



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

2025.07.22

First name	Corrochano Peláez		
Family name	Luis María		
Gender (*)		Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	URL Web:		
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-6282-6567		

(*) Mandatory

A.1. Current position

Position	Catedrático de Genética		
Initial date	2010.07.23		
Institution	Universidad de Sevilla		
Department/Center	Genética	Facultad de Biología	
Country	Spain	Teleph. number	
Key words	Fungal genetics and genomics, fungal photobiology		

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

Period	Position/Institution/Country/Interruption cause
1998-2010	Profesor Titular de Universidad. U. Sevilla, Spain.
1996-1998	Profesor Asociado. U. Sevilla, Spain.
1991-1996	Ayudante de Universidad. U. Sevilla, Spain
1993	Postdoctoral fellow. Stanford University, USA
1989-1992	Postdoctoral fellow. MRC Center. Cambridge, UK
1986-1988	Graduate student. FPI fellow. U Sevilla, Spain.

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Doctor en Biología	Universidad de Sevilla	1988
Licenciado en Biología	Universidad de Sevilla	1985

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

I am a Professor of Genetics at the University of Seville, Spain. I have a degree in Biology (MSc) (1985) and a PhD in Biology (1988) from the University of Seville, Spain. I have been a postdoctoral research fellow in the Molecular Genetics Unit of the Medical Research Council in Cambridge (UK) under the supervision of Nobel laureate Dr. Sydney Brenner (1989-1992), and a postdoctoral research fellow at Stanford University (USA) under the supervision of Prof. Charles Yanofsky (1993). I have been a visiting scholar at Stanford University (six months in 1996 and 1999), at Syracuse University, USA (six months in 1986), and at Oxford University (three months in 2025). I have been trained in fungal genetics (U.

Seville and Stanford U.), photobiology (Syracuse U.), and molecular biology (MRC Cambridge and Stanford U.).

I have been **PI in seven research projects funded the Spanish Research Plan and three regional research projects** (J. Andalucía). My research aims to understand how fungi see light and use the light signal to regulate development and the biosynthesis of protective pigments like carotenoids. My group participated in the discovery and characterization of photoreceptor and signal transduction proteins of *P. blakesleeanus*. In addition, we have identified other WC-type photoreceptors in *P. blakesleeanus*. We discovered that the blue-light photoreceptor cryptochrome CryA operates as a DNA-repair enzyme in two species of Mucoral fungi and helped to propose how a sensory photoreceptor may evolved into a DNA repair enzyme. The characterization of the *P. blakesleeanus* genome allowed us to detect a whole-genome duplication event that occurred early in the evolution of Mucoral fungi and that led to the expansion of genes for signal transduction proteins, including photoreceptors. We have characterized the levels of methylation in adenines and cytosines in the genome of *P. blakesleeanus*, and we have found that these epigenetic marks have opposite effects in the regulation of transcription. Abundance of 6mA correlates with highly transcribed genes during the response to light or during fungal development, while genes with reduced expression have an abundance of 5mC. In *N. crassa* we have characterized the regulatory role of the RCO-1/RCM-1 repressor complex in the transient activation of transcription by light (photoadaptation), and we have characterized the role of the protein VE-1 in the regulation of conidiation and the biosynthesis of carotenoids. We have discovered a novel effect of light on the stability and subcellular localization of VE-1 during conidiation that plays a key role during development. Asexual development in fungi is often regulated by light. We have characterized the regulation by light of regulatory genes for conidiation in *N. crassa* and *A. nidulans*, and proposed that the regulatory effect of light on conidiation occurs through the activation of key regulatory genes: *fl* in *N. crassa* and *brlA* in *Aspergillus nidulans*. We have characterized the transcriptional response to light in *P. blakesleeanus*, *N. crassa* and *A. nidulans*. Our results allowed us to identify common regulatory elements in the transcriptional responses to light in fungi.

I have chaired the two more respected conferences on fungal genetics in the world (European Conference on Fungal Genetics in Spain in 2014, and the Fungal Genetics Conference in Asilomar, CA, USA, in 2019). I have participated in several fungal genome initiatives, and I have led the international project that sequenced and characterized the genome of *Phycomyces blakesleeanus* by the JGI (Department of Energy, USA). I am the co-PI in a research project funded by the JGI to characterize the role of DNA methylation in transcriptional regulation in Mucoral fungi. **I have trained nine PhD students**. All of them work in science related posts or as active scientists. I have been the **Chairman of the Department of Genetics** of the University of Seville (2016-2020).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions) Corresponding author (CA).

Corrochano LM (CA), Gutiérrez G, Corrochano-Luque M, Franco-Cano A, Cánovas D. How fungi see the world: Fungal photoreceptors and their role in the regulation of fungal biology. **Microbiology and Molecular Biology Reviews** in press.

Cea-Sánchez S, Martín-Villanueva S, Gutiérrez G, Cánovas D, **Corrochano LM (CA)**. VE-1 regulation of MAPK signaling controls sexual development in *Neurospora crassa*. **mBio** 15:e02264-24 (2024)

Lax C, Mondo SJ, Osorio-Concepción M, Muszewska A, Corrochano-Luque M, Gutiérrez G, Riley R, Lipzen A, Guo J, Hundley H, Amirebrahimi M, Ng V, Lorenzo-Gutiérrez D, Binder U, Yang J, Song Y, Cánovas D, Navarro E, Freitag M, Gabaldón T, Grigoriev IV, **Corrochano LM (CA)**, Nicolás FE (CA), Garre V (CA). Symmetric and asymmetric DNA N6-adenine methylation regulates different biological responses in Mucorales. **Nature Communications** 15:6066 (2024)



- MM Gil-Sánchez+S Cea-Sánchez+EM Luque+D Cánovas+**LM Corrochano** (CA). Light regulates the degradation of the regulatory protein VE-1 in the fungus *Neurospora crassa*. **BMC Biology** 20, 149 (2022)
- S Cea-Sánchez+M Corrochano-Luque+ G Gutiérrez+NL Glass+D Cánovas (CA)+**LM Corrochano**(CA). Transcriptional regulation by the velvet protein VE-1 during asexual development in the fungus *Neurospora crassa*. **mBio** 13,e0150522 (2022)
- E Navarro+N Niemann+D Kock+**LM Corrochano LM**(CA) +A Batschauer(CA) + V Garre(CA) (8/10 autores). The DASH-type cryptochrome from the fungus *Mucor circinelloides* is a canonical CPD-photolyase. **Current Biology** 30, 4483-4490 (2020)
- MJ Myers+AE Bonds+RA Clemons+TY James(CA) (16/19 autores). Survey of early-diverging lineages of fungi reveals abundant and diverse mycoviruses. **mBio** 11, e02027-20 (2020)
- L.M. Corrochano**(CA). Light in the fungal world: from photoreception to gene transcription and beyond. **Annual Review of Genetics** 53,149-170 (2019)
- Ö.S. Bayram+A Dettmann+B Karahoda+Ö Bayram(CA) (13/17 autores). Control of development, secondary metabolism and light-dependent carotenoid biosynthesis by the Velvet complex of *Neurospora crassa*. **Genetics** 212, 691-710 (2019).
- S Polaino+JM Villalobos-Escobedo+VPS Shakya+A Idnurm(CA) (10/12 autores). A Ras GTPase associated protein is involved in the phototropic and circadian photobiology responses in fungi. **Scientific Reports** 7, 44790 (2017)
- L.M. Corrochano**(CA)+A Kuo+M Marcel-Houber+I Grigoriev (1/72 autores) Expansion of signal transduction pathways in fungi by extensive genome duplication. **Current Biology** 26, 1577-1584 (2016).
- V.G. Tagua+M Pausch+M Eckel+**LM Corrochano**(CA)+A Batschauer(CA) (9/10 autores). Fungal cryptochrome with DNA repair activity reveals an early stage in cryptochrome evolution. **Proceedings of the National Academy of Sciences USA** 112, 15130–15135 (2015).

C.2. Congress

- 17th European Conference on Fungal Genetics. Dublin (Ireland). 2-5 March 2025.. Neurospora workshop. Co-organizer.
- 32 Fungal Genetics Conference. Symposium “2nd Symposium on the basal fungi”. Asilomar (California, EE.UU.). 12-17 March 2024. Co-organizer.
- Neurospora 2023. Camp Allen, Navasota, Texas (USA) 1-4 October 2023. Co-organizer.
- 16th European Conference on Fungal Genetics. Session "Sensing and Signalling". Innsbruck (Austria). 5-8 de marzo de 2023. Session co-chair.
- 31st Fungal Genetics Conference. Session “Circadian rhythms and photobiology”. Asilomar (California, USA). 15-20 March 2022. Invited speaker and session co-chair.
- 19th Congress of the European Society for Photobiology. Salzburg (Austria). 30 August-3 September 2021. Invited speaker and symposium co-chair
- III International Symposium on Fungal Stress. São José dos Campos, São Paulo (Brasil). 20-23 May 2019. Invited speaker. Member of the organizing committee.
- 30th Fungal Genetics Conference. Asilomar (USA). 12-17 March 2019. Co-chair of the scientific program.
- 29th Fungal Genetics Conference. Session “Signal transduction and gene regulatory networks”. Asilomar (California, USA). 14-19 March 2017. Invited speaker.
- EMBO Conference. Exploring the Genomic Complexity and Diversity of Eukaryotes. Girona (Spain), 17-22 October 2015. Invited speaker.
- Mycological Society of America Presidential Address. Karling Lecture. Mycological Society of America Meeting. Botany 2015. Edmonton (Canada). 25-29 July 2015. Invited speaker.
- Gordon Research Conference. Cellular and Molecular Fungal Biology. Holderness School. Holderness NH (USA), 15-20 June 2014. Invited speaker.
- 12th European Conference on Fungal Genetics. Sevilla (Spain). 23-27 March 2014. Chair of the organizing committee.

C.3. Research projects

- Regulación transcripcional del desarrollo sexual y la fertilidad por las proteínas velvet en el hongo *Neurospora crassa*. Research Projects 2021. Ministerio de Ciencia e Innovación. PID2021-128001OB-I00. 2022-2025. 140.000 euros. PI: Luis M. Corrochano and David Cánovas (U. Sevilla)
- Regulation of transcription by light: the mechanism of photoadaptation in fungi. Research Projects (I+D+i). Consejería de Transformación Económica, Industria, Conocimiento y Universidades. Junta de Andalucía. PY20_00622. 2021-2022. 90.000 euros. PI: Luis M. Corrochano (U. Sevilla).
- Regulation of the degradation, nuclear transport, and formation of protein complexes by VE-1 during development and the biosynthesis of carotenoids in *Neurospora crassa*. Research Projects 2018. Ministerio de Ciencia, Innovación y Universidades. RTI2018-098636-B-I00. 2019-2021. 130.000 euros. PI: Luis M. Corrochano and David Cánovas (U. Sevilla).
- Exploring the role of DNA methylation in biofuel production, environmental sensing and development in basal fungi. Community Sequencing Program. E.O. Lawrence Berkeley National Laboratory, Department of Energy, USA, CSP18 503418. 2018-2019. Co-PI: Luis M. Corrochano (U. Sevilla). Funds for sequencing at JGI.
- Regulating the regulator: stability and localization of velvet during conidation and carotenoid biosynthesis in *Neurospora*. Research Projects 2015. Ministerio de Economía y Competitividad. BIO2015-67148-R. 2016-2018. 190.000 euros. PI: Luis M. Corrochano and David Cánovas (U. Sevilla).
- Interactions between light and development in the regulation of carotenoid genes in the fungus *Neurospora crassa*. Research Projects 2012. Ministerio de Economía y Competitividad. BIO2012-38520. 2013-2015. 134.550 euros. PI: Luis M. Corrochano (U. Sevilla).

C.4. Contracts, technological or transfer merits

- Organization of the international conference: “12th European Conference on Fungal Genetics”. Ministerio de Economía y Competitividad. Fundación Española para la Ciencia y la Tecnología. FCT-13-7395. 2013-2014. 15.000 euros. PI: Prof. Luis M. Corrochano (U. Sevilla).