**Bicycle Safety Investigation in Alabama Using Historical Crash Data and Stated-Preference Survey**

**Sydnie Fiocca, Dr. Kirolos Haleem**  
Department of Civil and Environmental Engineering

**Study Objectives**
- Over a five-year span (2011-2015), Alabama has experienced a total of 1,332 bicycle-vehicle crashes and the crash pattern showed a 78% increase in fatalities.
- This study investigates bicycle safety in Alabama using both historical crashes and stated-preference online survey.
- The online survey examines bicyclists’ and drivers’ understanding of local biking regulations gains a perspective of the difficulties that drivers and bicyclists encounter when sharing the road.

**Data Collection**
- Crash data were collected from detailed review of 1,332 five-year police crash reports in Alabama (2011-2015).
- Geometric design and operational variables were collected from Google Maps that were rarely explored in previous studies, e.g.: number of turn lanes, parking presence, intersection type, and median type.

**Survey Results**
- Some of the difficulties that respondents regularly encountered when cycling were presence of dogs, heavy vehicle traffic, unsafe road conditions, narrow or no shoulders, and aggressive motorists.

**Crash Analysis Results**
- Nighttime and early morning riding (7:01 pm-7:00 am) and crashes involving males and middle-aged persons (26-64) were more severe.
- When bicyclists were totally ejected, 95.2% of the crashes were severe. Compared to intersections, more severe crashes occurred at midblock roadway sections with speed limits higher than 35 mph.

**Conclusions/Recommendations**
- There is a possibility of having severe injury even when wearing a helmet, given that most severe bicycle-vehicle crashes occurred on high-speed arterials.
- Enforcing speed limits in rural areas and on roadway segments with speeds higher than 35 mph.
- Avoiding the use of skewed intersections.
- More outreach programs for bicyclist/driver education of driving rules on shared roads.
- Adding more bicycle lanes.

**Acknowledgements**
The authors would like to acknowledge the Alabama Department of Transportation (ALDOT) for the grant provided to conduct this research. The opinions, findings, and conclusions on this poster are those of the authors and not necessarily those of the State of Alabama Department of Transportation.