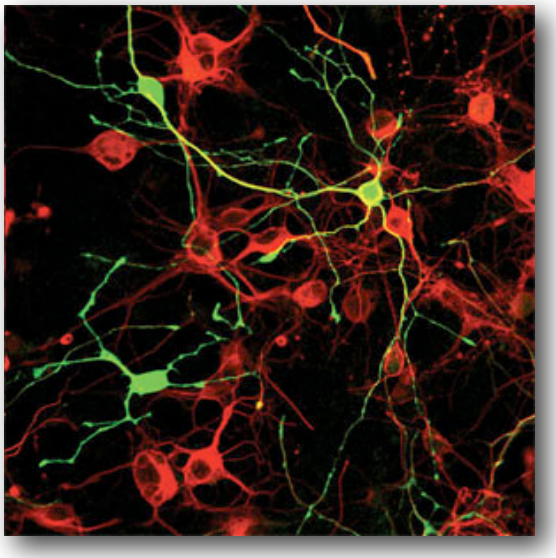
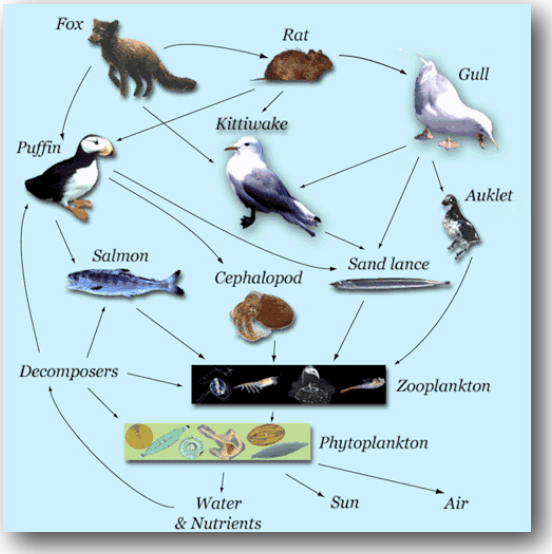
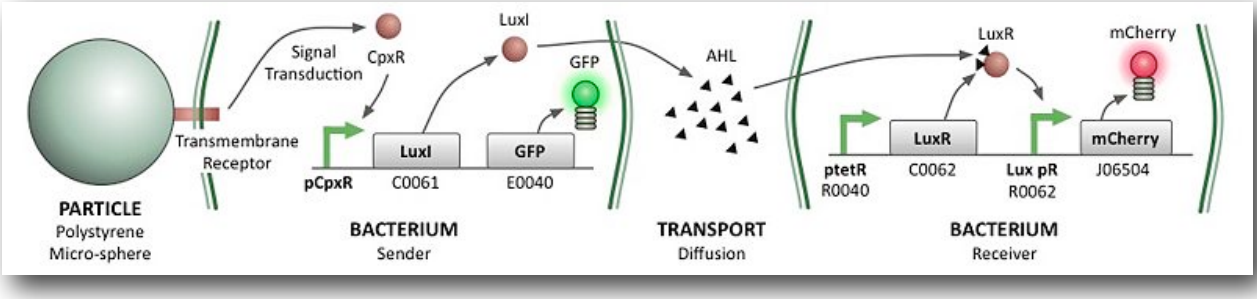
NETWORKS IN BIOLOGY

BIOL 404-03, Spring 2012, W 2-2:50 (1 credit)
Instructor: M. Drew LaMar (mdlama@wm.edu)
Prerequisite: BIOL 220 and BIOL 225, ***or by permission of instructor***







<u>Description</u>: This course will give an introduction to the structure and function of networks in biological systems, including gene regulatory networks, protein-protein interaction networks, neuronal networks, and ecological networks. Most of the material will come from the primary literature (see examples below) focusing on how network theory has been used in biological research. The focus of this course will be on the applicability of networks to biological problems, not on the development of network theory. Thus, any mathematical theory that is used in the papers will be discussed ahead of time in class. Much of the network theory discussed will come from Mark Newman's reference book "Networks: An Introduction", which will be put on reserve in the library. The required text "Linked" by Albert-Laszlo Barabasi is a popular science book that will be referenced throughout the semester in its relation to the primary literature.