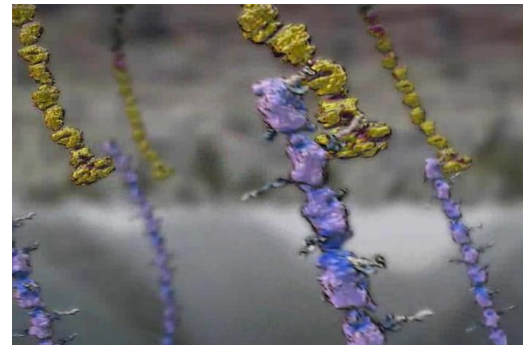
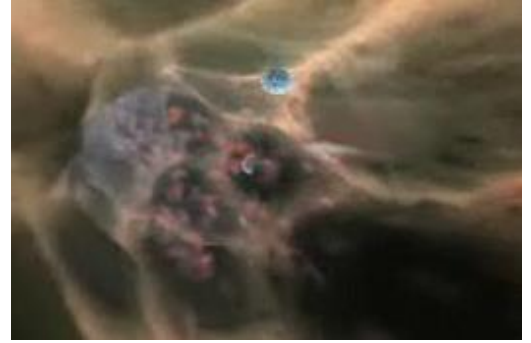


## The Inner Life of a Cell

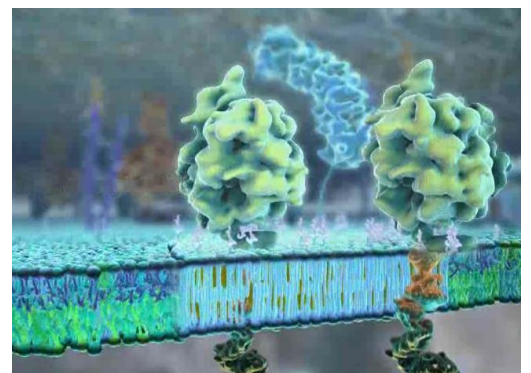
<http://biovisions.mcb.harvard.edu/>

<https://www.xvivo.net/animation/the-inner-life-of-the-cell/>

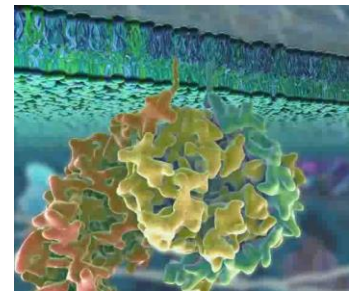
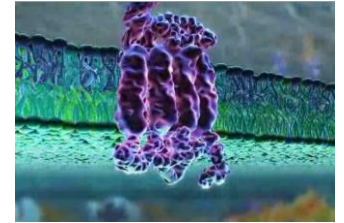
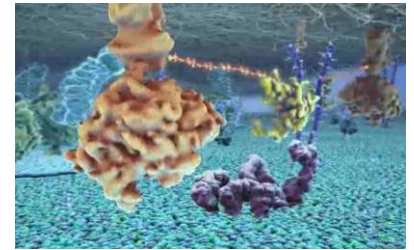
- 1) Explain how leukocytes (white blood cells) roll using the following words and phrases: leukocyte, endothelial cell, protein that is embedded in the plasma membrane of the endothelial cells, glycoprotein, and extracellular matrix.



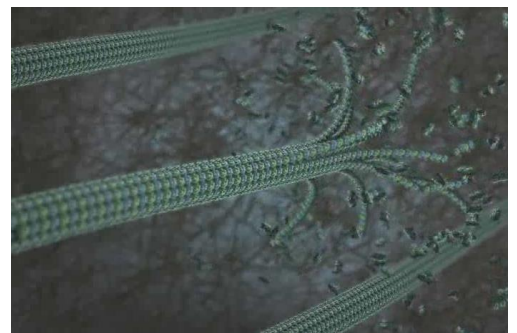
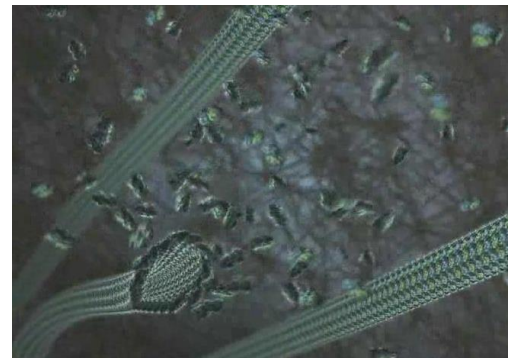
- 2) Explain how lipid rafts form using the following words: saturated fatty acid tail, cholesterol, and unsaturated fatty acid tail.



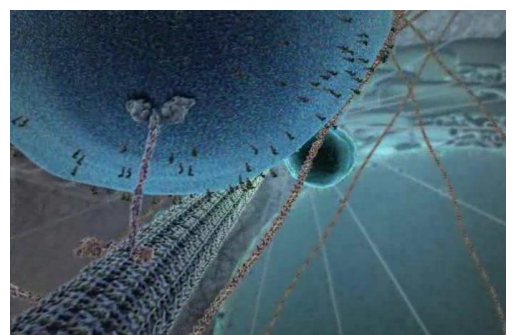
- 3) Describe the membrane proteins critical for signal transduction using the following words: receptor site, transmembrane protein, peripheral protein (G protein), phosphorylation, cell response, and signaling molecule (chemokine).



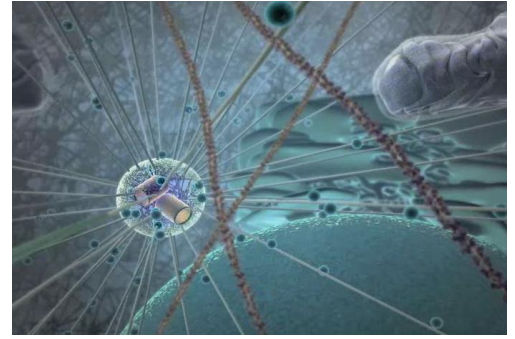
- 4) Describe the dynamic nature of the cytoskeleton using the following words: actin filaments, polymerization, severing protein, depolymerization, and microtubules.



- 5) Describe how vesicles travel to and from the plasma membrane using the following words: microtubules, tracks, vesicles, plasma membrane, and motor proteins.



- 6) Describe the origin of microtubules using the following words: microtubule, centrosome, centriole, and nucleus.



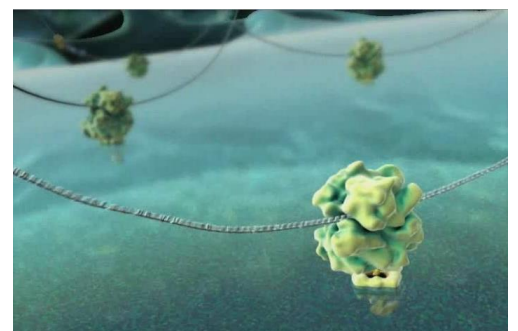
- 7) Describe the origin of mitochondria using the following words: endosymbiont theory, organic molecules, ATP, primitive eukaryotic cell, prokaryotic cell, mitochondria, phagocytosis



- 8) Explain how proteins are synthesized for the cytosol using the following words: free ribosome, mRNA, amino acids.

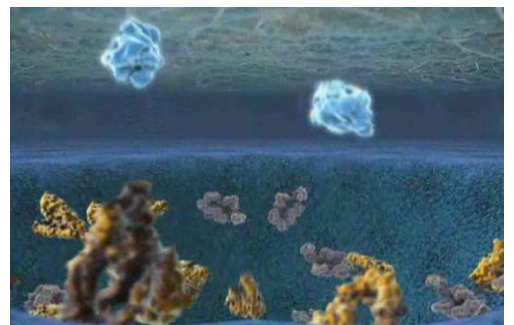
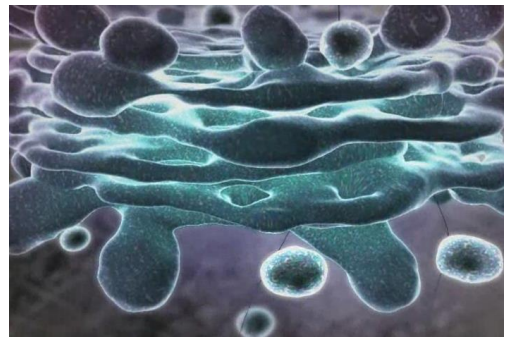
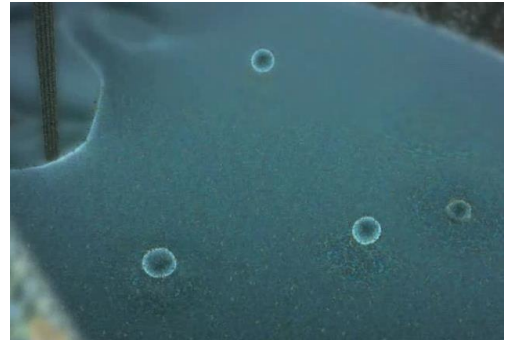


- 9) Explain how proteins are synthesized for excretion using the following words: ribosome, endoplasmic reticulum, endoplasmic reticulum lumen, mRNA, amino acids.



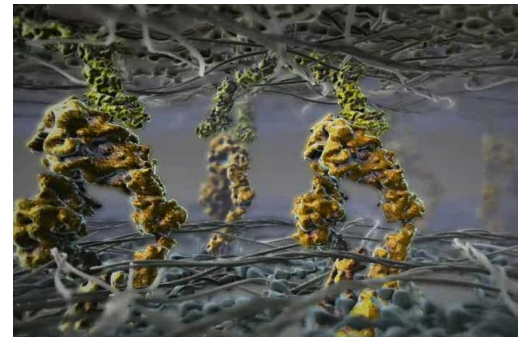
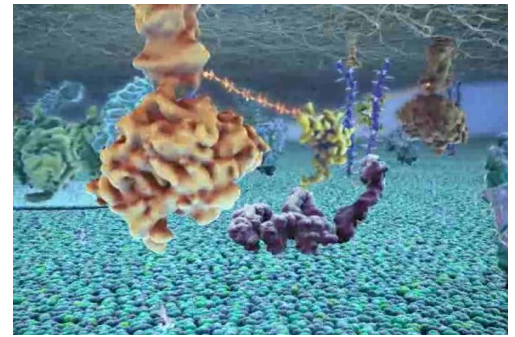
10) Explain how proteins are synthesized for the plasma membrane (integral proteins) using the following words: ribosome, endoplasmic reticulum, endoplasmic reticulum membrane.

11) Explain how proteins are secreted and how they are embedded into the plasma membrane using the following words: endoplasmic reticulum, vesicle, vesicle membrane, vesicle lumen, microtubules, motor proteins, Golgi apparatus, plasma membrane, and fuse.





12) Explain what chemokines do: using the following words: inflammation, endothelial cells, chemokines, receptor sites, signal transduction, clustering of proteins into lipid rafts, strong interactions of proteins and endothelial matrix, leukocyte immobilization.



13) Explain how leukocytes move from blood vessels to the site of infection (leukocyte extravasation) using the following words: immobilization, cytoskeleton reorganization, endothelial cells, and transendothelial migration.

