KENTUCKY
Career and Technical Education

Learning that works for Kentucky
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Building the Pipeline between education and industry

TRACK gaining momentum

Capital City Welding Classic

VEX Robotics Competition

Also in this issue:
- Upcoming CTE Events
- Franklin County CTC looking to lead state
- KY YES Initiative to help high school students

Volume VII Spring 2014

Ford/AAA Student Auto Skills competition
May 7-8, 2014 Kentucky Speedway,Sparta, KY.

KDE Revised Consolidated Compliance Plan for Non-Discrimination Available

Please be advised that the Kentucky Department of Education has revised its Consolidated Compliance Plan for Non-Discrimination. The revised plan has been posted on the Legal and Legislative Services page on KDE's website and includes a Discrimination Complaint Form that can be filled out by anyone alleging discrimination against KDE staff and/or KDE program areas.

Upcoming CTE Events

May

DECA National Conference
May 3-6, 2014 Atlanta, GA.

June/July

National FCCLA Leadership Conference
July 6-10, 2014 San Antonio, TX.

KY FCCLA 60th Leadership Camp
for regional and state officers
June 9-11, 2014 Hardinsburg, KY.

FFA Annual State Convention
June 10-12, 2014 Lexington, KY.

KY Council Economic Education
Life Fundamentals Conference for teachers
June 23-24, 2014 Holiday Inn Hurstbourne, Louisville, KY.

SkillsUSA 50th Annual National Leadership and Skills Conference
June 23-27, 2014 Kansas City, MO.

HOSA Future Health Professionals National Leadership Conference
June 25-28, 2014 Orlando, FL.

TSA National Conference
June 27 - July 1, 2014
Gaylord National, Washington DC
(National Harbor, Maryland)

FBLA National Leadership Conference
June 29-July 2, 2014 Nashville, TN.

July

National FCCLA Leadership Conference
July 6-10, 2014 San Antonio, TX.

Annual CTE Summer Program
July 22-24, 2014 Galt House Hotel, Louisville, KY.

Events to be listed in the Fall CTE Newsletter calendar should be submitted no later than August 31, 2014. See below for contact information.

Kentucky Career and Technical Magazine is published quarterly by the Kentucky Department of Education's Office of Career and Technical Education. For more information about this publication or featured items, contact Tim Thornberry at tim.thornberry@education.ky.gov or call (502) 564-1270 extension 4229.

All photos and stories by Tim Thornberry unless noted otherwise.

Building the Pipeline between education and industry:

A message from Associate Commissioner Dale Winkler

When it comes to supplying the needed employees for today's business and industry sector, most business leaders recognize and demand a well-educated workforce; an education that really begins in high school and carries on to the postsecondary level.

As more highly skilled manufacturing jobs are becoming available, the realization that there is a shortage of a new generation of skilled workers has prompted many businesses to "grow their own."

Training a workforce from scratch, however, takes time and resources. That's something often in short supply in a still somewhat shaky economy where a business must maintain the ability to grant the needs of its customers quickly and efficiently or risk losing that customer to a competitior.

While these workplace training ventures have helped to some degree, perhaps the ideal solution is to catch students at the high school level and introduce them to the world of possibilities from advanced manufacturing to engineering to healthcare and information technology, to name a few. Reaching them at this level gives students real insight as to just what kind of jobs there are and how much those jobs pay while dispelling some misconceptions of some of those jobs, especially industrial occupations.

> If there is such a thing as a "gold mine" when it comes to educational and workforce opportunities, Kentucky is sitting on top of one.

But getting a foundation at the secondary level is only a start as many, if not most human resource managers look for perspective employees with some sort of postsecondary training. That could mean a four-year bachelor's degree, a two-year associate degree, an apprenticeship or some other type of on-the-job training experience.

In order to build this educational/training pipeline, a partnership between the educational entities and industrial leaders needs to be fostered or created in order to supply a needed workforce to drive the local community's economic engine.

Establishing the need

As unemployment numbers remain relatively high, it may be difficult to substantiate the critical need many companies have for

As more highly skilled manufacturing jobs are becoming available, the realization that there is a shortage of a new generation of skilled workers has prompted many businesses to "grow their own."

skilled employees. The optimum word is "skilled," and business leaders recognize the necessity of a well-educated perspective employee.

A recent study conducted in an eight-county region in northern Kentucky showed a significant number of jobs that are and will be available mostly due to a large number of current employees retiring.

That study calculates that 680 positions are available with an estimated 2,500 coming up in three years and 6,250 skilled positions in the next 10 years.

The pay for these jobs ranges from $40,000 to $60,000 per year. So, as one executive put it, these are highly skilled, high paying jobs with good benefits. These are not the factory jobs of a past generation.

Through similar studies like the one in northern Kentucky and the state's Sector Strategy initiative, which have recognized five separate areas of need and projected job growth throughout Kentucky, the existing evidence points to not only the need for a skilled workforce but what areas in which they will be needed.

Comprehensive SREB study

Workforce training doesn't necessarily have to begin after high school; in fact, some studies have suggested that even middle school students need to be provided career education if they are to have the adequate knowledge to make choices at the high school level.

Kentucky has 95 high school career and technical centers or area technology centers that provide dozens of career education programs serving as a choice for students who are interested in Career and Technical Education (CTE) programs.

KDE recently commissioned a study conducted by the Southern Regional Education Board to evaluate the state's secondary CTE sector and make recommendations on how to move that system into a world-class status.

Kentucky has been on the cusp of having one of the largest, most comprehensive systems in the country, but the report takes a hard look at a somewhat antiquated system and recognized four over-arching recommendations to bring it up to date, not only from an educational standpoint, but from an economic development perspective, as well.

The report notes, "A strong partnership with postsecondary education and business and industry is essential to creating a world-class system of technical centers."

It recommends an alignment of CTE offerings with workforce needs by economic regions that would coincide with the five targeted industry sectors identified by the Kentucky Workforce Investment Board.

Students enrolled in advanced manufacturing programs get hands-on expereince with industry-level equipment, better preparing them for postsecondary training and the workforce.

Existing Resources

If Kentucky were a place barren of educational entities and few business and industry opportunities, a conversation about building and maintaining an employee pipeline would not be necessary.

Fortunately that is not the case. From a secondary education standpoint, more than 140,000 students (roughly 75 percent) are enrolled in some sort of CTE class or program.

In many cases, these students attend specialized schools, area technology centers or career and technical centers where they can get a real-life, on-the-job experience in classrooms that contain machinery or equipment specific to that found in the workplace.

Many of these schools have local business and industry advisory board members that continually update students and administrators as to what their needs are and what kind of educational efforts are needed to meet local job requirements.

At the next level, Kentucky has one of the most comprehensive community and technical college systems in the country.

The Kentucky Community and Technical College System (KCTCS) consists of 16 colleges and more than 70 campuses throughout the state. For many of the programs offered at KCTCS, there are articulation agreements with their secondary counterparts that keep students from replicating classes.

There also exists a statewide dual credit agreement between the two systems allowing students at the high school level to gain college credit for certain programs.

If there is such a thing as a "gold mine" when it comes to educational and workforce opportunities, Kentucky is sitting on top of one. The challenge now is to recognize it and take advantage of those opportunities.

Changing an image

While industry works to change the image of old style factories verses modern manufacturing facilities, the CTE sector that is or should be the training grounds for these industries, fights the old vocational school image that many individuals possess.

There are initiatives to combat that, however. Educationally, the Office of Career and Technical Education (OCTE) and KCTCS have begun a marketing campaign aimed at showcasing community college programs using former secondary CTE students while at the same time giving students a visual look at the available programs.

As part of that initiative, the "Reach Higher with CTE" marketing campaign was created using existing resources to help change the mindset some parents, students, teachers and administrators have when it comes to CTE and what really exist today; programs steeped deep in technology from traditional welding programs to high-tech computer-aided drafting classes.

The key component of the marketing effort will be the use of students to relay the CTE message to their peers and community members. This "ambassador" portion of the initiative will use Career and Technical Student Organization officers to speak at various events in their local schools and communities.

A series of visual aids also is being developed to use on websites and in social media venues.

But marketing programs are not just being initiated at the high school and college levels. The Northern Kentucky Industrial Park

Career and Technical Education students attend specialized schools, area technology centers or career and technical centers where they can get a real-life, on-the-job experience in classrooms that contain machinery or equipment specific to that found in the workplace.

(NKIP) Industry Partnership has developed the "Dream It, Do It" program focused toward area high school students. The campaign was designed to get these students interested in the opportunities available to them through advanced manufacturing jobs complete with videos and its own ambassador program.

The need for increased funding

While the SREB study examined many areas related to CTE, and made many recommendations, there are a few points of note, one being that of alignment gaps between existing CTE programs offered at the 95 centers and workforce needs both at the state level and by economic regions.

Strong support for CTE is critical in closing these gaps. The SREB report noted how important that support can be and also recommended increased funding for CTE programs.

A recent report from the National Association of State Directors of Career and Technical Education noted that several states, including some of Kentucky's neighboring states have requested increased funding for their CTE programs in recognizing their business and industry needs.

Kentucky has stepped up to the plate during this year's budget session of the General Assembly which included funding for vacant teacher positions in state CTE schools as well as across-the-board raises for state employees.

This is welcomed news and certainly a move in the right direction. It's important that our lawmakers and stakeholders in CTE understand we must fund these programs adequately as much for the economic wellbeing of the state as for the educational benefit of our students.

We are living in very competitive times and our neighboring states will gladly take business and industry away from Kentucky if the opportunity presents its self. That has happened in the past but should never happen in the future due to an inadequate work force caused by funding deficiencies.

The legislature has also included seed funding to further study the idea of a new technical high school to be located in Northern Kentucky. If this idea comes to fruition it will mark a new era in CTE for the state by creating a unique facility focusing on career

Kentucky is poised to be a national leader in career training at both the secondary and postsecondary levels allowing students to transition from one to the other and ultimately to the workplace, trained in the specific areas needed in their communities.

training while still providing all the necessary educational components that would allow students to become college and career ready.

Kentucky set to take the lead

With all the necessary components in place to build a sustainable education-to-work pipeline, Kentucky is poised to be a national leader in career training at both the secondary and postsecondary levels allowing students to transition from one to the other and ultimately to the workplace, trained in the specific areas needed in their communities.

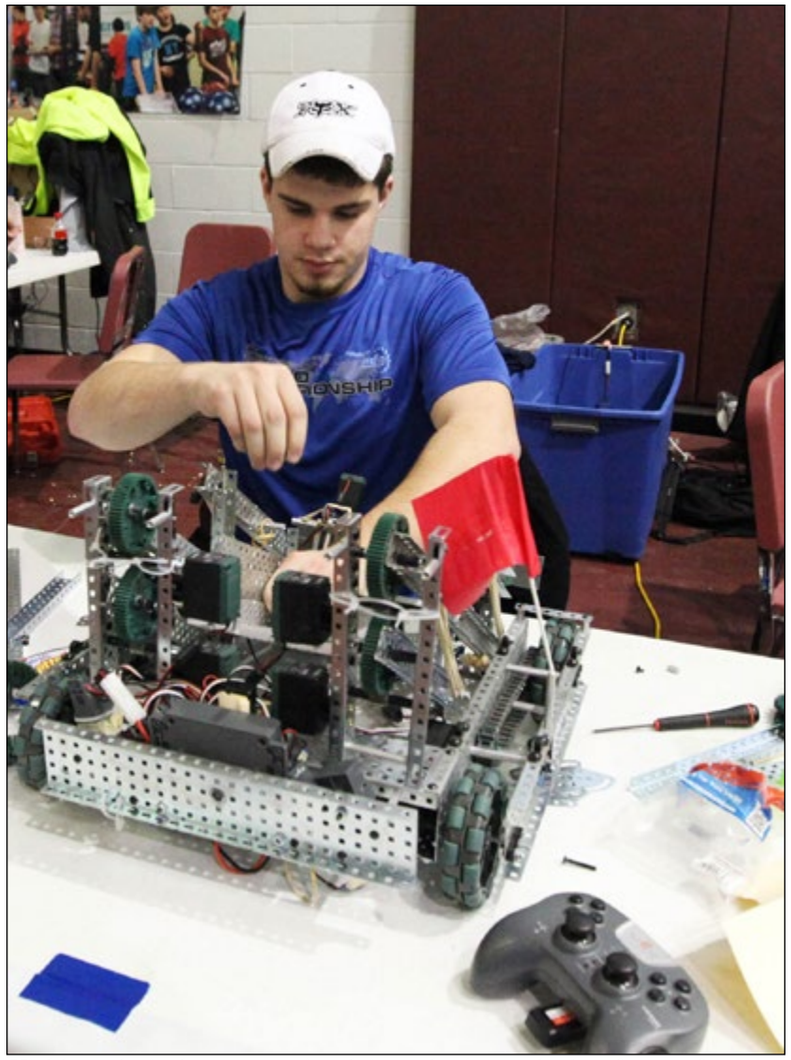
In Northern Kentucky for instance, a number of advanced manufacturing training programs are present in many of the area's technical high schools, both of a high tech-nature and traditional, as well.

It will take both to supply a student with the general foundation needed to compete for these jobs of the present and future.

Northern Kentucky also is home to one of the most advanced postsecondary manufacturing training facilities in the country by way of Gateway Community and Technical College's Center for Advanced Manufacturing.

The center, which opened in 2005, has the capability of training hundreds of students each year in program areas such as computer-assisted drafting, electrical technology, industrial maintenance technology, computerized manufacturing and machining, manufacturing engineering technology, mechatronics, welding technology and energy technology.

With comprehensive workforce studies in place, educational leaders don't have to justify the need for technical training; it exists



Highly technical programs involving robotics and other forms of engineering are helping high school students make the transition to postsecondary training opportunities.

already. With training programs in place at the secondary and postsecondary levels, the wheel does not have to be reinvented when it comes to providing the necessary programs needed by students to learn the skills required by these available manufacturing jobs.

All that needs to be done now is to take advantage of the opportunities that have been created at both local and state levels.

To borrow a popular saying from a movie, "If you build it, they will come;" the field has been built; business/industry has partnered with educational leaders to make the necessary investments in programs; and efforts are being made to market these opportunities to students across the state.

Once this giant education-to-work engine is running at full capacity, the possibilities will be endless for both students and the business and industry community.

Sincerely,
Dale Winkler
Associate Commissioner
Office of Career and Technical Education

TRACK gaining momentum statewide and nationally

The next step in expanding TRACK into the construction sector is to develop career pathways that will give students credit for courses taken and possibly direct entry into industry training programs.

Since its introduction as a pilot program in 2013, the Tech Ready Apprentices for Careers in Kentucky (TRACK) initiative has gained the support of many school districts across the state and the Kentucky Cabinet for Economic Development. Now it has the attention of U.S. Department of Labor.

TRACK is a partnership between the Office of Career and Technical Education (OCTE) and the Kentucky Labor Cabinet created to provide pre-apprenticeship opportunities to high school students, giving give them a head start on careers. The idea of the program is to employ existing programs already being taught in career and tech centers and create a certified program for students based on local industry needs.

In this pilot year, TRACK has included 13 high school technology centers in the area of advanced manufacturing. Because of its momentum and the interest the program has received from business and industry professionals in other industry sectors, the program will expand into construction technology during the 2014-15 school year.

As the TRACK initiative progresses, students ultimately will complete a series of courses requested by each participating business partner in order to receive their pre-apprenticeship certificate. Those courses are handpicked by the industries in accordance to their localized needs.

Students also will be credited with their hours already completed at the high school level toward their apprenticeship certification, much the same way as dual credit hours are issued toward postsecondary courses. The TRACK initiative will allow students at a sophomore level to enter into the program; an age once deemed unimaginable for any apprenticeship program.

"The idea of TRACK is directly related to a recommendation from a recent Southern Regional Education Board report on how

Students participating in the TRACK program will be credited with their hours already completed at the high school level toward their apprenticeship certification, much the same way as dual credit hours are issued toward postsecondary courses.

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to make Kentucky Career and Technical Education (CTE) a world-class system," said Dale Winkler, associate commissioner with the Kentucky Department of Education (KDE). "By utilizing the TRACK model of working directly with local business and industry partners, we would fulfil the need to offer programs most needed by those industries in a regional sense."

TRACK is the brainchild of OCTE Business and Industry Specialist Mary Taylor. She said never before has there been a program focused on getting high school students involved in an apprenticeship program.

"This really is a first for our state and I think it can become a model nationally by the amount of interest we've had and the number of businesses and schools that want to become involved," she said.

Taylor developed the program along with Mike Donta, deputy commissioner at the Labor Cabinet. He serves as the state's lead in apprenticeship and recently returned from a meeting in Washington D.C. where he spoke to the Labor Secretary's Advisory Council on Apprenticeship about the TRACK program.

Donta said council members along with Deputy Assistant Secretary for the Employment and Training Administration Gerri Fiala and John Ladd, Administrator of the Office of Apprenticeship were very positive in their remarks about the Kentucky program.

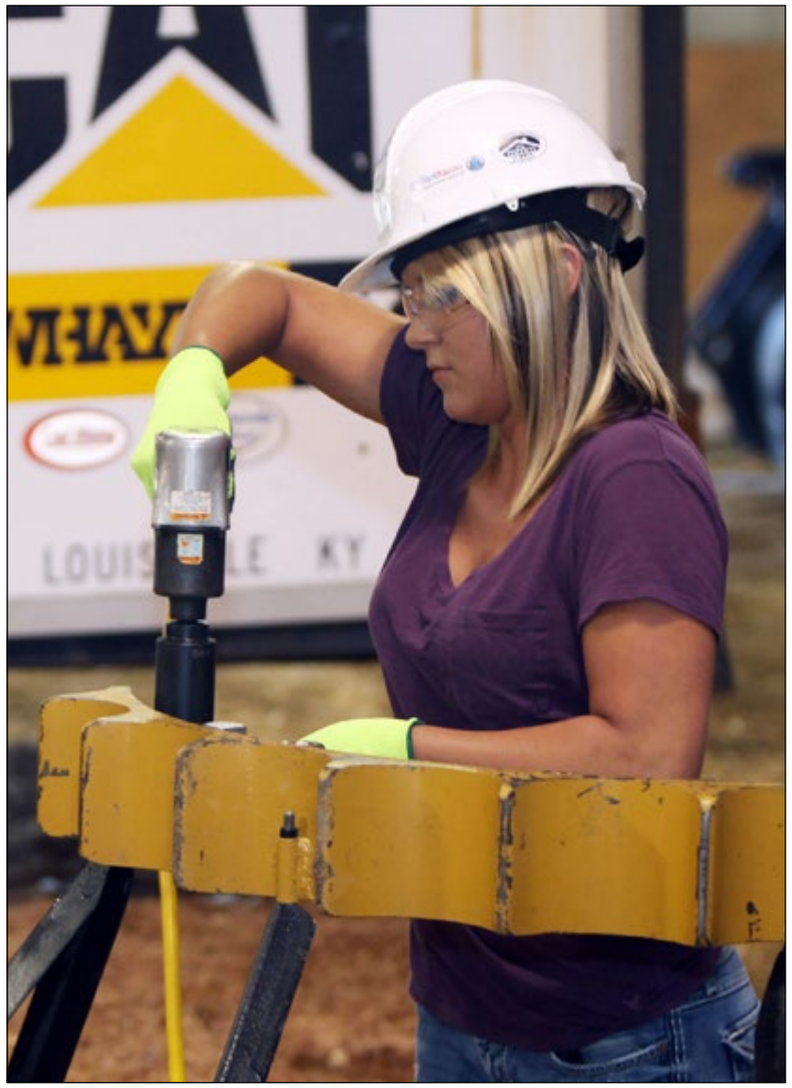
TRACK is a partnership between the Office of Career and Technical Education (OCTE) and the Kentucky Labor Cabinet created to provide pre-apprenticeship opportunities to high school students, giving give them a head start on careers.

The idea of TRACK is directly related to a recommendation from a recent Southern Regional Education Board report on how to make Kentucky Career and Technical Education (CTE) a world-class system.

"The day's meeting focused discussions on youth involvement, partnerships to expand registered apprenticeship, involvement with the state technical schools and crediting pre-employment training to those individuals entering apprenticeship programs," he said. "I really believe the TRACK program stood out among the other presentations and I think this puts our program in a national spotlight. Considering our TRACK program incorporated all of the elements of the entire day's discussions, I feel we were a hit with the members of the council."

Donta also attended a meeting in which Labor Secretary Thomas Perez said the President Obama has included a tremendous increase of funds allotted for Registered Apprenticeship and wants to double the number of apprentices over the next five years.

The idea of TRACK is to employ existing programs already being taught in career and tech centers and create a certified program for students based on local industry needs.



As the TRACK initiative progresses, students ultimately will complete a series of courses requested by each participating business partner in order to receive their pre-apprenticeship certificate.

The community college connection

As is the case on many fronts, the Kentucky Community and Technical College System (KCTCS) continues to play an important role in apprenticeships as well as being a big supporter of secondary CTE students.

Landon Garrison is a prime example of what a student can achieve by following a CTE pathway at the secondary level and moving on to community college by way of an apprenticeship program. He attended the Mason County Area Technology Center studying machine tool technology. From there he went to work at a local manufacturing facility, Stober, where he entered their apprenticeship program. This sent him back to school, this time at the Maysville Community and Technical College (MCTC) to complete the classroom portion of the apprenticeship. Today, Garrison is a manufacturing engineer.

He, along with others involved in the apprenticeship program at Stober and from MCTC, spoke at a recent gathering in Frankfort of workforce development officials and personnel from across the state.

Justin Pate, chief academic officer at MCTC, said getting a start on careers at the secondary level is critical whether a student is preparing for an apprenticeship or just continuing his or her education at the next level.

"I think, at the secondary level, one of the biggest benefits is that students learn, not just a technical skill, but that education has an application," he said. "Laying that foundation of a relevant outcome is as big of a benefit as the technical competencies they master coming out of high school."

Pate added that for those who have started their career training at the high school level, they have such a "leg up" over other students both academically through dual credit classes and in their technical skills, as well.

Winkler said when collaborative efforts are made to ensure the success of students, the outcome is always positive.

"When we put our students first and all the educational partners come together from the secondary, postsecondary and business/industry sectors to work together in a seamless manner, the results are always successful," he said. "I think the TRACK program will continue to create this necessary collaboration."

TRACK in the future

As the pilot year draws to an end, Taylor said the program is set to expand from advanced manufacturing to include the construction sector for the 2014-15 school-year. A meeting was held recently that brought construction industry leaders together from across the state to discuss TRACK and how it could benefit the industry.

Taylor said the next step in expanding TRACK into the construction sector is to develop career pathways that will give students credit for courses taken and possibly direct entry into industry training programs. Those meetings will include officials from the Labor Cabinet, trade industries and OCTE.

"In creating these pathways, we are bringing the education and business/industry sectors together to fulfil the needs of both," she said. "We feel as though this expansion is just the beginning for TRACK, and many other areas could be included in the future."

Franklin County CTC looking to lead state in secondary Career and Technical Education

Franklin County Public Schools Superintendent Chrissy Jones has one main goal for the district's Career and Technical Center (CTC): to be the best in the state.

And with a new facility, an innovative blend of programs and an experienced staff, she feels that goal is very obtainable.

Students began this school year in a new facility complete with updated state-of-the-art labs and classrooms, including those for Information Technology and Health Science programs and welding, carpentry and automotive technology. The facility also includes and a whole STEM (science, technology, engineering and mathematics) wing for the pre-engineering program.

Jones said the new building was needed as almost 40 percent of all district high school students attend the CTC.

"We were operating in a facility that was built in the 60s and, in trying to improve and expand the programs, we basically outgrew that building," she said. "We needed a building that would service the needs of the 21st century.

Jones said the local board of education agreed with the need to update the old building and the new structure was literally built around it.

Recognizing the importance of such a facility is the first step in creating a strong presence of Career and Technical Education (CTE) in any district, said Dale Winkler, associate commissioner at the Kentucky Department of Education (KDE) and executive director of the Office of Career and Technical Education.

"We need superintendents to recognize the importance of CTE in their districts," he said. "This is a critical step in the effort to increase college and career readiness percentages across the state as well as implement recommendations set forth in a report issued by the Southern Regional Education Board on how to make Kentucky CTE a world class system."

Franklin County Public Schools Superintendent Chrissy Jones stands in front of the newly remodeled Career and Technical Center.

Automotive technology students are learning many tasks from putting transmissions together to making bio-diesel fuel.

Jones said CTE programs, in general, are a great way for students to explore their interests especially if they realize it's something they would like to do as a career. It gives them a head start before they go into a postsecondary institution, she said.

"If they get into those programs and find out they love it, I want them to have the skills and possibly college level credits so that

A modern, state-of-the-art welding lab enables students to learn a high demand skills trade at the high school level.

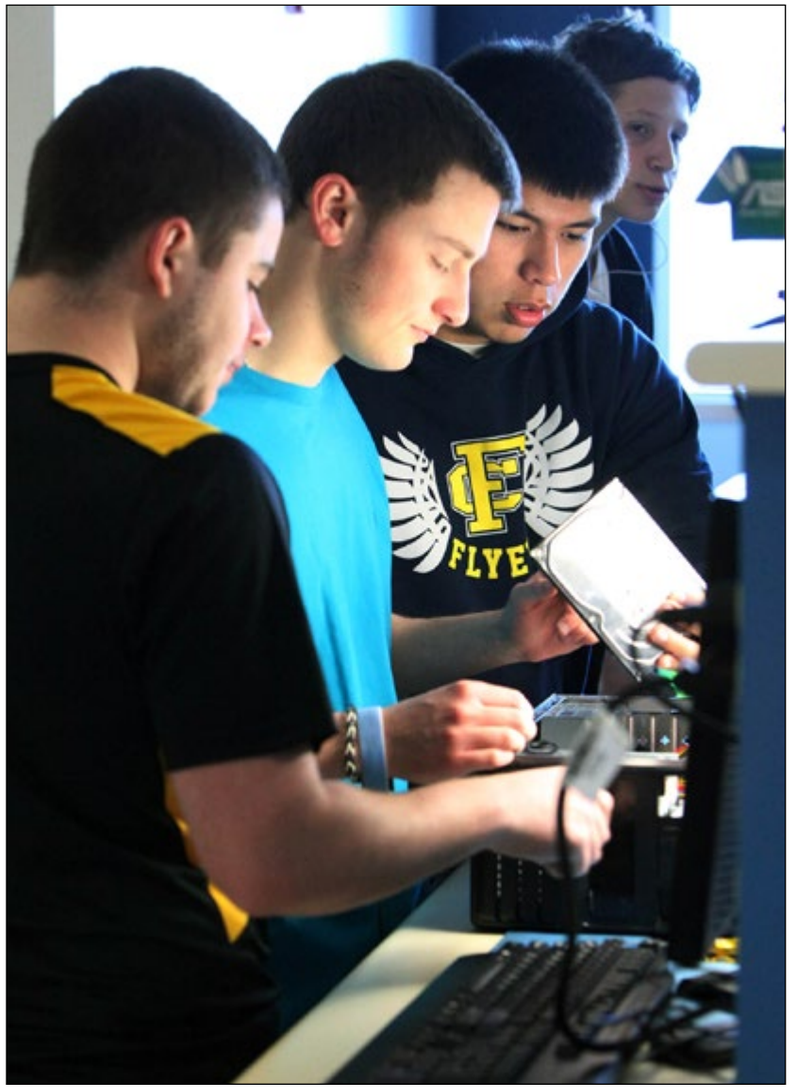
when they leave as seniors, they can go directly into a postsecondary option or if they choose to go into the workforce, they have the skills to get a job in that area," Jones added.

She also said it's time to recognize that there are many postsecondary avenues, including two- year programs, apprenticeships and certification programs as well as a traditional four-year college track.

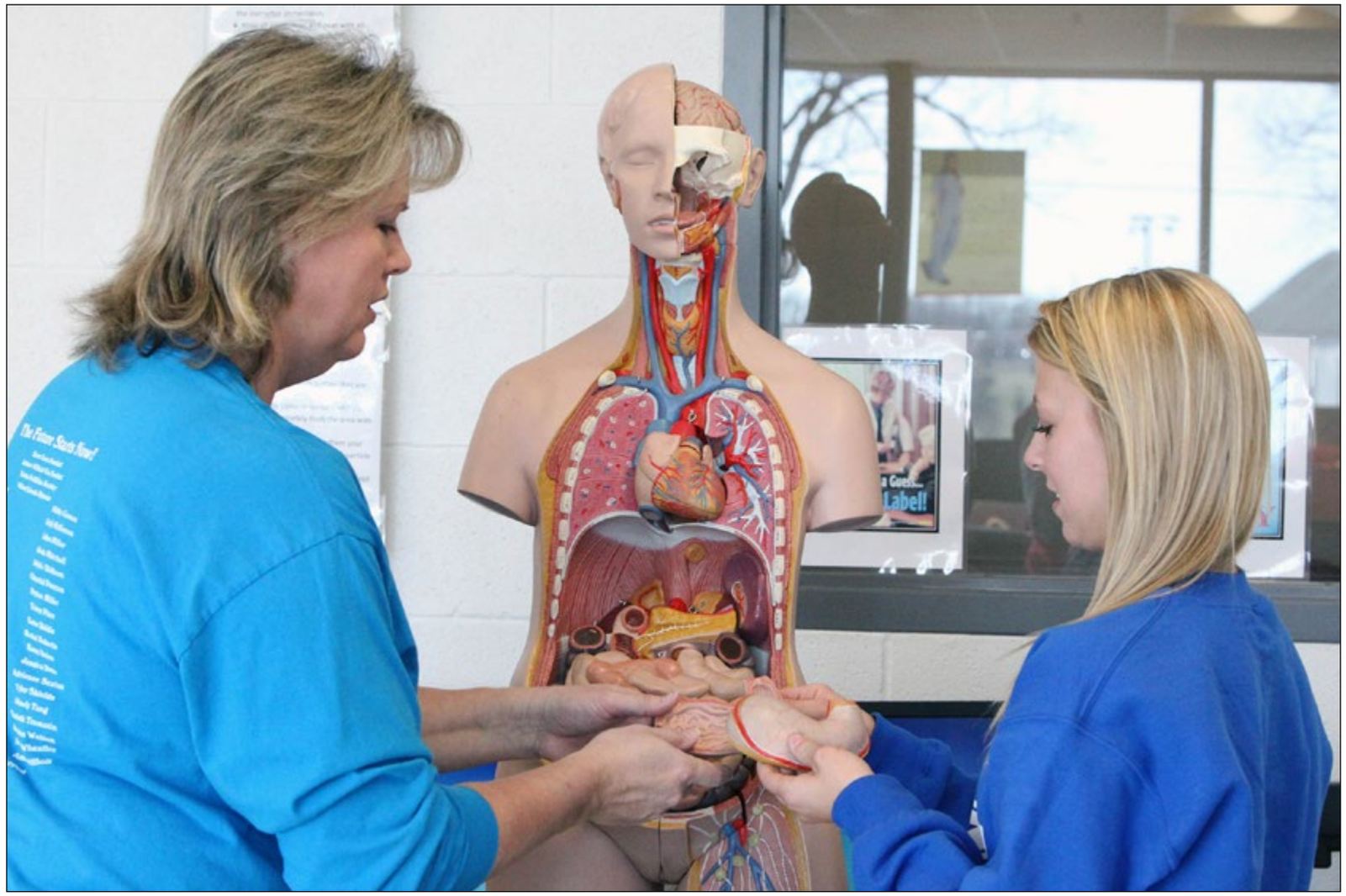
"I don't think that we should target every student to go to a four year university or college," she said. "A lot of kids can do two years and, for some, it may do them good to work for a couple of years and decide exactly what they want to do; see the value of working and then explore their postsecondary options."

Jones also feels it is important to expose students to CTE at an earlier age. That is one reason the pre-engineering curriculum Project Lead the Way is in both of the district's middle schools and all 8th-grade students get a chance to tour the CTC each year.

Getting deeper into the Career Clusters is something Jones feels is something that needs to be "honed in on" during these middle school years and even before.



Students work on a computer in the Information Technology program.



Students in the Health Science program can prepare for a number of careers in the healthcare field.

Getting to world class status

The Franklin County CTC already has a lot working in its favor as Kentucky strives to elevate its CTE sector. Jones wants to lead that effort and plans to do so by expanding the programs at the school by way of collaboration with other mainstream programs.

"My hope is to expand and have a mathematics and English teacher there who will also work with the CTE areas to integrate those programs and show students the connection between subjects such as mathematics and the CTE classes," she said. "We are taking the time to really plan it and give it a solid foundation."

Jones added that the more students can connect education and real life, the more they will retain what they are learning.

One of the problems many career centers have is that of keeping students for longer periods of time. Jones said she would like to get to half-days with every student that attends the CTC giving them the option to participate in extracurricular programs at their home high school while providing more time in their CTE programs.

In addition to utilizing collaboration and integration between core academic and CTE programs, Jones would also like to retain more students into their career pathways, steering them in the right direction should they choose a program that isn't a good fit.

"When I look at how many students we retain in our pathways, we are not where I want to be. Part of that could be that students have explored and said they are not interested in that subject but they are not choosing another pathway," she said. "We need to see what other options are available in steering that student to something else."

Jones hopes doing things like bringing in mathematics and English and expanding offerings at the CTC will help in keeping those students at the CTC longer and aid in making them completers in their chosen pathway.

In expanding programs, Jones said it's important to see what is needed in the local workforce first before adding programs.

"We have a lot of options but we as educators need to expand our thinking and not just do what we've always done," she said. "CTE has gone through an evolution over the past 10 years and I think we need to continue that and not be satisfied with where we are. That's why I want to be one of the top ten if not the best!"

Capital City Welding Classic showcases a perfect partnership

This year marked the first Capital City Welding Classic, which was held in the brand new facility at the Franklin County Career and Technical Center (FCCTC). The welding tournament became a reality thanks in part to a long-time relationship.

The school underwent a major reconstruction last year including the welding lab that has been equipped with industry-level, state-of-the-art equipment, thanks to the help of Lincoln Electric, a company with an extensive history of working with career education across the state.

Randy Shewmaker, a Franklin County CTC welding instructor, said the equipment purchased from Lincoln Electric will give his students an edge working with the most up-to-date welders available.

"The equipment we now have is the same as what these students will see in the workplace," he said. "That gives them a real advantage once they have left this class and have moved on to postsecondary training or into a job."

Lincoln Electric Sales Engineer Tony Noah worked with Shewmaker in equipping the lab and said having such a modern classroom is a benefit to him as well as the school.

"Every year we conduct a workshop for all the CTC welding teachers as part of their continuing education needs, so Randy and I have known each other and we talked a lot about what kind of equipment he wanted to bring into this new lab," said Noah. "I suggested a working relationship where I could bring in customers to his classroom while Lincoln could bring in some added-value to the school."

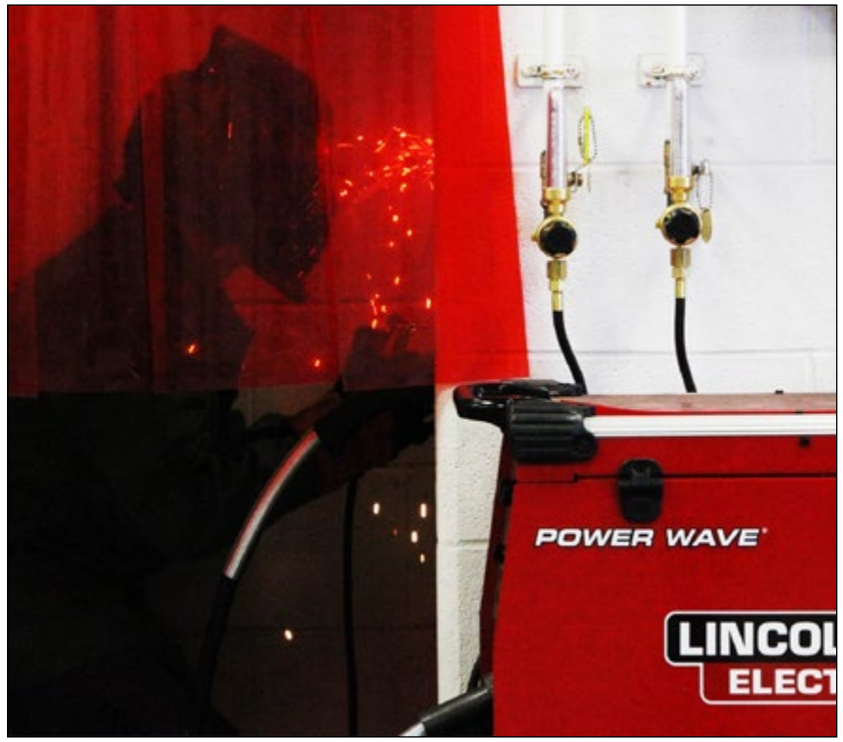
The result was a modern welding classroom for the new facility complete with an energy efficient exhaust system and welders that actually connect to the Internet. These Power Wave welders are advanced process units from Lincoln Electric that offer multi-process capability for stick, DC TIG, pulsed and flux-cored welding, according to information from the company.

Noah said he will be able to bring in industry people wishing to learn more about the welding equipment while at the same time, introducing those business owners to the program so that they may grow partnerships of their own.

"We thought that by working together we could benefit from each other," he said.

In addition to Lincoln's relationship with secondary schools, the company also has partnered with postsecondary institutions including Kentucky Community and Technical College System and the University of Kentucky (UK).

"Just recently we donated equipment to UK's agriculture program, and the reason we did it is because that farm program is used as a benchmark so (when) other ag programs at the high school level look at it, they learn from it and



The Franklin Co. CTC underwent a major reconstruction last year including the welding lab that has been equipped with industry-level, state-of-the-art equipment, thanks to the help of Lincoln Electric, a company with an extensive history of working with career education across the state.

Welding students from seven different schools located across the state participated in the first Capital City Welding Classic.

copy it and take it to their schools," Noah said.

Collaboration between education and business and industry partners is important to the success of the programs there, as it is to all Career and Technical Education programs said Karen Schneider, principal at the FCCTC.

"In order for our programs to expand, we need to have good working relationships with our industry partners," she said. "Our association with Lincoln Electric has greatly increased the chances for student success." Shewmaker said that, while his students get the benefit of being in the school and having direct access to this high-tech welding facility, those students participating this year and in future years at the tournament also will get a chance to experience the equipment, something he hopes will make the Capital City Welding Classic become even more successful.

"We had seven schools come to the tourney this year, and we feel like those numbers will grow because of the investment made in our classroom and lab," he said. "I don't know of many secondary welding facilities that compare to what we have here. I've worked with Lincoln Electric for years and can't tell you what a difference they have made in advancing statewide welding on a secondary and postsecondary level."

Terry Miller, academic consultant with the Office of Career and Technical education who oversees Kentucky's secondary welding programs, said relationships with business and industry partners have long been valuable tools in keeping labs current and students connected to the latest in equipment and technology.

"Lincoln Electric has really stepped up to the plate when it comes to working with all of our welding programs," he said. "These types of partnerships have proven to be invaluable in our efforts to increase college and career readiness goals, as well as benefiting our teachers and students greatly. But the business community has also benefited as we are able to turn out better students, highly skilled in their program areas, who eventually become employees."

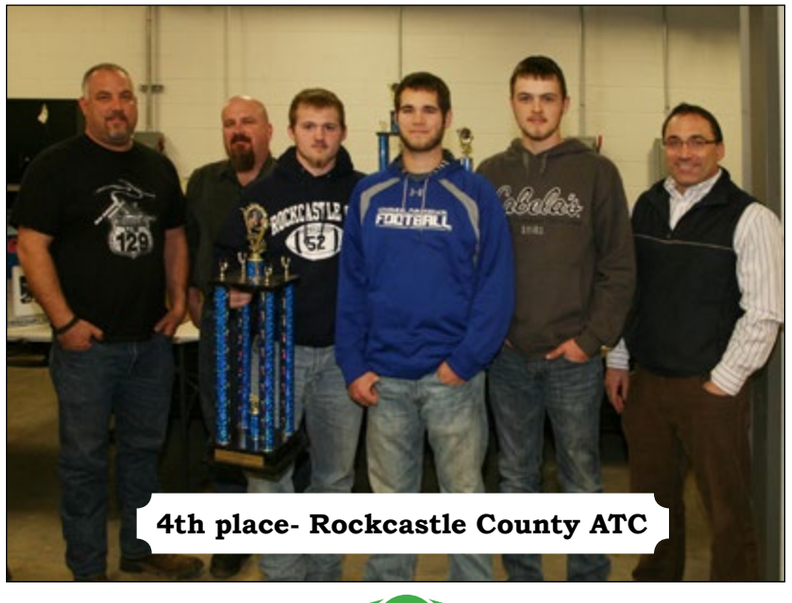
Certified Welding Inspectors Barry Jackson, right, a retired welding instructor from Barren Co. ATC and owner of Jackson Welding and inspection and Mason Wilson, owner of Wilson Welding, served as judges for the competition.

1st place- Franklin County CTC

3rd place- Casey County ATC

5th place- Harrodsburg ATC

2nd place - Boone County ATC



4th place- Rockcastle County ATC

Results of the 2014 Capital City Welding Classic

The individual awards went to:

1st place, Cole Reed, Casey County ATC
2nd place, Ben Dunavan, Franklin County CTC
3rd place- Christian Shepherd, Pulaski County ATC
4th place- Jordan Hemsley, Rockcastle County ATC
5th place-Tanner Eubank, Pulaski County ATC

Robots race around competition platforms as red and blue teams face off to garner as many points as possible by capturing their designated colored balls and move them to goals for a score.

VEX Robotics Competition

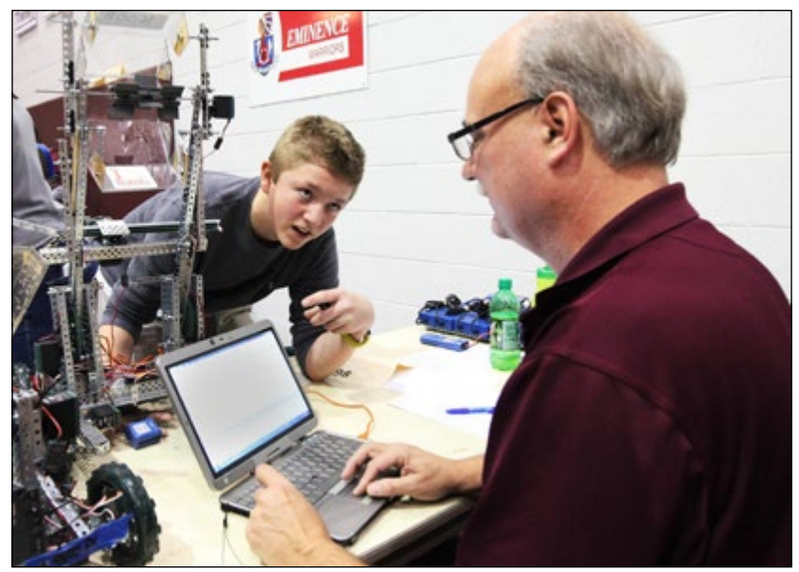
Not too long ago, the idea of robotics in the classroom seemed like something from a science fiction novel rather than something in the real world.

But thanks to the many teachers who found countless benefits from exploring such a program in a variety of different classroom settings, more and more schools are being "invaded" by the robotic craze.

Students from around the region gathered at Owen County High School to participate in a VEX Robotics competition. Competitions such as this one have grown exponentially in the last two years to accommodate the growing interest in robotics.

The VEX Robotics system is not only utilized by students in this state but in every state across the U.S. and 24 countries throughout the world.

VEX ROBOTICS COMPETITION



Many teachers have found countless benefits from exploring the robotics program in a variety of different classroom settings, and more and more schools are being "invaded" by the robotic craze.

In fact, participation has grown to the point that many schools are involved in competitions having formed robotics teams in much the same manner as other team events.

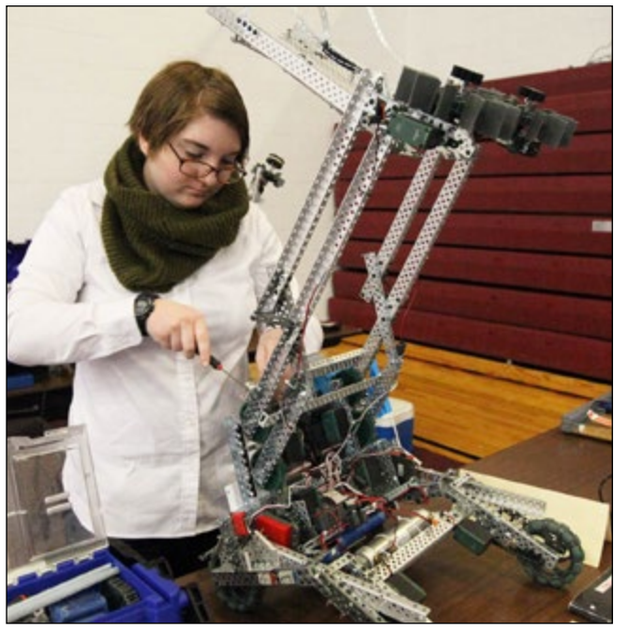
Central Hardin High School (Hardin County) has taken that concept to a whole new level with five such teams and more competition victories realized in a year than most teams garner in a lifetime.

Jason Neagle, the Central Hardin High coach said the engineering program at the school helped create robotics teams and spurred on the program in general.

"Project Lead the Way (PLTW) curriculum has been the foundation for the robotics and engineering program at Central Hardin High," he said. "We began integrating PLTW curriculum in the fall

Middle and high school students alike are getting introduced to robotics programs often through their school's Project Lead the Way pre-engineering curriculum.

The Owen County High School gym was turned into a robotics competition arena as hundreds of students gathered to test their skills against each other in an attempt to move on to national competition.



During every competition, adjustments have to be made to team robots in an effort to excel at various competition levels.

Students that are participating in the robotics programs offered in many schools across the state are learning other skills besides those related to the robots including team building skills.

of 2008 and became a PLTW certified school in 2011."

Neagle added that the greatest example of the success of the PLTW program is Central Hardin's Vex Robotics teams that officially formed in 2013. It has taken the teams little time to become world class.

"As the 2013-14 season progresses, Central Hardin High School Bruin 6135 teams are world ranked in Skills Challenges, have won 10 tournament championships, five excellence awards, 11 Robot Skills Challenges and have already begun to mentor other teams in their Rookie VRC Season," Neagle said. "Three of the teams have qualified for the Vex Robotics world competition in Anaheim, Calif."

Central Hardin High teams also will compete in the Kentucky State Technology Student Association (TSA) Competition in Louisville with an opportunity to qualify for the National TSA conference in Washington D.C., June 27-July 2.

Neagle said all this success that came in a short period is a result of the commitment his students made to the program in working to obtain high goals that were set at the beginning of the year.

"The competitive nature of the VEX Robots Challenge has fueled the students. Competition drives innovation in America, and the students that participate in competitions like this are prime examples," he said. "Along the way students are learning time management, team building skills, engineering journals, dealing with deadlines, how to prepare for events and stress management. These are the skills that students need to be successful in any endeavor they pursue after high school."

In February, one of the season's last regional events held in conjunction with the VEX Robots World Championship took place at Owen County High School. Principal Duane Kline said that his school has had great success with its robotics program, as well.

"We have participated in VEX for three years now and really began to hit our stride last year as we were able to compete well enough to earn an invitation to the VEX World Championships," he said. "Last year was our first year hosting an event, and this year the Rebel VEX Invitational more than doubled in size."

Kline also said that taking the time and effort to host such a large competition makes a great statement about how important his students are and how valued this is to the school.

"If we could have an event like this that highlighted every area of our school, it would be well worth the effort," he said. "Our students gain invaluable experience, not only in the 'nuts and bolts' of robotics (quite literally), but also in networking with other students from across the state, forming friendships and working partnerships while learning from their peers."

Kline added that the Owen County team is already talking about next year and what it can do over the summer to prepare.

The VEX Robotics Competition has grown to include teams from nearly every state and 24 countries. According to information from the company, the VEX Robotics Design System offers students "an exciting platform for learning about areas rich with career opportunities spanning science, technology, engineering and mathematics (STEM). The VEX platform is now found in middle schools, high schools and university labs around the globe."