



# SENSORY ENCODING AND THE EMERGENCE OF MEMORY

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Session 1

**Factors influencing brain function: evolutionary, attention and stress perspectives**

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## **What to expect when you are not expecting it: How implicit regularities drive attentional selection**

Lingering biases of attentional selection affect the deployment of attention above and beyond top-down and bottom-up control. In this talk I will present an overview of recent studies investigating how statistical learning regarding the distractor determines attentional control. In all these experiments we used the classic additional singleton task in which participants searched for a salient shape singleton while ignoring a color distractor singleton. The distractor singleton was presented more often in one location than in all other locations. Even though observers were not aware of the statistical regularities, we show that the location of the distractor was suppressed relative to all other locations. Moreover, we show that this learning is highly flexible and adaptive. We argue that selection history modulates the topographical landscape of spatial 'priority' maps, such that attention is biased towards locations having a high activation and biased away from locations that are suppressed.

