**Impact statement (250 words)**

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

The Wnt/β-catenin signaling pathway and epigenetic mechanisms mediated by microRNA (miRNAs) 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 study of the developmental consequences of prenatal CBD, its underlying mechanisms, and potential treatment for prenatal CBD exposure-exposed individuals.

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