Dear Faculty, IGERT Fellows, IGERT Associates and Students,

You are cordially invited to attend a Seminar presented by Brett Bays, Vincent On and Atena Zahedi. Please plan to attend.

Brett Bays, Vincent On and Atena Zahedi

IGERT Fellows

Date: Monday, April 1, 2013
Location: Bourns A265
Time: 11:10am

Data Stewardship for Researchers: Tips, Tools, and Guidance

Abstract:
When cell colonies are used for experimentation or for in vivo implantation, it is vital that the colony is initially healthy. Detecting the health of cell colonies is most often done by tedious manual inspection of the colonies over a period of time, which requires significant amounts of time, experts to properly assess the colonies, and the possibility of observer bias. Here we present a novel automated method of determining cell colony health and additional morphological information from video. Our dataset consists of 34 human embryonic stem cell (hESC) colonies that have been treated with different types of cigarette smoke and which were each recorded over 24 hours. By using an automated segmentation algorithm, the colony was isolated in each video and further algorithms determined a number of key features about each colony over the time course of the video. A Support Vector Machine classifier then used these features to determine whether the colony was healthy or unhealthy with an 85% success rate.