CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	José		
Family name	Muñoz Dorado		
Gender (*)	Male	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	jdorado@ugr.es	URL Web: https://www.ugr.es/~jdorado/	
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-7765-5687	

(*) Mandatory

A.1. Current position

Position	Full Professor			
Initial date	04/11/2009			
Institution	Universidad de Granada			
Department/Center	Microbiología	Facultad de Ciencias		
Country	Spain		Teleph. number	958243183
Key words	Molecular Biology, Microbiology, Genomics			

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

Period	Position/Institution/Country/Interruption cause
1982-1985	Predoctoral fellow FPPI, UGR/Spain: 48 months.
1986-1987	Postdoctoral fellow from Junta de Andalucía, UGR/Spain: 24 months. 3 of which in GBF. Braunschweig/Germany
1988-1992	Postdoctoral fellow from from MEC and Research Associate at UMDNJ, New Jersey, USA: 53 months
1992-1993	Investigator in Kirin Brewery Co. Ltd. Japón: 16 months
1993-1994	Contratado de Reincorporación (MEC) at UGR/Spain: 8 months
1994-1998	Assistant professor (Ayudante LRU, Profesor asociado and Profesor titular interino) at UGR/Spain: 60 months.
1998-2009	Associate professor (Profesor titular) at UGR/Spain: 135 months

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed in Biological Sciences	Granada/Spain	1981
PhD in Biological Sciences	Granada/Spain	1985

(Include all the necessary rows)

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

Number of research six-year terms: 5, next has been applied this year
Thesis supervised: 10
Number of publications in Web of Science: 62
Total citations: 58925 in Google Scholar
h index: 27 in Google Scholar

Professional career: In 1982 I got a fellowship FPI for 4 years. Then I obtained a postdoctoral fellowship from the Junta de Andalucía for 2 years. In 1988 I found work in USA, at UMDNJ, New Jersey, where I stayed for 4 years and 5 months. During two of these years, I obtained a scholarship from MEC, and the rest of the time I was hired as a Research Associate by this University. In 1992 I found a position in Japan for a year and 4 months in the laboratories of the company Kirin Brewery Co. Then, I returned to the University of Granada, where I have been hired with several types of contracts until 2009 when I obtained a position of Full Professor at the University of Granada. I am the founder and responsible for the research group termed Prokaryotic Development (BIO318).
Most important discoveries: In total I have published 56 scientific articles and several book chapters, some of which had a great impact on the scientific community. Two papers were published in 1990 in the J Biol Chem on the nucleoside diphosphate kinase of *Myxococcus xanthus*. This protein is homologous to the human Nm23, which is involved in cancer metastasis, and it was not known at that time what biological activity it had. We showed it. Other relevant works are those that led us to discover eukaryotic-type protein kinases in prokaryotes. The first two papers on this subject were published in Cell (1991) and Genes Dev (1995) and are considered milestones in the study of signal transduction in prokaryotes. More recently (2008) we published an article in PNAS where we related the presence of this type of proteins with multicellularity. Another important contribution was the participation in the sequencing of the largest prokaryotic genome sequenced so far, of 13.03 Mb, corresponding to *Sorangium cellulosum* (Nat Biotechnol, 2007). And more recently, I would like to highlight our contributions to the complex copper homeostasis of *M. xanthus* and the discovery of the mechanism of action of metal-dependent ECF sigma factors (Mol Microbiol, 2019; Metallomics, 2018; Nucleic Acids Res, 2016; Environ Microbiol Rep, 2016; PLoS ONE, 2013; PLoS Genet, 2011; three articles in Appl Environ Microbiol, one in 2012 and two in 2010; J Bacteriol, 2007; Mol Microbiol, 2005). Also remarkable are our works on microbial predation, where we have found that *M. xanthus* induces the production of actinorhodin and the development cycle of *Streptomyces*, and that the exopolysaccharide of *Sinorhizobium* and melanin protect against predation by this myxobacterium (Environ Microbiol, 2016 and 2014; and Microb Biotechnol, 2011; Front Microbiol, 2020; Comput Struct Biotechnol J, 2020). Finally, we have published transcriptomes of *M. xanthus* along its entire lifecycle. First, we published the transcriptome of development (eLife, 2019) and later we published the transcriptomic changes during predation on *S. meliloti* in both bacteria, the predator and the prey (Front Microbiol, 2022 and 2023).
Financing: I have been principal investigator of projects of the Spanish Government from the year 2000 to the present. One of them was a Consolider-Ingenio 2010 project (2009-15). In addition, I have been principal investigator of a project of Junta de Andalucía (2007-09). I have collaborated as investigator in other research projects in Spain, USA and Japan, and in a COST action. Currently, I am supervisor of a Marie S. Curie project.
Diffusion and transfer of knowledge: I have collaborated for several years in the Week of Science, celebrated in UGR; in the Science Research for Young Students in Science, Technology and Humanities, PIIISA 2012; and in the course “Towards a Scientific Career: An Introductory Course in Biomedicine and Biotechnology. European Union. Lifelong Learning Programme. Intensive ERASMUS Programme”. Last year, I applied for 2 patents. I have also organized three scientific congresses.
Young investigators formation: I have been supervisor of 10 PhD Thesis. All the doctors are working in science. I have also supervised several TFGs and TFMs, most of which obtained fellowships from different programs to perform these activities.
Reviewer: I have been reviewer of several research projects from countries including Spain, UK, France, Germany, Israel and the European Research Council. I have also been a member of the commissions of Ramón y Cajal y Juan de la Cierva contracts, in Agriculture. I have also been reviewer of numerous papers submitted to prestigious journals in Microbiology.
Short stays: In addition to the long stays mentioned above, I have stayed in other laboratories, such as in GBF, Germany (3 months), University of Georgia, USA (3.5 months), and Wayne State University, USA (4 months). This latter one obtained a Salvador de Madariaga Fellowship in 2018.

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

C.1. Publications *(see instructions)*

1. Contreras-Moreno FJ, Moraleda-Muñoz A, Marcos-Torres FJ, Cuéllar V, Soto MJ, Pérez J, Muñoz-Dorado J. (2024) Siderophores and competition for iron govern myxobacterial predation dynamics. ISME J. 18:wrae077. doi: 10.1093/ismejo/wrae077.
2. Soto MJ, Pérez J, Muñoz-Dorado J, Contreras-Moreno FJ, Moraleda-Muñoz A. (2023) Transcriptomic response of *Sinorhizobium meliloti* to the predatory attack of *Myxococcus xanthus*. *Front Microbiol*. 14: 1213659. Doi: 10.3389/fmicb.2023.1213659.
3. Pérez J, Contreras-Moreno FJ, Muñoz-Dorado J, Moraleda-Muñoz A. (2022) Development versus predation: Transcriptomic changes during the lifecycle of *Myxococcus xanthus*. *Front Microbiol*. 13:1004476. doi: 10.3389/fmicb.2022.1004476.
4. Marcos-Torres FJ, Moraleda-Muñoz A, Contreras-Moreno FJ, Muñoz-Dorado J, Pérez J. (2022). Mechanisms of Action of Non-Canonical ECF Sigma Factors. International Journal of Molecular Sciences. 23:3601. doi: 10.3390/ijms23073601.
5. Pérez, J, Contreras-Moreno, FJ, Marcos-Torres, FJ, Moraleda-Muñoz, A and Muñoz-Dorado. J. (2020) The antibiotic crisis: How bacterial predators can help. *Comput Struct Biotechnol J* 118: 2547–2555. doi: 10.1016/j.csbj.2020.09.010.
6. Contreras-Moreno, FJ, Muñoz-Dorado, J, García-Tomsig, NI, Martínez-Navajas, G, Pérez, J and Moraleda-Muñoz, A. (2020) Copper and melanin play a role in *Myxococcus xanthus* predation on *Sinorhizobium meliloti*. *Front Microbiol,* 11: 94. doi: 10.3389/fmicb.2020.00094.
7. Muñoz-Dorado, J, Moraleda-Muñoz, A, Marcos-Torres, FJ, Contreras-Moreno, FJ, Martin-Cuadrado, AB, Schrader, JM, Higgs, PI, and Pérez. J. (2019) Transcriptome dynamics of the *Myxococcus xanthus* multicellular developmental program. *eLife* 8:e5037. doi: 10.7554/eLife.50374.
8. Moraleda-Muñoz A, Marcos-Torres FJ, Pérez J, Muñoz-Dorado J. (2019) Metal-responsive RNA polymerase extracytoplasmic function (ECF) sigma factors. Molecular Microbiology 112:385-398. doi: 10.1111/mmi.14328.
9. Pérez J, Muñoz-Dorado J, Moraleda-Muñoz A. (2018) The complex global response to copper in the multicellular bacterium *Myxococcus xanthus*. Metallomics 10:876-886. doi: 10.1039/c8mt00121a.
10. Marcos-Torres, FJ, Pérez, J, Gómez-Santos, N, Moraleda-Muñoz, A., Marcos-Torres, FJ and Muñoz-Dorado, J. (2016) In depth analysis of the mechanism of action of metal-dependent sigma factors: characterization of CorE2 from *Myxococcus xanthus*. *Nucleic Acids Res*, pii: gkw150. doi: 10.1093/nar/gkw150.
11. Gómez-Santos, N, Pérez, J, Sánchez-Sutil, MC, Moraleda-Muñoz, J and Muñoz-Dorado, J. (2011) CorE from *Myxococcus xanthus* is a copper-dependent RNA polymerase sigma factor. *PLoS Genet*, 7:e1002106. doi: 10.1371/journal.pgen.1002106.

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

1. Marcos-Torres FJ and Muñoz-Dorado J. (2024) Exploring the role of the LysM peptidoglycan-binding proteins as bacterial sensory systems. 2024 Gordon Research Conference on Sensory Transduction in Microorganisms. Ventura (USA). Poster.
2. Moraleda-Muñoz A, Cabello-Alemán L, Contreras-Moreno FJ, Pérez J and Muñoz-Dorado J. (2023) Upregulation of *Myxococcus xanthus* genes involved in prey PHB granules consumption during the predatory interaction on *Sinorhizobium meliloti*. 48th Annual International Meeting of the Biology of the Myxobacteria, Princeton, USA. Oral.
3. Muñoz-Dorado, J, Cabello-Alemán L, Contreras-Moreno FJ, Pérez J and Moraleda-Muñoz A (2023) The predator *Myxococcus xanthus* upregulates genes to consume PHB granules of the prey *Sinorhizobium meliloti*. 10th FEMS Congress of European Microbiologists, Hamburg, Germany. Poster.
4. Pérez J, Moraleda-Muñoz A, Contreras-Moreno FJ and Muñoz-Dorado, J. (2022) A transcriptomic perspective to *Myxococcus xanthus* life cycle. 47th Annual International Meeting of the Biology of the Myxobacteria, Murcia, Spain. Oral.
5. Contreras-Moreno FJ, Pérez J, Soto-Misffut MJ, Moraleda-Muñoz A and Muñoz-Dorado, J. (2022) Role of iron uptake systems in *Myxococcus xanthus* predation on *Sinorhizobium meliloti*. 47th Annual International Meeting of the Biology of the Myxobacteria, Murcia, Spain. Oral.

6. Muñoz-Dorado, J, Contreras-Moreno FJ, Cabello-Alemán L, Moraleda-Muñoz A and Pérez J (2022) Characterization of factors of *Myxococcus xanthus* that regulate the expression of genes required for predation on *Sinorhizobium meliloti*. 18th International Symposium on Microbial Ecology (ISME 18), Laussane, Swithzerland. Poster.
7. Contreras-Moreno FJ, Pérez J, Soto-Misffut MJ, Moraleda-Muñoz A and Muñoz-Dorado, J. (2021) Role of metals in *Myxococcus xanthus* predation on *Sinorhizobium meliloti*. The 46,5th Annual International Meeting on the Biology of Myxobacteria, online. Oral.
8. Moraleda-Muñoz, A, Contreras-Moreno, FJ, Schrader, JM, Higgs, PI, Muñoz-Dorado, J and Pérez, J. (2019) The *Myxococcus xanthus* predatosome and the *Sinorhizobium meliloti* defensome. 8th Congress of European Microbiologists (FEMS). Glasgow, Scotland. Poster.
9. Contreras-Moreno FJ, García-Tomsig, N, Martínez-Navajas, G, Pérez, J, Moraleda-Muñoz, A and Muñoz-Dorado J (2019) Role of copper in bacterial predation. 8th Congress of European Microbiologists (FEMS). Glasgow (Escocia) Póster.
10. Contreras-Moreno FJ, García-Tomsig NI, Martínez-Navajas G, Pérez J, Muñoz-Dorado J and Moraleda-Muñoz, A. (2019) Plays copper a role on *Myxococcus xanthus* predation? 46th Annual International Meeting of the Biology of the Myxobacteria. Houston, USA. Oral.

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. LysM 101106411. Unravelling the potential of LysM-domain proteins to awaken silent secondary metabolites genes in predatory bacteria through predator-prey interactions. HORIZON-TMA-MSCA-PF-EF. IP2 and supervisor. 165.312,96€.
2. A-BIO-126-UGR20. Bacterias depredadoras: nuevas estrategias en la crisis de los antibióticos: Proyectos Frontera. FEDER. ANDALUCIA. Investigator. 50.000€.
3. PID2020-112634GB-I00. Estudios sobre depredación bacteriana y su impacto en agricultura. Proyectos de I+D+i en el marco de los programas estatales de generación de conocimiento y fortalecimiento científico y tecnológico del sistema de I+D. IP2. 154.880€.
4. BFU2016-75425-P. Depredación bacteriana: estudio del predatosoma de *Myxococcus xanthus* y el defensoma de *Sinorhizobium meliloti*. MEC. 2016-2020 (Programa estatal de fomento de la investigación científica y técnica de excelencia, Subprograma estatal de generación de conocimiento). IP2. 151.250€.
5. PRX17/00299. Análisis del predatosoma de *Myxococcus* durante la depredación de *Sinorhizobium meliloti* MINECO: Programa Salvador de Madariaga. 2018. Investigador principal. 13.957 €.
6. Consolider CGL2015-71523-REDC. Genomica Comparada Microbiana. Microgen-NET. MINECO. 1/1/2016 a 31/12/2017. Coordinator: Francisco Rodríguez Valera, IP UGR: José Muñoz Dorado. 51.500€.
7. BFU2012-33248. Estudios sobre rutas de transduccion de señales mediadas por proteínas quinasas de tipo eucariota durante el desarrollo. MEC. 2013-2015. IP. 117.000€.
8. CSD2009-00006 CONSOLIDER-INGENIO 2010. MICROBIAL COMPARATIVE GENOMICS MCyT 2009-2014. Coordinator: Francisco Rodríguez Valera, IP UGR: José Muñoz Dorado. 3.800.000€.
9. BFU2009-07565 (Subprograma BMC). Las quinasas de *Myxococcus xanthus* como modelo de evolución de parálogos. MCyT. 2010- 2012. IP. 145.200€.
10. BFU2006-00972. Oxidasas multicobre de *Myxococcus xanthus*: regulación y funciónn durante el crecimiento vegetativo y el ciclo de desarrollo. MCyT. 2006-2010. 121.000€.

C.4. Contracts, technological or transfer merits, include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

1. Contreras-Moreno FJ and Muñoz-Dorado J. Ref IPR-1012, application number: P202330352. Producción de mixoquelinas a partir de una cepa mutante de *Myxococcus xanthus*. Europe, Application submitted on May 5th, 2023. Awaiting response.
2. Contreras-Moreno FJ and Muñoz-Dorado J. Ref IPR-1066, application number: P202330612. Producción de mixoquelina A a partir de una cepa mutante de *Myxococcus xanthus*. Europe, Application submitted on July 18th, 2023. Awaiting response.