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The following individuals have been designated as the employees responsible for coordinating the department's effort to implement this nondiscriminatory policy:

- Perkins Act—James Woodard, Director, Career, Technical and Agricultural Education, (404) 657-8304
- Title VI—Julie Lewis, Legal Services, (404) 656-4689
- Title IX—Julie Lewis, Legal Services, (404) 656-4689
- Section 504 and ADA—Julie Lewis, Legal Services, (404) 656-4689

Inquiries concerning the application of the Perkins Act, Title VI, Title IX, or Section 504 and ADA to the policies and practices of the department may be addressed to the Georgia Department of Education, Twin Towers East, Atlanta, Georgia 30334, (404) 656-2800; to the Regional Office for Civil Rights, 61 Forsyth Street, Suite 1970, Atlanta, Georgia 30303; or to the Director, Office for Civil Rights, Education Department, Washington, D.C. 20201.

CTAE
Career, Technical and Agricultural Education

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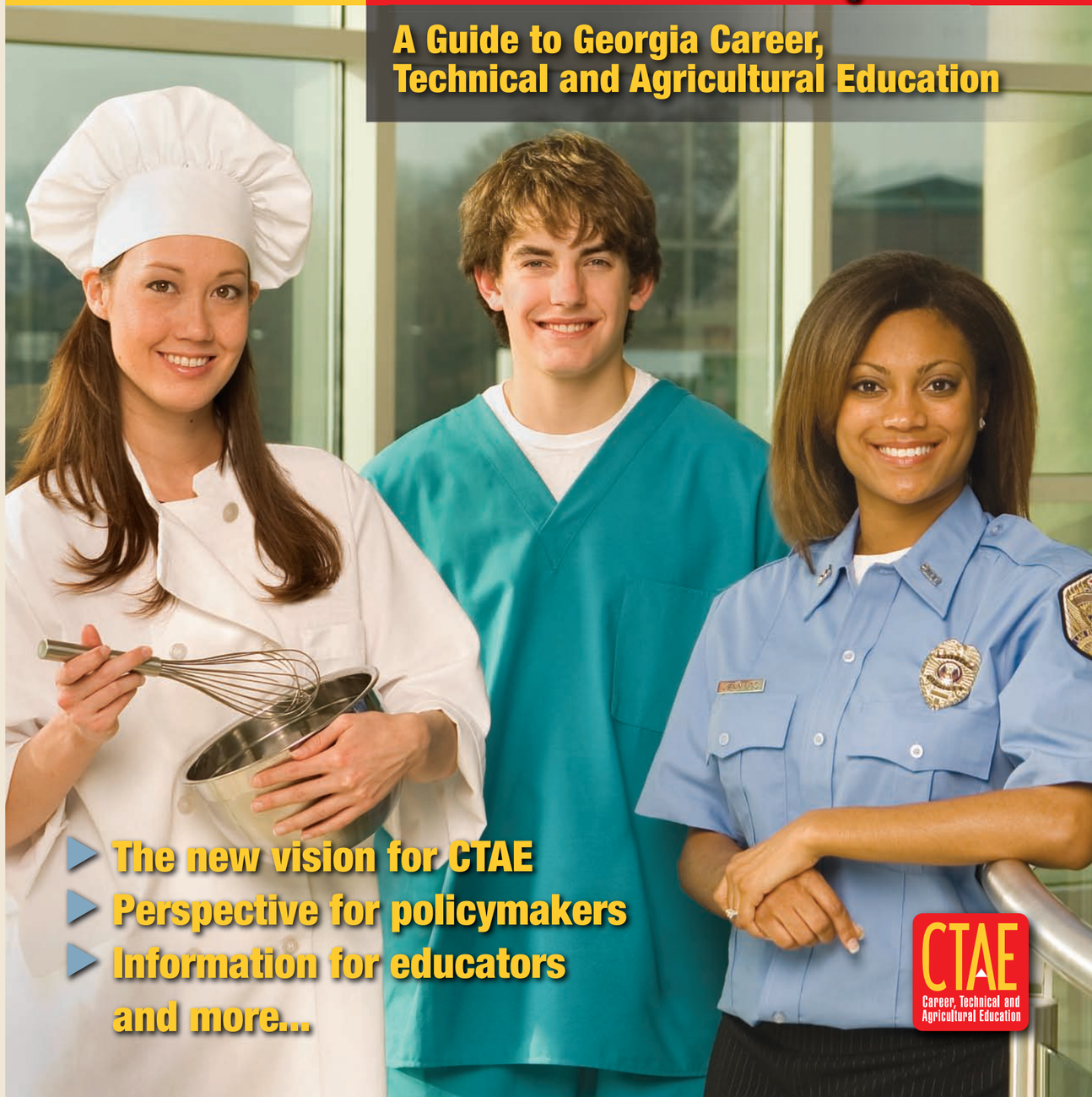
GEORGIA DEPARTMENT OF EDUCATION

We will lead the nation in improving student achievement.

Reengineering CTAE for the 21st Century

A Guide to Georgia Career, Technical and Agricultural Education



- The new vision for CTAE
- Perspective for policymakers
- Information for educators

and more...

CTAE
Career, Technical and Agricultural Education

Dear Fellow Georgian,

Every Georgia student deserves a rigorous and relevant education providing the experience and skills necessary to build fulfilling careers in the 21st-century Georgia economy. To help better prepare our students for career and college success, Georgia Career, Technical and Agricultural Education (CTAE) is reinventing itself.

In the past, most of Georgia's students were given the option to follow either a college prep or career-tech path, while a limited number have followed a dual path. Neither the college prep nor career-tech path alone enables students to reach their highest potential and find their true callings in life.

By reengineering CTAE to connect rigorous curriculum to relevant career exploration, Georgia can effectively engage all students, encourage excellence in every classroom, and raise academic expectations across the state.

To accomplish this goal, CTAE programs will directly support the Governor's Strategic Industries and Innovation Centers Initiative. This includes organizing some CTAE Program Concentrations and Career Pathways so that they correspond to a Strategic Industry identified by the state and to one of Georgia's five Innovation Centers.

Linking classroom learning to real-world earning opportunities available in the state will help the state grow its own highly skilled workforce, attract future economic development, and ensure that every student is prepared to build a rewarding future right here in Georgia.

On behalf of the Department of Education, I invite you to learn more about the reengineering of CTAE by reading this guide. I believe you will see that the new vision for CTAE is one that will make a positive, permanent impact on every Georgia student.

Sincerely,

Kathy Cox

Kathy Cox
Georgia Superintendent of Schools

CTAE Vision Statement:
All students will be prepared for success in future

Everyone Wins With CTAE

Building a brighter future for Georgia begins in our schools. Strategically reengineering CTAE to prepare students for high-skill, high-growth, and high-tech careers benefits everyone in the state, from students and families to communities and corporations.

Students Win

Beginning career awareness and exploration in elementary and middle school makes students active participants in their own educations. By linking classroom to career, students have a greater incentive to graduate and take on a challenging course load that will prepare them for the career of their dreams. CTAE's customized pathways ensure that students receive the relevant and rigorous preparation required to continue their education beyond high school graduation, whether at a community college, on-the-job training program, four-year college, graduate school, or in the military.

Parents Win

CTAE empowers parents to become true partners in their children's education. Parents and students sit down together to design and review Individual Career Plans (ICPs) and explore real career opportunities based on the child's strengths, interests, and goals. Through the reengineered CTAE curriculum, every parent can feel confident that his or her child will receive the tools and training required to meet his or her highest potential. No longer will students be placed on a single track that limits their options. With CTAE, every student will be equipped for success in school, in career, and in life.

Educators Win

The reengineered CTAE expands teachers' reach beyond the classroom and into the community. Educators partner with students, parents, community leaders, and other professionals to create relevant lesson plans that engage and excite students. CTAE brings a renewed energy to classroom teachers, counselors, and principals. Everyone becomes a valued partner in the process to equip the community's young people for bright, rewarding futures. CTAE connects educators with the resources they need to give Georgia's students the hands-on, high-skill education that the global marketplace demands.

Employers Win

A top-notch, homegrown talent pool is the best way for Georgia to attract new businesses, new revenue, and new opportunities for every resident. By aligning CTAE with the Governor's Strategic Initiatives and Centers of Innovation, today's students will be prepared to meet the demands of tomorrow's jobs. Employers partner in the process by offering internship, apprenticeship, job shadowing, and mentoring opportunities. Through relevant on-the-job work experience, students develop the work ethic, time management, and organizational skills required to be productive, valued employees in any field.

Georgia Wins

Schools are the lifeblood of every community. Reengineering CTAE ensures that every school in the state offers a rigorous and relevant education that prepares students for productive futures. By graduating motivated and engaged young people of promise, CTAE helps build stronger communities with the potential to attract new economic development, new residents, and new opportunities for everyone.

Please Support CTAE

Reengineering CTAE is a strategic process that will unfold over three years. Express your support for full implementation of the vision for a new CTAE system to policymakers and other leaders in your community. Thank you for helping to build an education system that truly prepares all students to succeed in the 21st-century economy.

Connecting CTAE To Workforce Development

CTAE is part of an integrated network of state departments and programs that serve Georgia's new, expanding, and existing industries by offering training and developing solutions to the challenges facing Georgia's businesses. The primary mission of this network, which includes the Georgia Department of Technical and Adult Education (DTAE), is creating a skilled workforce in the state.

DTAE's Quick Start program, for example, provides high-quality, customized training services at no cost to new or expanding businesses in the state. This training is provided through a network of 34 technical colleges, multiple satellite campuses, and four associated university programs throughout the state. Quick Start gives employees the training they need to help lead more satisfying, productive working lives and help Georgia's businesses run more efficiently and profitably.

An important partner in this integrated workforce development network is the Georgia Department of Labor (GDOL). Through GDOL's One-Stop Centers and electronically connected Career Centers, Georgians can gain access to basic employment services. Although each local One-Stop Center is unique, typical services offered include online job listings, education and training services, support services such as funds for transportation, a self-help library including a variety of career exploration tools, and personal employment assistance from professional counselors.

Inside Innovation Centers

Here's an overview of what takes place inside the Georgia Innovation Centers. By closely aligning some CTAE curriculum with these centers, Georgia's students will be better prepared to pursue in-state high-skill, high-pay careers.

Maritime Logistics Innovation Center (MLIC), Savannah
Through open communication and shared resources, MLIC works to identify, create, and implement technological advancements in maritime logistics.

Life Sciences Innovation Center (LSIC), Augusta
By facilitating collaborative research and assistance, providing a research facility, and supplying funding through grant support, LSIC supports and promotes the state's life science industry and creates new educational programs.

Middle Georgia Innovation Center for Aircraft Lifecycle Support (MICALS), Macon/Warner Robins
MICALS combines industry expertise with state-of-the-art facilities and leading-edge technologies to develop and transform lifecycle support for aircraft.

Information and Technology Innovation Center (ITIC), Columbus
ITIC's mission is to generate and support the use of innovative technology in new and established Georgia businesses. The center's facility, program, and participants help cultivate technological advancements and job opportunities in the state.

Agriculture Innovation Center (AIC), Tifton
By promoting research, training, and education in agricultural and natural resource technologies, AIC is developing innovative tools and techniques that can be used in commercial applications and to expand opportunities for the state's agricultural industry.

Manufacturing Excellence Innovation Center (MEIC), Gainesville
MEIC helps companies seeking help in meeting the challenges generated by global competition by offering assistance and leading-edge training in advanced manufacturing.

What Skills Do Students Need?

Part of the CTAE reengineering process involved asking the leaders of Georgia's five Innovation Centers what skills and knowledge were needed to produce a successful Georgia workforce. The leaders identified seven essential competency areas:

- **Entrepreneurship**
- **Marketing strategies**
- **Teamwork**
- **Problem-solving skills**
- **Leadership**
- **Sales**
- **Business plans**

By linking CTAE to the broader Georgia workforce development effort, both students and adults can explore career options available in the state and ensure that their training, skills, and experience prepare them to move into a satisfying and rewarding career right here at home.

CTAE is reengineering itself for the 21st century

Georgia Career, Technical and Agricultural Education—or CTAE—has historically provided students with the high-quality education necessary to prepare for career opportunities in the Georgia economy.

While CTAE has been successful, emerging technologies and evolving employer expectations to have a highly qualified, motivated, and reliable workforce demand that Georgia strategically retool CTAE.

The new vision for CTAE retains its challenging curriculum, yet expands the scope to ensure that every Georgia student graduates from high school with the academic skills, hands-on experience in real work environments, and intensive career guidance required to succeed in college and/or employment.

This booklet describes how CTAE is changing for the 21st century. It is your guide to a three-year effort to reengineer education to offer better opportunities for all students to succeed in school and in life.

learning, careers, and life.

CTAE Career, Technical and Agricultural Education

CONTENTS

Page 2: Where the Jobs Are

Page 3: Faces of CTAE: Healthcare Science

Page 4: Aligning CTAE Concentrations

Page 5: Faces of CTAE: Engineering and Information Technology

Page 6: Rewriting CTAE Curricula

Page 7: Sample ICP

Page 8: The Role of CTSOs

Page 9: Faces of CTAE: Agriculture

Page 10: The Role of Postsecondary Education

Page 11: Faces of CTAE: Engineering and Technology

Page 12: Connecting CTAE to Workforce Development

Page 13: Everyone Wins with CTAE

Cover photo taken at the Women's Basketball Hall of Fame in Knoxville, Tennessee.

Where the Jobs Are

The dynamic Georgia economy depends on a high-tech, highly skilled workforce. Unfortunately, employers can't find enough skilled workers in state, so they often recruit from other states, regions, and even countries to fill high-paying positions located right here in Georgia.

The top jobs in today's marketplace will go to graduates with postsecondary technical training. So while a four-year college degree can provide a wealth of career opportunities, it isn't the only path to future success. In fact, for many students, attending a more affordable two-year college or technical college is often a smarter investment. According to the Bureau of Labor Statistics, by 2008, careers requiring two-year degrees are projected to grow at twice the rate of the overall job market. In addition, students with associate's degrees can always continue their educations and earn a bachelor's degree, often with an employer reimbursing them for all or part of their tuition, books, and fees.

In Georgia, of the top ten occupations projected to be the fastest growing through 2012, only two—Respiratory Therapist and Computer Software Engineer—require more than a two-year degree. Take a look at these projections from the Georgia Department of Labor's Long-term Occupational Outlook:

2004–2014: Fastest Growing Occupations

Rank	Occupation	Projected Ten-Year Growth
1.	Home Health Aide	56 percent
2.	Network Systems and Data Communications Analyst	55 percent
3.	Medical Assistant	52 percent
4.	Physician Assistant	50 percent
5.	Computer Software Engineer, Applications	48 percent
6.	Physical Therapist Assistant	44 percent
7.	Dental Hygienist	43 percent
8.	Computer Software Engineer, Systems Software	43 percent
9.	Dental Assistant	43 percent
10.	Personal and Home Care Aide	41 percent

Skilled Workers Cash In

While a bachelor's degree and beyond can lead to career success, there are plenty of high-paying fields for students who earn an associate's degree or technical certificate from a community college or technical school.

Here's the average earning potential for some of the top jobs in Georgia for people with associate's degrees or postsecondary occupational training.

Associate's Degree

Occupation	Average Wage
Registered Nurse	$ 24.53
Computer Support Specialist	$ 20.76
Respiratory Specialist	$ 20.61
Medical & Clinical Laboratory Technician	$ 15.13
Medical Records & Health Information Technician	$ 13.76
Radiologic Technologist & Technician	$ 21.08
Paralegals & Legal Assistant	$ 20.80
Dental Hygienist	$ 23.66
Electrical/Electronic Engineering Technician	$ 23.27
Cardiovascular Technologist & Technician	$ 26.78

Postsecondary Vocational Training

Occupation	Average Wage
Automotive Service Technician & Mechanic	$ 16.34
Licensed Practical & Licensed Vocational Nurse	$ 15.04
Hairdresser, Hairstylist, & Cosmetologist	$ 11.52
Real Estate Sales Agent	$ 21.28
Preschool Teacher, Except Special Education	$ 23,242 *
Emergency Medical Technician & Paramedic	$ 12.97
Aircraft Mechanic & Service Technician	$ 27.97
Fitness Trainer & Aerobics Instructor	$ 18.36
Appraiser & Assessor of Real Estate	$ 18.36

** All salaries are hourly except for Preschool Teacher in which the total is based on working less than 2,080 hours per year.*

Faces of CTAE

ENGINEERING & TECHNOLOGY

Paula Verden

When Paula Verden entered Riverdale High School as a freshman, there wasn't room in the school's schedule for college-prep students to take career focused technology courses. So Verden and her advisor petitioned the principal to create a "zero period" that met before school and made all of the school's engineering and technology curricula available to students, like Verden, who were on the college track.

The idea was approved enabling Verden and her classmates to explore a wide range of careers from architecture to video production. "I discovered that I really enjoyed architecture and design," explains Verden, 21, who went on to Georgia Tech in Atlanta to study architecture after high school graduation.

To help build a portfolio of professional skills to complement her Advanced Placement and honors course load, Verden was an active member of the school's Technology Students Association (TSA), an organization she had also participated in throughout middle school. As a freshman, Verden participated in her first state high school TSA competition in the Computer Aided Design (CAD) event. The goal was to copy a true architectural floor plan into the computer. The assignment took five hours.

"My advisor threw me in there and basically I had to learn as I went along," recalls Verden. "My computer kept crashing and all sorts of things happened, but I never gave up. I ended up as a state finalist and finished in tenth place."

The next year, Verden returned to state, where she finished fourth in the CAD competition. When the top three students declined the invitation to participate in TSA's national competition that summer, Verden took on the challenge. Facing the first place CAD students from 49 other states, Verden earned third place national honors and decided she was destined to pursue a career in architecture.

"I always thought of high school as the beginning of my career."

Today the 21-year-old Verden is working as an architect intern/CAD draftsman at JSA Architects in Jacksonville, Florida, while pursuing four associate's degrees at Florida Community College in architectural design and construction technology; building construction; drafting and design; and civil engineering.

She has one year left at Georgia Tech where she will return to finish her bachelor's degree in the near future. Her current job, Verden says, is actually "85 percent" of the dream career she started preparing for as a freshman in high school.

"I always thought of high school as the beginning of my career. That's how I approached my schedule and how I was able to accomplish so much," explains Verden. "Students are in school from 7 a.m. to 3 p.m. That's like a real work day. So when you view school as a career, it becomes easier to make that transition from school to work. Whether you go to college or right into a job, the skills you learn in school should help you get further in your career. Your career preparation has to start in high school, because if you wait until after graduation to develop skills and find out what you like to do, then it is too late."

The Role of Postsecondary Education

CTAE provides a gateway to lifelong learning and a head start in advanced study following high school gradation. To ensure that all Georgia high school students can successfully transition to a two-year college, four-year college, the military, or other postsecondary education, CTAE offers three Seamless Education Opportunities. Each of the options listed below enables students to earn either advanced credit or equivalent college credit while still in high school. This approach saves time and money, since students begin a course of study in high school and seamlessly transition into a postsecondary education to continue their lessons without repeating material already mastered.

Here are Georgia's Seamless Education Opportunities:

Alignment/Articulation: Under this option, students take a secondary course aligned with a postsecondary course that has been locally approved for postsecondary credit upon completion of high school and entrance into a two- or four-year college or university.

Dual Enrollment: High school students can take postsecondary courses for both high school and postsecondary credit. This option is available for credit toward certificate and diploma programs as well as degree programs.

Joint Enrollment: Students can opt to take a postsecondary course while still in high school. In this case, credit is attained during high school but applied only at the postsecondary level.

Postsecondary Perspective

Michael Vollmer

"One of the key challenges for postsecondary education in Georgia is matching the skills needed in the job market with what we teach in our institutions. Like CTAE, the Department of Technical and Adult Education, which oversees Georgia's Technical College System, is aligning programs to meet current and future workforce needs. For instance, we are bringing on 100 new instructors in about 150 new programs in the state's Strategic Industries.

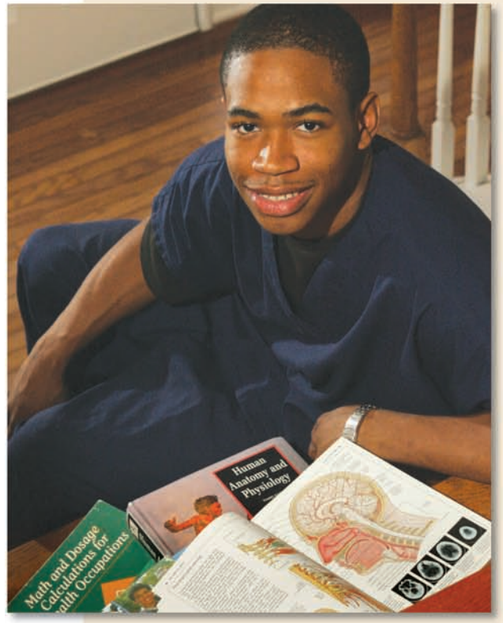
"We've begun working with about 145 middle and high schools to make sure kids understand all the wonderful career opportunities out there and to help *all* students develop a combination of academic skills and real-life skills. Microsoft founder Bill Gates has said that we've got to fundamentally change how we view the K–12 school system. It's an outdated notion that some high school graduates go off to college and the rest go down to the shop. In Georgia, 85 percent of jobs require more than a secondary school education. Every person who graduates from high school ought to be prepared both academically and with the job skills to go onto postsecondary education. In the future, we are no longer going to have two tracks—academic or technical. We are really seeing a merger of the two in higher education. We need students, parents, teachers, and counselors to understand that today's growth careers require *both* academic and technical skills."

—Michael Vollmer, Commissioner, Georgia Department of Technical and Adult Education

Faces of CTAE

HEALTHCARE SCIENCE

Eddie Hudson



Eddie Hudson started dreaming about becoming a doctor when he was a little boy. So when he entered Chapel Hill High School in Douglas County, the gifted athlete and artist chose a Healthcare Science focus to help him make his dream come true.

"Coming out of middle school, I chose a path that combined health careers and challenging courses because I knew that was the only way I could get firsthand experience in the healthcare field," says Hudson, a senior who plans to continue his medical school preparation at Albany State University in Albany after graduating from high school.

Through CTAE's Youth Apprenticeship program, Hudson has had the opportunity to explore a variety of healthcare settings including hospitals, daycare centers, nursing homes, and elementary school clinics. His school day typically begins at one of the many work sites available in the Health Science rotation, where Hudson dons surgical garb and assists nurses, aides, and other healthcare providers with basic patient care.

This on-the-job experience has confirmed what Hudson has known all along. Only now his career choice is even more focused. He explains, "Since I've had the chance to talk to people in health care and learn about each job, I know now that I want to be a general surgeon."

Hudson believes that his goal is in reach thanks in large part to his participation in his school's Health Occupations Students of America (HOSA) chapter. Throughout high school, Hudson has competed at HOSA competitions in which events include everything from researched persuasive speaking to medical terminology. Hudson, who is vice-president of Chapel Hill's HOSA chapter, specializes in medical math during the state competitions and adds extra math and science classes to his schedule to prepare for college and medical school.

"I chose a path that combined health careers and challenging courses to get firsthand experience in the healthcare field."

"HOSA gives students a chance to develop leadership skills in addition to the other more technical skills required for careers in health sciences," adds Hudson. "To me, being part of HOSA and being involved in Youth Apprenticeship gave me a head start in life. Now I won't waste time and money when I get to college. I know exactly what I want to do and what I need to do to get there."

Aligning CTAE Concentrations

Equipping Georgia's workforce and industries to compete in the global marketplace requires an ongoing and thoughtful examination of how the state prepares students for life beyond high school.

That is why CTAE is in the process of realigning its Program Concentrations and curriculum areas to better support the Governor's Strategic Industries and Innovation Centers Initiative (see box). By creating a direct connection between secondary school education and the industries identified as key to Georgia's future economic well-being, CTAE can help ensure that all students graduate from high school with the academic and career skills required to succeed in the 21st-century workplace.

This reengineering of Program Concentrations, curriculum, and Individual Career Pathways will unfold logically over three years. The goal is to create the following eight areas of concentration encompassing the 16 federal career clusters:

1. Agriculture
2. Architecture, Communication & Logistics
3. Business & Computer Science
4. Engineering & Technology
5. Family & Consumer Sciences
6. Government & Public Safety
7. Healthcare Science
8. Marketing, Sales & Service

Within each Program Concentration are Career Pathways that students can choose to follow. Part of the realignment process will include the development of Individual Career Plans (ICPs) showing the sequence of courses in each pathway, as well as the academic requirements and postsecondary options.

Below is a chart listing the new Program Concentrations followed by the corresponding proposed Career Pathways:

Agriculture	Agricultural Mechanics, Agribusiness Management, Plant Science/Horticulture, Animal Sciences, Forestry/Natural Resources, Agriscience
Architecture, Communication & Logistics	Construction, Drawing & Design, Automotive Technologies, Flight Operations, Aviation Support, Broadcast & Video Productions, Network Systems, Information Support/Services, Graphic & Visual Communications, Telecommunications, Logistics
Business & Computer Science	Small Business Development, Financial Management, Administrative/Information Support, Information Technology, Computing, Interactive Media
Engineering & Technology	Technology, Engineering, Electronics, Manufacturing
Family & Consumer Sciences	Early Childhood, Education, Consumer Services, Family/Community Services, Culinary Arts, Interior Design
Government & Public Safety	JROTC, Public Safety
Healthcare Science	Diagnostic Services, Therapeutic Services, Public Health, Health Informatics, Bio-Medical, Cosmetology
Marketing, Sales & Service	Marketing Management, Fashion Marketing, Travel & Tourism Marketing, Lodging Management, Marketing Communication & Promotion, Sports & Event Marketing

Connecting CTAE To Georgia's Innovation Centers

The Commission for a New Georgia identified these six Strategic Industries as critical to Georgia's future economic well being:

- Aerospace
- Agribusiness
- Energy and Environmental
- Healthcare and Eldercare
- Life Sciences
- Logistics and Transportation

To support the growth of these industries and encourage new companies to invest and build in Georgia, the state established The Centers of Innovation program. Each center supports joint industry-university applied research, providing incubation services to technology start-up companies, and providing entrepreneurial training and outreach to its region.

The reengineering of CTAE links some new Program Concentrations to one or more of the Centers of Innovation, ensuring that what students are learning in school today will be relevant and rewarded in tomorrow's workplace.

The box below illustrates the connection between the Innovation Centers and the Program Concentrations:

Maritime Logistics Innovation Center (MLIC), Savannah
- Architecture, Communications & Logistics
- Engineering & Technology

Life Sciences Innovation Center (LSIC), Augusta
- Health Science & Human Services
- Family & Consumer Science

Middle Georgia Innovation Center for Aircraft Lifecycle Support (MICALS), Macon/Warner Robins
- Architecture, Communication & Logistics
- Business & Computer Science
- Engineering & Technology

Information and Technology Innovation Center (ITIC), Columbus
- Business & Information Technology

Agriculture Innovation Center (AIC), Tifton
- Agriculture

Manufacturing Excellence Innovation Center (MEIC), Gainesville
- Manufacturing

Faces of CTAE

AGRICULTURE

Regina Holliday

When one of the Holliday family's cows gets sick these days, the first call isn't to the local veterinarian, but instead to their own vet-in-training, daughter Regina.

"Between my Agriculture classes at school and my FFA [The National FFA Organization, formerly known as Future Farmers of America] experience, I can handle most minor things that come up with the cattle," says Holliday. "Plus, the hands-on experience I get caring for our own animals is just another learning experience. It all works together to prepare me for my future."

The future that Holliday is proactively planning will begin with an associate's degree program in animal science at Abraham Baldwin Agricultural College in Tifton. From there, Holliday plans to continue her education and eventually earn a doctorate in large animal veterinary medicine from the University of Georgia College of Veterinary Medicine. She would also like to own 50 to 100 head of cattle.

Holliday, who already owns and cares for 12 cows, says she is thankful for the academic and career preparation she has received at East Laurens. She's especially pleased with the Agriculture classes that bring students beyond the classroom and out into the surrounding countryside for hands-on study.

"My Ag courses pertain to real world experiences," she explains. "I take a real challenging schedule—Advanced Placement English, Economics, Human Anatomy, and Forestry—and all the animal and plant science classes have always been the most interesting and valuable. We very rarely use text books in those courses. Instead we get up and go out to the school's forestry plot to measure trees, for example, or do some other experiment out in the field. There's no better teacher than real experience."

"FFA prepares students for real jobs and real life."

Complementing Holliday's rigorous academic schedule is FFA, which today includes more than 490,000 student members nationally and encompasses more than 300 agriculture-related careers. Through state and national FFA competitions, Holliday has competed in public speaking and job interview competitions, shown livestock, and participated in team events.

Says Holliday, "FFA prepares students for real jobs and real life. For the job interview competition, I had to prepare a resume and cover letter and go in and convince people to hire me for a veterinary assistant position. When I actually go to apply for a job, I will already have that experience and know what to do."

The Role of CTSOs

Thousands of Georgia students in middle schools, high schools, colleges, and universities participate in career and technical student organizations (CTSOs). These groups bring together students with shared career interests and connect them with teachers, community leaders, and local business people who serve as mentors, role models, and, often, employers offering internship and part- and full-time job opportunities.

Through their CTSO experiences, students develop the "soft skills" necessary for career success such as time management, organization, interviewing, writing a resume, teamwork, public speaking, networking, and leadership. Students also have the chance to test their career and technical skills in local, regional, and national competitions. Georgia CTSOs include:

DECA: An Association of Marketing Students
www.deca.org
More than 5,000 Georgia students participate in DECA, a national association of marketing students. DECA is specifically designed to provide activities for students to learn marketing, management, and entrepreneurial skills that will prepare them to pursue a career in the field of marketing. Members participate in a local, state, and national competitive events program that showcases student skills.

Future Business Leaders of America (FBLA)
www.georgiafbla.org
Georgia FBLA is the largest FBLA chapter in the nation, with over 17,500 members. This nonprofit student organization prepares today's students for success in business leadership. FBLA is an important partner in the success of school-to-work programs, business education curriculums, and student leadership development. Participation in FBLA activities promotes civic and personal responsibility, helps students develop business leadership skills and establish career goals, and prepares them for useful citizenship and productive careers.

Family, Career and Community Leaders of America (FCCLA)
www.gafccla.com
FCCLA offers more than 19,000 Georgia members the opportunity to expand their leadership potential and develop skills for life—planning, goal setting, problem solving, decision-making, and interpersonal communication—necessary in the home and workplace. Chapter projects focus on a variety of youth concerns including parenting, family relationships, substance abuse, peer pressure, environment, nutrition and fitness, inter-generational communication, and career education.

Georgia FFA Association
aged.ces.uga.edu/georgiaffa
Georgia FFA ranks in the top five for membership in the nation. Members develop their potential for premier leadership, personal growth, and career success through agricultural education. Today's FFA encompasses more than 300 careers in everything from agriscience to biotechnology to turf grass management.

Georgia SkillsUSA
www.skillsusageorgia.org
The mission of SkillsUSA is to develop leadership skills and workplace competencies that students will need to succeed in a constantly changing global workplace. More than 7,000 Georgia SkillsUSA members compete in over 70 leadership; health-occupations; occupationally related; and trade, industrial, and technical contests offered at the regional and state levels, culminating with the SkillsUSA Championships.

Georgia Technology Student Association (GA TSA)
www.gatsa.org
Georgia Technology Student Association (GA TSA) provides students with opportunities to excel and advance as part of their instruction in technology education. Georgia TSA promotes technology education as a means of preparing students for a dynamic world, inviting them to become critical thinkers, problem solvers, and technologically literate leaders. Members participate in co-curricular activities with the technology education program to develop communication, leadership, and competitive skills.

Georgia Health Occupations Students of America (HOSA)
www.georgiahosa.org
HOSA's mission is to enhance the delivery of compassionate, quality health care by providing opportunities for knowledge, skill, and leadership development of all health occupations students. Members attend leadership conferences featuring competition in nearly 50 healthcare-related skills.

Coordinated Vocational Academic Education VOCA Student Organization
www.gavoca.org
Georgia VOCA is a state organization with over 7,500 members. Helping students reach their potential is what VOCA is all about. Through participation in the Coordinated Vocational Academic Education (CVAE) program, and/or Project Success Program, students learn about the world of work and the employment skills they need to be successful. By participating in school and community projects, members learn to plan, organize, and implement—qualities essential in leadership. VOCA has over 45 competitive events in which students can participate. By providing these opportunities, students receive recognition for their achievement and feel confident in their abilities.

How CTSOs Help Students Succeed

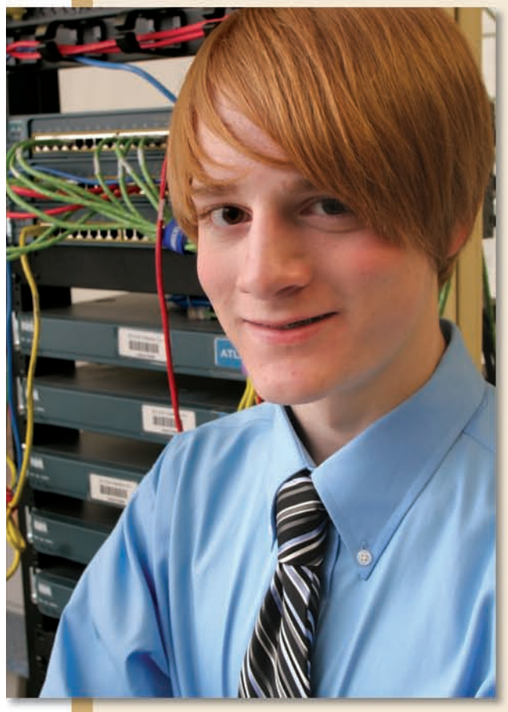
Georgia CTSOs offer students the chance to:

- develop employability skills such as problem-solving, decision-making, teamwork, responsibility, time management, and follow-through with assigned tasks
- develop and practice their leadership skills
- become involved in community service opportunities
- develop job seeking skills such as developing a resume, interviewing, and performance review skills
- explore majors and occupations in their career pathways.

Faces of CTAE

ENGINEERING & INFORMATION TECHNOLOGY

Davin Green



When it came time for high school, Davin Green chose to attend Northside High's Engineering Design and Technology Academy. The magnet school's partnership with Project Lead The Way (PLTW), the nation's leading pre-engineering curriculum, offered the project-based learning and intensive academic preparation Green knew he would need to fulfill his dream of attending New York's Columbia University.

"For as far back as I can remember I have either wanted to be an engineer or a computer scientist," says Green, who is now a junior. "The engineering magnet makes it easy for students to get a glimpse of the IT [Information Technology] world and engineering in general. There's no better preparation for a college engineering or computer science program."

The academy's program includes hands-on courses like Introduction to Engineering Design, where students render and construct simple machines and complex interdependent systems, and Digital Electronics, which challenges students to create both virtual and actual circuits. In addition to building technical skills, the academy's PLTW courses promote teamwork and help students develop valuable time management and organizational skills.

Green complements his project-based courses with a challenging menu of Advanced Placement math and science classes. During his sophomore year, he took twice the required math courses to further boost his chances of getting into his dream school. Green has also participated on Northside's robotics team, and this year, he revitalized the school's dormant Computer Club.

Explains Green, "Our initial club project is building a store for the school website. The more experienced programmers are working on that, while also teaching other students the web programming language PHP. That way every club member can participate in our projects. It's great experience and a way to give back to the school."

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The next achievement Green would like to add to his impressive portfolio is a part-time IT-related internship. His advisor, Eddie Lindsey, is helping Green explore the available opportunities and arrange an apprenticeship that matches his career goals and school schedule.

"Everything I do in high school should be helping me prepare for my future," adds Green, who plans to become a contract computer programmer after graduating from college. "Because of my classes and experiences at the engineering magnet, I know I can achieve any goal that I set for myself."

Education. Go Get It.

CTAE has teamed up with "Education. Go Get It." (GO) to help in the effort to better prepare Georgia's students for successful futures. GO is a statewide public/private partnership that works with communities to keep students in school and promote higher education.

GO encourages students to ask themselves, "Where will I go to college?" The answers could range from technical education and community college programs to a four-year degree and beyond. The goal is for students to view high school graduation as the launching pad to the next phase of their education.

Georgia's State Superintendent of Schools Kathy Cox serves on GO's Executive Committee and several Department of Education leaders contribute to GO's Advisory Teams and Subcommittees. This leadership has led to a natural partnership with CTAE, since both groups seek to enable and motivate students to reach their potential through education.

The Department of Education is using federal funds to rebrand existing school career centers to GO centers, which will provide students with information about colleges and careers. CTAE received an initial grant to fund 25 GO Centers and additional centers are being added continually in high schools, community centers, colleges, Department of Labor offices, and other public facilities.

For more information on how GO and CTAE are partnering to help Georgia's students, visit *www.georgiaGO.org* or call toll-free, 1-866-GO4-GRAD.

Rewriting CTAE Curricula

In addition to realigning the Program Concentrations, the three-year effort to reengineer CTAE will also include rewriting CTAE curricula. Currently, Formulating Committees are working to develop curricula that relate to and/or support the Strategic Industries and Innovation Centers described on page 12.

Committee members include academic and CTAE secondary teachers, postsecondary teachers, business representatives, Centers of Innovation staff, Department of Labor representatives, and Department of Education staff.

During the first phase of the CTAE reengineering process, the following pathways will be introduced to the corresponding areas:

Agriculture	Agriscience
Architecture, Communication & Logistics	Automotive Service; Aviation
Business & Computer Science	Computing; Small Business Development
Engineering & Technology	Engineering
Family & Consumer Science	Culinary Arts
Government and Public Safety	Public Safety
Health Science & Human Services	Public Health
Marketing, Sales, & Service	Marketing Management

The next phase will introduce two additional pathways to each program area. The remaining pathways will be introduced during the third phase.

Across the K–16 Curriculum

An important part of a student selecting a career pathway will include exploring ways to introduce careers to the curricula for all grades, K–16. A K–16 career development program would introduce career awareness in grades K–5; career exploration in grades 6–8; and career preparation in grades 9–16. Having students wait until high school to start exploring available careers and selecting courses to meet the requirements of a chosen career path is too late. By creating a K–16 career development plan, Georgia's students will be better equipped at the high school level to make educated postsecondary choices based on relevant coursework and real-world career experience.

The goal is to expose students to a wide variety of career opportunities and let them try several on for size to see what fits best with their strengths, interests, and goals. Students would be able to move freely between program clusters and pathways as their career interests mature and change. No student would be required to follow a certain path and all paths would be open to every student, as long as academic and course requirements were adequately met.

A Sample ICP

All Individual Career Plans (ICPs) include a plan for career preparation featuring high school course work, work-based learning options, and participation in student organizations. The ICP below includes classes leading to completion of a two-year associate's degree, as well as listings of possible four-year and graduate degrees. Actual courses vary from school to school; specific high school postsecondary offerings should be consulted for complete degree requirements and course listings.

INDIVIDUAL CAREER PLAN — ICP

Name: Logan Smith

School: South High School

Pathway: Network Systems

Program Concentration: Architecture, Communication, and Logistics

Postsecondary Goals: Associate's Degree in Telecommunications and Networking with possible further study toward a bachelor's or graduate degree.

Career Goals: Entry-level technical or professional career related to the design, development, support and management of hardware, software, multimedia, and systems integration services.

High School

9th Grade	10th Grade	11th Grade	12th Grade
English/Language Arts Math I OR Core Math I	English/Language Arts Math II OR Core Math II	English/Language Arts Math III OR Core Math III	English/Language Arts Math IV (AP Calculus) or Core Math IV
Physical Science/Biology	Biology/Physical Science	Chemistry	Physics
Citizenship (1/2 unit)	World History	American History	Economics (1/2 unit)
Required Courses/Electives PE, Health, Fine Arts, Foreign Language	**Required Courses/Electives** PE, Health, Fine Arts, Foreign Language	**Recommended sequence of courses:** • Operating Systems and Management • Networking*	
Career Electives Computer Applications*	**Career Electives** Information Technology Foundations*	*course is aligned with postsecondary course and carries articulated credit	

Postsecondary

Technical College
- Network Administrator
- Telecommunications and Networking Cable Tech
- Networking Administrator
- Networking Specialist
- Information Security Specialist
- Computer Operations

College/University
- Computer Engineering
- Computer Information Systems
- Computer Science
- Computer Engineering Technology
- Information Technology
- Business & Information Technology

Other Options
- State Registered Apprenticeship
- Industry-Sponsored Training
- Military
- On-the-Job Training

Career Enhancement Options

Work-Based Learning Options
- Job Shadowing
- Internship/Practicum
- CBE
- Youth Apprenticeship

Possible Local Articulated Credit with Technical Colleges** *(check with your counselor for other college credit opportunities)*

07.44110 Computer Applications.....SCT 100 Introduction to Computers AND CIS 107 Microcomputer Essentials

11.41200 Information Technology Foundations.....CIS 106 Computer Concepts

11.42200 Networking.....CIS 2321 Intro. to LAN and WAN AND CIS 2322 Intro. to WANs and Routing

***credit is awarded by the postsecondary institution*