BIOLOGICAL FRAMEWORKS FOR ENGINEERS

General Objectives:

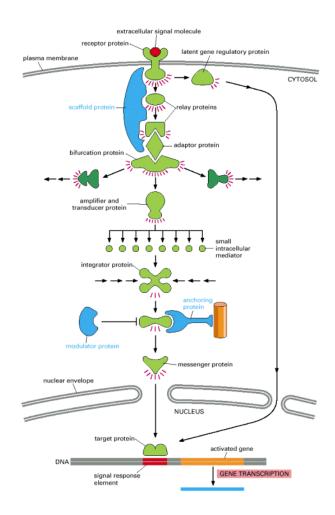
- ✓ Discuss cell signaling strategies and general communication.
- ✓ Examine specific local cell signaling pathways as examples of signal transduction and control.

nansaction and comion.
Central Framework:✓ Cell signaling is a complex control system regulated by numerous factors
Session Outline:
A. Cell Communication
<u>Contact Dependent</u>
<u>Paracrine</u>
<u>Autocrine</u>

Endocrine

B. <u>Basics of Signal Transduction [Reception – Transduction – Response]</u>

C. Components of Signal Transduction



D. <u>Cell-Surface Receptors</u>

G-Protein Linked receptors

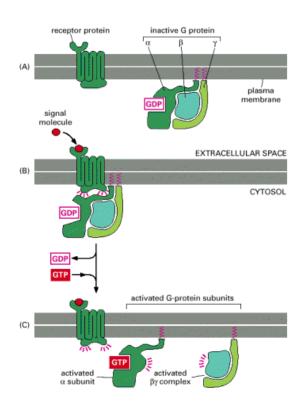
FUNCTION:

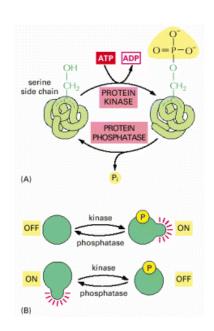
STRUCTURAL:

MECHANISM:

(Secondary Messengers)

(Protein Phosphorylation)





Receptor Tyrosine Kinases

FUNCTION:

STRUCTURE:

MECHANISM:

(Signaling Pathways – MAP Kinase)

