Commercial Vehicle Radiological System Module of an Integrated Safety and Enforcement System for the 21st Century with Homeland Security Benefits

The September 11th terrorist attack has heightened the government's efforts to improve the homeland security. The trucking industry is one area that Oak Ridge National Laboratory has focused on to support homeland security. Almost everything consumed is carried by trucks at some point, regardless of the principle mode for the movement of freight, whether it is by rail, ship, or plane. With the increased number of trucks expected on the highways in the decade, the traffic flow characteristic will have to change significantly. ORNL is currently testing sensor technologies associated with detection of radiological materials in commerce. This initiative serves the security, safety and enforcement needs of local, state and federal government entities and utilizes the respective state's existing weigh and inspection infrastructure. The weigh and inspection infrastructure is recognized and accepted infrastructure by the commercial carrier industry, and thus will have a negligible impact on interstate commerce. Safety Monitoring includes drivers, vehicles and cargo addressing safety of shipments in transport, identification of unsafe vehicles and carriers, and monitoring of domestic and foreign commercial vehicles (NAFTA). Enforcement opportunities address cargo safety, tracking, placarding, motor carrier safety regulations, hazardous materials regulations, and over dimension and overweight commercial vehicles. Homeland Security Applications address Radiological Dispersive Devices (RDD) identification, identification of unsafe or illicit transport of hazardous materials including chemicals and radiological materials, and screening for shipments of illicit drugs. The overall goal of this project is to continuously improve commercial truck and bus, safety and security, through technologies to driver, vehicle, and cargo inspections. The prototype system will enhance homeland security monitoring of highway transport; thereby, creating a National Performance Based Infrastructure for Commercial Vehicle Inspection for the 21st century.

Student's Name: **Tremeshia Waters**
School Student Attends: Mississippi Valley State University
Name(s) of Mentor(s): **Robert Abercrombie, Ph.D.; Randy Walker**
Division: Computational Sciences
Program: Research Alliance for Minorities