

Program Progress Performance Report for University Transportation Centers

Federal Agency and Organization Element to Which Report is Submitted:

U.S. Department of Transportation
Research and Innovative Technology Administration

Federal Grant or Other Identifying Number Assigned by Agency: DTRT12-G-UTC14

Project Title: National Center for Intermodal Transportation for Economic Competitiveness (NCITEC)

Program Director (PD) Name, Title and Contact Information (e-mail address and phone number):

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Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD: same as PD

Submission Date: July 15, 2012

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Recipient Organization (Name and Address): U.S. Department of Transportation
Research and Innovative Technology Administration
(Denise Dunn, UTC Grant Administrator)
1200 New Jersey Ave, S.E.
Washington, DC 20590

Recipient Identifying Number or Account Number, if any: 363277-061300-021000

Project/Grant Period (Start Date, End Date): 1/1/2012 – 1/31/2014

Reporting Period End Date: June 30, 2012

Report Term or Frequency (annual, semi-annual, quarterly, other): Quarterly, PPR1

Signature of Submitting Official:

1. Accomplishments

As indicated in our grant application, NCITEC's major goals are to directly address the economic competitiveness and safety of the national intermodal transportation system. Economic competitiveness and safety are two of the five strategic goals that U.S. Department of Transportation (USDOT) has identified. The next section provides more specific goals of NCITEC.

1.1. What are the major goals and objectives of the program?

- Develop, implement and maintain a comprehensive research program that addresses the economic competitiveness and safety of the national intermodal transportation center.
- Develop educational programs in intermodal transportation that incorporate the multidisciplinary nature of intermodal transportation by drawing upon the resources of each university.
- Utilize modern educational technologies, and develop effective professionals in intermodal transportation.
- Enhance the public awareness, understanding, and appreciation of intermodalism and its role in the modern world, including career opportunities in the field.
- Offer interdisciplinary programs and experiential training in intermodal transportation operations to provide a steady source of transportation professionals to public and private organizations.
- Ensure the availability of research results to potential users in a form that can be directly implemented, utilized, or otherwise applied.
- Strengthen the collaboration between NCITEC consortium members as well as between federal, state, and local agencies.
- Develop ties with other University Transportation Centers (UTCs) and USDOT's research clusters to create opportunities for collaborative activities.

1.2. What was accomplished under these goals?

- *Develop, implement and maintain a comprehensive research program that addresses the economic competitiveness and safety of the national intermodal transportation center:* As soon as UTC awards were announced we (i.e., NCITEC Executive Committee) developed a procedure for inviting, evaluating, and selecting projects to be funded by NCITEC. We created a list of external reviewers. This list includes about 75 individuals who are faculty members at U.S. universities (other than those at the five NCITEC consortium members), state DOT employees at each of the four states represented, private transportation consultants, and researchers at private organizations such as railroad companies. We prepared a "Request for Proposals" that was emailed to all researchers at the NCITEC consortium members on 2/15/2012. It was also posted on our website (ncitec.msstate.edu). We received 40 proposals by the due date of May 8, 2012. The proposals were assigned to reviewers based on the keywords the PIs provided and the expertise areas the reviewers provided. We tried to ensure that each proposal was reviewed by at least three reviewers and each reviewer received about four proposals. This ensured that the load on each reviewer was low and that each proposal was rigorously reviewed. In Early July

the Executive Committee made the final selection decisions, and of the 40 proposals those listed in the appendix were funded.

- *Develop educational programs in intermodal transportation that incorporate the multidisciplinary nature of intermodal transportation by drawing upon the resources of each university:* Nothing to report.
- *Utilize modern educational technologies, and develop effective professionals in intermodal transportation:* Nothing to report.
- *Enhance the public awareness, understanding, and appreciation of intermodalism and its role in the modern world, including career opportunities in the field:* Nothing to report.
- *Offer interdisciplinary programs and experiential training in intermodal transportation operations to provide a steady source of transportation professionals to public and private organizations:* Nothing to report.
- *Ensure the availability of research results to potential users in a form that can be directly implemented, utilized, or otherwise applied:* Nothing to report.
- *Strengthen the collaboration between NCITEC consortium members as well as between federal, state, and local agencies:* We are in close collaborations with state DOTs. The Mississippi (MDOT), Louisiana (LADOTD), Colorado (CDOT), and Virginia (VDOT) Departments of Transportation have all served as reviewers on some of our proposals.
- *Develop ties with other University Transportation Centers (UTCs) and USDOT's research clusters to create opportunities for collaborative activities:* We are in discussions with the Regional UTC at the University of Florida, the Tier 1 UTC at Georgia Tech, and the Transit oriented UTC at the University of South Florida to organize a regional conference.

1.3. What opportunities for training and professional development has the program provided?

Since we are still at the beginning stages of our program we have not yet provided any training and development programs.

1.4. How have the results been disseminated? If so, in what way/s?

There are currently no results from this grant, but once we get results they will be posted on our website. We are also encouraging the investigators to publish their work in scholarly journals and conferences. We will also work with the offices of commercialization and technology transfer at the consortium members to disseminate the results.

1.5. What do you plan to do during the next reporting period to accomplish the goals and objectives?

We will finalize the subcontracts for the selected projects. PIs will begin to work on the projects. We began discussions with the Regional UTC at the University of Florida, the Tier 1 UTC at Georgia Tech, and the Transit oriented UTC at the University of South Florida to organize a regional conference. We will work towards finalizing this regional effort. We will work on our first newsletter. We will also finalize our Advisory Board.

2. Products

2.1. Publications, conference papers, and presentations:

Nothing to report.

2.2. Website(s) or other Internet site(s):

All products will be published on NCITEC's web site (www.ncitec.msstate.edu).

2.3. Technologies or techniques:

Nothing to report.

2.4. Inventions, patent applications, and/or licenses:

Nothing to report.

2.5. Other products, such as data or databases, physical collections, audio or video products, software or NetWare, models, educational aids or curricula, instruments, or equipment

Nothing to report.

3. Participants & Other Collaborating Organizations

3.1. What individuals have worked on the program?

Name	Burak Eksioglu, Ph.D.
Program/Project Role	NCITEC Director
Number of hours worked during the reporting period	Approximately 300 hours
Contribution to the Program/Project	Responsible for overall leadership and management of the NCITEC Consortium
Funding Support	NCITEC, Mississippi State University (MSU)
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Pat Sherry, Ph.D.
Program/Project Role	NCITEC Executive Director, University of Denver (DU) Representative
Number of hours worked during the reporting period	Approximately 100 hours
Contribution to the Program/Project	Serve as a liaison between NCITEC and DU
Funding Support	NCITEC, DU
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Waheed Uddin, Ph.D.
Program/Project Role	NCITEC Associate Director of Research, University of Mississippi (UM) Representative
Number of hours worked during the reporting period	Approximately 150 hours
Contribution to the Program/Project	Serve as a liaison between NCITEC and UM
Funding Support	NCITEC, UM
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Harold 'Skip' Paul, P.E.
Program/Project Role	NCITEC Associate Director of Technology Transfer, Louisiana State University (LSU) Representative
Number of hours worked during the reporting period	Approximately 100 hours
Contribution to the Program/Project	Serve as a liaison between NCITEC and LSU
Funding Support	NCITEC, Louisiana Transportation Research Center
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Kelwyn D'Souza, Ph.D.
Program/Project Role	NCITEC Associate Director of Education and Workforce Development, Hampton University (HU) Representative
Number of hours worked during the reporting period	Approximately 100 hours
Contribution to the Program/Project	Serve as a liaison between NCITEC and HU
Funding Support	NCITEC, HU
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Mary Ann Richardson
Program/Project Role	NCITEC Budget Manager
Number of hours worked during the reporting period	Approximately 200 hours
Contribution to the Program/Project	Oversee all budget related issues
Funding Support	NCITEC, MSU
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a

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Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Li Zhang, Ph.D.
Program/Project Role	MSU Representative
Number of hours worked during the reporting period	Approximately 100 hours
Contribution to the Program/Project	Assist the NCITEC director in center activities such as research selection.
Funding Support	NCITEC, MSU
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Tom White, Ph.D.
Program/Project Role	MSU Representative
Number of hours worked during the reporting period	Approximately 25 hours
Contribution to the Program/Project	Assist the NCITEC director in center activities such as communications with the reviewers.
Funding Support	NCITEC, MSU
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	V.J. Gopu, Ph.D.
Program/Project Role	Louisiana Transportation Research Center (LTRC) Representative
Number of hours worked during the reporting period	Approximately 100 hours
Contribution to the Program/Project	Serve as a liaison between NCITEC and LTRC
Funding Support	NCITEC, LTRC
Collaborated with individual in foreign country	n/a
Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

Name	Devendra Parmar, Ph.D.
Program/Project Role	Hampton University (HU) Representative
Number of hours worked during the reporting period	Approximately 100 hours
Contribution to the Program/Project	Serve as a liaison between NCITEC and HU
Funding Support	NCITEC, HU
Collaborated with individual in foreign country	n/a

Country(ies) of foreign collaborator	n/a
Traveled to foreign country	n/a
If traveled to foreign country(ies), duration of stay	n/a

3.2. What other organizations have been involved as partners?

MDOT, CDOT, LADOTD, and VDOT have all been involved in proposal reviews. We also used reviewers from numerous other universities and private organizations to reduce the load for each individual reviewer.

3.3. Have other collaborators or contacts been involved?

We have been in contact with the Regional UTC at the University of Florida, the Tier 1 UTC at Georgia Tech, and the transit-oriented UTC at the University of South Florida.

4. Impact

4.1. What is the impact on the development of the principal discipline(s) of the program?

Nothing to report.

4.2. What is the impact on other disciplines?

Nothing to report.

4.3. What is the impact on the development of transportation workforce development?

Nothing to report.

4.4. What is the impact on physical, institutional, and information resources at the university or other partner institutions?

Nothing to report.

4.5. What is the impact on technology transfer?

Nothing to report.

4.6. What is the impact on society beyond science and technology?

Nothing to report.

5. Changes/Problems

5.1. Changes in approach and reasons for change:

Nothing to report.

5.2. Actual or anticipated problems or delays and actions or plans to resolve them:

Nothing to report.

5.3. Changes that have a significant impact on expenditures:

Nothing to report.

5.4. Significant changes in use or care of animals, human subjects, and/or biohazards:

Nothing to report.

6. Special Reporting Requirements

No additional award-specific reporting requirements.

List of Proposals Funded:

Title: The Interaction of Shift Work and Worker Resilience on Health & Safety of Intermodal Transportation Workers

PI: Allison Bondanza

NCITEC Amount: \$76,106

Title: Innovative Approaches to Improved Intermodal Transportation Infrastructure Funding and Financing through Public-Private Partnerships

PI: Andrew Goetz, University of Denver

NCITEC Amount: \$60,000

Title: Using a Typological Approach to Compare the Impact of Transit-Oriented Development on travel Behavior in the United States

PI: Andrew Goetz, University of Denver

NCITEC Amount: \$50,000

Title: Factors Affecting Recruitment and Retention of Intermodal Transportation Workforce: Inclusion, Advancement & Selection

PI: Patton Garriott, University of Denver

NCITEC Amount: \$73,000

Title: Effects of Safety Culture & Leadership on Accident Rates among Transportation Workers

PI: Patrick Sherry, University of Denver

NCITEC Amount: \$109,000

Title: Three Integrated Projects to Enhance Non-Contact Rail Inspection Technology for Application to Substructure Health Evaluation on Both Rail and Road Bridges

PI: Elizabeth Ervin, University of Mississippi

NCITEC Amount: \$202,096

Title: Disaster Protection of Transport Infrastructure and Mobility Using Flood Risk Modeling and Geospatial Visualization

PI: Waheed Uddin, University of Mississippi

NCITEC Amount: \$150,000

Title: Terminal Location Planning in Intermodal Transportation with Bayesian Inference Method

PI: Lei Cao, University of Mississippi

NCITEC Amount: \$98,856

Title: Integrated Intermodal Transportation Corridors for Economically Viable and Safe Global Supply Chain

PI: Waheed Uddin, University of Mississippi

NCITEC Amount: \$130,376

Title: Intermodal Transportation Infrastructure Interactions: Utilizing Acoustic Emission and Other Non-destructive Evaluation Technologies

PI: Devendra Parmar, Hampton University

NCITEC Amount: \$229,227

Title: Interdisciplinary Transportation Education and Workforce Development Modules

PI: Kelwyn D'Souza, Hampton University

NCITEC Amount: \$116,967

Title: The Impact of Modifying Jones Act on the US Domestic Shipping

PI: Asaf Ashar, Louisiana State University

NCITEC Amount: \$98,862

Title: Development of Performance Measures for Freight Transportation

PI: Peter Kelle, Louisiana State University

NCITEC Amount: \$74,449

Title: Economic Impact Analysis of Short Line Railroads

PI: Jared Llorens, Louisiana State University

NCITEC Amount: \$50,820

Title: Development of a Tool for Documenting, Tracking, Recording, and Analyzing Improvements to Intersection Sites and Roadway Departures in Curve Locations

PI: Helmut Schneider, Louisiana State University

NCITEC Amount: \$67,052

Title: Development of Minimum State Requirements for Local Growth Management Policies

PI: John Renne, Louisiana State University

NCITEC Amount: \$148,023

Title: Developing a Highway Safety Fundamentals Course

PI: Xiaoduan Sun, Louisiana State University

NCITEC Amount: \$31,316

Title: Improving Freight Crash Incident Management

PI: Chester Wilmot, Louisiana State University

NCITEC Amount: \$75,840

Title: Improving Safety Vulnerable Road Users: Effectiveness of Environment and In-Vehicle Warning Systems at Intermodal Interchanges

PI: Daniel Carruth, Mississippi State University

NCITEC Amount: \$70,202

Title: Analyzing the Impact of Intermodal-Related Risk to the Design and Management of Biofuel Supply Chain

PI: Sandra Eksioglu, Mississippi State University

NCITEC Amount: \$100,877

Title: Real-time Transit Vehicle Routing Optimization in Intermodal Emergency Evacuations - A Technical Transfer and Research Proposal

PI: Li Zhang, Mississippi State University

NCITEC Amount: \$100,905

Title: Passenger Usages of the Intermodal Transportation System: An Analysis of the 2009 National Household Travel Survey Data

PI: Guangqing Chi, Mississippi State University

NCITEC Amount: \$32,729

Title: Mission Intermodal Excellence

PI: Sandra Eksioglu, Mississippi State University

NCITEC Amount: \$110,943

Title: Simulation Modeling of Domestic and International Intermodal Supply Paths

PI: Allen Greenwood, Mississippi State University

NCITEC Amount: \$99,686

Title: Analyzing Traffic layout Using Dynamic Social Network Analysis

PI: Islam El-adaway, Mississippi State University

NCITEC Amount: \$81,507

Title: Education Outreach for Intermodal Transportation – Moving minds at the speed of time

PI: Lemond Irvin, Mississippi State University

NCITEC Amount: \$50,091

Title: MOBILlcity: Tirana Multimodal Station Competition

PI: Alexis Gregory, Mississippi State University

NCITEC Amount: \$1,140