

CV Date	11/02/2025
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Part A. PERSONAL INFORMATION

First Name *	Montserrat		
Family Name *	Carles Fariña		
Sex *	Female	Date of Birth *	12/06/1983
ID number Social Security, Passport *	29204462M	Phone Number *	(+34) 653361437
URL Web	Montserrat Carles Fariña LinkedIn		
Email Address	montserrat_carles@iislafe.es		
Researcher's identification number	Open Researcher and Contributor ID (ORCID) *	0000-0003-2401-8240	
	Researcher ID		
	Scopus Author ID		

* Mandatory

A.1. Current position

Job Title	Principal Investigator of a research project (Miguel Servet)		
Starting date	2024		
Institution	La Fe Health Research Institute		
Department / Centre	Grupo de Investigación Biomédica en Imagen / Área Clínica de Imagen Médica - Hospital La Fe		
Country	Spain	Phone Number	(+34) 9612 - 46734
Keywords	physical instrumentation in biomedicine; Clinical medicine; Medical equipment; Dataprocessing		

A.2. Previous positions

Period	Job Title / Name of Employer / Country
2020 - 2024	Research contract - Principal Investigator / Conselleria de Sanitat PlanGenT CDEI-01/20-B
2019 - 2020	Research contract / ERAPerMed (European Union's Horizon 2020 Programme)
2017 - 2019	Research contract / Albert-Ludwings-Universität Freiburg
2015 - 2017	Postdoctoral Researcher / Instituto de Investigación Sanitaria La Fe (VALi+d GVA) / Spain
2015 - 2015	Research contract / University Hospital Freiburg / Germany
2013 - 2015	Experienced Researcher / University Hospital Freiburg (Marie Curie Research) / Germany
2011 - 2011	Research contract / Universidad Politécnica de Valencia / Spain
2007 - 2011	Predoctoral Researcher / The Spanish National Research Council – University of Valencia (ACIF GVA) / Spain

A.3. Education

Degree/Master/PhD	University / Country	Year
Diploma FSE: Especialista en Radiofísica Hospitalaria	Ministerio de Sanidad, Spain	2023
MPE German Certificate: Medical Physics Expert	Baden Württemberg: Regierungspräsidium Freiburg	2020
Programa Oficial de Doctorado en Tecnologías para la Salud y el Bienestar (Technologies for Health and Welfare)	Universitat de València	2012
	Universitat de València	2008

Degree/Master/PhD	University / Country	Year
Master in Medical Physics. Master Thesis: "Random Coincidences and Sensitivity Study"		
BA in Physics	Universitat de València	2005

A.4. General quality indicators of scientific production

Resume of main publications in the last 5 years. Publications (1, 3-5, 7 y 9) focused on the development of software, and/or phantoms, and/or quality assurance of medical imaging systems or protocols. She was responsible for the coordination of paper 4(10/10), 5(10/10) and 7(8/8). These results are very relevant in the field of medical imaging of cancer, because for a correct diagnosis, treatment planning and monitoring (including radiomics analysis) it is necessary to ensure that the imaging system response is optimal, not deteriorated over time and reproducible. Otherwise, changes in system response could be misinterpreted as changes due to pathology. In addition, she was the corresponding- and first- author of 6/8 publications with more than 200 citations focused on the quantification of multimodality imaging, including radiomics and artificial intelligence, for treatment planning, monitoring and prognosis of patient response in different cancer sites: lung (1, 11, 14); prostate (7, 13, 15); head and neck (8, 12) and brain (10).

Part B. CV SUMMARY

Montserrat Carles Fariña received the Research Experience Certificate (R3) from the Spanish Ministry in 2023. Since July 2020, she has been employed at the Biomedical Imaging Research Group (GIBI230) and over these 5 years she has successfully secured funding as principal investigator for 12 project proposals: eight innovation projects focused on developing phantoms via 3D printing (three ReDiT, one, VLC-BIOMED, two AVI, and one AECC), one project aimed at optimizing PET imaging for radiation oncology (Health Research Projects - ISCIII), two mobility projects (BEST22 and SEFM23) and two projects for her continued funding (PlanGent - GVA and Miguel Servet - ISCIII). She is the scientific coordinator for the awarded TRASNCAN 2022 proposal and the corresponding MATTO-GBM project. Furthermore, she has supervised 8 Master's theses and 1 PhD thesis and is currently supervising 3 PhD theses—two at UKL Freiburg and one at IISLaFe (PFIS - ISCIII) and 2 Master's theses. She is also responsible for three research contracts and one additional contracts is currently in progress. Her international research experience began at the "Rechts der Isar" Hospital - TUM, Germany. In 2013, she was awarded an 18-month Marie Curie fellowship at UKL-Freiburg, Germany, during which she completed two research stays: one month at Delft University of Technology (Netherlands) and one month at the company AQUILAB (France). In July 2015, she embarked on an international collaboration that included a one-year stay with the Medical Physics group at UKL-Freiburg. From September 2017 to July 2020, she continued her work at UKL-Freiburg. Since 2020, she has returned annually for a four-month stay at UKL-Freiburg. Her research has been recognized with several awards: (i) the Valencia IDEA Award in Biotechnology and Biomedicine in 2010, (ii) the Second Prize in Translational Research in Radiation Oncology for 2020-2021 in 2022, and (iii) the Best Publication of 2022 award from the Spanish Journal of Medical Physics in 2023.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Publications

AC: corresponding author. (n° x / n° y): position / total authors. If applicable, indicate the number of citations

- 1 **Scientific paper.** 2024. (Position:1/10) Development and evaluation of two open-source nnU-Net models for automatic segmentation of lung tumors on PET and CT images with and without respiratory motion compensation. European Radiology. <https://doi.org/10.1007/s00330-024-10751-2>
- 2 **Scientific paper.** 2024. (Position:4/9) Y-90 PET/MR imaging optimization with a Bayesian penalized likelihood reconstruction algorithm. Phys Eng Sci Med. 11-43. <https://doi.org/10.1007/s13246-024-01452-7>
- 3 **Scientific paper.** 2024. (Position:4/9) The significance of partial volume effect on the estimation of hypoxic tumour volume with [18F]FMISO PET/CT. EJNMMI Phys. 11-43. <https://doi.org/10.1186/s40658-024-00643-1>
- 4 **Scientific paper.** 2024. (Position:10/10) Control de calidad para PET/RM basado en maniqués experimentales con evaluación de factores de degradación por movimiento respiratorio. Revista De Física Médica. 25-1. <https://doi.org/10.37004/sefm/2024.25.1.004>
- 5 **Scientific paper.** 2023. (Position:10/10) Free automatic software for quality assurance of computed tomography calibration, edges and radiomics metrics reproducibility. European Journal Nuclear and Molecular Imaging Physics. 114. <https://doi.org/10.1016/j.ejmp.2023.103153>
- 6 **Scientific paper.** 2022. (Position:1/11) Modelo radiómico con PSMA-PET para la discriminación de pacientes con cáncer de próstata de alto riesgo. Revista De Física Médica. 23-2. <https://doi.org/10.37004/sefm/2022.23.2.002>
- 7 **Scientific paper.** 2022. (Position:8/8) Comparison of protocols with respiratory-gated (4D) motion compensation in PET/CT: open-source package for quantification of phantom image quality. European Journal Nuclear and Molecular Imaging Physics. 9-80. <https://doi.org/10.1186/s40658-022-00509-4>
- 8 **Scientific paper.** 2021. (Position:1/14) 18F-FMISO-PET Hypoxia Monitoring for Head-and-Neck Cancer Patients: Radiomics Analyses Predict the Outcome of Chemo-Radiotherapy. Cancers. 13-14, pp.3449. <https://doi.org/10.3390/cancers13143449>
- 9 **Scientific paper.** 2021. (Position: 1/5) Experimental phantom evaluation to identify robust Positron Emission Tomography (PET) radiomic features. European Journal Nuclear and Molecular Imaging Physics. <https://doi.org/10.1186/s40658-021-00390-7>
- 10 **Scientific paper.** 2021. (Position:1/10) FET-PET radiomics in recurrent glioblastoma: prognostic value for outcome after re-irradiation?. Radiation Oncology. 16-46. <https://doi.org/10.1186/s13014-020-01744-8>
- 11 **Scientific paper.** 2021. (Position:1/13) FDG-PET Radiomics for Response Monitoring in Non-Small-Cell Lung Cancer Treated with Radiation Therapy. Cancers. 13-4, pp.814. <https://doi.org/10.3390/cancers13040814>
- 12 **Scientific paper.** 2019. (Position:2/11) Textural features of hypoxia PET predict survival in head and neck cancer during chemoradiotherapy. European Journal of Nuclear and Molecular Imaging. 47-5, pp.1056-1064. <https://doi.org/10.1007/s00259-019-04609-9>
- 13 **Scientific paper.** 2019. (Position:1-2 EC/15) Radiomic features from PSMA PET for non-invasive intraprostatic tumor discrimination and characterization in patients with intermediate- and high-risk prostate cancer - a comparison study with histology reference. Theranostics. 9-9, pp.2595-2605. <https://doi.org/10.7150/thno.32376>
- 14 **Scientific paper.** 2020. (Position:7/16) Immunohistochemistry and radiomics features for survival prediction in small cell lung cancer. Radiotherapy and Oncology. <https://doi.org/10.1016/j.ijrobp.2020.07.1331>
- 15 **Scientific paper.** 2019. (Position:6/21) Validation of different PSMA-PET/CT-based contouring techniques for intraprostatic tumor definition using histopathology as standard of reference Radiotherapy and Oncology chemoradiotherapy. Radiotherapy and Oncology. <https://doi.org/10.1016/j.radonc.2019.07.002>

C.3. Research projects and contracts

- 1 **Project.** Multimodality Artificial intelligence open-source Tools for Radiation Treatment Optimization in patients with Glioblastoma. TRANSCAN – European Union’s Horizon 2020 ISCI/ AECC. (La Fe Health Research Institute). 01/01/2024-31/12/2026. 1.196.709 €.

- 2 Project.** Acciones Preparatorias VLC-BIOMED: Feasibility of Adaptive Surface-Guided Radiation Oncology (FARO). Fundación de Investigación Sanitaria La Fe; Universitat de València. (La Fe Health Research Institute). 01/01/2025-31/12/2025. 7.500 €. Principal investigator.
- 3 Project.** FIS - Implementación de la compensación del movimiento respiratorio en el diagnóstico y tratamiento radioterápico de pacientes con cáncer de pulmón: protocolos de imagen, segmentación del tumor y garantía de calidad del tratamiento. Instituto de Salud Carlos III. (La Fe Health Research Institute). 01/01/2023-31/12/2025. 30.250 €. Principal investigator.
- 4 Project.** Ayudas para el programa REDIT-LA FE para Acciones Preparatorias: Bomba de infusión-perfusión para simular el flujo sanguíneo en Resonancia Magnética de 3T. Red de Institutos Tecnológicos de la Comunitat Valenciana. (La Fe Health Research Institute). 01/01/2024-31/12/2024. 5.000 €. Principal investigator.
- 5 Project.** Ideas SEMILLA - 3D-Printing phantoms for quality assurance in multimodality imaging. Asociación Española Contra el Cáncer. (La Fe Health Research Institute). 01/11/2022-01/11/2024. 20.000 €. Principal investigator.
- 6 Project.** Actuaciones UCIE - Quality Assurance Trimodality Head PhantOM And Software for its Analysis. Agencia Valenciana de Innovación. (La Fe Health Research Institute). 01/10/2022-01/10/2024. 35.753 €. Principal investigator.
- 7 Project.** Ayudas para el programa REDIT-LA FE para Acciones Preparatorias: VAT-photopolymerization for Biomarkers in Magnetic Resonance. Red de Institutos Tecnológicos de la Comunitat Valenciana. (La Fe Health Research Institute). 01/01/2023-31/12/2023. 5.000 €. Principal investigator.
- 8 Project.** PlanGenT: Multimodality Imaging in Oncology: optimization of its use in clinical routine. Conselleria de Sanitat Universal i Salut Pública. (La Fe Health Research Institute). 15/07/2020-31/12/2023. 233.750 €. Principal Investigator
- 9 Project.** Ayudas para el programa REDIT-LA FE para Acciones Preparatorias: Filamentos de impresión 3D para resonancia magnética. Red de Institutos Tecnológicos de la Comunitat Valenciana. (La Fe Health Research Institute). 01/01/2022-31/12/2022. 5.000 €. Principal Investigator
- 10 Project.** BEST 2022: Subvenciones para estancias de personal investigador doctor en centros de investigación radicados fuera de la Comunitat Valenciana. Conselleria de Innovación, Universidades, Ciencia y Sociedad Digital. (La Fe Health Research Institute). 01/04/2022-01/08/2022. Principal Investigator
- 11 Project.** AVI-Nominativa: Multimodality and mUltifunCtional Head phantOm. Agencia Valenciana de Innovación. (La Fe Health Research Institute). 01/02/2021-31/12/2021. 16.500 €. Principal Investigator
- 12 Project.** ERAPerMed. Project: Integrative Personalized Risk and Therapy Stratification of Localized Prostate Cancer. National Institute of Health Carlos III. (University Medical Center Freiburg). 01/06/2019-14/07/2020.
- 13 Project.** Programa Vali+d: Ayudas para la contratación de investigador en fase posdoctoral. Conselleria de Cultura Educació i Esport. (Instituto de Investigación Sanitaria La Fe). 01/06/2015-01/07/2017. Principal Investigator. Project: "Optimization of image quantification by Positron Emission Tomography (PET) for its use in radiotherapy"
- 14 Project.** Marie Curie Research Training Network (PITN-GA-2011-290148). Project: Software for the Use of Multi-Modality images in External Radiotherapy". (University Hospital Freiburg). 01/09/2013-28/02/2015.
- 15 Project.** Programa Vali+d: Ayudas para la contratación de personal investigador en formación con carácter predoctoral. Conselleria de Cultura Educació i Esport. (Instituto de Física Corpuscular). 15/04/2007-15/04/2011. Predoctoral researcher. I successfully defended my thesis "Image Quality Performance and Optimization in Positron Emission Tomography": Cum Laude.
- 16 Project.** Research fellowship (Beca de Colaboración, BI06-25). University of Valencia (UV) - Valencian Oncology Institute (IVO). (University of Valencia (UV) - Valencian Oncology Institute (IVO)). 01/10/2006-14/04/2007. Researcher. The project "Validation of radiotherapy treatments with in vivo dosimetry at the Oncology Institute of Valencia" was supervised by Prof. Facundo Ballester Pallarés.