

IGSN - SYMPOSIUM

Wednesday, July 4th 2018 • 16.00 (4 pm)

FNO – 01 / 117

Mechanisms of sensory information processing in visual and memory systems

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How is visual motion encoded within and between brain areas

The middle temporal area (MT) computes motion direction based on the inputs from direction-selective neurons in primary visual cortex (V1). While V1 neurons signal the direction of 'local' moving edges, MT neurons compute a 'global' direction that is consistent for many types of spatial patterns. To examine how visual information is successively represented by V1 and MT, we used separate multi-electrode arrays in each area to measure neural responses simultaneously from dozens of neurons in anaesthetised marmosets. We recorded neural activity while presenting motion with different kinds of visual patterns: fields of dots, sine waves, and square waves. All of these patterns evoke strong motion signals in MT, but recruit distinct V1 populations. I will discuss our findings on how population representation influences the information about motion direction that is ultimately computed by neurons in area MT. These results will tell us more about how information is transformed between brain areas to produce perception.

Host:

DENISE MANAHAN-VAUGHAN

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Guests are welcome!

