NCITEC Project Summary

Project Title: **Workforce Productivity: Schedules, Fatigue, & Women's Health**

Principal Investigator: **A. Bondanza & P. Sherry**

Start Date: Jan 2012 **Completion Date: November 2014**

NCITEC Funds: $50,000 **Matching Funds: $55,000**

Category (select at least one and at most five categories): Safety and human factors

Project Description:

Building upon previous studies demonstrating the relationship between hours worked and accidents the present study will focus on the effects of shift work on women's health and safety in a sample of intermodal transportation workers. In particular, the shift work in intermodal transportation operations often occurs during midnight hours. Transferring containers from ships to docks, or docks to trucks, trucks to rail and so forth may occur at all hours. Recent research has suggested that disruptions to the circadian cycle in woman may also affect certain health issues related to the reproductive system. Such information may lead to design of more advantageous work schedules and training for increased individual performance and increased organizational competitiveness.

Investigations of safety, fatigue, hours of service and work schedule studies with various railroads and other transportation providers have been underway for several years. A survey instrument which will assess attitudes, personality characteristics, work habits and practices, etc. related to safe and effective shift work will be administered online to study participants. Recruitment through labor organizations, transportation companies, and transportation agencies involved with intermodal transportation will be conducted to ensure a random and representative sample of intermodal transportation employees. Particular attention will be paid to be able to have a sufficiently large sample of women in the transportation industry in order to ensure adequate statistical power for examining the health and productivity of women. Regression analyses to determine the model most likely to explain the relationship between shift work, shift characteristics and the characteristics of individual workers will be prepared and examined. These statistical analyses will provide an estimate of the size of the relationship between work schedule characteristics and the various dependent variables, which are related to individual health and productivity. Analyses will also then be used to further estimate the overall effects on organizational productivity and competitiveness. Based on the analyses a set of indicator measures will be selected that identify the effects that shift work has upon the occurrence of accidents and incidents and worker health. Also, a set of indicator measures for identifying the work attitudes and personality characteristics associated with resilience in the face of shift work will also be identified. Statistical analyses will be conducted to assess the presence of the interaction effects. A report will be drafted and presented to the stakeholders of the study. The stakeholders include the staff and management of the identified railroad. The final report will recommend training and practices for use in reducing risk to workers. The principal investigators will submit a paper describing the project to TRB/TRF for presentation at the next available conference.