Learning Objectives – Natural Materials
BE-410, Fall '06, Dr. C. S. Tritt

Be able to name and describe the key features of each of the "big three" natural materials.

Be able to describe the molecular structure (but not the amino acid sequence) of collagen.

Be able to name an amino acid closely associated with collagen.

Be able to sketch and discuss the stress-strain curve for a typical collagen rich tissue.

Be able to explain what the term RGD sequence means and its role in the behavior of the extracellular matrix (ECM).

Be able to separately describe the intracellular and extracellular steps involved in collagen formation and deposition.

Be able to name 2 forms of processed collagen and their potential application.

Be able to describe a way in which collagen or collagen rich tissue can be processed.

Be able to describe the molecular structure (but not the amino acid sequence) of elastin.

Be able to name an amino acid closely associated with elastin.

Be able to sketch and discuss the stress-strain curve for a typical elastin rich tissue.

Be able to describe the general structure (not the chemical structure) of proteoglycans.

Be able to describe two common functions of proteoglycans.

Be able to describe the general interaction between GAG's and growth factors and the biological significance of this interaction.

Be able to describe an important function of each of the following classes of compounds: laminins, fibronectins, integrins and growth factors.

Be able to name and describe and give a potential biomedical use of 2 different polysaccharides or polysaccharide like materials.