Neurology/Neuroscience Research Seminar (2019)

Sponsored by: Neurology

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October 18, 2019
12:00 - 1:00 PM
BSRB
Room: 5515

Lecture(s):

C. elegans learning and decision making in a structured environment
Eleni Gourgou, PhD

C. elegans' ability to exhibit associative, non-associative and imprinted memory in the context of chemical stimuli is well studied. Here, we demonstrate that C. elegans are capable of associative learning of spatial cues in a maze-structured environment. By using a custom-made Worm-Maze platform, we show that C. elegans young adults can locate food in T-shaped mazes and, following that experience, learn to reach a specific maze arm. Our results show that C. elegans learning of spatial information is possible after a single training session and that it affects their decision-making, even in the presence of conflicting environmental cues. We also provide evidence that C. elegans learning of spatial cues is a multi-sensory behavior, which requires chemosensory and mechanosensory inputs and involves a CREB-like transcription factor and dopamine signaling.

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