

## **CER Technology Fellowship Program –2008**

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**Project Title:** Neuroscience Undergraduate Teaching Lab Videos

**Audience:** The videos generated by this project will be used by undergraduate students in the *Neuroscience Undergraduate Lab course (080.250)* “Neuroanatomy Lab”. The videos will also have relevance to the *Nervous System 1* and *Nervous System 2* courses. These videos could also be used by students in Psychological and Brain Science courses as well as courses in Biology. Dr Gorman has also been in touch with other institutions (such as Princeton University) which have shown an interest in this project.

**Pedagogical Issue:** The “Neuroanatomy Lab” has relied in the past on live demonstrations of dissections to students. Being able to see these demonstrations more than once would be helpful for students to learn the material. Current on-line resources are inadequate in covering the material to the depth which it is presented in the lab. Creating these videos with the quality needed to view them takes too much time for faculty.

**Solution:** To create the videos of the dissections, students who have already taken the neuroanatomy course will assist Dr. Gorman. The videography will undertaken by Dr. Gorman and the students in the “Neuroanatomy Lab”. Different angles of the dissections will be recorded for the best views. These dissections will then be edited to make short videos showing the progress of the dissections. Narration will be added afterwards to ensure continuity of the presentation. These videos will be made available on WebCT or through a streaming server so that students may review the dissections outside of class.

**Technologies Used:** WebCT, Digital Audio, Digital Video

**Project Abstract:** This grant will produce a set of teaching videos that will be available to all students enrolled in the *Neuroscience Undergraduate Lab course (080.250)*. These videos could also be packaged with the “Neuroscience Lab” manual and made available to the general public online. Currently, all of the procedures are demonstrated for the students; however, there is a need to have these demonstrations available for 24/7 student viewing.

The 1st video set will demonstrate various dissections used in learning the neuroanatomy of the sheep brain. Dissections will begin with external structures and then proceed to 3-D dissections to view structures located within the cerebral hemispheres. Videos will then be made that focus on the meninges, blood supply, cranial nerves and skull. Finally, horizontal, sagittal, and coronal sections will be made that highlight internal structures of the sheep brain.

The 2nd video set will give students a “tour” of the six human plastinated brains that we have in our neuroanatomy collection. These sets of horizontal, sagittal, and coronal human brains will be used to highlight similarities and differences between sheep and human neuroanatomy.

The 3rd video set will demonstrate various techniques used in the dissection of the *Aplysia Californica*, abdominal ganglia removal and ganglia preparation. This invertebrate animal is used to help the students learn the basic principles of neurophysiology.

The Neuroscience lab is equipped with all of the materials necessary to make these videos. There is a camera set up to allow students to view the various demonstrations described via their computer stations. Student fellows would record, edit and then put these demonstrations into an online format.