



PROGRESS IN NEUROSCIENCE PINS

Seminar Series of the
Brain & Mind Research Institute
Weill Cornell Medical College (WCMC)
&

The Graduate Program in Neuroscience of
WCMC and Sloan Kettering Institute



Thursday, 2/20/14, 4 PM, coffee at 3:45 PM
Weill Auditorium

Developmental Cannabis Impacts Neuronal Reprogramming and Psychiatric Risk

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Abstract:



The endocannabinoid system plays a central role in orchestrating the development of the brain. The fact that cannabis is the illicit drug most used by pregnant women and teens — two populations with significant implications for the developing brain — raises important questions about the impact of cannabinoid exposure on neurodevelopment and the long-term trajectory on adult brain and behavior. Our research investigates cannabis-related molecular disturbances in neuronal systems relevant to psychiatric disorders in the human fetal brain, replicated in animal models (both prenatal and adolescent development), and maintained into adulthood. Attention is given to epigenetic mechanisms that contribute to reprogramming the transcription of genes aligned to neuronal networks linked to goal-directed behavior and inhibitory control. Our studies also explore the potential transgenerational effects of cannabis on the epigenetic landscape within striato-mesolimbic circuits and behaviors relevant to psychiatric vulnerability.

Recent relevant publications:

Szutorisz H., J DiNieri, E Sweet, G Egervari, M Michaelides, J Carter, Y Ren, M Miller, R Blitzer, and YL Hurd. Parental THC exposure leads to compulsive heroin-seeking and altered striatal synaptic plasticity in the subsequent generation. *Neuropsychopharmacology*, Epub, Jan 2, 2014.

Tortoriello G, CV Morris, A Alpar, J Fuzik, SL Shirran, D Calvigioni, E Keimpema, CH Botting, K Reinecke, T Herdegen, M Courtney, YL Hurd and T Harkany Miswiring the brain: D9-tetrahydrocannabinol disrupts cortical development by inducing an SCG10/stathmin-2 degradation pathway. *EMBO Journal*, Epub Jan 27, 2014.

Tomasiewicz H.C., Jacobs MM, Wilkinson MB, Wilson SP, Nestler EJ and Hurd YL, Proenkephalin mediates the enduring effects of adolescent cannabis exposure associated with adult opiate vulnerability, *Biological Psychiatry*, Epub Jun 8 2012.



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