Poster Presentation
The Effects of an Adrenal Steroid Hormone on Spatial Learning in Prenatally Stressed Rats
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Prenatal stress effects have become widely studied in recent years. There is increasing evidence that prenatal stress is associated with higher rates of cognitive impairments, emotional problems, attention deficits, and neurocognitive disorders like schizophrenia. Attempts to reduce the attendant stressors of modern life are important from a public health standpoint, but more attention is being given to the biological mechanisms of stress and possible therapeutic interventions. For example, the adrenal steroid hormone dehydroepiandrosterone (DHEA) has been studied for its ability to restore cognitive function in elderly individuals but has also been found to be a precursor to other important hormones such as androgens and estrogens, which reduce the HPA-axis stress response. This study would allow better understanding of the risks posed by prenatal stress to learning and memory and how an important endogenous adrenal steroid hormone might mitigate these effects. To test the successfulness of the DHEA pre-treatment the offspring will be tested for memory capabilities. Once they age 6 weeks, the pups will be exposed to situations that test their spatial memory within the Morris water maze. The animals will be placed into the maze to navigate through and locate the hidden platform while the pool is filled to create a comparison between stressed and unstressed animals performance, animals that were drug treated and that were not treated, and the day subjects were assigned to complete tasks such as latency to the platform, percent of time spent in the target quadrant, and percent time spent in thigmotaxis.