

# CTE in Tennessee



Spring 2009  
Volume 1, Issue 1

## ASSISTANT COMMISSIONER'S MESSAGE



**RALPH BARNETT, ASSISTANT COMMISSIONER  
OF CAREER & TECHNICAL EDUCATION**

Welcome to the first edition of Tennessee's statewide Career and Technical Education (CTE) newsletter, CTE in Tennessee. The CTE newsletter will be published three times each year. For many years we have known there were unique and innovative CTE programs all across our great state. It is our hope that many of our best kept secrets become statewide initiatives. This is an opportunity for us to market CTE and to enhance its image; this is your chance to share, market and learn.

It is our hope you will use this newsletter for many purposes. I am sure your principals, teachers and counselors will find it helpful. Many local groups come to mind such as the CTE Advisory Council, CTE alumni groups, local board of education members, central office staff, chamber of commerce staff and members, local county court members and elected officials on all levels, just to name a few.



I know that technical skill assessment is a "hot topic." We are well underway toward developing a rubric for teachers to use when assessing student competency. On three different occasions we have invited both teachers and administrators to come to the table and share their ideas. We are piloting this rubric on a limited basis this year with an eye on a larger pilot for the next school year. The purpose of the rubric is to increase the validity and reliability of teacher assessment of student competencies. If we accomplish this goal, we may be able to eliminate third party assessments as the measure for effectiveness for federal reporting. I believe teachers know best, especially when compared to a two-hour multiple choice test.

DATA, DATA, DATA...nothing tells the story like reliable and accurate data. Please consider using the state report card to add local facts and figures to enhance your message. CTE has a great website, [www.state.tn.us/education/cte](http://www.state.tn.us/education/cte), that could be very useful to you in adding additional information to your adapted newsletter. Also, refer to the 2020 plan (found on our website) to review the mission, vision and plan of action for CTE. These, along with the state and your local Perkins IV plan, should provide you with an abundance of information.

Many of you are involved in regional, state and national Career & Technical Student Organization (CTSO) conferences. Showcase your teachers and students as they participate and compete. We all know our students do a great job in the classroom and in competitive events; let everyone else know, too, by submitting an article for the next CTE in Tennessee newsletter. Guidelines for submitting an article can be found on the CTE website: [www.state.tn.us/education/cte](http://www.state.tn.us/education/cte).

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## HIGH SCHOOLS THAT WORK BEST PRACTICES

### At Grundy County High School, Projects Connect Students to College and Community

One of Tennessee's *High Schools That Work (HSTW)* sites is featured in the October 2008 publication, "*Integrated Academic and Career/Technical Learning Shows Real-Life Applications of Education.*" Below is an excerpt from the SREB newsletter of "Best Practices" in implementing *HSTW*.

When leaders and teachers at Grundy County High School (GCHS) in Coalmont, Tennessee, joined *High Schools That Work (HSTW)*, they accomplished a number of things — using data to set higher standards, combining academic and career and technical education (CTE) studies, offering guidance and extra help and supporting students in completing service learning projects that extend the classroom into the community.

"Our entire school culture has changed," said Golda Colquette, assistant principal and director of CTE. "We have faculty buy-in and ownership for implementing the *High Schools That Work* Key Practices."

GCHS enrolls 726 students in a rural, economically disadvantaged county east of Nashville. Almost 100 percent of students are white, and 90 percent are completing CTE pathways. The school received a Gold Improvement Award from the Southern Regional Education Board (SREB) in 2007 for making significant gains in student achievement in reading, mathematics and science on the *HSTW* Assessment between 2004 and 2006 and meeting the Adequate Yearly Progress (AYP) criteria of No Child Left Behind. Common planning time for teachers has resulted in many integrated projects to show the connections between academic and CTE content.

**Alternative Fuel** — One project involves agriculture and physical science students in producing bio-diesel fuel. Welding students lend a hand by helping assemble the system, which can produce

40 gallons of fuel every 12 hours. So far, the system has produced close to 1,500 gallons for use in tractors and mowers. The physical science standards that students met in doing the project included selecting appropriate tools and technology to collect precise and accurate quantitative and qualitative data; investigating chemical and physical changes; using appropriate units to measure or calculate the mass and volume of substances; and identifying a substance as acidic, basic or neutral based on its pH or response to an indicator or instrument. When word spread about the project, a nearby college asked GCHS students to conduct a workshop on bio-diesel fuel for its agriculture students. "How many high school students can say they have taught a college class?" asked Donovan Stockwell, agriculture teacher and *HSTW* coordinator at GCHS.

**Recycling Project** — Students launched a recycling project in 2007 when they conducted an audit of how energy was being used at the school and how it could be conserved district-wide. The findings led to a project in which students have collected thousands of pounds of plastic bottles, paper and cardboard for recycling.

**Business Directory** — Science teacher Brian Masters and his service learning students received a \$3,000 grant from The University of the South in Sewanee, Tennessee, to publish a directory containing information about businesses in Grundy County and an adjoining county. The students contacted business owners to sell advertisements to help with the future cost of printing. They also researched the histories of the two counties and wrote profiles to include in the directory. Art students designed many of the ads. The purpose of The Gateway to the Cumberland project was twofold — to highlight local businesses and to show the types of enterprises that are needed in the area. "It's possible that some of our students might decide to fill that need by starting businesses of their own," Masters said.

Link for CTE program information  
and contact directory:

[www.state.tn.us/education/cte](http://www.state.tn.us/education/cte)

## 2007-2008 Reserve Grant Highlights

One of the fun parts of learning about innovative projects in schools and systems is the fact that they can often take on a life of their own. Faculty, students and even the community often become so engaged in the process that they frequently find new paths in which to take their program.

### *COOKING GREEN WITH USED CAFETERIA COOKING OIL*

For example, an agriculture program at South Side High School in Jackson-Madison County received a Perkins IV Reserve Grant from the Department of Education. The purpose of the program was to make biodiesel fuel from used cooking oil. The program engaged all students and crossed agricultural curriculum with studies in biology and chemistry. In the future, the program plans to work with its Automotive Service Excellence (ASE) automotive programs in broadening its activities. The school gave away a potassium rich liquid, a by-product of the biodiesel production, to put on compost piles. Melissa Perry, contact for the program, said "Students had a tremendous feeling of success when they realized that this project wasn't something that you just hear about in the news. They could actually make a usable fuel product. Having parents come in to 'tour' the use was amazing. When students are able to intelligently discuss the hot topics of the fuel shortage, and actually know more about it than their parents, it is wonderful!" The school worked with an area manufacturer, an advisory committee member, and a local tractor dealership, to run tests and burn the oil in their tractors.

### *PROJECT LEAD THE WAY*

Oak Ridge High School is one of several schools offering or preparing to offer Project Lead the Way (PLTW) programs. Oak Ridge has used the program as a part of a CTE Engineering/Manufacturing Technology Academy, which is designed to help students successfully transition from middle school to high school to postsecondary education. One of its goals is to increase the number of nontraditional gender participants and concentrators in the engineering/manufacturing academy. The sequence of courses for PLTW includes engineering with specific math and science requirements. For additional information about the program at Oak Ridge High School, contact Gayle Ward.

One of the common themes of schools which received grants for Project Lead the Way was the challenge of researching and addressing requirements and deadlines, including professional development and equipment purchases in advance of the program. Marcella Bentley, contact person for Jackson County, said that it would be helpful to have a designated person in charge of communication between partners and assigned responsibilities. This would have been of particular assistance in coordinating secondary/postsecondary transitions. Additional PLTW programs are being rolled out in Giles County (Bill Davis, contact), Greeneville/Greene County (Vicki C. Kirk and Wayland Seaton, contacts), Lexington High School (Lisa Lewis-Evans, contact), and Jackson Central Merry High School (Jeff Replogle, contact).

### *SECONDARY/POSTSECONDARY TRANSITION*

Rutherford County has worked to improve the secondary/postsecondary transition of its Marketing programs, as well as introducing a new Marketing program—FUSION. Contact Kay Nixon for information about these programs.

The system has trained teachers in the College-Level Examination Program® (CLEP) so they can offer course work preparing students for CLEP exams with the intent that students receive college credit for their work in high school. In addition to working with the secondary/postsecondary transition in marketing, Rutherford County has been working with Motlow State Community College and assisting Health Science students with receiving Certified Nursing Assistant certification upon completion of the nursing assisting program in health science.

The FUSION Academy at Blackman High School incorporates real-world business partnerships with student-centered learning activities. The academy includes a ninth grade exploration course, a capstone senior project course, CLEP tests to provide college credit opportunities, as well as service learning and other opportunities. For additional information on the FUSION program, contact Ann Stewart.

CTE Directors' contact information can be found on the CTE website:

[www.state.tn.us/education/cte](http://www.state.tn.us/education/cte)

## Blazing Into the Future

### *High Schools That Work (HSTW)* **Key Practices in Action at Blackman High School (BHS)**

**High Expectations.** BHS motivates students to meet high expectations by integrating academics into classroom practices and giving students frequent feedback. BHS offers only Honors English and ranks number one in the state in value added Biology scores for two of the last four years.

**Program of Study.** Each student is required to complete an upgraded academic core and a concentration. BHS offers Discrete Math and Advanced Statistic classes focusing on four years of math. The FUSION academy requires a senior project.

**Academic Studies.** BHS teaches more students the essential concepts of the college-preparatory curriculum by encouraging students to apply academic content and skills to real-world problems and projects. Course offerings include Virtual Enterprise, Banking, Computer Repair, Culinary Arts and others that are a direct application to real-world problems and situations.

**Career/Technical Studies.** Students are provided access to intellectually challenging career and technical studies in high-demand fields that emphasize high-level mathematics, sciences, literacy and problem-solving skills needed in the work place and in further education. Programs of Study include Business Academy, Culinary Arts, Graphic Arts, Radio and TV, Criminal Justice, Computer Repair, Careers with Children, Mobile Electronics, Home Audio and others.

**Work-Based Learning.** Students and their parents can choose from programs that integrate challenging high school studies and work-based learning. The following programs are planned by educators, employers and students: Culinary Internship, Health Science Clinical Internship, Best Buy Internship, Marketing Co-op, Business Co-op, Careers with Children WBL, and Blaze Savings and Loan.

**Teachers Working Together.** BHS provides teams of teachers from several disciplines the time and support to work together to help students succeed in challenging academic and career/technical studies including

- **Formation of Focus Teams yearly – data driven**
- **Cross curricular groups**
- **Common planning time (lunch)**

Teachers integrate reading, writing and speaking strategies into all parts of the curriculum and integrate mathematics into science and career/technical classrooms

- Literacy Across the Curriculum Focus Team
- Data Focus Team
- Mentoring Focus Team (BEST Team)

**Students Actively Engaged.** BHS engages students in both academic and career/technical classrooms in rigorous and challenging assignments using research-based instructional strategies and technology with a focus on the following:

- Robert Marzano's strategies
- Highlighting successful strategies in meetings
- Differentiated Instruction (DI) conference emphasis
- Continuing professional development opportunities including sending teams to *HSTW* national conferences annually

**Guidance.** Counselors develop a six-year plan with all students and their parents/guardians in the spring of the eighth-grade year and review plans annually. Each student is provided with the same mentor throughout high school to assist with setting goals, selecting courses, reviewing the student's progress and suggesting appropriate interventions as necessary. BHS counselors meet with each student twice annually. Students ranked BHS guidance system above the *HSTW* goal on the 2006 and 2008 NAEP Assessments.

**Extra Help.** BHS provides a structured system of extra help to assist students in completing accelerated programs of study and high-level academic and technical content. Extra help programs include: Prime Time; credit recovery, freshman academy and a student mentoring program provided by the Mu Alpha Theta and National Honor Society. BHS students ranked BHS Extra Help above the *HSTW* goal for an intensive level of quality extra help.

**Culture of Continuous Improvement.** BHS uses student assessment and program evaluation data to continuously improve school culture, organization, management, curriculum and instruction to advance student learning. Failure rates are addressed every six weeks. The BHS Data Focus Team examines data on a regular basis to set future goals and target areas for improvement.

**2008 *HSTW* Pacesetter School**

For more information about best practices at BHS, contact:  
Gail Vick, Principal <[vickg@rcs.k12.tn.us](mailto:vickg@rcs.k12.tn.us)>