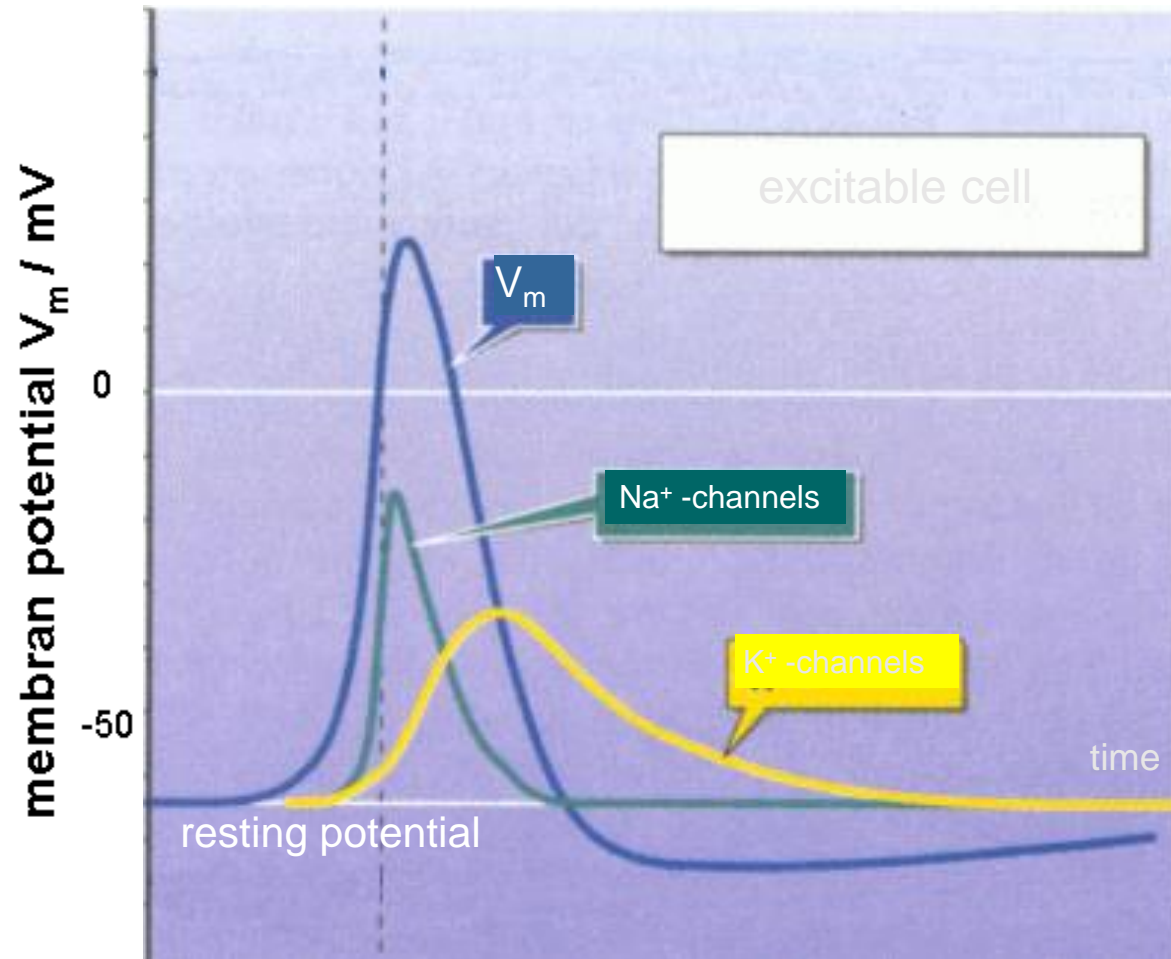


# Action Potential

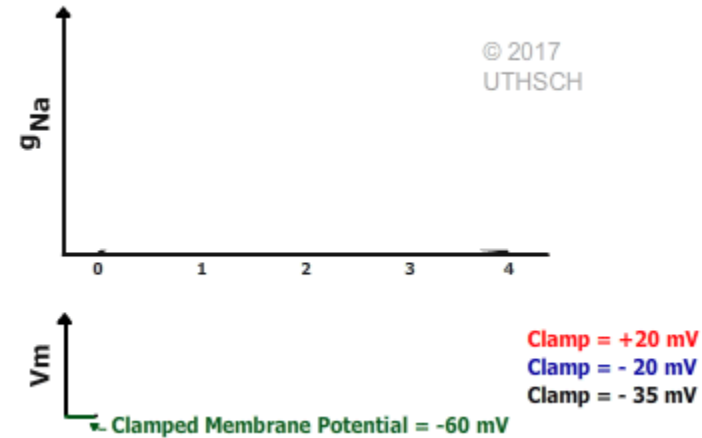
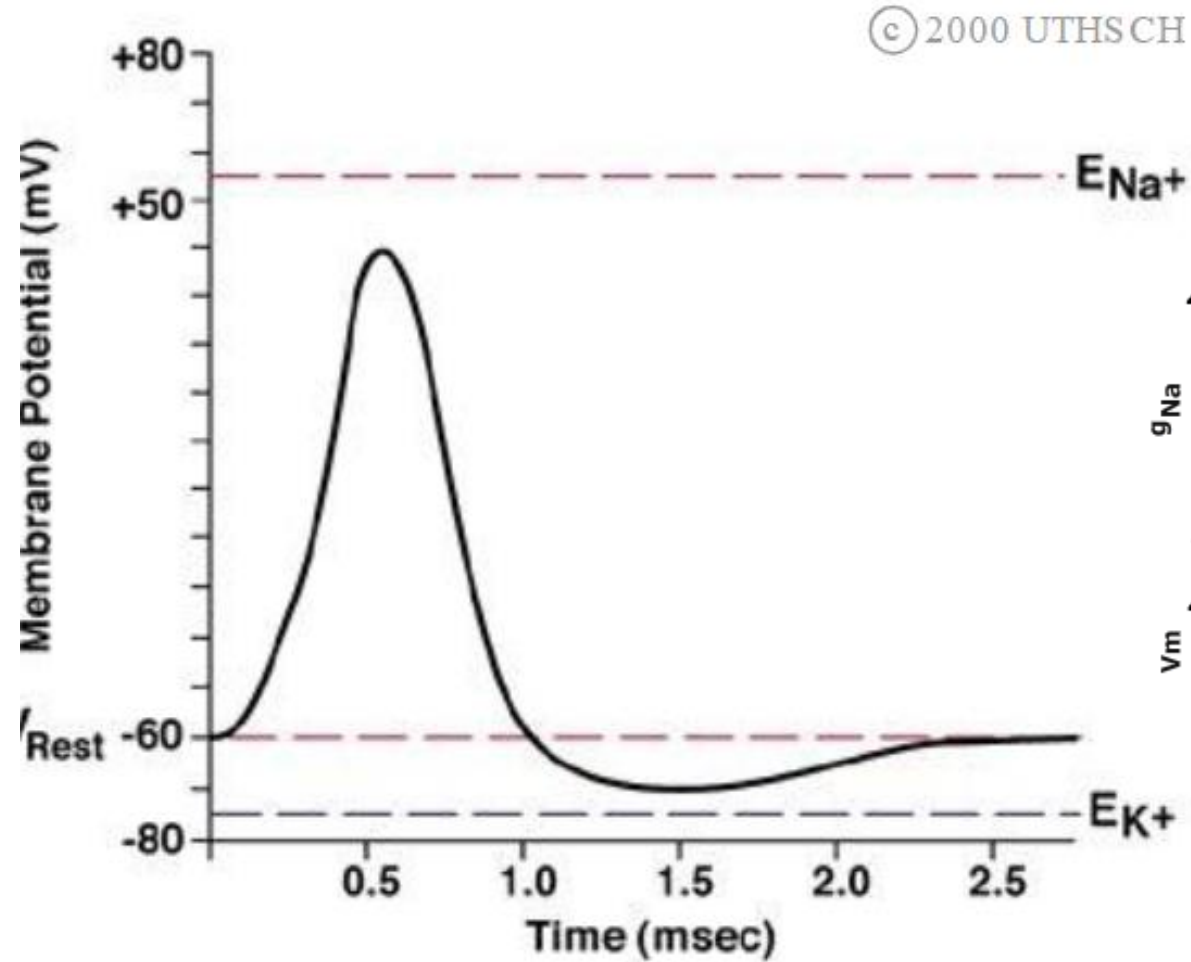
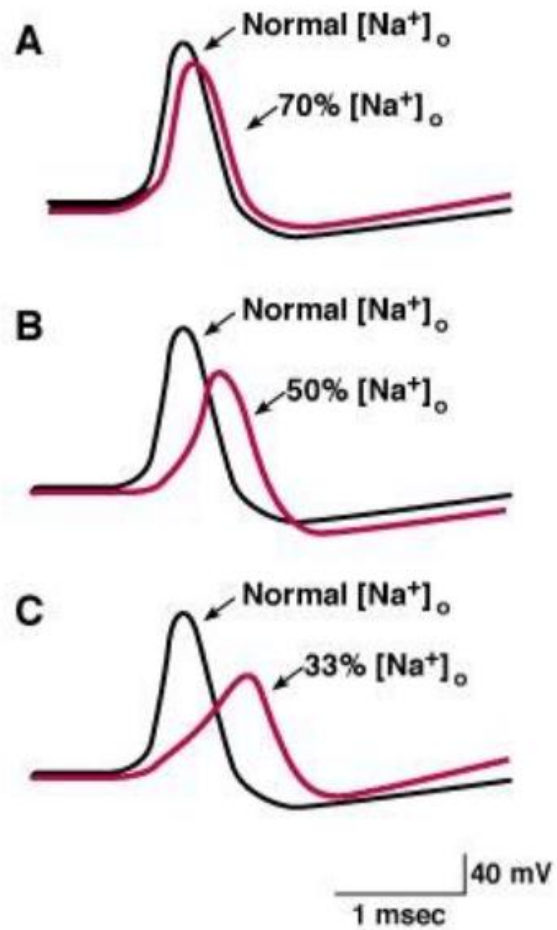
Assoc. Prof. Erkan Tuncay

Department of Biophysics

# Action potential

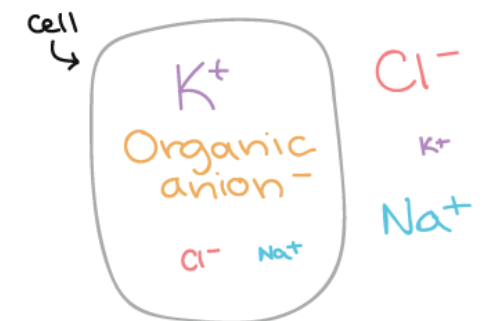
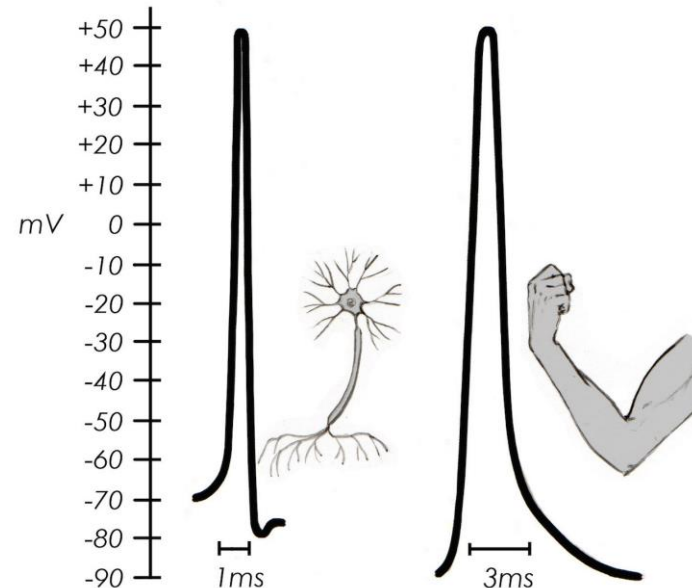


# Ionic Mechanisms of Action Potentials



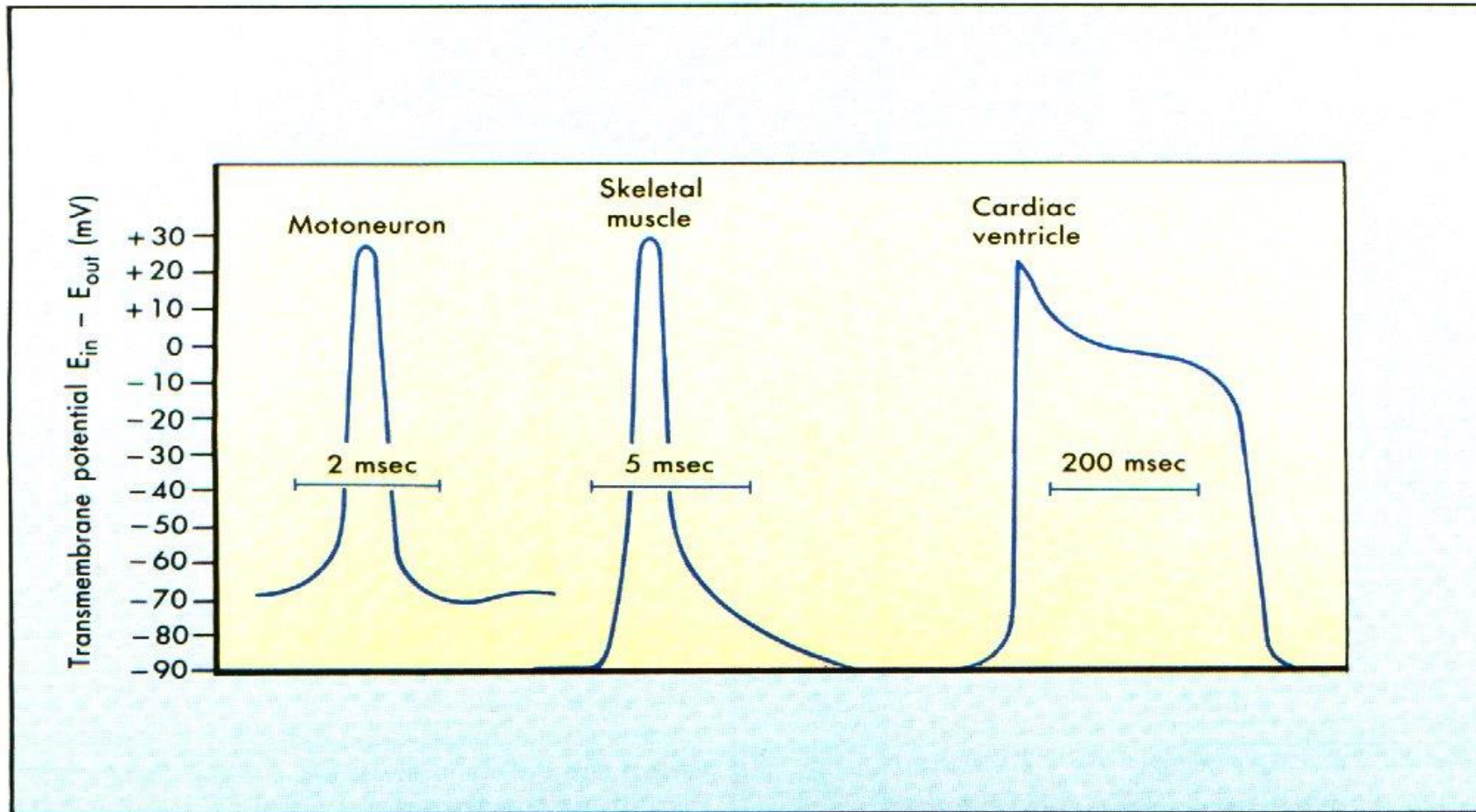
# Is there any difference between skeletal muscle and neuronal membrane potentials?

- Skeletal muscle membrane potential maintains more negative membrane potential than the neuronal membrane potential.
  - The more negative  $V_m$  due to
    - Increased  $K^+$  gradient
    - Increased  $Cl^-$  gradient
    - Greater resting  $Cl^-$  permeability
  - The T-tubule membranes contains chloride channel that contributes to the resting  $V_m$  potential together with leaky  $K$  channel.



BIG letters = high concentration  
tiny letters = low concentration

# Comparison between neuronal action potential and action potentials in other cell types



**FIGURE 3-1** Action potentials from three vertebrate cell types. Note the different time scales. (Redrawn from Flickinger CJ et al: Medical cell biology, Philadelphia, 1979, WB Saunders Co.)