UTC PROJECT DESCRIPTION

PROJECT NUMBER:
00304

PROJECT TITLE:
Gearing Up for Transportation Engineering, A Summer Institute

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PROJECT OBJECTIVE:
The objective of this project is to develop a summer program for encouraging diversity in transportation-related educational programs in Alabama.

PROJECT ABSTRACT:  
The major goal of this program is to introduce middle school students from under-represented groups to basic engineering and transportation-related concepts. An additional goal of the project will be to draft local minority and female engineers to act as mentors. Students will use real world examples and new technologies in their hands-on activities. Instructional and interactive experiences will be developed with this grant to motivate interest in transportation engineering and related science topics. The strategy of this program is aimed at producing students who know "how to find out" and "how to examine and evaluate evidence." Once the individual experiments and full curriculum are developed and tested, the program can also be implemented for on-site school visits. A project deliverable will be a manual detailing all aspects of the program for these visits.

PROJECT TASK DESCRIPTIONS:  
1. Committee to select 20 students based on potential and interest levels.  
2. Schedule mentors. Contact professional organizations (NSBE, SWE, ASCE), interested college students, local companies and Huntsville Center of US Army Corps of Engineers.  
3. Set-up schedule and lab experience. PIs meet several times to discuss objectives of each lab experience and develop individual experiments.  
4. Run summer institute tentatively scheduled for June 2000, to run for one week.  
5. Complete manual for implementation at school visits.  

MILESTONES AND DATES:  
Project Start Date: January 1, 2000  
Task 1 completion: March 1, 2000  
Task 2 completion: May 31, 2000  
Task 3 completion: June 1, 2000  
Task 4 completion: July 31, 2000  
Task 5 completion: September 30, 2000  
Task 6 completion: November 30, 2000  
Project completion: December 31, 2000

TOTAL BUDGET: 
One-year project: UTCA $61,280; total budget $122,727.

STUDENT INVOLVEMENT:  
The project will employ two undergraduate student assistants (either minority or from an under-represented group) to help in design and set-ups of projects and assist the participating middle-school students. Other university students will act as volunteers through the SWE, ASCE and NSBE student chapters.
RELATIONSHIP TO OTHER RESEARCH PROJECTS:
This project can be viewed as a stand-alone project as it does not tie into any other UTCA project.

TECHNOLOGY TRANSFER ACTIVITIES:
The team members will prepare documents of lab activities in manual form (both student activity guide and teacher instruction guide) for implementation next year at sister institutions. The research findings of this study will be incorporated into a final report and will be distributed to transportation professionals throughout the state. The PI will write a paper detailing the program for submission to either the Journal of American Society of Engineering Education, ASCE Transportation Journal or TRB.

POTENTIAL BENEFITS OF THE PROJECT: (Research relevance and impacts to Alabama)
This proposal addresses the mission and several of the major goals of the UTCA. In addition to providing educational experiences for minority students within Alabama (thus addressing diversity issues), this program has the potential to affect the future workplace (human resources issues). The students will become involved in working on transportation-related safety research at an early age and thus may gravitate towards the profession as they mature. This will also address the technology transfer goal of the center since student assistants; mentors and participants will be exposed to state of the art technology within the curriculum.

TRB KEYWORDS:
Transportation, education, safety, outreach, diversity.