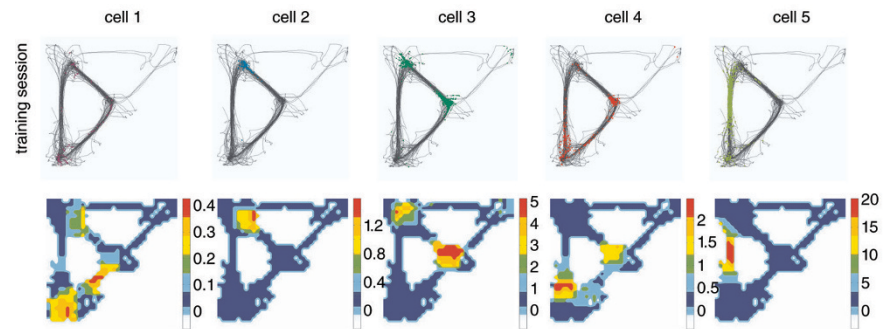


A place for reward cues in the hippocampus

Place cells in the CA1 region of the hippocampus have long been known to encode the current position of an animal. New research from a group led by Marian Tsanov at Trinity College, Dublin, Ireland, now shows that in addition to location, the ensemble activity of place cells can also encode preference for one location vs. another (*PLoS Biol.* 15, e2002365; 2017). Using multi-electrode recordings and population analysis of neural data from Lister hood rats, the team identified a population code for the experience-dependent value of location. Optogenetic manipulation of the ventral tegmental area showed that dopaminergic signaling is integrated with the encoding of location and reward from



Five sample place cells recorded from the reward loop of the training sessions (reward loop cells) from a representative animal. Adapted from *PLoS Biol.* 15, e2002365; 2017.

neurons in the hippocampus. Overall, the results demonstrate a new role for population dynamics in the hippocampus for

simultaneously processing and encoding both place and place preference.
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