

**CURRICULUM VITAE ABREVIADO (CVA) 2023**

**Part A. PERSONAL INFORMATION**

First name	Carmen		
Family name	Fenoll Comes		
Gender (*)		Birth date	
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-4653-6268		

(\*) *Mandatory*

**A.1. Current position**

Position	Full Professor (catedrática) of Plant Physiology		
Initial date	June 2000		
Institution	Universidad de Castilla-la Mancha		
Department/Center	Ciencias Ambientales	Ciencias Ambientales y Bioquímica	
Country	Spain	Teleph. number	+34680222432
Key words			

**A.2. Previous positions (research activity, NO interruptions)**

Period	Position/Institution/Country/Interruption cause
August-Dec 2002	Tinker Visiting Full Professor, U Wisconsin Madison- USA
1998-2000	Associate Prof tenured (Prof Titular), Univ Castilla-la Mancha
1987-1988	Associate Prof tenured (Prof. Titular), Univ Autónoma de Madrid
June-sept 1989	Visiting Scientist, Salk Institute, La Jolla, CA-USA
1987-1988	Postdoc Biotech Fellow, Univ California San Diego, USA
1985-1987	Fulbright postdoc, Univ California San Diego, USA
1981-1985	Assistant prof. (Ayudante LRU), Univ Autónoma de Madrid
1979-1981	PhD student (INAPE fellowship), CIB-CSIC, Madrid

**A.3. Education**

PhD, Licensed, Graduate	University/Country	Year
PhD	Univ Autónoma de Madrid, Spain	1983
Master degree	Univ Complutense de Madrid, Spain	1979
5-years Bachelor	Univ Complutense de Madrid, Spain	1978

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

**Scientific contributions.** After a PhD on bacterial bioenergetics, I started research in plants as a Fulbright postdoc in the USA, working with **geminiviruses** (EMBO J. 7:1589). I maintained this line after joining the UAM thanks to my first European project (Twinning Program, FW2), whose main contribution was to discover that viral replication proteins interact with the plant retinoblastoma protein. In parallel, I joined the line on **plant-nematode interactions** initiated by FF del Campo. We obtained national funding and became part of a European network, germ of 3 consecutive European projects (FW 3, 4 and 5) in which I led the Spanish group, dedicated to analysis of plant promoters in the giant cells on which the nematode feeds. Among our main achievements is the identification by transcriptomics of differentially expressed genes and their functional analysis (Ann. Rev. Phytopathology 40:191-219). Notably, a geminiviral promoter was activated in giant cells, resulting in an international patent (that was licensed). Since its inception I have led this line, focused on transcriptional mechanisms of giant cell differentiation, obtaining competitive funding, and producing publications (in Plant J., New Phytol., Frontiers, Mol Plant, etc.); because of the many international collaborations of this line, I edited 2 international books (Kluwer and Springer). In recent years the direction of this line has passed to Carolina Escobar.

In 1995 I started a line on **stomata development**, a process about which there was hardly any information (our first paper: Plant J. 12:747-755). Since then this line, which is co-led by Montaña Mena, has obtained national and regional funding without interruption. Articles have been published in New Phytol, Trends in Plant Sci and TIGs, Plant J., Plant Phys, Frontiers

and other journals; as a result of a strategic international collaboration that is ongoing we co-author an article in *Nature*. Our contributions include the identification of natural variation in stomata abundance, the role of stomata abundance on physiology, a new role of MUTE specifying non-stomatal cell identity and new action mechanisms of SPCH and its target genes unravelled through hypomorphic alleles. We described functional orthologs of stomatal genes in tomato and grapevine and are characterizing natural variation in grapevine stomatal abundance in relation to drought, and started a line on stomatal development at supra-optimal temperature in the three species..

I initiated the 3 lines at UAM, and since 2000 they are developed in the Consolidated Group of Biotechnology and Molecular Biology of Plants of the UCLM, which I coordinate. In this group there are other researchers acting as PIs, who share equipment, biological materials, and methodologies. As a group we have obtained 11 national grants for scientific infrastructures. I have been granted 6 six-year research periods.

**Contributions to society.** I have obtained one six-year recognition on transference for my activities until 2012. I collaborate assiduously in divulgation, with conferences and publications, having obtained the ANTAMA Award 2014 for biotechnological divulgation. I directed summer courses (at the Menéndez Pelayo International University and at the UCLM) and several training courses in agrobiotechnology for undergraduates of the European Social Fund at the UAM. I am committed to gender and leadership issues in academia and have been Secretary General and President of AMIT (Association of Women Researchers and Technologists) and co-founder and member of the Board of Directors of EWORA (European Women Rectors Association). I was President of the Spanish Society of Plant Biology (formerly SEFV). I was Vice-Rector of Academic Affairs, Erasmus coordinator and Director of the Institute of Environmental Sciences at UCLM, and General Director of the Council of Universities (Ministry of Science and Universities). I coordinated the National Team of Bologna Experts funded by the EC, organizing seminars and workshops for university leaders and producing publications. At this moment, I am in my second term as Head of the Department of Environmental Sciences.

**Training of personnel and evaluation.** I have been director or co-director of 13 PhD Theses, most of them with competitive funding (FPU, FPI and other grants) and made numerous contributions to congresses and conferences in national and international institutions. I supervised 3 postdocs (including an MSC). I regularly advise international and national scientific institutions, evaluating project proposals and research personnel. I also evaluate universities through European, national, or regional agencies and the Institutional Evaluation Program (European University Association), where I was member of the Steering Committee.

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

### C.1. Publications

(10 recent, selected only in my current research line. Corresponding authors\*)

1. Pérez-Bueno ML, Illescas-Miranda J, Martín-Forero AM, de Marcos A, Barón M, Fenoll C, Mena\* M (2022) An extremely low stomatal density mutant overcomes cooling limitations at supra-optimal temperature by adjusting stomatal size and leaf thickness. *Frontiers in Plant Sciences*, 13: 919299.
2. Delgado D, Sánchez-Bermejo E, de Marcos A, Martín-Jiménez C, Fenoll C, Alonso C, Mena\* M. (2019) A genetic dissection of natural variation for stomatal abundance traits in *Arabidopsis*. *Frontiers in Plant Sciences*, 10: 1392.
3. Ortega A, De Marcos A, Illescas J, Mena\* M, Fenoll\* C (2019) The tomato genome encodes SPCH, MUTE and FAMA candidates that can replace the endogenous functions of their *Arabidopsis* orthologues. *Frontiers in Plant Sciences*, 10: 1300.
4. Houbaert A, Zhang C, Tiwari M, Wang K, de Marcos A, Savatin D, Urs M, Zhiponova M, Gudesblat G, Vanhoutte I, Eeckhout D, Boeren S, Karimi M, Betti C, Jacobs T, Fenoll C, Mena M, de Vries S, De Jaeger G, Russinova\*, E. (2018) POLAR-guided signaling complex assembly and localization drive asymmetric cell division. *Nature*, 563:574–578
5. Morales-Navarro, S., Pérez-Díaz, R., Ortega, A., de Marcos, A., Mena, M., Fenoll, C., González-Villanueva E. & Ruiz-Lara\*, S (2018). Overexpression of a SDD1-Like Gene From Wild Tomato Decreases Stomatal Density and Enhances Dehydration Avoidance in *Arabidopsis* and Cultivated Tomato. *Frontiers in Plant Sciences*, 9: 940.

6. de Marcos A, Houbaert A, Triviño M, Delgado D, Martín-Trillo M, Russinova E, Fenoll C & Mena\* M (2017) A mutation in the bHLH domain of the SPCH transcription factor uncovers a BR-dependent mechanism for stomatal development. *Plant Physiol.*
7. de Marcos A, Triviño M, Fenoll\* C & Mena\* M (2016) Too many faces for TOO MANY MOUTHS? *New Phytologist*, 210 (3): 779–785.
8. De Marcos A, Triviño M., Pérez-Bueno ML, Ballesteros I., Barón M., Mena\* M & Fenoll\*, C (2015) Transcriptional profiles of Arabidopsis stomataless mutants reveal developmental and physiological features of life in the absence of stomata. *Frontiers in Plant Science*, 23, 6: 456.
9. Triviño M, Martín-Trillo M, Ballesteros I, Delgado D, de Marcos A, Desvoves B, Gutiérrez C, Mena M\* and Fenoll C\* (2013) Timely expression of the *Arabidopsis* stoma-fate master regulator *MUTE* is required for specification of other epidermal cell types. *Plant Journal*, 75:808-22
10. Delgado, D., Ballesteros, I., Torres-Contreras, J., Mena\*, M. & Fenoll\*, C. (2011) Dynamic analysis of epidermal cell divisions identifies specific roles for *COP10* in Arabidopsis stomatal lineage development. *Planta*, 236:447-61

### C.2. Congresses (only organization)

- 4<sup>th</sup> Annual Meeting of the EU on “Mechanisms for Resistance against Plant Parasitic Nematodes” (1997, Toledo). President of Scientific Committee. International.
- 7<sup>TH</sup> International Congress of Plant Pathology. Chairperson of the session *Nematodes* (1998, Edinburgh). International
- VI RBMP (2001, Toledo). President of the Scientific Committee. National.
- 2<sup>nd</sup> Annual COST Conference on NEMAGENICS. (Mayo 2009, Toledo). Organizers: Lee Robertson, Carolina Escobar & Carmen Fenoll. International
- XVII Congress of the Federation of European Societies of Plant Biology (FESPB). Valencia, Spain on 5-9 July 2010. Member of the Scientific Committee and Chairperson of *Emerging Techniques*. International
- FV2015. XIV Congreso Hispano-Luso de Fisiología Vegetal (Toledo, 2015). President of the Scientific Committee (14-17 June, 2015). International
- FV2017. XV Congreso Hispano-Luso de Fisiología Vegetal (Barcelona, 2017). Member of the Scientific Committee. International
- FV2019. XVI Congreso Hispano-Luso de Fisiología Vegetal (Pamplona, 2019). Member of the Scientific Committee. International.

### C.3. Research projects (most recent, as PI or co-PI)

1. MASTER: Molecular analysis of stomatal development master regulators and their temperature-elicited responses. AEI, PID2022-137606NB-I00 (2023-2026). colPs: C Fenoll y M Mena
2. HEATS: Modifying the leaf epidermis to adjust plant growth to the future climate. MICINN, PID2019-105362RB-I00 (2020-2023). colPs: C Fenoll y M Mena.
3. AIRÉN: Agricultura Inteligente combinando genómica, imagen y teledetección: Riego del viñedo y papel de los Estomas en el clima futuro. JCCM, SBPLY/17/180501/000394 (2018-2021). colPs: M Mena y C Fenoll
4. SCANNING: Stomata in models and crops: from genes and mechanisms that set their abundance to field phenotyping using non-invasive imaging. MINECO, AGL2015-65053-R (2015-2018). colPs: C Fenoll y M Mena.
5. AGROGENEMA: Agrobiotechnology and genomics of plant-nematode interactions JCCM, Excellence Project PEII-2014-020-P (2014-2017). IPs: C Fenoll.
6. MOSAICS (2013-2015): Molecular Mechanisms Operating on Stomatal development in Arabidopsis and their Impact in the Control of Stomatal abundance and plant performance. MINECO BIO2012-33952 (2013-2015). IPs: C Fenoll.
7. NESTOR: Nematode Susceptibility Targets fOr A durable Resistance, FW7 EU Project PLANT-KBBE PCIN-2013-053 (2014-2018). IPs: C Fenoll.
8. TRANSPLANTA: Function and biotechnological potential of transcription factors in plants. (Coordinator: J. Paz-Ares). CSD2007-00057 (2008-2015). IP UCLM: C Fenoll.
9. G-ESTOMA: Global approach to the molecular analysis of the differentiation of stomata in arabidopsis. MEC, BIO2007-60276 (2008-2012). IPs: C Fenoll.



10. HESTOMA: a holistic, global approach to stomata differentiation in Arabidopsis. MEC, BIO2004-01834 (2005-2007). IPs: C Fenoll.
11. NONEMA: Making Plants resistant to plant-parasitic nematodes: no access-no feeding. Coord: H. Helder. EC FW5, QLK5-1999-01501 (2000-2005). IP UCLM: C Fenoll.

#### **C.4. Contracts, technological or transfer merits.**

- Gene expression in tomato. Research contract ENZA-ZADEN, UCTR160337 (2018)
- Inducible Promoters (WO 00/01832), Year: 1999. Countries: International Patent (WO) Owner: Biosciences Ltd. (UK). Authors: FENOLL, C. & MUÑOZ-MARTÍN, A

#### **C.5 Editor of International Books**

- Escobar C & Fenoll C Eds (2015) Plant Nematode Interactions: A view on compatible interrelationships. Advances in Botanical Research, Vol 73. **Academic Press, Elsevier**. ISBN: 978-0-12-417161-9
- Jones, J, Fenoll C & Gheysen, G. Editors (2011) Genomics and molecular Genetics of Plant-Nematodes Interactions. Editorial: **Springer**, ISBN 978-94-007-0433-6
- Fenoll C., Ohl, S. & Grundler (Editors) (1997) Cellular and Molecular Basis for Plant-Nematode Interactions. Series: Developments in Plant Pathology, Volume 10. **Kluwer Acad. Publ.** ISBN: 978-94-010-6360-9 (Print) 978-94-011-5596-0 (Online)

#### **C.6. Competitive national funding for Research Infrastructures as Group coordinator**

- 2000. Infraestructuras científicas para el ICAM 0,5 millones €.
- 2001. Infraestructuras científicas para ICAM. CICYT-FEDER, DGI. 1.6 millones €.
- 2002. Equipamiento científico para el ICAM. CICYT-FEDER. 1,4 millones €.
- 2003. Invernadero para experimentación en condiciones controladas. 247.080 €
- 2003. Sistema de análisis para Genómica Estructural y Funcional. 99.900 €.
- 2005. Laboratorio inmunolocalización-hibridación in situ. CICYT-FEDER: 109.000 €.
- 2008. Cámaras de cultivo de plantas. MICINN/JCCM: 80.000 €
- 2014. Equipos Biología Integrativa Plantas. MINECO UNCM13-1E-1960: 190.000 €
- 2016. Equipo para la observación remota, UNCM15-CE-3142: 264.560,30 €
- 2018. Sistemas de captura y análisis avanzado de imagen., EQC2018-004141-P: 210.000€
- 2019. Growth Chambers for Plants. EQC2019-005528-P. 193.180 €

#### **C.7. Evaluation of Research (project proposals and personnel)**

- Expert for ANEP and Agencia Estatal de Investigación (since 2000, regularly)
- Panel member in Plan Nacional de Biotecnología calls (4 times)
- Funding agencies of Andalucía, Argentina, Ecuador, Austria, Francia, Flandes, Polonia; DG VI (Agriculture) EC; Nat. Agency of Energy and Nat. Science Foundation, USA; USA-Israel Agricultural Research & Develop Fund; Genome British Columbia (Canada); BBSRC (UK).
- Promotion to Full Prof. for University of California, Davis (USA) & University of Durham (UK).
- European Young Investigator Award, CE; Panels INIA; CSIC Panels (>15 times); Panel ANEP Progr JdC and RyC; Progr ACADEMIA – ICREA. Panel for Women in Science L'Oreal-UNESCO. Andalusian Agency academic personnel.

#### **C.8. Main management and academic policy positions**

- Academic Commission PhD Program Ciencias Agrarias y Ambientales, UCLM (2014-**today**)
- Director of the Depto de Ciencias Ambientales (2016-**today**)
- Presidenta de la Sociedad Española de Fisiología Vegetal (2017-2021)
- Member of the Steering Committee IEP, European University Association (2017-2021)
- Member of the Acad Staff Comision, Consejo de Gobierno de la UCLM (till 2004)
- Director of the Instituto de Ciencias Ambientales, UCLM (till 2003)
- Vicerrectora de Convergencia Europea y Ordenación Académica UCLM (2004-2008)
- Secretaria General Consejo Universidades, Ministerios de Ciencia y de Educación (till 2009).
- Coordinator (2008-2010) or member (2012-14) of the Bologna Experts Team (CE -Ministerio de Educación)
- President of the Committee on GMO Reserch, Consejo de Gobierno, UCLM (till 2011)