

Sample: Group Falcon Travel Grant Application

Department: Psychology

Funding Category: For URSCA students who are **PRESENTING** authors, program participants, or displaying their original research

Title: The Effect of Sustained Administration of Sertraline and Bupropion on Self-Control and Spatial Learning and Memory

Abstract / Description: The pharmaceutical drugs sertraline and bupropion increase brain levels of serotonin and dopamine, respectively. To the extent that the process of spatial learning and memory is mediated by these neurotransmitters, one might expect the sustained administration of sertraline and bupropion to facilitate performance on spatial tasks such as the radial arm maze. Pharmaceutical drugs of this kind may also influence other psychological processes, for example, self-control. The current experiment focused on the behavioral effects of sertraline and bupropion, which were administered in combination. It was hypothesized that sustained administration of these drugs would improve self-control and enhance spatial learning and memory. Rats assigned to the experimental group were administered 10mg/kg sertraline and 30mg/kg of bupropion daily; rats assigned to the control group were not. Subjects were tested extensively on self-control task and spatial memory task. In the former, rats received a choice between one pellet of food and three pellets of food. The choice-reward delay was longer for the large amount of food, and choosing this reward served to increase the delay on subsequent trials. Hence, this task entailed delay-discounting judgments. In the spatial memory task, rats were placed on an elevated central platform with several arms radiating outward. The rats' task was to retrieve food by visiting the end of each arm only once. Preliminary results indicate that the design of the current experiment is sensitive to the effects of sertraline and bupropion, two commonly prescribed "antidepressants."

Category: Poster Presentation

Significance of Project to Field: "Sertraline (trade name: Zoloft) and bupropion (trade name: Wellbutrin) are well known pharmaceutical drugs commonly used to treat depression through the increase of neurotransmitters such as serotonin and dopamine. Serotonin has been found to modulate memory, cognition, and mood (Buhot, Martin, & Segu, 2000; Cifariello, Pompili, & Gasbarri, 2008). Dopamine modulates positive affective states such as reward and pleasure (Arias-Carroin & Poppel, 2007) as well as negative affective behaviors such as compulsion and preservation (Ulloa, Nicolini, & Fernandez-Guasti, 2004). Therefore, any factor that influences levels of these neurotransmitters in the brain could conceivably enhance a variety of psychological processes, including spatial learning, memory, and self-control. This study would contribute significant evidence that these pharmaceutical drugs have an effect on these psychological processes and would increase our understanding of these effects.

Arias-Carroin, O., & Poppel, E. (2007). Dopamine, learning, and reward-seeking behavior. *Acta Neurobiologiae Experimentalis*, 67, 481-488.

Buhot, M., Martin, S., & Segu, L. (2000). Role of serotonin in memory impairment. *Annals of Medicine*, 32, 210-221.

Cifariello, A., Pompili, A., & Gasbarri, A. (2008). 5-HT₇ receptors in the modulation of cognitive processes. *Behavioral Brain Research*, 195, 171-179.

Ulloa, R., Nicolini, H., & Fernandez-Guasti, A. (2004). Age differences in animal model of obsessive-compulsive disorder: participation of dopamine: Dopamine in an animal model of OCD. *Pharmacology, Biochemistry and Behavior*, 78, 661-666."

Conference: Midwest Psychological Association

Location: Chicago, IL

Dates: April 30 - May 2, 2015

Conference Classification: National Conference

Importance of Conference to Your Educational and Career Development: Having the opportunity to present our research findings at the annual Midwest Psychological Association (MPA) conference will provide us with numerous opportunities to grow as students and as professionals. Many students from the psychology department attend this event each year and we look forward to continuing this tradition. Presenting our research will allow us to develop as a successful communicator of empirical research results and will provide us with critical feedback from faculty and peers who are both familiar and unfamiliar with the field. Attending such a large and prestigious conference will also give us the chance to network with graduate school representatives and to build our resumes as a prospective graduate students in the fields of psychology or biology. Given the current emphasis of undergraduate research in higher education, this opportunity to present at MPA will significantly improve our prospects of getting into a professional graduate program and will help us to develop skills as a professional and productive members in the field of psychology.

Itemized budget:

Conference Registration:	\$ 25.00 x 3 = \$75
Travel:	
Personal Vehicle (382 miles x .352):	\$134.46
Parking (1 Van x 2 nights):	\$ 25.00
Hotel:	
Palmer House Hilton (Conference Hotel)	
Rate of \$229 per night, plus 16.4% tax, 2 nights:	\$533.12 (\$177.71/individual)
Total:	Group Expense \$767.58 (Individual Expense for 3 people \$255.86)

Total budget requested: \$767.58