

Carlo Manco, PhD Student

Short report of the period spent at the Vrije Universiteit Brussel (from 17-03-2025 to 04-06-2025)

During my time at Vrije Universiteit Brussel, I dedicated myself to advancing a project titled "Comparison of biomarkers for an integrated approach in the pathophysiological and clinical assessment of Alzheimer's disease." Throughout this period, I actively collaborated with the research laboratory of the host institute, aiming to identify and recruit patients with Alzheimer's disease. My work focused on creating a comprehensive database that includes demographic information, neuroimaging data, and cerebrospinal fluid biomarkers, with the goal of investigating the predictive value of certain biomarkers. In this context, I also learned to use some of the most common image analysis software (Freesurfer, SUI, and SPM), which I used for the volumetric analysis of brain structures. Additionally, I had the opportunity to deepen my understanding of emerging biomarkers and those in the experimental phase in neuroimaging through an extensive review of recent scientific literature. I also had the chance to expand my knowledge of cutting-edge techniques, including magnetoencephalography (MEG) and PET-MR, both promising for the discovery of multimodal biomarkers. The time spent at Vrije Universiteit Brussel allowed me to meet other researchers in the field of neurodegenerative diseases to work with. Finally, thanks to this experience, a collaboration path between the University of Siena and Vrije Universiteit Brussel was initiated, which will lead to the completion of the study and the publication of the results in a renowned international scientific journal.

Siena, 27/06/2025

A handwritten signature in black ink, appearing to read 'Carlo Manco', written in a cursive style.