**Impact statement (250 words)**

Pregnant women use cannabidiol (CBD) for myriad pregnancy-related symptoms although there is a lack of scientific evidence regarding its safety during gestation. Identifying potential risks associated with prenatal CBD exposure and clarifying the pathophysiological mechanisms are public health imperatives that will support the development of clinical guidance and interventional strategies.

The Wnt/β-catenin signaling pathway and microRNA (miRNA)-mediated epigenetic mechanisms are critically involved in the development and progression of various neuropsychiatric conditions, yet many miRNAs appear to play beneficial rather than pathologic roles in settings of disease. Our proposed experiments will 1) offer insight into the potential therapeutic utility of the targeted activation or silencing of specific miRNAs as an approach to restoring memory and alleviating emotional deficits, 2) better define the role that β-catenin and miRNAs play in the context of prenatal CBD exposure in both males and females, and 3) help inform clinical recommendations for pregnant women seeking symptom relief. Revealing cognitive impairments and emotional dysfunction associated with fetal CBD exposure will challenge the view that CBD is a universally safe compound and will encourage further studies of the developmental consequences of prenatal CBD exposure, associated underlying mechanisms, and potential treatments for prenatal CBD-exposed individuals.

Taken together, our findings will yield information about the long-term, selective, sex-dependent negative impacts of prenatal CBD exposure on emotional and cognitive function and the mechanisms that mediate these effects. This work will provide an invaluable and unprecedented framework for treatment by identifying specific miRNAs that can be delivered through a safer route.