *Arabis alpina* genome in the frame of a TRILATERAL Project (TRANSNET) led by the international well-known experts G. Coupland (MPI-Köln, Germany), D. Weigel (MPI-Tubingen, Germany), V. Colot (CNRS-INSERM, France), H. Quensville (INRA-Versalles, France), P. Carbonero (CBGP) and J. Paz-Ares (CNB- CSIC) (***Nature Plants***, 2015).

Currently, I am studying the role of autophagy in seed development, and in seed response to environmental changes (BIO2017-82873-R; PI: Vicente-Carbajosa**; co-PI: R. Iglesias-Fernández**; *Plants*, 2022*). The *Comunidad de Madrid* (CM) granted me funding for hiring a predoctoral researcher for 1 year (2020) that worked on this topic. In 2019, Dr. E. Caro and I (**co-PIs**) got a grant from UPM for exploring seed epigenetics (*Plants*, 2020*). I was also the **PI** of 2 projects granted by CM-UPM (2020-2022) and by UPM-Banco Santander (2022). This latter was the seed to constitute an **International Consortium** granted with the ***Quinoa4Med*-PRIMA** project (Jun 2022), where I am **PI**. In the frame of this project an undergraduate thesis (UT; UPM), that I supervised, was awarded the 1st UT Prize-UPM (2022).

I have reviewed more than 40 articles for SCI Journals (*Plant J.*, *J. Exp. Bot*., *PLOS One*, etc.), and evaluated project proposals and mobility fellowships for the *Agencia Estatal de Investigación*, the Czech Science Foundation, and the *Vicerrectorado de Internacionalización* (UPM). I am also *Guest Editor* and *Review Editor* in the journals *Plants* and *Front. Plant Sci.*, respectively. I have participated in the drafting of the UPM institutional proposal for the Erasmus K171 program (2022, 2023). I have been part of commissions for the evaluation of *PhD*, master, and undergraduate theses. I am an invited member of an Excellence *PhD* program (UPM).

I have taught more than 1200 hours in under- and postgraduate education. I (co-)directed 16 national and international master/undergraduate theses. I supervised the work of 2 technicians financed by the "Garantía Juvenil de la CM" program, who obtained permanent positions as technicians at the INIA-CSIC. I usually participate in the annual Science Workshop for Secondary School Students (CBGP).

***Corresponding author**

Part C. RELEVANT MERITS *(sorted by typology)*
C.1. Publications

1. E. Contreras, L. Martín-Fernández, A. Manaa, J. Vicente-Carbajosa, **R. Iglesias-Fernández*.** (2023) Identification of reference genes for precise expression analysis during germination in *Chenopodium quinoa* seeds under salt stress (Preprint: https://doi.org/10.20944/preprints202309.1620.v1). (***Corresponding author**)
2. **Iglesias-Fernández R.***, Vicente-Carbajosa J. A View into Seed Autophagy: From Development to Environmental Responses. *Plants* (Basel). 2022,11:3247. (***Corresponding author**)
3. **R. Iglesias-Fernández***; E. Pastor-Mora; J. Vicente-Carbajosa; P. Carbonero. 2020. A possible role of the aleurone expressed gene *HvMAN1* in the hydrolysis of the cell wall mannans of the starchy endosperm in germinating *Hordeum vulgare* L. seeds *Frontiers in Plant Science*. 10, pp.1706. (***Corresponding author**)
4. N. Carrillo-Barral; A.J. Matilla; M.C. Rodríguez-Gacio; **R. Iglesias-Fernández*.** 2018. Mannans and endo-beta-mannanase transcripts are located in different seed compartments during Brassicaceae germination. *Planta*. 247,pp.649-661. (***Corresponding author**)
5. P. Carbonero[+]; **R. Iglesias- Fernández**[+]; J. Vicente- Carbajosa[+]. 2017. The AFL subfamily of B3 transcription factors: evolution and function in angiosperm seeds. *Journal of Experimental Botany*. 68, pp.871-880. **([+]Equal authors).**
6. Z. Abraham*; **R. Iglesias-Fernández***; M. Martínez; I. Díaz; P. Carbonero; J. Vicente-Carbajosa. 2016. A developmental switch of gene expression in the barley seed mediated by HvVP1 (Viviparous1) and HvGAMYB interactions. *Plant Physiology*. 170, pp.2146-2158. **SCI ii:** 6.841 **(*Equal authors)**.
7. E-M. Willing; V. Rawat; T. Mandáková… **R. Iglesias-Fernández**..P. Carbonero, J. Paz-Ares…D. Weigel, G. Coupland, K. K. Schneeberger. 2015. Genome expansion of *Arabis alpina* linked with retrotransposition and reduced symmetric DNA methylation. *Nature Plants*. 1, pp.14023. (Author position: 26/39).
8. V. González-Calle; C. Barrero-Sicilia; P. Carbonero; **R. Iglesias-Fernández***. 2015. Mannans and endo-beta-mannanases (MAN) in *Brachypodium distachyon*: Expression profiling and possible role of the *BdMAN* genes during coleorhiza-limited seed germination. *Journal of Experimental Botany*. 66,pp.3753-3764. (***Corresponding author**).
9. B. Rombola-Caldentey; P. Rueda-Romero; **R. Iglesias-Fernández**; P. Carbonero; L. Onate-Sanchez. 2014. Arabidopsis DELLA and Two HD-ZIP transcription factors regulate GA signaling in the epidermis through the L1 Box cis-element. *The Plant Cell*. 26, pp.2905-2919. My micrographs were selected to be the cover image of the issue.
10. **R. Iglesias-Fernández**; D. Wozny; M. Iriondo-de Hond; L. Onate-Sanchez; P. Carbonero; C. Barrero-Sicilia. 2014. The *AtCathB3* gene, encoding a cathepsin B-like protease, is expressed during germination of *Arabidopsis thaliana* and transcriptionally repressed by the basic leucine zipper protein GBF1. *Journal of Experimental Botany*. 65-8, pp.2009-2021. My micrographs were selected to be the cover image of the issue.
11. **R. Iglesias-Fernández***; C. Barrero-Sicilia; N. Carrillo-Barral; L. Onate-Sanchez; P. Carbonero. 2013. *Arabidopsis thaliana* bZIP44: a transcription factor affecting seed germination and expression of the mannanase-encoding gene *AtMAN7*. *The Plant Journal*. 74, pp. 767-780. (***Corresponding author**)

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster) 6 oral communication selected and 1 poster award out of 44 congress contributions

1. **R. Iglesias-Fernández (R.I-F).** The Quinoa4Med initiative: Promoting quinoa as a climate-smart crop for enhancing income generation in the Mediterranean marginal land. ***1st International Agrienvironment Symposium. Keynote Speaker (Invited).*** University of Salamanca, Spain (International). 17-18/07/2023.
2. **R. Iglesias-Fernández (R.I-F).** Genes que codifican enzimas remodeladoras de la pared celular durante el desarrollo de las semillas: función y regulación transcripcional. ***I Simposio Internacional de Genómica Vegetal y Bioinformática***. ***Invited Conference***. INIA- Perú (International). 02/12/2022.
3. **R. Iglesias-Fernández**, E. Pastor-Mora, Jesús Vicente-Carbajosa, P. Carbonero. *Mannans in the endosperm cell walls of barley seeds are mainly hydrolyzed by enzymes encoded by the HvMAN1 gene expressed in the aleurone upon germination.* ***6th Workshop on the Molecular Aspects of Seed***

Dormancy and Germination. *Oral* Communication (R.I-F). Volendam, The Netherlans (International). 22/09/2019- 25/09/2019.

4. **R. Iglesias-Fernández**, R. Alonso, M.A. Delgado-Gutiérrez, E. Pastor-Mora, P. Carbonero, Jésus Vicente-Carbajosa. *Regulation of the Asparagine synthetase encoding gene HvASN1 in barley seeds by transcription factors HvbZIP53 and HvBLZ1*. ***XIV Reunión de Biología Molecular Plantas***. *Oral* Communication (R.I-F). Salamanca, Spain (National). 04/07/2018- 06/07/2018.
5. **R. Iglesias-Fernández**, C. Barrero-Sicilia, N. Carrillo-Barral, L. Oñate-Sánchez, P. Carbonero. *Transcription factors of the bZIP family affecting Arabidopsis thaliana seed germination sensu stricto.* ***XIII Congreso Hispano-Luso de Fisiología Vegetal, XX Reunión de la Sociedad Española de Fisiología Vegetal.*** *Oral* Communication (R.I-F). Lisbon, Portugal (International). 24/07/2013-27/07/2013.
6. A. Ortiz-Espín*, **R. Iglesias-Fernández***, I. Martínez-Alcalá, A. Calderón, D. Camejo, F. Sevilla, P. Carbonero, A. Jiménez. **(*Equal authors)**. *Functional role of AtTrxo1 under salt stress and its transcriptional regulation. 11th International POG Conference (Reactive Oxygen and Nitrogen Species in Plants)*. Poster. **1st award to the best poster.** Warsaw, Poland (International). 17/07/2013-19/07/2013
7. **R. Iglesias-Fernández**, C. Barrero-Sicilia, N. Carrillo-Barral, L. Oñate-Sánchez, P. Carbonero. *The bZIP transcription factor AtbZIP44 during seed germination: Regulation of the mannanase encoding gene AtMAN7.* ***4th International Society for Seed Science (ISSS) Workshop on Molecular Aspects of Seed Dormancy and Germination.*** *Oral* Communication (R.I-F). Paris, Francia (International). 09/07/2013- 12/07/2013

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. "Deciphering autophagy in the barley grain by genome editing tools. **PI: Raquel Iglesias Fernández** and Götz Hensel (ref.: EoICSPINT01-DECAPH; FPI-fellowship (4 year) and 30.000 €. (2023-2026)).
2. Quinoa as a climate-smart crop diversification option for higher income generation from marginal lands in the Mediterranean (***Quinoa4Med***). (01/06/2022- 31/05/2025). PRIMA-EU program 2021 (Section 2). Coordinator: Sandra Schmöckel (University of Hohenheim). **PI and Work Package Leader 3: Raquel Iglesias Fernández** (ref.: PCI2022-132988; **Budget: 1.740.491 €; UPM-group: 201.013 €**).
3. *"La quínoa como una nueva alternativa para el éxito en condiciones agrícolas marginales"* (01/01/2020- 31/12/2021). Universidad Politécnica de Madrid-Banco Santander. **Budget:** 5 000 €- *CAPITAL SEMILLA.* **PI: Raquel Iglesias Fernández.** This funding was the seed to constitute a major **International Consortium** for working on the ***Quinoa4Med*-PRIMA project**.
4. Green remediation of mine affected soils: putting the microorganisms to work (BIOMINES; Ref.: TED2021-129229B-I00). MICINN-2021. (01/01/2023- 31/12/2024) PIs: Jesús Vicente-Carbajosa and Ana Moliner Aramendia. (ref.: TED2021-129229B-I00; **Budget:** 241.500 €).
5. "Ingeniería de la pared celular en la planta modelo de cereales (*Brachypodium distachyon*) y en cebada (*Hordeum vulgare*)" -(INGE-CEREAL; Ref.: APOYO-JOVENES-MTOKUE-25-MKITFX). (01/03/2020- 31/03/2022). Comunidad de Madrid and Universidad Politécnica de Madrid. **Budget**: 60.000 €. **PI: Raquel Iglesias Fernández (UPM)**
6. "Estrés del retículo endoplásmico en plantas: nuevos componentes y aplicaciones biotecnológicas" (BIO2017-82873-R). (01/01/2018-31/12/2020). Ministerio de Ecomomía y Competitividad. **Budget:** 139.150 €. PI Jesús Vicente Carbajosa **and co-IP Raquel Iglesias Fernández (UPM)**
7. "Convocatoria de ayudas para la contratación de investigadores predoctorales e investigadores postdoctorales cofinanciadas por Fondo Social Europeo a través del Programa Operativo de Empleo Juvenil y la Iniciativa de Empleo Juvenil (YEI) 2018 de la Comunidad de Madrid" (PEJD-2018-PRE/BIO-8505). David Figueira Galán (Biotecnólogo, UPM) was hired by this program. **Funding entity:** Comunidad de Madrid (01/02/2019-31/01/2020). **Budget:** 25.000 €. **PI: Raquel Iglesias Fernández (UPM)**
8. Development of epigenetic markers related to seed germination – (EPI-SEED: Ref.: VJIDOCUPM18ECB). (01/01/2018- 31/12/2019). Comunidad de Madrid. **Budget:** 30.000 €. **PIs: Raquel Iglesias Fernández** and Elena Caro (UPM)
9. Aumento en la captura de energía y carbono en sistemas vegetales (EXPLORA: BFU2013-49665). (01/09/2014-31/08/2016). Ministerio de Ecomomía y Competitividad. **Budget:** 80.000 €. **PI: J. Vicente Carbajosa (UPM)**
10. Redes transcripcionales en semillas de las Triticeae: comparación *Hordeum vulgare* y

Brachypodium distachyon (MICINN: BFU2009-11809). (01/01/2011- 31/12/2014). Ministerio de Ciencia e Innovación (MICINN). **PI: P. Carbonero (UPM)**

11. Función y potencial biotecnológico de los factores de transcripción de las plantas (TRANPLANTA MICINN CONSOLIDER: CSD2007-00057). (01/07/2007-30/11/2013). Ministerio de Ciencia e Innovación (MICINN). **Coordinator: J. Paz Ares (CNB-CSIC). Group PI: P. Carbonero (UPM)**