

## CE 890 Graduate Seminar

**SPEAKER:** Abhi Teja Rallabandi (Dr. Dissanayake's M.S. student)

**TOPIC:** "Contributing factors for fatal crash involvement of older drivers"

**DATE:** May 6, 2009

**TIME:** 4:00 p.m. (refreshments at 3:45 p.m.)

**PLACE:** 2144 Fiedler Hall

### ABSTRACT

The rapid increase estimated in older population and subsequent increase in older driving population in the US calls for safety. Though the total number of fatal crashes for elderly is less, percentage of fatalities is highest for their age group compared to other age groups. Their fatal crash involvement based on per mile driven basis is relatively high indicating the importance of true exposure. Thus the focus of research is on fatality risk for older drivers identifying some of their critical characteristics while considering the actual amount of driving and suggesting possible countermeasures for a safer driving zone.

Fatality Analysis Reporting System (FARS) as a source of crash data and National Household Travel Survey (NHTS) as a source of exposure data are used for this study. Basic characteristic study was completed to compare the fatality risks of younger (16-24 yrs), middle-aged (25-64 yrs) and older drivers (65+ yrs). Risk for older drivers due to other drivers and vice versa was studied to understand the involvement of older and non-older drivers in fatal crashes. Average Annual Fatality Rates were calculated taking exposure into consideration. Various statistical methods like Chi-Square test of independence, odds ratio and Double Paired Comparison estimates were applied to study the contributing factors for the increased fatal crash involvement of older drivers.

Results from characteristic study for the elderly indicate that majority of fatal crashes occur under daylight with higher seatbelt usage and driver being non-alcoholic driving on straight level roads which are considered to be safest driving conditions. Some of the other related factors include vehicle related variables like body type (automobiles contributing the most), manner of collision (no collision), roadway related variables like roadway function class (rural), environment related variables like death month (fatalities occurring among various months being equally distributed), day of the week (Friday) and driver related variables like race (Americans). Roadway function class, body type, travel speed and several other factors were found to have strong correlation with the age of the driver using chi-square results. Results from paired comparison estimates signify higher contribution of male passengers than female passengers in affecting male drivers compared to female drivers. Overall, fatality risk for older drivers increases with increase in age. Their higher involvement in fatal crashes is contributed to natural aging which leads to visionary and perception problems. Regular license renewal, driver refresher courses like AARP Driver Safety Program and improvement in the traffic signs are some of the recommended measures made to enhance older driver safety.