

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Sebastián Serrano, Violeta

eRA COMMONS USER NAME (credential, e.g., agency login): N/A

POSITION TITLE: Predoctoral Researcher, Centro Nacional de Investigaciones Cardiovasculares (CNIC), Madrid, SPAIN

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Universidad Francisco de Vitoria, Madrid, Spain	BSc	07/2022	Biotechnology
Universidad Autónoma de Madrid, Madrid, Spain	MSc	07/2023	Molecular Biomedicine

A. Personal Statement

My scientific journey began in 2018 when I embarked on a Biotechnology degree at Universidad Francisco de Vitoria (UFV) in Madrid, Spain. Alongside this, I pursued an Expert Program in Research Methodology in Biotechnology, also at UFV. This experience sharpened my scientific and technical capabilities, and my dedication was reflected in a strong academic record, with an average of 8.4 out of 10 in my undergraduate studies and 9.27 out of 10 in the expert program.

My first major research experience took place at Masaryk University in Brno, Czech Republic, where I spent four months (March - June 2022) working in the Comparative Immunology group under the mentorship of Dr. Pavel Hyršl, through the support of an Erasmus+ Programme Fellowship. This collaboration enabled me to conduct my undergraduate thesis on the immune-destabilizing effects of excreted/secreted products from the nematode *Heterorhabditis bacteriophora* in *Drosophila melanogaster*. This research earned a top grade of 9.7 out of 10 and gave me valuable insights into immunology and parasitic interactions.

Later in 2022, I joined the prestigious CICERONE program at the Centro Nacional de Investigaciones Cardiovasculares (CNIC), where I conducted a six-week research project in the Intercellular Signaling in Cardiovascular Development and Disease group under Dr. José Luis de la Pompa. Here, I explored cardiomyocyte populations in mouse models of hypertrophic cardiomyopathy and left ventricle non-compaction, which deepened my understanding of cardiac development and disease processes.

Driven by my commitment to biomedicine, I enrolled in the Master of Molecular Biomedicine program at Universidad Autónoma de Madrid (UAM), where I later conducted my Master's thesis research in the Molecular Neuropathology Laboratory at the Severo Ochoa Center for Molecular Biology, supervised by Dr. Francisco Wandosell. My thesis focused on molecular mechanisms in aging-related diseases, specifically analyzing proteins involved in the transformation of glial cells into gliomas. This research further solidified my dedication to investigating the molecular underpinnings of complex diseases.

Currently, I am completing my first year as a Ph.D. candidate in Molecular Biosciences at UAM, conducting research at CNIC under the guidance of Dr. José Luis de la Pompa. My research focuses on intercellular communication in cardiovascular development and its implications for congenital heart defects. Building on recent insights from UK Biobank data, which identified genes involved in cardiac development through fractal analysis of trabecular morphology, our lab has generated a CRISPR-Cas9-mutated mouse model targeting the *Mecom* gene. Through this model, I am investigating *Mecom*'s role in cardiac development, particularly its effects on trabeculation and the ventricular conduction system, with potential implications for understanding congenital heart disease.

B. Positions, Scientific Appointments, and Honors

11/2023-present. Ph.D. Candidate (FPI grant holder - PID2022-136942OB-I00). Dr. José Luis de la Pompa, Centro Nacional de Investigaciones Cardiovasculares (CNIC), Madrid, Spain.

C. Contributions to Science

N/A