

Maria Barba



Maria Barba is a Staff Engineer in the Cryogenic Technology Division of Fermi National Accelerator Laboratory's Applied Physics and Superconducting Technology Directorate. She works as a cryogenic engineer bringing operational and engineering support to the cryogenic plant at the Industrial Building 1 (IB1) and to the Cryomodule Test Facility (CMTF). The IB1 cryogenic facility supports testing activities related to superconducting quantum materials, SRF cavities, as well as superconducting magnets for the High-Luminosity Large Hadron Collider (HL-LHC) project and Fusion research activities. The CMTF facility supports all the testing activities related to the Linac Coherent Light Source (LCLS-II) and the Proton Improvement Plan II (PIP-II) cryomodules. Maria is also part of the Cryogenic Safety Subcommittee (Long Baseline Neutrino Facility) LBNF Panel Review.

Before joining Fermilab, Maria completed her postdoctoral studies at the European Organization for Nuclear Research (CERN), working on the development of high-density signal feedthroughs for liquid argon calorimeters. Her research was funded by the Future Circular Collider (FCC) project, in a collaboration between the Experimental Physics Department and the Technology Department. During this period, she also performed cryogenic tests on carbon fiber vessels as part of a research program to develop carbon fiber cryostats with the Detectors Group.

Prior to joining CERN, Maria completed a PhD in Cryogenics from Paris-Saclay University in 2019, where she worked on the characterization of cryogenic pulsating heat pipes as a thermal link to cool superconducting magnets for space applications at the Atomic Energy Commission (CEA) of Paris-Saclay. This PhD started just after finishing her studies in Mechanical Engineering between France and Spain (her home country).

Maria has co-authored several publications on various topics in cryogenic engineering for superconductivity and detector applications, and participated in conferences and workshops in cryogenics, detector systems, and fluid mechanic simulations. She has performed peer-review service for different journals, such as *Low Temperature Physics*, *Applied Thermal Engineering*, and *Cryogenics*, as well as CEC/ICEC conference papers. She has also given cryogenic safety courses at CERN, developing her interest in teaching and instructing in the cryogenic field.

Despite Cryogenics, she is also passionate about soccer and kayaking!