Field Trip # 5	**Brain-Computer Interface**
Developed by:	Dr. Matt Campbell, Assistant Professor & Health Informatics Track Coordinator
Subject:	Brain-Computer Interface (EEG)
Short description:	Students will learn how to use brain waves to interact with a computer. Specifically, students will use a single channel, non-invasive electroencephalography (EEG) headset to interact with & manipulate a number of computer games & other activities. Students are encouraged to think creatively about other applications of this technology, especially in relation to helping people with disabilities.
Educational Level:	4^{th} – 12^{th} Grade (logic/decision making class or a life science class) Applicable subject areas: computer technology, biology, anatomy & physiology
Field trip type:	Workshop
Educational Outcomes:	T The student will be able to: • Explain how brain waves can be used to control a computer or other electrical device • Propose their own creative uses of EEG technology • Interact with a computer through the use of brain waves
Notes to instructor:	Students are each assigned an EEG headset to use during the activity. Student will progress through a number of games & tasks that require them to either maintain a high level of concentration or relaxation. Scoring mechanisms within the applications allow the students to compete on each of the activities. It is recommended that the instructor have at least one assistant in the lab to assist learners who need help with the headsets. This learning object can easily be trimmed down to fit into a 50 minute time frame. The instructor can cover as much material as time permits or do fewer activities & games. Activity should be done in a computer lab or a classroom with laptop computers. The instructor should demonstrate with computer connected to an overhead projector.