

## PROJECT LEAD THE WAY: MIDDLE COLLEGE PARTNERSHIP BETWEEN ORANGEBURG CONSOLIDATED DISTRICT SCHOOL DISTRICT FOUR AND ORANGEBURG-CALHOUN TECHNICAL COLLEGE

### **Summary**

The Middle College Partnership between Orangeburg Consolidated School District Four and the Orangeburg-Calhoun Technical College aims to increase college retention and completion rates by providing high school students with effective preparation and greater access to college coursework.

The Orangeburg-Calhoun Technical College Middle College Division offers courses in three focus areas: University Transfer, Health Sciences, and Career and Technology Programs. One of the fastest growing programs within the Career and Technology focus group is the Project Lead the Way® Pre-Engineering Institute (PLTW). Hosted by the Orangeburg Consolidated School District Four Cope Area Career Center (OCSD4/CACC), the Pre-Engineering Institute currently serves approximately 60 students from rural areas within a 33-mile radius. Students who enter the Pre-Engineering Institute in the ninth grade and remain until completion of their senior year will graduate with 32 college credits comprised of engineering and general education coursework. The program enables students to develop critical thinking skills through hands-on projects incorporating computer-aided drafting, math, and science. Students create, design, and build robots, cars, trains, trebuchets, and bridges. Cope Area Career Center serves students from Branchville High School, Bamberg-Ehrhardt High School, and Denmark-Olar High School. The program has grown from 14 students in 2006-07 to over 60 students having currently served a total of 356 students. Last year, 25 PLTW students walked across the stage for the first time in OCSD4, well on their way to becoming engineers.

### **Demographics**

- *Target Settings:* Rural (approximately 33 sq. mile radius)
- *Target Groups Served:* Grades 9 - 12 (78.1% impoverished; 47.2% white; 47.6% African-American)
- *Districts Served:* Orangeburg Consolidated District 4; Bamberg 1

### **Research and Evaluation**

*What national or other research was considered during the development of this program/initiative?*

*Describe the evidence that shows the program/initiative works.*

South Carolina and the nation face a shortage of Science, Technology, Engineering and Mathematics (STEM) professionals with either the associate or the baccalaureate degree, especially those who are “workplace ready.” In addition, the engineering and science education “lag” by underrepresented minorities and women is also an issue in the state and in the region. This lag has both state and national education leaders and policymakers worried over whether engineering schools can attract and retain minorities at a rate consistent with their growth in the larger student population (Roach, 2004).

Despite American society's growing reliance on science expertise and technology, the percentage of college-bound high school graduates pursuing engineering careers has consistently ranged around nine percent over the past 30 years, with only six percent of college-bound high school students choosing to pursue science degrees (Chubin and Babco, 2003). This national dilemma is a critical issue for Orangeburg-Calhoun Tech and its service area, where local demographics, high school preparation, and college readiness issues exacerbate this national issue.

Even before the recent dramatic economic development initiatives, the five counties of the region's service area have seen its industry/manufacturing sector change rapidly. In short, what our service area engineering and manufacturing employers are facing is not a lack of employees, but rather a shortfall of qualified employees - especially underrepresented populations, with specific educational math, science, engineering, and technology skills. The OCSD4-CACC Middle College Partnership involves a formal partnership designed to improve and positively impact the recruitment, retention, and advancement of STEM professionals and provide for their continuing education through a career ladder.

The initial cohort group of 28 students will graduate in Spring 2012. Twenty-six students completed at least three years of the program. Twenty-two students will enter college in the fall 2012 semester. Fifteen students will be enrolled in a STEM related field.

### **Resources**

- *Annual Cost:* \$96,450 (\$52,000 for instructor; \$1200 for consumable materials and equipment; \$1700 presentation software; \$19,000 computer upgrade; \$6350 software renewal; \$15,000 community lab)
- *Funding Sources:* \$5000 grant from SME Education Foundation (Society of Manufacturing Engineers)
- *Staffing Needs:* \$40,000 One additional instructor
- *Infrastructure/Equipment Needs:* \$4200 electrical wiring and data drop upgrade
- *Partner Organizations:* Orangeburg-Calhoun Technical College Middle College Division, Cope Area Career Center, Orangeburg Consolidated School District Four and Bamberg One School District

### **Contact Information**

Sandra Jameson, Principal - Cope Area Career Center, Orangeburg Consolidated School District Four  
803.534.7661; jamesons@orangeburg4.net