



In Partial Fulfillment of the Requirements for the Degree of

## **Master of Science**

**Andrew McIntyre**

Will defend his thesis

### **Determinants of Bicycle and Pedestrian Crash Severity in San Francisco, CA**

#### **Abstract**

Bicyclist and pedestrian safety is a growing concern in San Francisco, CA, especially given the increasing numbers of residents choosing to bike and walk. Sharing the roads with automobiles, these alternative road users are particularly vulnerable to sustain serious injuries. With this in mind, it is important to identify the factors that influence the severity of bicyclist and pedestrian injuries in automobile collisions. This study uses traffic collision data gathered from California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) to predict the most important determinants of injury severity, given that a collision has occurred. Multivariate binomial logistic regression models were created for both pedestrian and bicyclist collisions, with bicyclist/pedestrian/driver characteristics and built environment characteristics used as the independent variables. Results suggest that bicycle infrastructure is not an important predictor of bicyclist injury severity, but instead bicyclist age, race, sobriety, and speed played significant roles. Pedestrian injuries were influenced by pedestrian/driver age and sobriety, crosswalk use, speed limit, and the type of vehicle at fault in the collision. Understanding these key determinants that lead to severe and fatal injuries can help local communities implement appropriate safety measures for their most susceptible road users.

Tuesday, November 1, 2016  
4:30 pm  
Wrigley Hall, L1-04

Faculty, students, and the general public are invited.

Supervisory Committee:  
Dr. Deborah Salon, Chair  
Dr. Mikhail Chester, member  
Dr. Mike Kuby, member