

CVA date	21/9/2026
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Part A. PERSONAL INFORMATION

First name	Francisco	
Family name	García García	
Gender	Male	
ID number		
e-mail	fgarcia@cipf.es	URL Web: https://bioinfo.cipf.es/cbl/
Open Researcher and Contributor ID (ORCID)	0000-0001-8354-5636	

A.1. Current position

Position	Senior leader researcher		
Initial date	01/02/2018		
Institution	Fundación Comunidad Valenciana Centro de Investigación Príncipe Felipe (CIPF)		
Department	Computational Biomedicine Laboratory		
Country	Spain	Teleph. number	+34 96 328 96 80
Key words	Neurobiology, Ageing, Brain Metastases, Cancer, Sex Differences, Computational Biology, Bioinformatics, Personalized Medicine, Biomarkers, Artificial Intelligence, Drug Repurposing, Digitalization, Medical Imaging, Environmental Pollution		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
01/09/2007-31/01/2018	Researcher at CIPF (Spain)
01/12/2012-31/10/2015	Associate Lecturer at Universidad Politécnica de Valencia (Spain)
01/09/2009-31/01/2012	Associate Lecturer at Universitat de València (Spain)

A.3. Education

PhD, Licensed, Graduate	University	Year
PhD Biotechnology and Biomedicine	Universitat de València	2016
Master in Biostatistics	Universitat de València	2012

Part B. CV SUMMARY

Since 2018, Francisco García has been the principal investigator of the **Computational Biomedicine laboratory (CB)**, in the Valencian Biomedical Research Center (CIPF). His research focuses on developing and applying **Computational Biomedicine, Systems Biology, and Artificial Intelligence (AI)** methods to characterize complex human diseases, with a pioneer perspective on sex differences and personalized medicine.

Currently, he directs a highly dynamic and multidisciplinary team of 11 members (3 postdocs, 7 predoctoral researchers, and 1 bioinformatics technician). His leadership translates into 4 core research lines: **1) Study of the molecular mechanisms linking ageing to the development and progression of neurological, oncological, and metabolic diseases** using single-cell approaches. **2) Characterization of the molecular basis of neurological diseases:** **a)** Generation and integration of spatial and single-cell atlases to elucidate sex differences in neurodegenerative diseases (Parkinson's disease, Alzheimer's disease, amyotrophic lateral sclerosis, and multiple sclerosis); **b)** Comparative analysis of gut microbial communities and their metabolic profiles in men and women with neurodegenerative diseases; **c)** Development of descriptive and predictive models for improved patient stratification in neurological disorders through the integration of multimodal data. **3) Identification of novel biomarkers in cancer:** **a)** Development and application of integrative multi-omics data analysis methods for the identification of novel biomarkers of diagnosis and tumour progression; **b)** Investigation of the neurobiology of cancer and characterization of the role of the nervous system in cancer. **4) AI-driven clinical predictors for metabolic disorders** (obesity, diabetes, MAFLD).

He has developed his professional and research career in various biomedical and health institutions (Spanish National Bioinformatics Institute, CIBER Rare Diseases, Health Departments in Generalitat Catalunya and Generalitat Valenciana, and Principe Felipe Research Center), generating relevant and useful information to provide solutions to biological, epidemiological and clinical problems. He has also carried out **numerous research stays** on an ongoing basis **to strengthen the internationalisation of his team and the development of his lines of research, consolidating his participation in consortia** in Japan, USA, Argentina, Mexico and Europe: **1)** [Department of Molecular Biology](#), Keio University, Tokyo, Japan. 2025; **2)** [Center for Molecular Neurology](#). Univ. Antwerp-VIB, Belgium. 2024; **3)** [Department of Molecular Biology](#), Keio Univ. Tokyo, Japan. 2023; **4)** [Pathology Department](#), NYU United States. 2022; **5)** Computational Genomics Department, INMEGEN, México. 2015; **6)** CONICET, Argentina. 2013; **7)** Technical Univ. Ostrava. Czech Republic. 2012.

Francisco García has been teaching continuously since 2006, participating as a university lecturer in undergraduate and master's degrees. He has participated in **>80 national and international training activities** in Biostatistics, Bioinformatics, Computational Biology and Personalized Medicine. He also coordinates the international programme of [WODA \(Web-based Omics Data Analysis\)](#) and [CIPF Bioinformatics](#) (<https://bioinfo.cipf.es/cbl/training/>).

His scientific output comprises >120 peer-reviewed articles, predominantly in top-tier (Q1) journals (<https://bioinfo.cipf.es/cbl/publications/>), accumulating >7k citations (h-index 39, i10-index 92). He has extensive experience in biomedical research with the application of new computational strategies, contributing to the field of bioinformatics and computational biology with the development of methods and tools that facilitate the generation of results and their interpretation.

Summary of scientific and technical activities:

Steering committees: **a)** 2018 - Present. Member of the academic committee of the Master's in Bioinformatics at the University of Valencia; **b)** 2018 - Present. Member of Committee on Animal Research and Ethics, CIPF; **c)** 2021 - 2025. Member of the board of directors of Spanish Society for Bioinformatics and Computational Biology; **d)** 2023 - Present. Co-coordinator of the Data Science and Computational Biology scientific program at CIPF; **e)** 2019- 2021. Coordinator of the Valencian node of the National Institute of Bioinformatics (INB).

Joint Units and collaborative networks. His laboratory is part of: **a)** TransBioNet network; **b)** CIPF-Univ. Valencia Joint Unit on Biomedical Research with a Gender Perspective; **c)** IISLAFE-CIPF Rare Diseases Joint Unit; **d)** CSIC-CIPF Joint Unit; **e)** IVO-CIPF Cancer Joint Unit; **f)** FISABIO-CIPF Bioimaging and AI Joint Unit; **f)** ISABIAL-CIPF Electron Microscopy Joint Unit.

Member of the evaluation panels for biomedical R+D+I projects: **a)** ERA PerMed 2021-2025; **b)** HORIZON-HLTH-2023-DISEASE; **c)** HORIZON-MSCA-2024-DN; **d)** HORIZON-CL6-2025; **e)** HORIZON-MSCA-2025-DN; **f)** Agencia Estatal de Investigación 2022-2025.

Refereeing: "Nucleic Acids Research", "Bioinformatics", "Aging Cell", "Alzheimer's & Dementia", "Biological Psychiatry", "Bioscience, Biotechnology, and Biochemistry", "BMC Genomics", "Biology Direct", "Reproduction and Fertility", and "Orphanet Journal of Rare Diseases".

General indicators of scientific output: **a)** **2 six-year research periods:** 2011-2016 and 2017-2022. **R3 certificate;** **b)** **research projects in the last 5 years:** 15 (11 as IP), 3 of these projects are international; **c)** **peer-reviewed articles in the last 5 years:** 52; **d)** **outreach:** >50 activities.

Part C. RELEVANT MERITS

C.1. 10 selected publications in the last 5 years (*corresponding author):

1. F Gordillo-Gonzalez, C Galiana-Rosello, R Grillo-Risco, I Soler-Saez, MR Hidalgo, H Siomi, M Kobayashi-Ishihara*, **F García-García*** (8/8). *A Single-Cell Meta-Analysis Evidences Transposable Element Dysregulation in Sex-based Differences in Parkinson Disease*. Neurobiol Dis. **2026**. PMID: 42669364.
2. R Grillo-Risco, M Kupchuk Tiurin, C Perpiñá-Clérigues, FJ Cordero Felipe, S Lozano Juárez, M de la Iglesia-Vayá, **F García-García*** (7/7). *MetaOmixTools: an interactive web suite for meta-analysis of ranked features and functional enrichment*. Computational and Structural Biotechnology Journal **2026**. PMID: 42614712.

3. I Soler-Sáez, C Galiana-Roselló, R Grillo-Risco, G Falony, V Tepavčević, S Vieira-Silva, **F García-García*** (7/7). *Integrative multi-cohort analysis reveals consistent sex differences in gut microbiota of multiple sclerosis patients*. mSystems Journal **2026**. PMID: 42484622.
4. RA Moldovan, MR Hidalgo, H Castane, A Jimenez-Franco, J Joven, DJ Burks, A Galan*, **F García-García*** (8/8). *Transcriptomic landscape of sex differences in obesity and type 2 diabetes in subcutaneous adipose tissue*. Metabolism. **2025** Mar. PMID: 40157598.
5. I Soler-Sáez, A Karz, MR Hidalgo, E Hernando*, **F García-García*** (16/16). *Unveiling common transcriptomic features between melanoma brain metastases and neurodegenerative diseases*. Journal of Investigative Dermatology **2024**. PMID: 39326662.
6. Malmierca-Merlo, R Sanchez-Garcia, R Grillo-Risco, MR Hidalgo*, **F García-García*** (8/8). *MetaFun: Unveiling sex differences in multiple omics studies through comprehensive functional meta-analysis*. Biol Sex Differ. **2024**. PMID: 39192356.
7. J Llera-Oyola, H Carceller, Z Andreu, MR Hidalgo, FR Guerini, , R Mancuso, FR Guerini, A Mizokami, **F García-García*** (13/13). *The role of microRNAs in understanding sex-based differences in Alzheimer's disease*. Biol Sex Differ. **2024**. PMID: 38297404.
8. Fuster-Martínez I, Català-Senent JF, Apostolova N, **García-García F***, Blas-García A* (7/8). *Integrated transcriptomic landscape of the effect of anti-steatotic treatments in high-fat diet mouse models of non-alcoholic fatty liver disease*. J Pathol. **2024**. PMID: 38180387.
9. JF Català-Senent, Z Andreu, FJ Roig-Molina, **F García-García*** (10/10). *A deep transcriptome meta-analysis reveals sex-based molecular differences in Multiple Sclerosis*. Neurobiol Dis. **2023**. PMID: 37023829.
10. M Guaita-Cespedes, R Grillo-Risco, MR Hidalgo, **F García-García*** (8/8). *Deciphering the Sex Bias in Housekeeping Gene Expression in Adipose Tissue: A Comprehensive Meta-analysis of Transcriptomic Studies*. Biol Sex Differ. **2023**. PMID: 37072826.

C.2. Congress activities and invited talks: a) **291 congress contributions (international: 138)** (<https://bioinfo.cipf.es/cbl/research/>); b) **58 invited talks**; c) **Conference committee (7)**: European Conference on Computational Biology (ECCB2020); Interdisciplinary Congress on Human Genetics (2023); International Annual Meeting on Study of Sex Differences Congress (2024); Congress of the Spanish Society for Bioinformatics and Computational Biology (2024); Annual Meeting CIPF Neuronal Pathologies Program (2024-2026).

C.3. Ongoing and funded research projects: (PI: Principal Investigator)

1. **Project title:** "Deciphering sex differences in neurodegenerative diseases: an integrative biology assessment of microbiome, single cell and spatial transcriptomics (DifNerCells)". **Reference:** PID2025-174324OB-I00. **Financing Entity:** Proyectos de Generación de Conocimiento. MICIU. **Duration:** 1/9/2026-31/8/2029. **Budget:** 187.500€. **PI: Francisco García-García.**
2. **Project title:** Impact of sex difference on Parkinson's and Alzheimer's diseases: an integrative biology assessment of transcriptomic, microbiota and biomedical imaging data. **Financing Entity:** Generalitat Valenciana. **Reference:** Grant for consolidated research groups CIAICO/2023/149. **Duration:** 1/9/2024-31/8/2027. **Budget:** 90.000€. **PI: F García-García.**
3. **Project title:** Enhancing the digital capabilities of cancer centres in the European Union to improve prevention and care (eCAN Plus). **Financing Entity:** EU4H Project Grants. **Reference:** 101219434. **Duration:** 1/5/2025-31/4/2029. **Budget:** 19.997.388€. **Coordinator:** Sciensano. Belgian Institute for Health. **PI at CIPF: Francisco García-García.**
4. **Project title:** Mechano-metabOlic Responsive nanoPlatform for HeterogEnous tUmor Suppression (MORPHEUS). **Financing Entity:** ERC Advanced Grant 2025. **Reference:** 101268299. **Duration:** 1/9/2026-31/8/2031. **Budget:** 2.499.745€. **Coordinator:** María Jesús Vicent (CIPF). **Researcher team: Francisco García-García.**
5. **Project title:** Novel single-cell and spatial transcriptomic characterisation of sex differences in multiple sclerosis for the identification of diagnostic and prognostic biomarkers. **Financing Entity:** Generalitat Valenciana. **Reference:** GRISOLIA Predoctoral grant, CIGRIS/2026/037. **Duration:** 16/9/2026-5/9/2030. **Budget:** 107.535€. **PI: Francisco García-García.**

6. **Project title:** Characterisation of sex differences in multiple sclerosis using new computational and systems biology strategies. **Reference:** FPU25/00918 Predoctoral grant. **Financing Entity:** Ministerio de Ciencia, Innovación y Universidades. **Duration:** 2026-2030. **Budget:** 100.464€. **PI: Francisco García-García.**
7. **Project title:** Bioinformatics and biostatistics analyst specialising in molecular data to support the Big Data platform for biomedical research. **Reference:** PTA2025-025744-I. Grants for R&D&I Technical Staff contracts 2025. **Financing Entity:** MICIU/AEI. **Duration:** 1/9/2026-31/08/2029. **Budget:** 56.400€. **PI: Francisco García-García.**
8. **Project title:** Novel computational strategies for the identification of a multi-omics signature for diagnosis and prognosis in melanoma with brain metastases (multiMBM). **Reference:** PRDVA234163GOME. **Financing Entity:** Predoctoral grant AECC. **Duration:** 15-11-2023-14-11-2027. **Budget:** 100.600€. **PI: Francisco García-García.**
9. **Project title:** Sex differences in Parkinson's disease through meta-analysis and integration of microbiome, transcriptome and biomedical imaging studies. **Reference:** ACIF/2021/221 Predoctoral grant. GVA. **Duration:** 2022-2026. **Budget:** 93.000€. **PI: F García-García.**
10. **Project title:** CIPF Platform for Biomodels and Biobanks. **Financing Entity:** ISCIII. **Reference:** PT23/00177. **Duration:** 2024-2026. **Budget:** 490.680€. **PI: M. Jesús Vicent. Researcher at CIPF: Francisco García García.**

C.4. Participation in technology/knowledge transfer activities and exploitation of results.

- **C.4.1. Technology contracts:** (PI: F García-García) **1)** Achucarro Basque Center for Neuroscience. Metabolic strategies to stimulate myelin repair and prevent neurodegeneration in multiple sclerosis. 01/01/2024-31/12/2025. 14.000€; **2)** FISABIO. Analysis of chest radiographic images. 01/11/2022-31/12/2022. 16.335€; **3)** IDIBAPS. Detection of immune profiles in inflammatory skin diseases. 01/07/2020-30/06/2021. 11.471€; **4)** Instituto de Medicina Genómica. Identification of precision immunotherapy biomarkers in cancer. 15/05/2019-14/11/2019. 19.000€. **5)** ATOS IT Solutions. Development of clinical predictors based on molecular data and artificial intelligence methods to improve diagnosis and prognosis in cancer patients. 8/10/2018-31/12/2020. 160.000€.
- **C.4.2. Exploitation of results - Development of open web tools** (<https://bioinfo.cipf.es/cbl/tools/>): **1)** Neuroscience resources: [MetaFun-PD](#) and [Metafun-MS](#), web-tools to identify expression signatures in Parkinson Disease and Multiple Sclerosis studies; single-cell atlases: [Alzheimer](#), [Parkinson](#) and [Multiple Sclerosis](#); **2)** Sex differences tools: [MetaFun-SCZ](#), [MetaFun-NAFLD](#), [MetaFun-AUD](#), tools to evaluate sex differences for human diseases; **3)** Other biomedical software: [MetaFun-SCI](#) (Spinal Cord Injury); [MetaFun-HKG](#) (HouseKeeping Genes); [MetaFun](#) (Functional Meta-analysis).
- **C.4.3. Technology coordination of a singular infrastructure.** From February 2018, Francisco García is the coordinator of research activity in Personalized Medicine, for a singular facility such as the computational infrastructure of the Príncipe Felipe Research Centre, co-financed by Conselleria de Sanidad, Generalitat Valenciana, whose total cost was 900.000€.

C.5. Other relevant information:

Defended PhD thesis (5): Irene Pérez-Díez (2025); José F Català-Senent (2025); Rubén Grillo-Risco (2025); Irene Soler-Sáez (2025); Carla Perpiñá-Clérigues (2026).

PhD thesis ongoing (11): Sergio Romera; Pablo Malmierca; Adolfo López; Borja Gómez; Fernando Gordillo; Natalia del Rey; Edmond Geraud; Paula Palero; Raúl Pérez; Miguel Fernández, Jaime Llera.

MsC supervised (60): since 2016 from Master in Bioinformatics (Univ. València); Master in Biostatistics (Univ. València); Master in Bioinformatics and Biostatistics (UOC).

Supervision of postdoctoral researchers (20); Mentoring and advising in national and international student programs **(3); Outreach activities (>50):** Descubre Programme: Science for teenagers (2015-1028); Pint of Science (2019); Databeers (2018,2023); Jornadas de Bioderecho (2019); Genes, Big Data and Health, Science Museum (2022); European Researchers' Night (2023-2026); Discover Bioinformatics in Science! (2018-2025). International Day of Women and Girls in Science, 2018-2026. **Videos:** [Computational platform in biomedical research](#), [Metafun Data Science](#).