

1116-VC-477 **Pengcheng Xiao*** (px3@evansville.edu), 1800 Lincoln Ave, Department of Mathematics, Evansville, IN 47722, and **Jianzhong Su**. *A Computational Model for PTSD and Cognitive Function*. Preliminary report.

In this paper we study computationally a mathematical model of people with PTSD. It is known that people with PTSD will lead to abnormal levels of hormonal secretion, especially glucocorticoids. As a consequence, the neuronal electric activities also change due to variations in synaptic receptors regulated by hormone levels. We measure the hippocampal plasticity variability computationally through the synaptic spike timing-dependent plasticity characterized in spine's calcium current in the neuronal system, and the results provide the evidence of long term potentiation changes in a Hippocampus model due to PTSD. (Received September 03, 2015)