The Cognition, Learning, and Psychopharmacology lab is interested in the relationship between drug use (including alcohol and illegal drugs) and learning abilities in a variety of tasks.

We look at both:
- potential neurotoxic effects that drugs might have on the brain and behavior (ex: drug exposure altering the brain and behavior)
- potential individual differences that might cause altered cognition/emotion and cause increased drug use (ex: drug exposure doesn’t cause altered decision-making or anxious, but *more* anxious people or *people more prone to bad decisions* are more likely to take drugs)

**Behavioral testing after drug or alcohol exposure in rats**

We provide rats with exposure to alcohol or other addictive drugs during adolescence and examine the effects of this exposure on:
- Reward seeking
- Fear and anxiety

We also examine whether the effects of drugs mimic effects of brain damage due to neurotoxin injections into the brain

**Examination of brain tissue in rats previously exposed to drugs**

In rats exposed to drugs and/or given fear-inducing experiences, we examine whether there are changes in the brain using immunohistochemistry:
- Certain excitatory or inhibitory cell types (parvalbumin and ChAT)
- Changes in neuronal activity (Fos)

**Testing of cognitive abilities in humans (with future plans to correlate this with nicotine/alcohol use)**

We test people in tasks related to those used in rats to determine if:
- Personality traits related to drug use are associated with people’s performance in the tasks
- Use of legal drugs is correlated with performance in our tasks
- We can develop better learning tasks for humans to test cognitive abilities

Academic credit is available for participation. Several previous undergraduate lab members have won undergraduate research awards to do projects in the lab. Also, undergraduates in the lab have gone on to medical school or PhD programs at places like Columbia University, Boston College, Washington University (St. Louis), University of California-Irvine, Ohio State, and Oklahoma State.

We are recruiting student research assistants for Summer and Fall 2019. Please contact Dr. Charles Pickens (*pickens@ksu.edu*) with the name of one-two references if you would like to apply.