

fter a full year of implementation, The Rapides Foundation is proud of the STEM/CTE programs that are now being offered in nine Central Louisiana school districts. The efforts to increase learning in the

areas of science, technology, engineering and mathematics (STEM) and in career and technical education (CTE) are preparing students for success in the 21st century. The initiative is now in the second year, with districts continuously learning and improving on their plans to enhance student performance.

The partnership between the Foundation and school districts is addressing a national focus. This is something local education leaders recognize. "Science, technology, engineering and math are the drivers of tomorrow's economy," said Gary Jones, superintendent of Rapides Parish schools. "Those students who are not prepared in these areas will be unable to participate in tomorrow's workforce. Scientific and mathematic literacy prepare students to be engineers of problem solving. Training students to think will help ensure the financial stability of our nation."

Recognizing a need for STEM/CTE initiatives in schools, the Foundation has provided close to \$5 million since 2009 to districts to support these programs. District teams were formed consisting of superintendents, principals, math and science teachers, as well as technology leaders. Teams developed new program ideas, met with STEM experts and visited various STEM schools around the country to prepare for implementation in their respective districts.

School districts are also expanding and strengthening their career and technical education programs. CTE incorporates technology in the curriculum and can offer students a better understanding of STEM careers, giving students the encouragement to pursue a STEM-related career path.

The 2010-2011 school year marked the first full year of implementation, STEM plans included advanced leadership training and teacher professional development, expansion of advanced placement courses in math and science, and incorporating more technology, like social media, into classroom activities. Many of the districts' plans for CTE



aim to increase the number of industry-based courses offered, and provide professional development opportunities for the teachers of those courses.

"Our approach to developing the district's STEM/CTE grant has been to build an educational system that will help students learn in powerful ways," said Diane Marcantel, the district coordinator in Allen Parish. "This will enable them to manage the demands of ever-changing information, technologies, future jobs and social conditions."

Allen Parish is working to build on the projects started last year. This includes additional training in two different strategies designed to help K-12 math and science teachers plan their curriculum and teaching methods: Math Perspectives and Understanding by Design Unit Development. Both are structured to help teachers develop quality performance tasks in the classroom. "Structures and strategies for instructing toward high levels of thinking, comprehension, and rigor will be weaved through each project," Marcantel said.

The same emphasis placed on training teachers in new instructional methods is under way in Rapides Parish. Jones said they plan to expand the Discovery Learning Science Model and increase Project Lead The Way classes. Discovery Learning is designed for students to take a more hands-on approach to learning, such as group projects and hands-on experimentation. The Discovery Learning Science model will be expanded to seventh and eighth grades, and an additional eight elementary schools will be using the Discovery Science SCIENCE TECHBOOK instead of a regular textbook. The SCIENCE TECHBOOK is an online textbook that can be accessed on the internet from any computer. It is customized to Louisiana science standards and includes reading materials, interactive activities, quizzes and tests, along with teacher resources.

Education



Project Lead The Way classes are also hands-on and based in real-world experiences. A robotics class is now offered at Bolton High School, and this year Project Lead The Way will be expanded to a biomedical course at Alexandria Senior High School. Project Lead The Way classes complement required science and math courses. The Foundation's grant funding was used to provide technical support and professional development. Teachers who were trained became responsible for redelivering information to their home school faculties.

In addition to new course offerings and AP classes, Jones says the district is looking to expand the Aiken Virtual Program, which allows students to take online courses. Partnering with Aventa Learning, the expansion would offer all courses necessary for a high school diploma and TOPS requirements. Jones said virtual school opportunities would be made available to surrounding parishes as well.

Samantha Mire, a physical science teacher at Plaucheville Elementary School, examines a prism spectrum during a STEM/CTE institute science demonstration.



Olla Elementary physical science teacher Terri Stewart participates in a mathematics exercise at a STEM/CTE conference.

Sheila Causey, district coordinator in Winn Parish, said technology is playing a big role in their STEM efforts. Students currently access Skype, email, Facebook and interactive websites in the classrooms. They are also using email and Facebook to contact soldiers in Afghanistan and to communicate with a classroom in China. United Streaming also allows teachers and students to quickly download and watch Discovery Education videos. Like many of the other districts, Causey said Winn Parish is looking at expanding their Industry-Based Certification course offerings. "There will be the inclusion of Career Ready 101 concepts and topics in existing courses and the introduction of WorkKeys testing."

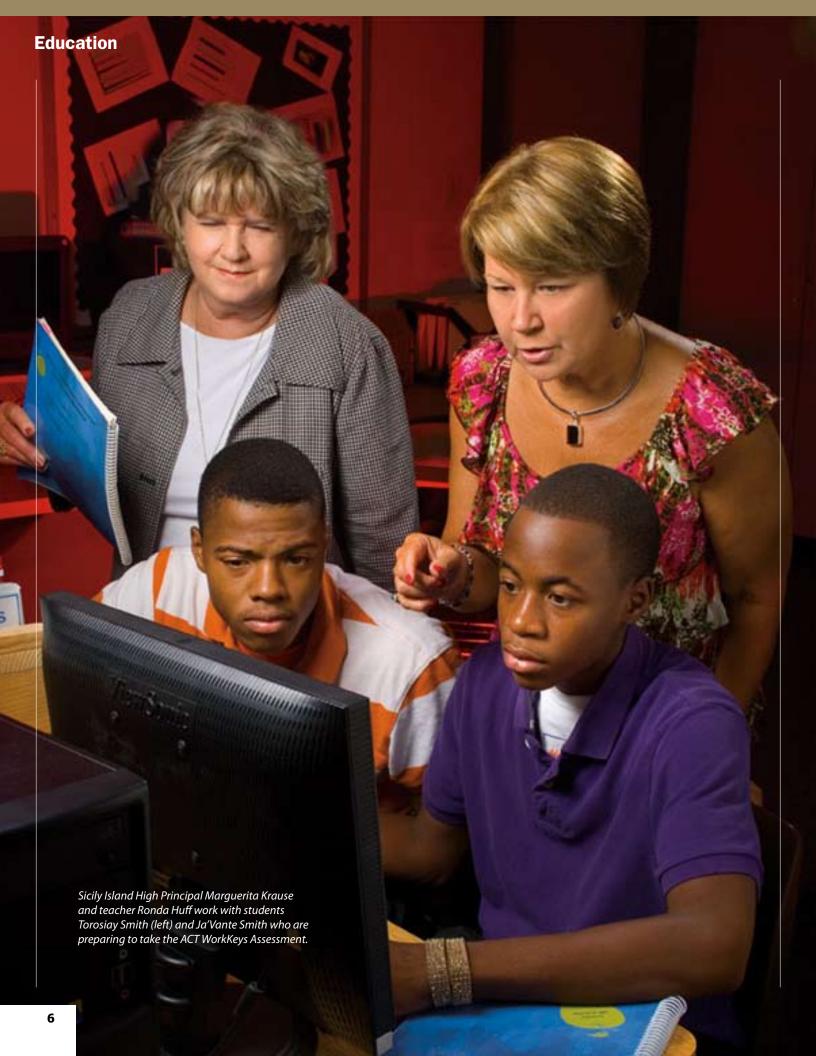
Causey cited support from the Foundation as a key element in her district's STEM/CTE efforts. "The Rapides Foundation was valuable to the implementation of this initiative and without their assistance, it would not have happened. They provided financial support as well as training and technical support."

The Foundation intends to continue its support of the STEM/CTE initiative through the 2012-13 school year. Although the Initiative is new to districts, planning teams feel confident of the benefits. "Any new initiative involves the unknown," Jones said. "Since many of tomorrow's jobs are not even created today, we are preparing students for problem solving and thinking rather than for specific careers."

The Foundation is looking forward to seeing school districts implement strategies that will give students the skills needed to be successful and move forward in 21st century jobs. Armed with the resources and a broad range of STEM careers available, the opportunities are endless.



Shaun Reynaud, physical science teacher from Lafarque Elementary, concentrates during a math exercise.





Network helps students get job certifications

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onda Huff believes one of her main goals as a teacher is to prepare students for the future, and the Cenla Work Ready Network is giving her the extra resources to do it. Huff teaches at Sicily Island High School in Catahoula Parish, one of the schools that piloted the initial phase of the network last spring. Huff used a software program called Career Ready 101 to help her students prepare for the nationally recognized WorkKeys Assessment. Results from the test are used by employers to select, hire and retain a high-performance workforce.

There are two components to the Cenla Work Ready Network. The first is the Career Ready 101 software to help students perform well on the WorkKeys Assessment. Achieving a high score on the test can earn students a National Career Readiness Certificate, which documents skills that are accepted by employers nationwide. The certificate shows an individual has mastered certain foundational basics that are important across a wide range of jobs.

The network's second component is increasing the number of students who receive Industry-Based Certifications (IBC). There are a wide range of IBCs available, from construction to certified nursing assistants and finance. The goal is to help students be prepared for the workforce directly out of high school.

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READY FOR WORK

"Now more than ever, all industries need a strong, skilled workforce to compete in their markets. The Cenla Work Ready Network is another way to prepare students for their future, and play an important role to help Cenla's businesses reach their goals," said Joe Rosier, president and CEO of The Rapides Foundation.

The network is being funded by The Rapides Foundation through a grant to The Orchard Foundation, a nonprofit local education fund that works with school districts, businesses and communities to improve educational opportunities in Central Louisiana. "Whether students are college-bound or plan on being in the workforce directly out of high school, taking the WorkKeys Assessment and earning a National Career Readiness Certificate will be of value to them. At some point they will have a job, and the skills they learned will be used," said Marjorie Taylor, executive director of The Orchard Foundation.

Starting this school year, the Career Ready 101 software is available to all high school students in nine Central Louisiana parishes. Career Ready 101 is specifically designed to prepare high school students for the WorkKeys Assessment. In addition to providing the software to high schools, the grant also allows students to take the test without charge.

Huff used Career Ready 101 in her freshman transition class because it could easily be integrated into the curriculum. The program allowed her students to work at their own pace in the classroom, reading information and answering questions on the computer in three core areas: Applied Mathematics, Locating Information and Reading for Information. Huff stressed to her students that all three skills are needed for any job, whether they enter the workforce right out of high school or after college. "It helps them understand there are skills required by employers and gives them insight about what they need to do to get there."

Career Ready 101 proved to be successful for Huff's students. A minimum score of 3 is required on each of three separate area tests to be eligible for the National Career Certificate. All 12 of the students made at least a 3 on the three tests, some even scoring 4s and 5s, earning them bronze, silver and gold levels.

Ja'Vante Smith, one of Huff's students, said a nationally recognized certificate will help him get work because it will show employers that he has the skills they need. Smith said it was a team effort with his classmates encouraging each other and eagerly anticipating their test results. "When we found out that everyone in the class received certificates, we had a celebration. Mrs. Huff was very proud of us."

Huff said her students felt pride in receiving a nationally recognized certificate. "This built up their confidence because it proved they do have a level of skill to be successful in a potential job." The certificates can be used in addition to diplomas, degrees and resumes, and can give them an advantage in the job interview process.

Sicily Island High School Principal Marguerita Krause said that confidence will give students the motivation they need to enter the workforce. Although it differs year to year, Krause says most of the school's graduates enter the workforce right out of school and opportunities are limited in their rural area. "It makes a difference for these students to have this certificate in their portfolio, giving them the edge they need to be successful in a job, and opening their eyes to opportunities they never would have known existed."

Through an Industry-Based Certification, students have the opportunity to receive extra training and employability skills in a certain industry or business, like construction or certain medical fields. Taylor said The Orchard Foundation works with educators to determine needs and integration of IBC courses in the schools.

To accomplish this goal, partnerships between business leaders and high schools are being sought so students can acquire IBCs prior to graduation. Taylor said The Orchard Foundation has held meetings with educators and business leaders in all nine Central Louisiana parishes to "cultivate business champions." Businesses are asked to help financially support IBCs in schools and provide experts in the field to help mentor and monitor students and projects. Local employers are then able to personally see the skills of future applicants.

Both components of the network are designed to use education and workforce development to meet regional economic needs. Huff believes Career Ready 101 helped her students "become individual thinkers, and that's what employers are looking for." The Foundation is excited about providing the software and other tools for teachers like Huff to help Central Louisiana students enter a workforce more prepared and confident, while assisting local businesses and communities to retain a high-performing labor force.





"There is a growing demand for careers in construction," said Donald Lacombe, a training and development specialist for Gilchrist. "As high school students prepare to enter the workforce, it is Gilchrist's hope that this course will provide students with enough information and intrigue them to either consider or pursue a career in the construction industry."

Ethan Strother is one of the students who went through the course and is now employed full-time at Gilchrist. Strother is a 2009 graduate of Glenmora High School and was in the CTC the first year it was piloted. Now as an employee, he is using the skills learned in the course. "The training I received helped me because I was already familiar with some of the equipment and tools, but I still had a lot to learn," he said. "I knew I wanted to work in construction, and this class really got me to where I am now."



Gilchrist Construction foreman Darrell Sasser gives recent Construction Technology Course graduate Calvin Branch instuction on different masonry techniques.

In addition to learning about concrete work, measurements and basic tools, CTC students worked on construction projects for the school. Strother and others in the class helped repair and construct a new drainage system for the school's cafeteria and auditorium after it had been damaged by Hurricane Gustav.

Projects similar to this one are done with the help of a specialist or expert, who mentors and oversees the students' work. Rodney Jones, another employee at Gilchrist, has worked on these projects. "Students really get a feel of what is expected in that particular field when they take this class. It's like taking a college course. When they graduate they are that much further in knowing the basics," he said.

The Orchard Foundation is working with local businesses to increase offerings. When a company makes a financial donation so an IBC can be offered, the foundation will match that up to \$5,000.

Marjorie Taylor, executive director of The Orchard Foundation, said her organization has met with business leaders in Cenla's parishes to cultivate new partnerships and explore different courses for the 2011-2012 school year. Taylor said businesses will look at their needs and work with the Foundation and school superintendents to determine which IBC courses to put in schools.

IBCs benefit both employers and students. Employers are looking to hire a skilled workforce and improve their industry. Students get the benefit of technical and industrial knowledge, as well as encouragement to pursue a particular career. Students also have the opportunity to earn a dual enrollment college credit or an industry-based certification, which many employers look for when hiring.

"It's important that folks in our community realize the importance of workforce readiness; preparing our future workforce for the tremendous career and employment opportunities that exist in Central Louisiana," Lacombe said. "The construction industry offers a wide array of good-paying jobs that are right here at home." The mission of Career and Technical Education and the CTC course is aligned with the Foundation's focus on improving the quality of education. With more opportunities available in a wide array of jobs, the Foundation is excited about adding new partnerships in the future.

TAYLOR BRINGS EXPERTISE



arjorie Taylor has been executive director of The Orchard Foundation since Jan. 1, 2011. She was hired following a national search

that attracted more than 80 applicants. Dr. Taylor has more than 20 years of experience in adult and continuing education. She holds a Bachelor of Science in Mathematics, a Master of Education in Mathematics, and a Doctorate in Professional Studies in Adult Education, all from Delta State University in Cleveland, Miss.

Ouestion. What is The Orchard Foundation?

Answer. The Orchard Foundation is a nonprofit local education fund established by The Rapides Foundation as a resource for Central Louisiana. It works with school districts, businesses and communities to improve educational opportunities in a nineparish service area. Its mission is to improve academic achievement for Central Louisiana students by promoting best practices; recruiting, retaining, and rewarding excellent and innovative teachers; building school leadership; and strengthening school and community relationships.



Marjorie Taylor, Executive Director of The Orchard Foundation

Q. What are the major initiatives of The Orchard Foundation?

Answer. 1. STEM/CTE: Through funding from The Rapides Foundation, The Orchard Foundation conducts professional development activities for area teachers and administrators in areas of STEM and Career and Technical Education.

2. CART, the Central Louisiana Academic Residency for Teachers. The CART partnership between LSU, LSUA, The Rapides and Orchard Foundations, and the nine Cenla districts, was awarded a U.S. Department of Education Teacher Quality Partnership grant. The purpose of the program is to dramatically increase the number of mathematics and science teachers in high-needs high schools who are qualified to teach AP/Dual Enrollment coursework. The five-year program combines current research and best practices for teacher

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recruitment, preparation, induction and support in rural schools. Residents are offered a tuition-free LSU Master of Natural Science degree, including teacher certification, and provided a \$35,000 stipend for the one year residency period. Their commitment is to teach for at least three years in their host district.

3. The Cenla Work Ready Network is a system designed to link education with workforce development efforts and to align them with regional economic needs. Key components include Career Ready 101, a career training course that prepares students for certification with a WorkKeys Assessment. WorkKeys is a job skills assessment system leading to the National Career Readiness Certificate (NCRC), a portable, evidence-based credential that measures essential workplace skills and is a reliable predictor of workplace success. The Network also provides assistance to high schools for the development of Industry-Based Certifications.

Q. How do these initiatives impact Central Louisiana?

Answer. Each of these initiatives is linked by the common threads of STEM and CTE. These are two of the major focus areas of education reform initiatives nationwide thus making them top priorities in our school districts. Through the STEM/CTE professional development activities, Cenla school administrators and teachers receive training in best practices through organizations recognized as national experts. As professional development budgets of our local districts continue to decrease, this training provided through The Orchard Foundation has become increasingly valuable.

Through the CART program, Central Louisiana will benefit from 60 highly qualified AP/Dual Enrollment STEM teachers over the five-year period. These teachers will eventually become mentors to other teachers and leaders in advancing college and career readiness in their districts.

The two goals of the Cenla Work Ready Network are for every high school student to receive a work ready certificate and to increase the number of Industry-Based Certifications offered in our high schools. This will have a major impact on the economic development of our region as it is creating a pool of "work-ready" potential employees.

Q. What brought you to The Orchard Foundation?

Answer. My entire professional career has centered around education on some level. I began my career in the high school classroom as a math teacher. I then spent several years in the private sector working for two Mississippi Delta manufacturing companies. From this experience in industry, I saw firsthand the challenges facing employers, from a lack of basic employability skills and work ethic to a lack of basic literacy skills in the workforce. I was also able to make a connection between the skills being taught in the K-12 classroom and what was actually needed in the workforce -- which is something so many of our teachers do not have the opportunity to experience. This inspired me to enter the field of adult education in the hope that I could make a difference in the lives of the adult workers, so many of whom could not even read or write. I spent the next 20 years working in adult education from Adult Basic Education/GED, to workplace literacy education, and finally to higher education. In 2003, my family moved from the Mississippi Delta to Central Louisiana and I worked for the Louisiana Board of Regents as the Dean of the Learning Center for Rapides Parish. I saw The Orchard Foundation as a way for my career to come full circle as most of our work centers around K-12 education. My passion for education is at all levels and this is a perfect opportunity for me to use all my knowledge and experience gained over the past years to truly make a difference in my community.

Q. What are the future goals of The Orchard Foundation?

Answer. The future goals of The Orchard Foundation should build upon the mission of improving the academic achievement of Central Louisiana students. This will be accomplished by continuing to research best practices and innovative methods of teaching and developing programs around them. We must focus our efforts around common themes that promote leadership development for educators and higher achievement for students. We will continue to explore external sources of funding to assist with the development of these programs for our local school districts.



he dream of becoming a teacher is now a reality for Theresa Fletcher. Fletcher spent 16 years as the cafeteria manager at Winnfield Senior High. This year, she entered the classroom as a math teacher at the school. Fletcher is a new graduate of CART: the Central Louisiana Academic Residency for Teachers.

She and 12 others are the first group to complete the residency program that is training advanced math and science teachers for rural schools. Residents entered the program with undergraduate degrees in math or science. During the 2010-11 school year they co-taught, observed different classrooms and took graduate

classes. At the completion of their residency they earned master's degrees and certifications to teach. "It's like a dream come true for me," said Fletcher, who is excited to get started.

CART - CENTRAL LOUISIANA ACADEMIC RESIDENCY FOR TEACHERS

The goal of CART is to train and place new teachers in the areas of Advanced Placement math and science courses in high-needs high schools. In Central Louisiana, the number of Advanced Placement courses are limited, and in rural districts more than 20 percent of teachers are teaching out-of-field or without a license. CART is designed to help those districts recruit and retain highly qualified teachers in math and science.

"I've always loved math and wanted to teach. Certain life experiences prevented me from achieving that dream when I wanted to, but this opportunity gave me the chance to go for it," said Fletcher. "To be able to teach at the school where I worked in the cafeteria is wonderful. All of the kids, they know me, and I feel I have taught them a life lesson that you are never too old to accomplish what you want."

CART focuses on recruiting candidates with ties to Cenla communities. Ninety-two people applied to be in the first group and 13 were selected. The program has a lot to offer residents. They earn a free Master of Natural Science degree from LSU, receive a \$35,000 stipend while training in the schools and also receive a teaching certification. They also must teach in that district for three years.

Reggie Braxton is another recent graduate of CART. With an undergraduate degree in biology from McNeese State University, he had plans to attend pharmacy school. Instead, Braxton started substituting at Oberlin High School where he learned about CART and decided to apply. After doing his residency at Oakdale High School, Braxton is now teaching at Elizabeth High, also in Allen Parish. He feels his background in science gives him an advantage. "I feel secure going into the classroom because I know the content material and the correct things students need to get out of the lessons. I know how to answer their questions, and believe I can generate more interest in science and increase student achievement."

The Rapides Foundation and The Orchard Foundation believe CART is a good fit for



Elizabeth High School science teacher Reggie Braxton works with 10th grade biology students as they learn the difference between plant cells and animal cells.

the education direction they are taking. The effort is to focus on improving science, technology, engineering, and math (STEM). To create the CART model, the Foundations partnered with LSU, LSUA and the nine Central Louisiana school districts. Funding is provided through an \$8 million Teacher Quality Partnership grant from the U.S. Department of Education. CART was the only rural residency Teacher Quality Partnership awarded, making it unique and an example for other school districts throughout the nation.

This past summer, the second group of CART residents started their residency. Twelve were chosen out of 66 applicants. In June, they completed six-weeks of coursework in their content area. They are now in their host schools and communities working in the classroom with a mentor teacher, while learning classroom management and teaching skills. Residents will be student-teaching four days a week and taking master's degree coursework Friday afternoons at LSUA. They will complete their master's coursework at LSU next summer.

Taneka Aristidou is one of those new residents. She graduated from LSU with a degree in biological engineering and spent three years as a division head at an engineering company. Aristidou is doing her residency at Natchitoches Central High School, where she will be hired as a chemistry teacher. She'll also be teaching an engineering class, something she is especially excited about. "I feel students will respect you more if they know you've worked in the field and have those experiences," Aristidou said. "I have a passion for the subject that I know I can pass on to students."

Like Aristidou, new CART resident James McDonald believes it is important to have high-level math and science teachers in high schools. McDonald has an undergraduate degree in biology and

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CART - CENTRAL LOUISIANA ACADEMIC RESIDENCY FOR TEACHERS

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spent time as an agriculture researcher and consultant to local farmers. "I have a lot of ideas for hands-on projects. I know I can bring a new energy to the class and teach students beyond just factual-based problems," he said. McDonald is doing his residency at Rosepine High School.

The next phase of CART is to expand to middle school grades. Program coordinators discovered that having CART residents teach seventh- and eighth-grade accelerated math got students more motivated and excited to learn the subject matter. By increasing access to highly qualified teachers in middle school, the hope is students will be encouraged to take more Advanced Placement and college-level courses in high school.

Former and current CART residents will face challenges, but they are committed. The training and mentoring they receive will prove to be of value, as they prepare to tackle the realities of teaching in rural schools. They all share Theresa Fletcher's belief that CART provides tremendous opportunities to share a passion and to pursue a dream of teaching.



CART residents travel from their host schools to LSUA every Friday to attend graduate school – counting down to next school year when they become full-time teachers. Front row, left to right: Taneka Aristidou, Marisa Lee and Anthony Soileau. Back row, left to right: Sean Ford, Jessica Harvey, Jessica Paul, Sharon Henard, Alejandra Rubio, Eric Guidry, Lacee Brown, Jon Holland, James McDonald.



The Rapides Foundation continues a legacy of community healthcare initiated in 1903.

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