Integrating all the inputs to make a decision

What is similar about all neurons despite difference in shape is the way they function:

Listening – integrating -signaling

Synapse has pre-synaptic and post-synaptic cells

Electric – how signal is propagated across a neuron

Chemical – how signal is communicated from one neuron to another

ESPS = increased positive charge in post-synaptic caused by the release of glutamate/dopamine from pre-synaptic

Sodium Potassium Pump – integral membrane protein that pushes 3 sodium out in exchange for 2 K+ coming in

A lot of energy expended = Na-K Pumps use ATP 🡪 main metabolic consumption

Net is not the same as a network

Def. A net refers to the sum of inputs

In our models, since we are not using partial differential equations, our model will treat time in a chunky way to update our simulation, using difference equations

Signal = Action Potential = Traveling (longitudinal wave), current flowing into the cell across the neuron

Net = Sum of all signals coming into a neuron

Activation = State of neuron that determines how it will influence other connected neurons

*Aj = f(Nj)*

Can a neuron be both excitatory and inhibitory??

An excitatory neuron can act to inhibit by exciting an inhitory neuron (Parkinson’s?)

Perfusion of notation

Where does knowledge come from? Reflection on remembered experience