INTRODUCTION:

- Alcohol and nicotine are two commonly co-used recreational drugs, and this co-use tends to begin in adolescence (Di Bona & Erausquin, 2014, *Journal of Child & Adolescent Substance Abuse,* 23).
- Prior studies suggest that alcohol and nicotine may be affecting the rewarding properties of one another as rats produce more robust alcohol-induced conditioned place preference (CPP) if they were previously given nicotine during their adolescence (Philpot, Engberg, & Wecker, 2014, *Behavioural brain research, 262*). This finding suggest that alcohol and nicotine may be working within similar brain reward systems.
- While studies focus on the effects of pretreating either alcohol or nicotine, and examining the effect on one another, the co-administration of alcohol and nicotine has not been examined in adult or adolescent rats. The latter is surprising, given that adolescence is the developmental period that these drugs are usually first consumed.
- Thus, this study will attempt to characterize alcohol reward in adolescent male and female rats and investigate the rewarding effects of alcohol and nicotine interaction.

HYPOTHESIS:

- Ascending doses of alcohol will produce more robust alcohol-induced CPP than fixed doses of alcohol.
- The co-administration of alcohol and nicotine produces a synergistic effect (more robust CPP compared to each drug independently).

METHODS:

- SUBJECTS: Male and female Sprague-Dawley rats (Charles River Farms, Hollister, CA) born and raised at CSULB kept on a 12:12 light/dark cycle.
- DRUGS:
  - ****Fixed dosing pattern of alcohol***: 0, 0.5, 1.0, or 2.0 g/kg alcohol IP
  - ****Ascending dosing patterns of alcohol***: 1) 0.0625, 0.125, 0.25, & 0.5 g/kg of alcohol IP; 2) 0.125, 0.25, 0.5, & 1.0 g/kg alcohol IP; or 3) 0.25, 0.5, 1.0, & 2.0 g/kg alcohol IP
  - ****Nicotine injections**: 0.067 or 0.2 mg/kg nicotine SC

EXPECTED RESULTS:

ACKNOWLEDGEMENTS:

This research was supported by the National Institute of General Medical Sciences of the National Institutes of Health under Award Numbers; UL1GM118979; TL4GM118980; RL5GM118978; a Faculty Small Grant from the College of Liberal Arts, and a New Investigator Grant Program, California State University Program for Education and Research in Biotechnology (CSUPERB).