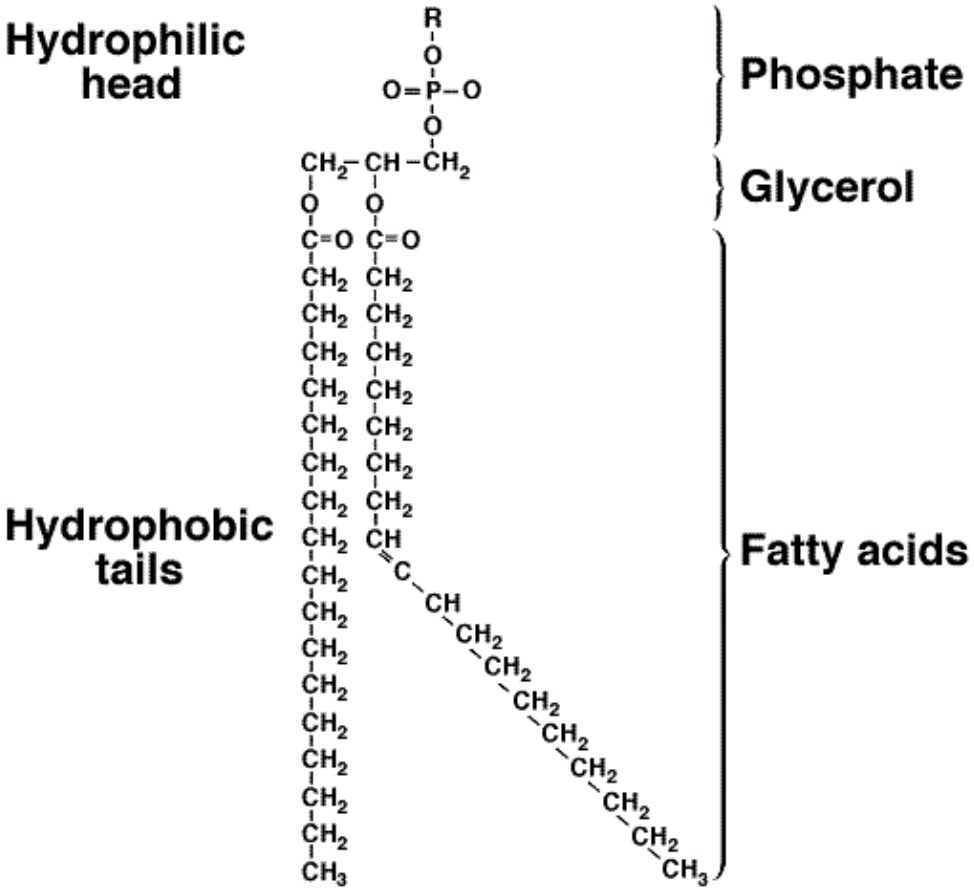
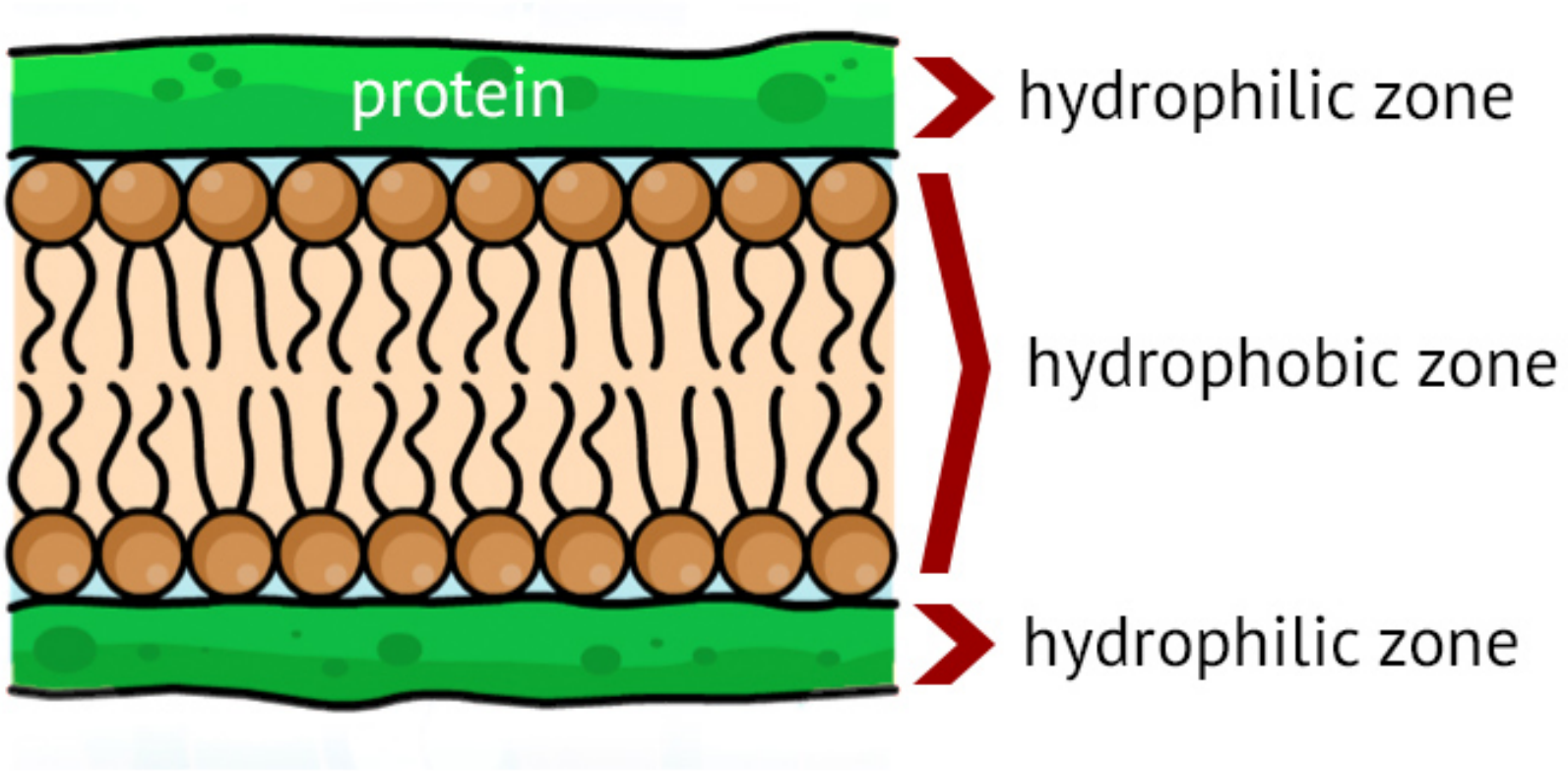
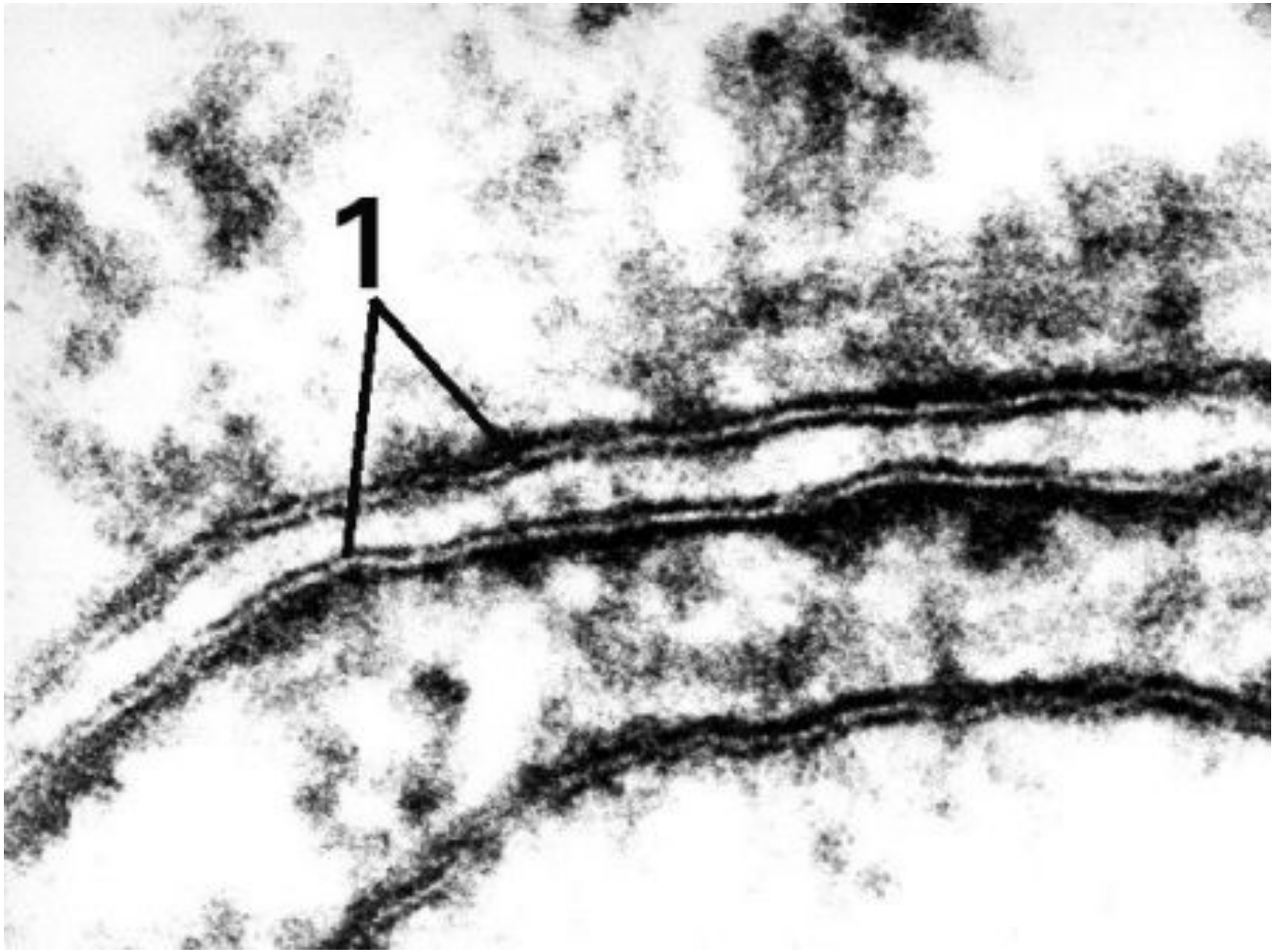
I will meet the challenge and you will know I am capable!

Phospholipids form bilayers in water due to the **amphipathic** properties of phospholipid molecules



Model 1 Davson -Danielli Model

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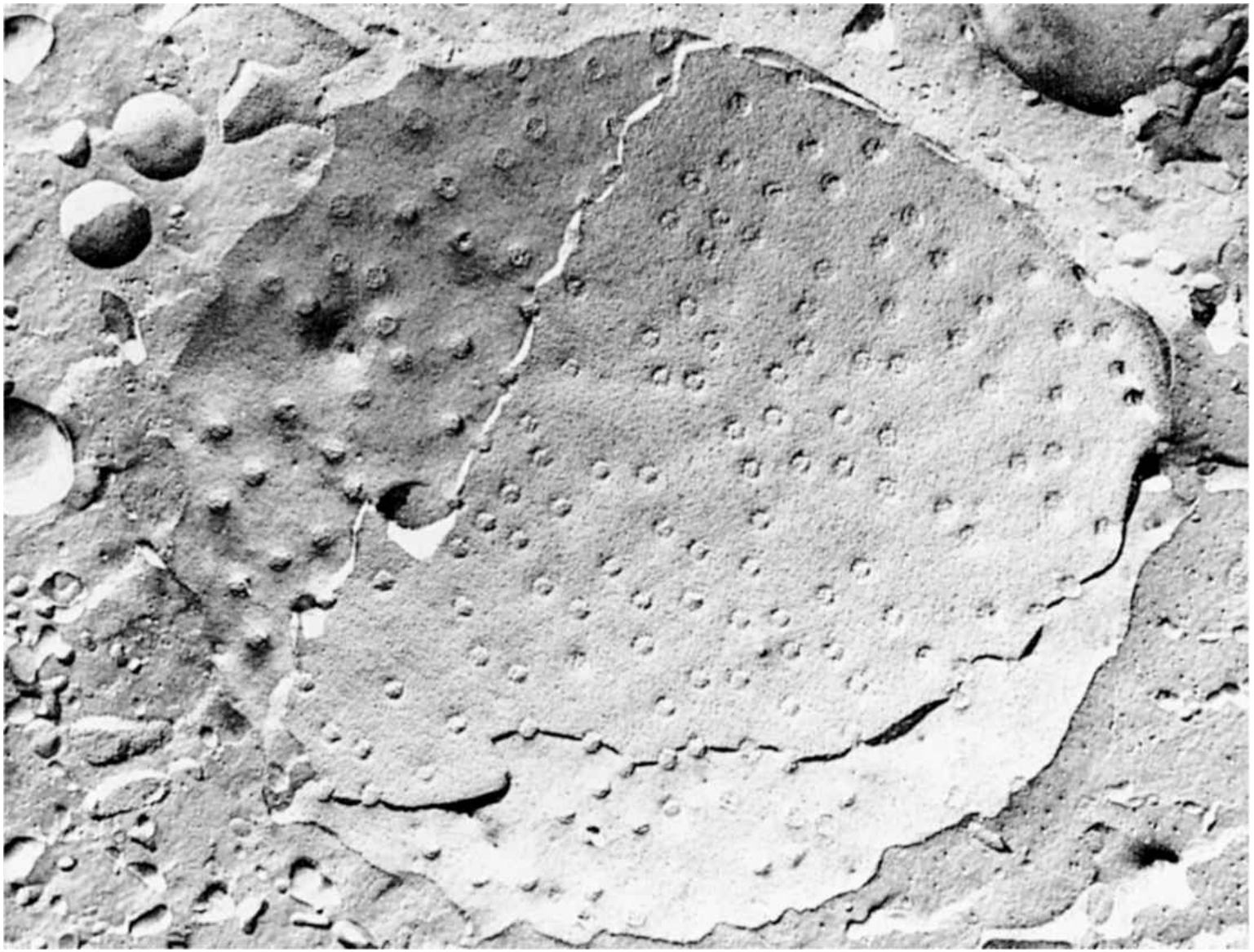
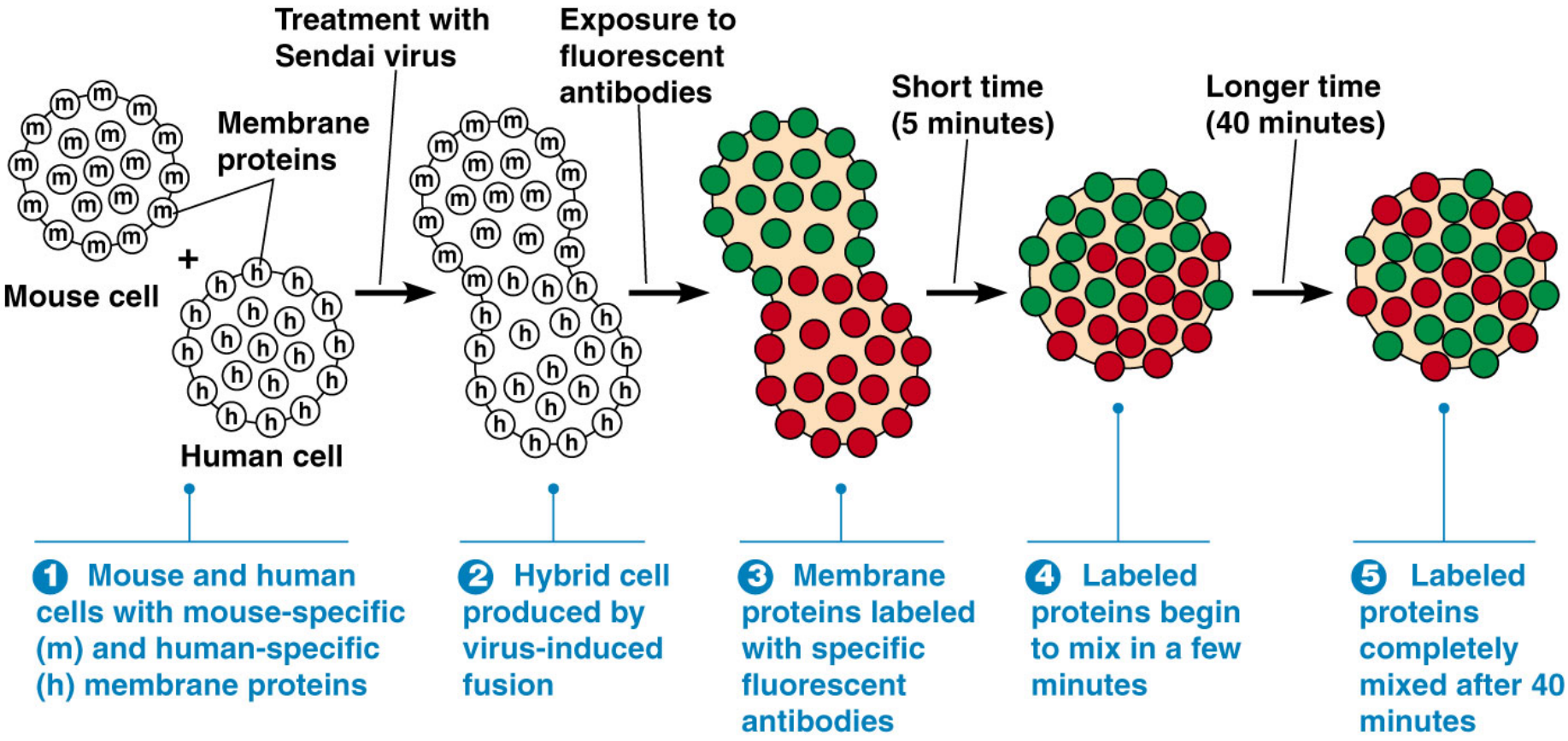
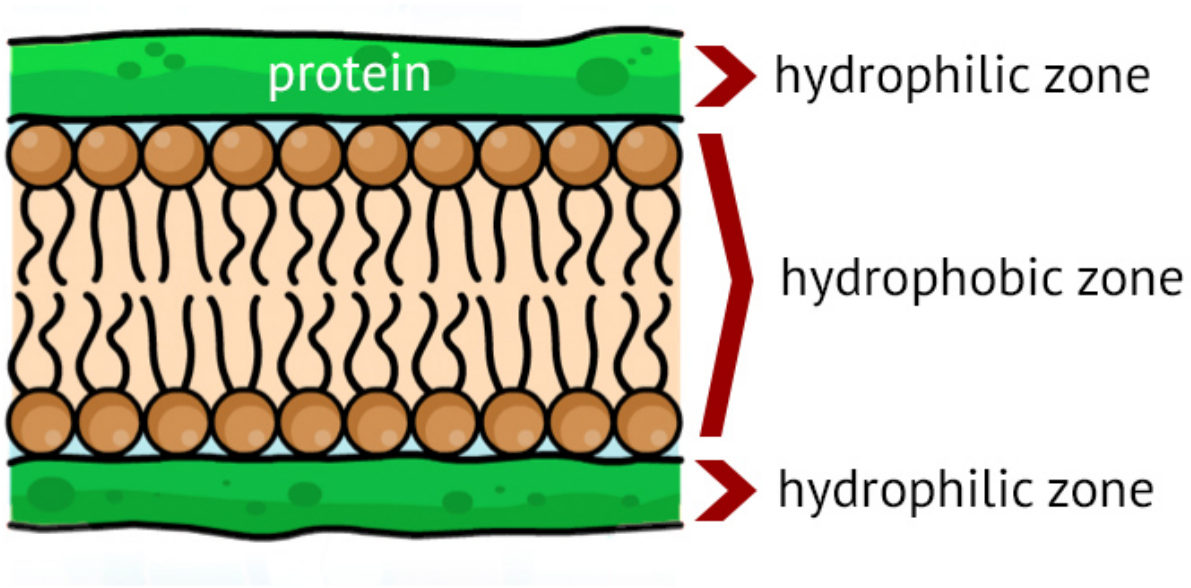




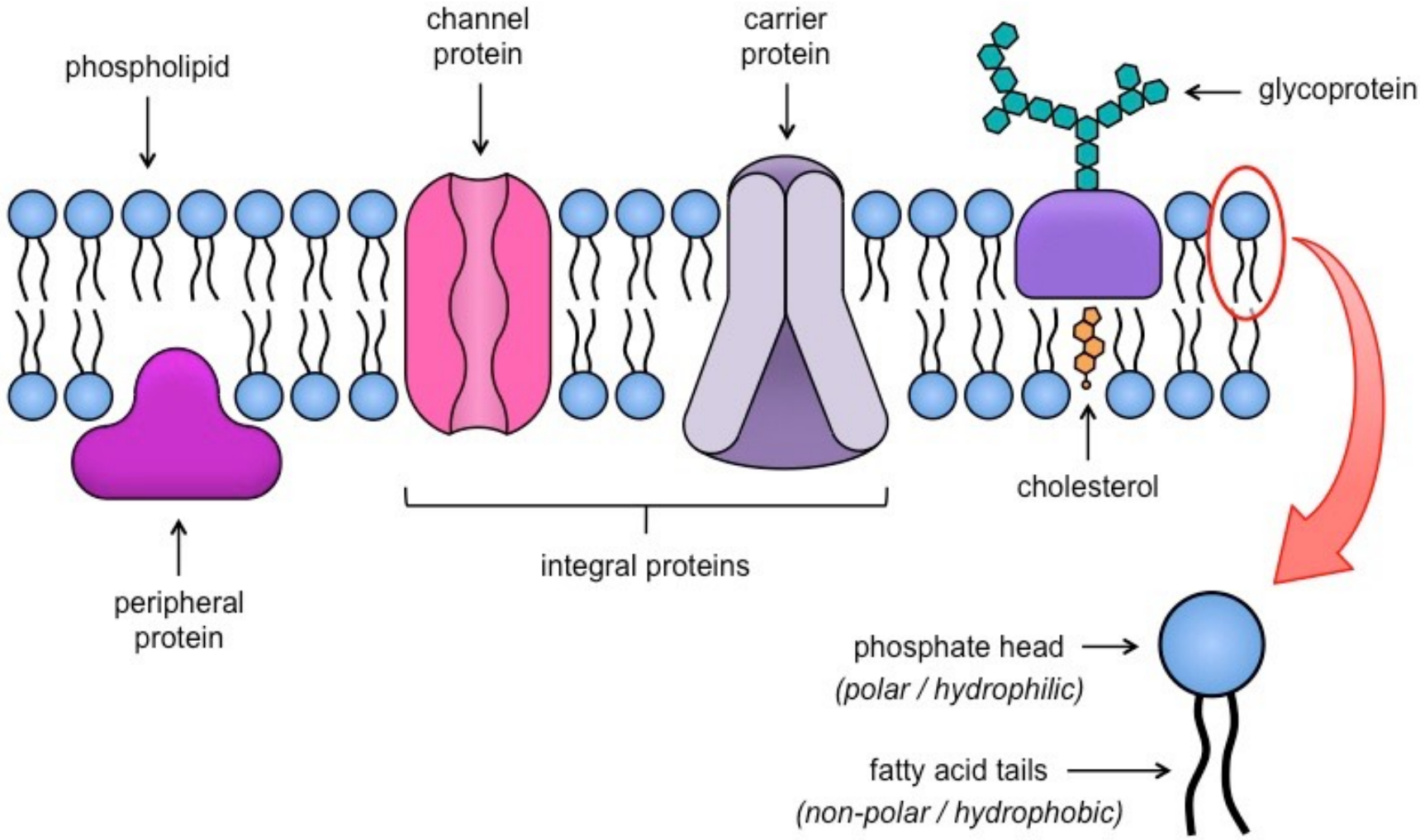
Model 1 Davson -Danielli Model



Model flaws:

- freeze fracture appeared to show transport proteins that are trans-membrane
- membrane proteins vary in size and shape and some hydrophobic - no continuous layer possible
- fluorescent antibody tagging shows fluidity to proteins

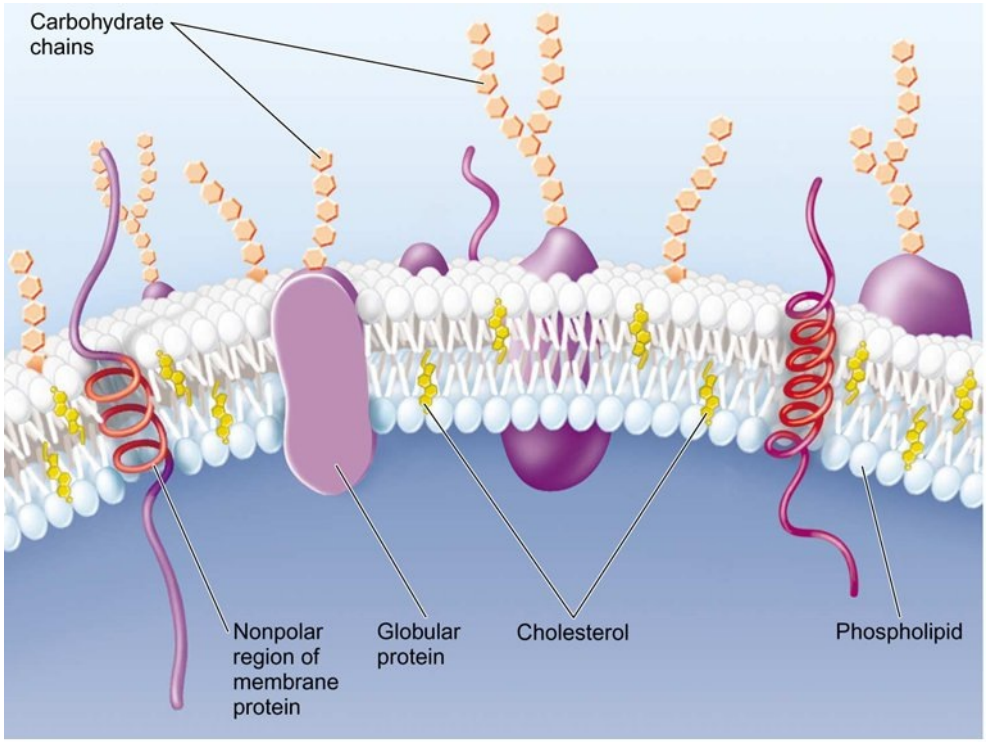
Singer-Nicolson
The **Fluid Mosaic Cell Membrane** Model



Plasma Membrane

Function:

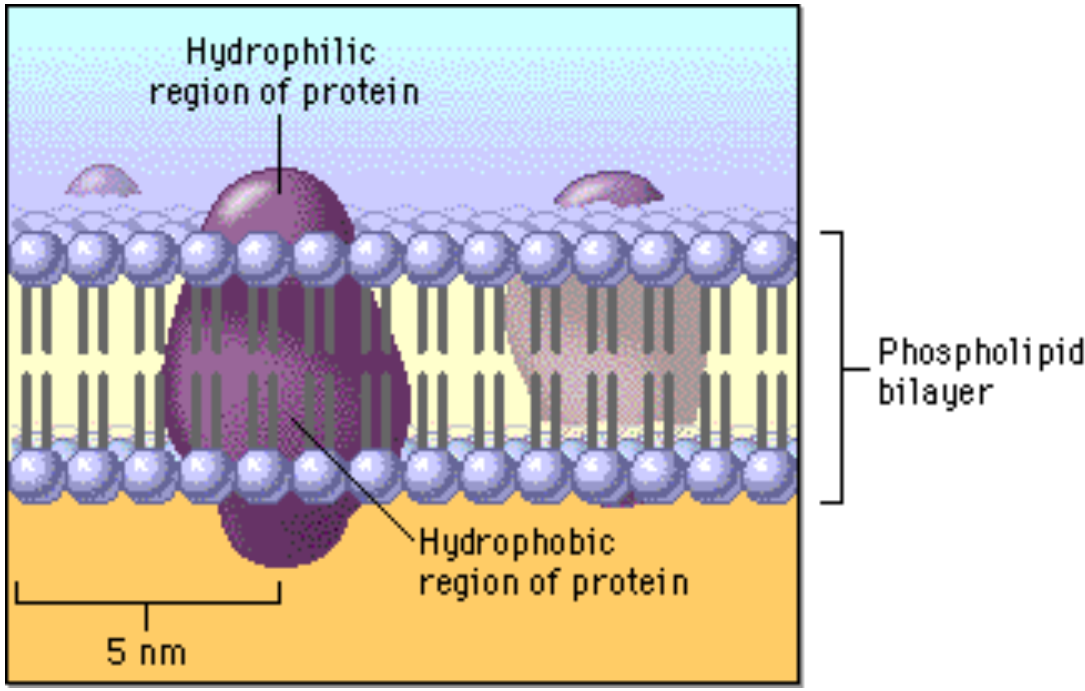
- transport raw materials into cell & products & wastes out
- keep unwanted matter out & essential matter in



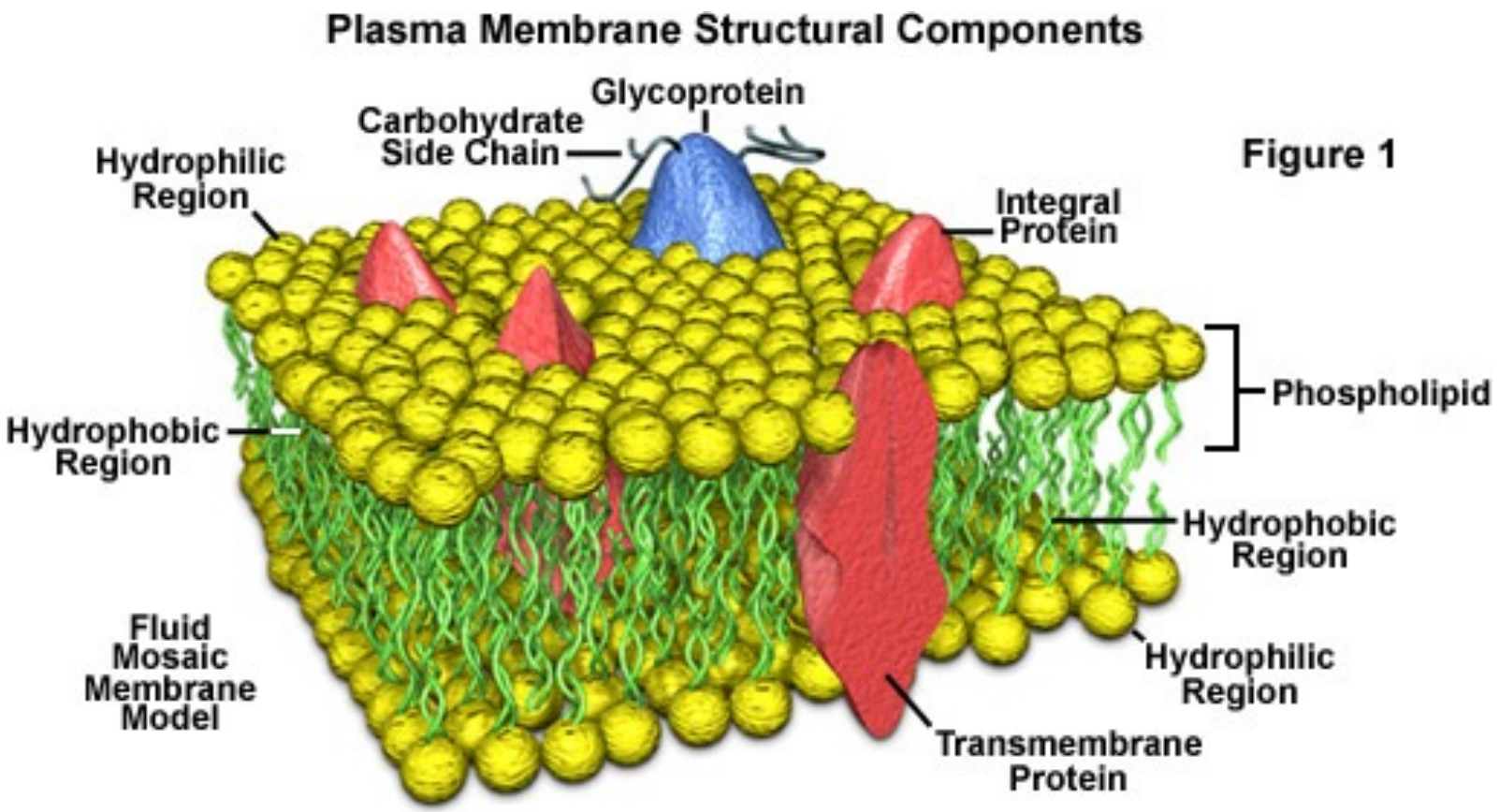
Cell Membrane Structure

Structure:

- less than 10 nm thick
- phospholipid bilayer
- protein molecules embedded in bilayer
- in motion (fluid)

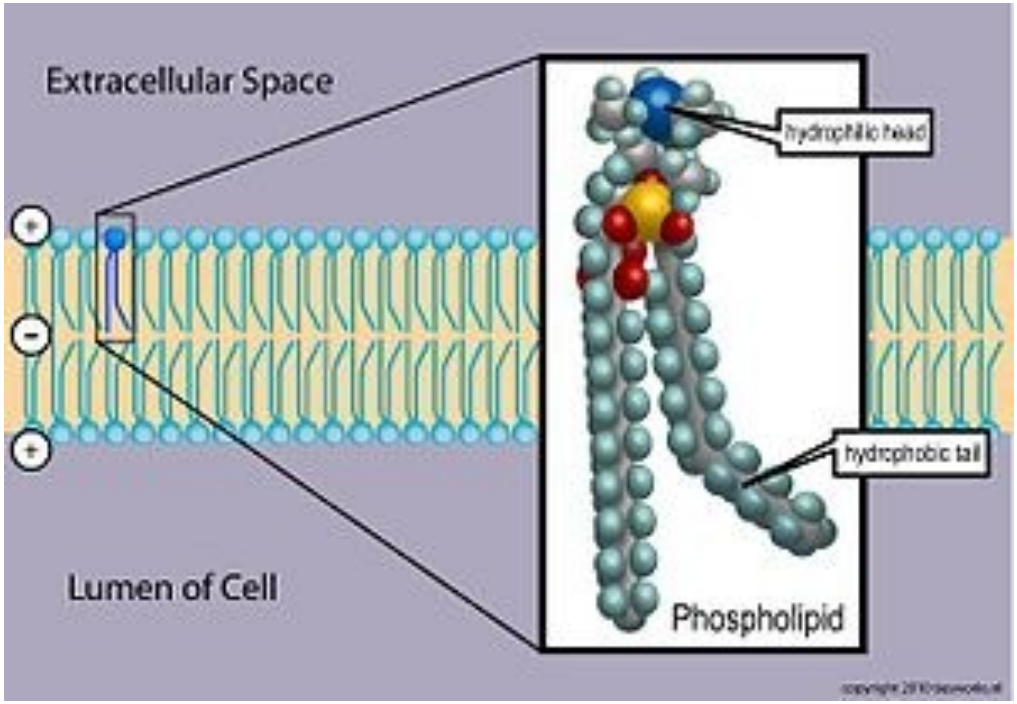


Cell Membrane Structure



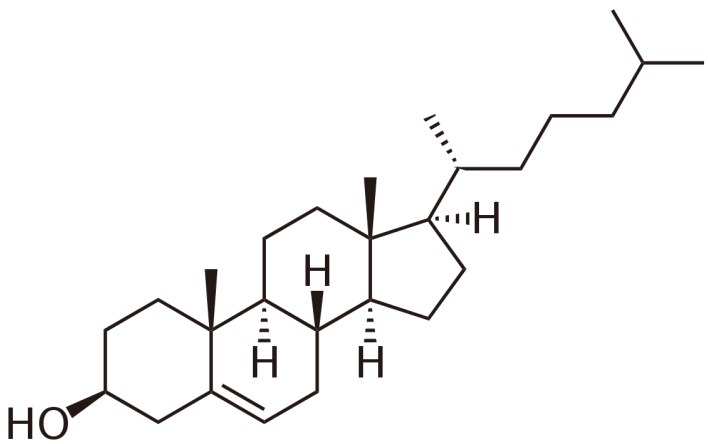
Phospholipids

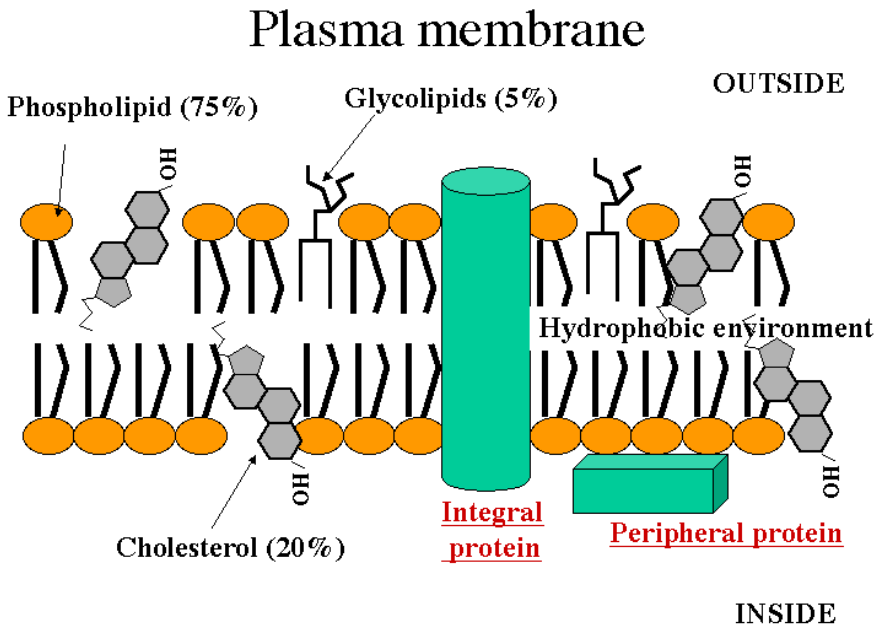
- hydrophobic tails, and hydrophilic heads
- fluidity depends on type of fatty acids



Cholesterol

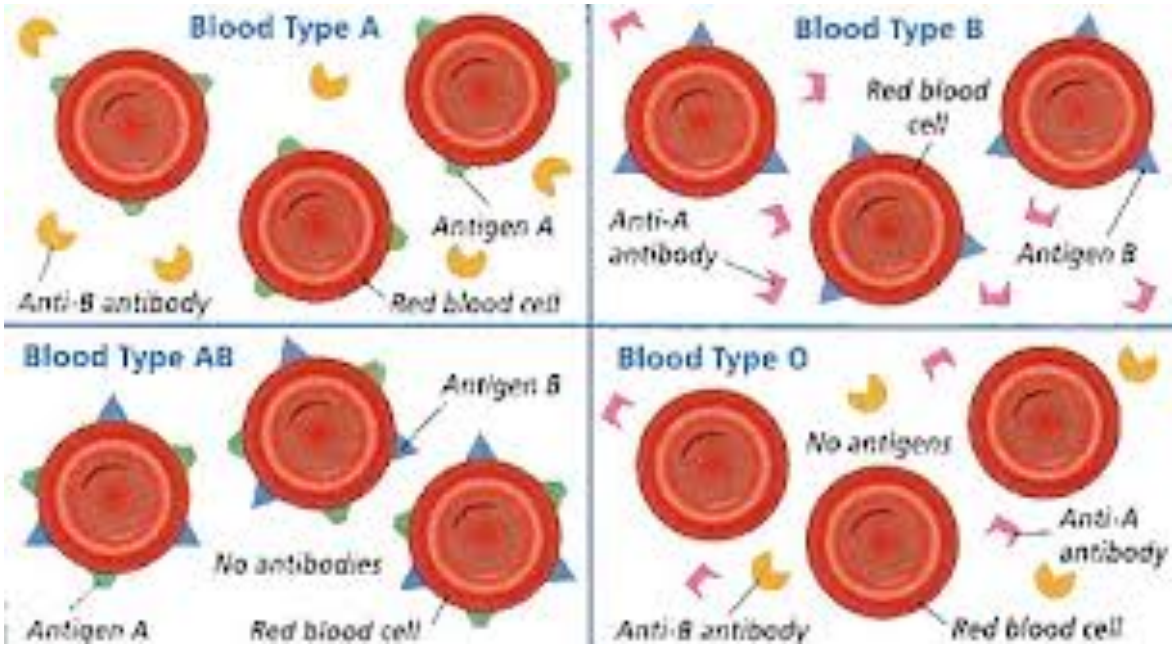
- A lipid - called **sterols**
- allows cells to function in a wide range of temperatures *(stays solid at high temps, liquid at low temps)*
- *aids the membrane to curve*
- *hydroxyl group is hydrophilic and the rest is hydrophobic*





Membrane Glycoproteins Proteins

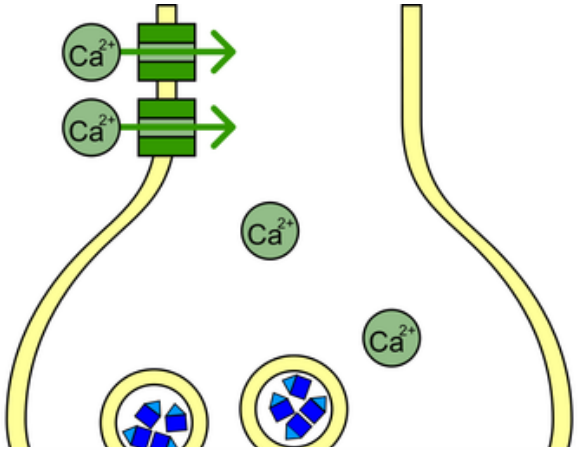
- glycoproteins provide cells with unique markers for cell recognition

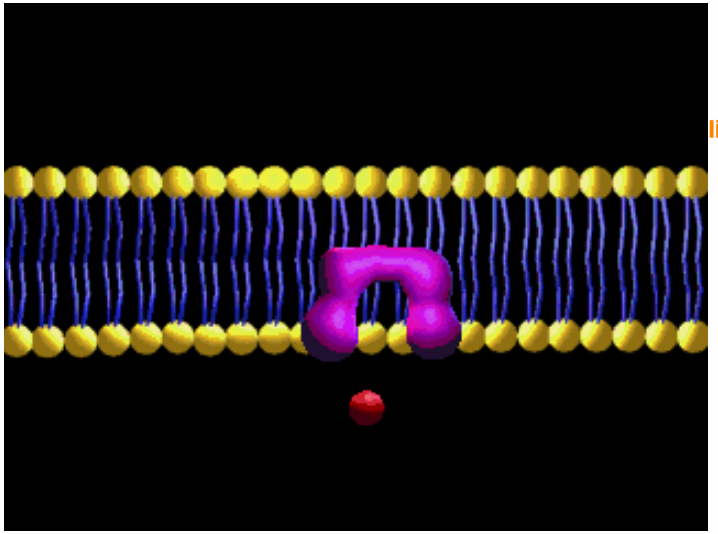


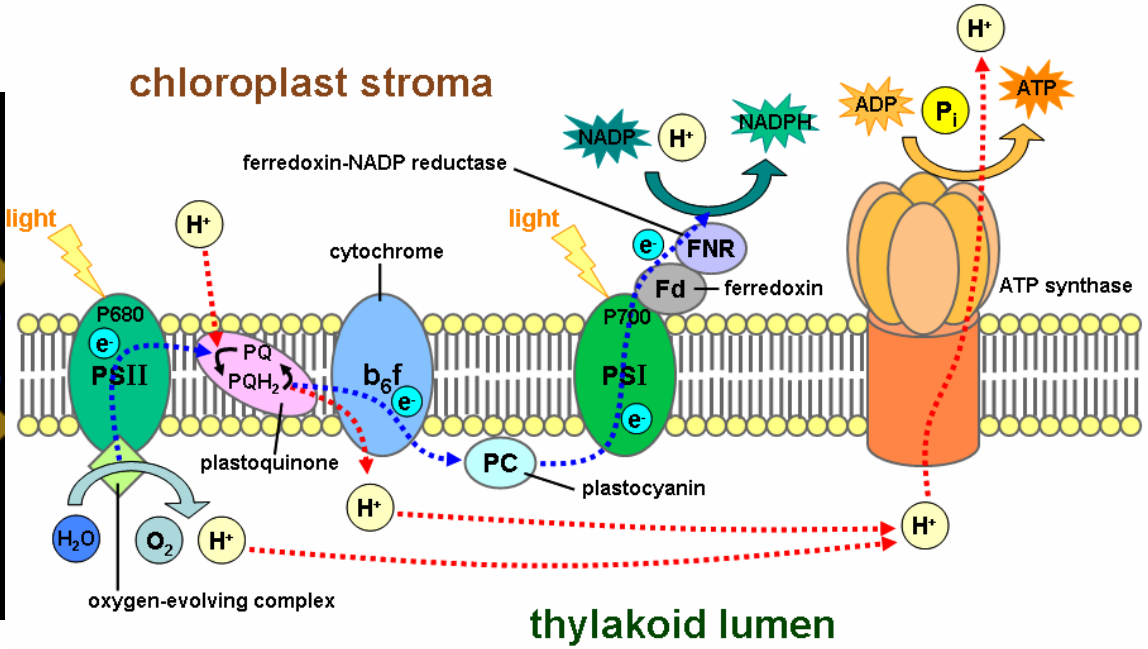
Membrane Proteins

4 main functions:

- transport
- enzymatic activity
- triggering signals



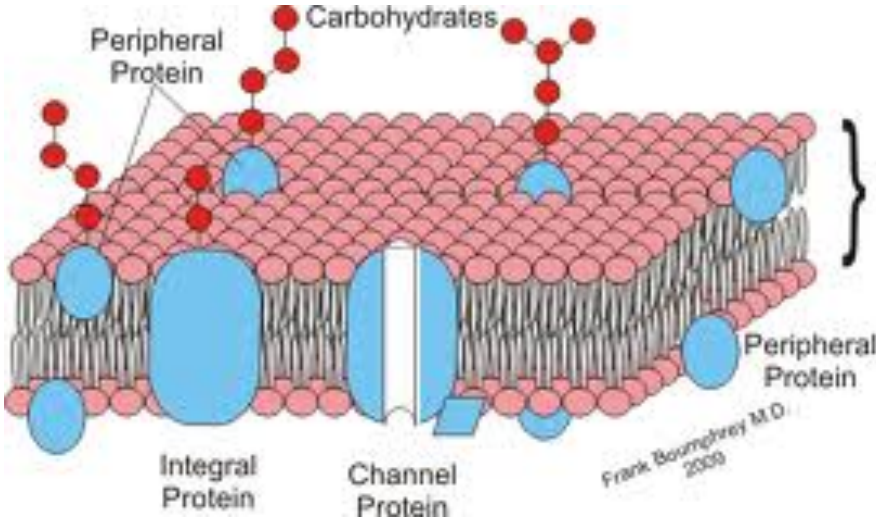


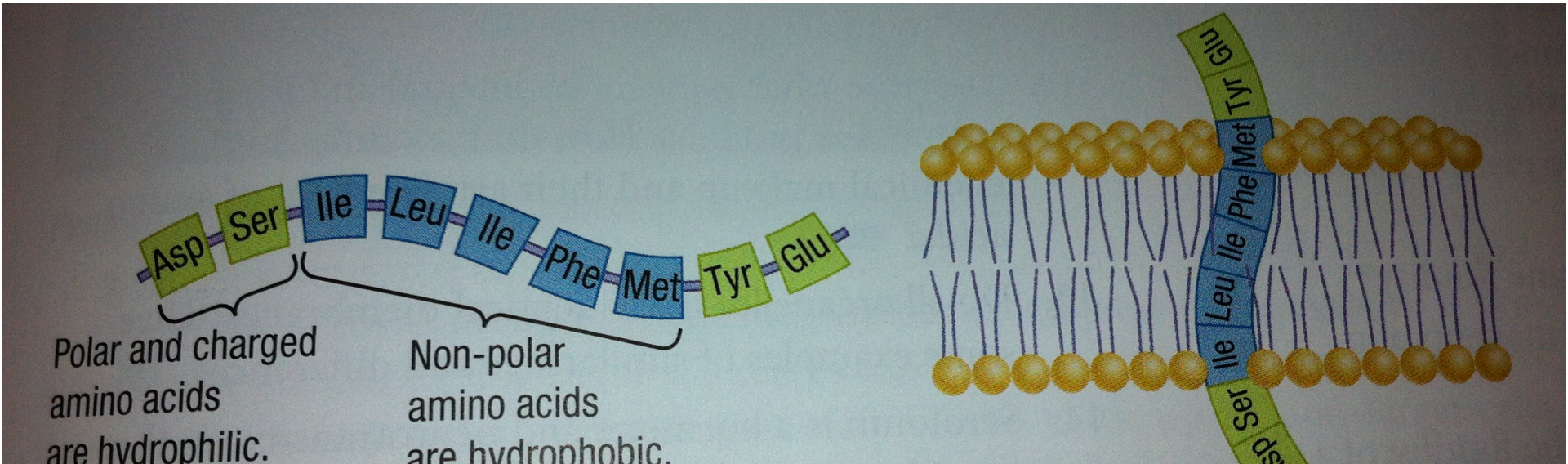


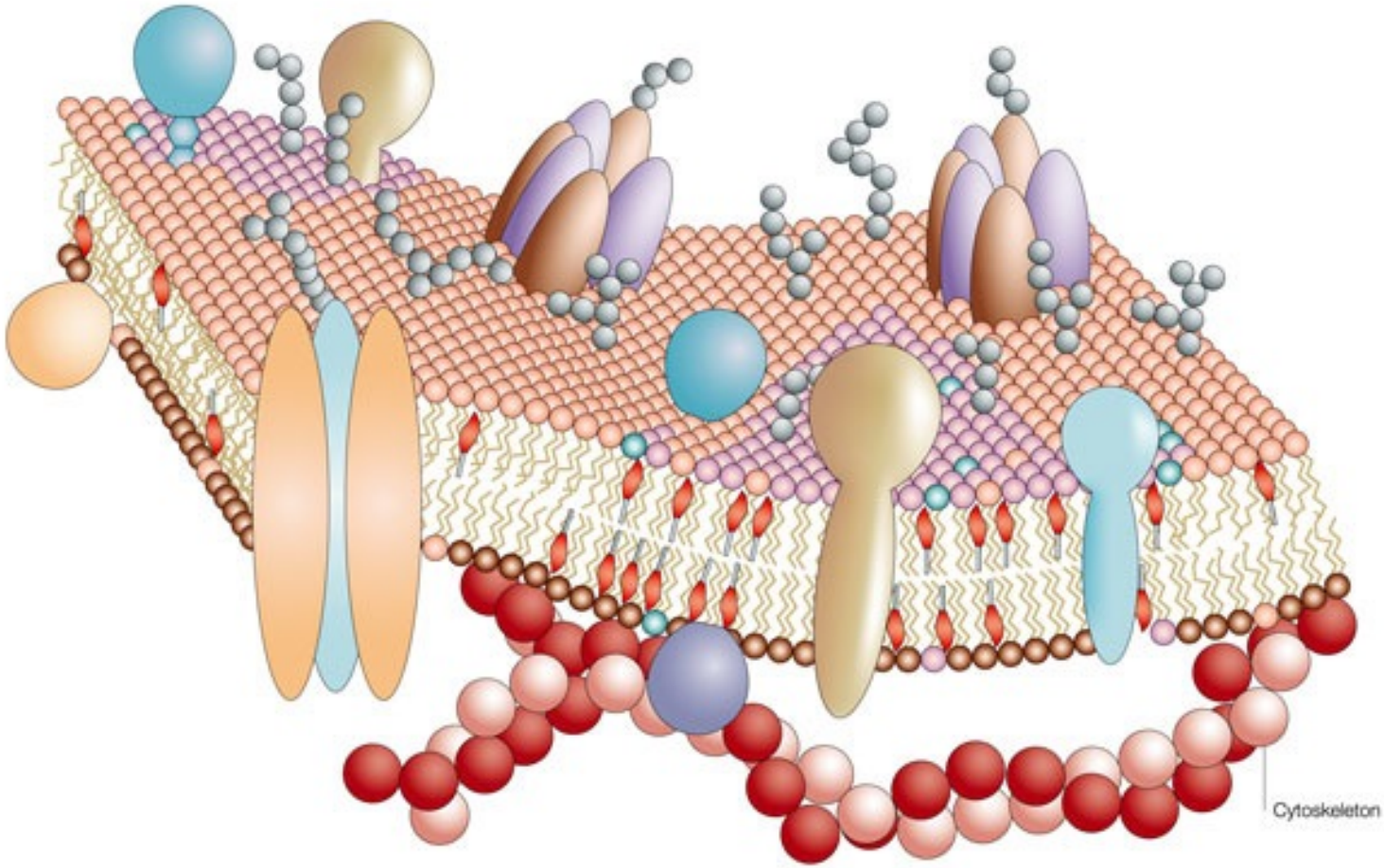
- Intergral proteins
  embedded in lipid bilayer

Or

- Peripheral proteins
  at the surface of the cell






Cytoskeleton

The “Bubble” Demo

- The purpose of the lab is to visualize how a mb can be fluid and yet allow material in and out.
- Please use a paper towel at your desk and work carefully… avoid mess.
- Follow the directions.
- Complete the questions as you do the lab.

Explain how the bubble lab helped to reinforce characteristics of the cell membrane.