CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Monday, December 2
1:00 – 2:00 PM
Copernicus Hall (NC), Room 20102

USING CRIME PREDICTION MODELS
TO AID LAW ENFORCEMENT
IN RESOURCE ALLOCATION AND DECISION MAKING

DANIEL ALOI

(Data Mining MS Thesis Presentation)

CENTRAL CONNECTICUT STATE UNIVERSITY

Abstract: The recent development of predictive models has allowed law enforcement the ability to deploy resources in *advance* of criminal activity. With the help of data mining, analysts can now consider a multitude of variables. Phase one includes data preparation procedures and principal component analysis, and clustering analysis to gain insight into the important factors that may predict violent crime. BIRCH and K Means clustering will be used to profile the different types of communities contained in the data set and may increase accuracy if different types of communities have different types of predictors. Phase two focuses on predicting communities with high per capita violent crimes. The results of phase one are fed into classification models including logistic regression, CHAID, and neural networks. In the event, the CHAID classification model showed itself to be the most effective predictor of violent crime.