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FALL 2010

FOCUS: STEM/CTE



STEM efforts move into Cenla schools

Kinder Middle School Principal Tracey Odom, shares ways to use technology to enhance learning during a group problem-solving activity.



Districts offering innovative ways to teach math, sciences.

A major effort to prepare Central Louisiana students for success in the 21st century has moved from planning stage to reality.

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STEM/CTE

■ STEM Efforts

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To reach this goal, The Rapides Foundation built on its partnerships with the nine school districts in Central Louisiana to launch a new focus – on science, technology, engineering and math (STEM), and on career and technical education (CTE). This focus is designed to help Cenla students compete globally, and one which relies on successful partnerships that have been in place for more than a decade.

“For the past 12 years we have developed tremendous trust between the Foundation and Central Louisiana’s nine school districts, and that is enabling us to take this bold step to prepare Cenla’s students for the future,” explained Joe Rosier, Foundation president and CEO. “We began our work with individual schools, then moved to the district level, and will now collaborate to provide opportunities for our students to acquire skills needed in the global economy. Through every step the Foundation has taken with the districts there’s always been one goal in mind, to improve student achievement.”

More Than A Decade Of Collaboration

Since 1998 the Foundation has been providing training and tools so teachers could improve their skills to advance student achievement. In 2004, the Foundation moved from individual schools to the district level with its funding of the Systemic Initiative in Education. This five year, \$10 million effort had at its core a belief backed by research – that professional development is the key to educational success. Districts made leadership and professional development top priorities.

The Systemic Initiative grants focused on

math and literacy as each district customized its own plans, ranging from enhancing math and literacy content to providing training for highly skilled educators to mentor less-experienced teachers. For the past several years the Foundation also provided comprehensive leadership academies for more than 300 educators with emerging and advanced skills. The academies were led by nationally recognized experts from the University of Washington’s Center for Educational Leadership and the Urban Learning and Leadership Center.

Preparing For STEM/CTE Initiative

All of this work led to the Foundation and districts’ readiness to move to an even deeper level with STEM and CTE. But before grants could be awarded to implement such a major initiative, both the Foundation and the districts took a step back to make planning a top priority. For the 2009-10 school year, the districts received planning grants to assemble their STEM/CTE Strategic Plans.

Each district recruited a team that included superintendents, principals, science and math teachers, as well as district instructional and technology leaders. The Foundation provided outside expertise to help guide the teams during their planning efforts, pushing their thinking, while providing support to complete high-quality plans.

Diane Marcantel is Allen Parish’s district coordinator, a position that works closely with the Foundation. She’s also the district’s personnel/school improvement supervisor. Marcantel said item number one for their



The Winn Parish STEM/CTE team: (seated l-r) Gena Hatcher, Nancy Crain, Heather Pendarvis, Debbie Porter, Donna Dyson, Paula Jones, and Amy Seward. (standing l-r) Steve Bartlett, Kaye Pyles, Sheila Causey, Chad Camp, Jane Griffin, Amy Dantzler and Steve Vines.



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planning team was a lot of learning. "Our first task was to learn and fully understand the terms STEM and CTE, and 21st Century Skills. We then looked at the deep infrastructures we had firmly in place." Marcantel noted they were excited to see how their STEM/CTE efforts and plans fit extremely well with district programs already in place.

Allen Parish's team, as well as the eight other districts, explored STEM/CTE in a variety of ways: from site visits to other schools

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STEM/CTE

■ STEM Efforts

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and districts in Louisiana and other states, attending conferences to learn from national experts on these topics, and bringing in consultants who are experts in these areas to provide information on successful models and how they could be adapted for Cenla's schools and students.

STEM/CTE Strategic Plans Ready To Launch

In February of 2010 each planning team presented its STEM/CTE Strategic Plan to the Foundation. Grants totaling \$1.6 million were awarded to the nine districts for the 2010-11 school year to help make their plans a reality. In addition, the Foundation awarded \$450,000 to its education entity, The Orchard Foundation, to conduct professional development institutes focused on the areas of science and math and 21st Century Skills. These institutes will focus on all grade levels from K-12 and will be held throughout the school year.

Sheila Causey is the district coordinator for Winn Parish and also serves as the math and science/CTE supervisor. Causey was a member of the planning team and feels the grants offer a rare opportunity. "It's unique because the 'out of the box' of 'creating a new box' thinking stretched our vision about STEM to try new ventures in all schools and all grade levels. During the first year a lot of researching to support activities will be done. The ideas that will be incorporated into the regular school program include Distance Learning, 21st Century Skills, Career Awareness, STEM Algebra I, STEM Physical Science and Project Lead the Way. We have a big agenda, and our team feels that all activities are doable."

Many of the STEM plans had core elements in common, such as an enhanced emphasis on teacher professional development through coaching and mentoring, increased use of data to improve student performance, and implementing strategies that have proven to be successful, such as Project Lead the Way and Discovery Science Model, which are programs infused with 21st Century Learning Skills. Project Lead The Way provides an engaging, hands-on curriculum that encourages the development of problem-solving skills, critical thinking, creative and innovative reasoning, and a love of learning.

Just as with STEM, many of the districts' plans for CTE also share a common goal; to increase the number of industry-based courses offered, use technology to add and improve CTE programs, and provide professional development opportunities for teachers on Industry Based Certification courses, Career Clusters and technical education experiences and requirements.

"Our challenge is to change the way we teach our children to learn in order to address the rapidly changing world," said Allen Parish planning team member Tracey Odom, principal of Kinder Middle School. "Teachers throughout the parish are working together to plan units to include real-life application and revising assessment to track and monitor student achievement. We are now planning units that are interdisciplinary, integrated, and include project-based learning. Lessons are planned to actively engage students in the learning process."

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WHY SUPPORT EDUCATION?

The Rapides Foundation devotes 25 percent of its spending to its education initiative. Research has shown a person's level of educational attainment is directly related to their health status and quality of life. The Foundation's mission is to improve the health status of Central Louisiana. We believe education must be a major focus of the Foundation's work to reach that goal.



Foundation's Support Vital For Success

With the school year under way and STEM/CTE programs being implemented, Rapides Parish school superintendent Dr. Gary Jones says the planning process that led to the districts' Strategic Plans was a learning experience for everyone. Speaking for all nine superintendents, Jones said he believes the Foundation's support during this period was key to creating successful plans for the future.

"It's impossible to measure this partnership strictly in terms of the financial support we've received. The Foundation has brought all the districts together to work in a collaborative manner. We've had the benefit of really bright minds, and we're staying on the cutting edge." Jones noted he gets calls from other school districts that ask how they can be a part of this work. "We truly are the envy of the rest of the state."

Jones uses the planning grant as an example of how important this assistance has been. "It gave us an opportunity to step aside from the day-to-day duties and activities, to really ask what do we want our districts to look like five years down the road."

For the Foundation, it hopes to see school districts and educators continuing to evolve and implementing strategies to keep students engaged and educated to ensure they reach their fullest potential as they prepare for the jobs of the 21st century.



Central Louisiana Academic Residency for Teachers



CART resident Joshua Moulton, seated second from left, gets help from some highly skilled educators. They are, (seated l-r) Block High School Math Department chair and 11th/12th-grade and college Early Start math teacher Allan Bean; Harrisonburg Elementary 7th/8th-grade math teacher Kasi Cader; Jonesville Junior High 7th-grade math/accelerated math teacher Toni Spinks; (standing l-r) Block High Principal Donald Money; Block High 9th/10th-grade math teacher Stephen Collins; and Catahoula Parish School Superintendent Dr. Gwile Freeman.

Central Louisiana Academic Residency for Teachers

CART



Pioneers begin unique rural teacher residency.

With the school year still weeks away, Joshua Moulton sat in a classroom, surrounded by some highly skilled teachers and Dr. Gwile Freeman, the superintendent of Catahoula Parish schools. They were helping Moulton begin his journey to become a teacher.

Moulton, who grew up in Leesville, received his undergraduate degree in mathematics from LSU in May. He is now part of the pioneer group for CART: the Central Louisiana Academic Residency for Teachers.

Moulton and 12 others are part of this unique rural residency program that is training advanced math and science teachers in a very different way. Each resident has an undergraduate degree in math or science. Over the next year they'll receive a master's degree and be certified to teach. The goal over the next five years is to train and place 60 new teachers who are ready

to teach advanced placement mathematics and science courses in high-needs high schools. Currently Central Louisiana school districts rank well below the nation and state in the number of Advanced Placement courses offered.

Moulton said he is excited to be working in the classroom with such a highly trained teacher and mentor. "It's important to learn a skill by observing a variety of techniques and individual practicing, and using this method for teacher training makes a lot of sense."

Each mentor was carefully chosen by the districts' superintendents and host school principals. They received special training for their new role. Moulton's mentor is Allan Bean, chair of the math department at Block High School. Bean is a retired Air Force colonel who earned a Bachelor of Science in Electrical Engineering from the University of Texas. While in the Air Force he served as a full-time

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Central Louisiana Academic Residency for Teachers

CART

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instructor at the Air Command and Staff College. He's taught advanced math courses at Block for nine years, and also teaches college algebra and finite math at Northwestern State University.

As Bean speaks about mentoring Moulton, it's easy to understand why he was chosen for this role. "I want to give my residents a great foundation and head start with lots of help from other teachers and supervisors, and with sustained follow-up support they'll become great teachers and we'll be able to retain them in our school system."

More than 90 people applied to be in this first group of residents, recognizing what a tremendous opportunity the program offers. They'll earn a free Master in Natural Science degree from LSU, receive a \$35,000 stipend while training in the schools, and at the end of the program receive their teaching certification. They must then pledge to work three years for the districts.

CART began in June with a six-week institute at LSU where residents took rigorous coursework in their content area and began to learn the skills needed to become a teacher. In August they were introduced to their host schools and communities, and then began working four days in the classroom, side-by-side with



Tyrone Pichon (left) and Leslie Smith (right) help Peabody Magnet High School students in a dual enrollment algebra class. Smith is switching careers through the CART program.

their mentor teacher. During the school year they'll continue their master's degree coursework on the LSUA campus and then finish up next summer at LSU.

The project was spearheaded by The Rapides Foundation and its education entity, The Orchard Foundation. The Rapides Foundation is focusing its grantmaking efforts in the coming years on improving science, technology, engineering and math (STEM), and also career and technical education (CTE) in Cenla's schools. The Foundation believes CART is a perfect fit with its new education direction.

The Foundations partnered with LSU, LSUA and the nine Central Louisiana school districts, working for several months to

create the CART model. The program was funded by an \$8 million grant to LSU from the U.S. Department of Education. It was one of only 12 grants awarded for teacher residencies, with just three being rural partnerships.

While Moulton and most of the other 12 residents are recent college graduates, the group also includes some "career switchers," professionals who have always wanted to teach. They include a former banker, an oil-field specialist and school lunchroom supervisor.

Resident Leslie Smith has a Bachelor of Science in Mathematics from Florida A&M University. She's lived in Central Louisiana for 17 years. Smith says

Central Louisiana Academic Residency for Teachers



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. Standing from left to right: Theresa Fletcher, Patrick Kelly, Tiffany Milliern, Joshua Moulton, Myles Gilliland. Seated from left to right: Carly Martel, Catherine Bradford, Reggie Braxton, Leslie Smith, Jessica Odom, Sarah Roark, Theresa DeVanie, Amber Williams Hively.

she's a "two time career switcher." She was in management, working at Fort Polk and Camp Beauregard before moving to a career in financial services. Now through the CART program, this mother of four, who are students in the Rapides Parish school system, is fulfilling a life-long dream to become a teacher. Smith is doing her residency training at Peabody Magnet High School.

Smith believes it is critical to prepare more high-level math and science teachers for Cenla's high schools. "I hope to inspire students to pursue careers in

math and science, but also to help those students who don't see a need to study to realize that these subjects are a part of their everyday lives."

Recruitment efforts are now under way for the next group of CART residents who will start their program in the summer of 2011. Both Smith and Moulton say potential applicants need to be prepared to make a commitment — to the master's level coursework, and to the residency training program. It's also a promise to work in a district for three years, teaching high-level math or

science courses.

"Be sure you want to teach. Take time to talk to teachers," Smith said. "This program is so much more than a free master's degree or having the opportunity to be paid while you learn."

Moulton echoed those feelings. "At the end of the day you really need to believe that you can make a difference in the lives of hundreds of people, little by little, through the ups and downs, day by day. You must truly have the sincere desire and motivation to do this."



STEM WORKSHOPS

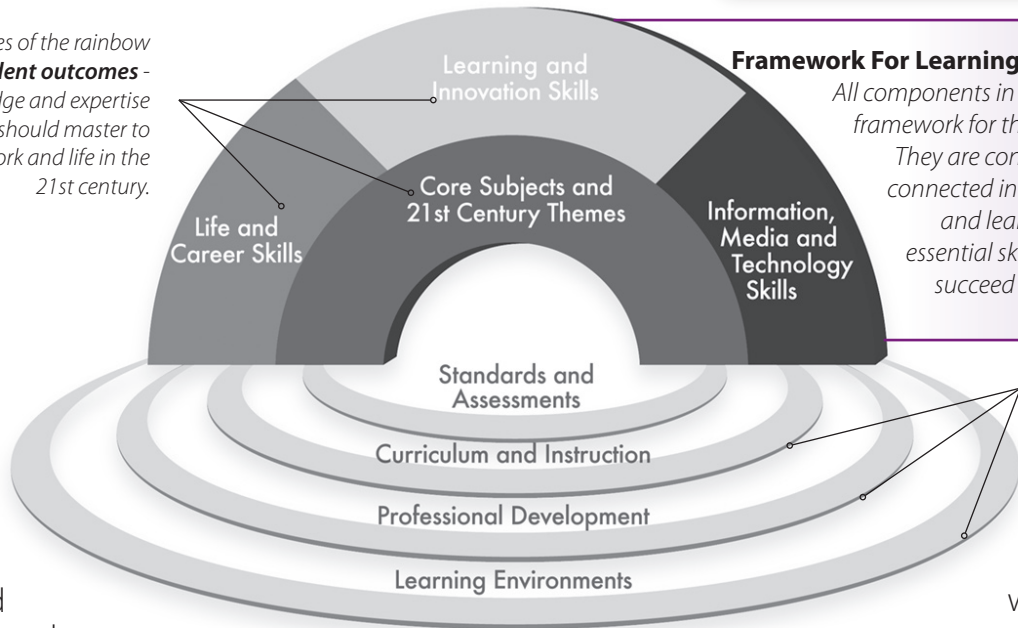
STEM/CTE

Workshops Give Teachers Exciting Hands-on Training



Riverside Elementary School teacher Keithca Callihan uses a prism in a STEM/CTE Workshop activity.

The arches of the rainbow represent **student outcomes** - skills, knowledge and expertise students should master to succeed in work and life in the 21st century.



Framework For Learning In The 21st Century

All components in this graphic represent a framework for the 21st century learning. They are considered to be fully interconnected in the process of teaching and learning, and are based on essential skills students will need to succeed as citizens and workers.

Pools at the bottom represent **support systems** - critical systems that are necessary to ensure student mastery of 21st century skills.



You could hear the laughter and shouts of “that’s so cool,” “awesome” and “wow” coming out into the hallways. It wasn’t students who were so excited by what they were learning, but teachers taking time during their summer break to attend The Rapides Foundation’s math and science workshop. They were learning stimulating hands-on activities to bring back into their classroom this school year with a goal to get students more engaged, challenged and excited about these subjects.

More than 200 elementary teachers attended the day-long sessions, which are part of the Foundation’s new direction to provide intensive workshops focused on science, technology, engineering and math (STEM), and career and technical education (CTE).

The summer workshop was led by AIMS, a nationally recognized organization that

works across the country presenting programs for teachers, where they learn activities that are kid-oriented, motivating and very hands-on for participants.

Keithca Callihan, who teaches fourth grade at Riverside Elementary School in Avoyelles Parish, described the AIMS Workshop as “phenomenal.” One of her hands-on activities was creating a sundial out of paper plates. Participants would go outside at different times of the day to measure the length of their shadows. They used paper plates, clay and a pencil to measure the position of the sun. It was an example of a simple activity that gets students out of their desks and engaged, while having fun learning.

Callihan said she will take what she learned back to her classroom. She said she really appreciated that the instructors put everyone at ease. “I loved everything about the

STEM WORKSHOPS

workshop, but if I had to choose one particular thing, it was my comfort level with the other participants and the overall manner in which the presenter encouraged cooperative learning among us. I could not get enough of the lessons on sound. I was amazed at all that I could have done with my students when I taught that lesson before."

Teachers left with materials from the workshop. They also were able to order an additional \$50 of supplies and materials for their classrooms, for a total value of \$100, all provided by the Foundation.

Workshops will be held almost every month through February as the Foundation brings in some of the most respected organizations to work with elementary and secondary teachers to bring STEM and CTE expertise to their classrooms. Each organization was chosen because they have proven track records of providing teachers with hands-on, exciting training that can then be taken into their classrooms with a goal to get students excited about these subjects and increase student achievement. In addition to AIMS, Kagan Publishing & Professional Development will provide math and science workshops for middle and high school teachers.

For CTE, Performance Learning Systems will facilitate workshops for superintendents and parish leaders. The goal is to assist each parish

to implement their CTE plans. Workshops will focus on 21st Century Skills and the best approaches for integrating them into the curriculum.

Sheila King, the Foundation's district coordinator for LaSalle Parish, believes integrating what is learned at the workshops back to the classrooms is key to increasing student engagement and achievement in these subjects. King spoke to teachers who attended the AIMS Workshop and will recruit more for the sessions during the school year. She says they're all excited to be participating, and believes these hands-on workshops will be successful because they're showing – not telling – teachers how to have rigor in their classrooms.

King is excited that the teachers who attended the AIMS Workshop plan to share their new knowledge with others at their schools. "They enjoyed the activities and couldn't wait to start the new year and use the training in their classrooms. They also want to redeliver to other teachers and we're looking into buying the equipment so that the other teachers can experience a part of what the attendees did."

Hillary Gray teaches third grade math, science and social studies at Natchitoches Magnet School. She says these workshops are different from other professional development programs where teachers sit in a classroom. There's lots of activity and energy. She plans to attend future workshops. "I really enjoyed being so actively engaged. I love doing things hands-on and the workshop gave me some wonderful ideas that could easily be incorporated into my class."


The Foundation is excited about providing these workshops and wants teachers to leave them armed with new ideas and tools for their classrooms so more and more students throughout Central Louisiana can get excited learning about math and science.



Hillary Gray, a third grade math and science teacher at Natchitoches Magnet School, takes part in a STEM/CTE activity during a Foundation-funded institute for more than 200 educators.



CART RECRUITMENT



▶ We're looking for a few good math and science teachers.

Know a college student or someone in another job who wants to be a math or science teacher?

Tell them about CART, the Central Louisiana Teacher Residency program. They will be paid \$35,000 and earn a free master's degree from LSU while teaching in a Cenla school. Call 318-767-6561 to learn more!!

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