

Summer Research Fellowship Proposal for 2020

FACULTY INFORMATION:

NAME: William E. Fantegrossi, Ph.D.
DEPARTMENT: Pharmacology and Toxicology

LOCATION: Biomed I

PROJECT INFORMATION:

TITLE: Abuse liability of new psychoactive substances

LOCATION OF THE PROJECT: Biomed I

BRIEF DESCRIPTION OF THE PROJECT: In the past few years, a number of relatively obscure compounds have appeared on the illicit drug market. In most cases, these new drugs of abuse have turned out to be established research chemicals that have diffused out of laboratories and scientific journals and onto the streets. As novel pharmacological entities, the legal ramifications for selling and possessing these drugs are initially unclear, and enterprising individuals typically exploit the novelty of these substances to make rapid and substantial profits selling them over-the-counter and online. Indeed, emerging drugs of abuse occupy a legal grey area until emergency scheduling powers are invoked, typically first at the municipal and state level, then nationally.

Research in my laboratory is currently focused on several categories of these drugs, including synthetic cannabinoids (constituents of K2/"Spice" smoking blends), analogues of cathinone (present in "bath salts" preparations), hallucinogens (related to mescaline) and novel opioids (including extremely potent fentanyl analogues.) In an effort to better understand the biological actions of these emerging drugs of abuse, we use behavioral pharmacology techniques in rodents to compare these compounds with more the well-known drugs of abuse which these emerging drugs are designed to mimic (such as the phytocannabinoid THC, psychostimulants like MDMA and methamphetamine, research psychedelics like DOI, and traditional opioids like fentanyl and morphine).

STUDENT'S RESPONSIBILITIES-DUTIES IN THE PROPOSED PROJECT: Students interested in working in my laboratory will have the opportunity to assist with surgeries (intraperitoneal implantation of biotelemetry probes which simultaneously measure core temperature and locomotor activity), to work with mice or rats in behavioral assays

(including operant tests of food- or drug-maintained responding, and assays of drug-elicited effects such as analgesia and catalepsy), and assist with dissections for studies involving tissue distribution and disposition of drug, neurotoxicity, or molecular correlates of tolerance and withdrawal.

ESTIMATED TIME FOR PROJECT COMPLETION: __8-10__ weeks

DOES THE WORK INVOLVE ANIMAL RESEARCH? YES ---X---
NO -----