



Supplementary Figure 1. Individual differences in development of cue-related dopamine signals early in learning. **(a)** Trial-by-trial dopamine concentration for a single animal relative to cue onset at time zero. Cue-related dopamine signals were not evident early in the session, but emerged as conditioning progressed. This animal retrieved the sucrose reward relatively quickly (mean = 3.12 ± 0.5 s) after CS+ offset. **(b)** Trial-by-trial dopamine concentration for a second animal relative to cue onset at time zero. For this animal, cue-evoked dopamine signals did not appear to change during the session. Mean reward retrieval latency for this animal was 9.82 ± 2.53 after CS+ offset. **(c)** Maximal cue-evoked change in dopamine signal taken from animal represented in panel a. Peak dopamine concentration evoked within 2 seconds of cue onset increased as a function of trial number ($r^2 = 0.23, p < 0.01$ for linear relationship between trial number and peak dopamine signal). **(d)** Maximal cue-evoked change in dopamine signal taken from animal represented in panel b. Peak dopamine concentration evoked within 2 seconds of cue onset did not change as a function of trial number ($r^2 > 0.01, p = 0.7$ for linear relationship between trial number and peak dopamine signal). 20nM represents the approximate noise value of carbon-fiber electrodes on individual trials.