

## CS Masters' Thesis Defense

**Title:** *Identification of Alternative Translation Initiation Sites: Bioinformatic Analysis of Mammalian 5' UTR (Location Prediction of Start Sites)*

**Speaker:** Thomas Drudge

**Date:** Monday, April 2, 2012

**Time:** 1:00 p.m.

**Location:** GMCS 405

**Thesis advisor:** Dr Faramarz Valafar

### **Abstract:**

Alternative Translation Initiation in mammalian mRNA at nonAUG start codons is a rare but increasingly observed phenomenon. The exact method of translation initiation is not fully understood, but significant research has indicated that primary and secondary structural information is a significant determining factor in translational efficiency. In order to provide a greater understanding of alternative nonAUG translation initiation, we examine previously identified instances of alternative translation initiation from several mammalian species. Using these previously identified instances, we provide an automated classification mechanism based on an Artificial Neural Network to aid in the further discover of new instances of alternative translation. This project provides an efficient approach for the identification and location of new alternative translation initiation sites.