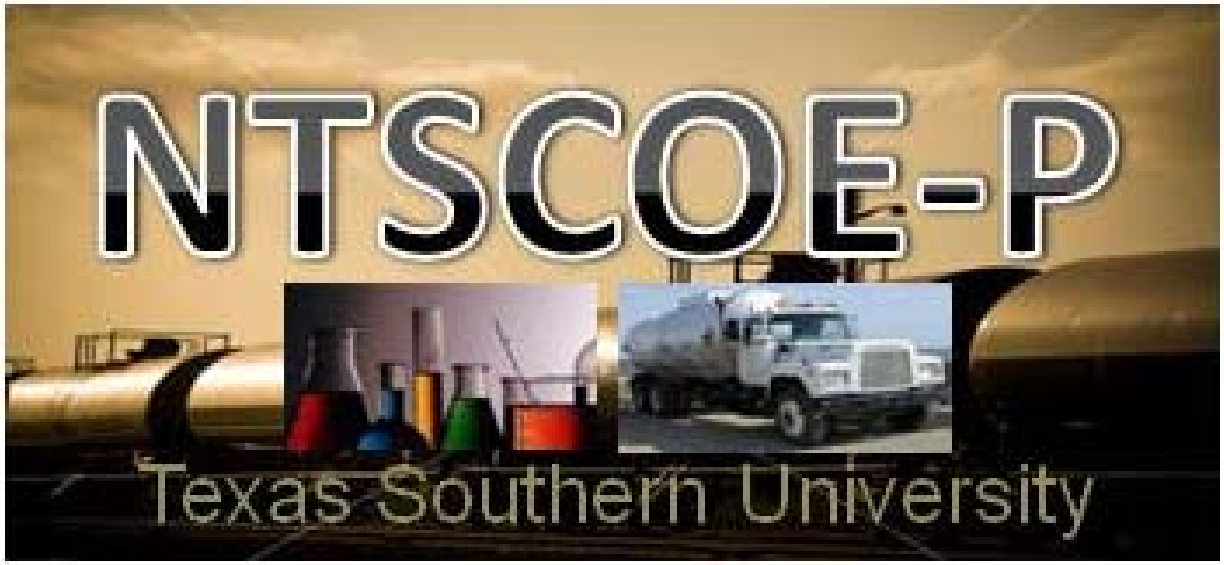
Department of Homeland Security



March 18, 2009

RESEARCH TEAM

Principal Investigator : Carol Abel Lewis, Ph.D.

Co – Principals: Lei Yu, Ph.D.

Carroll G. Robinson, J.D.

Director: Sharon Adams, M.S.

Members: Robert Ford, Ph.D.

Carlos Handy, Ph.D.

Charles, Glass, Ed.D.

Graduate Student: **Latissha Clark**

MISSION

- To conduct research and education activities
- To develop and provide professional security training, including,
  - training of transportation employees and
  - transportation professionals

KEY ACTIVITY

- Work Shop
  - Held in November
- Participants
  - Federal Railroad Administration
  - Federal Highway Administration
  - City of Houston
  - Kellogg Brown & Root
  - Harris County Fire Marshall
  - Motor Carrier

IMPACT AND RELEVANCE

- Develop research leading to improvements in transportation infrastructure resilience
- Improve abilities to detect threats to transportation infrastructure
- Develop long-term strategy for transportation security research
- Develop education and training baselines for transportation security geared towards transit employees and professionals

STAKE HOLDER CONCERNS

(1) Extent of Vulnerability and Threat Leading to Pattern Analysis

(2) Public Education and Cultural Change in Understanding Dangerous Exposure as Opposed to Tolerable Levels of Exposure

(3) Attention to Commodity Flow Modeling

(4) Greater Information to Inform Risk Analysis and Priority Setting

STAKEHOLDERS CONCERNS CONTINUED

(5) Greater Attention to Land Use and Petrochemical Transportation Linkages; Locating Production More Proximate to Manufacturing to Reduce Transport Miles

(6) Strengthen Containers used for Transport (Embedding Sensors; Reducing their Potential for Penetration)

(7) Improved Network Information and Data Sharing for Stakeholders, Shifting from Static to Real-Time Information

(8) Strengthen Care and Custody Chain; Including Greater Security for Truckers at Rest Stops

KEY ISSUES FROM THE WORKSHOP TRUCK AND RAIL

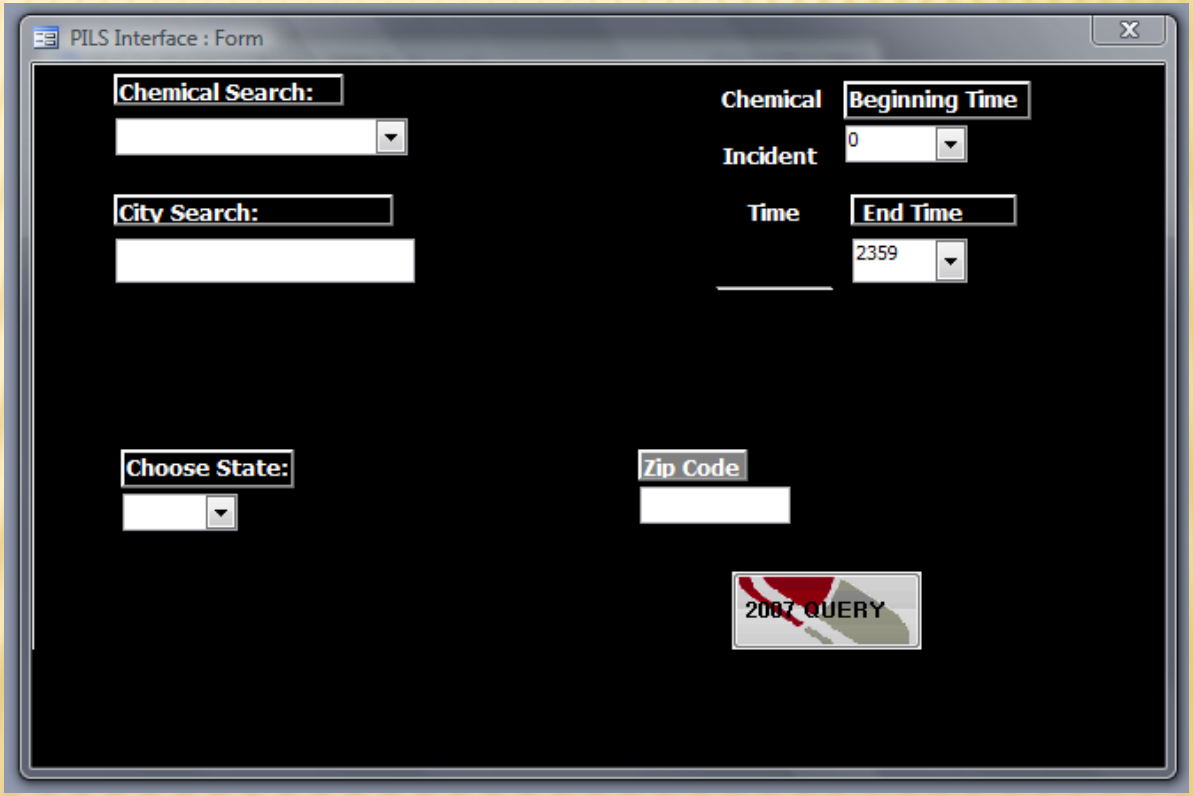
- Distinctions between the state-of-the-practice in petrochemical transport
- Impacts relative to regulations and variations that exist for trucking as compared to rail
- Underlying principal scenario for decision making relative to truck routing for hazardous transport

KEY ISSUES CONTINUED

- Vulnerabilities associated with the flow of petrochemical commodities
- Security measures on the primary routes used by truckers transporting petrochemicals
- Measures of effectiveness

INITIAL PRODUCT UNDER DEVELOPMENT

- Petrochemical Incident Location System (PILS)



INTRODUCTION OF PILS

- Program runs off database of the Office of Pipeline and Hazardous Material Safety
- It will analyze where petrochemical incidents are happening and determine patterns or concentrations
- In the data set, there could be over 20,000 incidents. The record of incidents has only been kept since 1993.
- While not an overly large dataset, a computer program would make the process more efficient
- Overlay programmed data with GIS and GUI

FUTURE TASKS

- Continuing with evaluation of Truck and Rail
- Maintain a steady process improving PILS
- Hold Technology Symposium