Topographic map of the visual system

Stepwise guidance of axons in the grasshopper limb

Cx1 neuron is required for the formation of the trajectory from Tr1 to Cx1.
Actin is concentrated in filopodia and lamellipodia.

Microtubules are concentrated in the central core of the growth cone.

Filopodia – sensory ability of the GC.

Growth cone extension

Filopodia extended

Microtubules from central core advance

Cytoplasm collapses to create new segment of axon
Neuromuscular junction (NMJ) is the best studied system for synapse formation

Synapse in the mammalian central nervous system (CNS)

Organization of the CNS synapses follows similar principles used at the NMJ, but less well understood due to its complexity.