

**Learning Objectives – Tissue Engineering, Regenerative Medicine and Stem Cell
Technology
BE-410, Spring '06, Dr. C. S. Tritt**

Be able to define tissue engineering.

Be able to explain the purpose of scaffolds in tissue engineering.

Be able to define regenerative medicine.

Be able to explain what tissue engineering and regenerative medicine have in common.

Be able to give an example of a possible application of tissue engineering.

Be able to describe in some detail a possible tissue engineering application.

Be able to give an example of a possible application of regenerative medicine.

Be able to describe in some detail a possible regenerative medicine application.

Be able to discuss the possible impact of tissue engineering and regenerative medicine on the field of biomedical engineering.

Be able to describe a way in which the phenotype of a cell may be identified or defined.

Be able to describe the possible role of cell fusion in regenerative medicine.

Be able to describe the possible role of tissue injury in regenerative medicine.

Be able to explain the difference between autografts, autographs and homografts.

Be able to explain the difference between *in vitro* (or *ex vivo*) and *in vivo* (or *in situ*).

Be able to describe a possible application of stem cells.

Be able to describe two uses of stem cells.

Be able to explain the difference between embryonic and adult stem cells.

Be able to name a tissue in which adult stem cells have been found.