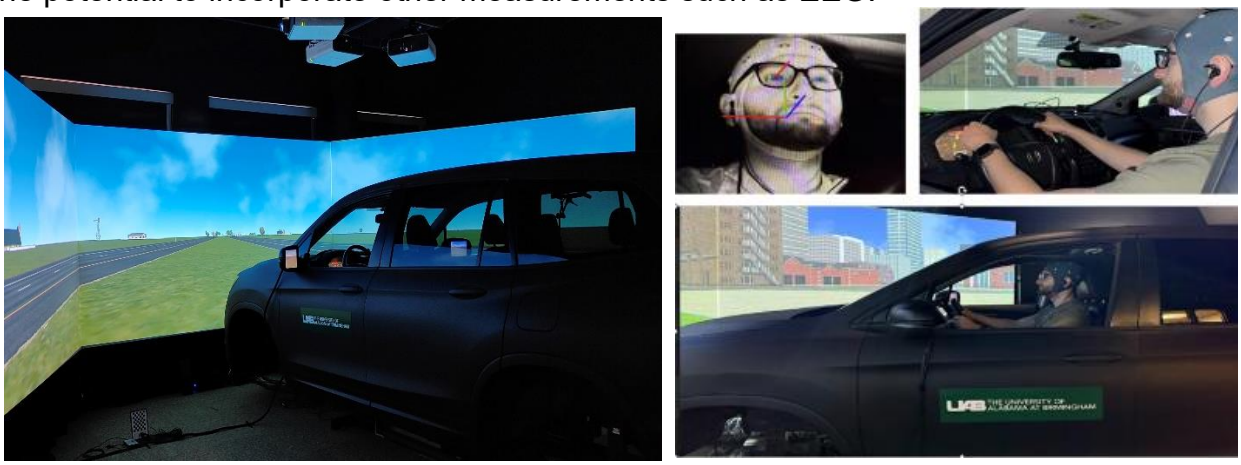
UAB Driving Simulator
Request for Applications for Pilot Studies
Application Deadline: December 15, 2025

The UAB Driving Simulator is located at 916 19th Street and consists of a Honda Pilot SUV, wrap-around video displays that can simulate a wide range of realistic driving scenarios, equipment for eye-tracking and monitoring of attention and performance, and the potential to incorporate other measurements such as EEG.*



Investigators from the Schools of Engineering and Health Professions and the College of Arts and Sciences – with support from several other Schools – have obtained funding from the UAB Strategic Investment Fund to support pilot studies or clinical initiatives. The goal of this pilot program is to develop a mix of research and clinical activities that can eventually support the Driving Simulator as a core resource for the UAB community.

Selected applicants will receive dedicated time on the simulator, technical assistance planning and executing their pilot study/clinical initiative, and assistance with data analysis. If required, recruitment incentives for study participants should be provided by the PIs or their departments.

Application format and content

Applications should consist of a 1-page PDF that addresses the following points, **NSF or NIH format biosketch** of PI and co-PIs, and letter of support for PIs or their departments highlighting, in the case of pilot studies, commitment for incentives for study participant recruitment:

- Names of PI/co-PIs and other investigators
- Brief description of the proposed study/clinical initiative
- Driving scenario(s) you wish to employ **(see next page)**
- Planned number of participants (we expect each session to last 15-30 minutes).
- Description of how the pilot studies/clinical initiative will enable future grant applications or the development of clinical programs. Please be as specific as possible; for example, for grant applications specify the agency, program, mechanism, etc.

Applicants can be submitted to drivingsimulator@uab.edu until 11:59 pm on Monday December 15, 2025. Applicants will be notified of the outcome by mid-January.
**If you would like to visit the simulator or obtain more information about the types of scenarios available, please join us for an Open House on December 5th, 2025, from 1 PM to 4 PM or contact Dr. Avinash Unnikrishnan at drivingsimulator@uab.edu.*

Potential Driving Scenarios

1. Weather & Environmental Conditions
    - Rain: Light, moderate, heavy, snow fall
    - Fog: Low vs. high density (reduced visibility)
    - Day and night driving
2. Driving Environments & Road Types
    - Urban Driving: Traffic lights, pedestrians, cyclists, intersections
    - Highway/Motorway: High-speed merging, lane changes, truck interactions
    - Rural Roads: Sharp curves, blind turns, animal crossings
    - Construction Zones: Lane closures, reduced speed limits
    - School zones and residential zones
3. Distraction Scenarios
    - Cognitive Distraction:
        - Puzzles or math problems
        - Conversation (hands-free phone)
        - Audio distractions (podcasts, loud music)
    - Visual Distraction:
        - Texting/phone use
        - Checking GPS/navigation
        - Looking at roadside billboards
        - Manual Distraction:
        - Eating/drinking
        - Adjusting radio/AC controls
4. Vision & Perception Challenges
    - Impaired Vision: Blurred vision, Night blindness, color blindness
    - Contrast Sensitivity: Low-contrast obstacles (e.g., gray car in fog)
    - Motion Perception: Judging gaps in high-speed traffic
5. Cognitive & Behavioral Scenarios
    - Divided Attention Tasks: Dual-task paradigms (e.g., driving + memory recall)
    - Risk-Taking Behavior: speeding, traffic light violations, aggressive lane changes
    - Hazard Perception: Sudden pedestrian crossings, Vehicle cut-ins, Hidden obstacles
    - Traffic rule Compliance: Stop sign violations, Speed limit adherence
6. Emergency & Unpredictable Events
    - Sudden Braking by Lead Vehicle
    - Pedestrian/Animal sudden crossing