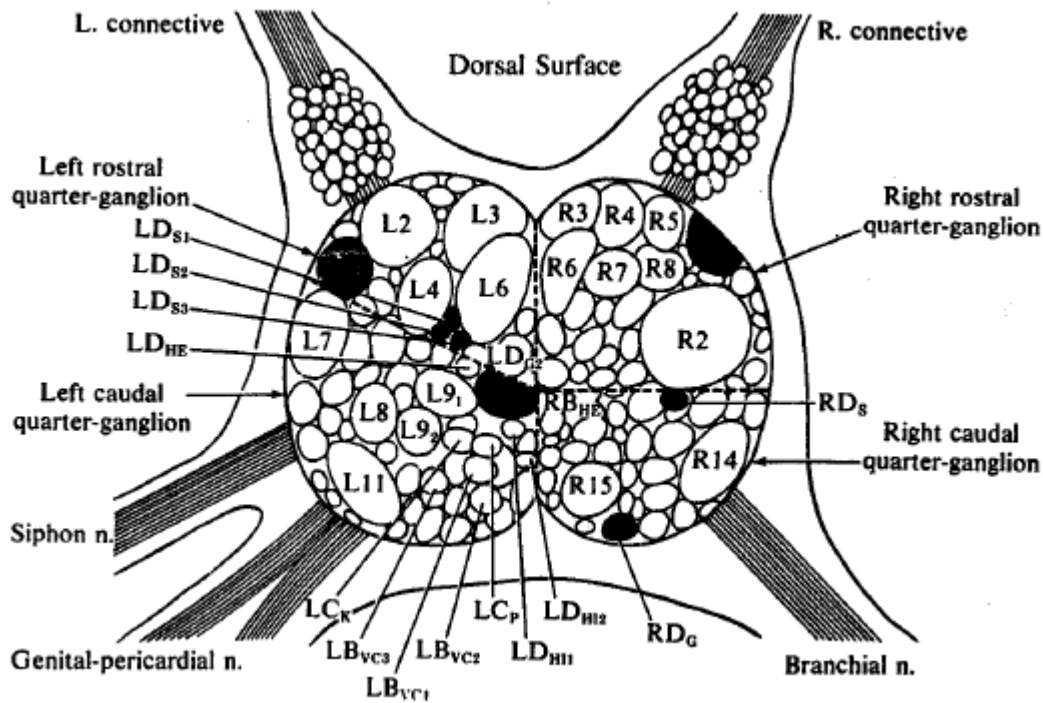


PROPERTIES OF NEURONS

There will be four demonstrations. For the first one, we will use computer simulation. For the others we will use identified neurons of the abdominal ganglion of the mollusk *Aplysia*, hippocampal slices, and human muscle.



1. Passive and active properties of neurons. (Room #625, Siegelbaum)

Functional consequences of voltage-gated channels for the generation of the action potential (Chapter 7,8, and 9):

Idealized voltage clamp experiment.

Na and K currents can be blocked by different drugs.

Effect of Na and K currents on the amplitude and duration of the action potential.

2. Axonal Conduction

(Room #873, Koester)

Extracellular recordings of compound action potentials from human muscle fibers, demonstrating the diagnostic value of electromyography (Chapter 8).

3. Associative plasticity

(Room #619, Alarcon)

Short-term and long-term plasticity in hippocampal slices. Live demonstration from slices and taped demonstration of LTP (long-term potentiation). If you wish, read ahead Chapter 63 in *Principles of Neuroscience*.