MEMORIAL UNIVERSITY

McLEAN Lab

Dr. John McLean
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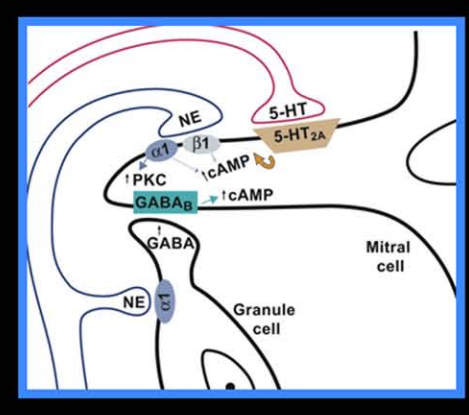
Major Research Interests:

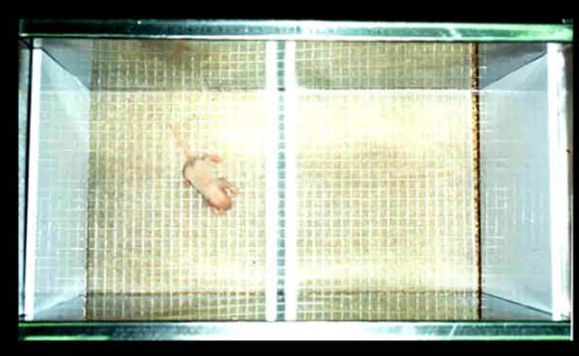
⇒ The mechanisms involved in learning acquisition and memory extension using a model of scent-based (olfactory) learning in neonate rats



We investigate the behavioural, physiological, cellular and within-cell components required for learning.

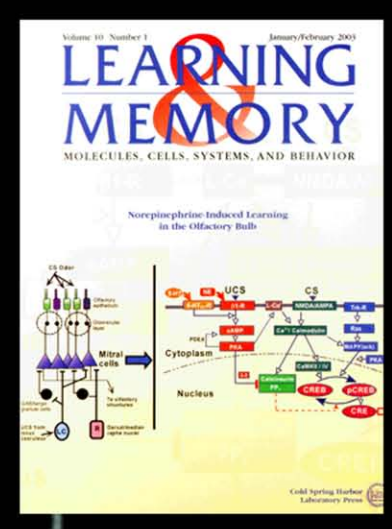
A better understanding of the critical cellular pathways needed for learning will help us learn how to overcome learning deficits and even prolong memory.

This research is in collaboration with Dr. Carolyn Harley, Dept. of Psychology.

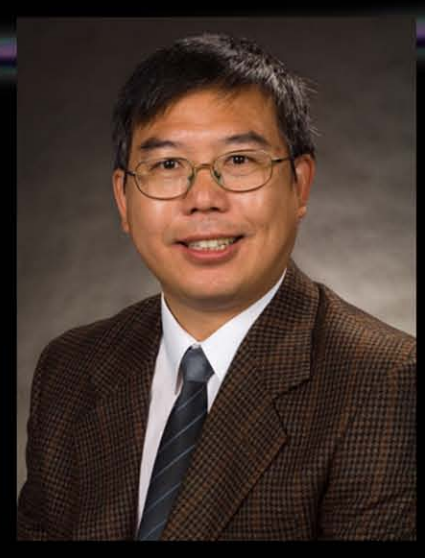


Above:

Rat pups that experience peppermint odor while being lightly stroked show more preference for the odor than pups that have been exposed without stroking. This is a simple demonstration of Pavlovian conditioning.



CHEN Lab



Dr. Xihua Chen
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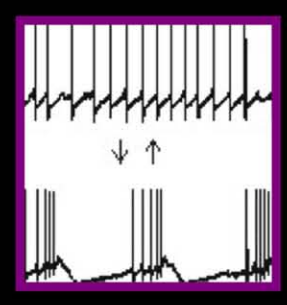
Major Research Interests:

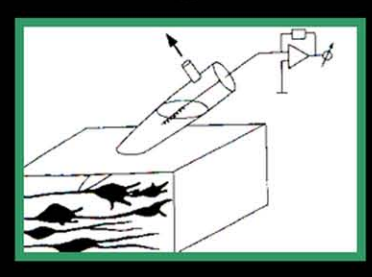
⇒ How neurons containing dopamine, a chemical messenger important in motivation, emotions and addiction, are activated by drugs

Nerve cells communicate by electrochemical signals in different temporal patterns. We are studying dopamine cells in sections of rodent cerebral tissue to examine how these cells change their firing patterns under different conditions.

We believe that a change in the firing pattern of these cells underlies novelty-activated behaviours (e.g. new experiences).

Our ultimate goal is to better understand how addictions may be treated.





Our technique involves inserting an electrode into a single nerve cell to "eavesdrop" on brain cell communication.