Research Objective
The purpose of this research is to pursue autonomous navigation through visual cues. Image-based measurements to estimate the vehicle’s attitude and geolocation would aid autonomous systems through GPS denied environments.

Challenges
- Inherent computational burden of computer vision algorithms.
- First frame target detection for smart projectiles is difficult with a dynamic scene.
- Camera challenges include low frame rates, blur, latency, etc.

Complementary Expertise/Facilities/Capabilities Sought in Collaboration
- Expertise sought in surveillance, fast computer vision methods and implementation, IR cameras.
- Innovative new research approaches to address this research objective include biologically inspired methods, compressive sensing, network control, etc.

The purpose of this research is to develop a robust vision-based navigation strategy for all conditions.