

CVA date	13/10/2025
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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 CV Centro de Investigación Príncipe Felipe (CIPF)		
Department	Computational Biomedicine Laboratory		
Country	Spain	Teleph. number	+34 96 328 96 80
Key words	Neurobiology, Brain Metastases, Ageing, Sex Differences, Computational Biology, Bioinformatics, Personalized Medicine, Biomarkers, Artificial Intelligence, Big Data, 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 activity is focused on the development and application of novel methods and computational resources to improve the characterization of the molecular bases in human diseases.

His team is made up of 10 people, including 2 postdoctoral researchers, 2 bioinformatics technician and 5 predoctoral researchers. The **CB's** lines of research are: **1) Ageing and Age-Related Diseases:** Identifying expression patterns in neurological, cancer, and metabolic diseases to study ageing. **2) Improving the understanding of molecular mechanisms in brain disorders:** **a)** Generation of single-cell and spatial atlases to decipher sex differences in neurodegenerative diseases (Parkinson's disease, Alzheimer's disease, amyotrophic lateral sclerosis and multiple sclerosis); **b)** Identification of biological pathways in behavioural alteration pathologies (schizophrenia); **c)** Study of differential sex profiles in neuroinflammation associated with alcohol use disorders, through integrative multi-omics strategies. **3) Finding novel biomarkers in cancer:** **a)** Development and application of big-data analysis methods for the identification of novel diagnostic and progression biomarkers in cancer studies; **b)** Neurobiology of cancer: description of the role of the nervous system in oncological diseases and identification of possible clinical implications in oncology. **3) Clinical targets and predictors in metabolic disorders:** **a)** Detection of potential clinical targets in obesity, diabetes and metabolic associated fatty liver disease through massive analysis of omics data; **b)** Clinical predictors based on high-throughput technologies and artificial intelligence methods.

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. Francisco García has been teaching continuously since 2006, participating as a university lecturer in undergraduate and master's degrees at numerous universities. He has participated in more than 80 national and international training activities in Biostatistics, Bioinformatics, Computational Genomics and Personalized Medicine. He also coordinates the international programme of [WODA \(Web-based Omics Data Analysis\)](#) and [CIPF Bioinformatics](#).

As result of his scientific career, Francisco García has published >100 peer-reviewed articles (most of them 1st quartile, [PubMed](#)) with >6k citations (h-index 37, i10-index 79). 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:

- 2018 - Present. Member of the academic committee of the Master's in Bioinformatics at the University of Valencia.
- 2018 - Present. Member of Committee on Animal Research and Ethics, CIPF.
- 2021 - Present. Member of the board of directors of Spanish Society for Bioinformatics and Computational Biology.
- 2023 - Present. Co-coordinator of the Data Science and Computational Biology scientific program at CIPF.
- **2 Six-year research periods:** 2011-2016 and 2017-2022. **R3 certificate.**
- **Member of the evaluation panels** for biomedical R+D+I projects in: **a)** European Health and Digital Executive Agency (HaDEA), HORIZON-HLTH-2023-DISEASE; **b)** HORIZON-MSCA-2024-DN; **c)** HORIZON-CL6-2025; **d)** PerMed 2021-2024; **e)** Agencia Estatal de Investigación 2022-2025.
- **Reviewer:** **a)** scientific journals: "Alzheimer's & Dementia", "Biological Psychiatry", "Bioscience, Biotechnology, and Biochemistry", "Bioinformatics", "BMC Genomics", "Biology Direct", "NAR", and "Orphanet Journal of Rare Diseases"; **b)** reviewer committee for the European Conference on Computational Biology since 2020.
- His laboratory is part of the TransBioNet network, and he has been the coordinator of the Valencian node of the National Institute of Bioinformatics (INB): 2019- 2021.
- His team is involved in several international research collaborations in Japan, USA, Argentina and European consortia.
- His unit has been integrated in the CIPF-University of Valencia Joint Unit on Biomedical Research with a Gender Perspective since 2018.
- **Research projects in the last 5 years:** 14 (11 as IP). 2 of these projects are international.
- **Students supervision:** 3 defended PhD Thesis + 7 ongoing, and >55 master students.
- **Mentoring** and advising in national and international student programs: 2.
- **Scientific dissemination:** >25 activities.

Part C. RELEVANT MERITS

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

1. 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.
2. A Galan, **F García-García*** (2/2). Revisiting gender differences in obesity and type 2 diabetes: Letter to the editor. Metabolism. **2025** May.
3. 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** Sep.

4. P Malmierca-Merlo, R Sanchez-Garcia, R Grillo-Risco, I Perez-Diez, M de la Iglesia-Vaya, MR Hidalgo*, **F Garcia-Garcia*** (8/8). *MetaFun: Unveiling sex differences in multiple omics studies through comprehensive functional meta-analysis*. Biol Sex Differ. **2024** Aug.
5. J Llera-Oyola, H Carceller, FR Guerini, **F Garcia-Garcia*** (13/13). *The role of microRNAs to understand sex-based differences in Alzheimer's disease*. Biol Sex Differ. **2024** Jan.
6. Fuster-Martínez I, Català-Senent JF, Hidalgo MR, Roig FJ, Esplugues JV, 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** Jan 5. PMID: 38180387.
7. 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** Apr 5.
8. 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** Apr.
9. A López-Cerdán, Z Andreu, MR Hidalgo, R Grillo-Risco, JF Català-Senent, I Soler-Sáez, A Neva-Alejo, F Gordillo, M de la Iglesia Vaya, **F García-García*** (10/10). *Unveiling sex-based differences in Parkinson Disease: a comprehensive meta-analysis of transcriptomic studies*. Biol Sex Differ. **2022** Nov 22;13(1):68. PMID: 36414996.
10. JF Català-Senent, MR Hidalgo, M Berenguer, G Parthasarathy, H Malhi, P Malmierca, M Iglesia, **F Garcia-Garcia*** (8/8). *Hepatic steatosis and steatohepatitis: functional meta-analysis of sex-based differences in transcriptomic studies*. Biol Sex Differ. **2021**.

C.2. Congress and invited talks: a) 206 [Congress contributions](#); b) member of the scientific or organising committees of the [IV interdisciplinary congress of Human Genetics 2023](#), [Study of Sex Differences Congress 2024](#) (OSSD, US) and the [I Congress Spanish Society of Bioinformatics and Computational Biology 2024](#); c) 58 invited talks.

C.3. Research projects granted from the last seven years (PI: Principal Investigator)

1. **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.**
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:** 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: F García-García.**
4. **Project title:** DifNerOmics: "Study of sex differences in neurodegenerative diseases with integrative approaches of omics data and biomedical imaging". **Reference:** PID2021-124430OA-I00. **Financing Entity:** Proyectos de Generación de Conocimiento. MICIU. **Duration:** 1/9/2022-31/8/2026. **Budget:** 157.300 €. **PI: F García-García.**
5. **Project title:** Plataforma ISCIII de Biomodelos y Biobancos CIPF. **Financing Entity:** ISCIII. **Reference:** PT23/00177. **Duration:** 2024-2026. **Budget:** 490.680€. **PI: M. Jesús Vicent. Researcher at CIPF: F García García.**
6. **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.**
7. **Project title:** Characterising sex differences in multiple sclerosis disease through meta-analysis and integration of biomedical imaging, transcriptome and microbiome. **Reference:** FPU20/03544 Predoctoral grant. **Financing Entity:** M° de Universidades. **Duration:** 1/12/2021-1/11/2025. **Budget:** 94.000€. **PI: F García-García.**

8. **Project title:** The Future of Biomedical Research CIPF lecture series. **Reference:** CIAORG/2022/35. Grant for the organization and dissemination of congresses, conferences and scientific meetings. **Financing Entity:** Generalitat Valenciana. **Duration:** 2023. **Budget:** 9.000€. **PI:** F García-García.
9. **Project title:** Extracellular vesicles in urine, a new tool in the detection of alcohol use disorder and possible sex differences. **Reference:** PND20231024. Plan Nacional sobre Drogas. **Financing Entity:** Ministerio de Sanidad. **Duration:** 01/01/2024-31/12/2025. **Budget:** 57.005€. **PI:** M. Pascual. **Researcher at CIPF:** F García García.
10. **Project title:** Multimodal Polypeptide Nanoplatfom of Precision for the Treatment and Monitoring of Metastatic Tumors. Pol@Mets. **Reference:** MFA/2022/065. **Financing Entity:** Generalitat Valenciana. **Duration:** 1/10/2022-30/9/2025. **Budget:** 269.825€. **PI:** M. Jesús Vicent. **Researcher at CIPF:** F García García.
11. **Project title:** IMPaCT: Precision Medicine Infrastructure associated with Science and Technology. **Reference:** IMP/00019. **Financing Entity:** ISCIII-MICIU. **Duration:** 1/01/2021-31/12/2024. **Budget:** 4.549.380 €. **PI at CIPF:** F García-García.
12. **Project title:** New players in human BAT differentiation and activation: a human PSC-derived BAT approach combined with state of the art genome engineering and -omics based methodologies (StemBAT). **Reference:** Advanced Grant 669879. **Financing Entity:** ERC. **Duration:** 01/01/2016-30/06/2023. **Budget:** 346.869€. **PI:** Antonio Vidal-Puig. **Researcher at CIPF:** F García García.
13. **Project title:** DifGenOmics: Study of sex and gender differences in health with omic approaches. **Reference:** GV/2020/186. **Financing Entity:** Generalitat Valenciana. **Duration:** 01/01/2020-31/12/2021. **Budget:** 15.500 €. **PI:** F García-García.
14. **Project title:** Bioinformatics Platform. The Spanish National Bioinformatics Institute (INB). **Financing Entity:** ISCIII. **Coordinator:** A Valencia. **Reference:** PT17/0009/0015. **Duration:** 01/01/2018-31/12/2021. **Budget:** 31.899€. **PI:** F García-García.

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

A) 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€.

B) Exploitation of results - Development of web 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 in transcriptomics studies for human diseases; **3)** Other biomedical software: [MetaFun-SCI](#) (Spinal Cord Injury); [MetaFun-HKG](#) (HouseKeeping Genes selection); [MetaFun](#) (Meta-analysis of functional profiles).

C) Technology coordination of a singular infrastructure. From February 2018, Francisco García is the coordinator of research activity in Personalized Medicine, for an unique facility such as the computational infrastructure of the Príncipe Felipe Research Centre, co-financed by Conselleria de Sanidad, whose total cost was 900,000 euros.

C.5. Scientific dissemination. Continued participation in numerous talks and scientific dissemination activities in various forums aimed at the general public and specialised groups as well. Selected activities: **1)** “Descubre Programme” 2015-2018: "Science for teenagers"; **2)** Pint of Science 2019, Databeers 2018; **3)** Jornadas de Bioderecho 2019: "Big Data, Artificial Intelligence and Health"; **4)** “Genes, Big Data and Health”, Museo de las Ciencias, Valencia, 2022; **5)** European Researchers' Night 2023-2024. **Videos:** [Computational platform in biomedical research](#), [Metafun Data Science](#).

C.6. International research stays: 1) [Department of Molecular Biology](#), Keio University, Tokyo, Japan. 2025; 2) [Center for Molecular Neurology](#). University Antwerp-VIB, Belgium. 2024; 3) [Department of Molecular Biology](#), Keio University, Tokyo, Japan. 2023; 4) [Pathology Department](#), NY University, United States. 2022; 5) Computational Genomics Department, INMEGEN, México. 2015; 6) Consejo Nacional de Investigaciones Científicas y Técnicas. Argentina. 2013; 7) Technical University of Ostrava. Czech Republic. 2012.

C.7. Doctoral theses supervision:

1. *Development and application of novel computational approaches for the characterization of cancer subtypes*. Irene Pérez Díez. Defence date: May 7, 2025.
2. *Study of molecular bases behind sex differences in non-alcoholic fatty liver disease and multiple sclerosis through transcriptomic meta-analysis*. José F. Català-Senent. Defence date: May 12, 2025.
3. *Obtaining and characterising consensus transcriptional profiles to understand the progression and severity of spinal cord injury*. Rubén Grillo Risco. Defence date: June 20, 2025.
4. *Sex differences and cross-disease molecular mechanisms in multiple sclerosis: insights from transcriptomics and metagenomics analyses*. Irene Soler Sáez. Defence date: November 28, 2025.