

**Monica Vegiraju, Class 2024**

Campus: Baylor University Medical Center, Dallas, TX

Research Area: Polysubstance use effects on fetal brain development

Mentor: Rajesh Miranda, PhD

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Awards: MRC Awardee

Monica Vegiraju, a medical student at Texas A&M School of Medicine, is conducting a research project investigating maternal alcohol and nicotine polysubstance use effects on fetal brain development under the guidance of [Rajesh Miranda, PhD](#) and professor at the Texas A&M School of Medicine. Prenatal alcohol exposure is the leading cause of preventable birth defects and development disabilities. According to the CDC, 40% of women who used alcohol during pregnancy also reported simultaneous use of at least one other substance, most often tobacco. Research shows that stopping even one of the substances during pregnancy can prevent irreparable damage to some extent. Alcohol is a CNS depressant, but nicotine is a CNS stimulant. These opposing mechanisms on a healthy, fully developed adult produce long-ranging and serious health consequences. Their research project aims to understand this mechanism on a growing fetal brain and determine if the effects are as detrimental or worse than in an adult.