

**(A) Project Title:** Mission Intermodal Excellence

**(B) Principal Investigators:**

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**(B) Start date:** August 16, 2012

**(C) Completion date:** December 31, 2013

**(D) NCITEC Funds:** \$110,943

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**(E) Project Description:**

*The main objective of this project is to introduce K-12 students to intermodal transportation concepts.* We will use a number of tools in order to introduce K-12 students to the benefits and challenges of using intermodal transportation. We will to develop lesson plans for the K-12 teachers to facilitate their teaching of the curricula. We plan to develop class materials which will be delivered in part by the principal investigators and graduate assistant in cooperation with the trained teachers. We plan to provide training to help teachers gain the necessary knowledge to deliver the unit and lesson plans developed. Finally, we plan to organize a competition amount the students who have participate in this program.

We will prepare two sets of curricula materials. One set will be designed for students of grades K-5. The other will be designed for students of grades 6-12. The competitions for the two groups of students will take place the same day. However, the structure of the competition will be different for the groups. The purpose of addressing these two groups of students separately is to develop lectures and class examples that reflect their level of knowledge and understanding of math and science within the construct of differentiated learning.

The curricula materials that we will develop will cover a number of important issues, and performance measures of intermodal transportation. We will discuss topics such as transportation safety, traffic flow, transportation emissions, transportation cost analysis, etc. These lectures will also reflect the importance of intermodal transportation on the performance of the supply chain for different products. The level of complexity of the lectures and corresponding problems developed will depend on the groups of students who participate in the program. In order to help students to better understand these topics our lectures will reinforce basic math, science and physics.

This program will help K-12 students understand of some important social and environmental issues that can be solved using industrial and civil engineers skills. Through this program we expect to attract K-12 students to these two areas of engineering. In addition, due to the increase in the price of gas and the increase in our awareness about environmental issues, we expect to see an increase in use of intermodal transportation. Through this program, the new generation will become aware of the importance of using intermodal transportation. Maybe some of these students will become the leaders and the engineers who will vitalize intermodal transportation.