RESEARCH PROJECT DESCRIPTION

PROJECT NUMBER: 06304

PROJECT TITLE: Summer Transportation Engineering Institute – Phase VII

PRINCIPAL INVESTIGATORS:
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PROJECT OBJECTIVE:
The objective of this research is to continue a summer program for encouraging diversity in transportation-related educational programs in Alabama.

PROJECT ABSTRACT:
The numbers of female and minority students are increasing overall in engineering, however there is still a relatively small percentage drawn to the field of transportation engineering. As a consequence, there is a need to educate young people about the profession to encourage under-represented individuals to become engineers. Therefore, the major goal of this program is to introduce middle school students, with preference to 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." The summer program will involve inviting middle school students, referred by their teachers, to UAH for a one-week intensive transportation engineering seminar. Another week will be devoted to alumni students and involve advanced research-oriented experiments.

Since this proposal is the commencement of seventh year for this UTCA project we have an alumni-base of over 180 students, with some at college entry age. Thus a survey of the alumni from the first two years will be conducted to determine if the past participants have entered engineering or science studies to quantify the impacts of this program in North Alabama.
PROJECT TASKS AND SCHEDULE:
06 Task 1: Jan 2006 – Receive funding
Task 2: Feb – Send letters to schools
Task 3: Mar – Formal commitments with schools
Task 4: Apr – Participants selected
Task 5: May – Confirm dates and letters to students
Task 6: Apr-Jun – Set up experiments, trips & lab materials
Task 7: May – Select mentors (professionals & assistants)
Task 8: May-Jun – Finalize schedule-send to participants
Task 9: July – Implement program
Task 10: Jul-Sep – Survey of Alumni & Evaluation
Task 11: Oct – Conduct CE Challenge at UAH
Task 12: Oct-Dec – Deliverables, final report

BUDGET
One-year project—UTCA $49,900 UAH cost share: 56,245 Total Budget $106,154

STUDENT INVOLVEMENT:
The project will employ two graduate students and four undergraduate student assistants (with preference to minorities or under-represented groups) to help in designing the projects, documenting plans, laboratory set-ups, and assist with the participating instructors at the institute. Other university students will act as volunteers through the SWE, ASCE and NSBE student chapters. These students will use their design experiences to complete a selected topic course in fall.

TECHNOLOGY TRANSFER ACTIVITIES:
The team members will prepare documents of lab activities in manual form (both student activity guide and teacher instruction guide) and electronic version as a teacher resource. The research findings of this study will be incorporated into a final report and will be distributed to transportation professionals throughout the state

TRB KEYWORDS:
transportation, education, safety, outreach, diversity