



**Supplementary Figure 1. Following Late-training the temporal profile of evoked activity was not significantly different between simultaneously recorded ChR2<sup>+</sup> and opsin-negative neurons.** **A**, Sample traces of evoked polysynaptic activity (5 traces per cell and mean (bold)) from a simultaneously recorded pair of ChR2<sup>+</sup> and Opsin<sup>-</sup> pyramidal neurons in response to red-alone. **B**, Comparison of the mean  $\pm$  SEM (shading) of evoked activity in simultaneously recorded ChR2<sup>+</sup> and Opsin<sup>-</sup> pyramidal neurons from Late-trained slices (Opsin<sup>-</sup>: 8, ChR2<sup>+</sup>: 8). **C**, Average median event time of evoked network activity was not significantly different in ChR2<sup>+</sup> and Opsin<sup>-</sup> neurons from Late trained slices. Data are presented as median event times  $\pm$  SEM:  $398 \pm 45$  ms and  $516 \pm 41$  ms for ChR2<sup>+</sup> and Opsin<sup>-</sup> pyramidal neurons, respectively;  $n = 11$ ,  $n = 24$ ,  $p = 0.089$ , two-sided unpaired t-test. **D**, Average median peak time of evoked network activity was not significantly different in ChR2<sup>+</sup> and Opsin<sup>-</sup> neurons from Late trained slices. Data are presented as median peak times  $\pm$  SEM:  $593 \pm 38$  ms and  $673 \pm 36$  ms for ChR2<sup>+</sup> and Opsin<sup>-</sup> pyramidal neurons, respectively;  $n = 11$ ,  $n = 24$ ,  $p = 0.185$ , two-sided unpaired t-test.