MISSION

The CTE Technical Assistance Center (CTE TAC), a division of the Successful Practices Network (SPN), operates under a state contract to aid the New York State Education Department (NYSED) in carrying out its mission to improve the quality of, access to and delivery of career and technical education (CTE) through research-based methods and strategies – resulting in broader CTE opportunities for all students.

As part of our mission, we work to:

- Improve CTE data collection to create an accurate picture of career and technical education program performance
- Assist schools in the integration of new academic standards with CTE
- Expand CTE program approvals
- Use best practices in CTE for high school improvement
- Expand CTE programs and student leadership participation
- Build relationships and networks to strengthen CTE

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Greetings from the Career and Technical Education Technical Assistance Center (CTE TAC) of New York.

2016 has been a year of growth and excitement for career and technical education (CTE) in New York State, and I am proud to say that CTE TAC has been at the forefront of expansion efforts and new program development. There is a growing realization that cutting-edge, rigorous and relevant CTE prepares young people for both college and a wide range of high-wage, high-skill and high-demand careers.

Much of that excitement has been driven by the Board of Regents action to establish multiple pathways to graduation for all students. The new regulations recognize the importance of student engagement in rigorous and relevant CTE programs by allowing students to pass an approved pathway assessment to meet graduation requirements.

The entire CTE TAC team remains fully engaged in making sure that school districts understand the new regulations and the CTE program approval process. More than 70 school districts and BOCES reached out to us in 2016 requesting onsite assistance to develop CTE pathway programs. Additionally, our new website offers a number of resources, best practices and strategies to ensure implementation efforts go smoothly.

Requests for professional development increased substantially in 2016 as well. CTE TAC provided professional development workshops in 40 schools/districts, 15 BOCES, and 37 state-run or other professional organization conferences or trainings. More than 2,500 teachers and administrators attended these events. One of our biggest achievements was partnering with the New York State Association for Career and Technical Education (NYSACTE) to organize and conduct the first statewide CTE conference in New York in 25 years. More than 400 teachers, administrators, school counselors, board members and business representatives attended the conference, which was one of the most highly rated activities of the year.

Another signature event in 2016 was the Sixth Annual CTE Professional Organization Leadership Seminar. NYSACTE and its seven affiliate organizations were represented by the 44 leader participants along with representatives from career and technical student organizations. The Seminar is an important component of our efforts to strengthen the leadership capacity of CTE professional organizations.

This year, we redouble our efforts to provide quality resources to strengthen and expand CTE programs and, in cooperation with NYSED and CTE professional organizations, provide a strong, unified voice for CTE. Our focus on CTE program approval and quality professional development programs will continue along with strengthening the capacity of CTE leaders.

Throughout this report, you will find summaries of CTE TAC’s work in 2016. More importantly, you will see the positive impact CTE is having on education in New York and why – now more than ever – it is time to expand CTE.

Tim Ott
Director, CTE TAC of NY
Career and Technical Education Isn’t – And Mustn’t Be – What It Once Was

In New York, as in other states, career and technical education has been alternatively referred to as “vocational education” or “vocational training” – and it was far too often structured, organized and delivered to those students who were deemed less than capable of rigorous “meaningful” learning and obtaining well-paying jobs.

Educators have increasingly recognized the need to discard such outmoded and outdated thinking. This transformation is particularly evident in three key areas that the CTE TAC is committed to addressing:

- Workforce development
- Career development
- Student achievement

Today’s workplace is far different from that of our parents and grandparents – as is today’s CTE. CTE TAC is a means to bridge the gulf between what CTE/vocational education was and how it will continue to evolve to serve today’s students, employers, consumers and citizens.
LEARNING THAT WORKS

This section provides context for CTE TAC’s specific focus, strategy activities and vision with respect to each of the previously listed three key areas.

WORKFORCE DEVELOPMENT

The 2016 presidential election raised the thorny issue of the state of American manufacturing jobs. However, U.S. manufacturing output has actually been increasing:

America has lost more than 7 million factory jobs since manufacturing employment peaked in 1979. Yet American factory production, minus raw materials and some other costs, more than doubled over the same span to $1.91 trillion last year, according to the Commerce Department.¹

Associated Press, November 2016

Moreover, a study by Ball State University’s Center for Business and Economic Research last year found that only 13 percent of lost U.S. factory jobs disappeared due to international trade. The remainder were lost due to robotization and other factors reducing the comparative productivity of human labor.²

In addition, a 2013 study by Carl Benedikt Frey and Michael A. Osborne found that 47 percent of U.S. jobs are at a “high risk” of potential automation.³ The Boston Consulting Group states that the share of tasks done by robots will grow from 10 percent in 2015 to 25 percent by 2025.⁴

What determines vulnerability to automation is not so much whether the work is manual or white-collar, but whether it is the sort of routine job that is easily automated.⁵

The Economist, November 2016

¹ Paul Wiseman, “Why robots, not trade, are behind so many factory job losses”, Associated Press (November 2, 2016)
² Michael J. Hicks and Srikanth Devanaj, The Myth and the Reality of Manufacturing in America, Ball State University Center for Business and Economic Research (June 2015)
⁵ “Automation and Anxiety”, The Economist (June 25, 2016)
The New York State Department of Labor estimates\(^6\) that New York will add approximately 1.3 million jobs between 2014 and 2024 – a 13.1 percent increase.

There are significant variations by region and by employment sector that CTE leadership and all involved in workforce development need to be aware of. Yet there are consistent areas of opportunity and general trends across New York State.

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\(^6\) Long-Term Occupational Employment Projections, 2014-2024, New York State Department of Labor
According the National Skills Coalition, 51 percent of jobs in New York State are considered to be "middle skill"; NSC defines these jobs as "[requiring] education beyond high school but not a four-year degree" and states that key industries are unable to find enough qualified workers to fill these jobs. Middle-skill jobs also significantly outpace middle-skill workers as a share of the state economy (51 percent to 38 percent).7

With such a rapidly evolving employment picture, New York needs to prepare its students for tomorrow's rewarding, in-demand and well-paying jobs. NYSED and CTE TAC will, as a key part of their focus, continue to assist schools, districts, BOCES, postsecondary institutions, businesses and chambers of commerce in becoming increasingly attuned to workforce development needs.

CAREER DEVELOPMENT
There are several key issues related to student career development and college and career readiness:

- Far too many New York students fail to graduate from high school or require remediation upon entering postsecondary education, apprenticeships or business training.
- A "skills gap" limits entry into middle-skill jobs.
- Shifting demographics, automation and evolving workplace expectations need to be addressed.

In addition to the changing nature of jobs and employment, employees are changing jobs as well. The “lifetime” job has gone the way of the one-room schoolhouse.

What this increasingly common phenomenon means is that today's students will – voluntary, involuntarily, out of personal interest or for whatever other reasons – change jobs more frequently than previous generations. This would suggest that education credentials and experience matter more than ever, but also that tomorrow's workers and citizens need a strong set of transferable, generic, and situation-adaptable skills and aptitudes. These aptitudes – persistence, problem-solving ability, flexibility, interpersonal, communication and planning skills, determination to succeed, the ability to learn, honesty, empathy and so on – are known by many different names, for instance: soft skills, readiness skills, career skills and 21st-century skills.

For example, the 1991 Secretary's Commission on Achieving Necessary Skills (SCANS) report from the U.S. Department of Labor outlined five areas of essential employability aptitudes that crossed job or industry boundaries:

- **Resources**: Identifies, organizes, plans and allocates resources
- **Interpersonal**: Works with others
- **Information**: Acquires and uses information

7 "New York’s Forgotten Middle", National Skills Coalition (2014)
systems: Understands complex interrelationships
technology: Works with a variety of technologies\n
More recently, Career Ready Practices are a component of the Common Career Technical Core standards developed by Advance CTE.\n
Although there is debate about how these skills and aptitudes can or should be directly taught, all can easily be articulated, assessed, modeled and integrated into academic, extracurricular and technical content and learning.

- Mastery of technology and tools needed for entry-level employment
- A solid college-ready academic base
- Demonstrated abilities to succeed in a work or educational setting
- The ability to achieve certification or college credential without remediation

CTE TAC is working across the state to ensure CTE programs in New York become more aligned with career development for students in the following areas:

- Appropriate instruction to help students master technical skills
- Problem-/project-based learning
- Opportunities to earn certificates or take national skill-based assessments

CTE TAC furthers recommends that CTE programs:

- Define life/career abilities for all teachers to emphasize in instruction.
- Give feedback – in the process of instruction or by using assessments and common rubrics.
- Encourage students to take a proactive role in identifying and implementing life/career skills in character-based and leadership programs as active learners working with peers.

All these means and methods will enhance career development.
80 PERCENT OF STUDENTS TAKING A COLLEGE PREPARATORY ACADEMIC CURRICULUM WITH RIGOROUS CTE MET COLLEGE AND CAREER READINESS GOALS. ONLY 63 PERCENT OF STUDENTS TAKING THE SAME ACADEMIC CORE WITHOUT RIGOROUS CTE MET THOSE GOALS.

SOURCE: *High Schools That Work*, Southern Regional Education Board (2012 assessment)

CTE STUDENTS WERE SIGNIFICANTLY MORE LIKELY THAN THEIR NON-CTE COUNTERPARTS TO REPORT DEVELOPING PROBLEM-SOLVING, PROJECT COMPLETION, RESEARCH, MATH, COLLEGE APPLICATION, WORK-RELATED, COMMUNICATION, TIME MANAGEMENT AND CRITICAL THINKING SKILLS DURING HIGH SCHOOL. THE SOCIETY FOR HUMAN RESOURCE MANAGEMENT HAS IDENTIFIED EMPLOYER DEMAND FOR MANY OF THESE SKILLS.

SOURCES:
STUDENT ACHIEVEMENT
CTE TAC believes that its shared goal of “student achievement” covers a wide range of needs, responsibilities, responses and solutions. Those of us who are committed to helping students achieve recognize the previously addressed realms of workforce development and career development.

However, those to be served by student achievement include a wide array of direct and indirect stakeholders – primarily, of course, our secondary and postsecondary students. Others include:

- Parents
- Business and industry
- Communities and regions
- Taxpayers
- Consumers
- Citizens
- The state as a whole
- Our nation
“Achievement” of college and career readiness implies and involves a broad array of competencies, support mechanisms and commitments:

- **Academic Achievement**: NYSED has provided a rigorous and relevant set of learning standards in literacy, math and other core areas.

- **Technical and Career Development**: NYSED has provided a clear set of expectations for technical knowledge and skills for all students, including occupational studies across a variety of career areas – and, through CTE TAC, promotes the development of generic workplace readiness skills and attitudes.

- **Program Quality**: Working closely with CTE TAC, NYSED has implemented and maintains a nationally acclaimed program approval process to ensure that New York’s CTE programs are meeting and will continue to meet high standards.

- **Rigorous, Ongoing Assessment of Student Progress**: NYSED designates six pathways to high school graduation, including 30 CTE national industry-based assessments as an alternative to one Regents examination.

- **Optional Access to Postsecondary Learning**: Working with CTE TAC, NYSED has implemented 30 P-TECH programs that can streamline entry into postsecondary programs.

- **Advisement and Support for CTE Educators**: NYSED’s funding of CTE TAC, contracted with the not-for-profit Successful Practices Network, provides CTE leaders and practitioners with free access to professional development, research, guidance, and the sharing of proven and promising practices through its central office and regionally based staff.

The Successful Practices Network is honored to collaborate on behalf of and support NYSED through its past and ongoing management and delivery of high-quality CTE TAC services.

As documented elsewhere and throughout this report, CTE TAC continues to efficiently and effectively promote achievement through CTE – for students, stakeholders, and the state’s future economic health and well-being.

87 percent of CTE concentrators in New York graduated high school in 2013, compared to the national average of 81 percent.

81 percent of dropouts said “more real-world learning” may have influenced them to stay in school.
NEW YORK CITY

Throughout the year, CTE TAC associates Ted Gershon and Marsha Iverson continued to provide technical assistance to CTE schools that was focused on program approval and customized professional development based on specific requests from school leaders. The team also made significant progress in establishing protocols for future work with CTE TAC in activities related to professional development and program approval.

The team worked very closely with UFT (United Federation of Teachers) Teacher Center staff to facilitate professional development initiatives and conducted numerous professional development activities.

In the first two quarters of the year, CTE TAC also provided District 79 with assistance to facilitate the design and implementation of CTE programs for youth currently incarcerated and those transitioning back to Cooperative Tech or other CTE schools. Our technical assistance included identification of appropriate programs and equipment, and working with the UFT and Department of Education to establish a protocol for teacher recruitment.

LONG ISLAND

The CTE TAC team for Long Island, led by Ellen Palazzo, significantly expanded awareness and development of CTE programs, including new contacts and enhanced relationships within the Nassau County BOCES, 30 districts and
15 individual schools. The same types of services and relationship-building were provided to both the Eastern and Western Suffolk BOCES, as well as in 23 districts and 15 individual schools.

Of particular note:

- Supported by CTE TAC, the number of Virtual Enterprise (VE) programs expanded to 73 class “firms” in 52 schools, with 1,350 students enrolled and with support from 55 teachers. This has resulted in new CTE program approvals using VE as a capstone in East Islip, Hewlett, Bellport, Wantagh, Oceanside, Connetquot, William Floyd, Lindenhurst, Middle Country, Sachem and Patchogue-Medford (pending).

- Support has gathered across several local education agencies (LEAs) for the development of additional CTE programs in a variety of fields, including cosmetology, construction, culinary arts, medical assistant training, accounting, geometry in construction, algebra in manufacturing, engineering by design, and middle-school JV Virtual Enterprise.

- Across Long Island, CTE TAC has focused on building strong collaborations, partnerships and articulations with postsecondary institutions, including LIU, Farmingdale State, Mercy College, Molloy College, Suffolk Community College and the Culinary Institute of America, as well as with local business and industry.

- Requests to CTE TAC for professional development programs (both stand-alone and in conjunction with other organizations) have been increasing.

- Presentations were made in school districts – including Sewanhaka, Plainview Old Bethpage, Sachem, East Islip – and at WECA, STEM RIC and Perkins to provide up-to-date info on NYSED initiatives related to pathways and academic integration.

Additionally, CTE TAC has actively promoted and fostered the concept of a K–12-and-beyond pathway system with K–12 educators, supporting ongoing, developmental career awareness, career exploration and CTE program development as a continuum.

YONKERS

Marsha Iverson has worked closely with the superintendent, new assistant superintendent and CTE director to meet their goal of expanding CTE in Yonkers so that every high school has at least one CTE pathway. The district identified three focus schools on which to concentrate. Regular meetings with staff members and administrators were held, with feedback provided to district leaders after each meeting.

CTE TAC also assisted the district with professional development in various schools. This included problem-based learning, program approval, rigor and relevance, and integrated learning. CTE TAC provided two half-day presentations by Bill Daggett, one for all district administrators and the other for all high school teachers.

With CTE TAC’s assistance, Yonkers will be implementing several Virtual Enterprise firms for the 2017–18 school year. We have assisted by arranging site visits to excellent Virtual Enterprise programs, providing guidance in the planning stages and assisting in the training of staff.
Southern New York

As one example of CTE TAC’s effectiveness, the Mount Vernon City School District was witness to the rebirth of its storied CTE program. According to Regional Field Associate Bernard Pierorazio, at one time, Mount Vernon High School (MVHS) boasted one of the finest CTE programs established by a LEA downstate. However, that all came to an abrupt end a decade ago, with new leadership at the central office and board levels, the statewide emphasis on college readiness, and the perennial budgetary shortfall.

Yet in one short year, with the appointment of Sherry Ward as new CTE director and concentrated work by CTE TAC, there has been a renaissance in CTE throughout the district. With an energetic thrust from the CTE director, support from the central office and the targeted assistance of CTE TAC, three CTE programs went through the arduous NYSED approval process.

The road to approval was at times challenging, but what lay in the balance was the district’s share of Perkins funding, which was put on hold by the state.

During the process, CTE TAC completed a voluntary review of three MVHS CTE programs and issued a report that was straightforward, with goals and guidance to direct the district toward success. Working diligently with the district, CTE TAC supported their work and provided assistance through the approval process, including specific intervention and support toward the required college articulations.

In less than 10 months, the district secured NYSED approval for the minimum three CTE programs (Television Production, Graphics and Auto Mechanics) and was able to recoup 20 percent of its Perkins funding. Over the summer, the report previously issued by CTE TAC was the impetus to a capital improvement investment in the high school, with the complete renovation, including ventilation, flooring and new furniture for the Cosmetology Lab, new software for the Television Production program, and the repainting of the Auto Mechanics Lab.

Staff development has been a key target this academic year, with CTE TAC consultants Sherry St. Clair and Nicole Hochholzer completing two separate full-day literacy workshops for the CTE staff. CTE TAC will also sponsor a trip to the Nashville Academies and support the restructuring of the high school schedule to allow for multiple lab periods for the CTE classes.

Student enrollment in CTE classes has increased significantly and a multitude of new offerings are in the approval pipeline. They include Culinary Arts, Digital Photography, Nursing Assistance, Cosmetology/Barbering and Nail Instruction, CISCO Networking Academy, and Accounting and Related Services.

CTE TAC’s support for Mount Vernon illustrates the warranties that SPN provided in its 2005 proposal to NYSED to earn the CTE TAC contract and also echoes the specific recommendations that the 2016 Hofstra Conference offered to Roger Tilles concerning program approvals, the creation of new programs, putting college- and career-readiness on equal footing, and providing high-quality educational program experiences for CTE students.

Central and Northern New York

According to Regional Field Associate Carol Zygo, pathways have been a major focus of CTE TAC’s work in these parts of the state – from regional professional development to working with individual schools and districts. Many districts wishing to offer their students options and opportunities have looked at their CTE courses and
approved programs as ways to provide pathways to graduation in their systems. Below are some of the major efforts in the region:

- Five regional meetings were held throughout the Central and Northern regions with SEQA and RSE TASC to help districts understand the CDOS Credential and CDOS Pathway.

- Syracuse City School District now has 24 CTE programs and three P-TECH programs that have CTE programs as their foundation. All high schools offer CTE programs, and the district’s goal is that all students become involved in a CTE program in the school of their choice. The district has decided to provide an assessment that will allow students to access the CDOS credential if they do not want to choose CTE assessments from the limited SED-approved list. If the assessment aligns with their program, that will be acceptable, but SCS wants all students who complete a CTE program to have access to the CTE pathway or CDOS pathway for graduation.

- Work was done with several small districts – such as Remsen and Stockbridge – to help them understand the program approval process and to align those programs with the CTE pathways.

**WESTERN NEW YORK**

Under the local leadership of Charlie Crumb, CTE TAC has been able to provide extensive professional development activities for CTE teachers in the two “Big Five” districts in Western New York. The Rochester and Buffalo City School Districts have multiple CTE programs available for students. Each city has Focus and Priority Schools that have been listed as turnaround schools, and CTE TAC has been actively involved with the CTE program offerings at the new turnaround schools that have been growing in each city.

CTE TAC has provided and continues to provide extensive professional development to all of the CTE teachers in each BOCES over the five-and-a-half-year timeframe of its contract agreement with NYSED.

CTE TAC has been able to work with the ACTEA Zone 1 Administrators to create an exemplary team of administrators who now use their meeting time for professional development activities; the zone now holds a retreat each year to discuss support needs in each of Western New York’s BOCES and professional development plans for the coming school year.

During the first five-year contract, CTE TAC completed schoolwide CTE reviews in the Rochester, Buffalo and Webster school districts and Wayne-Finger Lakes BOCES. In Rochester, the CTE TAC–authored report given to the district served as the foundation to completely change and enhance CTE.

There are 20 LEAs that now have approved CTE programs as a result of CTE TAC’s technical assistance work with those districts.

Business and industry partnerships and connections have been an ongoing goal for five years with the Finger Lakes Advanced Manufacturing Enterprise (FAME) and the Niagara Frontier Industry Education Council (NFIEC). Charlie Crumb and CTE TAC have presented to the membership of each organization multiple times to strengthen the business and education partnerships in the region.

Other partnerships continue with the Western New York STEM Hub and the New York State STEM Collaborative.
PROFESSIONAL DEVELOPMENT:
GROWING AND LEARNING TOGETHER
CTE TAC CAPACITY AND FOCUS

CTE TAC has broad-based familiarity with the Board of Regents reform agenda, firsthand knowledge of New York State CTE programs and personal working relationships with CTE professionals across the state.

CTE TAC draws from a significant talent pool of its own staff and, as needed, hundreds of consultants, advisors, facilitators and third-party agencies. For example, CTE TAC continues to work extensively with and utilize the expertise and resources of the New York State Association for Career and Technical Education (NYSACTE). CTE TAC also deploys individual experts such as Bill Daggett, Ray McNulty, Sue Szachowicz, Sherry St. Clair, Susan Gubing and Jim Miles. Specific professional development has included:

- Leadership for college and career readiness, project-based learning, integrating academics and CTE, multiple pathways, as well as the Advance CTE career clusters
- Reading and writing in content areas
- Whole-school literacy
- Quadrant D lessons based on the Rigor/Relevance Framework®
- Instructional strategies, curriculum and assessment development and alignment
- Career academy development
- Implementing multiple pathways
- Working with special populations and ELLs in the CTE classroom
- The CDOS commencement credential
- Specialized training for the CTE program approval process (articulation agreements, employability profiles, business advisory councils, curriculum alignment and work-based learning)
- Math lesson development
- CTE data reporting

For left: Regent Roger Tilles (l) and Connie Spohn, TAC Assistant Director (r). At left: Connie Costley, NYSACTE President (l) and New York State Commissioner of Education MaryEllen Elia (r).
STATEWIDE CONFERENCE: CTE COMMUNITY JOINS FORCES

One of our biggest achievements in 2016 was partnering with the New York State Association of CTE (NYSACTE) to organize and conduct the first statewide CTE conference in New York in 25 years. NYSACTE’s seven affiliate organizations served on the conference committee and contributed to the program offerings. More than 350 teachers, administrators, school counselors, board members and business representatives attended the conference, which was one of the most highly rated activities of the year – with a 95.24 percent overall satisfaction rating.

Keynote speaker Ed Gerety inspired and energized the audience with his passion and strategies for student success. More than 40 workshops offered best practices, teaching strategies, innovative curriculum, new equipment and ideas for promoting CTE. 88 percent of the workshops were rated “good” or above.

The group was honored to have New York State Education Commissioner MaryEllen Elia share her thoughts on the future direction for CTE in New York. Regent Roger Tillis was also on hand to participate and share his thoughts with the group.

The “School Is Out” party allowed participants to combine business and pleasure while getting to know their CTE colleagues.

There was broad consensus that another conference be held in the future.

REGIONAL CONFERENCES

Due to CTE TAC’s expertise in event management, it is frequently asked to help other organizations improve the quality of their events. In 2016, CTE TAC organized the Sixth Annual CTE Conference at Hofstra University, which attracted nearly 400 CTE teachers and administrators.

CTE TAC also sponsored and helped organize an annual CTE professional development conference in New York City, which more than 400 teachers and administrators attended. We have also collaborated with several BOCES to enhance their professional development offerings in CTE.

HELPING ADMINISTRATORS BECOME INSTRUCTIONAL LEADERS FOR CTE

This year, CTE TAC developed an e-book of research, references and ideas for administrators who work with CTE teachers. There are unique features of CTE that frequently create challenges for instructional leaders seeking to ensure that CTE provides a maximum benefit to students enrolled. This reference is aimed at helping leaders develop high-quality CTE that actually supports school leaders’ agendas by positively changing student lives, improving their learning, supporting their successful transition to college and increasing community support.

A SAMPLING OF COMMENTS FROM STATEWIDE CTE CONFERENCE ATTENDEES

“Excellent conference! Professionally done, great presentations – very valuable information. I see many things to use with my students.”

“Great event! The world and everything in it is ever-evolving, so this is a good way to see what’s new in our field of work.”

“Please have this conference again!”
CTE TAC PARTNERS

CURRICULUM FOR AGRICULTURAL SCIENCE EDUCATION (CASE)

CASE is committed to the goal of improving educational experiences for agriculture students by empowering their teachers. The specific mission of CASE is to:

- Provide a system of curriculum and professional development for teacher change promoting rigorous and relevant student learning opportunities.
- Leverage partnerships with public and private entities to provide resources to teachers and students to facilitate change.
- Position agricultural education as a solution to academic challenges in secondary education.

CASE is an ambitious project started by the National Council for Agricultural Education in 2007. Its goal is to implement a national curriculum for secondary agricultural education that provides a high level of educational experiences to enhance the rigor and relevance of agriculture, food and natural resources (AFNR) subject matter. Besides elevating the rigor of AFNR knowledge and skills, CASE provides purposeful enhancement of science, mathematics and English language understanding.

CASE develops curriculum utilizing science inquiry for lesson foundations, and concepts are taught using activity-, project- and problem-based instructional strategies. In addition to the curricular aspect of CASE, the project ensures quality teaching by providing extensive professional development for teachers that leads to certification.
The final component of CASE is assessment. CASE curriculum is designed to promote a common understanding of agricultural concepts by all CASE students. By providing instruction based on common concepts, national assessments of agricultural education programs can be accomplished in ways that are valid and meaningful.

ENGINEERING BY DESIGN™ (EbD)

The International Technology and Engineering Educators Association’s STEM Center for Teaching and Learning™ has developed the only standards-based national model for grades K–12 that delivers technological literacy in a STEM context.

The Engineering by Design™ (EbD) model is built on the Common Core State Standards for high school and middle school, Next-Generation Science Standards (K–12), Standards for Technological Literacy (ITEEA), Principles and Standards for School Mathematics (NCTM), and Project 2061 Benchmarks for Science Literacy (AAAS). Additionally, the K–12 Program has been mapped to the National Academy of Engineering’s Grand Challenges for Engineering.

Using constructivist models, students participating in the program learn concepts and principles in an authentic, problem/project-based environment. Through an integrative STEM environment, EbD uses all four content areas as well as English Language Arts to help students understand the complexities of tomorrow.

CTE TAC budgets $25,000 to support NYSTEEA, including EbD training in New York State, and has helped the program expand to 52 districts across the state.

EbD’s goals are to:

- Provide a standards-based K–12 program that ensures that all students are technologically literate.
- Provide opportunities for all students without regard to gender or ethnic origin.
- Provide clear standards and expectations for increasing student achievement in science, technology, engineering and mathematics.
- Provide leadership and support that will produce continuous improvement and innovation in the New York State EbD program.
- Restore New York State’s status as the leader in innovation.
- Provide a program that constructs learning from a very early age and culminates in a capstone experience that leads students to become the next generation of engineers, technologists, innovators and designers.

OTHER PARTNERS

The CTE TAC continues to work with many other major professional organizations across the state, including NYSACTE, ACTEA, WECA, BTA, UTF, NYSCOSS and Office of Post-Secondary Access, Support and Success, as well as affiliated CTE student organizations serving approximately 75,000 New York students – including DECA, FBLA, FCCLA, FEA, FFA, HOSA, SkillsUSA and TSA.
PROFESSIONAL DEVELOPMENT SUMMARY

CTE TAC provided professional development workshops in 40 schools/districts, 15 BOCES, and 37 state-run or other professional organization conferences or trainings in 2016. More than 2,500 teachers and administrators attended these events.

CTE TAC also conducted 13 webinars during the year, reaching approximately 600 attendees.

WORKSHOPS AND MEETINGS

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<th>Attendees</th>
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<td>School Reform Team Cateauguay</td>
<td>20 attendees</td>
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<td>December 22</td>
<td>DS Meeting at NYSED (all DSs received overview of CTE TAC contract)</td>
<td>50 attendees</td>
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<td>January 15</td>
<td>Long Island Virtual Enterprises International Trade Show and Business Plan</td>
<td>1,000 attendees</td>
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<td>January 21</td>
<td>HFM BOCES – P-TECH Design Team Meeting</td>
<td>60 attendees</td>
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<td>January 25–26</td>
<td>New York State Criminal Justice Conference (Albany)</td>
<td>30 attendees</td>
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<td>January 28–29</td>
<td>ACTE Zone 1 Meeting</td>
<td>30 attendees</td>
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<td>January 29</td>
<td>Half-Day Workshop, Secondary Staff PD (Yonkers City Schools)</td>
<td>200 attendees</td>
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<th>Workshop/Meeting</th>
<th>Attendees</th>
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<td>February 1</td>
<td>CTE at the Core (NYC Conference)</td>
<td>400 attendees</td>
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<tr>
<td>February 5</td>
<td>HFM BOCES Component School Superintendents and Other Administrators</td>
<td>50 attendees</td>
</tr>
<tr>
<td>February 19</td>
<td>TST BOCES Component School Superintendents and Other Administrators</td>
<td>30 attendees</td>
</tr>
<tr>
<td>February 24</td>
<td>LI VEI Business Plan Final Round</td>
<td>100 attendees</td>
</tr>
</tbody>
</table>
## MARCH

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 10</td>
<td>St. Lawrence/Lewis BOCES DS and Component School Superintendents and Other Administrators</td>
<td>20 attendees</td>
</tr>
<tr>
<td>March 11</td>
<td>Monroe 1 BOCES DS and Component School Superintendents and Other Administrators</td>
<td>30 attendees</td>
</tr>
<tr>
<td>March 11</td>
<td>PD Meeting at Huntington High School on Long Island on CTE Program Approval</td>
<td>15 attendees</td>
</tr>
<tr>
<td>March 18</td>
<td>Ulster BOCES DS and Component School Superintendents and Other Administrators</td>
<td>60 attendees</td>
</tr>
<tr>
<td>March 20</td>
<td>PD Workshop at Northville CSD on Integrating Career Awareness and Career Readiness in Curricula</td>
<td>35 attendees</td>
</tr>
<tr>
<td>March 21</td>
<td>PD Meeting at Plainview–Old Bethpage High School on CTE Program Approval and EbD</td>
<td>14 attendees</td>
</tr>
<tr>
<td>March 23</td>
<td>Roundtable with RSETASC on CDOS Credential</td>
<td>12 attendees</td>
</tr>
<tr>
<td>March 26</td>
<td>&quot;Today's Girl, Tomorrow's Woman&quot; Conference</td>
<td>250 attendees</td>
</tr>
<tr>
<td>March 28</td>
<td>PD Workshop with Academy of Finance and Enterprise on Questioning and Higher-Order Thinking (New York City)</td>
<td>35 attendees</td>
</tr>
</tbody>
</table>

## APRIL

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 6–8</td>
<td>ACTEA Leadership Conference</td>
<td>125 attendees</td>
</tr>
<tr>
<td></td>
<td>1) Self-Study for WBL Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) What We Have Learned from Approved Programs</td>
<td></td>
</tr>
<tr>
<td>April 7</td>
<td>Franklin Essex Hamilton BOCES</td>
<td>15 attendees</td>
</tr>
<tr>
<td></td>
<td>• Planning Meeting with DS and Component Superintendents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Evening Presentation to FEH School Board Regional Meeting; “Putting CTE on Equal Footing with Academic Education”</td>
<td>20 attendees</td>
</tr>
<tr>
<td>April 7</td>
<td>ACTEA Conference</td>
<td>110 attendees</td>
</tr>
<tr>
<td>April 8</td>
<td>WECA Conference Presentation</td>
<td>90 attendees</td>
</tr>
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</table>
## APRIL

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 16</td>
<td>UFT Workshop: “Horizontal Team Planning for Integrated Learning”</td>
<td>42 attendees</td>
</tr>
<tr>
<td>April 21</td>
<td>Eastern Suffolk BOCES DS and Component School Superintendents and Other Administrators</td>
<td>25 attendees</td>
</tr>
<tr>
<td>April 22</td>
<td>Herkimer BOCES Conference Day</td>
<td>300 attendees</td>
</tr>
<tr>
<td>April 28–29</td>
<td>Kenmore Tonawanda SD Community</td>
<td>1,200 attendees</td>
</tr>
<tr>
<td></td>
<td>Kenmore Tonawanda SD Faculty and Administrators</td>
<td>500 attendees</td>
</tr>
</tbody>
</table>

## MAY

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2</td>
<td>Herkimer Fulton Hamilton Otsego BOCES Planning Meeting with DS and Component School Superintendents and Other Administrators</td>
<td>23 attendees</td>
</tr>
<tr>
<td>May 4</td>
<td>TST BOCES Training on Career Readiness Self-Assessment</td>
<td>10 attendees</td>
</tr>
<tr>
<td>May 10</td>
<td>HFM BOCES Career Summit: “Creating Schools for Our Future”</td>
<td>110 attendees</td>
</tr>
<tr>
<td>May 10–11</td>
<td>PD on CDOS Standards at Jamestown CSD</td>
<td>69 attendees</td>
</tr>
<tr>
<td>May 17</td>
<td>Mohawk Valley Community College Summer Institute: “Preparing Students for the Future”</td>
<td>200 attendees</td>
</tr>
<tr>
<td>May 20</td>
<td>Adirondack Community College Half-Day PD for Faculty and Administration: “Emerging Trends”</td>
<td>80 attendees</td>
</tr>
<tr>
<td>May 21</td>
<td>UFT Workshop: “Problem/Project-Based Learning for Integrated Learning”</td>
<td>45 attendees</td>
</tr>
<tr>
<td>May 26</td>
<td>Oswego BOCES Planning Meeting with DS and Component School Superintendents and Other Administrators</td>
<td>19 attendees</td>
</tr>
</tbody>
</table>
## JUNE

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 9</td>
<td>Problem-Based Learning Workshop and Cooperative Tech (New York City)</td>
<td>15 attendees</td>
</tr>
<tr>
<td>June 9</td>
<td>Industry Partners Workshop at Cooperative Tech (New York City)</td>
<td>10 attendees</td>
</tr>
<tr>
<td>June 20</td>
<td>End-of-Year PD and 2016–17 Planning Meeting</td>
<td>65 LI VEI business teachers and administrators</td>
</tr>
<tr>
<td>June 21</td>
<td>Authentic Assessment in CTE Workshop at Champlain Valley Education Services (Plattsburgh)</td>
<td>26 attendees</td>
</tr>
<tr>
<td>June 27–30</td>
<td>AMPED Summer Training (Spencerport)</td>
<td>22 attendees</td>
</tr>
<tr>
<td>June 28-29</td>
<td>Joint CTE Conference (Albany)</td>
<td>385 attendees</td>
</tr>
</tbody>
</table>

## JULY

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 11</td>
<td>NYS Rural Schools Conference</td>
<td>200 attendees</td>
</tr>
<tr>
<td>July 11–14</td>
<td>VEI Teacher Training Conference (Old Westbury)</td>
<td>140 total attendees (60 New York State)</td>
</tr>
<tr>
<td>July 13</td>
<td>Authentic Teaching and Authentic Learning Workshop at LIFT NY (New York City)</td>
<td>12 attendees</td>
</tr>
<tr>
<td>July 14</td>
<td>Fordham University Concurrent Workshop for CSA Executive Leadership Institute on Leadership Shifts for Career Readiness</td>
<td>14 attendees</td>
</tr>
<tr>
<td>July 25–28</td>
<td>AMPED/Geometry in Construction Training (New York City)</td>
<td>19 attendees</td>
</tr>
</tbody>
</table>

## AUGUST

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 2–3</td>
<td>CTE Leadership Seminar (Albany)</td>
<td>75 attendees</td>
</tr>
<tr>
<td>August 10</td>
<td>“Teach Your Trade” (Cheektowaga)</td>
<td>45 attendees</td>
</tr>
<tr>
<td>August 26</td>
<td>Yonkers Public Schools (Yonkers)</td>
<td>All secondary teachers and administrators</td>
</tr>
<tr>
<td>August 31</td>
<td>Monticello Schools (Monticello)</td>
<td>All teachers and administrators</td>
</tr>
</tbody>
</table>
### SEPTEMBER

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 6</td>
<td>Pine Valley Central Schools (Dayton)</td>
<td>50 attendees</td>
</tr>
<tr>
<td>September 7</td>
<td>New York Community College Association of Presidents</td>
<td>75 attendees</td>
</tr>
<tr>
<td>September 12</td>
<td>Literacy Workshop with CTE Mt. Vernon HS</td>
<td>14 attendees</td>
</tr>
<tr>
<td>September 16</td>
<td>Bronx Design and Construction Academy PD on PBL (for all teachers at their opening meeting)</td>
<td>15 attendees</td>
</tr>
<tr>
<td>September 16</td>
<td>Provided PD for the teaching staff and administration of the two FEH BOCES CTE Centers in the program approval and reapproval processes (Malone and Saranac Lake)</td>
<td>35 attendees</td>
</tr>
</tbody>
</table>

### OCTOBER

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 7</td>
<td>HFM BOCES</td>
<td>200 attendees</td>
</tr>
<tr>
<td>October 16</td>
<td>Rochester City SD</td>
<td>35 attendees</td>
</tr>
<tr>
<td></td>
<td>• Reviewed curriculum components needed for state review</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Started planning the Scope and Sequence part to be started in January</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Participated in CTE Roundtable with all leaders managed by Keith Babuszczak</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discussed student voice and classroom management</td>
<td></td>
</tr>
<tr>
<td>October 23-24</td>
<td>SAANYS Annual Conference (sponsor)</td>
<td>350 attendees</td>
</tr>
<tr>
<td>October 24</td>
<td>Literacy Workshop with CTE Mount Vernon HS</td>
<td>14 attendees</td>
</tr>
<tr>
<td>October 28</td>
<td>SUNY Cobleskill CDOS Credential, CDOS and CTE Pathways</td>
<td>124 attendees</td>
</tr>
</tbody>
</table>
## NOVEMBER

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop/Meeting</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 4</td>
<td>SED: “What Works” Conference</td>
<td>150 attendees</td>
</tr>
<tr>
<td>November 7</td>
<td>CFM Rewrite (Albany)</td>
<td>12 attendees</td>
</tr>
<tr>
<td>November 8</td>
<td>Yonkers Public Schools Full-Day PD</td>
<td>350 attendees</td>
</tr>
<tr>
<td>November 16</td>
<td>BTANYS Fall Seminar Presentation on Problem-Based Learning (New York City)</td>
<td>35 attendees</td>
</tr>
<tr>
<td>November 16</td>
<td>Glen Cove School District:</td>
<td>25 attendees</td>
</tr>
<tr>
<td></td>
<td>• Meeting with Glen Cove Assistant Superintendent Michael Israel about the VE program implementation in middle and high schools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Observation of classes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Meeting with principal and teachers at high school and middle school</td>
<td></td>
</tr>
<tr>
<td>November 16</td>
<td>Sachem SD: Three-Hour Workshop for CTE Teachers on CTE-Approved Programs, Approval and Reapproval Processes, Potential New Programs, Interdisciplinary Connections</td>
<td>25 attendees</td>
</tr>
<tr>
<td>November 18</td>
<td>Sixth Annual Hofstra CTE Conference</td>
<td>250 attendees</td>
</tr>
<tr>
<td>November 29-30</td>
<td>EbD Training (New York)</td>
<td>22 attendees</td>
</tr>
</tbody>
</table>
2016 WEBINARS
Career Counseling: Transforming to Changing Times
Registered: 48 | Attended: 26

Putting “Career Readiness” on Equal Ground with “College Readiness”: The Leadership Role for CTE
Registered: 97 | Attended: 48

NYS CTE Program Approval Process: An Introduction and Overview
Registered: 101 | Attended: 53

Transforming Middle-Level CTE
Registered: 55 | Attended: 31

Adolescent Literacy’s Role in CTE
Registered: 30 | Attended: 15

Teaching and Assessing Speaking Skills
Registered: 41 | Attended: 15

Career and Technical Education: Challenge and Opportunity for School Leaders
Registered: 22 | Attended: 13

Overview of the Rigor and Relevance Framework
Registered: 23 | Attended: 9

Competencies Needed for a Quality Work-Based Learning Program (Part 1)
Registered: 149 | Attended: 69

Digging Deeper into Rigor
Registered: 19 | Attended: 10

Getting Teacher “Buy-In” for Instructional Improvement
Registered: 17 | Attended: 7

Competencies Needed for a Quality Work-Based Learning Program (Part 2)
Registered: 143 | Attended: 43

Creating Rigorous Assessments
Registered: 23 | Attended: 5
One major goal of CTE TAC’s current mandate and warranty to NYSED is to expand the number of CTE-approved programs across the state, particularly at the local educational agency (LEA) level. During the first quarter of the contract, CTE TAC created a standardized yet flexible online tracking system that the field staff could use in assisting LEAs through the program approval process.

The Program Approval Activity Log is a database housed on the CTE TAC website and managed by the CTE TAC central office staff. Since February 2016, 90 individual records have been created by field staff members as they worked closely with the LEAs in their respective regions. The breakdown of activities is as follows:

**AGENCIES**
- 90 Record Entries (for individual programs)
- 68 Distinct Agencies (schools, districts, BOCES)

**PHASE (TYPE OF WORK)**
- 69 New Approvals
- 15 Reapprovals
- 5 Previous Work
- 1 Amendment
CONTENT AREA
9 Agricultural Education
15 Business and Marketing Education
8 Family and Consumer Science Education
4 Health Occupations Education
12 Multiple Pathways
3 New and Emerging
16 Technology Education
23 Trade, Technical and Industrial Education

STATUS (CURRENT)
55 New/beginning
11 Ongoing
5Awaiting articulation agreement
3 Application complete and submitted
4 Realigning and developing curriculum
3 Tying up loose ends
9 Programs approved

APPROVED PROGRAMS (2016)

<table>
<thead>
<tr>
<th>DISTRICT/BOCES</th>
<th>PROGRAM</th>
<th>CONTENT AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>G. W. Hewlett HS</td>
<td>Programming and Networking</td>
<td>Business and Marketing Education</td>
</tr>
<tr>
<td>Bethlehem HS</td>
<td>Human Services</td>
<td>FACS Education</td>
</tr>
<tr>
<td>DCMO BOCES</td>
<td>Nursing Assistant</td>
<td>Health Occupations Education</td>
</tr>
<tr>
<td>Islip HS</td>
<td>Business Education with Virtual Enterprises Capstone</td>
<td>Business and Marketing Education</td>
</tr>
<tr>
<td>Mount Vernon HS</td>
<td>Television Production/Digital Communication</td>
<td>Trade, Technical and Industrial Education</td>
</tr>
<tr>
<td>Mount Vernon HS</td>
<td>Automotive Technology</td>
<td>Trade, Technical and Industrial Education</td>
</tr>
<tr>
<td>District 79, NYC</td>
<td>Carpentry</td>
<td>Trade, Technical and Industrial Education</td>
</tr>
<tr>
<td>Sewanhaka Central HS District</td>
<td>Networking and A+ Programming</td>
<td>Trade, Technical and Industrial Education</td>
</tr>
<tr>
<td>Valley Stream Central HS District</td>
<td>Commercial Foods</td>
<td>Trade, Technical and Industrial Education</td>
</tr>
</tbody>
</table>
NYS-APPROVED PROGRAMS BY CAREER CLUSTER

**AGRICULTURE, FOOD & NATURAL RESOURCES**
66

**MANUFACTURING PRODUCTION**
91

**ARCHITECTURE & CONSTRUCTION**
121

**MARKETING SALES & SERVICE**
76

**INFORMATION TECHNOLOGY**
101

**TRANSPORTATION, DISTRIBUTION & LOGISTICS**
149

**HOSPITALITY & TOURISM**
67

**FINANCE**
12
Enhancing Communications and Growing the Network

Data Project

In order to take full advantage of the Multiple Pathways initiative approved by the Board of Regents in 2015, NYSED needs a clear and accurate picture of how many students participate in CTE programs across the state. However, collecting, reporting, and verifying CTE data is a challenging process for many school districts. Simple inspection of 2014–15 Student Information Repository System (SIRS) data from most LEAs highlights the fact that too much data is incomplete or inaccurate.

CTE TAC headed a study of CTE data management and reporting processes in a sampling of districts to identify the deficiencies in NYSED’s current data collection protocols and to systematically isolate and understand the root causes of the problem points. Onsite discussions with districts’ data management teams began in April 2016 and concluded in July. Reviews were conducted in 20 districts. The CTE TAC made an effort to select districts that formed a representative sample of districts within each economic region of New York.

Although there were several common deficiencies and/or inaccuracies that districts exhibited in regard to specific SIRS field headers (e.g., Service Provider, CIP Code, Level of Intensity, End Date/End Reason, Technical Skills Assessment), broader, more general issues were observed. The most common was a general misunderstanding of SIRS codes and definitions.

Of the 20 districts visited, approximately 70 to 80 percent were underreporting and/or inaccurately reporting CTE data. Another 10 to 20 percent had minor inaccuracies, and two districts were observed to have a good handle on CTE data reporting.
The new 2015–16 SIRS reports were released in September 2016. TAC reviewed each report from the 20 districts visited in the spring in the same manner as the 2014–15 SIRS reports. TAC determined that the work conducted in the spring had a positive impact on the accuracy of reporting for 2015–16 SIRS.

- Approximately one-third of the districts showed much improvement, meaning they addressed most if not all of the problem areas identified in 2014–15.
- Another third showed some improvement, meaning the data team made an obvious effort to improve on some or many of the inaccuracies discussed with them.
- A few districts exhibited the same problems with 2015–16 data as the prior year, so no effort was made to augment their reporting process.
- A few districts that had exemplary reporting practices in place continued to report accurate data in 2015–16.
- One district regressed.

CTE TAC plans to build upon the positive results from the 2016 study by reaching out to an additional 20 districts across the state to perform a similar review in 2017. Furthermore, CTE TAC intends to incorporate a SIRS review as part of the scope of work it does with all district clients. CTE TAC is also offering to present data at conferences held by New York State CTE professional organizations.
MARKETING AND COMMUNICATIONS

Communicating the value of CTE to teachers, students, administrators, counselors, parents, and business and industry is critical to the marketing and advocacy work to which CTE TAC of New York is committed.

2016 was another successful year of engaging the CTE community in New York through our monthly newsletters and email blasts in which we shared the successes and accomplishments of CTE teachers, administrators and students and kept the community up to date on CTE news and events. We also engaged in a fruitful CTE Month campaign in which we shared best practices and success stories from throughout New York.

CTE TAC continues to engage New York’s CTE community through an active Twitter account (@NYSCTECENTER) and regularly shares student successes as well as notice of events, including our online webinars.

CTE TAC looks forward to an ongoing connection with the CTE community in 2017, including the many conferences and workshops it supports as a sponsor and exhibitor, which will include the ACTEA Annual Leadership Conference on March 29 and the Region 1 ACTE Conference in New York City on April 26.

NEW WEBSITE

CTE TAC was hard at work in 2016 redesigning nyctecenter.org to better meet the needs of the NYS CTE community. With feedback from the field and keeping in mind best practices in web design, CTE TAC will introduce a new and improved web experience in 2017.

The same supportive resources that career-technical educators have come to expect from CTE TAC are now accessible in an easier-to-navigate environment. Development and enhancement of resources will continue through 2017, and users can expect more resources and tools to become available on the website throughout the year.

Because the resources of CTE TAC are restricted to New York State educators, users should register on the new website to gain access to all tools and content.
PROFESSIONAL ORGANIZATION SEMINAR

CTE TAC held its Sixth Annual CTE Professional Organization Leadership Seminar in August 2016. The New York State Association for Career and Technical Education (NYSACTE) and its seven affiliate organizations were represented by the 44 leader participants along with four representatives from Career and Technical Student Organizations.

The group was joined by NYSED’s senior deputy commissioner and CTE team, CTE postsecondary representatives, SREB’s Director for Teaching to Lead and NYSACTE’s CTE advocate, who served as keynoters or presenters. In total, 65 persons attended.

These annual seminars provide CTE leaders with information impacting CTE from the state and national levels. The 2016 seminar included updates on policies and practices stemming from Multiple Pathways, teacher preparation and certification, and ESSA. It focused on leadership skill development to address challenges of membership development, strategic planning, CTE advocacy and public relations. The organizations developed plans to address these areas. Over the past six years, the ultimate goal for the seminars has been to strengthen the organizations and assist them in speaking with one voice for CTE.

A sampling of feedback shared by participants indicated that the seminar was very well-received:

- “This seminar provided excellent information, strategies and opportunities for networking.”
- “The seminars help the groups continue to work together to have a unified voice for CTE.”

ECONOMIC ZONE REPORTS

CTE TAC used information released or reported by the New York Regional Economic Development Councils and the New York Department of Labor to determine whether CTE programs provided by LEAs and BOCES aligned to the economic needs of their region.

CTE TAC created economic zone labor alignments for each of the 10 economic regions in New York State. Each alignment is a chart organized around the 16 career clusters. The clusters align to Regional Economic Development Council plans and focus areas as well as New York Department of Labor projections and high-need industries.

With this data, LEAs and BOCES can assess the value of the various CTE programs offered to students in finding quality, high-wage, high-need jobs.
ASSURING BROAD-BASED, QUALITY CTE IN NEW YORK

HOW CTE TAC HELPS OUR SCHOOL COMMUNITIES

To continue its mission and mandate, CTE TAC needs the active support of believers and stakeholders in CTE, as well as members of the broader New York State community. Everyone who recognizes the critical importance of CTE needs to be actively involved. To do that, CTE TAC encourages everyone with a stake in quality education to:

- Ask and learn more about local CTE programs.
- Visit and observe local CTE programs.
- Volunteer to support CTE programs and their teachers as mentors and tutors.
- Become advocates for CTE among friends and neighbors.
- Identify needs and facilitate business participation and partnerships with CTE programs.
- Identify potential job-shadowing, internship and apprenticeship opportunities.
- Continue to reach out to CTE TAC to help institutions deal with opportunities, challenges and technical/compliance regulations – and recognize that CTE TAC is here to support them.
- Be a CTE TAC promoter by sharing with colleagues your current and previous interactions with CTE TAC and encouraging them to engage CTE TAC’s expertise and resources.
LOOKING AHEAD

The NYSED CTE TAC’s go-forward, priority goals for 2017 and beyond include a number of ongoing and new initiatives that will continue to maintain New York’s nationally recognized leadership position in CTE advancement and, on behalf of NYSED, improve CTE across New York State. Those specific initiatives support the overarching strategic vision and mission of CTE TAC:

- **Promotion, awareness building and advocacy communications directed at non-CTE education and business leaders as well as parents.** Catalyzing and expanding such broader understanding and support will serve to enhance and expand CTE across the state.

- **Support and advocacy for college and career readiness.** CTE TAC will inform and advance the notion of preparing students not only for postsecondary studies, but also for adult roles as responsible citizens, consumers, family members and contributors to America’s ever-changing workforce and economy.

- **CTE program development, approval and enhancement.** Continuous improvement will not only ensure and enhance the quality of CTE pathways and programs, but will also guide and inform the evolution of new CTE – and general education – programs, as well as the overarching development of NYSED’s college and career initiatives.

- **Enhanced observation, documentation, collection and dissemination of best practices in CTE.** The Center will leverage its experience and expertise that SPN developed during its school improvement project – conducted during 2003–08 in collaboration with the Council of Chief State School Officers (CCSSO) and with the support of the Bill and Melinda Gates Foundation – identifying replicable, proven and promising best practices in CTE that inform both CTE and career- and college-ready learning.

- **Data collection.** Making the case for CTE requires accurate data and information on the size and scope of CTE programs and the types and numbers of students they serve. CTE TAC understands that such a major, ongoing undertaking will provide NYSED and local education leaders with the data needed to secure the continuance and enhancement of local, state and federal support for CTE.

- **The ongoing support and enhancement of CTE’s career professionals and practitioners.** CTE TAC will continue to maintain and enhance the quality and professionalism of CTE teaching and leadership and the image of the profession.
EXPANDING OUR REACH

CTE TAC has invested in its website, database and communications as part of its mission to serve, support and expand CTE across New York State. You will see a new CTE TAC moving forward with enhanced communications and the same passionate commitment to our mission.

Your resource for quality career and technical education

Updated CTE TAC website and e-newsletter template (at right)
MAKING THE CASE FOR CTE

OUR MESSAGE: Without a quality career and technical education system, New York State will not be able to compete in a global marketplace. Eighty-eight of the 200 fastest-growing occupations within the next decade require technical education. This economy demands a better-educated workforce than ever before, and jobs in this new economy require more complex knowledge and skills than the jobs of the past.

INFORMATION AND SUPPORTING FACTS: Without a quality career and technical education program, fewer students will graduate from high school and consequently, New York State will not have adequate human capital to compete in a global marketplace. Eighty-eight of the 200 fastest-growing occupations within the next decade require technical education. This economy demands a better-educated workforce than ever before, and jobs in this new economy require more complex knowledge and skills than the jobs of the past.

CTE TAC is focusing on applying and retaining academic skills in communication, mathematics, and science and being able to demonstrate those in academic achievement.

Students enrolled in CTE programs are significantly more likely to complete high school, and the program requires students to complete four years of high school and to have technical and academic skills. Students who are employed in CTE programs have higher rates of on-time graduation and credit accumulation.

Research and studies report that many applicants are seeking employment without the full set of skills academic, employability, and technical required for today’s jobs. Education and labor programs are the very areas teaching these skills.

CTE TAC assists the New York State Education Department (NYSED) in carrying out its mission of improving the quality, access, and delivery of Career and Technical Education (CTE) across the state. NYSED to serve, support, and expand opportunities for all students.

CTE improves the return on our investment in education at the local, state and federal levels—making sure we develop a more highly-educated workforce with better skills, technical expertise, and great ideas. CTE TAC assists the New York State Education Department (NYSED) in carrying out its mission of improving the quality, access, and delivery of Career and Technical Education (CTE) across the state. NYSED to serve, support, and expand opportunities for all students.

CTE BY THE NUMBERS

New York State will create 6.7 million employment jobs by 2024.

In addition, 63% of all jobs will require some education and training beyond high school, including $400,000 that will require certificates.

By 2018, the US economy will create 13.8 million new jobs and 33 million replacement jobs.

Career Technical Education (CTE) provides students of all ages with the academic and technical skills, knowledge, and training necessary to succeed in today’s career and to become lifelong learners. In total, about 250,000 students are enrolled in CTE across the state.

Now Hiring

The U.S. currently lacks short of the college graduates needed to fill high skill jobs by 3 million each year.

Just 69% of students in America graduate from high school in four years.

87% of CTE concentrators in New York State in 2016 compared to the national average of 81%.

By 2016, New York will gain approximately 882,110 jobs, for a total of 8.7 million. About 65% of all jobs will require some education and training beyond high school, including $400,000 that will require certificates.

CTE programs prepare students to contribute to industries vital to New York State’s economy.

- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts, A/V Technology & Communications
- Business Management & Administration
- Education & Training
- Engineering
- Manufacturing & Technology
- Transportation, Distribution
- STEM
- Hospitality & Tourism
- Health Science
- Tourism & Hospitality
- Law Enforcement & Public Safety
- Human Services
- Information Technology
- Marketing
- Manufacturing
- Transportation, Distribution & Logistics
- Travel, Tourism & Hospitality

CTE Talking Points and CTE Fact Sheet handouts

DEFINING THE FUTURE OF CAREER & TECHNICAL EDUCATION IN NEW YORK

CTE Technical Assistance Center of NY

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