Dear Friends and Colleagues,

Thank you for your interest in learning more about the Georgia Department of Education’s Career, Technical and Agricultural Education (CTAE) programs. Each year, we continue to take steps toward providing education that prepares all students to thrive in the rapidly changing 21st century economy – education that works for all Georgians. We are working to prepare students to adapt to a changing workforce and meet its demands, and to equip them with vital, marketable skills that help them understand the value of their degrees. No students should ever leave high school without seeing the connection between their education and tangible opportunities in the labor market.

Georgia’s Career Cluster Pathways initiative allows students to choose a program of study that suits their interests. Students are studying everything from energy to finance to human services, and they are learning about potential careers as early as elementary school, so they are prepared to choose a pathway when they reach high school. Career Clusters blend core academics with real-world applications, tying education to the world students will navigate after graduation. The old high school refrain – “When will I ever use this in real life?” – should be a thing of the past.

Students who follow our Career Cluster Pathways are prepared for their chosen careers, prepared for studies in postsecondary work, and are bolstered by real-life connections. The Pathways also promote critical thinking and problem solving, developing lifelong learners who will not leave their education at the door when they receive their diplomas.

Our vision of equipping students for rewarding, 21st century careers also represents a step toward strengthening regional economies. Our Career Cluster Pathways are aligned to workforce needs; we are transforming student work-based learning opportunities and working to increase the number of students who graduate from high school with an industry certification credential. This year, we have expanded our partnerships across the state, and taken steps to measure the economic impact of CTAE in Georgia.

I am proud to present this annual report, which provides more details of our efforts to make education work for all Georgians. Your continued support is greatly appreciated as we move forward in our vision.

Sincerely,

John D. Barge, Ed.D
Message from CTAE Director

This annual report briefly summarizes the status and accomplishments of the secondary Career, Technical, and Agricultural Education (CTAE) programs in the state of Georgia during the 2012-2013 school year. A major purpose of CTAE is to create college and career ready programs that are relevant and rigorous for both college and career bound students.

Our career education programs are designed to assist students in becoming successful as they pursue their career choices. The Georgia Department of Education CTAE Division administers our programs throughout the 180 school systems in Georgia to ensure that all students who graduate from a high school in Georgia are college and career ready.

The success of our CTAE Programs is based on our belief that every student can and will benefit from being engaged in CTAE. The integration of academic standards into our programs increases the likelihood of a CTAE student graduating from high school. During the 2013 school year, the graduation rate for CTAE concentrators was 88.4%, approximately 16.6 percentage points higher than Georgia’s overall graduation rate of 71.8% or 5.15 percentage points higher than 90 percent (83.25%) of the State’s USDOE established target of 92.5%. The majority of CTAE programs experienced increased student enrollment in 2013. The Career and Technical Student Organizations (CTSOs) initiatives that enable students to display leadership and technical skills inside and outside the classroom grew by 7,649 students. Our Youth Apprenticeship Program continues to be recognized and appreciated by employers throughout the state. We continue to engage our business and industry partners in the creation of new curriculum standards. Career, Technical and Agricultural Education is truly making education work for all Georgians.

I want to use this opportunity to thank all local and state CTAE staff members, parents, employers and students for their involvement and efforts in promoting CTAE related activities. To the members of the Georgia General Assembly, members of the State School Board, and our State School Superintendent, thank you for supporting CTAE initiatives in Georgia. Your efforts are making the difference in the lives of students. CTAE will continue to be a catalyst for success in the life of Georgia’s Youth.

Sincerely,

David Turner, Director
Career, Technical and Agriculture Education

CTAE Mission
To prepare students to be successful as they transition to college and the workforce
Georgia Career, Technical and Agricultural Education... Preparing the Next Generation of Leaders

CTAE At-A-Glance
Georgia Department of Education
2012-2013 Georgia Career, Technical and Agricultural Education
Secondary Education—Grades 6-12

CTAE Programs
- 180 Local School Systems

Total Georgia Student Enrollment
- 524,008 Students in Grades 9-12
- 429,388 Students in Grades 6-8

Student Enrollment in CTAE Courses
(Students enrolled in one or more CTAE courses)
- 60.90% of all Students in Grades 9-12 Statewide
  (319,133 students)
- 56.08% of all Students in Grades 6-8 Statewide
  (240,810 students)

CTAE Enrollment by Gender in Middle and High Schools
- Male 52.28%
- Female 47.72%

CTAE Enrollment by Race
- Black 39.07%
- Hispanic 10.87%
- White 44.10%
- Other 5.96%

CTAE High School Concentrators
(Students completing 3 or more classes in a Program Area)
- 96,663 Students

Graduation Rate for CTAE Concentrators
- 88.4%

Georgia Career, Technical and Agricultural Education (CTAE) students enter the world of work with excellent prospects of opportunities for employment. According to the Georgia Workforce Trends—An Analysis of Long-term Employment Projections to 2020 by the Georgia Department of Labor, total employment in Georgia is projected to grow to over 4.6 million in 2020, an increase of 11.7 percent from 2010 employment levels. The gain amounts to over 483,000 new jobs for the state. The Career, Technical and Agricultural Education Division of the Georgia Department of Education is responsible for the career and leadership development of students in schools across the state who make up the next generation of leaders.

In FY 2013, Georgia CTAE began the process of transitioning to the 90 career pathways within 17 Career Clusters which are modeled after the National Career Cluster Model utilized across the United States. Students take classes tailored to their cluster which help them navigate their way to greater success – no matter what they choose to do after high school graduation. Each cluster includes multiple career pathways. The aim of the program is to show students the relevance of what they are learning in the classroom, whether they want to attend a two-year college, a four-year university, train in a specific trade, or go straight into the world of work. Students learn about potential careers in elementary and middle school so that they are ready to choose a pathway once they reach high school. Career Clusters include:

- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts, Audio/Video Technology & Communications
- Business Management & Administration
- Education & Training
- Energy
- Finance
- Government & Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections & Security
- Manufacturing
- Marketing
- Science, Technology, Engineering & Mathematics
- Transportation, Distribution & Logistics

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- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections & Security
- Manufacturing
- Marketing
- Science, Technology, Engineering & Mathematics
- Transportation, Distribution & Logistics

Georgia students begin career exploration in elementary school exploring various career areas as an integral part of the curriculum each year. Designed to meet the needs of young adolescents (ages 10-15), middle schools bridge the gap between elementary and high school by providing students with an opportunity to learn in a safe, nurturing, and positive environment.

Characteristics of effective schools include courageous, collaborative leadership, a shared vision that guides decisions, high expectations for every member of the learning community, students and teachers engaged in active learning, and school-community partnerships. These characteristics are integral to the Career, Technical and Agricultural Education programs in Georgia. CTAE is making giant strides to bring middle and high school programs to new career readiness goals. The curriculum includes national standards, CTAE standards, and Georgia Performance Standards, in addition to career development activities allowing students to make the connection between class work and workforce. Over 429,000 middle school students and over 524,000 high school students participated in CTAE career pathway programs during the 2012-2013 school year.

High school students have a solid foundation to select a career area to study, and many high school students graduate with industry certifications and college credits along with their high school diplomas. In FY 2013, CTAE Concentrators who took a sequence of three or more classes in a single program area had a graduation rate 88.4%, as compared to the state graduation rate of 71.8%. In FY 2013, 12,815 CTAE students earned an industry credential, a 158% increase compared to FY 2012. In FY 2013, a total of 7,324 students participated in postsecondary options and earned college credits, a 43% increase compared to FY 2012.

The state career and technical education system consists of programs offered at the middle and secondary school level by the CTAE Division of the Georgia Department of Education (GaDOE) and at the postsecondary level by the Technical College System of Georgia (TCSG) and Georgia Board of Regents. Guidelines of the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) align the CTAE program with the academic indicators of the No Child Left Behind Act.

The Georgia Department of Education is dedicated to preparing students for 21st century workplace careers by providing high quality educational opportunities in science, technology, engineering, and mathematics (STEM) fields. STEM education encourages a curriculum that is driven by problem solving, discovery, exploratory learning, and student-centered development of ideas and solutions. The saturation of technology in most fields means that all students – not just those who plan to pursue a STEM profession – require a solid foundation in STEM to be productive members of the next-generation workforce.

Data Source: Georgia Department of Education Website (2012-2013 CTAE Enrollment), data tables provided by the CTAE division, and Perkins IV Consolidated Annual Report FY 2012-2013.
CTAE is preparing the next generation of highly-skilled, sustainable workers that America’s business and industry need to remain globally competitive.
CTAE Achievements in 2012-2013

Academic Achievements of CTAE Students
- 92.42% of CTAE Concentrators who took the End of Course Test (EOCT) met or exceeded state standards in English/Language Arts (State Target of 92%) in FY 2013.

Graduation Rate for CTAE Concentrators
- CTAE graduation rate of 88.4% compares favorably with Georgia’s overall graduation rate of 71.8% in FY 2013.
- CTAE graduation rate of 88.4% is within the standards of the State Target of 92.5%.

CTAE Postsecondary Transitions
- In FY 2013, a total of 7,324 students participated in postsecondary options and earned college credits, a 43% increase compared to FY 2012.
- A total of 7,324 high school students dual enrolled in college-level CTAE courses at Georgia’s technical colleges or other colleges with technical divisions in FY 2013. This is an increase of 2,848 students over FY 2012.
- A total of 779 high school students joint enrolled in college-level CTAE courses at Georgia’s technical colleges or other colleges with technical divisions in FY 2013. This is an increase of 138 students over FY 2012.

CTAE Teacher Achievements
- 404 professional development workshops, including onsite, distant learning, and Webinar sessions, were held with a total attendance of 12,422 CTAE educators throughout the state in FY 2013.

Georgia STEM (Science, Technology, Engineering, and Mathematics) Program
- 60 teachers attended Georgia STEM Institutes to learn what STEM professionals do, ways to strengthen subject content, and the integration of STEM instruction. 15 STEM industries and organizations hosted the institutes.
- Over 100 high school students (50% females and 50% males) presented at STEM Without Borders where they partnered with subject matter experts at Georgia Tech to design rigorous research projects.
- CTAE, math and science teachers collaborated to write integrated STEM frameworks of instruction that are now posted on the Georgia DOE website.
- Over 370 Georgia schools are currently working towards STEM Certification from the Georgia Department of Education.

CTAE Program Achievements
- The total number of high school students enrolled in CTAE in FY 2013 (524,008 students) increased from 517,744 high school students enrolled in FY 2012.
- The total number of middle school students enrolled in CTAE in FY 2013 (429,388 students) increased from 426,520 middle school students in FY 2012.
- 56% of all middle school and 61% of all high school students were enrolled in CTAE courses in FY 2013.
- Both middle school and high school CTAE course enrollment increased in FY 2013 as compared to FY 2012. Middle school students increased from 220,519 in FY 2012 to 240,810 in FY 2013. High school students increased from 313,898 in FY 2012 to 319,133 in FY 2013.
- 25,319 pathway completers were tested with pathway assessments in FY 2013 as compared with 12,712 high school students in FY 2012 (a 99% increase).
- 449 CTAE programs were industry certified in FY 2013 as compared with 411 industry certifications in FY 2012.
- 12,815 high school students earned an industry credential in FY 2013 as compared with 4,959 high school students in FY 2012 (a 158% increase).
- Student enrollment increased in the following high school CTAE programs in FY 2013 as compared to FY 2012:
  - Coordinated Career Academic Education/Project Success – 23%
  - Government and Public Safety – 19%
  - Marketing, Sales and Services Education – 10%
  - Healthcare Science Education – 5%
  - Architecture, Construction, Communications & Transportation – 4%
  - Agriculture – 4%
  - Education – 3%
  - Business and Computer Science – 2%
- Student enrollment increased in the following middle school CTAE programs in FY 2013 as compared to FY 2012:
  - Healthcare Science Education – 52%
  - Government and Public Safety – 23%
  - Engineering and Technology Education – 2%
- Student enrollment in Junior Reserve Officers Training Corps (JROTC) increased in FY 2013 to 39,053 students as compared to 37,116 students in FY 2012.
- Student membership in Career Technical Student Organizations increased to 166,290 in FY 2013, an increase of 7,649 students compared to FY 2012.
- Student membership increased during 2013 in the following Georgia Career Technical Student Organizations: Future Farmers of America (FFA), Georgia Technology Student Association (GA TSA), SkillsUSA of Georgia, and Career and Technical Instruction (CTI).
- 100% of employers participating in the Georgia Youth Apprenticeship Program would recommend the Georgia Youth Apprenticeship Program to other companies.
- 99.6% of employers participating in the Georgia Youth Apprenticeship Program agreed that students performed at the level expected, and 98.6% of employers noted this related to understanding written instruction.
- 98.6% of employers agreed that students who participated in the Youth Apprenticeship Program exhibited satisfactory problem-solving skills, and 96% of employers agreed that students demonstrated computer skills at the level expected.
- 95.9% of employers found the Georgia Youth Apprenticeship Program beneficial to their company.
CTAE Career Pathways – Preparing the Next Generation of Leaders

Programs of study under CTAE are designed to work for each student's success by:

➤ Providing student classes and hands-on labs, Career Technical Student Organizations (CTSOs), college classes, and on-the-job experiences
➤ Delivering academic, STEM, and CTAE content in a coordinated, non-duplicative progression of courses
➤ Incorporating and aligning secondary and postsecondary education which provides the opportunity for secondary students to acquire postsecondary credits or certificates
➤ Identifying and addressing current or emerging occupational trends

Georgia’s Technical Skill Attainment Inventory

Georgia CTAE, like many other career and technical education programs around the nation, has worked in recent years to establish a measurement mechanism to ascertain the level of technical skill attainment on behalf of its Career Pathway completers. Georgia’s measurement process has been derived in direct response to the Perkins IV Legislation, specifically, Core Indicator 251, which requires states to implement a valid and reliable assessment model linked directly to industry validated standards.

In working to identify existing assessment (or credentialing) opportunities that would not only support the mandates set forth in the Perkins IV Legislation, but also support Georgia students in their quest to leave high school with valuable credentials, the state’s technical skill attainment inventory is comprised of several measurement components:

➤ Industry certifications/credentials
➤ Occupational assessments
➤ State licensures and state-developed assessments

STEM

The Georgia Department of Education is dedicated to preparing students for 21st century workplace careers by providing high-quality educational opportunities in science, technology, engineering, and mathematics (STEM) fields. In Georgia, STEM education is defined as an integrated curriculum (in contrast to science, technology, engineering, and mathematics taught in isolation) that is driven by problem solving, discovery, exploratory project/problem-based learning, and student-centered development of ideas and solutions. The saturation of technology in most fields means that all students – not just those who plan to pursue a STEM profession – will require a solid foundation in STEM to be productive members of the workforce. Georgia STEM goals include the following:

➤ Empower students to become innovators and technologically proficient problem solver
➤ Ensure that all students have access to the appropriate technology conducive to enhancing their learning experiences both in and outside the traditional classroom
➤ Increase students’ 21st century skill and technological literacy by providing students with opportunities to use the technical tools of the STEM industry
➤ Guide community understanding of the importance of STEM education and build capacity to sustain a viable STEM educational program to prepare students for work and life in the 21st century
➤ Increase Georgia’s capacity to provide high-quality K-12 STEM professional learning opportunities
➤ Nurture partnerships that allow schools and the business sector to join efforts to improve students’ STEM-career opportunities
➤ Increase the number of students pursuing careers in STEM-related fields and/or postsecondary STEM-related education/training

Postsecondary Options Prepare Georgia’s Students for Next Generation Employment

Transition Career Partnerships (formerly Education Career Partnerships) is designed to prepare students for college and career opportunities leading students to postsecondary institutions for an industry recognized certification or licensure, an associate and/or higher college degree, and successful employment. Move On When Ready is a dual enrollment program for students to attend a postsecondary institution full-time during their junior and/or senior year of high school and receive high school credit and college credit simultaneously while attending college classes on the college campus, full-time. During the 2012-2013 school year a total of 7,324 students participated in postsecondary options through Georgia Technical Colleges, including 6,545 students in Dual Enrollment classes and a total of 779 students in Joint Enrollment classes that enhance their education in their identified Career Pathway. This represents a 43% increase (2,213 students) as compared to FY 2012. The Georgia Department of Education, the Technical College System of Georgia, and the Georgia Board of Regents strengthen and expand seamless education opportunities to benefit Georgia high school students as they pursue their chosen careers. Students may graduate high school with college credits and in some cases certificates, diplomas, or associate degrees in a career area.

Transistion Career Partnerships help develop a well-educated, technically trained, and highly competitive workforce in Georgia that can be widely recognized as the best in the nation. Through a coordinated effort with business and industry, Transition Career Partnerships is designed to prepare students for career opportunities by providing an education that is composed of coherent, articulated sequences of rigorous academic and career related courses. Business and industry partners play a vital role in defining appropriate standards of performance, providing input concerning the validity of current pathways, and assessing school programs to assure students are prepared as the skilled professionals they need.

During FY 2013 the Carl Vinson Institute of Government, University of Georgia conducted a Business and Industry Survey for CTAE to obtain input from as many businesses as possible and representing the broadest range possible to determine what businesses believe are the important skills and abilities that students need to possess to be college- and career-ready. The top ten include:

1. Workplace honesty and accountability
2. Punctuality and time management
3. Effective communication and writing skills
4. Respect of other people and other cultures
5. Problem solving and working independently
6. Adaptability to change
7. Being well-groomed and workplace presentable
8. Ability to work collaboratively in diverse teams
9. Critical thinking and the ability to ask challenging questions
10. Finding and analyzing data (paper and electronic)

“We need to know that students are being prepared, not at a minimum-competency level but with rigorous, relevant education, to enter college, the workforce or the military at a level that makes them competitive with students from other states.”

Dr. John D. Barge,
State School Superintendent
## Enrollment by Gender in Grades 9-12
(Unduplicated Count)

<table>
<thead>
<tr>
<th>Total</th>
<th>31,547</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>19,918 (63%)</td>
</tr>
<tr>
<td>Female</td>
<td>11,629 (37%)</td>
</tr>
</tbody>
</table>

## High School Student Enrollment in Agricultural Education in FY 2013
(Duplicated Count)

<table>
<thead>
<tr>
<th>Pathway-Related Course Enrollment – 118,218</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Plant Science/Horticulture: 19,355 (16%)</td>
</tr>
<tr>
<td>• Agriculture Mechanics: 18,244 (15%)</td>
</tr>
<tr>
<td>• Animal Science: 17,807 (15%)</td>
</tr>
<tr>
<td>• Agriscience: 17,202 (15%)</td>
</tr>
<tr>
<td>• Forestry &amp; Natural Resources: 16,416 (14%)</td>
</tr>
<tr>
<td>• Veterinary Science: 14,722 (13%)</td>
</tr>
<tr>
<td>• Agribusiness Management: 14,472 (12%)</td>
</tr>
</tbody>
</table>

### Other AGED Courses
- 955

## Grade 6-8 Student Enrollment in Agricultural Education Courses in FY 2013

| Total          | 26,315 |

## Number of Industry-Certified Programs

| Note: AGED programs adopted new industry certification standards and is in the process of programs becoming industry certified. |

## Number of CTAE Teachers FY 2013

| 414 High School Teachers |
| 95 Middle School Teachers |

### AGRICULTURAL EDUCATION (AGED) mission is: To

be a premier learning system that delivers agricultural, environmental and leadership education programs and services. Students may enter a wide variety of employment opportunities such as Agricultural Engineering, Agribusiness Management, Agriscience, Biotechnology, Turf Management, Landscaping, Environmental Science, Food Science, Forestry, and Wildlife Management, Agricultural Economist, and Veterinarian.

The focus for all Agricultural Education programs in relation to total school improvement is a balance of:

- Classroom and laboratory experiences
- Supervised Agricultural Experience program (SAE)
- Future Farmers of America (FFA) organization
- Evaluation of the effectiveness of each program
Enrollment by Gender in Grades 9-12 (Unduplicated Count)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>57,493</td>
<td>41,736</td>
<td>15,757</td>
</tr>
</tbody>
</table>

High School Student Enrollment in Architecture, Construction, Communications & Transportation Education in FY 2013 (Duplicated Count)

<table>
<thead>
<tr>
<th>Pathway-Related Course Enrollment – 85,170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadcast/Video Production 14,930 (18%)</td>
</tr>
<tr>
<td>Construction 12,632 (15%)</td>
</tr>
<tr>
<td>Transportation/Logistical Support – Ground Marine 9,965 (12%)</td>
</tr>
<tr>
<td>Transportation/Logistical Operations – Ground Marine 8,881 (10%)</td>
</tr>
<tr>
<td>Graphic Communications 8,877 (10%)</td>
</tr>
<tr>
<td>Graphic Design 8,598 (10%)</td>
</tr>
<tr>
<td>Heating, Ventilation, Air Conditioning, and Refrigeration (HVACR) 8,510 (10%)</td>
</tr>
<tr>
<td>Architectural Drawing &amp; Design 7,835 (9%)</td>
</tr>
<tr>
<td>Metals 3,957 (5%)</td>
</tr>
<tr>
<td>Flight Operations 516 (less than 1%)</td>
</tr>
<tr>
<td>Collision Repair 469 (less than 1%)</td>
</tr>
</tbody>
</table>

Other ACCT Courses

- 1,818

Number of Industry-Certified Programs

131

Number of CTAE Teachers FY 2013

571 High School Teachers

ARCHITECTURE, CONSTRUCTION, COMMUNICATIONS and TRANSPORTATION (ACCT) programs equip students with the knowledge, skills, and attitudes necessary for successful employment in the trade and industrial field and for further education. Students prepare for employment in architecture/design, construction trades (plumbing, carpentry, masonry, sheet metal, electrical wiring), automotive services, engineer drafting, graphic design, telecommunication specialist, web design, broadcast/video production, surveying, planning, managing, and moving people, materials, and goods by road, pipeline, air, rail, and water, as well as other related professional and technical support services.

I am a former student in a vocational construction program and have employed students from these programs. The logic and knowledge one gains in the programs make students capable of deciding their career for the future. The experience one receives is of excellent quality. The education and training received helps establish a groundwork for deciding their future in construction. I will continue to use and support students from these programs.

Billy Helton, Owner
Helton Electrical Services
Warthen, Georgia
### Enrollment by Gender in Grades 9-12
(Unduplicated Count)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>122,624</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>66,719</td>
<td>54%</td>
</tr>
<tr>
<td>Female</td>
<td>55,905</td>
<td>46%</td>
</tr>
</tbody>
</table>

### High School Student Enrollment in Business and Computer Science in FY 2013
(Duplicated Count)

Pathway-Related Course Enrollment – 204,311
- Administration/Information Support 51,481 (25%)
- Small Business Development 32,933 (16%)
- Interactive Media 27,803 (14%)
- Financial Mgmt. – Services 25,526 (12%)
- Financial Mgmt. – Accounting 25,006 (12%)
- Computing 20,514 (10%)
- Computer Systems & Support 19,842 (10%)
- Computer Networking 1,206 (less than 1%)

Other BCS Courses
- 6,647

Grade 6-8 Student Enrollment in Business and Computer Science Courses in FY 2013
118,447

Number of Industry-Certified Programs
119

Number of CTAE Teachers FY 2013
1,577 High School Teachers
452 Middle School Teachers

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**BUSINESS and COMPUTER SCIENCE (BCS)** prepares students to become productive members of the business community and to enter a post-high school institution after graduation. Students develop competencies in such areas of instruction as finance, legal operations of business, administrative support, information management, international business, entrepreneurship, and management.

Business and Computer Science programs consist of three components:
- Classroom and project-based learning experiences, which provide instruction that meets industry-validated standards
- Work-based learning directly related to classroom instruction in the form of internships, cooperative education, school-based enterprises, and youth apprenticeship
- The career and technical student organization of FBLA, which provides co-curricular activities within the program area to develop teamwork and leadership skills.
**EDUCATION (EDU) 2012-2013**

**EDUCATION (EDU)** provides students with training for many diverse opportunities in Education, from school administrator, school counselor, elementary school teacher, special needs teacher, secondary teacher, postsecondary teacher, career and technical teacher, preschool teacher, paraprofessional, and other areas. Career pathways in education introduce the foundations of education, combined with knowledge and skills gained in both the classroom and in the workplace, to prepare students for a career in Education.

---

**Enrollment by Gender in Grades 9-12**
(Unduplicated Count)

<table>
<thead>
<tr>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>24,398</td>
<td>2,845 (12%)</td>
<td>21,553 (88%)</td>
</tr>
</tbody>
</table>

**High School Student Enrollment in Education in FY 2013**
(Duplicated Count)

<table>
<thead>
<tr>
<th>Pathway-Related Courses Enrollment</th>
<th>12,271</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Industry-Certified Programs</td>
<td>21</td>
</tr>
<tr>
<td>Number of CTAE Teachers FY 2012</td>
<td>115 High School Teachers</td>
</tr>
</tbody>
</table>

---

**Enrollment by Gender in Grades 9-12**
(Unduplicated Count)

<table>
<thead>
<tr>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>12,271</td>
<td>4,839 (39%)</td>
<td>7,432 (61%)</td>
</tr>
</tbody>
</table>

**High School Student Enrollment in Culinary Arts in FY 2013**
(Duplicated Count)

<table>
<thead>
<tr>
<th>Pathway-Related Courses Enrollment</th>
<th>12,271</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Industry-Certified Programs</td>
<td>15</td>
</tr>
<tr>
<td>Number of CTAE Teachers FY 2012</td>
<td>115 High School Teachers</td>
</tr>
</tbody>
</table>

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*The Culinary Arts curriculum is based on American Culinary Federation Standards.*
### ENERGY SYSTEMS (ENGY) 2012-2013

<table>
<thead>
<tr>
<th>Enrollment by Gender in Grades 9-12 (Unduplicated Count)</th>
<th>Total 12,592</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 10,232 (81%)</td>
<td>Female 2,360 (19%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High School Student Enrollment in Energy Systems in FY 2013 (Duplicated Count)</th>
<th>Pathway-Related Courses Enrollment – 12,592</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathway-Related Courses Enrollment – 12,592</td>
<td></td>
</tr>
<tr>
<td>Engineering 18,803 (65%)</td>
<td>Engineering Graphics &amp; Design 7,254 (25%)</td>
</tr>
<tr>
<td>Manufacturing 1,644 (6%)</td>
<td>Electronics 1,248 (4%)</td>
</tr>
</tbody>
</table>

**ENERGY SYSTEMS (ENGY)** prepares individuals for careers in the designing, planning, maintaining, generating, transmission, and distribution of traditional and alternative energy. Overall employment of line installers and repairers is expected to grow 13 percent from 2010 to 2020, about as fast as the average for all occupations. Job opportunities should be best for those who have excellent technical and mechanical skills. Jobs in the energy field require varying levels of education, from work experience to college and advanced degrees.

### ENGINEERING AND TECHNOLOGY EDUCATION (ENGR) 2012-2013

<table>
<thead>
<tr>
<th>Enrollment by Gender in Grades 9-12 (Unduplicated Count)</th>
<th>Total 28,155</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 22,691 (81%)</td>
<td>Female 5,464 (19%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High School Student Enrollment in Engineering and Technology Education in FY 2013 (Duplicated Count)</th>
<th>Pathway-Related Courses Enrollment – 28,949</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 6-8 Student Enrollment in Engineering and Technology Education Courses in FY 2013</td>
<td>91,612</td>
</tr>
<tr>
<td>Number of Industry-Certified Programs</td>
<td>45</td>
</tr>
<tr>
<td>Number of CTAE Teachers FY 2013</td>
<td>361 High School Teachers 256 Middle School Teachers</td>
</tr>
</tbody>
</table>

**ENGINEERING and TECHNOLOGY EDUCATION (ENGR)** develops technological literacy as part of students’ fundamental education through an activity-based study of past, present, and future technological systems and their resources, processes, and impact on society. Engineering and Technology Education utilizes computer and educational technology in the delivery of content related to systems of communication, energy/power-transportation, production, and bio-related technologies.

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*I get so much more than just a paycheck. They make me feel like I am an important part of this Siemens plant and that the work I do is of high quality and needed by Siemens.*

Sean Carty, Apprenticeship Student
Siemens Energy and Automation
Forsyth, Georgia
Family and Consumer Sciences Education addresses important life challenges experienced by all individuals.

- Nutrition is an important life skill – without proper nutrition, individuals may develop many health-related diseases and disorders.
- Food Science enables research to develop new products in the market place that might prevent disease or add longevity to your life.
- Serious financial problems are arising among consumers. It is important for students to understand budgets, credit, consumer rights and responsibilities.

FAMILY and CONSUMER SCIENCES (FACS) prepares students for postsecondary education and careers in the business-related aspects of family and consumer sciences. It provides opportunities to develop the knowledge, skills, attitudes, and behaviors that students need to become responsible citizens and leaders, and to manage the challenges of living and working in a diverse global society. Employment opportunities include such areas as interior or fashion design, food scientist or technologist, dietician, nutritionist, social worker, and community planner.

CAREER AND TECHNICAL INSTRUCTION (CTI) 2012-2013

Enrollment by Gender in Grades 9-12 (Unduplicated Count)  
- Total: 65,513  
- Male: 18,787 (29%)  
- Female: 46,726 (71%)

High School Student Enrollment in Family and Consumer Sciences Education in FY 2013 (Duplicated Count)  
- Pathway-Related Courses Enrollment – 32,882  
  - Nutrition & Food Science: 28,455 (86%)  
  - Interior & Fashion Design: 2,508 (8%)  
  - Consumer Services: 1,919 (6%)  
- Other FACS Courses: 2,669

Grade 6-8 Student Enrollment in Family and Consumer Sciences Courses in FY 2013: 59,121

Number of CTAE Teachers FY 2013  
- 682 High School Teachers  
- 170 Middle School Teachers

Enrollment by Gender in Grades 9-12 (Unduplicated Count)  
- Total: 1,357  
- Male: 621 (46%)  
- Female: 736 (54%)

Number of CTAE Teachers FY 2013  
- 120 High School Teachers

The CAREER and TECHNICAL INSTRUCTION (CTI) is designed to support students with disabilities enrolled in Career, Technical and Agricultural Education classes. The goal of the secondary (grades 9-12) level services is to provide these students with job-entry skills at the completion of the CTAE experience. The role of the career and technical instruction coordinator is to provide resource assistance to students with disabilities served under the Individuals with Disabilities Act (IDEA) in the CTAE program and to coordinate the services needed for the learner to acquire his/her goal of job placement.
GOVERNMENT AND PUBLIC SAFETY (PSAFETY) 2012-2013

COORDINATED CAREER ACADEMIC EDUCATION/PROJECT SUCCESS (CCAE/PS) 2012-2013

<table>
<thead>
<tr>
<th>Enrollment by Gender in Grades 9-12 (Unduplicated Count)</th>
<th>Total</th>
<th>11,260</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>5,866 (52%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>5,394 (48%)</td>
</tr>
</tbody>
</table>

High School Student Enrollment in Government and Public Safety in FY 2013 (Duplicated Count)

Pathway-Related Courses Enrollment – 11,302
- Law and Justice 11,119 (98%)
- Homeland Security & Emergency Services 183 (2%)

Grade 6-8 Student Enrollment in Government and Public Safety in FY 2013

751

Number of CTAE Teachers FY 2013

119 High School Teachers
4 Middle School Teachers

If you visit a public safety program in Georgia, you may see a mock trial in progress, a simulated crime scene, CPR training, the fingerprinting process, a table top emergency plan, or a demonstration of fire rescue techniques, but you definitely will see students who are excited about learning. There will always be a need for qualified professionals in the Government and Public Safety career area, and Georgia schools are helping to prepare a dedicated public safety workforce for the future.

GOVERNMENT and PUBLIC SAFETY (PSAFETY) prepares individuals for employment relating to emergency and fire services, legal services, protective services, and homeland security.

SkillsUSA®

COORDINATED CAREER ACADEMIC EDUCATION/PROJECT SUCCESS (CCAE/PS) 2012-2013

<table>
<thead>
<tr>
<th>Enrollment by Gender in Grades 9-12 (Unduplicated Count)</th>
<th>Total</th>
<th>3,058</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>1,881 (62%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1,177 (38%)</td>
</tr>
</tbody>
</table>

Number of CTAE Teachers FY 2013

22 High School Teachers

COORDINATED CAREER ACADEMIC EDUCATION/PROJECT SUCCESS (CCAE/PS) has the mission to provide educational and occupational services and to assist students in becoming responsible, productive citizens. Through participation in the CCAE/PS support services, students in grades 9-12 learn about the world of work and employment skills they need to be successful. Throughout their school years, students need the opportunity to develop a reservoir of information, attitudes and experiences that will serve as a substantial base for decision making when they reach points in their lives at which education or career decisions must be made.
HEALTHCARE SCIENCE EDUCATION (HCSTE) 2012-2013

HEALTHCARE SCIENCE EDUCATION (HCSTE) provides students the opportunity to explore careers in healthcare and facilitates transition into postsecondary nursing, medical or allied health education, or the ability to acquire an entry level medical position in the workforce or the military. Students are exposed to general healthcare knowledge and skills and are then encouraged to pursue a more in depth study in the career area they are interested in through the appropriate career pathway including: Therapeutic Services - Nursing, Therapeutic Medical Services, and Emergency Services along with Health Informatics, Diagnostics, and Biotechnology, and Physical Medicine.

<table>
<thead>
<tr>
<th>Enrollment by Gender in Grades 9-12 (Unduplicated Count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total 37,813</td>
</tr>
<tr>
<td>Male 6,960 (18%)</td>
</tr>
<tr>
<td>Female 30,853 (82%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High School Student Enrollment in Healthcare Science Education (HCSTE) Education in FY 2013 (Duplicated Count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathway-Related Course Enrollment – 160,476</td>
</tr>
<tr>
<td>• Therapeutic Services – Nursing 28,301 (18%)</td>
</tr>
<tr>
<td>• Therapeutic Services – Medical 28,067 (18%)</td>
</tr>
<tr>
<td>• Therapeutic Services – Emergency 19,997 (12%)</td>
</tr>
<tr>
<td>• Health Informatics 19,734 (12%)</td>
</tr>
<tr>
<td>• Biotechnology Research &amp; Development 19,576 (12%)</td>
</tr>
<tr>
<td>• Physical Medicine 19,582 (12%)</td>
</tr>
<tr>
<td>• Diagnostic Services 19,233 (12%)</td>
</tr>
<tr>
<td>• Personal Care Services – Cosmetology 5,986 (4%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade 6-8 Student Enrollment in Healthcare Science Education Courses in FY 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,521</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Industry-Certified Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of CTAE Teachers FY 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>410 High School Teachers (Healthcare)</td>
</tr>
<tr>
<td>80 High School Teachers (Cosmetology)</td>
</tr>
<tr>
<td>18 Middle School Teachers</td>
</tr>
</tbody>
</table>

➤ Health care and social assistance will lead all industry sectors both in terms of new job growth and rate of growth. It will account for one-fourth of all new jobs created in the state through 2020.
➤ Occupations growing at the fastest rate through 2020 include healthcare support occupations growing by 26.6 percent to almost 108,000 jobs; healthcare practitioners and technical occupations growing by 25.1 percent to nearly 244,000 jobs; and personal care and service occupations growing by 23.5 percent to almost 116,000 jobs.

Georgia Workforce Trends—An Analysis of Long-term Employment Projections to 2020
Georgia Department of Labor
JUNIOR RESERVE OFFICERS TRAINING CORPS (JROTC) 2012-2013

MARKETING, SALES and SERVICES EDUCATION (MKT) prepares students for postsecondary education and careers in marketing, management and entrepreneurship. Students develop knowledge and skills in the foundational areas of marketing (economics, human relations and business basics) and the functional areas of marketing (product and service planning, marketing-information management, purchasing and pricing, selling and promotion, risk management, financing and distribution/logistics), as well as in international marketing, management and entrepreneurship.

The American Marketing Association and the Georgia Department of Education continue to refine the standards by which exemplary Marketing Education Programs are evaluated and certified. The strength of these business partnerships insures that curriculum meets industry specifications.

JUNIOR RESERVE OFFICERS TRAINING CORPS (JROTC) 2012-2013

MARKETING, SALES AND SERVICES EDUCATION (MKT) 2012-2013

<table>
<thead>
<tr>
<th>Enrollment by Gender in Grades 9-12 (Unduplicated Count)</th>
<th>Total</th>
<th>20,168</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>9,445</td>
<td>(47%)</td>
</tr>
<tr>
<td>Female</td>
<td>10,723</td>
<td>(53%)</td>
</tr>
</tbody>
</table>

Grade 6-8 Student Enrollment in Marketing, Sales and Services Education (MKT) Courses in FY 2013 (Duplicated Count)

<table>
<thead>
<tr>
<th>Pathway-Related Course Enrollment – 66,948</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing &amp; Management 15,108 (23%)</td>
</tr>
<tr>
<td>Fashion Marketing 13,464 (20%)</td>
</tr>
<tr>
<td>Sports &amp; Entertainment Marketing 13,824 (21%)</td>
</tr>
<tr>
<td>Travel Marketing &amp; Lodging Management 12,319 (18%)</td>
</tr>
<tr>
<td>Marketing Communication &amp; Promotion 12,233 (18%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other MKT Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>207</td>
</tr>
</tbody>
</table>

Grade 6-8 Student Enrollment in Marketing, Sales and Services Education (MKT) Courses in FY 2013 (Duplicated Count)

<table>
<thead>
<tr>
<th>Total</th>
<th>207</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>97</td>
</tr>
<tr>
<td>Female</td>
<td>110</td>
</tr>
</tbody>
</table>

Number of Industry-Certified Programs

| 53 |

Number of CTAE Teachers FY 2013

| 268 High School Teachers |
| 3 Middle School Teachers |

The American Marketing Association and the Georgia Department of Education continue to refine the standards by which exemplary Marketing Education Programs are evaluated and certified. The strength of these business partnerships insures that curriculum meets industry specifications.

JUNIOR RESERVE OFFICERS TRAINING CORPS (JROTC) offers the opportunity for high school students to enroll in a leadership/citizenship program coordinated under the umbrella of the Career, Technical and Agricultural Education Division of the Georgia Department of Education. Any three sequenced courses in one of the JROTC branches (U. S. Army, U. S. Air Force, U. S. Navy, or U. S. Marines) satisfy the requirements for a Career Pathway. The JROTC curriculum satisfies national and Georgia Performance Standards (GPS) requirements. JROTC instructors in Georgia are required to secure a Georgia teaching “Permit” through the Professional Standards Commission in addition to their military credential. The JROTC program emphasizes academic content; teaches leadership skills; assists students in life skills and career opportunities; reinforces reading, math, and writing skills; and stresses multi-disciplined presentations, models, trips, and other educational formats. Federal law establishes JROTC units fairly and equitably across the United States. Of the 39,053 students enrolled in JROTC courses 57% are male and 43% are female. About 12% of all JROTC students enter the military after graduating high school. Georgia JROTC students received over $31 million in scholarships during 2013.
### Career Technical Student Organizations (CTSO)

<table>
<thead>
<tr>
<th>Organization</th>
<th>CTAE Program</th>
<th>FY 2013 Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Farmers of America (FFA)</td>
<td>Agriculture</td>
<td>35,000</td>
</tr>
<tr>
<td>Georgia SkillsUSA</td>
<td>Architecture, Construction, Communication &amp; Transportation Cosmetology Government &amp; Public Safety</td>
<td>10,334</td>
</tr>
<tr>
<td>Future Business Leaders of America (FBLA)</td>
<td>Business and Computer Science</td>
<td>23,294</td>
</tr>
<tr>
<td>Georgia Technology Student Association (GA TSA)</td>
<td>Engineering &amp; Technology Energy Systems</td>
<td>33,937</td>
</tr>
<tr>
<td>Family, Career and Community Leaders of America (FCCLA)</td>
<td>Family &amp; Consumer Sciences Culinary Arts Education</td>
<td>35,903</td>
</tr>
<tr>
<td>Health Occupations Students of America (HOSA)</td>
<td>Healthcare Science Technology</td>
<td>10,482</td>
</tr>
<tr>
<td>Distributive Education Club of America (DECA)</td>
<td>Marketing, Sales &amp; Service</td>
<td>11,340</td>
</tr>
<tr>
<td>Career and Technical Instruction (CTI)</td>
<td>Coordinated Career Academic Education</td>
<td>6,000</td>
</tr>
</tbody>
</table>

Career and Technical Student Organizations are valuable tools for implementing technical and academic standards found in Georgia’s curriculum. The diagram illustrates how the instructional program consists of three overlapping parts: classroom instruction, hands-on lab activities, and CTSO activities. Each element of the diagram is a distinct part of the CTAE division but they are so fully intertwined that they cannot be fully separated if a complete program is to be offered.
The Georgia Department of Education CTAE programs expand educational opportunities offered by continuing to develop Career Pathways that are relevant and aligned to the 21st century workplace. As the Georgia economy changes and expands, CTAE programs evolve to ensure that every student in Georgia graduates from high school with the academic skills, hands-on experience in real work environments, and intensive career guidance required to succeed in college, employment, and life-long learning. During FY 2014 and beyond, CTAE has identified several areas for special ongoing focus:

- **The Georgia Career Pathways will continue to be implemented during the 2013-2014 school year with all high school students.** The Pathways will be phased in beginning with the foundation course with the additional courses introduced as they are completed.

- Georgia will continue work to increase the number of students entering STEM (Science, Technology, Engineering and Math) career areas. STEM plans for FY 2014 include partnership activities with local industries and the community, and additional STEM Institutes for CTAE educators, math and science teachers. STEM industries and organizations will explore career opportunities and ways in which specific industry careers can be applied in the classroom. Georgia STEM Festivals at participating high schools will be held to inspire and motivate students to consider a STEM career by creating awareness of STEM possibilities that reflect the local economy and involve students, teachers, and STEM industries that will exhibit related career opportunities.

- **CTAE End-of-Pathway Assessments** will continue to be identified and implemented for all Career Pathways.

- **Non-Traditional Career Pathways** will be promoted based on enrollment data. For example, efforts will be made to encourage female students to enroll in the career areas of Architecture, Construction, Communication and Transportation; Agriculture; and Engineering and Technology Education; and to attract male students to the Family and Consumer Sciences, Education, and Healthcare Science career areas.

- **Industry Certification/Recertification** will be conducted to maintain existing certifications and to expand in include additional Career Pathways.

- **Curriculum Resources** will be updated to support all existing Career Pathways and developed for new Career Pathways.

- **In-Service Educational Opportunities** will continue to provide high-level professional development for CTAE educators and counselors.

- **The Georgia initiative Move On When Ready** will continue and expand opportunities for postsecondary education during high school as an integrated part of CTAE Career Pathways.

- Georgia CTAE will continue to reorganize the Peach State Career Pathways to align with the 17 Career Clusters recognized nationally: Agricultural & Natural Resources; Architecture & Construction; Arts, A/V Technology & Communications; Business & Administration; Education & Training; Finance; Government & Public Administration; Health Science; Hospitality & Tourism; Human Services; Information Technology; Law & Public Safety; Manufacturing; Marketing, Sales & Service; Scientific Research/Engineering; and Transportation, Distribution & Logistics.

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**CTAE Success:**

**Skilled High School Graduate with Career Pathway Certificate and Career Plan**

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**Postsecondary Education Options**
- Educational Career Partnerships (Articulated Courses)
- Dual Enrollment
- Joint Enrollment
- Advanced Placement
- Move On When Ready

**Career Development**
- Career Awareness K-5
- Career Exploration 6-8
- Career Training 9-16
- Transitional Activities

**Instruction**
- Educator and Counselor Professional Learning
- State-of-the-Art Technology
- Real Work Experience/Mentoring
- Coordinated Career Academic Education
- Youth Apprenticeship Program
- Internships
- Junior Reserve Officers
- Training Corps

**Skills-Based Curriculum**
- GA Performance Standards
- Integrated Academic & Technology
- Workplace Readiness
- Foundation Skills
- STEM Georgia
- Career and Technical Student Organizations
- Postsecondary Alignment
- Statewide Articulation
- Business & Industry Standards

**Special Populations**
- Occupations that lead to economic self-sufficiency
- Self-advocacy
- Equal access to programs
- Non-discrimination
- Nontraditional programs
- Support to graduate
- Assist to meet program standards
- Prepare for additional training

**Career Planning**
- Student
- Parents
- Counselors
- Teachers
- Business Industry Mentors

**Continuous Program Improvement**
- CTAE Program Compliance Review/
  Technical Assistance
- Office of Civil Rights (OCR) Compliance Review
- Adding/Revising Career Pathways

---

**Assessment**
- End of Pathway Assessment
- Academic Performance Standards
- State Tests—No Child Left Behind
- CTAE Completion
- Graduation Rate
- Business and Industry Certification
- Postsecondary Credentials