Global integration of information in the brain results from complex interactions of segregated brain networks. Identifying the most influential neuronal populations that efficiently bind these networks is a fundamental problem in neuroscience. Here we apply network theory and pharmacogenetic interventions \textit{in-vivo} to predict and target the nodes responsible for global integration in a model of learning and memory. Mathematically, we find the set of influential nodes by optimizing the damage to the giant connected component with systematic inactivation of nodes. We find that the integration of the brain network is mediated by a set of weak nodes through optimization of influence in optimal percolation. Pharmacogenetic inhibitions confirm the theoretical predictions. We discuss the relevance of these influencers to ecological systems dominated by abrupt first order tipping points.