Elevate your learning

Take your skills to the next level

Inside
Career planning
Career cluster profiles
Work-based learning
Entrepreneurship
Industry credentials
Ways to pay for education

A publication of the Virginia Department of Education’s Office of Career and Technical Education in partnership with Virginia Business Publications
Your future success begins here.

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➤ Guaranteed internships
➤ Infusing entrepreneurship into all academic disciplines
➤ Hands-on research projects with award-winning faculty
➤ Diverse community of students from 105 countries

Old Dominion University, located in Norfolk, is Virginia’s entrepreneurial-minded doctoral research university with more than 25,000 students, rigorous academics, an energetic residential community, and initiatives that contribute $2.1 billion annually to Virginia’s economy.
Elevate your learning

Your career may seem far away. With academics, sports, and club activities, it can be difficult to find time to focus on the future. However, what you learn in high school can have a big impact on your future. Now is the time to start thinking about how you can elevate your learning. It is important that you start exploring career options and investigating those you find most interesting. A little planning and work now can go a long way to preparing you for life after high school.

Published by Virginia Business Publications LLC in partnership with the Virginia Department of Education, this magazine is designed to help prepare you for a career. You’ll find detailed information on the 16 career clusters, which includes important information about a variety of careers: the salary you can expect, projections for the future, and the education and training required for each career. The question is not whether you have enough education, but the right education. You’ll also want to use this magazine to understand what work-based learning opportunities are available to you now. You can read stories about students who have used these opportunities to help launch their own careers. The magazine ends with some practical advice about paying for college, creating a résumé, and finding a job.

There are tough choices ahead that will affect you for the rest of your life. Take some time to review this magazine and to read over the options available to you. Meet with your school counselor, your parents, and your teachers to discuss what education and marketable skills you’ll need to achieve your goals. It’s time to elevate your learning! 😊

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2018 R U College & Career Ready?
Consider a Career in Teaching

6 Steps to a Career in Education
Imagine a career where you can shape the future...ignite curiosity...be creative...make a positive difference...and achieve your dreams. Find all of this—plus more—in a teaching career.

So, where can you begin? Below are six easy steps to help you become a teacher:

#1 In many high schools students may participate in the “Virginia Teachers for Tomorrow” program. Find out if your school offers The Virginia Teachers for Tomorrow class and sign up. This course helps students explore the field of teaching and education through classroom study and internships. Learn more about the Virginia Teachers for Tomorrow program at the Web site below:

#2 Join Educators Rising (formerly known as the Future Educators Association (FEA)), which is an international organization that supports young people who are interested in education-related careers. Learn about the organization at www.educatorsrising.org or ask if your school has a chapter.

#3 Expand your teaching experiences by volunteering to tutor others, helping teachers in your school division, or volunteering for nonprofit organizations which serve children and youth such as Special Olympics.

#4 Start planning for college. Get advice from your school counselor on colleges that offer teacher preparation programs in the subject and grade level you want to teach. Plan visits to colleges and universities to find the right program for you.

#5 Seek scholarships since many such teacher education programs specifically target future educators. Talk with your school counselor, college financial aid officer, and the education preparation program contact at your college or university for more information.

#6 Now it is time to head off to college and study hard. Later, when you need information on teaching positions, teacher salaries, or how to obtain a teaching license in Virginia, here is a great Web site to bookmark: www.teachvirginia.org.

Become a Teacher
Learn more about careers in teaching at www.teachvirginia.org or call us at 1-888-TEACHV1.
September 30, 2015

Dear Sophomores and Parents:

Over the next two years, you will be considering your next step toward a successful career and making crucial decisions to reach your goals. I commend you for the hard work and academic commitment that have brought you to this important milestone.

As you consider your many options, I encourage you to take advantage of the opportunities available to you here in the Commonwealth. Virginia needs new talent. We need a diversified and flexible economy with a highly-skilled, highly-trained workforce. I want you to be part of our work to build a new Virginia economy. If we are going to create the workforce of the 21st century, we must do everything we can to ensure that Virginia’s students have access to a high-quality public education and that they are prepared to succeed in today’s global economy.

We are well on our way. Last year, I established a goal to award 50,000 new workforce credentials by the time I leave office. I announced in August a partnership with Georgetown University’s Center on Education and the Workforce to boost statewide attainment of high-demand credentials. We also worked to pass legislation that will direct resources to newly enrolled students who have a parent in the armed services. We made great strides over the past two years, but there is more work to do.

As you enter community college, a four-year institution, the military, a workforce training program or the job market, I want you to know that my Administration is dedicated to making sure you receive the education and training necessary to prepare you for a rewarding career.

Sincerely,

Terence R. McAuliffe
Web resources

Career Resources

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Career Clusters in Virginia
www.doe.virginia.gov/instruction/career_technical/career_clusters/index.shtml
Career clusters help you investigate careers and design your courses of study to advance your career goals. A career cluster is a grouping of occupations and broad industries that include multiple career pathways.

Career Planning Guide
www.cteresource.org/cpg
The Career Planning Guide (CPG) is a career-planning tool for students and a resource for parents, teachers, and school counselors who guide students in career choices.

CTE Trailblazers
www.ctetrailblazers.org
Trailblazers’ mission is to help you recognize all career opportunities, unrestricted by social or cultural expectations. A nontraditional career is any occupation in which females or males comprise 25 percent or less of its total employment.

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KnowHow Virginia
www.knowhowvirginia.org
This site, sponsored by the Virginia Career Education Foundation, lets you explore careers and identify course offerings that will prepare you for your career. It includes a self-assessment.

Virginia Career View
www.vacareerview.org
This site helps K–8 students explore career options, introduces the 16 career clusters, and provides resources and activities to enhance career development.

Virginia Education Wizard
www.vawizard.org
The Virginia Education Wizard offers extensive career information, including assessment tools based on interests. See page 5.

Virginia Employment Commission
www.vec.virginia.gov
The commission provides employer and job seeker services, unemployment benefits, and labor market information.

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COLLEGE RESOURCES

College Board ........................................www.collegeboard.org
CollegeNET ........................................www.collegenet.com
CollegeView ........................................www.collegeview.com
GoCollege ........................................www.gocollege.com
myCollegeOptions .......................www.mycollegeoptions.org
The Princeton Review .....................www.princetonreview.com

INTERNSHIPS

Internship Programs ...............www.internshipprograms.com
Internships.com .........................www.internships.com
Looksharp ................................www.looksharp.com
The Washington Center for Internships and Academic Seminars........www.twc.edu

JOB FINDERS

CareerBuilder ................................www.careerbuilder.com
Federal Jobs Digest .....................www.jobsfed.com
Glassdoor ...................................www.glassdoor.com
Indeed.com ................................www.indeed.com
Job-Hunt .......................................www.job-hunt.org
Monster .......................................www.monster.com
Monster College .........................college.monster.com
Salary.com ..................................www.salary.com
Simply Hired ................................www.simplyhired.com
snagajob ....................................www.snagajob.com
USAJOBS .....................................www.usajobs.gov

MILITARY

Military Information ......................www.military.com
U.S. Air Force .................................www.airforce.com
U.S. Army ......................................www.army.mil
U.S. Coast Guard .........................www.uscg.mil
U.S. Marines .................................www.marines.mil
U.S. Navy ......................................www.navy.mil
Virginia National Guard ..............vaguard.dodlive.mil

TUITION ASSISTANCE

College Board ................................www.collegeboard.org
CollegeNET ....................................www.collegenet.com
Edvisors ........................................www.edvisors.com
Fastweb ........................................www.fastweb.com
FinAid ..........................................www.finaid.org
Virginia529 College Savings Plan ....www.virginia529.com

VOLUNTEERING

AmeriCorps .................................www.nationalservice.gov
Center for Interim Programs ........www.interimprograms.com
City Year ......................................www.cityyear.org
Habitat for Humanity ...................www.habitat.org
Help Exchange .............................www.helpx.net
Office on Volunteering and Community Service ...........www.vaservice.org
Peace Corps ...............................www.peacecorps.gov
World Wide Opportunities on Organic Farms........www.woof.net

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FIND YOUR FUTURE
with the Virginia Education Wizard
http://www.VaWizard.org

CHOOSE Your Career
Take assessments to find careers that match your interests, values, and skills, then explore specific occupations and get real-time details about the demand and local salaries for those occupations.

PLAN For College
Use the Wizard to search for colleges and universities across Virginia and prepare for college admission exams.

FUND Your Education
Compare college costs, get assistance applying for financial aid, and search for scholarships.

TRANSFER To a University
The Wizard outlines pathways to four-year degrees, including guaranteed admission to Virginia universities. The Wizard also helps plan, track and prompt necessary steps for an easy transfer.

http://www.VaWizard.org

The Virginia Education Wizard is a collaboration of the Virginia Community College System and the Virginia Department of Education.
A variety of opportunities exist after high school graduation. You may be eager to enter the workforce right away, or you may be considering a career, such as a teacher, that requires additional education and training.

As you explore options, you need to focus on bringing your career and educational aspirations together. Different careers have different education and training requirements. Learn the requirements of your career choice and elevate your future!

**Apprenticeships**
Apprenticeships combine job-related technical instruction with structured on-the-job learning experiences. Participants in these programs earn wages at jobs and take related courses, typically working toward degrees. See our profile of an apprentice on page 13. For more information, visit the Virginia Department of Labor and Industry’s Web site at [www.doli.virginia.gov](http://www.doli.virginia.gov).

**Service learning**
You may have served as a volunteer who has collected canned goods for a local food bank or raised money for a local nonprofit. Volunteering can help you gain useful leadership and business skills for a career. Some service-based organizations—such as Teach for America, AmeriCorps, and the Peace Corps—give participants opportunities to gain valuable work experiences while earning salaries or stipends.

**Military**
If you want to serve your country, get an education, earn a paycheck, and have a satisfying career, you should consider a career in the Armed Forces. The military offers on-the-job training and provides work experience that can be applied to many civilian careers. To enlist, you must be at least 17 and have a high school diploma or high school equivalency certificate.

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**The workforce**
If you want to enter the workforce directly after graduation, take opportunities to assess whether a particular industry is a good fit for you and is in high demand in your area before you seek additional training or education. Ask your school counselor about work-based learning opportunities in your school (see pages 12 and 13). The Virginia Employment Commission ([www.vec.virginia.gov](http://www.vec.virginia.gov)) offers help to anyone looking for job placement, interview training, or résumé writing.
Community colleges

Community colleges provide quality education at a cost lower than four-year colleges and universities. Community colleges offer degrees that can lead straight to positions in high-demand technical fields or can transfer to four-year colleges. Through system-wide agreements, students who graduate from one of Virginia’s 23 community colleges with associate degrees and maintain certain grade point averages are guaranteed admission to more than 25 of the commonwealth’s colleges and universities. For more information, visit https://www.vawizard.org/vccs/TransferGAA.action.

Four-year colleges or universities

A degree at a four-year college or university is required for some careers but is optional for others. Make sure you choose a college or university that matches your career interests. You won’t have to declare a major right away, but use the career Web sites on page 4 to narrow your choices. That way, you’ll start college with the confidence that you are in the best place to obtain marketable skills to enter the workforce.

Proprietary colleges/career colleges

Perhaps you want a four-year college degree in the future but don’t feel ready right now. Proprietary colleges often offer flexible class schedules and that meet the needs of full-time workers. These schools offer everything from bachelor’s and master’s degrees to specific career and technical training. Be sure to evaluate each school for its credentials, cost, school placement, and loan opportunities.

TCC offers dozens of affordable degree programs that can have you on the road to a great, high-paying career in two years or less. And three out of five TCC students graduate with no student debt. From here, you really can go anywhere.

APPLY ANYTIME. LEARN MORE AT TCCENROLL.COM

tccenroll.com  |  757-822-1122
What is an industry credential?
Will you have to earn one to graduate?

As of the 2013–2014 school year, all 9th-grade students (graduating class of 2017) who plan to graduate with a Standard Diploma are required to earn an industry credential. Many students, parents, and teachers don’t know much about industry credentials, how to earn them, or how they can help after graduation. Knowledge is power, and since you are taking control of your academic and career planning, you need to know. So, read on!

There are many Career and Technical Education (CTE) courses that provide students with the technical knowledge needed to earn a credential. The credential may give you an advantage over others when pursuing further education and a career.

Here are some frequently asked questions that may help you as you move forward with plans for graduating from high school and earning industry credentials.

1. What is an industry credentialing examination?
   It is an exam that assesses your knowledge in a specific technical area. If you successfully complete certain courses within a CTE area and pass an approved exam, you can earn one (or even two) verified credits required for graduation.

2. How do I earn a credential for graduation?
   You must pass a credentialing exam from a list that has been approved by the Virginia Board of Education (see below). Each exam has a passing score. If you pass the exam, you earn that credential AND complete the credential graduation requirement. The best news is that you have a certificate in hand that you can be proud of and use to help yourself as you move forward with plans after high school.

3. Which industry credentials will satisfy the graduation requirement?
   There are more than 300 industry credentials on a list that is approved by the Virginia Board of Education. The list can be found at this link: http://www.doe.virginia.gov/instruction/career_technical/path_industry_certification/index.shtml. You may have heard of many of the exams: Microsoft Office Word, PowerPoint, and Excel; the Workplace Readiness Skills for the Commonwealth Examination; the Career Readiness Certificate; and SkillsUSA are just a few.
   The easiest way to determine what credential fits best with a CTE course you are taking is to speak to your teacher or school counselor.

4. When is the best time to take a credentialing exam?
   It is usually best to take a credentialing exam right after you complete a course or courses that cover the material on the exam. Makes sense, right?

5. What does the credential do for me?
   Earning an industry credential does not guarantee you a job, but it does look great on your job application and résumé. It also very well may be the deciding factor in your being hired over someone else without a credential. Credentials are valued by employers as a demonstration of workers’ knowledge, skills, and experience.

6. What is the Virginia Workplace Readiness Skills for the Commonwealth Examination?
   It is an exam that meets the credential requirement for graduating with a Standard Diploma. Employers from Virginia worked together to determine the kind of behaviors and skills that students need to enter any work environment and have the non-technical skills (soft skills) necessary to meet workplace expectations. A good work ethic, speaking and listening skills, creativity, teamwork, and Internet safety are just a few of the behaviors and skills covered by the exam.
   The information for the exam is covered in every CTE course offered in Virginia. So, if you have taken a CTE class, you have learned these skills. You have a good chance of passing the exam and meeting the credential requirement for earning a Standard Diploma.

Need more information?
See your CTE teacher or school counselor!
Plan it ... Learn it ... Earn it

Counseling for Careers –
See your school counselor about academic and career planning.

by Joe Wharff

You probably know lots of reasons why staying in school and embracing life-long learning is important. Well, here’s one more: You’re less likely to be unemployed. According to data released from the U.S. Bureau of Labor Statistics, the higher your level of education, the lower your rate of unemployment.

College graduates who get laid off generally find work faster than high school graduates do. The reason? More and more in the U.S., there are fewer openings in low-skilled, entry-level jobs.

Not all college degrees are created equal. Students go to college and choose majors for many reasons. If earning power is a top priority, you will need to know what the high-earning majors are and how long you will have to stay in college to qualify for high wages.

Earn It!
The more you learn, the more you earn! Earn more than an extra quarter million dollars in your lifetime just by graduating from high school. You can increase those earnings by earning additional degrees.

The power to earn grows with each level of education. Of course, you are not guaranteed these salaries. To achieve your desired income, you will need to consider your career choice and earn your degree or certification. Plan well now, and it will pay later!

Unemployment Rate 2014

Note: Data are for persons 25 and over. Earnings are for full-time and salary workers.

“Whatever you are, be a good one.”
— Abraham Lincoln

“The future depends on what you do today.”
— Mahatma Gandhi

Educational Attainment

Spotlight on Governor’s Academies
Heritage High School Governor’s STEM Academy

Governor’s STEM Academies are programs that give students focused opportunities to learn about STEM (Science, Technology, Engineering, and Mathematics) concepts and skills. Similarly, Governor’s Health Sciences Academies offer programs that allow students to learn content and master skills related to the five Health Sciences pathways: Therapeutic Services, Diagnostic Services, Health Informatics, Support Services, and Biotechnology Research and Development.

Governor’s STEM Academies and Governor’s Health Sciences Academies partner with other schools and school divisions, colleges and universities, and businesses to prepare students for high-demand, high-wage, and high-skill careers in Virginia. Currently, there are 23 Governor’s STEM Academies and nine Governor’s Health Sciences Academies operating in Virginia.

Heritage High School Governor’s STEM Academy in Newport News stands as one of Virginia’s most successful academies. The academy’s relevant and hands-on approach to learning, business partnerships, and STEMulating Minds Summer Enrichment Program make this academy a standout. Toinette Outland, Heritage High School Governor’s STEM Academy’s program administrator, elaborates on what sets this academy apart.

Relevant and Hands-on Approach to Learning

Since academies exist to prepare students to enter their community’s workforce, each academy offers different programs of study depending on local business and industry needs. Thus, an academy located near the ocean will most likely not offer the same programs as an academy that sits in the mountains. Students who attend Heritage High School Governor’s STEM Academy focus their studies in one of three career clusters—Architecture and Construction; Information Technology; or Science, Technology, Engineering, and Mathematics—because there is a need for highly skilled professionals in these fields in and around Newport News. In addition, students participate in project-based learning in classrooms, allowing them to apply, practice, and hone technical skills, rather than just learn about them. Students also complete work-based internships with the academy’s business partners. Internships enable students to have meaningful, real-life, hands-on experiences related to the career cluster they are studying. Outland explains, “The hands-on approach is different in that it resembles ‘real-world’ application. Students are able to become better critical thinkers, decision makers, and collaborators by applying what they have learned to real-world activity.”

Business Partnerships

The academy has fostered multiple business partnerships, including NASA Langley Research Center, Jefferson Lab, Canon, and Newport News Shipbuilding. The academy’s partnership with Newport News Shipbuilding has earned state and national recognition, receiving the 2015 Governor’s Career and Technical Education Exemplary Standards Award and placing third for the 2014 National Career Pathways Partnership Award. Further, Newport News Shipbuilding has a dedicated office space at the academy; shipbuilding employees staff the office to help students with coursework and mentor them about possible career paths. Other partners support the academy by serving as guest speakers in STEM classrooms, acting as judges at student exhibits and expos, attending career fairs, and mentoring students. Outland states, “Partners also assist with ensuring the school’s curriculum is aligned with the needs of the workforce [by] serving on curriculum writing teams and school advisory committees.”

STEMulating Minds Summer Enrichment Program

Unique to Heritage High School Governor’s STEM Academy, rising ninth grade academy students are invited to attend this free, 3-week summer program. Outland explains that the program enables “students [to] gain a deeper understanding of the skills and knowledge in their STEM fields of study.” Students engage in lessons related to video game design, robotics, PC repair, and environmental science. For instance, students enrolled in the 2015 summer program built and flew unmanned aerial vehicles (UAV). Students then raced their UAVs through an aerial obstacle course—the winner took home a new tablet. In addition to learning about and participating in STEM-related concepts and activities to prepare them for their upcoming studies, students earn a semester course credit by completing the program.
Alex: Alexander Obenauer didn’t grow up wanting to be an entrepreneur, but his passion for “solving complex problems” led him to co-found and lead Mindsense. The Blacksburg-based software company is behind Mail Pilot, a popular email app that boasts thousands of users and has taken the top paid app spot in the Mac App store in 58 countries.

Alex, 25, tells us more about his company, explains how he got to where he is today, and gives advice to aspiring entrepreneurs.

Answers have been edited for length and clarity.

Describe your company, Mindsense, in a nutshell.

Alex: Mindsense is a young, creative software studio that dreams up unique, outside-the-box solutions to complex problems. [One of our] flagship products [is] Mail Pilot, an email client that looks at your inbox from a task-oriented perspective, which makes email less frustrating and time consuming. [Our other flagship product is] Throttle, a service that allows you to stop giving out your email online, controls who gets into your inbox, finds out who sold your email address, and combines all mass mailings into a single, daily digest.

With computers and software, your effort can be maximized infinitely. With the right software, just a little effort can create an immense result.

What were your career aspirations when you were in high school?

Alex: I wanted to start a software engineering firm. I wanted to build up a team of like-minded, creative people to come up with refined solutions for complex problems. I didn’t actually think it was possible, but I’ve been extremely lucky—that’s exactly what has happened.

You took International Bacca-laureate (IB) computer science courses in high school. How did that shape your college education and career in technology?

Alex: If it weren’t for IB computer science, I wouldn’t be running my own company today. I transferred to Gar-Field [Senior High School in Woodbridge] my sophomore year. My mother, with an incredible level of foresight, enrolled me in [computer science courses], where I learned what I would learn my first year of college as a computer science major.

I ended up taking four computer science courses in high school, so when I got to Virginia Tech, I was able to jump way ahead of where I would have been. My first semester, I was able to seek out undergraduate research in my department, which led me to work on real-world projects that got me ready to start my own company.

What advice could you pass on to high school students who aspire to become entrepreneurs?

Alex: First, constantly talk to people. Find out what their problems are and what solutions they imagine should exist for those problems. The notion of the visionary in a room by himself coming up with a brilliant idea is a myth. It takes a lot of talking to people and understanding people’s problems. Second, don’t hesitate. Start now. Young entrepreneurs often ask me when is the right time to start. The answer is always, now. The younger you are, the less you have to risk and the more you can do. Even if the idea isn’t fully baked, give it a go. Find out where it leads and learn from the experience.
Work-based learning
Jumpstart your career during high school

Work-based learning opportunities provide you with a chance to experience the work world now, before you leave high school. These experiences will let you interact with adults working in careers that you may wish to pursue. They will help you decide whether the career is right for you. If you are interested in any of the following options, visit your school counselor to discuss available opportunities.

**JOB SHADOWING**
Accompanying a working professional

Job shadowing is a short-term, on-site work experience that gives you a sense of the day-to-day activities of a certain career. Job shadowing is a quick way to discover whether a career is for you. Maybe you think you’d like to be a doctor but aren’t sure whether you can stand the sight of blood. Ask the person you are shadowing about what they do. Discover the pros and cons of each career; ask what he or she would do differently if starting out again; and if he or she would choose the career again.

**SERVICE LEARNING**
Applying your skills to community service

Service learning is a method in which the student engages in community-service work for a specified number of hours in order to gain developmental experience. Students and teachers cooperate with local leaders to address community problems and issues. With guidance from a teacher or counselor, you can identify an issue in the community and help develop a solution. Service learning is also a good way to test your ability to work with a team and to help other people achieve their goals.

**COOPERATIVE EDUCATION**
Earning money and high school credit

Cooperative education (often called “co-op”) is an opportunity for a student to combine classroom instruction with paid employment. The school and the employer supervise and coordinate instruction time as well as hands-on work so that each component contributes to the student’s career objectives. Cooperative education opportunities are available in a variety of career fields.

**INTERNSHIP**
Trying out a job

Internships allow you to test drive a career. Not only will internships let you know if you enjoy the work, they look great on a résumé or college application. Some are paid, and some are not, but the value of an internship comes in understanding what a job is really like and in developing a network of future employment contacts. See Web Resources on page 4 for Web sites that are helpful in finding internships.

**MENTORSHIP**
Developing a trusting relationship with a working professional

Mentorship is another way to explore a particular career, but it goes beyond job shadowing. While spending time in a workplace, you have the opportunity to develop a relationship with an accomplished worker or executive who will provide guidance, support, feedback, and instruction. Often, he or she can provide you with personal and career-development advice.

**CLINICAL EXPERIENCES**
Health and medical training

Clinical experiences give health and medical students the opportunity to apply their classroom knowledge with clinical practice. Students are not paid, but they learn the basic skills, behaviors, and attitudes needed for professional competence in the healthcare field.

**STUDENT APPRENTICESHIP**
Learning and earning

Apprenticeships allow students to learn while earning a paycheck. Student apprenticeship is designed to lead students directly into an entry-level job for highly skilled technicians, a registered apprenticeship, or a postsecondary program. Often, apprentices can earn a degree or industry credential while working. ●
Apprenticeships: Earn while you learn
by Kathryn Cobb

Apprenticeships allow students to earn salaries while they learn the skills needed to succeed in high-demand, high-wage, and high-skilled careers. Essentially, apprentices are paid to go to school. Paul Norford earned while he learned by attending and graduating from the University of Virginia’s Facilities Management Apprenticeship program.

The university’s apprenticeship program spans four years and offers students the opportunity to learn a skilled trade through a combination of on-the-job training, technical education, and classroom instruction. Paul completed an electrical apprenticeship, but five other apprenticeships are currently offered in the following trades: plumbing, carpentry, masonry, plastering, and HVAC.

The Facilities Management Apprenticeship program is very competitive; each year, only six to nine new apprentices are hired depending on need. Paul explains that he was interviewed and tested before the university offered him a slot. The interview lasted about 45 minutes and was conducted by a panel of seven university employees who asked a broad range of questions. Paul indicates that the test he took consisted of general knowledge questions about English, science, and mathematics. He was one of seven hired, beating out more than 1,000 applicants.

Apprentices are full-time university employees with salaries and benefits. Paul states that first-year university apprentices in the electrical program earn close to $30,000 a year and receive raises after each year they finish. However, apprentices work hard for their money. Paul points out that apprentices are bound by a contract that calls for them to attend all classes, maintain a minimum of a “C” average, and complete a total of 8,000 hours of on-the-job training.

Paul further explains that he worked eight hours a day, five days a week and attended three hours of class once a week in order to uphold his apprenticeship contract. He describes the long hours as both the best and worst part of his apprenticeship but says he really appreciated “learning all you could about the trade.”

While he learned many new skills during his apprenticeship, Paul was at an advantage as he entered the program with a background in electricity. He attended Fluvanna County High School for his core classes, such as English and mathematics, and took career and technical education (CTE) courses in electricity at Charlottesville Albemarle Technical Education Center (CATEC). Paul states that his CTE studies at CATEC “gave me a jump on the basics of electricity,” which proved beneficial during his apprenticeship.

After graduating from high school in the spring of 2010, Paul entered the apprenticeship program that August and finished in August 2014. He continues to work full time for the university—now as a regular employee who doesn’t have to attend a weekly class—and hopes to be promoted to lead electrician soon.

Paul recommends that high school students pursue apprenticeships, but he wants prospective apprentices to understand that the “program is a learning process and a commitment—one must be able to stick with it and follow through to the end.”

Paul learned about his apprenticeship through CATEC, but there are other ways high school students can get information about programs. Talk to your teachers and counselors about programs offered across Virginia and the nation.


Photo by Mark Rhodes

Don’t limit your options
Explore nontraditional careers

Don’t limit your thinking when it comes to your future. By venturing into a field not traditional for your gender, you may uncover opportunities you never imagined and earn a great living, too.

Nontraditional careers are those in which there are three females for every one male, or vice versa. Many of these careers offer great opportunities, but you may have to step out of your comfort zone to prepare for them. When you study for one of these careers, you’re usually in a class that’s overwhelmingly female or male.

Check out the table below, which shows the 25 fastest-growing jobs from 2012 to 2022, according to recent projections from the Virginia Employment Commission.

You will spot some familiar examples in this table: more females than males are physical therapist aides; more males than females are information security analysts. Certain nontraditional careers not only need workers—and will in the future—but also offer great salaries. Information security analysts (nontraditional for females) earn on average $104,700 a year. Nontraditional careers for males offer a lot of great opportunities, too. Audiologists earn on average $80,000 a year.

You can study for these careers in high school Career and Technical Education (CTE) classes, and, for the careers in bold, you’ll probably be in a nontraditional class. Visit the CTE Trailblazers Web site, www.ctetrailblazers.org, for more information about nontraditional careers.

Virginia’s fastest growing occupations (2012–2022)

The table below lists the 25 fastest-growing jobs from 2012 to 2022, according to projections from the Virginia Employment Commission. The table shows the percentage each occupation will have grown through 2022. Students can prepare, or begin preparing, for almost all of these jobs that are considered nontraditional, through CTE courses. Nontraditional jobs are those that employ predominantly females or predominantly males. Nontraditional occupations are bolded.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employed in VA, 2012</th>
<th>Projected employed in VA, 2022</th>
<th>Percent change 2012-2022</th>
<th>Nontraditional gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulance Drivers and Attendants, Except Emergency Medical Technicians</td>
<td>190</td>
<td>320</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>Interpreters and Translators</td>
<td>4,910</td>
<td>8,130</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Physical Therapist Aides</td>
<td>1,630</td>
<td>2,680</td>
<td>64 Males</td>
<td></td>
</tr>
<tr>
<td>Occupational Therapy Assistants</td>
<td>610</td>
<td>1,000</td>
<td>62 Males</td>
<td></td>
</tr>
<tr>
<td>Personal Care Aides</td>
<td>32,420</td>
<td>51,220</td>
<td>58 Males</td>
<td></td>
</tr>
<tr>
<td>Veterinary Technologists and Technicians</td>
<td>1,420</td>
<td>2,230</td>
<td>57 Males</td>
<td></td>
</tr>
<tr>
<td>Physical Therapist Assistants</td>
<td>1,900</td>
<td>2,950</td>
<td>55 Males</td>
<td></td>
</tr>
<tr>
<td>Audiologists</td>
<td>370</td>
<td>560</td>
<td>51 Males</td>
<td></td>
</tr>
<tr>
<td>Information Security Analysts</td>
<td>10,030</td>
<td>15,070</td>
<td>50 Females</td>
<td></td>
</tr>
<tr>
<td>Atmospheric and Space Scientists</td>
<td>430</td>
<td>650</td>
<td>49 Females</td>
<td></td>
</tr>
<tr>
<td>Skincare Specialists</td>
<td>1,220</td>
<td>1,810</td>
<td>48 Males</td>
<td></td>
</tr>
<tr>
<td>Physician Assistants</td>
<td>2,090</td>
<td>3,100</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Physical Therapists</td>
<td>4,300</td>
<td>6,360</td>
<td>48</td>
<td></td>
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<tr>
<td>Dental Hygienists</td>
<td>5,130</td>
<td>7,590</td>
<td>48 Males</td>
<td></td>
</tr>
<tr>
<td>Emergency Medical Technicians and Paramedics</td>
<td>4,450</td>
<td>6,560</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Home Health Aides</td>
<td>10,380</td>
<td>15,250</td>
<td>47 Males</td>
<td></td>
</tr>
<tr>
<td>Diagnostic Medical Sonographers</td>
<td>1,350</td>
<td>1,960</td>
<td>45</td>
<td></td>
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<tr>
<td>Phlebotomists</td>
<td>4,200</td>
<td>6,060</td>
<td>44 Males</td>
<td></td>
</tr>
<tr>
<td>Ophthalmic Medical Technicians</td>
<td>570</td>
<td>820</td>
<td>44 Males</td>
<td></td>
</tr>
<tr>
<td>Meeting, Convention, and Event Planners</td>
<td>3,150</td>
<td>4,540</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Optometrists</td>
<td>1,020</td>
<td>1,470</td>
<td>43</td>
<td></td>
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<tr>
<td>Health Specialties Teachers, Postsecondary</td>
<td>3,200</td>
<td>4,590</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Industrial-Organizational Psychologists</td>
<td>80</td>
<td>110</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Podiatrists</td>
<td>220</td>
<td>310</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Nursing Instructors and Teachers, Postsecondary</td>
<td>1,380</td>
<td>1,960</td>
<td>42 Males</td>
<td></td>
</tr>
</tbody>
</table>

Projections produced by Virginia Employment Commission, Autumn 2014
Non-traditional status determined via NRC/CTE’s Perkins Crosswalk Validation Project (revised January 2013)
Job versus career

Find a more fulfilling future

You’ve heard of a dream job, but what about a “dream career”? What’s the difference between the two? Put simply, a job is work you might select randomly without considering your interests, goals, or skills. But a career involves planning your course, learning the necessary skills, and purposely deciding on the places to apply based on your interests, skills, and work values.

Ultimately, you will be happier if you take the time to develop a career plan, but it won’t be something you’ll decide in an afternoon. It’s more of a lifetime project, and you’ll need to work at it. You can start exploring options now. Take electives related to careers in which you might be interested. Explore work-based learning opportunities (see page 12) that will help you decide whether a career option is right for you. Look for electives related to your career interests. For instance, if you’re interested in fine arts, take a drama class, or help with a play to learn the essentials behind production.

The correct career choice will bring personal, as well as professional, satisfaction and afford you the lifestyle you want. The wrong choice can leave you frustrated.

If you want a fulfilling career—not just a job—take action now, and get organized. The next stage of your life will happen whether you are ready or not!

Higher education doesn’t have to be a stretch!

Thomas Nelson offers flexible schedules and locations near you. Reach your goals in less time at less cost. Make Thomas Nelson your fast track to a new career, and to a new life.

- Transferring a Thomas Nelson Associate degree cuts the cost of a Bachelor’s degree
- Qualify at Virginia’s most prestigious four-year universities
- Register in arts, sciences or workforce development courses
- Enroll in degree or certificate programs
- Earn scholarships and qualify for financial aid
- Take classes in Hampton, Williamsburg, Newport News, or online

It’s all closer because we’re right here on the peninsula and right next door. Visit us at tncc.edu/success to register for classes and start your journey. Success. It’s closer than you think.
Military spotlight:
A unique career path with rewarding results

by Jennie Blizzard

“Don’t give up” and “give it your all.” Sgt. Russell Kiser with the 2nd Infantry Division at Fort Lewis, in Tacoma, Washington, readily gives this advice to any current high school student considering a military career.

As a 2008 graduate of Hanover County’s Atlee High School who took JROTC for one year, Russell has followed a career path that has allowed him to travel throughout the world and earn awards and promotions. Although his initial interest in the military was sparked by a long family lineage of military service that dates back to the Revolutionary War, Russell credits his high school JROTC class with instilling the core values of military service in him. “It was critical in developing self-discipline, personal responsibility, and a professional demeanor, which are key to being successful in the military,” says Russell.

While enrolled in JROTC, he also took several CTE courses in engineering and architecture and earned an AutoCAD certification. This certification is used by professionals in a variety of industries; industrial designers, technicians, interior designers, architects, and engineers use AutoCAD software to help them develop and implement design solutions.

Russell credits the JROTC program with his leadership development. Last fall he was promoted to sergeant, a rank that enabled him to serve as squad leader for two teams. “You have to put forth the effort to make yourself a better leader. My dad used to tell me that all of the time, and the reality actually sank in after I went to Afghanistan.”

As an infantryman, Russell is trained to engage, fight, and defeat the enemy in hand-to-hand combat. After a deployment to Afghanistan in 2010 with the 10th Mountain Division, Russell received the opportunity to travel to Germany through a Combined Results Operation. The mission, which lasted two and a half months, was a combined effort with 14 other nations to discourage a Russian invasion of neighboring Ukraine. Russell received three awards for his role in the mission.

His short-term career goal is to be promoted to staff sergeant. Long term, he would like to attend Army Ranger School, as well as Army Airborne School and Army Air Assault School.

Eventually, he plans to retire from the Army and take advantage of the Montgomery GI Bill (commonly known as the GI Bill), which is available to active duty service men and servicewomen and veterans who have retired or received honorable discharges. GI Bill benefits can help with costs by providing funds for tuition and access to numerous training and support programs. Russell hopes to use the benefit in the future to earn a degree in criminal justice. “If you set your mind to something, see it all the way through, and give it your all,” advises Russell, “you will learn more about what you can do.”

GI Bill Facts

- Used to pay for college degree and certificate programs, technical and vocational courses, flight training, on-the-job training, high-tech training, entrepreneurship training, licensing and certification tests, entrance examinations, and correspondence courses
- Goes directly to recipients, not schools or programs
- Have up to 10 years from the time of retirement or discharge to use
- Able to transfer benefits to spouses, children, or any combination of both

For more specifics about the GI Bill, visit www.benefits.va.gov/gibill.

Source: www.military.com
Career clusters

Find the perfect profession

It’s never too early to start thinking about the future, especially when it comes to exploring potential careers. Many people spend the majority of their time at work, which is why you want to pick a career that you’ll enjoy and also provides a stable financial future.

This section aims to help you pick a career by introducing career clusters—groupings of jobs that share similarities. There are 16 nationally recognized career clusters, ranging from Marketing to Science, Technology, Engineering, and Mathematics (STEM).

The following pages profile former Virginia high school students who have embarked on a career path and are loving what they do. These successful adults are applying their high school and postsecondary learning to get ahead in their careers. Most of them took classes related to their career in high school and/or college, and many also received hands-on experience through internships and on-the-job training.

The profiled subjects share the steps they took to land their dream jobs, as well as words of wisdom to help guide others who may be interested in pursuing jobs in their fields. Each profile also includes a basic description of the future job outlook, the number of opportunities in Virginia, and salary ranges for each career. Salary data are based on 2013 data from the U.S. Bureau of Labor Statistics. The median wage means that half of the workers earned below that level and half earned above it.

If you need help determining which of the 16 career clusters is right for you, you can talk with a school counselor about your likes, dislikes, interests, and abilities. Also, you can take a career assessment to find career options that match both your interests and skills. Explore online options at the Web sites listed on page 4.
Agriculture, Food & Natural Resources

The Agriculture, Food & Natural Resources Career Cluster includes careers that involve the science and mechanics of improving the quality and safety of food, cultivating and preserving our natural resources, and caring for livestock and other animals. Further, you can learn about the business aspects involved in this broad field.

Job outlook

Innovations in agriculture production continue to increase efficiency. Larger farms and ranches still seek the knowledge of agricultural managers to run their farms as businesses; however, the employment of farmers, ranchers, and agricultural managers is expected to have decreased. Some farmers are finding success in niche markets, such as organic food production and horticulture.

Job prospects for grounds maintenance workers are projected to have increased 13 percent from 2012 to 2022.

Large institutions like universities and corporate campuses, as well as busy and aging homeowners, continue to increase the demand for lawn care and landscaping services. The need for tree trimmers and pruners is expected to have grown 18 percent as the demand for new trees in urban settings grows.

The need for agricultural and food technicians is expected to have increased 3 percent through 2022. As the population continues to grow, processing methods and production efficiency are more vital than ever.

What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscaping and groundskeeping workers</td>
<td>32,489</td>
<td>$23,190</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Farmworkers and laborers, crops</td>
<td>24,131</td>
<td>$21,130</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Landscaping supervisors</td>
<td>6,452</td>
<td>$43,650</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Veterinary assistants</td>
<td>3,531</td>
<td>$25,660</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Environmental scientists and specialists</td>
<td>3,416</td>
<td>$73,780</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Farmworkers, animals</td>
<td>3,912</td>
<td>$25,170</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Water treatment plant operators</td>
<td>3,179</td>
<td>$37,810</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Veterinarians</td>
<td>2,406</td>
<td>$89,550</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Environmental engineers</td>
<td>2,482</td>
<td>$96,350</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Veterinary technologists and technicians</td>
<td>1,424</td>
<td>$36,940</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Farming, fishing, and forestry supervisors</td>
<td>1,991</td>
<td>$41,700</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Biological technicians</td>
<td>1,086</td>
<td>$38,450</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Natural sciences managers</td>
<td>1,279</td>
<td>$126,240</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Environmental science technicians</td>
<td>693</td>
<td>$43,230</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Geoscientists</td>
<td>545</td>
<td>$89,450</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Environmental engineering technicians</td>
<td>440</td>
<td>$42,130</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Conservation scientists</td>
<td>432</td>
<td>$60,340</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Forest and conservation technicians</td>
<td>359</td>
<td>$36,710</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Agricultural and food science technicians</td>
<td>237</td>
<td>$34,380</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Soil and plant scientists</td>
<td>193</td>
<td>$53,910</td>
<td>Bachelor’s degree</td>
</tr>
</tbody>
</table>


Career and Technical Student Organization (CTSO)

National FFA Organization ........................................................................www.vaffa.org

Keeping it beautiful

by Jessica Sabbath

As a horticulturalist of Primland Resort, Brandy Puckett oversees the grounds of a serene 12-thousand-acre resort in the Blue Ridge Mountains.

“Now I’m responsible for all the grounds but also interior plants, any new landscape designs and installations, and work very closely with our superintendent on the golf course,” says Brandy.

The resort is rapidly growing, giving Brandy ample new challenges. “We just finished opening four brand-new buildings, our Pinnacle Cottages, and I designed and installed the landscaping around that,” she says.

Brandy uses knowledge and skills she learned in the many agriculture-related courses she took in high school. “As far as pruning plants and proper spray techniques, all those things I learned when I was in high school,” she says of the hands-on high school courses.

Her high school greenhouse management and floral design classes also have been vital to her job because she’s in charge of the resort’s greenhouse and interior plants.

Brandy got her start at Primland as an intern helping maintain the resort’s golf course. After graduating from Ferrum College, she worked as a spray technician, then grounds maintenance supervisor at Primland before becoming a horticulturist.

One aspect Brandy loves about her job is hearing guests compliment the landscaping. “It just makes you feel good whenever you hear people talking about how beautiful it is,” she says.

Her favorite part of her job is trying to identify plants—something she enjoyed doing in FFA career development events. “I spent two hours today trying to identify a plant that everyone wanted to know,” says Brandy. “There’s always something new and challenging. It’s not the same mundane thing every day.”

18 Elevate Your Learning
Carlie McGuire
Reporter, WJCL, Savannah, Ga.
T.C. Williams High School, Alexandria City Public Schools
CTE studies: Television and Media Production I, II, and III
Additional studies: Bachelor of Journalism, University of Missouri

Brandy Puckett
Horticulturalist, Primland Resort, Meadows of Dan
Patrick County High School, Patrick County Public Schools
CTE studies: Introduction to Plant Systems; Introduction to Animal Systems; Horticulture Sciences; Floriculture; Floral Design I and II; Greenhouse Plant Production and Management; Landscaping I
Additional studies: Bachelor of Science in Horticulture and Agriculture with a minor in Biology, Ferrum College; Virginia Pesticide Applicators License; endorsements in turf and ornamental pest control
The Architecture & Construction Career Cluster includes careers that allow you to design, plan, manage, build, and maintain machinery or structures, such as buildings, homes, and bridges. People employed in this cluster work on new structures, restorations, additions, alterations, and repairs.*

### Job outlook

As the population and new home construction increase, the need for carpenters is expected to have grown 24 percent from 2012 to 2022. Job growth for carpenters also will come from home remodeling, repair and replacement of roads and bridges, and construction of factories and power plants.

The overall employment of construction laborers and helpers is expected to have grown 25 percent from 2012 to 2022, much faster than the average for all occupations.

The demand for architects is projected to have increased 17 percent through 2022. Many school districts and colleges are seeking architects to design new facilities or renovate existing structures. As the baby-boomer population ages and more and more individuals are using healthcare services, the healthcare industry offers architects increasing opportunities. Architects face strong job competition, and demand is increasing for architects with knowledge of sustainable design or the efficient use of resources.

### What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpenters</td>
<td>24,834</td>
<td>$37,540</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Construction supervisors</td>
<td>21,411</td>
<td>$57,900</td>
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</tr>
<tr>
<td>Electricians</td>
<td>18,681</td>
<td>$44,820</td>
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<tr>
<td>Plumbers, pipefitters, and steamfitters</td>
<td>12,982</td>
<td>$43,530</td>
<td>High school diploma, certification</td>
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<tr>
<td>Construction managers</td>
<td>12,263</td>
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<td>Construction equipment operators</td>
<td>9,525</td>
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<td>Heating, AC, and refrigeration mechanics</td>
<td>9,169</td>
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<td>Civil engineers</td>
<td>8,716</td>
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<td>Cost estimators</td>
<td>7,774</td>
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<td>Sheet metal workers</td>
<td>5,442</td>
<td>$41,160</td>
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<tr>
<td>Cement masons and concrete finishers</td>
<td>4,484</td>
<td>$34,570</td>
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<td>Architects</td>
<td>3,444</td>
<td>$77,990</td>
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<td>Brickmasons and blockmasons</td>
<td>2,919</td>
<td>$41,650</td>
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<td>Electrical power-line installers and repairers</td>
<td>2,923</td>
<td>$58,780</td>
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<td>Civil engineering technicians</td>
<td>2,831</td>
<td>$41,610</td>
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<td>Structural iron and steel workers</td>
<td>1,960</td>
<td>$39,510</td>
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<td>Interior designers</td>
<td>1,472</td>
<td>$63,760</td>
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<td>Surveyors</td>
<td>1,377</td>
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<td>Architectural and civil drafters</td>
<td>1,483</td>
<td>$48,180</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Landscape architects</td>
<td>800</td>
<td>$66,120</td>
<td>Bachelor’s degree, certification</td>
</tr>
</tbody>
</table>


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by Veronica Garabelli

Joey Dawson’s fascination with carpentry started as a child, when he snuck into his grandfather’s woodworking shop to build small jewelry boxes, frames, and signs.

A self-described busybody, “it focused my attention and energy to know I could take just a couple of piles of board and turn them into something, that I could give to somebody or have,” Joey says. “That meant a lot to me.”

Today, Joey has turned his passion into his job. He’s the owner of Dawson Custom Woodworking (DCW) Inc., which remodels and builds homes and manufactures custom cabinets and furniture. He started the company when he was 18 years old, logging $80 thousand in sales the first year. The firm now has four full-time employees, made $1.5 million in sales in 2014, and works with several subcontractors.

Although it’s been 20 years since Joey graduated from high school, he still uses the skills he picked up in high school. As a builder and contractor you have to be a jack of all trades, Joey says.

“Classes that were hands-on were what meant the most to me,” he says, citing the impact of his CTE and mathematics classes. After high school, Joey received his Class A Contractor license and became certified through the Kitchen Builder program.

Joey also has expanded to other entrepreneurial ventures. He started DCW Rental Properties, LLC, which builds and leases properties. He also has started a DCW tournament fishing team, which he treats like a business (although technically it isn’t one).

“I work hard at it like I do my business, and it’s something that I enjoy doing outside of work,” he says. “The competition drives me.”

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SkillsUSA ....................................................................................... www.skillsusava.org
Technology Student Association (TSA)........................................ www.VirginiaTSA.org
Joey Dawson
Owner & President, Dawson Custom Woodworking, Inc., DCW Rental Properties, LLC, Rustburg

Rustburg High School, Campbell County Public Schools

CTE studies: Introduction to Animal Systems; Agricultural Production Technology; Agricultural Production Management; Operating the Farm Business; Technical Drawing and Design; Engineering Drawing and Design; Architectural Drawing and Design; Materials and Processes Technology

Additional studies: Class A Contractor; Kitchen Builder certification
The Arts, Audio/Video Technology & Communications Career Cluster allows you to apply your creativity in a variety of areas. This industry allows you to learn about advanced technologies used in venues ranging from corporate boardrooms, hotels, and convention centers, to classrooms, theme parks, stadiums, and museums.*

## Job outlook

Reporters, correspondents, and broadcast news analysts face some stiff competition, which is why experience in the field is key. Those who interned at media organizations or worked for school newspapers, television stations, or radio stations will have the best job opportunities.

News organizations are faced with declining advertising revenue, as online advertising, which is typically not as lucrative as traditional media, becomes more dominant. Employment of graphic designers is projected to have grown 7 percent through 2022.

Employment of producers and directors is expected to have grown 3 percent through 2022, partly due to demand for more movies and television shows. New methods of content delivery, including computers and mobile devices, may also produce more job openings. Candidates seeking careers in producing and directing will face intense competition, and those with experience on film sets will have the best job prospects.

### What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median Wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic designers</td>
<td>6,943</td>
<td>$51,780</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Telecommunications line installers</td>
<td>6,131</td>
<td>$61,600</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Printing press operators</td>
<td>5,669</td>
<td>$34,140</td>
<td>High School diploma, certification</td>
</tr>
<tr>
<td>Telecommunications equipment installers</td>
<td>5,669</td>
<td>$56,620</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Writers and authors</td>
<td>3,977</td>
<td>$59,080</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Editors</td>
<td>3,776</td>
<td>$56,650</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Technical writers</td>
<td>3,085</td>
<td>$72,970</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Photographers</td>
<td>2,955</td>
<td>$31,470</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Producers and directors</td>
<td>1,889</td>
<td>$60,370</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Print binding and finishing workers</td>
<td>1,844</td>
<td>$28,390</td>
<td>High School diploma</td>
</tr>
<tr>
<td>Audio and video equipment technicians</td>
<td>1,480</td>
<td>$37,660</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Multimedia artists and animators</td>
<td>1,152</td>
<td>$56,440</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Prepress technicians and workers</td>
<td>1,030</td>
<td>$37,740</td>
<td>High School diploma</td>
</tr>
<tr>
<td>Reporters and correspondents</td>
<td>962</td>
<td>$36,000</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Commercial and industrial designers</td>
<td>587</td>
<td>$45,280</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Desktop publishers</td>
<td>532</td>
<td>$37,170</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Film and video editors</td>
<td>383</td>
<td>$54,530</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Proofreaders and copy makers</td>
<td>391</td>
<td>$33,400</td>
<td>Bachelor's degree, certification</td>
</tr>
</tbody>
</table>


### Career and Technical Student Organization (CTSO)

Family, Career, and Community Leaders of America (FCCLA) ........................................www.virginiafccla.org
Future Business Leaders of America (FBLA) ..............................................www.vafbla-pbl.org
SkillsUSA .......................................................................................... www.vaskillsusa.org
Technology Student Association (TSA)..........................................................www.VirginiaTSA.org

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Carlie McGuire
Reporter, WJCL, Savannah, Ga.

T.C. Williams High School, Alexandria City Public Schools
CTE studies: Television and Media Production I, II, and III
Additional studies: Bachelor of Journalism, University of Missouri

Photo by Mark Rhodes

Cheston McGuire
Vice President of Media Relations, Farr, Miller & Washington, Washington, D.C.

T.C. Williams High School, Alexandria City Public Schools
CTE studies: Television and Media Production I, II, and III
Additional studies: Bachelor of Journalism, University of Missouri

Carlie photo by John Alexander
Cheston photo by Mark Rhodes

2016 R U College & Career Ready? 23
Skills in organization, time management, customer service, and communication are essential for evaluating operations in order to run a successful business. There are a variety of career opportunities available that require these skills.

Elevate Your Learning

**Job outlook**

Employment of management analysts is projected to have increased 19 percent between 2012 and 2022. Small consulting firms and government agencies are expected to contribute to this growth as they hire management analysts to reduce costs and improve efficiency. Candidates who have graduate degrees, are fluent in a foreign language, or have sales and public relations experience will have better job prospects.

Technological advancements and improved training programs will impact the demand for training and development managers. Employment is expected to have grown 11 percent by 2022, as companies seek ways to train staff members while staying on budget. Many training and development managers need a bachelor's degree, and some must obtain a master's degree. Employment of general office clerks is expected to grow 6 percent from 2012 to 2022, varying by industry.

**What they make**

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA¹</th>
<th>Median wage²</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office clerks</td>
<td>88,065</td>
<td>$28,590</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Management analysts</td>
<td>53,611</td>
<td>$92,140</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>General and operations managers</td>
<td>55,379</td>
<td>$114,030</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Customer service representatives</td>
<td>50,697</td>
<td>$31,170</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Bookkeeping clerks</td>
<td>49,952</td>
<td>$35,900</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Supervisors of office workers</td>
<td>40,098</td>
<td>$50,510</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Secretaries and administrative assistants</td>
<td>37,326</td>
<td>$33,590</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Receptionists</td>
<td>30,182</td>
<td>$26,840</td>
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</tr>
<tr>
<td>Executive secretaries and assistants</td>
<td>21,250</td>
<td>$49,830</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Shipping, receiving, and traffic clerks</td>
<td>14,489</td>
<td>$29,300</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Training and development specialists</td>
<td>10,012</td>
<td>$64,290</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Operations research analysts</td>
<td>4,789</td>
<td>$93,470</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Administrative services managers</td>
<td>4,748</td>
<td>$85,380</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Human resources assistants</td>
<td>4,430</td>
<td>$37,830</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Payroll and timekeeping clerks</td>
<td>3,780</td>
<td>$41,220</td>
<td>Associate degree, certification</td>
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<tr>
<td>File clerks</td>
<td>3,456</td>
<td>$26,230</td>
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<td>Human resources managers</td>
<td>2,946</td>
<td>$118,640</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Compensation and job analysis specialists</td>
<td>2,428</td>
<td>$60,390</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Procurement clerks</td>
<td>2,280</td>
<td>$41,120</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Training and development managers</td>
<td>1,155</td>
<td>$109,680</td>
<td>Bachelor's degree</td>
</tr>
</tbody>
</table>

¹2012  ²2013


**Career and Technical Student Organization (CTSO)**

DECA ................................................................. www.vadeca.org
Future Business Leaders of America (FBLA) ................................................................. www.vafbla-pbl.org

**Branching into business**

When it comes to pursuing her dreams, Kirsten Branch is getting down to business. Kirsten is paying her way through school while pursuing a bachelor’s degree in business administration, working full time for a government contractor, and serving as the head cheerleading coach at her alma mater, Stonewall Jackson High School.

To most, that would be a full plate, but Kirsten’s ambitions don’t end there. Her ultimate career goal is to continue to advance in public service and work for multiple government agencies. She also wants to keep mentoring young professionals and students.

At NTT Data Federal Services, Kirsten works as an administrative analyst supporting a Department of Justice contract. Although security measures prevent her from sharing specific information about her job, she says she regularly uses the skills and knowledge she gained in her middle and high school CTE courses.

Kirsten says she wanted to work in business because it provides a good opportunity to make a living. She also was drawn to the different functions of business—from operations to finance and business development.

The business program at Stonewall Jackson also had a big impact on Kirsten’s love of business. “My business teachers impacted me so much that they will probably be invited to my wedding,” she says.

Even her experience as a cheerleading coach has helped Kirsten gain business skills. For example, Kirsten has to implement a financial plan to track how much money is brought in from fundraising and how much uniforms will cost. “It’s very much like a business,” she says.

Kirsten Branch
Administrative Analyst, NTT Data Federal Services, Inc., Vienna
Stonewall Jackson High School, Prince William County Public Schools

CTE studies: Keyboarding; Principles of Business and Marketing; Entrepreneurship; Computer Information Systems; Digital Input Technology

Additional studies: Completed courses at Averett University in Danville and Northern Virginia Community College; pursuing a Bachelor of Business Administration, Capella University, online
Education & Training

The Education & Training Career Cluster includes careers that serve individuals of all ages and across a range of industries. Career choices include teaching in a classroom, leading as a college president, and corporate training.*

Job outlook

Increased enrollment and decreased student-teacher ratios, resulting in more classes with fewer students, have created job openings for educators. Additionally, many veteran teachers are expected to have retired through 2022. However, job prospects in this industry depend heavily on local and state government budgets. When governments experience budget deficits, teacher positions may be cut.

Job prospects also vary geographically. Student enrollment is expected to grow fastest in the South and West, but there will be more competition in the Midwest and Northeast, where enrollment is expected to stay the same or decline.

Overall employment of kindergarten and elementary school teachers is expected to have increased 12 percent from 2012 to 2022. Educators certified to teach English as a second language (ESL) or special education will be in high demand.

What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA¹</th>
<th>Median wage²</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school teachers, except special education</td>
<td>35,071</td>
<td>$54,990</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Teacher assistants</td>
<td>29,371</td>
<td>$22,680</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Secondary school teachers, except special and career/technical</td>
<td>22,889</td>
<td>$56,540</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Middle school teachers, except special and career/technical</td>
<td>16,085</td>
<td>$54,440</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Preschool teachers, except special education</td>
<td>8,684</td>
<td>$29,110</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Coaches and scouts</td>
<td>6,913</td>
<td>$30,420</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>School counselors</td>
<td>6,481</td>
<td>$55,110</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Education administrators, elementary and secondary school</td>
<td>6,481</td>
<td>$84,120</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Self-enrichment education teachers</td>
<td>5,790</td>
<td>$37,730</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Librarians</td>
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<td>Special education teachers, secondary school</td>
<td>3,768</td>
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<tr>
<td>CTE teachers, secondary</td>
<td>3,502</td>
<td>$56,960</td>
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<tr>
<td>Adult basic education teachers</td>
<td>2,978</td>
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<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Special education teachers, middle school</td>
<td>2,962</td>
<td>$55,900</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Education administrators, postsecondary</td>
<td>2,531</td>
<td>$85,540</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Library technicians</td>
<td>2,481</td>
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<td>High school diploma</td>
</tr>
<tr>
<td>Education administrators, preschool and childcare</td>
<td>1,008</td>
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¹2012  ²2013


Career and Technical Student Organizations (CTSOs)

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Family, Career, and Community Leaders (FCCLA) ..................... www.virginiafccla.org
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DECA ................................................................. www.vadeca.org

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DECA ................................................................. www.vadeca.org

Pursuing her teaching dream

by Jessica Sabbath

From the time she was 5 years old, Carinda Soulou was reading to her stuffed animals and playing “school” with them in her bedroom.

As she got older, Carinda spent her summer vacations holding classes in her basement for her cousins and sisters, even assigning homework and hosting parent-teacher conferences. “I’ve always loved kids and always had a passion for it,” says Carinda.

So it was a natural decision for her to take education courses at the Arlington Career Center, where she had the opportunity to work in preschool and elementary school classes. Those classes helped solidify her interest in teaching younger children.

“The career center allowed me to make sure that teaching was what I wanted to do before I went to college,” says Carinda. “I didn’t have to spend a year deciding what I wanted to do with my life. I think it was good for me that I could gear all of my college classes toward my major.”

Carinda was able to attend a 5-year education program at Virginia Commonwealth University, where she earned both her bachelor’s and master’s degrees.

Now she is a kindergarten teacher at Chesterbrook Elementary School in McLean. She enjoys teaching kindergarten, even though the first month is spent helping kids — and nervous parents — adjust to the new setting. “The first month of school is pretty much teaching the students the routines, the procedures, and the rules,” says Carinda.

Carinda also loves how different her job is each day. “No day is the same in my classroom,” she says. “I have no idea how my day’s going to go ... what tantrums may arise, what accidents may happen. It keeps it exciting.”

Carinda Soulos

Kindergarten Teacher,
Chesterbrook Elementary School,
McLean

Yorktown High School and Arlington Career Center,
Arlington County Public Schools

**CTE studies:** Early Childhood, Education, and Services I and II

**Additional studies:** Bachelor of Interdisciplinary Studies in Early and Elementary Education; Master of Teaching, Virginia Commonwealth University

Photo by Mark Rhodes
Private Colleges

1. Appalachian School of Law
2. Atlantic University
3. Averett University
4. Bluefield College
5. Bridgewater College
6. Catholic Distance University
7. Christendom College
8. Eastern Mennonite University
9. Emory and Henry College
10. Ferrum College
11. Hampden-Sydney College
12. Hampton University
13. Hollins University
14. Institute for Psychological Sciences
15. Jefferson College of Health Sciences
16. Liberty University
17. Lynchburg College
18. Mary Baldwin College
19. Marymount University
20. Medical College of Hampton Roads-EVMS
21. Patrick Henry College
22. Randolph-Macon College
23. Randolph College
24. Regent University
25. Roanoke College
26. Shenandoah University
27. Southern Virginia University
28. Sweet Briar College
29. Union Presbyterian Seminary
30. University of Richmond
31. Virginia International University
32. Virginia Theological Seminary
33. Virginia Union University
34. Virginia University of Lynchburg
35. Virginia Wesleyan College
36. Washington and Lee University

Community & Junior Colleges

1. Blue Ridge Community College
2. Central Virginia Community College
3. Dabney S. Lancaster Community College
4. Danville Community College
5. Eastern Shore Community College
6. Germanna Community College
7. J. Sargeant Reynolds Community College
8. John Tyler Community College
9. Lord Fairfax Community College
10. Mountain Empire Community College
11. New River Community College
12. Northern Virginia Community College
13. Patrick Henry Community College
14. Paul D. Camp Community College
15. Piedmont Virginia Community College
16. Rappahannock Community College
17. Richard Bland College
18. Southside Virginia Community College
19. Southwest Virginia Community College
20. Thomas Nelson Community College
21. Tidewater Community College
22. Virginia Highlands Community College
23. Virginia Western Community College
24. Wytheville Community College
**Finance**

The Finance Career Cluster includes careers in financial and investment planning, banking, insurance, and business financial management. Every sector of the economy offers a job in this career. Many career opportunities require specialized skills in organization, time management, customer service, and communication.*

**Job outlook**

Employment of budget analysts is projected to increase 6 percent from 2012 to 2022. High demand and stable employment can be expected despite government spending limits, as expertise is needed during budget cutbacks. The employment of accountants and auditors is closely tied to the economy and is expected to have grown 13 percent by 2022. Accounting expertise related to international trade and mergers and acquisitions will likely be sought after as business globalization continues. As a result of stricter laws and regulations, corporate scandals, and recent financial crises, organizations looking to comply with new standards are expected to increase demand for accounting services. Employment of insurance underwriters is expected to have decreased 6 percent by 2022. The expansion of advanced underwriting software reduces the need for insurance underwriters. There will be a need for insurance underwriters to evaluate automated recommendations, and opportunities for these jobs will be best for individuals with strong technological skills and a background in finance.

**What they make**

<table>
<thead>
<tr>
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<th>Median wage²</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountants and auditors</td>
<td>42,022</td>
<td>$71,120</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Financial managers</td>
<td>14,750</td>
<td>$126,430</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Tellers</td>
<td>12,899</td>
<td>$27,220</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Financial analysts</td>
<td>9,434</td>
<td>$81,340</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Insurance sales agents</td>
<td>9,841</td>
<td>$44,040</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Bill and account collectors</td>
<td>9,161</td>
<td>$32,880</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Loan officers</td>
<td>7,086</td>
<td>$61,170</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Personal financial advisors</td>
<td>5,071</td>
<td>$81,120</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Financial services sales agents</td>
<td>5,382</td>
<td>$57,610</td>
<td>Bachelor’s degree, certification</td>
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<tr>
<td>Loan interviewers and clerks</td>
<td>5,142</td>
<td>$38,260</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Insurance clerks</td>
<td>4,821</td>
<td>$34,890</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Claims adjusters and investigators</td>
<td>4,141</td>
<td>$59,420</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Budget analysts</td>
<td>3,111</td>
<td>$80,710</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Tax preparers</td>
<td>2,750</td>
<td>$39,230</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Credit analysts</td>
<td>1,636</td>
<td>$68,770</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Insurance underwriters</td>
<td>1,793</td>
<td>$63,590</td>
<td>Bachelor’s degree, certification</td>
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<tr>
<td>Brokerage clerks</td>
<td>1,371</td>
<td>$38,810</td>
<td>Associate degree, certification</td>
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<tr>
<td>Credit authors</td>
<td>960</td>
<td>$28,360</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Insurance appraisers, auto damage</td>
<td>215</td>
<td>$59,830</td>
<td>Bachelor’s degree, certification</td>
</tr>
</tbody>
</table>

¹2012  ²2013


**Acing the audit**

by Jessica Sabbath

A s an auditor of Virginia’s agencies and museums, Candice Owens combines her knack for accounting with her interest in policy:

Candice is part of the Capital Asset Management team at the Virginia Auditor of Public Accounts (APA). She is tasked with helping state agencies improve their finances and ensuring public funds are spent according to laws and regulations.

As part of her job, Candice has audited agencies such as the Virginia Lottery and the Virginia Community College System, and other state-run properties, such as Gunston Hall, Yorktown Victory Center, and Christopher Newport University.

“No agency is ever the same,” Candice says. “That’s the fun part. There’s always something different to learn.”

Candice got a head start on her career path in high school. Her accounting courses helped her discover she had a talent for accounting. “It just clicked,” she says.

Her teacher also was inspirational, sharing stories of his time as both a public accountant and auditor. She became active in Future Business Leaders of America (FBLA) and, later, the college division of the organization, Phi Beta Lambda (PBL).

The knowledge she gained in high school translated well to college. Even in her freshman year at Longwood University, Candice was tutoring other accounting students.

Candice first learned about APA through job fairs at Longwood. “I like meeting new people and helping agencies become better,” Candice says of her job. “I like coming back and seeing things they’ve implemented.”

***

Career and Technical Student Organizations (CTSOs)

DECA ................................................................. www.vadeca.org
Future Business Leaders of America (FBLA) .......................... www.vafbla-pbl.org

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Candice Owens
Auditor, Capital Asset Management Team, Virginia Auditor of Public Accounts, Richmond
Middlesex High School, Middlesex County Public Schools

CTE studies: Accounting I; Accounting (dual-enrollment with Rappahannock Community College, including one year as teacher’s assistant); Business Law; Design, Multimedia, and Web Technologies

Additional studies: Bachelor of Science in Business Administration with a concentration in Accounting, Longwood University; Virginia Construction Contracting Officer (VCCO) certification; pursuing a Master of Accountancy at Virginia Commonwealth University
**Government & Public Administration**

The Government & Public Administration Career Cluster includes diverse jobs found in local, state, and federal government. Virtually every occupation can be found within this field. You may help defend against foreign aggression, represent national interests abroad, or pass and enforce local laws.*

### Job outlook

Increasing globalization and a more diverse U.S. population, among other factors, are increasing the demand for interpreters and translators. Employment for these careers is expected to have grown 46 percent through 2022. While employment in state and local government will have increased, overall employment in the federal government is expected to have declined from 2012 to 2022, thus creating strong competition for the available jobs. Candidates with internship experience and a notable academic background will have the best job prospects.

Employment of tax examiners and collectors and revenue agents is projected to have declined 4 percent through 2022. Demand for these jobs is heavily dependent on changes to government budgets, although job cuts for these jobs will likely be less severe because they tend to improve government budgets by increasing revenue.

Transportation inspectors and urban regional planners will see job growth of 11 percent and 10 percent respectively through 2022.

### What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpreters and translators</td>
<td>4,912</td>
<td>$59,830</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Compliance officers</td>
<td>6,852</td>
<td>$64,270</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Postal service mail carriers</td>
<td>7,120</td>
<td>$54,590</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Eligibility interviewers</td>
<td>3,706</td>
<td>$37,570</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Construction and building inspectors</td>
<td>3,298</td>
<td>$52,200</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Tax preparers</td>
<td>2,750</td>
<td>$39,230</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Court, municipal, and license clerks</td>
<td>2,118</td>
<td>$32,130</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Occupational health and safety specialists</td>
<td>2,363</td>
<td>$61,700</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Tax examiners and collectors</td>
<td>1,760</td>
<td>$44,950</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Appraisers and assessors of real estate</td>
<td>1,703</td>
<td>$57,620</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Financial examiners</td>
<td>1,481</td>
<td>$74,170</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Urban and regional planners</td>
<td>1,393</td>
<td>$64,780</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Postal service clerks</td>
<td>1,854</td>
<td>$53,840</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Legislators</td>
<td>743</td>
<td>$18,500</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Postmasters and mail superintendents</td>
<td>627</td>
<td>$64,300</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Transportation inspectors</td>
<td>405</td>
<td>$70,210</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Occupational health and safety technicians</td>
<td>313</td>
<td>$40,190</td>
<td>Bachelor’s degree, certification</td>
</tr>
</tbody>
</table>

*2012 | *2013


### Career and Technical Student Organizations (CTSOs)

Future Business Leaders of America (FBLA) .................................................. www.vafbla-pbl.org
SkillsUSA ............................................................................................................ www.skillsusava.org

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**Supplying the military**

by Jessica Sabbath

John Henley has been helping the government buy military supplies since his first summer in college.

He applied for an internship with the Defense Logistics Agency (DLA), which was seeking interns among students who planned to major in business. The DLA buys and stocks items that the military needs, including everything from vehicle and aircraft parts to weapons systems.

That summer, John learned the basics of procurement and worked for the agency throughout his three years of college at Virginia Commonwealth University. He worked full time in the summer and about 24 hours a week during the school year in addition to handling his courses.

After gradation, he started a two-year, post-graduate program with the agency and now works full time. John plans to stay with the agency—his dad has enjoyed working there for 32 years—and eventually wants to earn his Master of Business Administration (MBA) with a concentration in finance.

As an acquisitions specialist, he is in charge of creating solicitations for items needed by the military. Once companies bid on the contract, John evaluates the contractors based on price and previous task performance of the company. He also tries to work with contractors to get the best price for the government.

John sees a lot of value in helping the military. “I kind of feel like I have a direct impact on helping out the guys in the military,” says John. “If I do my job well and get a contract awarded for an item the military members need...I can have a direct impact on getting that helicopter back up in the air,” he says.
John Henley
Acquisitions Specialist,
Defense Logistics Agency,
Richmond
Atlee High School,
Hanover County Public Schools

CTE studies: Principles of Business and Marketing; Marketing; Sports, Entertainment, and Recreation Marketing

Additional studies: Bachelor of Science in Marketing, Virginia Commonwealth University; Defense Acquisition Workforce Improvement Act (DAWIA) Level 2 certification

Photo by Mark Rhodes
Health Science

The Health Science Career Cluster includes careers in which you help keep people healthy and treat those who are not. Work directly with people by conducting research on diseases and other important health information. This field allows you to work in diverse environments such as hospitals, medical and dental offices, or labs.

Job outlook

Federal healthcare reform plays a large role in the job growth in health-related professions. As more individuals gain access to healthcare, more jobs will become available in order to treat patients.

Employment of physical therapists is expected to have grown 36 percent from 2012 to 2022. The aging baby-boomer generation is staying active later in life than past generations, which will increase the demand for physical therapy services. Heart attacks, strokes, and mobility-related incidents, as well as the growing number of patients with chronic diseases such as obesity and diabetes, require rehabilitation offered by physical therapy. Additionally, advances in medical technology have increased the number of patients receiving outpatient surgery, creating increased demand for rehabilitation.

Employment of emergency medical technicians (EMTs) and paramedics is projected to have increased 23 percent through 2022, as a growing population means increased emergencies.

What they make

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employed in VA</th>
<th>Median Wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered nurses</td>
<td>59,445</td>
<td>$62,750</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Licensed practical nurses</td>
<td>21,876</td>
<td>$39,390</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Home health aides</td>
<td>10,378</td>
<td>$20,600</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Medical assistants</td>
<td>10,456</td>
<td>$30,400</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Dental assistants</td>
<td>8,455</td>
<td>$34,950</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Pharmacy technicians</td>
<td>8,919</td>
<td>$28,240</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>7,364</td>
<td>$122,170</td>
<td>Bachelor's degree, certification</td>
</tr>
<tr>
<td>Medical and health services managers</td>
<td>6,759</td>
<td>$90,280</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Physical therapists</td>
<td>5,130</td>
<td>$81,410</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>EMTs and paramedics</td>
<td>4,449</td>
<td>$30,180</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Dental hygienists</td>
<td>4,295</td>
<td>$81,110</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Medical laboratory technicians</td>
<td>3,825</td>
<td>$37,340</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Medical laboratory technologists</td>
<td>4,131</td>
<td>$54,570</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Medical records technicians</td>
<td>3,697</td>
<td>$34,920</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Dentists</td>
<td>3,457</td>
<td>$158,680</td>
<td>Bachelor's degree, certification</td>
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<tr>
<td>Psychiatric technicians</td>
<td>4,368</td>
<td>$25,230</td>
<td>Associate degree</td>
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<tr>
<td>Speech-language pathologists</td>
<td>2,878</td>
<td>$74,320</td>
<td>Bachelor's degree</td>
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<tr>
<td>Occupational therapists</td>
<td>2,479</td>
<td>$81,310</td>
<td>Bachelor's degree</td>
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<tr>
<td>Physician assistants</td>
<td>2,090</td>
<td>$87,170</td>
<td>Bachelor's degree, certification</td>
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<tr>
<td>Physical therapist assistants</td>
<td>1,901</td>
<td>$55,940</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Respiratory therapists</td>
<td>2,328</td>
<td>$56,590</td>
<td>Bachelor's degree</td>
</tr>
</tbody>
</table>


*2012 **2013

Career and Technical Student Organizations (CTSOs)

Future Business Leaders of America (FBLA) .................................. www.vafbla-pbl.org
Health Occupations Students of America (HOSA) ........................... www.vahosa.org

Caring for others

by Veronica Garabeli

Cindy Umaña
Amador, PT, DPT, knew she wanted to go into the medical field, but it was a high school physical therapy and sports medicine class that guided her to physical therapy.

“This class really kind of opened up my eyes, and I was like ‘Oh, OK, this is something. I can see myself doing this,’” she says about the class she took sophomore year.

Today, Cindy is a licensed physical therapist for Fox Rehabilitation, a private practice that includes physical, occupational, and speech therapists. She makes house calls and helps senior patients improve their movement and manage their pain. That can mean working on balance by playing catch with a patient or helping them walk with or without a cane. Her favorite part of her job is tailoring treatments to individual patients, while the most challenging is dealing with ageism.

“Everyone says ‘Oh, he’s 80. He shouldn’t be able to do that anymore,’” but sometimes age is just a number,” says Cindy, who also is contracted as a physical therapist at Spring Arbor of Leesburg, an assisted-living facility.

Cindy’s ultimate career goal is to become a geriatric specialist, which she says is the highest standard in her specialty.

She advises high school students who want to become physical therapists to volunteer and travel to expose themselves to the different areas of physical therapy. Physical therapy has various specialties, including helping children, injured athletes, and animals. While working on her doctorate, for example, Cindy did mission work in Costa Rica, providing physical therapy in communities and orphanages. Although the workload and cases were overwhelming at times, “it improved my ability to adapt to diverse situations while being able to problem solve,” she says.
Cindy Umaña Amador, PT, DPT

Licensed Physical Therapist,
Fox Rehabilitation and Spring Arbor,
Leesburg

Wakefield High School,
Arlington County Public Schools

CTE studies: Physical/Occupational Therapy; Sports Medicine

Additional studies: Bachelor of Science in Health and Human Performance and Doctor of Physical Therapy, Marymount University
Hospitality & Tourism

The Hospitality & Tourism Career Cluster includes careers that allow you to travel and work with a variety of people. Careers can be found all over the world and range anywhere from hotel and restaurant operations to working in amusement parks and other tourist destinations. Excellent customer service skills are essential for everyone in this field.

Job outlook

Employment of meeting, convention, and event planners is expected to have grown 33 percent from 2012 to 2022. Face-to-face interactions continue to be the preferred meeting method by many people. As companies become increasingly international, meetings and conventions become even more valuable. Candidates with a Bachelor of Science in Hospitality and Tourism Management or a Certified Meeting Professional credential, as well as experience working with social media outlets and virtual meeting software will have the best options.

The need for chefs and head cooks is expected to have increased 5 percent through 2022. While an increase in population growth and income is causing more demand for high-quality dishes, restaurants often are hiring food service workers instead of chefs to save money. Most job openings will come from turnover in this fast-paced industry.

What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooks, restaurant</td>
<td>28,232</td>
<td>$22,650</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Supervisors of food service workers</td>
<td>23,921</td>
<td>$31,940</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Recreation workers</td>
<td>12,626</td>
<td>$21,820</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Hosts and hostesses, restaurant and related</td>
<td>10,243</td>
<td>$18,540</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Supervisors of housekeeping workers</td>
<td>8,876</td>
<td>$33,850</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Bartenders</td>
<td>8,351</td>
<td>$25,910</td>
<td>Associate degree</td>
</tr>
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<td>Cooks, institution and cafeteria</td>
<td>8,310</td>
<td>$23,490</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Cooks, fast food</td>
<td>7,728</td>
<td>$18,610</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Hotel, motel, and resort desk clerks</td>
<td>6,709</td>
<td>$19,810</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Amusement and recreation attendants</td>
<td>5,891</td>
<td>$18,320</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Meeting, convention, and event planners</td>
<td>4,204</td>
<td>$55,310</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Food service managers</td>
<td>5,004</td>
<td>$56,290</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Bakers</td>
<td>2,879</td>
<td>$24,770</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Chefs and head cooks</td>
<td>2,844</td>
<td>$39,200</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Tour guides and escorts</td>
<td>1,781</td>
<td>$22,590</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Travel agents</td>
<td>1,899</td>
<td>$42,140</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Lodging managers</td>
<td>1,503</td>
<td>$57,870</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Concierges</td>
<td>1,321</td>
<td>$28,330</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Film and video editors</td>
<td>383</td>
<td>$54,530</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Proofreaders and copy markers</td>
<td>391</td>
<td>$33,400</td>
<td>Bachelor’s degree, certification</td>
</tr>
</tbody>
</table>


Career and Technical Student Organizations (CTSOs)

DECA ......................................................................................................www.vadeca.org
Family, Career, and Community Leaders of America (FCCLA) ... www.virginiafccla.org

Making the mark

by Veronica Garabelli

Each year Nicole Sanchez is responsible for coordinating up to 50 events for the Washington Wizards and Washington Mystics, professional basketball teams based in Washington, D.C. Events are held for the teams’ owners and season ticket members. One of her favorite events is when major and minority owners and members with courtside seat accounts attend an opposing team’s game with all expenses paid. This past year the trip was to a Clippers game in Los Angeles.

“I coordinated that whole event,” Nicole says, including flights, hotels, and dinner reservations. Nicole was drawn to her current line of work when she took a sports marketing class at Mount Vernon High School. Her decision to pursue sports marketing was further solidified when the class went on a field trip to a Washington Wizards game and met Steve Zarick, senior manager of group sales for the Washington Wizards.

The class, she says, helped lay the groundwork for what she would learn at George Mason University in Fairfax, where she majored in sports management. At GMU, Nicole continued to gain experience in her field. During her sophomore year, she was the retail intern for the Washington Redskins and then interned with the Wizards and Mystics during her senior year. Before her internship ended, she was offered a full-time position.

She likes that her job changes daily, allows her to be creative, and provides her with growth opportunities.

“We also have one of the best work atmospheres out there,” she says. “We’re more like a family than coworkers and that makes the long, 12-hour game days so much better to deal with.”
Nicole Sanchez
Manager, Events and Programs, Washington Wizards and Washington Mystics, Washington, D.C.
Mount Vernon High School, Fairfax County Public Schools

**CTE studies:** Sports, Entertainment, and Recreation Marketing

**Additional studies:** Bachelor of Science in Sport Management, George Mason University

Photo by Mark Rhodes
Human Services

The Human Services Career Cluster includes careers in which you help families and individuals with life services. You can assist people through early childhood care, mental health services, or personal care services. This diverse cluster requires individuals to have superior communication and problem-solving skills to provide various levels of support.*

**Job outlook**

Early childhood care is extremely important for a child’s social and intellectual development. Employment of childcare workers is expected to have grown 14 percent from 2012 to 2022. As the population of children between the ages of 3 and 5 increases and demand for preschool programs rises, more jobs will become available for preschool teachers and childcare workers.

Increased demand for healthcare and social services has led to an expected increase in the employment of social workers. Their overall employment is expected to have risen by 19 percent through 2022, but demand will vary by specialty.

Employment of health educators and community health workers is projected to have grown 21 percent from 2012 to 2022. The growing need to inform the public of how to identify health problems and when to seek medical treatment will increase demand for health educators and community health workers. More than one-third of Americans are obese, and these workers are needed to provide care for these individuals and serve on intervention teams.

### What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal care aides</td>
<td>32,418</td>
<td>$18,420</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Childcare workers</td>
<td>28,524</td>
<td>$19,120</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Hairstylists</td>
<td>21,829</td>
<td>$28,020</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Fitness trainers and aerobics instructors</td>
<td>8,908</td>
<td>$40,080</td>
<td>Bachelor’s degree or more</td>
</tr>
<tr>
<td>Mental health counselors</td>
<td>7,644</td>
<td>$43,030</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Child, family, and school social workers</td>
<td>7,791</td>
<td>$43,220</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Supervisors of personal service workers</td>
<td>7,226</td>
<td>$35,870</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Human service assistants</td>
<td>6,229</td>
<td>$29,530</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Rehabilitation counselors</td>
<td>3,904</td>
<td>$38,070</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Massage therapists</td>
<td>3,500</td>
<td>$37,620</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Mental health and substance abuse social workers</td>
<td>3,193</td>
<td>$43,270</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Healthcare social workers</td>
<td>2,737</td>
<td>$50,940</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Substance abuse and behavioral disorder counselors</td>
<td>2,387</td>
<td>$40,290</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Residential advisors</td>
<td>2,294</td>
<td>$28,350</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Marriage and family therapists</td>
<td>1,877</td>
<td>$43,840</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Skincare specialists</td>
<td>1,222</td>
<td>$20,160</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Tailors, dressmakers, and custom sewers</td>
<td>1,785</td>
<td>$23,680</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Health educators</td>
<td>1,145</td>
<td>$49,860</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Clergy</td>
<td>1,019</td>
<td>$40,350</td>
<td>Bachelor’s degree, certification</td>
</tr>
</tbody>
</table>


### Career and Technical Student Organizations (CTSOs)

Family, Career, and Community Leaders of America (FCCLA) .... www.virginiafccla.org
SkillsUSA .......................................................... www.skillsusava.org

Victoria McGee
Assistant Teacher, The Goddard School, Virginia Beach

Ocean Lakes High School and Virginia Beach Technical and Career Education Center, Virginia Beach City Public Schools

CTE studies: Early Childhood, Education, and Services

Additional studies: Pursuing Associate of Arts in Early Childhood Education, Liberty University
Information Technology

The Information Technology Career Cluster gives you the opportunity to design, develop, and manage different types of software programs and hardware. This field requires a solid foundation in mathematics and science as well as high technical skills. Information technology workers can be found in virtually every sector of the economy, providing assistance at a multitude of levels.

Job outlook

Software developer jobs are expected to have increased 22 percent from 2012 to 2022. The main driver of this growth is the demand for computer software for the healthcare industry, new mobile technology, and cybersecurity. Candidates with the most relevant programming skills will have the best job prospects. Some outsourcing of software developer jobs is expected but should be limited because these professionals need to be close to their customers to do their job properly.

Driven by increased data analysis needs across all sectors of the economy, employment of database administrators is expected to have increased 15 percent through 2022. Employment at cloud computing firms, which offer popular database programs over the Internet, is expected to have grown 48 percent through 2022. Employment in general medical and surgical hospitals is projected to have increased 43 percent through 2022, largely due to the increased use of electronic medical records in the healthcare industry.

Employment of computer systems analysts is expected to have grown 25 percent from 2012 to 2022, especially in the healthcare sector and at IT consulting firms.

What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA¹</th>
<th>Median wage²</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software developers, applications</td>
<td>33,373</td>
<td>$102,890</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Software developers, systems software</td>
<td>31,321</td>
<td>$110,800</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Computer systems analysts</td>
<td>31,016</td>
<td>$95,280</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Network and computer systems administrators</td>
<td>20,146</td>
<td>$87,210</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Computer support specialists</td>
<td>18,404</td>
<td>$50,460</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Computer programmers</td>
<td>10,331</td>
<td>$75,900</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Computer occupations, all other</td>
<td>10,295</td>
<td>$97,330</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Database administrators</td>
<td>6,215</td>
<td>$91,580</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Technical writers</td>
<td>3,085</td>
<td>$72,970</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Computer and information research scientists</td>
<td>1,901</td>
<td>$112,770</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Computer hardware engineers</td>
<td>1,982</td>
<td>$115,640</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Multimedia artists and animators</td>
<td>1,152</td>
<td>$56,440</td>
<td>Bachelor’s degree, certification</td>
</tr>
</tbody>
</table>

¹2012  ²2013


Career and Technical Student Organizations (CTSOs)

Future Business Leaders of America (FBLA) ............................................... www.vafbla-pbl.org
SkillsUSA .............................................................................................................. www.skillsusava.org
Technology Student Association (TSA)................................................................. www.VirginiaTSA.org

Doing what IT takes

by Veronica Garabelli

Imagine being responsible for a human resources system used by one of the largest companies in the U.S.

That’s what Brian Tajo is tasked with doing at Johnson & Johnson, a company with 134,000 employees.

Brian designs a system using Workday and teaches Johnson & Johnson employees how to use it. The system helps managers plan bonuses, manage performance ratings, and track employee skills. Brian’s favorite part of his job is the building and design aspect of it.

“When I was young I liked to play with Legos and build a lot of things,” he says. The fact that he can still do that in a way “is really interesting to me.”

While Brian started building skills for his future career before he was even aware of it, his father’s advice also played a big role.

“Happiness and wealth is measured by the options a person has,” his father told him. That mantra led him to pick Business Information Technology as a major in college, because he thought it would provide him with the most opportunities.

In college, Brian gained experience by landing internships in his field at CACI Inc., Norfolk Southern, and Freddie Mac. Senior year, Brian was offered a job at IBM, where he stayed for four years until he switched to consulting and eventually started working at Johnson & Johnson.

He credits the skills he learned in his high school CTE classes with helping him acquire those initial internships. An Advanced Computer Information Systems class, for example, helped him earn the Microsoft Office Specialist certification.

“Those kinds of skill sets, at the time when I was getting internships, were really in demand,” he says.
Brian Tajo
Workday Design Manager,
Johnson & Johnson
New York

Salem High School, Virginia Beach City Public Schools

CTE studies: Keyboarding I and II; Design, Multimedia, and Web Technologies; Advanced Computer Information Systems; Business Management

Additional studies: Bachelor of Science in Business Information Technology, Virginia Tech; certifications in SAP HCM Management and Administration I & II, Workday, Management Reporting Certification from Cornell University, and Microsoft Office Specialist
**Law, Public Safety, Corrections & Security**

The Law, Public Safety, Corrections & Security Career Cluster includes careers that provide public services on local, state, federal, and international levels. Responsibilities include prevention of and protection from harm such as crime or natural disasters. Career opportunities range from public safety officers to legal services to homeland security.*

### Job outlook

Demand for lawyers is expected to have grown 10 percent from 2012 to 2022. While the need for legal services is expected to increase for individuals and businesses, pricing competition may force some law firms to shift some document review work to paralegals or legal assistants. Competition is steep for these positions, and candidates willing to relocate will have better job prospects.

Heightsened security concerns are expected to increase demand for private detectives and criminal investigators 11 percent through 2022. The Internet and technological advances have created more opportunities for theft and fraud, resulting in an increased demand for investigative services. Popular television series such as Sherlock have made this career much more popular, and strong competition should be expected.

### What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA¹</th>
<th>Median wage²</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security guards</td>
<td>32,663</td>
<td>$26,930</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Lawyers</td>
<td>20,431</td>
<td>$115,370</td>
<td>Juris Doctorate</td>
</tr>
<tr>
<td>Police and sheriff’s patrol officers</td>
<td>18,305</td>
<td>$47,510</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Correctional officers and jailers</td>
<td>18,150</td>
<td>$35,210</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Paralegals and legal assistants</td>
<td>8,976</td>
<td>$46,800</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Firefighters</td>
<td>8,640</td>
<td>$44,330</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>EMTs and paramedics</td>
<td>4,449</td>
<td>$30,180</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Detectives and criminal investigators</td>
<td>3,769</td>
<td>$82,350</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Police, fire, and ambulance dispatchers</td>
<td>3,040</td>
<td>$34,540</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Legal secretaries</td>
<td>3,430</td>
<td>$39,000</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Probation officers</td>
<td>3,123</td>
<td>$42,440</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Supervisors of correctional officers</td>
<td>2,608</td>
<td>$44,690</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Supervisors of police and detectives</td>
<td>2,573</td>
<td>$76,720</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Supervisors of fire fighting workers</td>
<td>1,634</td>
<td>$67,000</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Private detectives and investigators</td>
<td>795</td>
<td>$44,750</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Animal control workers</td>
<td>448</td>
<td>$33,880</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Judicial law clerks</td>
<td>152</td>
<td>$44,730</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Forensic science technicians</td>
<td>386</td>
<td>$68,410</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Fish and game wardens</td>
<td>277</td>
<td>$42,330</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Court reporters</td>
<td>227</td>
<td>$44,030</td>
<td>Associate degree</td>
</tr>
</tbody>
</table>

*¹2012  - ¹²2013

**Sources:** United States Bureau of Labor Statistics, Virginia Employment Commission, Trailblazers

### Specializing in family law

**by Veronica Garabelli**

Jason Knoster is only 27 years old, but he’s already an accomplished lawyer at Graham Law Firm in Leesburg.

“As far as attorneys go, I’m probably younger than most, but as far as perception goes in the community, I am well respected, judges know me by name, clients ask for me by name, and I’ve made a name for myself out here,” Jason says.

Jason specializes in family law, primarily helping clients through divorces.

“I take happiness out of the fact that people come to me in their time of need, and that I can help them find a solution,” says Jason. “So, I perceive myself being in family law for a long time.”

Jason graduated fifth in his class at the West Virginia University College of Law and received the Order of the Coif, an honor only given to the top 10 percent of a graduating law class. For Jason, becoming a lawyer has been a dream since he was a child.

“There’s something about law that fascinates me,” he says. “The law is the bond that holds society together, and if you can understand what holds society together, you have a completely different understanding of the world around you,” he says.

At any given time, Jason works with a range of 25 to 45 clients. He loves that his job is always interesting. The biggest challenge is the preparation each case requires.

Jason started planting the seeds for his law career before college. He took Business Law in high school, which gave him a broad introduction to the profession. His high school Accounting course also proved useful, as he often searches through financial documents when working on cases.

But Jason’s not done learning yet. He plans to continue developing himself as a lawyer, proving his merit in the profession, and advocating for his clients.

“I have barely put a drop in the bucket as far as my career,” he says. “I see a long career in law ahead of me.”

### Career and Technical Student Organizations (CTSOs)

- Future Business Leaders of America (FBLA) ........................................ www.vafbla-pbl.org
- SkillsUSA ........................................................................................................ www.skillsusava.org

Jason Knoster
Attorney, Graham Law Firm, PLLC, Leesburg

Broad Run High School, Loudoun County Public Schools

CTE studies: Business Law; Accounting; Keyboarding

Additional studies: Bachelor of Science, Business Administration, College of William & Mary; Juris Doctorate, West Virginia University College of Law
Manufacturing

The Manufacturing Career Cluster includes careers in planning, managing, and performing the processing of materials into intermediate or final products. Careers also include related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.*

Job outlook

Welders, cutters, solderers, and brazers will be needed to repair and maintain the country’s aging infrastructure. Employment is expected to have increased 6 percent through 2022. Typically, basic welding skills can be transferred across manufacturing industries. Overall employment of industrial machinery mechanics, millwrights, and maintenance workers is projected to have increased 17 percent by 2022.

Highly skilled mechanics will be needed to operate cutting-edge manufacturing machinery, and increased use of technology will keep job openings available for maintenance workers. Job prospects are promising for millwrights, who will be needed to install, repair, and disassemble machinery.

Employers in most industries, including nonprofits, will require industrial engineers to improve efficiencies.

What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA¹</th>
<th>Median wage²</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and repair workers</td>
<td>32,438</td>
<td>$36,160</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Production supervisors</td>
<td>13,845</td>
<td>$57,790</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Purchasing agents</td>
<td>12,178</td>
<td>$70,800</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Team assemblers</td>
<td>10,451</td>
<td>$26,300</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Welders, cutters, solderers, and brazers</td>
<td>9,133</td>
<td>$39,230</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Industrial machinery mechanics</td>
<td>8,029</td>
<td>$44,150</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Inspectors, testers, and weighers</td>
<td>8,207</td>
<td>$33,580</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Production, planning, and expediting clerks</td>
<td>7,865</td>
<td>$47,450</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Machinists</td>
<td>7,459</td>
<td>$42,370</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Electrical and electronics engineering techs</td>
<td>5,033</td>
<td>$63,010</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Electrical and electronic equipment assemblers</td>
<td>3,870</td>
<td>$30,290</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Industrial production managers</td>
<td>2,648</td>
<td>$102,300</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Mechanical drafters</td>
<td>2,648</td>
<td>$52,670</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Maintenance workers, machinery</td>
<td>2,196</td>
<td>$45,060</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Cabinetmakers and bench carpenters</td>
<td>2,514</td>
<td>$28,790</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Industrial engineering technicians</td>
<td>1,222</td>
<td>$51,320</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Chemical technicians</td>
<td>1,166</td>
<td>$40,860</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Tool and die makers</td>
<td>1,040</td>
<td>$48,760</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Electromechanical equipment assemblers</td>
<td>1,109</td>
<td>$32,390</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Power plant operators</td>
<td>583</td>
<td>$44,250</td>
<td>Associate degree</td>
</tr>
</tbody>
</table>

¹2012    ²2013


Learning and earning as a welder

by Jessica Sabbath

On her first day of welding class at Richmond Technical Center, Cynthia Roberts, wearing a pink t-shirt and pink backpack, walked into a room full of male students.

“They looked at me and wanted to know if I was lost,” recalls Cynthia. Her skills at welding soon made her stand out in a different way. “Everyone at the Richmond Technical Center saw my potential,” says Cynthia.

Advancing quickly through welding techniques, Cynthia competed in SkillsUSA competitions. She won at the district level and qualified to compete at the state level her senior year.

Now a student at the competitive Apprentice School at Newport News Shipbuilding, Cynthia not only earns a salary but is receiving an education, too. She’s working toward an associate degree in business from Tidewater Community College.

Cynthia is an apprentice welder on Navy aircraft carriers and submarines. Her apprenticeship allows her to acquire the skills needed to perform a variety of welds. The level of difficulty of each job depends on many factors, including the size of the space she’s working in, the thickness of the welding material she’s working with, and the possibility of toxic gas being emitted.

She loves the independent nature of her work — and is also competitive. “When you can put down a beautiful weld better than the guys, it’s something that I can’t help but smile about.”

Career and Technical Student Organizations (CTSOs)

SkillsUSA .................................................................................... www.skillsusava.org
Technology Student Association (TSA)..................................... www.VirginiaTSA.org

Cynthia Roberts
Welder,
Newport News Shipbuilding,
Newport News

Huguenot High School and
Richmond Technical Center,
Richmond Public Schools

CTE studies: Welding I, II, and III;
Auto Body I

Additional studies: Newport News
Shipbuilding’s Apprentice School;
pursuing Associate of Business
through Tidewater Community
College

Photo by Mark Rhodes
Marketing

The Marketing Career Cluster includes careers in advertising, public relations, sales, and planning. This cluster allows you to demonstrate your creativity through promotional campaigns, event planning, and new sales techniques.*

➤ Job outlook

Employment of advertising and promotions managers is expected to have grown 7 percent from 2012 to 2022, while employment of marketing managers is expected to have grown 13 percent. While the newspaper publishing industry is shrinking, advertising and promotion managers should see employment growth in other areas, like online advertising and marketing.

The rapid spread of news across the Internet is expected to increase demand for public relations specialists, growing 12 percent from 2012 to 2022. Public relations expertise will be fundamental for companies looking to boost their public image. Candidates can expect steep competition for these jobs, but those with a bachelor’s degree in public relations, communication, English, business, or journalism will have an advantage.

Jobs for real estate brokers and sales agents are expected to have grown 11 percent through 2022; but the industry is dependent on the health of the real estate market.

What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail salespersons</td>
<td>125,224</td>
<td>$20,470</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Retail sales supervisors</td>
<td>43,510</td>
<td>$37,960</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Sales representatives, except tech/scientific</td>
<td>30,260</td>
<td>$55,530</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Real estate sales agents</td>
<td>20,378</td>
<td>$44,190</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Market research analysts and specialists</td>
<td>14,346</td>
<td>$63,650</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Driver/sales workers</td>
<td>13,667</td>
<td>$21,520</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Supervisors of non-retail sales workers</td>
<td>10,396</td>
<td>$79,450</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Counter and rental clerks</td>
<td>9,572</td>
<td>$27,170</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Sales representatives, tech/scientific</td>
<td>8,231</td>
<td>$83,500</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Public relations specialists</td>
<td>7,463</td>
<td>$64,540</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Sales managers</td>
<td>6,193</td>
<td>$121,680</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Telemarketers</td>
<td>5,506</td>
<td>$21,170</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Marketing managers</td>
<td>4,584</td>
<td>$142,730</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Advertising sales agents</td>
<td>3,111</td>
<td>$47,380</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Real estate brokers</td>
<td>2,621</td>
<td>$49,350</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Wholesale and retail buyers</td>
<td>2,815</td>
<td>$56,330</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Merchandise displayers</td>
<td>2,369</td>
<td>$28,850</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Public relations and fundraising managers</td>
<td>1,552</td>
<td>$124,990</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Advertising and promotions managers</td>
<td>393</td>
<td>$88,230</td>
<td>Bachelor’s degree</td>
</tr>
</tbody>
</table>

*2012 2013


Career and Technical Student Organizations (CTSOs)

DECA ......................................................................................... www.vadeca.org
Future Business Leaders of America (FBLA) ........................................ www.vafbla-pbl.org

Giving back

by Jessica Sabbath

When she took Marketing in high school, Justina Sage Sumpter realized one could find joy in a career.

Justina grew up watching her single mother struggle to make ends meet.

“My mom worked incredibly hard, but she didn’t have a high school diploma,” says Justina.

In her Marketing class, she realized she had found a career path that she could enjoy and allowed her to be creative. “It’s wonderful when you find something you care about, to know you’re doing something you love,” says Justina.

Now Justina is marketing and development manager for the United Way of Montgomery, Radford, and Floyd, an organization that raises money for 26 local charities.

At a small nonprofit organization, Justina wears many hats, and each day is different. She writes press releases, coordinates interviews with local media, works with businesses and their employees on giving to the United Way through payroll deductions, and helps with local fundraising events.

Justina interned with the United Way during college and started an advertising job at The Roanoke Times after graduating from Radford.

When her current position became available, United Way called to see if she was interested in the job. “At the time, I wasn’t looking, but it was really appealing to me,” says Justina.

Justina enjoys being able to work for a nonprofit while utilizing her degree.

“I wanted to know that every day I was helping people,” Justina says of her job. “And with my current career, I get to be creative, and I get to use those ideas and promote something I know will help people directly.”
Justina Sage Sumpter
Marketing and Development Manager,
United Way of Montgomery,
Radford & Floyd,
Christiansburg

Eastern Montgomery High School,
Montgomery County Public Schools

CTE studies: Marketing; Fashion Marketing; Family and Consumer Sciences; Housing and Home Furnishings; Family and Home Relations

Additional studies: Bachelor of Science in Media Studies, Radford University
Science, Technology, Engineering & Mathematics

The Science, Technology, Engineering & Mathematics Career Cluster includes careers that use STEM skills to conduct in-depth research to provide solutions to a variety of technical problems within many different fields. A postsecondary degree and relevant work experience are necessary to succeed in this cluster.

Job outlook

Employment of mechanical engineers is projected to have grown 5 percent from 2012 to 2022, especially in the architectural and manufacturing industries. These workers also can expect to see an increase in demand as machinery begins to replace human labor.

Microbiologists can expect to see employment growth of 7 percent through 2022. The development of new medicines and treatments is expected to increase employment. These professionals also are needed in the food industry to help engineer crops and in the clean energy sector to research and develop alternative energy sources.

Jobs for nuclear engineers is projected to have increased 9 percent through 2022. Upgrades in safety protocols at nuclear utility plants will increase demand.

What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage $</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil engineers</td>
<td>8,716</td>
<td>78,140</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Mechanical engineers</td>
<td>7,902</td>
<td>89,460</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Electrical engineers</td>
<td>6,218</td>
<td>89,330</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Architectural and engineering managers</td>
<td>5,833</td>
<td>136,770</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Electronics engineers</td>
<td>5,181</td>
<td>102,430</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Aerospace engineers</td>
<td>4,320</td>
<td>122,890</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Industrial engineers</td>
<td>3,873</td>
<td>84,290</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Nuclear engineers</td>
<td>2,372</td>
<td>87,160</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Computer hardware engineers</td>
<td>1,982</td>
<td>115,640</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Computer scientists</td>
<td>1,901</td>
<td>112,770</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Biological technicians</td>
<td>1,086</td>
<td>38,450</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Chemical engineers</td>
<td>1,278</td>
<td>111,660</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Petroleum engineers</td>
<td>1,145</td>
<td>133,070</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Marine engineers</td>
<td>921</td>
<td>82,570</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Biochemists and biophysicists</td>
<td>580</td>
<td>64,890</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Geoscientists</td>
<td>545</td>
<td>89,450</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Health and safety engineers</td>
<td>529</td>
<td>85,050</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Environmental engineering technicians</td>
<td>440</td>
<td>42,130</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Materials engineers</td>
<td>430</td>
<td>90,700</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>Microbiologists</td>
<td>375</td>
<td>60,380</td>
<td>Bachelor's degree</td>
</tr>
</tbody>
</table>


Career and Technical Student Organizations (CTSOs)

DECA; Educators Rising; Family, Career, and Community Leaders of America (FCCLA); Future Business Leaders of America (FBLA); Health Occupations Students of America (HOSA); National FFA Organization; SkillsUSA; Technology Student Association (TSA)

Designing the details

by Jessica Sabbath

Casey Bowler was introduced to drafting and design when she visited a class at New River Community College.

While taking a variety of drafting and design classes in high school, Casey’s interest in the field was solidified. “When I was in high school I really loved the drafting classes, and I knew that was something I wanted to pursue,” she says.

Today she uses her skills as a tool drafter/designer at Federal-Mogul Corp., which manufactures automotive products.

In her job, she has a variety of roles. Some days, she may help with the design of engine bearings. Other days, she may figure out why a part isn’t being produced with the right specifications. “I have to figure out what’s wrong in the tooling,” says Casey.

One of the best parts of her job is being able to see her designing and drafting come to fruition. “At work I’m actually able to go out on the floor and see how my design is implemented. I can see how it worked or how I could improve it or change the design. I like to be able to see something that I did carried out and see how it affects what we do.”

Casey is pursuing a mechanical engineering degree through Old Dominion University’s distance-learning program, and she takes classes at New River Community College. “Drafting is what I love, but I would like to be able to do more of the hands-on work that the engineers do,” she says. “I would like to stay in drafting, or if I moved up to engineering, I would hope that I could still apply my drafting skills and knowledge to what I was doing as an engineer.”

Casey Bowler
Tool Designer/Detailer,
Federal-Mogul Corp.
Blacksburg

Christiansburg High School,
Montgomery County Public Schools

**CTE studies:** Introduction to Engineering Design (PLTW); Engineering Drawing and Design; Civil Engineering and Architecture (PLTW); Advanced Drawing and Design

**Additional studies:** Associate of Applied Science in Computer Aided Drafting and Design with a specialization in Mechanical Drafting, New River Community College; pursuing Bachelor of Science in Mechanical Engineering, Old Dominion University
Employment of automotive service technicians and mechanics is projected to have grown 9 percent from 2012 to 2022. As vehicle use increases, mechanics will be needed to maintain older vehicles and make repairs. Most job openings for these types of careers will be at car dealerships and independent repair shops. Though competition for these entry-level jobs can be high, candidates with formal postsecondary training and industry certification will have an advantage.

The recovering economy and growing demand for waterway freight shipping will increase the need for workers in water transportation. Employment of captains, mates, and water vessel pilots is projected to have increased 14 percent from 2012 to 2022. Employment of ship engineers is projected to have increased 8 percent, and sailors and marine oilers can expect to see employment growth of 16 percent.

### What they make

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>Employed in VA</th>
<th>Median wage</th>
<th>Predominant level of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy and tractor-trailer truck drivers</td>
<td>39,719</td>
<td>$36,570</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Automotive service technicians</td>
<td>22,653</td>
<td>$39,540</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Light truck or delivery services drivers</td>
<td>19,386</td>
<td>$29,830</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Billing and posting clerks</td>
<td>12,835</td>
<td>$35,120</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Logisticians</td>
<td>6,675</td>
<td>$80,350</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Diesel engine specialists</td>
<td>7,238</td>
<td>$41,130</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Supervisors of transportation operators</td>
<td>5,624</td>
<td>$55,560</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Dispatchers</td>
<td>4,185</td>
<td>$34,520</td>
<td>Associate degree, certification</td>
</tr>
<tr>
<td>Bus drivers</td>
<td>3,638</td>
<td>$34,780</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Mobile heavy equipment mechanics</td>
<td>3,212</td>
<td>$44,900</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Airline pilots, copilots, and flight engineers</td>
<td>2,808</td>
<td>$102,800</td>
<td>Bachelor’s degree, certification</td>
</tr>
<tr>
<td>Transportation and distribution managers</td>
<td>2,338</td>
<td>$92,880</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Tire repairers and changers</td>
<td>2,022</td>
<td>$26,120</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Captains, mates, and pilots of water vessels</td>
<td>1,880</td>
<td>$67,830</td>
<td>High school diploma, certification</td>
</tr>
<tr>
<td>Cargo and freight agents</td>
<td>1,785</td>
<td>$32,020</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Aircraft mechanics and service technicians</td>
<td>1,844</td>
<td>$53,640</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Couriers and messengers</td>
<td>1,984</td>
<td>$27,810</td>
<td>High school diploma</td>
</tr>
<tr>
<td>Ship engineers</td>
<td>1,539</td>
<td>$57,130</td>
<td>Associate degree</td>
</tr>
<tr>
<td>Air traffic controllers</td>
<td>1,240</td>
<td>$140,290</td>
<td>Associate degree, certification</td>
</tr>
</tbody>
</table>


### Maintaining the family tradition

Humberto Otero kicked his career into high gear before graduating from high school. As part of his high school Auto Service Technology class, Humberto applied for a job at an automobile shop. He interviewed at First Team Auto Mall in Roanoke, the same place where his father worked, and landed a job as an automotive technician.

Humberto knew he wanted to work with cars by the time he was 12. He says he has been around cars “forever,” since he comes from a family of mechanics. His father still works at the same shop he does, and his grandfather used to own an automobile shop.

“My dad has been my mentor since day one,” he says. “He has taught me the skills needed to succeed in such an ever-changing career.”

Humberto’s favorite part about his career is also his biggest challenge: making sure vehicles are fixed properly.

At First Team Auto Mall, Humberto specializes in Volkswagens and is a VW Master Technician, a certification which took him about five years to complete. He also is a certified Virginia State Vehicle Inspector. Eventually, he would like to earn Master Technician status from the National Institute for Automotive Service Excellence, a sought-after certification by employers in his field.

“I would like to move away from working on vehicles and move up to a manager role one day,” he says.

Humberto advises high school students who want to become automotive technicians to work hard and never stop learning. “That’s a big thing, because technology in automobiles is changing all the time,” he says.
Humberto Otero II
Automotive Technician, First Team Auto Mall, Roanoke

Hidden Valley High School and Arnold R. Burton Technology Center, Roanoke County Public Schools

CTE studies: Automotive Technology I, II, and III

Additional studies: Volkswagen Master Technician; Virginia State Vehicle Inspector

Photo by Mark Rhodes
Dollars and $ense
Learn to make, manage, and save money

Many teens spend hours learning about history and mathematics but graduate without knowing the difference between a checking and a savings account, or how credit history affects one’s ability to purchase a car or a house. Learning to become financially savvy now is key to a successful future.

Luckily, upon graduation, you will be prepared to handle your own money because Virginia public school students are required to earn one credit in Economics and Personal Finance to receive a Standard Diploma or Advanced Studies Diploma. This course requirement will ensure that you know the answer to many real-life questions before you graduate from high school. The course covers everything from paying bills to understanding how basic investments work. The course also provides a macroeconomic view of the U.S. and global economy.

The Economics and Personal Finance course also is available through Virtual Virginia. For more information about the online course, see your school counselor, and visit http://www.virtualvirginia.org.

It’s important that you develop good financial habits now so that you’re prepared to support yourself in the future. The most important thing to remember is that you must live within your means. This can be difficult when you’re bombarded by hundreds of advertisements every day. Remember that you don’t have to buy the latest cell phone just because your friend has it.

Learn to prioritize. Pay your bills, and save some money before you consider your entertainment costs.

RESOURCES: There are many resources available to help you learn how to manage your money. Here are some Web sites that can help.

www.balancetrack.org/teensandmoney: This site has great tips for teens on a variety of money topics. It also features a podcast and quiz so teens can test their knowledge.

www.mint.com: Mint pulls all of your financial accounts into one place, allowing you to set a budget and track your financial goals.

www.moneytrail.net: If your parents still give you an allowance, pay you for certain household chores, or let you borrow money, this is a great site. This virtual money management system helps parents and their teens keep track of allowances given and loan repayments.

www.teachingmoneyVA.org: This site provides resources for each Economic and Personal Finance Standard of Learning.

www.teensguidetomoney.com: This site introduces teens to money management skills. It is broken down into four major categories: earning, saving, investing, and spending.

www.themint.org: TheMint is designed for parents and educators but also includes a section on tips for teens.

$ound money tips

Your spending now probably has little to do with rent, utility bills, healthcare, or retirement portfolios. However, these will become a regular part of your budget when you become an adult. Starting good financial habits now will benefit you in the future. Follow these tips to develop good financial planning habits.

CREATE A BUDGET.

Write down every single expense you have for one month. Include everything; for example, clothes, transportation, movie tickets, and snacks you bought from the school vending machines. Compare your monthly expenses with your monthly income, such as allowances or money from any odd jobs. If your expenses are more than your income, you need to reconsider your spending priorities.

LEARN TO SAVE.

There are probably some big-ticket items you’d like to buy, such as a car or new wardrobe. Determine the cost of things you want and set aside money each month to reach your goal. Investigate different options for where to put your money. Savings accounts typically earn some interest on your money, while checking accounts do not. When you graduate, you’ll need to put away money for emergencies. Experts recommend saving enough to cover three to nine months of your expenses.

PAY ATTENTION TO CREDIT.

Financial planning requires a good credit history, which is important for securing loans. For students, a credit card can be a good option to begin this history, but you must be responsible. Credit cards are not free money! Research credit cards to find the one with the lowest rates and fees and that offer the best rewards. A good source is CreditCards.com. Pay your bills in full each month. Late payments will lower your credit rating. If you don’t pay the full amount each month, interest will kick in on your purchases. Before you know it, the cost of that $20 sweater could double!
Paying for education

Higher education is expensive, and the cost of college tuition continues to soar. The publisher of Edvisors, a group of Web sites about planning for college, found that students graduating from college in 2015 carried an average of $35,000 in college-related debt. Whether you or your parents are planning to be responsible for college tuition, you will need to be proactive in your approach. Once the college application process has begun, note each college’s financial aid deadlines, and direct any questions to the school’s financial adviser.

SCHOLARSHIPS
Money that typically is awarded based on a specific qualification, such as academic achievement, athletic talent, or financial need.

Important Web sites
www.collegescholarships.com
www.collegeview.com
www.fastweb.com
www.scholarships.com

GRANTS AND LOANS
Government grants and loans are often provided based on financial need. The first step in any financial aid search is to fill out the Free Application for Federal Student Aid (FAFSA), available at www.fafsa.ed.gov.

Grants
Federal Pell Grants: Based on financial need (www2.ed.gov/programs/fpg/)
Federal work-study programs: Work part-time to pay for education (www2.ed.gov/programs/fws/)
Virginia Tuition Assistance Grants: Get up to $3,100 per year for Virginia residents attending a private university or college in Virginia (www.schev.edu/students/factsheetVTAG.asp)

Loans (studentloans.gov)
Direct Stafford Loans: Unsubsidized and subsidized student loans with a fixed interest rate; most common form of student financial aid
Direct Perkins Loans: Low-interest loans to students who have exceptional financial need
Direct PLUS Loans: For parents of college students or for graduate and professional students
Direct Consolidation Loans: For students to consolidate eligible federal student loans into a single loan with a single loan servicer
Personal or private loans: Necessary if additional money is needed; typically have higher interest rates

MILITARY STUDENT AID
The military provides a number of educational opportunities and will pay for higher education. For more information, visit www.military.com/education.

COLLEGE SAVINGS PLANS
The Virginia College Savings Plan offers four ways to save for college with ideal tax incentives. For more information, visit www.virginia529.com.

The Virginia Prepaid Education Program (VPEP): Locks in future college costs at Virginia’s public colleges and universities
Virginia Education Savings Trust (VEST): Offers a tax-advantaged plan where parents choose from a variety of investment funds
CollegeAmerica Program: Offers a tax-free savings plan with choice of 22 different investment funds
CollegeWealth Program: Provides tax advantages while allowing families to save money through deposit accounts or certificates of deposits at Virginia’s banks
Facebook
Keeping a presentable profile can be difficult on Facebook. Luckily, Facebook offers customizable privacy options — if you know how to use them. Facebook also changes privacy settings every now and then, so stay vigilant and keep your settings up-to-date.

Many young people post frequently about subject matter they wouldn’t want a parent, teacher, or future employer to know about. Keep your page free of anything that suggests illegal activity, foul language, and trash talking. Ask friends to take down inappropriate photos. A good rule of thumb is to ask yourself whether you would want your grandmother to see what’s posted. Also, be mindful of who you follow and like. If they post inappropriate photos, they will appear in your feed and may negatively affect your profile.

Facebook can be a great tool. For example, if you start a club at school, give it a healthy online presence with an informative and active Facebook page. Use the site to publicize your club’s events. Your effort could help you stand out in college applications and job interviews.

Instagram
This site gives users the opportunity to share their lives in photos. Make sure the photos you post don’t portray you in a bad light. If your friends take photos of you that you wouldn’t want to share with a future boss, ask your friends not to upload them. Be very careful when using Instagram’s photo editing features, because it is very easy to accidentally post photos you do not intend to upload.

Twitter
The same rules for Facebook apply to Twitter, but your online presence here can be easier to maintain. If you’re worried, simply set your profile to private, and you can easily control who sees your tweets.

Tweet about such things as interesting facts and articles you’ve read. Don’t post anything inappropriate or distasteful, and try not to
complain—especially about something school- or work-related. Ask yourself, “Would I be comfortable with my teacher, parent, or boss reading this?”

If you consistently post interesting and entertaining tweets, you can successfully cultivate a strong online following. These connections could come in handy when searching for jobs.

Twitter can also be a good tool to use to follow industries or companies that you might be interested in working for in the future. Say, for example, you are interested in the health field. If you follow organizations’ Twitter handles, such as the American Association of Pediatrics, or the American Medical Association, you can stay abreast of new research.

LinkedIn
This site is focused solely on job-related connections. You should certainly take advantage of how easy LinkedIn makes it to connect with people who can help you professionally. However, be careful when reaching out to people you don’t know very well.

Take advantage of LinkedIn’s work history feature, and provide good descriptions of your work and education background. Connect with organizations you have worked with in the past and would like to work with in the future.

Other social media
There are so many social media sites; it can be difficult to keep up! General rules from above still apply. Keep your online presence presentable and consider whether these sites could actually help you land a job one day. Don’t let others take and post inappropriate or provocative photos of you. You never know who might be a friend of a friend!

Once photos are uploaded, you can never really take them off the Internet. You don’t know who has downloaded or saved or shared a photo, even if you think you have deleted it. This is true even for apps like Snapchat, where your photo “disappears” after seconds. Someone could save the photo during those few seconds. Inappropriate photos have resurfaced years after being originally posted and deleted.

Also, don’t forget to follow standard Internet safety rules on social media. Make sure you keep a different password for each social media site to prevent cyber criminals from accessing your information. Be prudent about what you post online. Hackers could use this information to stalk you or steal your identity or other information.

Although you should be careful with social media, it’s wise to stay on top of new media and technology. Being knowledgeable and active in newer types of social media could make you stand out in an interview and show that you’re tech savvy and current.

Most colleges say they will be your perfect fit. Virginia Military Institute is not most colleges.

Since 2007, U.S. News and World Report has ranked VMI fourth in the nation among public liberal arts colleges.

vmi.edu
Ace your interview

Preparation is key

The process

If a prospective employer calls you in for an interview, it's because he or she is impressed with the skills, experience, and education on your résumé. During an interview, whether in person or over the phone, it's time to let your personality shine, showing a potential employer that you would be a dedicated employee who is easy to work with. The best applicants are well prepared for their interviews.

Research the company.
Talk to people who know the business or industry, and spend time exploring the company’s Web site. Write down its mission statement to find out what’s most important to the company.

Practice potential interview questions.
Prepare to answer standard interview questions: What interests you about this position? What accomplishments are you most proud of? What are your strengths and weaknesses? Be prepared to answer off-the-wall questions, too. An interviewer might be testing to see how well you can think on your feet.

Prepare a list of questions.
If you have a list of questions about the job and company, you will appear more interested in the position. Take notes to further show your interest.

Dress for success.
It's better to be overdressed than underdressed for an interview. You need to look professional, especially if you are interested in an office job.

Thank-you notes.
Always send interviewers thank-you notes via e-mail or the postal service for taking the time to meet with you. Include the best way for interviewers to reach you if they have any questions.

Cover Letter

Always include a cover letter when sending a résumé to an employer, even when applying online or via e-mail. While your résumé is a nuts-and-bolts outline of your education and work experience, a cover letter gives you the opportunity to explain why you want the position and how your skills match the specific position to which you are applying.

Be as specific as possible. The cover letter will need to include the reasons you are interested in both the job and the organization. Don’t forget to proofread! An employer may question your skills if you call yourself detail-oriented but your cover letter includes typos.

Here’s how you should outline your cover letter:

- On separate lines, list your name, mailing address, phone number, and e-mail address.
- On a separate line, list the date.
- On separate lines, list the name of the person responsible for hiring, his or her title, the employer’s name, and the mailing address.
- First paragraph: State the position for which you are applying and where you found the job posting. If someone referred you to the job, make sure you mention his or her name.
- Middle paragraphs: Explain how your skills and expertise match the needs of the employer. Use this to enhance information provided on your résumé.
- Final paragraph: Thank the potential employer for his or her consideration, and include how you might follow up.
- Closing, such as Sincerely or Respectfully
- Leave four blank lines for your signature
- Type your name under the space for your signature
- Sign your name if sending a hard copy of the letter; insert an electronic signature if submitting the letter via e-mail or online.

Here’s an example:

Jane Doe
1234 56th Street, Richmond, VA 23456
804-555-5555
jane.doe@hotmail.com

November 14, 2015

Mr. John A. Smith
Director of Human Resources
Virginia Pharmacy
1234 Main Street, Richmond, VA 23223

Dear Mr. Smith:

I am writing to express my interest in the Pharmacy Assistant position listed on CareerBuilder.com.

I recently received my certification to become a licensed pharmacy technician. Last June, I completed the Pharmacy Technician program at the Richmond Technical Center.

In this program, I completed an internship at a Wal-Mart pharmacy, where I assisted pharmacists and worked with customers. I believe my knowledge, positive attitude, and rapport with customers can be beneficial to the Virginia Pharmacy.

Thank you kindly for your consideration. I look forward to speaking with you about this employment opportunity.

Respectfully,
Signature
Jane Doe
Jane M. Doe

OBJECTIVE
To obtain a pharmacy assistant position

EDUCATION
September 2011—Present, Central High School, Richmond, Virginia
Advanced Studies Diploma
Health Science Career and Technical Education

AND SKILLS
CERTIFICATIONS
Licensed Pharmacy Technician — detail-oriented, up-to-date on current regulations, excellent customer-service skills

PROFESSIONAL
MEMBERSHIPS
Vice President, Central High School Chapter of the Virginia Health Occupations Students of America
May 2014 — Present

WORK EXPERIENCE
Target Corp., Richmond, VA
May 2014--August 2014, Customer service representative
• Assisted customers find inventory
• Handled returns and exchanges of merchandise
• Re-stocked inventory

Jane Doe’s Dog Walking Service, Richmond, Virginia
April 2013—October 2013, dog walker
• Walked and cared for dogs for 15 families in the Richmond area
• Handled monthly collection of fees and care of dogs

VOLUNTEER
EXPERIENCE
Richmond Habitat for Humanity, Richmond, Virginia
March 2014, high school liaison
• Organized a two-day building blitz by students from Central High School
• Raised more than $2,000 for supplies

EXTRACURRICULAR
ACTIVITIES
Central High School cross country team
August 2012—Present, team captain

REFERENCES
Available upon request

References: Let employers know that you can provide references who will confirm your abilities. References cannot be family or friends, so think about teachers, coaches, or previous employers. Be sure to get permission from your references before sending them to any potential employer.
Ten hours, four Sharpies, one masterpiece — it all adds up to success for computer science major Corey Taylor. He has morphed a class assignment into an underwater self-portrait, composed entirely of a single symbol: “C.”

With a passion for writing, drawing, and digital media, Corey is wired for a career in animation and graphic design. Learn more. Call a UMW enrollment specialist today at 800-468-5614 or 540-654-2000. Better yet, come visit!

Open House dates:
Saturday, September 26
Saturday, October 17
Monday, February 15
Friday, March 25

admissions.umw.edu
Office of Admissions
1301 College Avenue
Fredericksburg, VA 22401