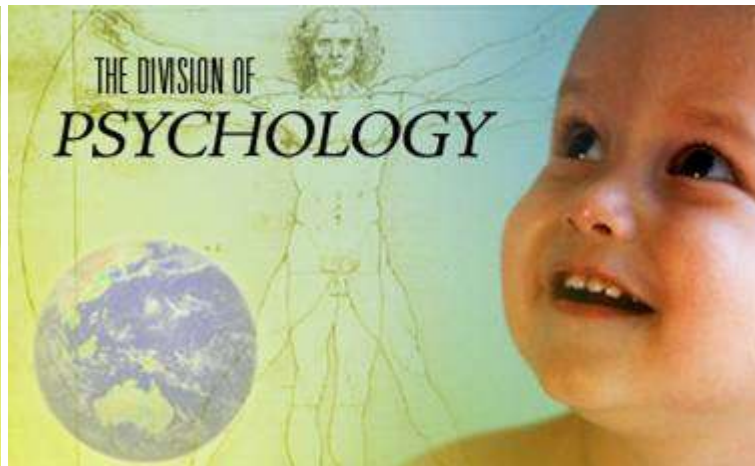


***Research
Seminar
Series***



**Effects of Acute Ethanol and Allopregnanolone on Spatial Memory
in Adolescent and Adult Rats**

Vivien Chin, Ph.D. candidate

Department of Psychology and Neuroscience, Baylor University

11 August 2009 (Tuesday) 11:30am – 12:30pm

HSS Meeting Room 5 (HSS-04-89)

Abstract

The effects of ethanol, such as motor incoordination and impaired spatial memory, are cues to limit ethanol intake. Less sensitivity to ethanol means slower detection of such cues and could lead to greater ethanol intake. Adolescents show a unique vulnerability to ethanol compared to adult. Particularly, it has been shown that adolescents demonstrate differential

sensitivities to ethanol's effect on spatial tasks. However, the findings are contradictory. Markwiese et al. (1998) demonstrated that ethanol impairs spatial acquisition in the Morris Watermaze in adolescents more than it does in adults. However, Ranjendran and Spear (2004) demonstrated that when an appetitive paradigm was used, adolescents are not impaired at doses of ethanol that impair adults. Here, we demonstrate that adolescents are not more sensitive to the spatial memory impairing effects of ethanol than adults. *Study 1* Adolescent (PND 30-32) and adult (PND 70-72) male Sprague Dawley rats were trained in the standard version of the Morris Water Maze for 6 days to locate a submerged platform in a fixed location. On Day 7, the rats received saline, 1.5g/kg or 2.5g/kg ethanol (10% w/v), i.p., and the time to reach the platform was measured. During training, adolescents performed reliably worse than adults. When spatial memory is testing following ethanol treatment, there was no significant effect of age; however, there appeared to be trend for adolescents to be less sensitive. *Study 2* The potent GABA_A receptor modulator, allopregnanolone (ALLO), is one of the mechanisms by which ethanol induces behavioral effects. Adolescent (PND 30-32) and adult (PND 70-72) male Sprague Dawley rats are trained as in study 1 and their spatial memory tested following 2-hydroxypropyl- β -cyclodextrin vehicle, 9mg/kg ALLO or 18mg/kg ALLO. Similar to the results in study 1, there was no significant effect of age; however there appears to be a trend for adolescents to be less sensitive to allopregnanolone.

Biography

Vivien Chin is a doctoral candidate at Baylor University department of Psychology and Neuroscience. She received her undergraduate training at the National University of Singapore. Her research interests lies in effects of ethanol on adolescents and adults. Using animal models, she looks at ethanol's effects both at the behavioral and cellular level. Her current study involves investigating the differential sensitivities of adolescent and adult rats to spatial memory impairment produced by ethanol and allopregnanolone. She received a Research Society on Alcoholism (RSA) Student Merit/Junior Investigator Meeting Award and has recently presented a poster at the RSA conference in San Diego.

~~~~~ **All Are Welcome** ~~~~~