

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	Amando		
Family name	Flores Díaz		

A.1. Current position

Position	Profesor Titular Universidad		
Initial date	21/12/20		
Institution	Universidad Pablo de Olavide (UPO)		
Department/Center	Biología Molecular Ingeniería Bioquímica	Facultad Ciencias Experimentales	
Country	Spain	Teleph. number	
Key words	Microbiology, bacterial genetics, gene expression, biodegradation, functional metagenomics, antibiotic resistance, new antimicrobials		

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

Period	Position/Institution/Country/Interruption cause
2005-2020	Profesor Contratado Doctor. UPO
2004-2005	Postdoctoral contratado UE. Universidad Sevilla
2000-2004	Profesor Asociado. Universidad Málaga
1999-2001	Postdoctoral (Reincorporación doctores). Universidad Málaga
1997-1999	Postdoctoral contratado. Commissariat à l'énergie Atomique. Francia
1995-1997	Becario postdoctoral. CNRS. Francia
1990-1994	Becario predoctoral. Universidad de Sevilla

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed Biology	Universidad de Sevilla	1989
Doctor Biology	Universidad de Sevilla	1994

(Include all the necessary rows)

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

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I graduated in Biology in 1989 at the **University of Seville** and began my doctoral thesis in the laboratory of Dr. **Josep Casadesús**, specialising in bacterial genetics, with a pre-doctoral grant from the University Training Programme (PFPU) of the Andalusian Regional Government (1990-1994). The work focused on the analysis of deregulated mutants in the expression of histidine biosynthesis genes in *Salmonella* that affected different cellular functions. It resulted in numerous communications at national and international congress and the publication of 4 articles in high impact journals in the field. During this period I did a 3 months stay in the laboratory of Dr. Maurice Fox at the **Massachusetts Institute of Technology (MIT)** with a grant from the Regional Government. Subsequently, I carried out a Postdoctoral stay (1995-1997) in Dr. Lionello Bossi's laboratory at the **Centre de Génétique Moléculaire, CNRS (Gif sur Yvette, France)**, working on the induction of cell death in gyrase mutants of *Salmonella typhimurium* with grants from the Ministry of Education and Science and the "Foundation for Medical Research". I then moved to the **Service de Biochimie et Génétique**

Molécuaire du CEA (Saclay, France), in Dr Michel Werner's group under a European Union contract (1997-99). This is a centre of excellence dealing with different aspects of the transcription process in *Saccharomyces cerevisiae*. In the framework of an EU project, I worked on the intra- and intermolecular interactions of the different subunits of *S. cerevisiae* polymerases. The work and collaboration with this lab resulted in high impact articles and citations, such as PNAS, Mol. Cell. Biol. and Science.

Subsequently, I returned to Spain to the **University of Malaga** with contracts for the Incorporation of Doctors and Technologists of the Ministry of Education and Science (1999) and associate professor (2002-2004). Here, with Dr. Eduardo R. Bejarano, I worked on the characterisation of proteins related to the cell cycle of *Schizosaccharomyces pombe*, the results of which led to 2 indexed scientific publications. I then joined Dr. Javier Cejudo's group at the **Centro de Investigaciones Científicas de la Cartuja (University of Seville-CSIC)** (2004-5), where I worked on enzymes related to oxidative stress in plants, with results published in 1 article in the journal Planta. Finally, in 2005, I joined the **Centro Andaluz de Biología del Desarrollo (CABD, Universidad Pablo de Olavide-CSIC)**, as Associate Professor in the area of Microbiology, where I am currently Full Professor. Here, I have worked on different projects with biomedical and environmental applications that have given rise to several publications and communications at national and international conferences. Specifically, I joined a line in which we have built attenuated strains of *Salmonella* to produce and release proteins in a regulated manner with applications in biomedicine inside eukaryotic cells. To date, several high-impact publications have been obtained and I supervised a doctoral thesis. Subsequently, we initiated a new line in which an ibuprofen-degrading microorganism was isolated and characterised. This work gave rise to a line of research still in progress and in which we study drug-degrading microorganisms in a project currently funded by the Regional Government of which I am co-IP (ProyExcel_00358, JA) and where I supervise a doctoral thesis. Related to this, I am also involved in a funded project (Ministerio de Ciencia e Innovación TED2021-132239B-I00) in which we are applying functional metagenomics to identify new enzymatic activities and develop biocatalysts for the revalorization of lignocellulosic waste and the biodegradation of plastics.

In addition to this, we I am engaged in another research project in which we are interested in identifying, through functional metagenomics, new determinants of resistance to antibiotics used in hospitals to predict and combat the emergence of resistant pathogens and new molecules with antimicrobial activity that can serve as new drugs against them. In this line, together with Eduardo Santero, I have been PI of the SAF2017-85785-R project and, co-PI of a project financed by the Regional Government. I am currently supervising two doctoral theses on this project.

Throughout my career, I have combined research with teaching. I have taught undergraduate and graduate courses in Environmental Sciences and Biotechnology Degrees at University Pablo de Olavide, as well as postgraduate courses, and I have supervised numerous Final Degree Project (TFG) (approximately 1 per year) and more than 15 Final Master Project (TFM). I am also part of several institutional boards at the University, Faculty and Cloister Broad. I have also participated as reviewer of several high-visibility journals.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (A maximum of the 10 most relevant contributions)

1. Zaki Saati-Santamaría, Z. Navarro-Gómez. P, Martínez-Mancebo, JA, Juárez-Mugarza, M, Flores, A* and Canosa, I*. **2025**. Genetic and species rearrangements in microbial consortia impact biodegradation potential. *In press in ISME J*. doi: 10.1093/ismejo/wraf014.
2. Paula Prieto-Laria, Pilar Fernández-Ibáñez, A. Rabdel Ruiz-Salvador, Inés Canosa, Amando Flores, Carlos Salameh, José Enrique Domínguez-Santos, Menta Ballesteros, Tania Farías. **2025**. *Cu or Fe-exchanged natural clinoptilolite as a sustainable Photo-Fenton catalyst for 3 water disinfection at near neutral ph 4*. **2025**. Submitted to *Microp Mesop Mater*. doi:10.5281/zenodo.14731716.
3. Paula Prieto-Laria, Antonia Jiménez-Rodríguez, A. Rabdel Ruiz-Salvador, Inés Canosa, Amando Flores, Yamilet Colle, Katia Borrego, Nuria O. Nuñez, Esteban Alonso, Pilar Fernández-Ibáñez, Tania Farias, Menta Ballesteros. **2025** *River water disinfection and removal of emerging*

contaminants and antibiotic-3 resistant bacteria by heterogeneous visible Photo-Fenton using a bimetallic natural 4 clinoptilolite zeolite. 2025. Submitted to J of Environl Cheml Engineer doi:10.5281/zenodo.14731742

4. Aulestia, M., Flores, A., Acosta-Jurado, S., Santero, E., and Camacho, E.M*. (2022) Genetic Characterization of the Ibuprofen-Degradative Pathway of *Rhizorhabdus wittichii* MPO218. *Appl Environ Microbiol* 88. 10.1128/aem.00388-22.
5. Álvarez-Marín, M.T., Zarzuela, L., Camacho, E.M., Santero, E., and Flores, A*. (2022) Detection by metagenomic functional analysis and improvement by experimental evolution of β -lactams resistance genes present in oil contaminated soils. *Sci Rep* 12: 10059.
6. Aulestia, M., Flores, A., Mangas, E.L., Pérez-Pulido, A.J., Santero, E., and Camacho, E.M.* (2021) Isolation and genomic characterization of the ibuprofen-degrading bacterium *Sphingomonas* strain MPO218. *Environ Microbiol* 23: 267–280.
7. Cárcel-Márquez, J., Flores, A., Martín-Cabello, G., Santero, E., and Camacho, E.M.* (2019) Development of an inducible lytic system for functional metagenomic screening. *Sci Rep* 9: 3887.
8. Mesa-Pereira B, Medina C, Camacho EM, Flores A*, Santero E (2015) Improved cytotoxic effects of *Salmonella* producing cytosine deaminase in tumour cells. *Microbial Biotechnology*. 8(1):169-76. doi: 10.1111/1751-7915.12153
9. Bridier-Nahmias A, Tchalikian-Cosson A, Baller JA, Flores A (6/10), Lesage P*. (2015) An RNA polymerase III subunit determines sites of retrotransposon integration. *Science*. 384(6234): 585-588. doi: 10.1126/science.1259114.
10. Mesa-Pereira B., Medina, C., Camacho E.M., Flores A*, Santero, E. (2013). Novel tools to analyze the function of *Salmonella* effectors show that *svpB* ectopic expression induces cell cycle arrest in tumor cells. *PLoS One*. Oct 21, 2013 DOI:10.1371/journal.pone.0078458

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

1. Pilar Navarro-Gómez, Zaki Saati-Santamaría, Juan A. Martínez-Mancebo, Maitane Juárez-Mugarza, Amando Flores and Inés Canosa. The use of bacterial consortia isolated from WWTPs for ibuprofen bioremediation: a solution to the problem of emerging contaminants. XIV Reunión Microbiología Molecular de la Sociedad Española de Microbiología (SEM). Santander 17-19 junio 2024. Póster y comunicación oral
2. Juan A. Martínez-Mancebo, Pilar Navarro-Gómez, Zaki Saati-Santamaría, Maitane Juárez-Mugarza, Amando Flores, Inés Canosa. Evolutionary study of *ipf* genes responsible for ibuprofen biodegradation in microbial consortia isolated from WWTPs. Workshop Environmental Microbiology: Microbes as Safeguards of the Environment UNIA. Baeza 12-14/3/2024
3. Juan A. Martínez Mancebo, Zaki Saati-Santamaría, Maitane Juárez-Mugarza, Pilar Navarro-Gómez, Amando Flores, Inés Canosa. Deciphering The Mechanisms of Naproxen Biodegradation By Microbial Consortia. Poster. XXIX Congreso Sociedad Española de Microbiología. Burgos. Spain. 25-28/6/2023
4. S. Acosta-Jurado, B. Guillén Tirado, C. Alías-Villegas, E.M. Camacho, A. Flores. Detección de nuevos mecanismos de resistencia a antibióticos de uso hospitalario mediante metagenómica funcional. Oral communication. XXIX Congreso de la SEM. Burgos, Spain. 2023
5. L. Andreo-Andreu, C. Alias-Villegas, S. Acosta-Jurado, A. Díaz-Moscoso A. Flores, E.M. Camacho. Caracterización de la actividad antibacteriana de clones procedentes de metagenotecas de ADN ambiental. Poster. XXIX Congreso de la SEM. Burgos, Spain. 2023
6. L. Andreo-Andreu, C. Alias-Villegas, S. Acosta-Jurado, A. Flores, E.M. Camacho. Análisis de la actividad antimicrobiana de un clon con ADN metagenómico proveniente de una pila de compostaje de una refinería. Poster; Congresos: XIII REUNIÓN DEL GRUPO DE MICROBIOLOGÍA MOLECULAR DE LA SEM. Granada, Spain. 2022
7. Maitane Juárez-Mugarza, Pilar Navarro-Gómez, José Manuel Garrido, Amando Flores, Inés Canosa. Isolation and characterisation of microbial consortia for the degradation of emerging pollutants. XIII Reunión grupo Microbiología Molecular, SEM. Póster. Granada. 07- 09/09/2022

8. *Zaki Saati-Santamaría, Jorge Rodríguez-Grande, Maitane Juárez-Mugarza, Pilar Navarro-Gómez, Amando Flores, Inés Canosa*. Metagenomic insights into microbial consortia degrading emerging pollutants. Póster. XIII Reunión grupo Microbiología Molecular, SEM. Granada. 07- 09/09/2022
9. *Juárez-Mugarza, Maitane; Garrido, José Manuel; Flores, Amando; Canosa, Inés*. Study on Emerging Pollutant-Degrading Microbial Consortia from WWTPs. Póster. FEBiotec. Congreso Anual De Biotecnología BAC. Valencia. 13-15 julio 2022
10. *Canosa, I, Garrido, JM and Flores, A*. Aislamiento y caracterización de consorcios microbianos degradadores de contaminantes emergentes. (2021). Póster. XXVIII Congreso Sociedad Española de Microbiología. Online. June 28th to July 2nd 2021.

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. *Influencia de la agricultura regenerativa sobre la biodiversidad y el funcionamiento de espacios adherados (AGROREG)*. Convocatoria "Exploración, análisis y prospectiva de la Biodiversidad: Posibles respuestas a la estrategia 2030 de Desarrollo Sostenible en un escenario de cambio global" dentro del Plan Complementario de I+D+I, Plan de Recuperación, Transformación y Resiliencia, dentro del área de Biodiversidad. IP: Inés Canosa and Antonio Gallardo. Universidad Pablo de Olavide. Cuantía: 252.476 €. Research team

2. *FortaUPO: Dotación de Equipamiento Científico para el Impulso y Fortalecimiento de la Investigación Multidisciplinar de Proyectos con Carácter Medio Ambiental, Nutricional y de Salud Pública en la UPO.* Ayuda A5 "Ayudas para proyectos de equipamiento de I+D+I para el impulso y fortalecimiento de los servicios científico-técnicos homologados de apoyo a la investigación y los grupos PAIDI", del VI Plan Propio de Investigación y Transferencia (2023-2026), en régimen de concurrencia competitiva, en el marco del programa operativo FEDER 2021-2027. (Rfª.: PPI2307). IP: Inés Canosa Cuantía: 94.844,00 €. Research team.

3. *Aproximación meta-ómica para la biorremediación de contaminantes emergentes en la cuenca del Guadaira*. ProyExcel_00358. Junta de Andalucía. 2023-2025. 174960 €. IP: Inés Canosa and **Amando Flores**.

4. *Metagenómica funcional para la identificación de nuevas enzimas y desarrollo de biocatalizadores de interés ambiental*. TED2021-132239B-I00. Ministerio de Ciencia e Innovación. 2022-2024. 178.250 €. IPs Francisca Reyes Ramírez and Eva M Camacho. Cuantía: 178.250 € Research team.

4. *Una aproximación metagenómica para combatir las bacterias multirresistentes a antibióticos*. UPO-1380700. Junta de Andalucía. 2022-2024. 25000 €. IP: Eva Camacho and **Amando Flores**

6. *Una aproximación metagenómica novedosa para combatir las crecientes resistencias a antimicrobianos*. SAF2017-85785-R. Ministerio de Economía, Industria y Competitividad. 2018-2021. 193600 €. IP: Eduardo Santero/**Amando Flores**.

7. *Modelos de regulación global y específica en bacterias degradadoras de contaminantes ambientales*. BIO2014-57545-R. Ministerio de Economía y Competitividad. 2015-2017. 278.300 EUR. . IPs: Inés Canosa and Eduardo Santero €. Ref: BIO2014-57545-R. Research team.

8. *Diversidad y metagenoma microbiano de la península ibérica*. CSD2007-00005. Ministerio de Educación y Ciencia (CONSOLIDER). 2007-2013. 450.000 €. Research team.