



My research focuses on understanding the alterations in neuronal circuits associated with brain diseases, aiming to develop strategies to selectively modulate these circuits and correct motor, cognitive, and affective impairments. During my PhD at IIBB-CSIC (Spain) and postdoctoral work at the Max Planck Institute of Psychiatry and Johannes Gutenberg University Mainz (Germany), I studied circuit alterations in conditions like depression, stress, and schizophrenia using rodent models. Since joining the University of Barcelona (UB) in 2015, my work has expanded to investigating brain circuit changes linked to neurodegenerative diseases such as Huntington's disease, Alzheimer's disease, and Chorea Acanthocytosis. Currently, I lead the "Modulation of Brain Circuits in Brain Disorders" research group at UB's Department of Biomedical Sciences. My international team uses techniques including in vivo fiber photometry, behavior analysis, and multimodal magnetic resonance imaging in rodent models to understand circuitry alterations related to specific symptoms. We then apply in vivo optogenetics, chemogenetics, and optopharmacology to modulate these circuits and alleviate symptoms. As a principal investigator, I have secured funding from Horizon Europe (GliLight, NEUROPA), national research grants, and established collaborations with industry and patient foundations. I actively participate in the Chorea Acanthocytosis community, co-organizing conferences and scientific committees, and contribute to international teaching and summer schools. I have supervised numerous PhD and postdoctoral researchers and foster multidisciplinary collaborations across neuroscience, physics, and photonics. I have been an active member of the European Brain and Behavioural Society (EBBS) since 2013 and served on the EBBS Executive Committee from 2018 to 2021. I am eager to continue contributing to this remarkable society as an Ordinary Member of the Executive Committee.