

# Memory Manipulation



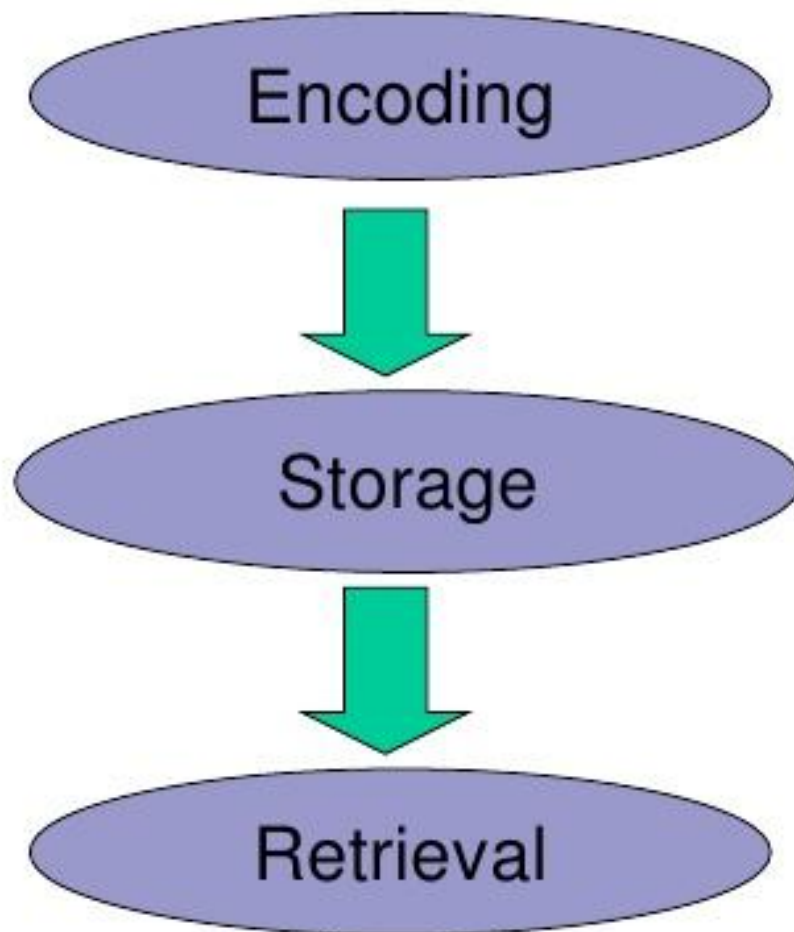


**HOW  
MEMORY  
WORKS ?**



Engram

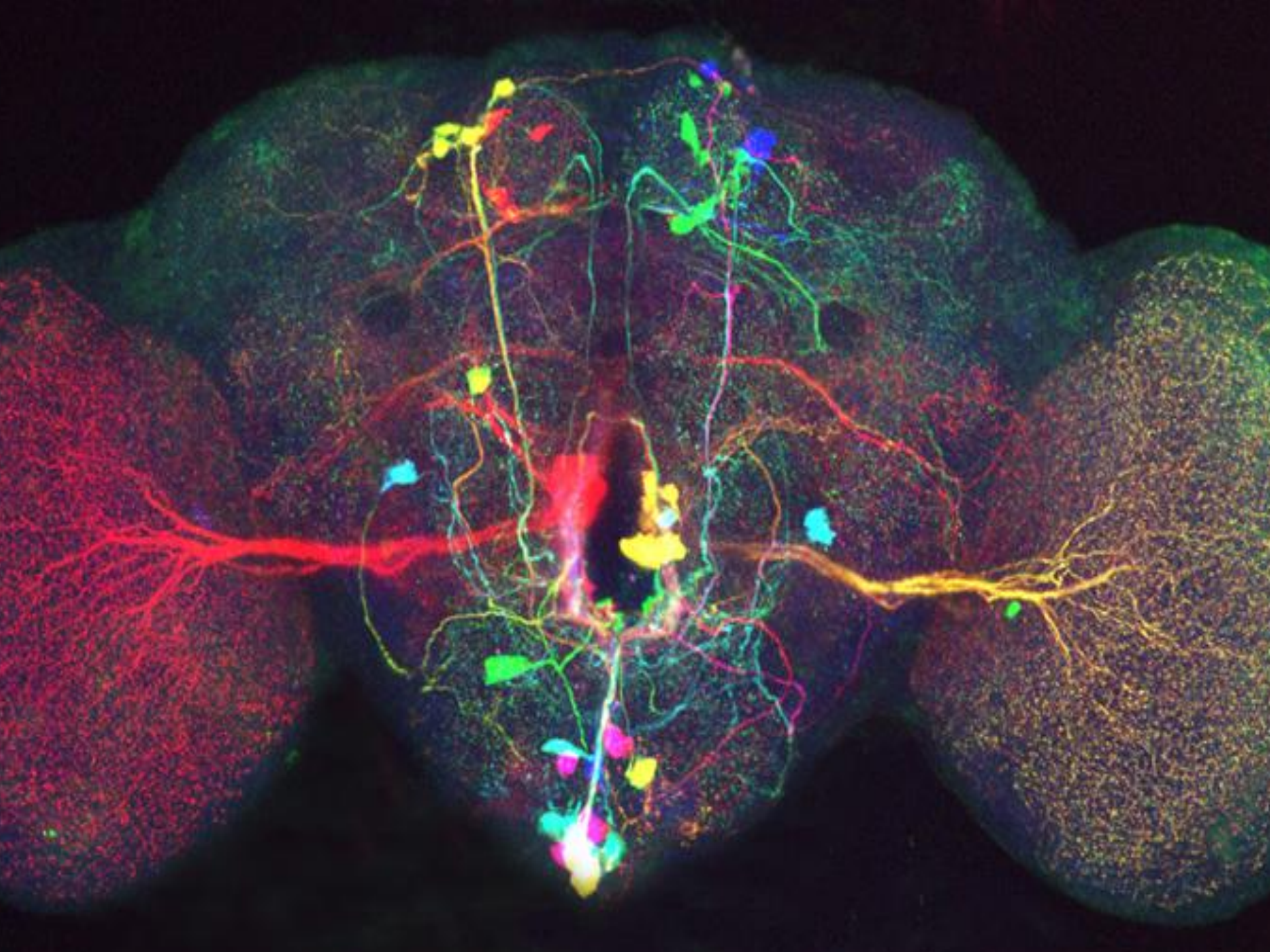
# The Stages of Memory





Memories











# **Eternal Sunshine** **of the spotless mind**



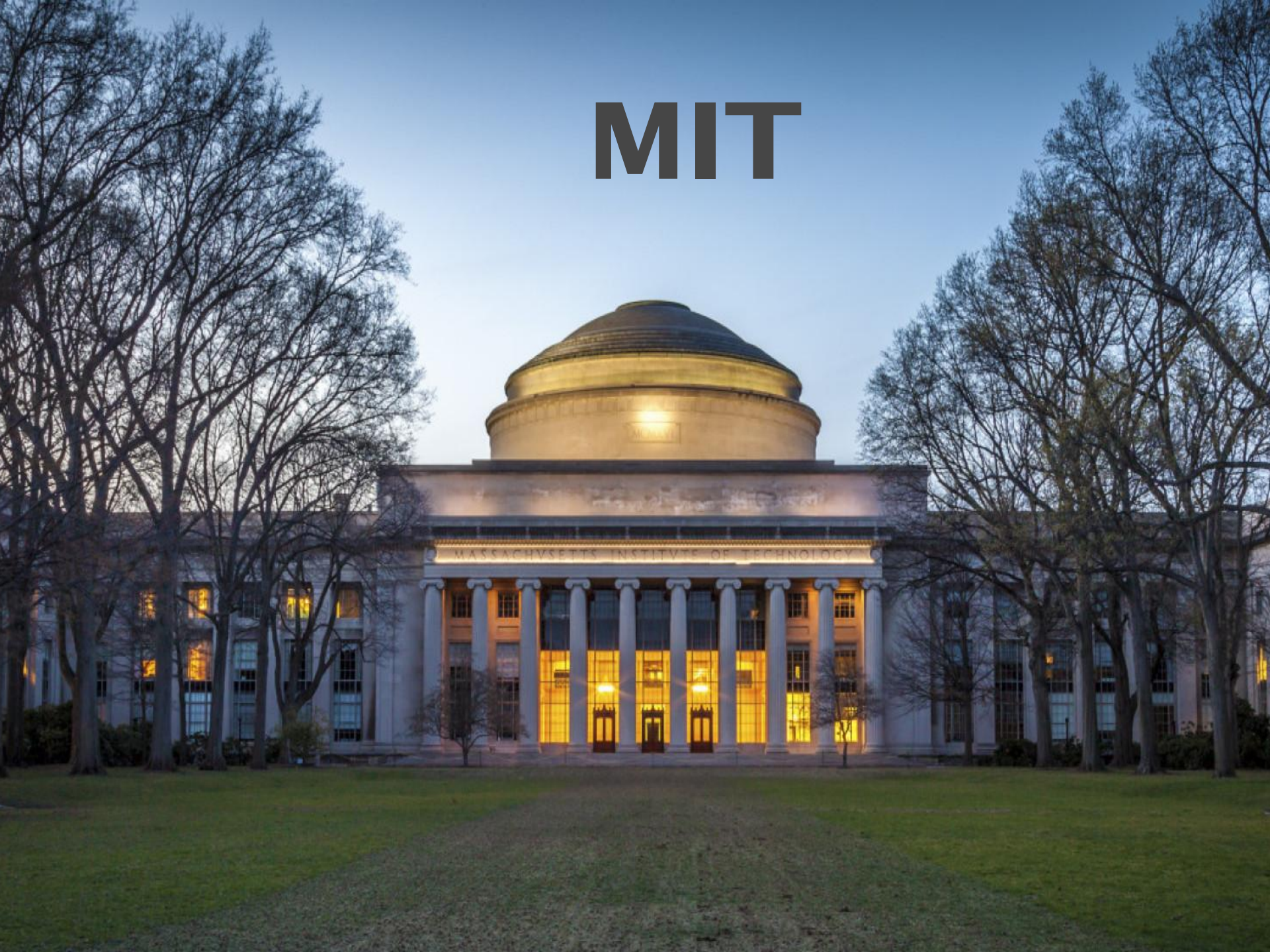






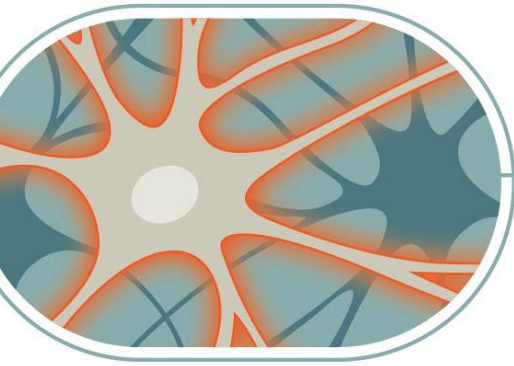
Propranolol

# MIT

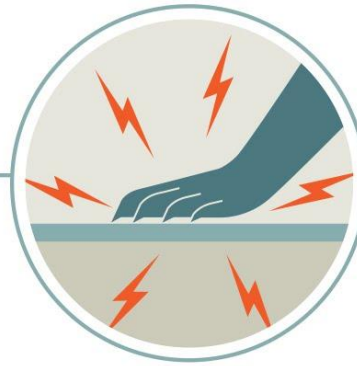




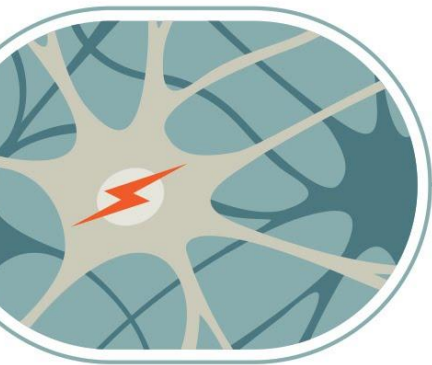
## Activating a Memory



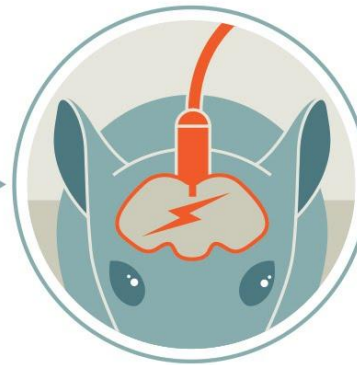
1. A mouse's brain cells are genetically engineered so that those associated with a memory become light sensitive.



2. The mouse explores a box and receives a foot shock.



3. It encodes a fear memory of the box in firing brain cells.



4. When a laser stimulates those cells, the mouse freezes in fear as it recalls the memory.

# **!!Retrieving Memory**







# TEST



D'oh!



