OBJECTIVE
Using Statistical Models:
- Describe driver yielding behavior toward pedestrian(s) based on vehicle/driver and pedestrian variables
To address this objective, observational studies were conducted at midblock locations with clearly marked crosswalks.

FRAMEWORK
An interaction event between pedestrians and drivers begins at the moment a pedestrian reaches the crosswalk influence area while a driver is on the approach.
Both the pedestrian and the driver have decisions to make. The pedestrian may decide to accept a gap or wait for a vehicle to yield, while the driver must decide if they will, or if they even can, yield.

METODOLOGY

Data Collection Process:
- Real-time observations by trained observer on a tally sheet
- Video recording of the crosswalk
- Lidar speed measurements of approaching vehicles

Validation:
- Pull one representative dataset from each state before creating models
- Determine which model gives better results

DATA COLLECTION
Characteristics of Sites and Pedestrian Population:
- On-campus and off-campus
- Geometry: single- or multi-lane with/without turn lanes, single- or two-stage crossing
- Land use: education, public office, parking
- User types: age, attire, gender, behavior

Equipment Used: Study Sites:
- Video camera and tripod
- Laser speed gun

MODEL DEVELOPMENT
Model Development:
- Use observation data to create models
- Model types being considered:
  - Binary logit – Single choice between Y and NY
  - Pseudo nested logit – After Y is selected, single choice between HY and SY
  - "Flip-of-a-coin" based on group probabilities (not included in sample results)

SAMPLE RESULTS
Full Binary Logit Model

Recommended Binary Logit Model

Pseudo Nested Logit Model

Next Steps include:
- Validate model
- Determine if model needs further editing
- Choose final yielding model
- Compile discussion of modeling process for final report

IMPLEMENTATION
The driver yielding model, as well as a gap acceptance model, will be incorporated in algorithms ready to be implemented in microscopic traffic simulation tools to assure successful technology transfer.

VEHICLE PROCESS FLOW:

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