

NORTH CAROLINA CAREERS[®]



**Agriculture, Food
& Natural Resources**



**Architecture
& Construction**



**Arts, A/V
Technology &
Communications**



**Business
Management
& Administration**



**Education
& Training**



Finance



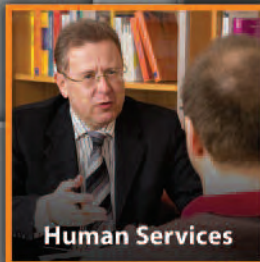
**Government
& Public
Administration**



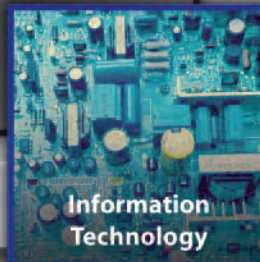
Health Science



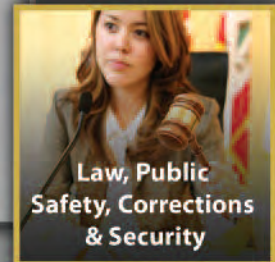
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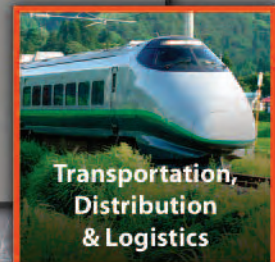
Manufacturing



Marketing



**Science, Technology,
Engineering
& Mathematics**



**Transportation,
Distribution
& Logistics**

Career Clusters Guide

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Project Director:	Felicia Gray-Watson , <i>Interim Section Chief</i> <i>North Carolina Department of Public Instruction</i>
Assistant Project Director:	Douglas E. Long , <i>Coordinator</i> <i>North Carolina Community College System</i>
Project Team:	Chris Droessler , <i>Consultant</i> <i>North Carolina Department of Public Instruction</i> Bill Hatch , <i>Consultant</i> <i>North Carolina Department of Public Instruction</i> Robert J. Witchger , <i>Associate Director</i> <i>North Carolina Community College System</i>
Federal Vocational Education Director:	Elizabeth C. Brown <i>North Carolina Community College System</i>
Career and Technical (CTE) Director:	Rebecca B. Payne <i>North Carolina Department of Public Instruction</i>

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Nelse Grundvig, *North Carolina Employment Security Commission*
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Dr. Delores A. Parker, *North Carolina Community College System*
North Carolina Community College System Public Affairs Department
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301 N. Wilmington Street
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Chief Academic Officer
Academic Services and Instructional Support
6368 Mail Service Center
Raleigh, North Carolina 27699-6368
Telephone: (919) 807-3200
Fax: (919) 807-4065
Visit us on the Web: www.ncpublicschools.org

North Carolina Community College System R. Scott Ralls, Ph. D.

President
200 West Jones Street
Raleigh, North Carolina 27603
Telephone: (919) 807-7100
Fax: (919) 807-7164
Visit us on the Web: www.ncccs.cc.nc.us

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Public Schools of North Carolina
State Board of Education | Department of Public Instruction



July 2009

Dear Students, Parents, and Educators:

We are pleased to present the *North Carolina Career Clusters Guide*, a student and parent guide to educational planning using Career Clusters. Career Clusters are groupings of occupations/career specialties that are used as an organizing tool for curriculum and instruction. This guide is designed as a tool to assist in streamlining the path through which students meet their educational goals and are ultimately employed in high-skill, high-wage, or high-demand occupations and nontraditional fields.

To support these efforts, we want to ensure that students and their parents have the most timely and accurate information available to help students make informed decisions about their educational path and career choices. In line with the Future-Ready Core graduation requirements, Career Clusters will be implemented starting with the freshman class of 2009-2010. Each Career Cluster and its related pathways requires a common set of knowledge and skills for career success. This approach enhances the more traditional approach to Career and Technical Education by providing a foundation that prepares students for a full range of occupations and career specialties, focusing on a blend of technical, academic, and employability knowledge and skills.

The economy and workforce of North Carolina is changing. The North Carolina Department of Public Instruction and the North Carolina Community College System are committed to supporting the workforce needs of our state. This guide will assist students in identifying the available career options and help them make career decisions that are led by their interests, clearly defined pathways, and timely employment projections that meet the needs of North Carolina's economy.

Sincerely,

June St. Clair Atkinson, Ed.D.
Superintendent
NC Department of Public Instruction

R. Scott Ralls, Ph.D.
President
NC Community College System

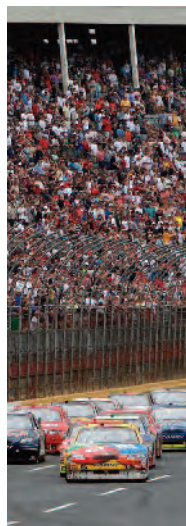
How to Use This Guide

The *North Carolina Career Clusters Guide* is a resource tool for career planning and preparation. This guide introduces you to Career Clusters and their related pathways. Whether you are planning for high school, college, the workforce, or a career change, this guide will assist you in determining a path to reach your academic and career goals. You will be able to create a realistic career plan tailored to your career interests as well as be prepared to be part of the globally competitive workforce. Use this guide to help you find your place in the world of work now or in the future.

Follow these steps to learn about Career Clusters and their multiple pathways, and discover the many career opportunities available to you.

Step One

Refer to the Glossary on pages 130-131 for terms and definitions. By being familiar with terms and definitions in the Glossary, you will be better prepared to complete the steps that follow.



Step Two

Complete “Discover Your Career Personality,” the interest inventory that starts on page 4, to help develop a focus and direction for planning your future. The results of the interest inventory will assist you in determining which of the 16 Career Clusters contain occupations that match what you have identified as your greatest interests.

Step Three

Match your interests and personality to a Career Cluster. Using the personality types you discovered from the interest inventory, you will find occupations within the Career Clusters that match your interests.

Step Four

Read about your Career Cluster of interest in the Career Clusters section on pages 12-119. Locate your career interest in a pathway within your selected Career Cluster. Discover what occupations within other pathways interest you. Consider a nontraditional occupation. Imagine what your career success story will be.

Step Five

Look at the selected careers on the cluster data pages found within each of the Career Cluster sections on pages 12-119 to learn about high-skill, high-wage, and high-demand occupations in North Carolina. This important information provides job descriptions, wages, the number of annual openings, and educational requirements for selected careers in North Carolina.

Step Six

Locate colleges and universities in North Carolina on pages 128-129. If you are not sure which colleges and universities offer the programs that interest you, visit the College Foundation of North Carolina (CFNC) at <http://www.cfnc.org>. CFNC is a nonprofit partnership between Pathways of North Carolina, College Foundation, Inc., and the North Carolina State Education Assistance Authority. These organizations have broad expertise in helping students to prepare successfully for college and to find the best financial aid alternatives. Together, they provide a complete and comprehensive source of information – and real solutions – for students and their families.

In CFNC’s College Fair section, http://www1.cfnc.org/College_Fair/Matching_Assistant_Undergrad_Matching_Assistant.aspx, you can find the colleges and universities that meet your requirements by academic program/major or other criteria.

Step Seven

Once you have found majors that interest you, go to the Web site for the colleges or universities offering those majors, so that you can learn more about each institution. Some important things to check out are scholarships and financial aid, how to apply to the institution, and what student services are offered to help you achieve your educational goals.

Step Eight

Research additional information to help with your career planning:

- Visit some of the Web sites on pages 126-127.
- Read about North Carolina high school graduation requirements and other planning tools on pages 120-123.

Step Nine

Learn about and participate in Career and Technical Student Organizations (CTSOs). CTSOs provide opportunities to explore careers and to enhance leadership, networking, and team-building skills. See pages 124-125 for more information.

Step Ten

Research opportunities to job shadow, intern, be an apprentice, or participate in other career exploration and preparation activities. Talk with your school counselor, student services staff, or Career Development Coordinator (CDC), or visit a Career/Placement Center about these opportunities and others. Ask for their assistance with making a career plan.

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Discover Your Career Personality

The purpose of this career interest survey is to help you discover your “career personality” and some jobs you really might enjoy.

What’s a career interest survey? It’s a simple self-test. This one is based on the Holland Codes. There are no wrong answers!

The quiz begins on the next page. Take it to discover your interests. Simply follow these steps:

1. Check activities that you like.

In part 1, read through the list of activities. Then check the ones that interest you.

2. Add up your scores.

In part 2, total your scores. You’ll begin to see your career personality emerge. It’s important to consider your career personality when planning for the future.

3. Evaluate yourself.

In part 3, you may find that you have more than one career personality. That’s okay. Most people do.

4. Think about the future.

In part 4, on pages 6 and 7, you will find careers related to your personality. You are not limited to jobs just within your personality group. Check out career choices within the other personality types. You might be surprised at your career options!

What Are Career Clusters?

Some people are interested in health care. Other people are interested in information technology.

Interests like these have been grouped into what’s called “Career Clusters.” The term describes knowledge, skills, and interests that connect with industries, jobs and educational programs.

North Carolina groups careers in 16 Career Clusters. This survey and the information that follows relate to jobs in these 16 clusters.

You will find Career Clusters useful as you look for industries, career fields and jobs you may like or an educational program you may want to pursue.



1 Check Activities You Like.

Place a check by the activities that interest you. Don't worry if you don't know much about them. Right now it's just important to identify the activities that capture your imagination.

- | | |
|--|--|
| <input type="checkbox"/> 1. Save a rainforest or grow organic vegetables | <input type="checkbox"/> 25. Work outdoors patrolling or maintaining a national park |
| <input type="checkbox"/> 2. Solve complicated math problems | <input type="checkbox"/> 26. Research legal statutes for a lawsuit |
| <input type="checkbox"/> 3. Act in a movie, play, or television show | <input type="checkbox"/> 27. Play a musical instrument |
| <input type="checkbox"/> 4. Work with people in different cultures and societies | <input type="checkbox"/> 28. Work with infants or children |
| <input type="checkbox"/> 5. Research news stories and do interviews for the evening news | <input type="checkbox"/> 29. Run for political office |
| <input type="checkbox"/> 6. Study the economy and predict economic trends | <input type="checkbox"/> 30. Work an after-school job to save money |
| <input type="checkbox"/> 7. Read and use "how-to" manuals | <input type="checkbox"/> 31. Set up a home theater system or install a car stereo system |
| <input type="checkbox"/> 8. Perform science experiments in a laboratory | <input type="checkbox"/> 32. Read science fiction |
| <input type="checkbox"/> 9. Manage an art gallery | <input type="checkbox"/> 33. Write a short story, play, or novel |
| <input type="checkbox"/> 10. Conduct a religious service | <input type="checkbox"/> 34. Host and entertain guests at a party |
| <input type="checkbox"/> 11. Bargain with vendors at a flea market | <input type="checkbox"/> 35. Work in a politician's office |
| <input type="checkbox"/> 12. Analyze and create statistical graphs and charts | <input type="checkbox"/> 36. Enter information into a computer spreadsheet |
| <input type="checkbox"/> 13. Build cabinets or furniture | <input type="checkbox"/> 37. Build a model of a jet aircraft |
| <input type="checkbox"/> 14. Study the environmental impact of pollution or global warming | <input type="checkbox"/> 38. Study bacteria using an electron microscope and other high-tech equipment |
| <input type="checkbox"/> 15. Write a movie or television script | <input type="checkbox"/> 39. Design a new line of clothes |
| <input type="checkbox"/> 16. Volunteer to lead a club or scout troop | <input type="checkbox"/> 40. Read and discuss a book or poem |
| <input type="checkbox"/> 17. Choose and purchase merchandise to sell in a store | <input type="checkbox"/> 41. Sit on a television panel to discuss political or social issues |
| <input type="checkbox"/> 18. Work in a corporate office | <input type="checkbox"/> 42. Keep accurate accounting and sales records for a business |
| <input type="checkbox"/> 19. Operate heavy machinery | <input type="checkbox"/> 43. Repair a car or motorcycle motor |
| <input type="checkbox"/> 20. Play chess or games of strategy | <input type="checkbox"/> 44. Identify different planets, stars, and constellations |
| <input type="checkbox"/> 21. Write articles for music, art or entertainment magazines | <input type="checkbox"/> 45. Create and fire a ceramic pot or vase |
| <input type="checkbox"/> 22. Organize an event for a charity or community organization | <input type="checkbox"/> 46. Work with the elderly |
| <input type="checkbox"/> 23. Compete with other salespeople in a fast-paced, high-pressure company | <input type="checkbox"/> 47. Sell products for a portion of the profit |
| <input type="checkbox"/> 24. Design computer programs and/or games | <input type="checkbox"/> 48. Create and oversee a budget for a large company or government agency |

2 Add Up Your Scores.

On the grid below, circle the numbers you checked off. Count the number of circles in each row, and write that total in the blank space at the end of each line. These are your scores for each "career personality" type.

Personality Types

Total

a. REALISTS	1	7	13	19	25	31	37	43	
b. INVESTIGATORS	2	8	14	20	26	32	38	44	
c. ARTISTS	3	9	15	21	27	33	39	45	
d. HELPERS	4	10	16	22	28	34	40	46	
e. ENTERPRISEERS	5	11	17	23	29	35	41	47	
f. DETAILERS	6	12	18	24	30	36	42	48	

3 Evaluate Yourself.

In the spaces below, write the names of the two personality types in which you received the highest scores.

HOW CAN KNOWING YOUR PERSONALITY TYPE LEAD YOU TO A SATISFYING CAREER FUTURE? READ ON ...

4 Think About The Future.

Look at headlines “a” through “f” at the top of these two pages. Circle the ones that match your top two personality types from page 5. Now, look at the job titles listed below your personality types. Circle jobs you find interesting. Then circle related career clusters. Don’t think you’re limited only to jobs within your “job personality.” For example, if you’re a “Helper” with an interest in “Health Science,” check out Health Science career options within the other job personality types. You might be surprised at what you find.

a. Realist

Realists typically are focused, rugged, mechanical, and direct. Often athletic, they enjoy working outdoors with tools, animals, and plants. Famous “Realists” include primatologist Jane Goodall, hair stylist Vidal Sassoon, and architect Paul Williams.

b. Investigator

Investigators are curious and observant, and they like to research, analyze, and solve problems. Many enjoy science and math – working independently and in teams. Famous “Investigators” include physicist and chemist Marie Curie, anthropologist Margaret Mead, and forensic scientist Dr. Henry Lee.

c. Artist

Creative and imaginative, artists often work best in unstructured environments using words, pictures, music, and dance to create products and communicate ideas. Famous “Artists” include dancer Gregory Hines, painter Salvador Dali, and playwright William Shakespeare.

Career Clusters	a. Realist	b. Investigator	c. Artist	
 Agriculture, Food & Natural Resources	Animal care technician Farmer, grower Forestry worker	Food scientist Forest ranger Wildlife manager	Florist Gardener, landscaper	
 Architecture & Construction	Builder, carpenter Electrician Plumbing, heating, air conditioning installer	Code inspector Preservationist	CAD operator, drafter, designer Landscape architect Painter, paperhanger	
 Arts, A/V Technology & Communications	Camera operator, photojournalist Set designer Performer	Journalist Playwright Researcher	Copywriter Creative director Graphic designer Illustrator Media specialist	
 Business Management & Administration	Accountant Business manager, entrepreneur Customer support specialist	Acquisitions manager Business analyst Collections clerk Management analyst	Advertising manager Director – marketing communications Meeting planner	
 Education & Training	Elementary teacher Coach Technology teacher	Curriculum developer Educational researcher School psychologist	Art teacher Early childhood, elementary teacher Instructional media specialist	
 Finance	Claims investigator Loan officer Stockbroker	Accountant/auditor Claims examiner Contract administrator Financial officer	Business/financial writer Direct marketing media specialist Fundraiser	
 Government & Public Administration	Elected official Legislative aide Military officer	Military intelligence officer Policy advisor Tax examiner	Charitable organization executive Lobbyist Public relations specialist	
 Health Science	Dentist, dental hygienist Home health aide Nurse, nursing assistant Physician, surgeon Therapist – radiologic	Biomedical engineer, technician Medical assistant Technician, laboratory Pharmacist Research scientist	Art, dance, music therapist Athletic trainer Public relations director Plastic surgeon Prosthetist	
 Hospitality & Tourism	Food service worker Recreation worker Tour guide	Forest ranger Hotel security officer Night auditor	Cake decorator Catering director Chef Restaurant concept developer, designer	
 Human Services	Hair stylist Home care aide Social services worker	Consumer advocate Credit counselor Patient accounts representative	Activities director Child care facility director, assistant Cosmetologist	
 Information Technology	Network systems engineer, technician Telecommunications technician	Computer security specialist Data, systems analyst Information systems architect Programmer Test engineer	Animator Audiovisual technician Web designer, site developer Webmaster	
 Law, Public Safety, Corrections & Security	Crime scene investigator Firefighter Police officer	Detective Forensics examiner, technician Fraud investigator	Grant writer, coordinator	
 Manufacturing	Machine operator Industrial maintenance technician Welder	Instrument, process control technician Quality control specialist	CAD operator, drafter, designer Product developer, designer	
 Marketing	Buyer Promotion director Shipping, receiving clerk	Manager – brand, database, forecasting Market researcher	Catalog developer Designer – fashion, floral, interior, packaging Manager – e-commerce, sales promotion	
 Science, Technology, Engineering & Mathematics	Electrical, electronic installer, repairer Engineer, engineering technician	Engineer, engineering technician – environmental, facility maintenance, industrial	A/V equipment technician Engineer, engineering technician – broadcast Medical illustrator Technical writer	
 Transportation, Distribution & Logistics	Automotive, other technician Body repairer – aircraft, automotive Driver, pilot	Automotive technician Inspector – aviation, freight, environmental Logistics analyst	Facility architect, designer Urban, regional planner	

	d. Helper	e. Enterpriser	f. Detailer	Career Clusters
	Agricultural sales agent Animal care technician Farm manager Food, drug inspector	Agricultural sales agent Food broker Food, livestock producer	Bacteriologist, biochemist Food products processor Food, fiber engineer	
	Construction foreman, manager General maintenance contractor Interior designer	Architectural firm owner, consultant Contractor – general, maintenance, specialty craft	Building inspector Cost estimator Electrical, power transmission installer Safety director	
	A/V equipment installer Interior decorator Performing arts coach, conductor, director	Advertising, design, marketing, publishing company owner Events, performing arts, trade show producer	Animator A/V systems technician Graphics, printing equipment operator Web designer	
	Administrative assistant Fundraising director Human resources manager, recruiter, labor specialist Real estate associate	Business owner, entrepreneur Company president, general manager Marketing manager	Administrative assistant Business analyst Data processor Payroll clerk Purchasing agent	
	Child care specialist Coach School counselor Teacher	Acting, dance, music studio owner, operator Charter school founder, operator Test preparation, learning center franchise owner, operator	Educational researcher Speech-language pathologist, audiologist Test measurement specialist	
	Customer service representative Debt counselor Financial advisor Investment planner Loan officer	Banker Financial planner Financial manager Treasurer	Accountant/auditor Actuary Financial manager Insurance appraiser	
	Elected official Legislative aide Military officer	Ambassador Elected official Military combat operations specialist Policy advisor	Census enumerator Emergency planner Military intelligence officer Vital statistics clerk Zoning administrator	
	Home health aide Medical assistant Therapist – physical Psychologist Social worker	Hospital, health agency, laboratory executive director, owner, operator Medical, veterinary practice owner	Biomedical engineer, technician Laboratory technician Medical records manager, coder Pathologist Pharmacist, technician	
	Food service worker Hotel worker Recreation worker Park ranger Tour guide	Amusement park, tourist attraction developer Hotel, motel franchise owner, operator Restaurateur	Banquet manager Hotel executive Supervisor – housekeeping, laundry, maintenance	
	Counselor – family, mental health, rehabilitation, substance abuse Psychologist Social worker	Counseling, psychology practice owner Day-care center operator Funeral home director Nonprofit agency director	Emergency management specialist Nutrition counselor	
	Computer support specialist Help desk technician Instructional designer Interactive media developer	E-merchandise Information support services provider Interactive media programmer/software developer	Computer programmer Computer security specialist Data processing, documentation specialist Network systems analyst	
	Corrections educator, counselor Hazardous materials responder Probation officer	Law firm partner Police patrol officer Private detective, security service	Criminal investigator Immigration, customs inspector Lawyer, paralegal, legal secretary	
	First-line manager, supervisor Quality control specialist	Labor relations manager Manufacturing executive, supervisor Medical appliance, optical goods maker	Failure analyst Industrial maintenance technician Machine tool operator Quality engineer	
	Client relationship manager Customer support specialist Field representative Regional sales manager	Business development manager Buyer Merchandising manager Product developer	Manager – forecasting, fulfillment, inventory Logistics analyst Marketing researcher Statistician	
	Environmental scientist Maintenance, repair technician Laboratory technician Medical researcher Oceanographer	Engineering firm owner, consultant Medical research laboratory operator	Electrical, electronic installer, repairer, technician Engineer – industrial, health and safety, maintenance	
	Cashier, counter clerk Customer service representative Driver Flight attendant Logistics, warehouse manager	Consultant – airfield operations, logistics Government executive Manager – customer service, logistics, warehouse	Air traffic controller Dispatcher – air, rail Inspector – aviation, freight Packer	

d. Helper

Do you enjoy helping people? Most “Helpers” enjoy working with others, both individually and in groups. Famous “Helpers” include civil rights leader Martin Luther King, Jr., humanitarian Mother Teresa, and the first black president of South Africa Nelson Mandela.

e. Enterpriser

Do you have strong leadership skills, like to compete, take risks, and persuade others? Enterprisers have both social and hands-on skills. Famous “Enterprisers” include Microsoft co-founder Bill Gates, U.S. President Barack Obama, and TV personality Rachael Ray.

f. Detailer

Detailers analyze numbers and facts, pay careful attention to details, and tend to be structured. Famous “Detailers” include the first female engineer Lillian Gilbreth, inventor of the first practical telephone Alexander Graham Bell, and FBI director J. Edgar Hoover.





NORC CARBO

Exploring Careers During High School and College

Although many high schools and colleges help students with future planning, the process usually starts in middle school. Are you surprised?

According to advice found on the Federal Student Aid Web site (<http://studentaid2.ed.gov/prepare/timeline>), it's important to start thinking about a future career beginning in eighth grade. That's true particularly if a career interest requires postsecondary education.

Meeting high school graduation requirements often isn't enough to ensure that a high school graduate

will be accepted into a post-secondary program that leads to a desired career. Some colleges may require more and harder courses in addition to good grades, recommendations, and evidence of program-related activities.

As part of the planning process, students may take career inventories similar to the one that appears on pages 4-7. Based on interests and abilities, students likely will be counseled to consider education needed both during and after high school to achieve career goals.

However, remember that most interest inventories are based on a student's experiences. If you have not had experiences related to a nontraditional career – the kind described in the following article – interest inventories may not reveal your interest in those careers. Take time to explore a wide array of career-related experiences to expand potential interests.

While some school districts may not have a formal system in place, many use a Career Cluster approach to career and educational planning – the approach used in this publication. This approach helps students understand connections among careers – connections based on a combination of personal

High School Career Programs

Ask a school counselor about career-related programs at your local high school. Typical programs include:

- Career and Technical Education
- Career academies
- College prep programs
- Cooperative education
- Huskins dual enrollment and early college
- Internship or mentoring programs
- Service learning programs
- Tech Prep programs
- Youth apprenticeships

College Career Programs

Consider participating in the following programs while in college:

- Placement center services
- Career counseling services
- Internships or mentoring programs
- Career fairs
- Career planning courses



interests, abilities, industry-related needs, and other characteristics. Understanding them also can help when thinking about future plans.

A school counselor can provide lots of information about a school's approach to career and educational planning, high school graduation credits, and postsecondary program requirements. To learn more, you also may want to go to college Web sites and to view Career Cluster sample plans of study at <http://www.careerclusters.org/resources/web/pos.cfm>. In addition to a wide variety of courses, high schools offer many opportunities to explore careers and gain related experiences. These are good ways to discover career likes and dislikes at an early age.

As you learn more about Career Clusters and related educational programs, such as Career and Technical Education, and discover personal interests, you can develop a plan for achieving a satisfying career.

Career and Technical Organizations for High School and College Students

Student organizations provide great experiences for exploring careers. The teamwork and leadership opportunities promote personal growth as well. Find out if any of these organizations are available at your high school or college:

- DECA – An association of marketing students (<http://www.deca.org>)
- Future Business Leaders of America (<http://www.fbla-pbl.org>)
- National FFA Organization (<http://www.ffa.org>)
- Family, Career and Community Leaders of America, Inc. (<http://www.fccla.com>)
- Health Occupations Students of America (<http://www.hosa.org>)
- Technology Student Association (<http://www.tsaweb.org>)
- SkillsUSA (<http://www.skillsusa.org>)

For more information, please see pages 124-125.



Am I a Ground Breaker?

By Mimi Lufkin, Chief Executive Officer, National Alliance for Partnerships in Equity

Our world is becoming increasingly smaller and our economy more global. These changes create an ever-widening range of careers.

In working through your career exploration process, you may want to develop skills and gain experiences that will increase your knowledge of occupations and widen your career options. Part of that widening process is being sure that you don't set artificial barriers for yourself regarding your own career choices. Employment in many sectors of our economy has been traditionally segregated by gender, an artificial barrier that many are working to eliminate. Old stereotypes about what careers are for men and what careers are for women do not apply anymore. We cannot afford to lose half the potential workforce in any career field due to outdated notions.

Explore Before You Choose

The 16 Career Clusters provide a framework you can use to explore all aspects of a particular career field. Within each cluster, there are multiple pathways, and within each pathway, there are a variety of occupations. Some of these occupations are considered “nontraditional,” which means that

less than 25% of one gender is employed in that field.

Your career choices should be made based on your interests and skills. The Career Clusters framework provides you with the opportunity to explore a wide range of career options regardless of your particular background. As you consider career options, do not allow yourself to be steered away from a cluster or pathway because of your lack of experience. As you go through the career exploration process, you may take a career interest inventory like the one that begins on page 4 to help you focus your career choices. But be aware that many of these assessments are based on your experience with typical activities within careers. It is very important that you take the opportunity to explore career choices and build your portfolio of experiences before you start to narrow your options.

Follow Your Dreams

As you explore the multiple career options within each Career Cluster, listen to your instincts about what careers will utilize your interests and skills, regardless of who is typically employed in that field. There may be times when you

might be discouraged from following your dreams because your career choice does not fit in with traditional gender roles. In the long run, your choice of a career that fits you will provide you with a more satisfying and fulfilling future. And the good news is that research shows that men and women are increasingly moving into, and succeeding in, nontraditional careers. Regardless of the career you chose, do not let anyone's prejudices, including your own, limit you!

Consider a Nontraditional Career

The biggest argument in favor of working in a nontraditional career is the intrinsic benefit of following your dreams and the satisfaction that comes from a job well done. As a “groundbreaker,” you will help overcome gender stereotypes and open the door to others. There is nothing more satisfying than knowing you have made a long-lasting impact on society in addition to doing what you enjoy. For women, participating in a nontraditional career can carry with it significant financial rewards. Male-dominated occupations tend to have higher wages and benefits. When women



are employed in these areas, it can mean over 25% more annual income. For men, nontraditional career choices can also mean higher wages, especially in the health care fields, as compared to many other career choices.

Choosing to be different always carries with it some challenges. However, as daunting as some of these challenges might appear, the workplace is continuing to become much more diverse. A lack of role models and others who support your nontraditional career choices can be discouraging, so it is important to surround yourself with those who support your choices and to find champions who can mentor and guide you. In some traditionally male careers, the physical demands of the job can be significant. But with the proper preparation, understanding of physical dynamics, and the use of appropriate tools and technology, these barriers can be limited. Certainly carrying a 30-pound toddler on your hip while doing housework has its physical challenges, too!

Central to the current global challenges we are facing is the growing need for a workforce with

skills in science, technology, engineering, and mathematics (STEM). A majority of these career fields are nontraditional for women, and in recent years there has been a decline in women's participation in some of the engineering- and math-related career areas, a loss of human potential we cannot afford. As we have seen the performance gap shrink between boys and girls on standardized assessments in math and science, we have not seen the translation of that success to college preparation and career selection. The opportunities for women in STEM careers are endless.

Most of us carry around the image of an engineer as a white male with wild hair, thick black-rimmed glasses, pocket protector, and white dress shirt and tie, who sits in front of a computer all day running endless mathematical equations. But this image is far from reality. Engineers can be any individuals who are willing use their imagination and analytical skills to invent, design, and build things that matter. They are team players with independent minds who ask, "How can we develop a better recycling system to protect the environment, design a school that

can withstand an earthquake, or create cutting-edge special effects for the movies?" By dreaming up creative and practical solutions, engineers are changing the world all the time.

Don't let your preconceived notions of what career is a fit for you limit your choices. Take the opportunities provided to you by exploring all of the 16 Career Clusters to expand the options you want to choose from. Who knows, maybe you might even choose a nontraditional career!

Resources

The National Alliance for Partnerships in Equity
www.napequity.org

The STEM Equity Pipeline project
www.stemequitypipeline.org

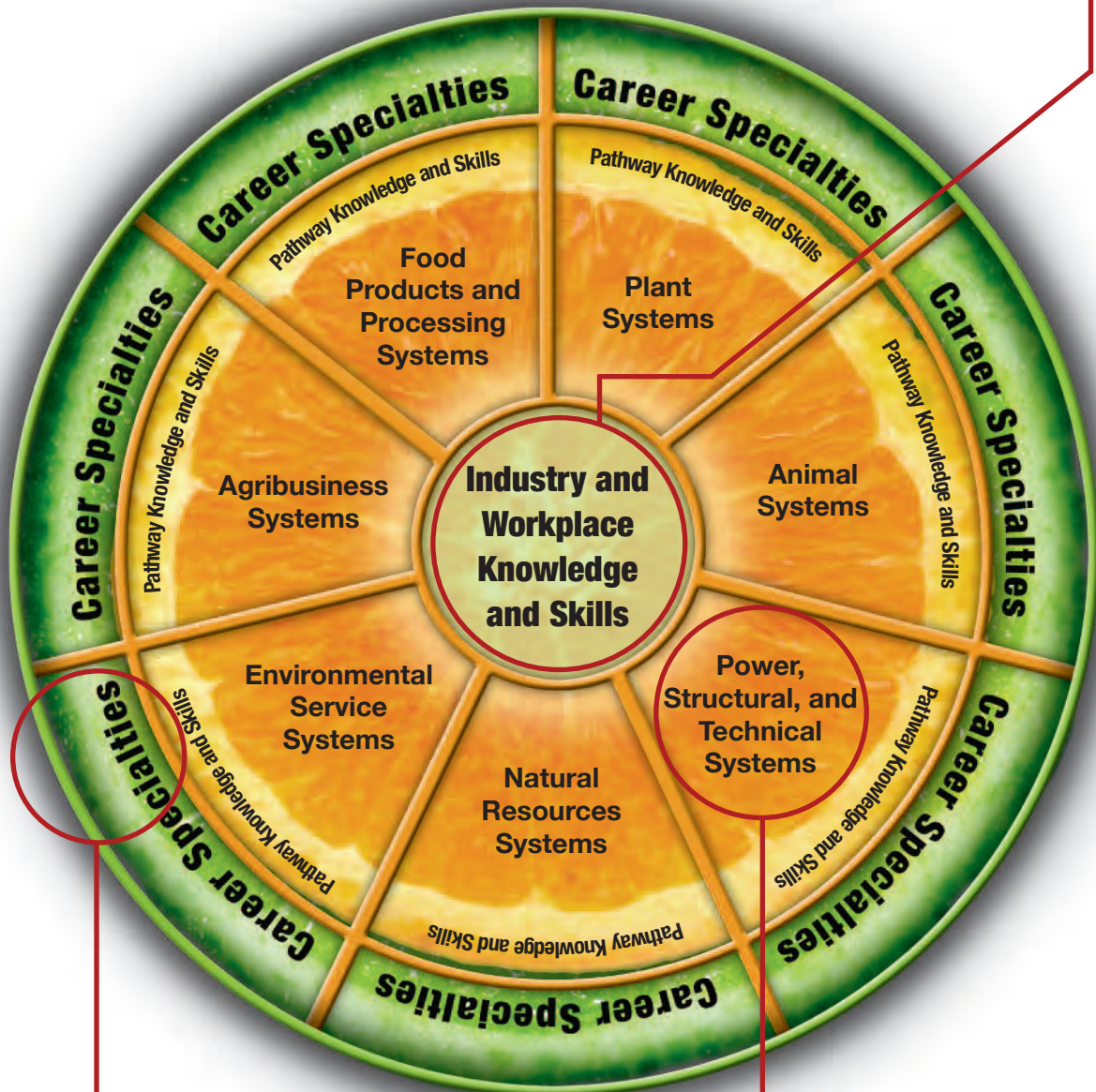
Engineer Your Life
www.engineeryourlife.org

Nontraditional Career Resource Center
www.ncrc.rutgers.edu



The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources. Mining and mineral extraction are included in the Agriculture, Food & Natural Resources cluster.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Food Products and Processing Systems	<ul style="list-style-type: none"> • Agricultural and Food Science Technicians • Agricultural and Food Scientists • Agricultural Inspectors • Agricultural Sciences Teachers, Postsecondary • Chemical Technicians 	<ul style="list-style-type: none"> • Computer Support Specialists • Farm and Ranch Managers • First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers 	<ul style="list-style-type: none"> • Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders • Food Batchmakers • Food Cooking Machine Operators and Tenders • Graders and Sorters, Agricultural Products 	<ul style="list-style-type: none"> • Nonfarm Animal Caretakers • Office Machine Operators, Except Computer • Pest Control Workers • Purchasing Agents and Buyers, Farm Products
Plant Systems	<ul style="list-style-type: none"> • Agricultural and Food Science Technicians • Agricultural and Food Scientists • Agricultural Sciences Teachers, Postsecondary • Biochemists and Biophysicists • Economists • Farm and Home Management Advisors 	<ul style="list-style-type: none"> • Farm and Ranch Managers • Farmers and Ranchers • Farmworkers and Laborers, Crop, Nursery, and Greenhouse • Farmworkers, Farm and Ranch Animals • First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers 	<ul style="list-style-type: none"> • First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers • First-Line Supervisors/Managers of Retail Sales Workers • Floral Designers • Grounds Maintenance Workers 	<ul style="list-style-type: none"> • Landscaping and Groundskeeping Workers • Pesticide Handlers, Sprayers, and Applicators, Vegetation • Retail Salespersons • Tree Trimmers and Pruners
Animal Systems	<ul style="list-style-type: none"> • Agricultural and Food Science Technicians • Agricultural and Food Scientists • Agricultural Sciences Teachers, Postsecondary 	<ul style="list-style-type: none"> • Animal Breeders • Animal Trainers • Farm and Home Management Advisors • Farm and Ranch Managers • Farmers and Ranchers 	<ul style="list-style-type: none"> • Farmworkers, Farm and Ranch Animals • First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers 	<ul style="list-style-type: none"> • Nonfarm Animal Caretakers
Power, Structural, and Technical Systems	<ul style="list-style-type: none"> • Agricultural Equipment Operators • Agricultural Sciences Teachers, Postsecondary 	<ul style="list-style-type: none"> • Aircraft Mechanics and Service Technicians • Farm Equipment Mechanics 	<ul style="list-style-type: none"> • Mobile Heavy Equipment Mechanics, Except Engines 	
Natural Resources Systems	<ul style="list-style-type: none"> • Biological Science Teachers, Postsecondary • Captains, Mates, and Pilots of Water Vessels • Chemical Processing Machine Setters, Operators, and Tenders • Conservation Scientists • Conservation Scientists and Foresters • Conveyor Operators and Tenders • Engineering Technicians, Except Drafters • Environmental Science and Protection Technicians, Including Health 	<ul style="list-style-type: none"> • Environmental Science Teachers, Postsecondary • Environmental Scientists and Specialists, Including Health • Fallers • First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers • Fish and Game Wardens • Fishers and Related Fishing Workers • Forest and Conservation Technicians • Forest and Conservation Workers • Foresters 	<ul style="list-style-type: none"> • Gas Compressor and Gas Pumping Station Operators • Gas Plant Operators • Geological and Petroleum Technicians • Industrial Truck and Tractor Operators • Loading Machine Operators, Underground Mining • Log Graders and Scalers • Logging Equipment Operators • Logging Workers • Mechanical Engineering Technicians • Petroleum Pump System Operators, Refinery Operators, and Gaugers 	<ul style="list-style-type: none"> • Plant and System Operators • Pump Operators, Except Wellhead Pumps • Pumping Station Operators • Recreation and Fitness Studies Teachers, Postsecondary • Recreation Workers • Refuse and Recyclable Material Collectors • Service Unit Operators, Oil, Gas, and Mining • Shuttle Car Operators • Tank Car, Truck, and Ship Loaders • Wellhead Pumps • Zoologists and Wildlife Biologists
Environmental Service Systems	<ul style="list-style-type: none"> • Environmental Engineering Technicians • Hazardous Materials Removal Workers 	<ul style="list-style-type: none"> • Heating, Air Conditioning, and Refrigeration Mechanics and Installers 	<ul style="list-style-type: none"> • Occupational Health and Safety Specialists and Technicians 	<ul style="list-style-type: none"> • Water and Liquid Waste Treatment Plant and System Operators
Agribusiness Systems	<ul style="list-style-type: none"> • Agricultural and Food Scientists • Agricultural Sciences Teachers, Postsecondary 	<ul style="list-style-type: none"> • Audio and Video Equipment Technicians • Farm and Home Management Advisors • Graphic Designers 	<ul style="list-style-type: none"> • News Analysts, Reporters and Correspondents 	

Career Spotlight

Name: Howard Wallace

Occupation: Interim Extension Director, Columbus County

High School Agriculture Program Leads to Career Success



When Howard Wallace started high school, he had zero intentions of ever taking an agriculture class. Growing up in rural Columbus County, all he ever dreamed about was graduating from high school and attending North Carolina State University. “I had no real career interests at the time. I just knew I wanted to go to college to better myself. I also bought into the negative stereotypes about agriculture that sometime seem prevalent.”

A chance conversation with his older sister convinced Wallace to sign up for an introductory agriculture course just for the opportunity to attend the North Carolina State Fair. That conversation changed his life forever. He found that his Introduction to Agriscience class gave him an opportunity to join the

National FFA Organization, which opened up new opportunities for competition, leadership, teamwork, and travel. “I was deathly afraid of standing up and speaking to groups, and my experiences in FFA helped me to become a better, more confident public speaker. The knowledge gained in my agriculture classes also helped me take on a more positive view and better appreciation for agriculture in our great state.” In his final three years of high school, Wallace served as the West Columbus FFA chapter’s reporter and president as well as the Three River’s Federation’s president two years in a row. He was also competitive in FFA career development events, competing both at the federation and regional levels.

Wallace’s experiences in high school led him to pursue a career in agricultural education. He was named a North Carolina Teaching Fellow and a Lewis A. Sikes Memorial Scholar his senior year at West Columbus High School and graduated magna cum laude from North Carolina State University with a degree in Agricultural Education in 2002. Following graduation, he taught high school agriculture for the Wayne County Public Schools System in Goldsboro and the Public Schools of Robeson County in Lumberton. “I loved

teaching, and I really loved training and preparing students for competition in career development events, but I was soon given an opportunity to work with the North Carolina Cooperative Extension Service back home in Columbus County... Interestingly, much of the subject matter I teach to adults in my work now can be traced back to what I learned in my high school courses in horticulture.”

Wallace quickly moved up the ranks at the North Carolina Cooperative Extension Service and is now the Interim Extension Director for Columbus County. Even in his new leadership role, the interpersonal communication and teamwork experience gained from his Career and Technical Education courses in agriculture are still proving to be invaluable. “Beyond my subject matter knowledge in agriculture, the agriculture courses I took in high school improved my skills in time management, decision making, resource allocation, and conflict management – skills which I find invaluable and use every day in my current position.”

Wallace is currently pursuing a master’s degree in Agricultural and Extension Education and hopes to one day work in college or university administration.

Did You Know?

If you're considering a green career with a science or engineering focus, you have options, according to the Bureau of Labor Statistics. Authors of "Going 'Green': Environmental Jobs for Scientists and Engineers" cited several in the summer 2009 edition of the *Occupational Outlook Quarterly*. They mentioned jobs for botanists, chemists, geoscientists, agricultural engineers, geological engineers, and science and engineering technicians among examples of occupations with an environmental focus.

But work in an environmental career isn't limited to science and engineering. Environmental jobs include many types of workers in a variety of occupations. Curators in a nature center, for example, educate visitors about a particular ecosystem. Lawyers might specialize in environmental issues but also work on other kinds of cases. And construction laborers' projects might include retrofitting a building for energy efficiency.

For more information about environmental jobs, go to <http://www.bls.gov/opub/ooq/2009/summer/summer2009ooq.pdf>.

NATURAL RESEARCH

U.S. Department of Agriculture: <http://www.usda.gov>

Farm Service Agency: <http://www.fsa.usda.gov>

Natural Resources Conservation Service: <http://www.nrcs.usda.gov>

Rural Development: <http://www.rurdev.usda.gov>

USA Jobs: The Official Job Site of the Federal Government:

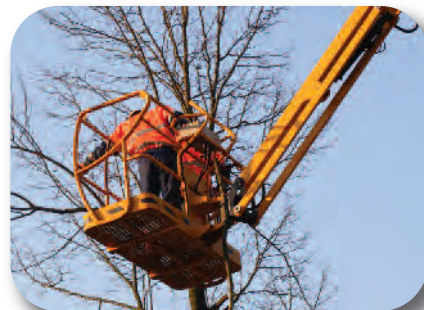
<http://www.usajobs.opm.gov>

AgrowKnowledge, the National Center for Agriscience and Technology

Education: <http://www.agrowknow.org/about>

National FFA Organization: <http://ffa.org>

Plant Pathology Online: <http://www.apsnet.org/>



Selected Careers

Occupation	Career Pathway(s)	Job Description	
Agricultural and Food Science Technicians	Animal Systems; Food Products and Processing Systems; Plant Systems	Work with agricultural scientists in food, fiber, and animal research, production, and processing. Assist with animal breeding and nutrition work. Conduct tests to improve yield and quality of crops or increase resistance to disease.	
Biochemists and Biophysicists	Plant Systems	Study the chemical composition and physical principles of living cells and organisms, their electrical and mechanical energy, and related phenomena. May research complex chemical combinations and reactions involved in metabolism, reproduction, growth, and heredity. May determine effects of foods, drugs, serums, hormones, and other substances.	
Biological Science Teachers, Postsecondary	Natural Resources Systems	Teach courses in biological sciences.	
Environmental Engineering Technicians	Environmental Service Systems	Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in prevention, control, and remediation of environmental pollution.	
Environmental Science and Protection Technicians	Natural Resources Systems	Perform laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health. May collect samples of gases, soil, water, and other materials for testing and take corrective actions as assigned.	
Environmental Scientists and Specialists, Including Health	Natural Resources Systems	Conduct research or perform investigation to identify, abate, or eliminate sources of pollutants or environmental hazards. May collect, synthesize, study, report, and take action based on data derived from measurements or observations of air, food, soil, water, and other sources.	
Lawn Service Managers	Plant Systems	Plan, organize, direct, or coordinate activities of workers engaged in landscaping or groundskeeping activities, such as planting and maintaining ornamental trees, shrubs, flowers, and lawns, and applying fertilizers, pesticides, and other chemicals. May also coordinate activities of workers engaged in terracing hillsides, building retaining walls, constructing pathways, installing patios, and similar activities in following a landscape design plan.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$12.17/ 25,319	\$16.91/ 35,169	29	19.7	Associate degree	✓		
	\$21.60/ 44,937	\$34.16/ 71,050	37	21.4	Doctoral degree	✓	✓	
	\$21.14/ 43,981	\$34.57/ 71,906	67	30.1	Doctoral degree	✓	✓	
	\$14.47/ 30,106	\$19.36/ 40,270	14	17.2	Associate degree	✓	✓	
	\$13.62/ 28,334	\$19.25/ 40,033	48	17.8	Associate degree	✓	✓	
	\$17.44/ 36,266	\$25.81/ 53,686	157	21.9	Master's degree	✓	✓	✓
	\$12.79/ 26,605	\$18.41/ 38,302	234	20.3	Work experience in a related occupation		✓	✓

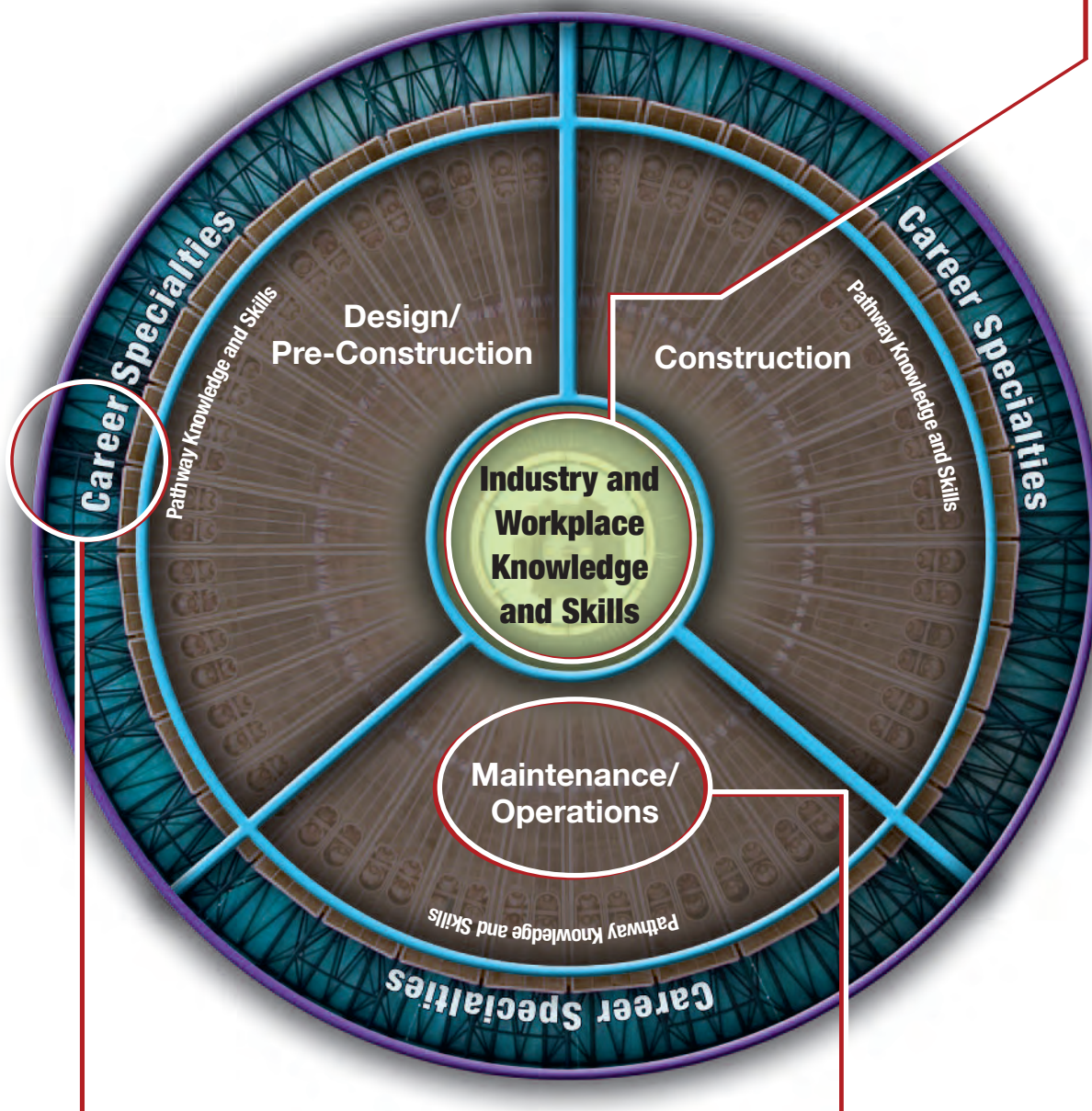
NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Careers in designing, planning, managing, building, and maintaining the built environment.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Design/ Pre-Construction	<ul style="list-style-type: none"> Architects, Except Landscape and Naval Architectural and Civil Drafters Architecture Teachers, Postsecondary Cartographers and Photogrammetrists 	<ul style="list-style-type: none"> Civil Engineering Technicians Computer Software Engineers, Systems Software Drafters Electrical and Electronics Drafters Engineering Managers 	<ul style="list-style-type: none"> Engineering Teachers, Postsecondary Engineering Technicians, Except Drafters Engineers Historians Interior Designers Landscape Architects 	<ul style="list-style-type: none"> Mechanical Drafters Operations Research Analysts Surveying and Mapping Technicians Surveyors
Construction	<ul style="list-style-type: none"> Airline Pilots, Copilots, and Flight Engineers Related Workers Brickmasons and Blockmasons Carpenters Carpet Installers Cement Masons and Concrete Finishers Commercial Pilots Construction and Building Inspectors Construction and Related Workers Construction Laborers Construction Managers Continuous Mining Machine Operators Cost Estimators Crane and Tower Operators Derrick Operators, Oil and Gas Dredge Operators Dredge, Excavating, and Loading Machine Operators Drywall and Ceiling Tile Installers Earth Drillers, Except Oil and Gas Electrical and Electronics Repairers, Powerhouse, Substation and Relay Electrical Power-Line Installers and Repairers Electricians Electromechanical Equipment Assemblers Engineering 	<ul style="list-style-type: none"> Technicians, Except Drafters Excavating and Loading Machine and Dragline Operators Explosives Workers, Ordnance Handling Experts, and Blasters First-Line Supervisors/Managers of Construction Trades and Extraction Workers Flight Attendants Floor Layers, Except Carpet, Wood, and Hard Tiles Floor Sanders and Finishers Glaziers Heating, Air Conditioning, and Refrigeration Mechanics and Installers Helpers, Construction Trades Helpers – Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters Helpers – Carpenters Helpers – Electricians Helpers – Painters, Paperhangers, Plasterers, and Stucco Masons Helpers – Pipelayers, Plumbers, Pipefitters, and Steamfitters Helpers – Roofers Highway Maintenance Workers 	<ul style="list-style-type: none"> Insulation Workers Maintenance and Repair Workers, General Manufactured Building and Mobile Home Installers Mine Cutting and Channeling Machine Operators Mining Machine Operators Operating Engineers and Other Construction Equipment Operators Other Extraction Workers Painters, Construction and Maintenance Paperhangers Paving, Surfacing, and Tamping Equipment Operators Pile-Driver Operators Pipelayers Plasterers and Stucco Masons Plumbers, Pipefitters, and Steamfitters Rail Transportation Workers Railroad Conductors and Yardmasters Rail-Track Laying and Maintenance Equipment Operators Reinforcing Iron and Rebar Workers Riggers Roofers Rotary Drill Operators, Oil and Gas 	<ul style="list-style-type: none"> Security and Fire Alarm Systems Installers Segmental Pavers Septic Tank Servicers and Sewer Pipe Cleaners Signal and Track Switch Repairers Stationary Engineers and Boiler Operators Stonemasons Structural Iron and Steel Workers Subway and Streetcar Operators Tapers Terrazzo Workers and Finishers Tile and Marble Setters Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders Woodworking Machine Setters, Operators, and Tenders, Except Sawing
Maintenance/ Operations	<ul style="list-style-type: none"> Coin, Vending, and Amusement Machine Servicers and Repairers Heating, Air Conditioning, and Refrigeration Mechanics and Installers 	<ul style="list-style-type: none"> Home Appliance Repairers Security and Fire Alarm Systems Installers 		



Career Spotlight

Name: Joshua Bumgarner

Occupation: Student, Electrical/Electronics Technology

Experienced Electrical Worker Takes the Next Step

Joshua Bumgarner worked for years with licensed electricians. Then he decided to take the next step and enroll in the Electrical/Electronics Technology program at Durham Technical Community College. The program, which has always offered a diploma and several certificates, now also has an Associate of Applied Science degree.

“I thought I’d be taking classes in which I’d know most everything. That’s not how it is at all,” he said. “We see stuff in class that some advanced professionals don’t see

for a long time.” Bumgarner looks forward to the lively discussion in his classes. Though he is in the electrical profession, he is amazed at how much he didn’t know!

“At Durham Tech you get much more than you pay for. Mr. Crutchfield could teach anywhere he wants to, but he chose to stay here,” Bumgarner said. John N. Crutchfield is Program Director/Instructor in Electrical/Electronics Technology at Durham Tech.

In both the laboratory and classroom, students learn

installation and maintenance of electrical wiring, transformers, AC and DC motors, motor control circuits, lighting circuits, and much more.

After completing the Associate in Applied Science degree, Bumgarner plans to transfer to a four-year college or university for a bachelor’s degree. And one day, he may follow in his instructor’s footsteps. “I’d love to teach electrical.”



Did You Know?

One of the nation's largest industries, construction provided jobs for nearly 7.7 million wage and salary workers and 1.9 million self-employed workers and family members in 2006, according to the *Career Guide to Industries*. Many of those careers are "going green" as the nation moves toward green buildings and solar, water, and wind energy.

Community colleges are taking the lead in modifying their architecture and construction-related programs and adding new ones to incorporate green skills. Some new green-related jobs in these fields include solar energy systems designer, wind turbine technician, environmental technician, air pollution specialist, and others.

In fact, the Construction Management associate degree program at Wake Technical Community College in Raleigh, North Carolina, uses its Northern Wake Campus as a lab setting where students learn both conventional and "green" building methods. According to *Going Green: The Vital Role of Community Colleges in Building a Sustainable Future and Green Workforce*, this is the first all-LEED campus in the nation. Buildings were constructed according to the strictest environmental standards set by the U.S. Green Building Council. In recognition, the college received a 2008 Innovation of the Year Award.

In addition to working as an architect, draftsman, or in construction, another career option in the Architecture & Construction cluster is interior design, both of residential and commercial buildings.

See the following Web sites for more information:

Career Guide to Industries: <http://www.bls.gov/oco/cg/cgs003.htm>

Going Green Report: <http://www.aed.org/Publications/upload/GoingGreen.pdf>

Green Building Council: <http://www.usgbc.org>

Green Jobs Guide: <http://www.edf.org/article.cfm?contentID=8466>

BUILDING KNOWLEDGE

The American Institute of Architects: <http://www.aia.org>

Construction careers: <http://skillsusa.org> and <http://www.constructmyfuture.com>

Electrician careers: <http://www.njatc.org>

Engineers and engineering technicians: <http://www.engineeringk12.org/students/>, <http://www.jets.org>, <http://www.swe.org>, <http://www.ascet.org> and <http://www.education.org>

Landscaping careers: <http://www.asla.org>, <http://www.landcarenetwork.org> and <http://www.TreeCareIndustry.org>

Mechanical engineering careers: <http://www.asme.org/Communities/Students> and <http://www.ashrae.org/students>



Selected Careers

Occupation	Career Pathway(s)	Job Description	
Architects, Except Landscape and Naval	Design/ Pre-Construction	Plan and design structures, such as private residences, office buildings, theaters, factories, and other structural property.	
Cartographers and Photogrammetrists	Design/ Pre-Construction	Collect, analyze, and interpret geographic information provided by geodetic surveys, aerial photographs, and satellite data. Research, study, and prepare maps and other spatial data in digital or graphic form for legal, social, political, educational, and design purposes. May work with Geographic Information Systems (GIS). May design and evaluate algorithms, data structures, and user interfaces for GIS and mapping systems.	
Construction Managers	Construction	Plan, direct, coordinate, or budget activities concerned with the construction and maintenance of structures, facilities, and systems. Participate in the conceptual development of a construction project and oversee its organization, scheduling, and implementation.	
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Construction; Maintenance/ Operations	Install or repair heating, central air conditioning, or refrigeration systems.	
Interior Designers	Design/ Pre-Construction	Plan, design, and furnish interiors of residential, commercial, or industrial buildings.	
Plumbers, Pipefitters, and Steamfitters	Construction	Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gases. May install heating and cooling equipment and mechanical control systems.	
Security and Fire Alarm Systems Installers	Construction; Maintenance/ Operations	Install, program, maintain, and repair security and fire alarm wiring and equipment according to relevant codes.	
Surveyors	Design/ Pre-Construction	Make exact measurements and determine property boundaries. Provide data regarding shape, contour, gravitation, location, elevation, or dimension of land or land features on or near the Earth's surface for engineering, mapmaking, mining, land evaluation, construction, and other purposes.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$22.05/ 45,866	\$34.91/ 72,610	137	18.3	Bachelor's degree	✓	✓	✓
	\$15.13/ 31,480	\$21.66/ 45,058	25	16.4	Bachelor's degree	✓	✓	
	\$26.86/ 55,868	\$37.75/ 78,522	917	24.6	Bachelor's degree	✓	✓	✓
	\$13.12/ 27,287	\$18.03/ 37,494	365	21.5	Long-term on-the-job training		✓	✓
	\$13.23/ 27,525	\$20.72/ 43,102	93	14.8	Bachelor's degree	✓	✓	
	\$12.74/ 26,506	\$17.21/ 35,795	648	25.7	Long-term on-the-job training			✓
	\$12.86/ 26,748	\$17.40/ 36,191	72	24.1	One - two years of college			
	\$18.02/ 37,490	\$26.68/ 55,494	65	22.8	Bachelor's degree	✓	✓	

NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Designing, producing, exhibiting, performing, writing, and publishing multi-media content including visual and performing arts and design, journalism, and entertainment services.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Audio and Video Technology and Film	<ul style="list-style-type: none"> • Agents and Business Managers of Artists, Performers, and Athletes • Archivists, Curators, and Museum Technicians • Art, Drama, and Music Teachers, Postsecondary • Artists and Related Workers 	<ul style="list-style-type: none"> • Broadcast Technicians • Camera Operators, Television, Video, and Motion Picture • Choreographers • Commercial and Industrial Designers • Computer Programmers • Craft Artists • Dancers • Film and Video Editors 	<ul style="list-style-type: none"> • Fine Artists, Including Painters, Sculptors, and Illustrators • Graphic Designers • Historians • Managers • Media and Communication Equipment Workers 	<ul style="list-style-type: none"> • Media and Communication Workers • Multi-Media Artists and Animators • Photographers • Producers and Directors • Set and Exhibit Designers
Printing Technology	<ul style="list-style-type: none"> • Art, Drama, and Music Teachers, Postsecondary • Bindery Workers • Craft Artists • Data Entry Keyers 	<ul style="list-style-type: none"> • Desktop Publishers • Etchers and Engravers • Fine Artists, Including Painters, Sculptors, and Illustrators 	<ul style="list-style-type: none"> • Job Printers • Multi-Media Artists and Animators • Prepress Technicians and Workers 	<ul style="list-style-type: none"> • Printing Machine Operators
Visual Arts	<ul style="list-style-type: none"> • Art Directors • Art, Drama, and Music Teachers, Postsecondary • Artists and Related Workers • Audio and Video Equipment Technicians • Commercial and Industrial Designers 	<ul style="list-style-type: none"> • Craft Artists • Fashion Designers • Fine Artists, Including Painters, Sculptors, and Illustrators • Graphic Designers • Interior Designers • Locomotive Engineers • Locomotive Firers • Motorboat Operators 	<ul style="list-style-type: none"> • Multi-Media Artists and Animators • Painting, Coating, and Decorating Workers • Photographers • Photographic Process Workers • Photographic Processing Machine Operators 	<ul style="list-style-type: none"> • Prepress Technicians and Workers • Set and Exhibit Designers
Performing Arts	<ul style="list-style-type: none"> • Actors • Art, Drama, and Music Teachers, Postsecondary • Artists and Related Workers • Choreographers • Craft Artists 	<ul style="list-style-type: none"> • Dancers • Entertainers and Performers, Sports and Related Workers • Fine Artists, Including Painters, Sculptors, and Illustrators 	<ul style="list-style-type: none"> • Managers • Music Directors and Composers • Musicians and Singers • Producers and Directors • Set and Exhibit Designers • Writers and Authors 	
Journalism and Broadcasting	<ul style="list-style-type: none"> • Announcers • Audio and Video Equipment Technicians • Broadcast Technicians • Camera Operators, Television, Video, and Motion Picture 	<ul style="list-style-type: none"> • Communications Teachers, Postsecondary • Editors • English Language and Literature Teachers, Postsecondary • Film and Video Editors 	<ul style="list-style-type: none"> • Media and Communication Workers • News Analysts, Reporters and Correspondents • Photographers 	<ul style="list-style-type: none"> • Producers and Directors • Sound Engineering Technicians • Technical Writers • Writers and Authors
Telecommunications	<ul style="list-style-type: none"> • Broadcast Technicians • Communications Equipment Operators • Computer, Automated Teller, and Office Machine Repairers 	<ul style="list-style-type: none"> • Electronic Home Entertainment Equipment Installers and Repairers • Film and Video Editors 	<ul style="list-style-type: none"> • Media and Communication Workers • Radio Mechanics • Radio Operators 	<ul style="list-style-type: none"> • Sound Engineering Technicians • Telecommunications Equipment Installers and Repairers, Except Line Installers



Career Spotlight

Name: Jonathon Benson

Occupation: Researcher and Production Assistant, *The Daily Show with Jon Stewart*

Business Education Provides a Means to Excel

At West Montgomery High School in Mount Gilead, North Carolina, Jonathon Benson became involved with Future Business Leaders of America (FBLA) and the school's business department on a bit of a whim. However, competing at the state and national levels, exploring the principles and workings of the business world, and meeting all sorts of interesting people helped him to discover and grow, ready to take on the world beyond high school.

As a Morehead Scholar (now Morehead-Cain) at The University of North Carolina at Chapel Hill, he majored in Political Science with a minor in Writing for the Screen and Stage. Outside of class, he was involved with the Student Union. As president in his senior year, he applied his leadership and production skills to serve the student body with programs, concerts, festivals, and speakers. During the summers, he continued to challenge himself, setting out on whitewater canoeing expeditions in Manitoba, traveling to remote Ugandan villages for the North Carolina Zoo, exploring the cultural diversity of New Zealand, and interning in New York City with *The Daily Show with Jon Stewart*.

Following graduation, he moved to New York to pursue a career



in television and film production and returned to *The Daily Show* as a production assistant. According to Benson, "Working for one of the most successful shows on television is a never-ending learning experience. I'm honored to get to work with so many people who are the best at what they do and to be a part of a very well-run organization."

Benson has since risen to the role of researcher and is responsible for assisting field producers in securing interviews with guests, locations for filming, and pitching ideas for show segments. "With the skills gained through my business education in high school, I've got everything I

need to excel in my current position and to continue to pursue my goals of writing and producing in the future."



Did You Know?

People usually think about entertainment industry jobs when they first hear about the Arts, A/V Technology & Communications Career Cluster. However, many other good jobs await individuals whose talents lie in design, writing, technology, and related fields.

For example, public relations managers in North Carolina earned a median annual income of \$78,800 in 2007; graphic designers, \$37,000; and audio and video equipment technicians, \$33,900.

O*NET™ OnLine is a good place to find more information about occupations in many fields. Start your search at <http://online.onetcenter.org/find>. For more information about entertainment industry careers, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cgs031.htm>.

CREATIVE RESEARCH

Advertising: <http://www.aaf.org>

Animation: http://corporate.disney.go.com/careers/who_feature_animation.html

A/V technologies: <http://www.infocomm.org>

Broadcast engineering: <http://www.smppte.org/membership/students>

Broadcasting: <http://www.nab.org> and <http://www.rtnda.org>

Dance: <http://www.danceusa.org> and <http://nasd.arts-accredit.org>

Film: <http://www.afi.com>

Graphic design: <http://www.gag.org>

Journalism: <http://www.spj.org>

Literary writing: <http://www.pen.org>

Music: <http://www.afm.org> and <http://nasm.arts-accredit.org>

Public relations: <http://www.prssa.org/>

Photography: http://www.nppa.org/professional_development/students

For more information: <http://www.bls.gov/oco/home.htm>. Search for actors, producers, and directors; artists and related workers; broadcast and sound engineering technicians; dancers and choreographers; and musicians, singers, and related workers.



Selected Careers

Occupation	Career Pathway(s)	Job Description	
Agents and Business Managers of Artists, Performers, and Athletes	Audio and Video Technology and Film	Represent and promote artists, performers, and athletes to prospective employers. May handle contract negotiation and other business matters for clients.	
Editors	Journalism and Broadcasting	Perform editorial duties such as laying out, indexing, and revising content of written materials in preparation for final publication.	
Film and Video Editors	Journalism and Broadcasting; Telecommunications; Audio and Video Technology and Film	Edit motion picture soundtracks, film, and video.	
Multi-Media Artists and Animators	Printing Technology; Visual Arts; Audio and Video Technology and Film	Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.	
Photographers	Journalism and Broadcasting; Visual Arts; Audio and Video Technology and Film	Photograph people, subjects, merchandise, or other commercial products. May develop negatives and produce finished prints.	
Technical Writers	Journalism and Broadcasting	Write technical materials such as equipment manuals, appendices, or operating and maintenance instructions.	
Writers and Authors	Journalism and Broadcasting; Performing Arts	Originate and prepare written material such as scripts, stories, and advertisements.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$14.06/ 29,242	\$22.60/ 47,005	33	21.4	Bachelor's degree or higher plus work experience	✓	✓	
	\$13.78/ 28,667	\$23.85/ 49,609	117	12.5	Bachelor's degree	✓	✓	
	\$12.84/ 26,706	\$20.11/ 41,837	16	16.0	Bachelor's degree	✓	✓	
	\$15.51/ 32,261	\$25.05/ 52,904	139	27.2	Bachelor's degree	✓	✓	✓
	\$8.88/ 18,460	\$19.03/ 39,584	124	12.6	Long-term on-the-job training		✓	
	\$18.53/ 38,544	\$28.55/ 59,392	56	21.9	Bachelor's degree	✓	✓	
	\$14.10/ 29,338	\$23.50/ 48,887	73	13.4	Bachelor's degree	✓	✓	
	NOTES 5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.							



Business Management & Administration careers encompass planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. Business Management & Administration career opportunities are available in every sector of the economy.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
General Management	<ul style="list-style-type: none"> • Administrative Services Managers • Advertising and Promotions Managers • Agents and Business Managers of Artists, Performers, and Athletes • Business Teachers, Postsecondary • Chief Executives • Communications Teachers, Postsecondary 	<ul style="list-style-type: none"> • Computer and Information Systems Managers • Construction Managers • Cost Estimators • Economics Teachers, Postsecondary • Economists • First-Line Supervisors/Managers of Mechanics, Installers, and Repairers • First-Line Supervisors/Managers of Office and Administrative Support Workers 	<ul style="list-style-type: none"> • First-Line Supervisors/Managers of Production and Operating Workers • General and Operations Managers • Industrial Production Managers • Logisticians • Management Analysts • Managers • Market Research Analysts • Operations Research Analysts • Public Relations Managers 	<ul style="list-style-type: none"> • Public Relations Specialists • Purchasing Managers • Sales Managers • Social and Community Service Managers • Survey Researchers • Transportation, Storage, and Distribution Managers
Business Information Management	<ul style="list-style-type: none"> • Accountants and Auditors • Billing and Posting Clerks and Machine Operators • Bookkeeping, Accounting, and Auditing Clerks 	<ul style="list-style-type: none"> • Brokerage Clerks • Budget Analysts • Business Teachers, Postsecondary • Credit Analysts • Financial Analysts • Financial Examiners • Financial Managers 	<ul style="list-style-type: none"> • Gaming Cage Workers • Managers • Mathematical Science Teachers, Postsecondary • Natural Sciences Managers 	<ul style="list-style-type: none"> • Payroll and Timekeeping Clerks • Statistical Assistants • Statisticians • Tax Examiners, Collectors, and Revenue Agents • Tax Preparers
Human Resources Management	<ul style="list-style-type: none"> • Business Teachers, Postsecondary • Compensation, Benefits, and Job Analysis Specialists 	<ul style="list-style-type: none"> • Employment, Recruitment, and Placement Specialists • Human Resources Managers 	<ul style="list-style-type: none"> • Human Resources, Training, and Labor Relations Specialists 	<ul style="list-style-type: none"> • Training and Development Specialists
Operations Management	<ul style="list-style-type: none"> • Computer and Information Systems Managers • Computer Programmers 	<ul style="list-style-type: none"> • Computer Specialists • Database Administrators 	<ul style="list-style-type: none"> • Engineering Teachers, Postsecondary • Natural Sciences Managers 	<ul style="list-style-type: none"> • Operations Research Analysts
Administrative Support	<ul style="list-style-type: none"> • Cargo and Freight Agents • Correspondence Clerks • Court, Municipal, and License Clerks • Customer Service Representatives • Data Entry Keyers • Executive Secretaries and Administrative Assistants • File Clerks • Financial, Information, and Record Clerks 	<ul style="list-style-type: none"> • Human Resources Assistants, Except Payroll and Timekeeping • Insurance Claims and Policy Processing Clerks • Interviewers, Except Eligibility and Loan • Mail Clerks and Mail Machine Operators, Except Postal Service • Office and Administrative Support Workers • Office Clerks, General 	<ul style="list-style-type: none"> • Office Machine Operators, Except Computer • Order Clerks • Postal Service Clerks • Postal Service Mail Carriers • Postal Service Mail Sorters, Processors, and Processing Machine Operators • Procurement Clerks • Receptionists and Information Clerks 	<ul style="list-style-type: none"> • Secretaries, Except Legal, Medical, and Executive • Shipping, Receiving, and Traffic Clerks • Switchboard Operators, Including Answering Service • Telephone Operators • Weighers, Measurers, Checkers, and Samplers, Recordkeeping • Word Processors and Typists



Career Spotlight

Name: Roderick V. Jones II

Occupation: Front Desk Manager, Raleigh Marriott Crabtree Valley Hotel

Creating Wonderful Memories for Customers



Roderick V. Jones, II is the Front Desk Manager at the Raleigh Marriott Crabtree Valley Hotel. Originally, Roderick had planned for a career in Web design, although he was already working for Marriott as a result of attending a job fair and completing a mock interview.

Computers had always been his passion, but he kept working to pay the bills while studying Web design at Wake Technical Community College. During his education, he learned skills that have continued to help him advance in the hotel industry. When he completed his program, he realized that he was already pursuing the career that he loves.

Roderick states, “Although I enjoy designing Web sites and Web graphics, my first love will always be hospitality. I have the opportunity every day to create wonderful memories for customers I encounter.”

With a few more courses at Wake Tech, Roderick will soon complete his associate degree in Hospitality. No matter how far he rises in the hotel industry, he will always have a second career upon which he can fall back.

Did You Know?

Nationally, the service-producing industries are the best places to start when looking for a job. According to the Bureau of Labor Statistics, they are expected to account for approximately 15.7 million new wage and salary jobs generated over the 2006 – 2016 period. Several of these jobs would be classified as business management and administration careers, including:

- Accountants and auditors
- Computer and information systems managers
- Computer systems analysts
- Database administration professionals
- Financial analysts
- Management analysts

Among these careers, accountants, and auditors are expected to experience a 17.7 percent growth in employment from 2006 to 2016, and management analysts are expected to experience a 21.9 percent growth in employment during the same time period. Employment of financial analysts is projected to grow by 41 percent during the time period between 2006 – 2016.

For more information about these industries and related jobs, go to <http://www.bls.gov/oco/oco2003.htm>.

BUSINESS DATA

Accountants: <http://www.aicpa.org/Becoming+a+CPA> and <http://www.startheregoplaces.com>

Administrative professionals: <http://www.iaap-hq.org>

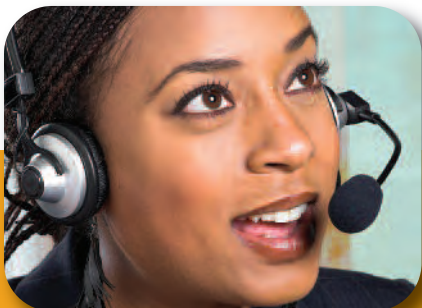
Business Professionals of America: <http://www.bpa.org>

DECA: <http://www.deca.org>

Future Business Leaders of America: <http://www.fbla-pbl.org>

Human resources professionals: <http://www.shrm.org>

Project managers: <http://www.pmi.org>



Selected Careers

Occupation	Career Pathway(s)	Job Description	
Compensation, Benefits, and Job Analysis Specialists	Human Resources Management	Conduct programs of compensation and benefits and job analysis for employer. May conduct position classification and pension programs.	
Customer Service Representatives	Administrative Support	Interact with customers in response to inquiries about products and services and handle and resolve complaints.	
Employment, Recruitment, and Placement Specialists	Human Resources Management	Recruit and place workers.	
Executive Secretaries and Administrative Assistants	Administrative Support	Provide high-level administrative support by conducting research, preparing reports, handling information requests, and preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings.	
Financial Analysts	Business Information Management	Conduct quantitative analyses of information affecting investment programs of public or private institutions.	
Public Relations Managers	General Management	Plan and direct public relations programs designed to create and maintain a favorable public image for employer or client or if engaged in fundraising, plan and direct activities to solicit and maintain funds for special projects and nonprofit organizations.	
Statisticians	Business Information Management	Engage in the development of mathematical theory or apply statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information.	
Training and Development Specialists	Human Resources Management	Conduct training and development programs for employees.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$17.38/ 36,155	\$24.90/ 51,798	180	22.3	Bachelor's degree	✓	✓	✓
	\$9.94/ 20,674	\$14.51/ 30,187	3,891	24.8	Moderate-term on-the-job training			✓
	\$13.50/ 28,085	\$23.05/ 47,941	298	24.6	Bachelor's degree	✓	✓	✓
	\$12.79/ 26,599	\$17.31/ 36,012	1,977	18.6	Moderate-term on-the-job training			✓
	\$23.76/ 49,420	\$34.18/ 71,103	263	26.4	Bachelor's degree	✓	✓	✓
	\$24.16/ 50,250	\$40.77/ 84,808	84	20.2	Bachelor's degree or higher plus work experience	✓	✓	
	\$22.23/ 46,235	\$33.93/ 70,582	40	22.6	Master's degree	✓	✓	
	\$15.92/ 33,111	\$24.41/ 50,767	279	19.4	Bachelor's degree	✓	✓	✓

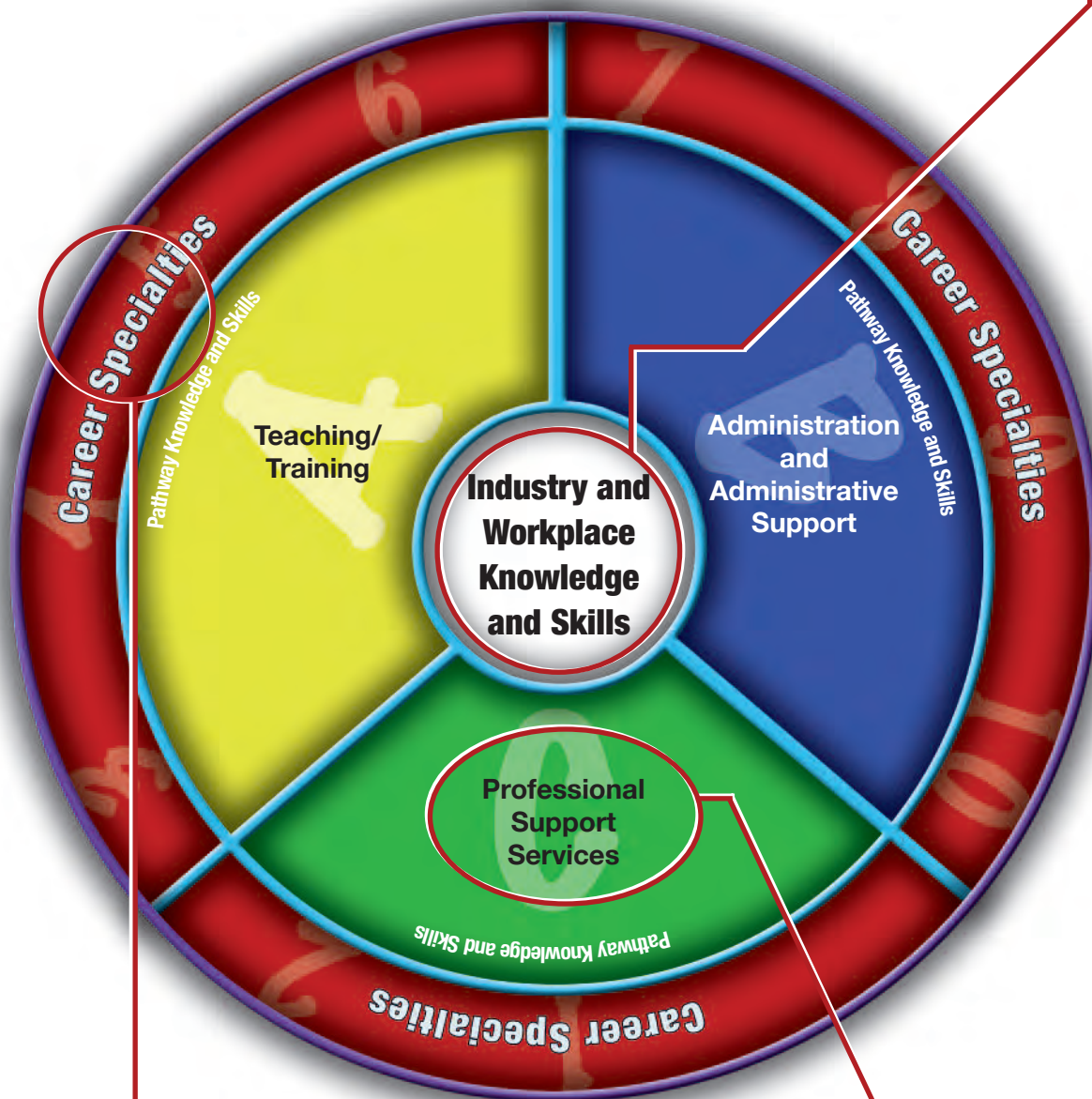
NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Planning, managing, and providing education and training services, and related learning support services.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations		
Administration and Administrative Support	<ul style="list-style-type: none"> • Coaches and Scouts • Education Administrators • Education Administrators, Elementary and Secondary School 	<ul style="list-style-type: none"> • Education Administrators, Postsecondary • Education Administrators, Preschool and Child Care Center/Program 	<ul style="list-style-type: none"> • Fitness Trainers and Aerobics Instructors • Instructional Coordinators • Recreation and Fitness Studies Teachers, Postsecondary
Professional Support Services	<ul style="list-style-type: none"> • Educational, Vocational, and School Counselors • Librarians • Library Assistants, Clerical 	<ul style="list-style-type: none"> • Library Science Teachers, Postsecondary • Library Technicians 	<ul style="list-style-type: none"> • Postsecondary Teachers
Teaching/Training	<ul style="list-style-type: none"> • Adult Literacy, Remedial Education, and GED Teachers and Instructors • Agricultural Sciences Teachers, Postsecondary • Architecture Teachers, Postsecondary • Athletes and Sports Competitors • Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary • Business Teachers, Postsecondary • Coaches and Scouts • Criminal Justice and Law Enforcement Teachers, Postsecondary • Dietitians and Nutritionists • Education Teachers, Postsecondary • Elementary School Teachers, Except Special Education • Engineering Teachers, Postsecondary 	<ul style="list-style-type: none"> • English Language and Literature Teachers, Postsecondary • Environmental Science Teachers, Postsecondary • Fitness Trainers and Aerobics Instructors • Foreign Language and Literature Teachers, Postsecondary • Forestry and Conservation Science Teachers, Postsecondary • Geography Teachers, Postsecondary • Health Specialties Teachers, Postsecondary • Historians • Home Appliance Repairers • Instructional Coordinators • Interpreters and Translators • Kindergarten Teachers, Except Special Education • Librarians 	<ul style="list-style-type: none"> • Library Science Teachers, Postsecondary • Middle School Teachers, Except Special and Vocational Education • Postsecondary Teachers • Preschool and Kindergarten Teachers • Preschool Teachers, Except Special Education • Psychology Teachers, Postsecondary • Recreation and Fitness Studies Teachers, Postsecondary • Recreation Workers • Secondary School Teachers, Except Special and Vocational Education • Self-Enrichment Education Teachers • Social Work Teachers, Postsecondary • Special Education Teachers, Middle School





Have You Considered Teaching?

No matter what your interests, there is a teaching position that incorporates your favorite activities. Do you like to work on cars? Consider teaching automotive service technology to high school students. Perhaps you have a passion for reading or writing. Consider a career as an English teacher. The possibilities are endless provided that you are willing to complete a four-year degree in education and pass a few credentialing tests.

Many resources are available to assist potential teachers in achieving their educational goals and to reduce the financial strain of higher education. Qualifying students can receive need-based federal Pell Grants, which do not have to be repaid, and student loans, which are paid back after you graduate from college. Additional financial aid is available for potential teachers through fellowships, scholarships, and loan forgiveness. College

admissions counselors can help you find the funding source that is right for you.

Preparing for a Career in Teacher Education

North Carolina's teachers are required to meet several criteria before they are able to enter the classroom as licensed teachers. First, an education degree from an accredited four-year college or university is required. Forty-seven colleges and universities in North Carolina are accredited and approved to offer degrees in teacher education.

To help reduce the cost of a four-year degree, many students are choosing to complete all or at least a portion of their first two years of college through enrollment at a community college or through a high school-community college partnership program. These programs allow students to take many of the more general courses at community college prices,

or in the case of high school-community college partnership programs, the courses could be tuition-free.

Additionally, some universities participate in "2+2" programs that allow students to complete their first two years at the community college while also completing courses that count toward both a two-year and a four-year degree. Upon completion of the first two years, some colleges and universities then make many of the remaining courses available through distance learning on the community college campus. In other words, these programs make it possible to achieve a bachelor's degree without ever leaving the community college campus.

Usually in the third and fourth years of an education degree, prospective teachers must participate in teacher observation, field experience, and student teaching, all of which take place on K-12 campuses. Teacher

observation is simply spending time in a K-12 classroom observing classes being taught by a licensed teacher. Field experience involves actually teaching students for segments of the school day. Student teaching is a semester-long period where the prospective teacher actually teaches class under the supervision of a licensed teacher.

Throughout the final two years of the degree program, potential teachers must also pass a series of standardized tests. A portion of the tests is universal to all teaching fields, and other portions are specific to the prospective teacher's area of specialty.

The United States is experiencing a severe teacher shortage. During the 2006-2007 school year alone, North Carolina's school districts hired 10,695 teachers who were first-year teachers, teachers returning to teaching, or people who were teaching in other states. This one year of new hires represents over 10 percent of all the teachers employed in our state. As a result, nearly every school system in the state is searching beyond its borders to ensure that each classroom is staffed with highly qualified professionals. As North Carolina's population grows, so does its need for more teachers.

As you chart your educational path, please consider whether teaching is the right choice for you. If your goal is to inspire the next generation of leaders, teaching is a great way to touch the future.

Financial Assistance for Prospective Teachers

Many opportunities are available to help future teachers offset the cost of higher education.

North Carolina Teaching Fellows Program

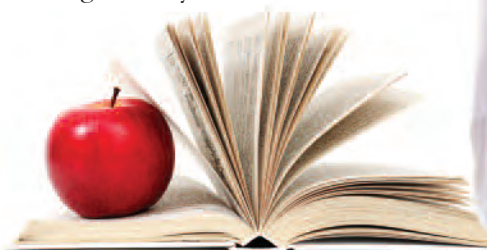
The Teaching Fellows Program provides a scholarship for four years to 500 outstanding North Carolina high school seniors. Recipients must be legal residents of North Carolina for tuition purposes and must meet the 12-month, in-state residency requirement. Upon acceptance of the scholarship, the student agrees to teach for four years following graduation from college in one of North Carolina's public schools

or United States government schools in North Carolina. A recipient who cannot repay the scholarship through service must repay the loan to the State at 10 percent interest.

During the 2007-2008 school year, Teaching Fellows' graduates were employed in 98 of North Carolina's 100 counties.

For more information, please visit <http://www.teachingfellows.org/>.

Other programs, including federal student loan forgiveness and campus-specific scholarships, are available for prospective teachers. For more information on these opportunities, please contact the financial aid office at the colleges or universities that you are interested in attending.



Career Spotlight

Name: Jennifer Taylor

Occupation: Teacher's Assistant

Educator Leads Children in Song

Jennifer Taylor's seven-year old daughter, Shana, loves to play with bubbles and sing silly songs when she takes a bath. So Taylor chose to write about her daughter's experiences in the bathtub when she had to write a poem for a Language and Literacy Exploration class.

The class was part of the Early Childhood Teacher Associate Program at Beaufort County Community College in Washington, North Carolina, where Taylor earned her degree in 2005. While there, she took extra courses to prepare her to earn a bachelor's degree in education.

"I've always loved teaching," Taylor said, "and I've always loved kids, so I knew this is what I wanted to do with my life."

In fact, Taylor taught music at the First Christian Church preschool before returning to school. She and her husband, Shane, a local mail carrier, felt it was important that Taylor stay home until their children reached school age. Then she returned to the work force and began to pursue her dream of becoming a teacher.

Now a teacher's assistant at Eastern Elementary School in Washington, Taylor turned that poem she wrote into *A Silly Song for the Bathtub*, and, with the help of her family and friends, she recorded *Playtime*,



a compact disc of children's songs. She often uses her musical skills in class, bringing her guitar with her each Friday to lead the children in song.

Taylor said she was drawn to early childhood education because she has always wanted to make a difference in the lives of children.

These future teachers are extremely busy balancing family, work, and school, yet they are still driven to better the communities in which they live by serving as educators.

There are many community-oriented students like her who are enrolled in early childhood education programs in North

Carolina, both at high school and community college levels. In the secondary Early Childhood Education program, students have the opportunity to work as interns in child care centers and other early childhood settings. Many complete the program and go directly to work as lead teachers, while others go to college to prepare to become elementary teachers. Whether their career paths involve secondary or community college programs of study, or more often a combination of the two, these future teachers become extremely busy balancing family, work, and school; yet they are still driven to better the communities in which they live by filling local positions with qualified, dedicated workers.

Did You Know?

Educational services is the nation's second largest industry, and retirements will create many openings. Nationally, the following occupations are expected to grow by at least 10 percent over the next 10 years:

- Adult literacy, remedial education, and GED teachers and instructors
- Child care workers
- Coaches and scouts
- Computer specialists
- Educational, vocational, and school counselors
- Elementary school teachers, except special education
- Instructional coordinators
- Kindergarten teachers, except special education
- Middle school teachers, except special and vocational education
- Postsecondary administrators
- Postsecondary teachers
- Preschool teachers, except special education
- Registered nurses
- Self-enrichment education teachers
- Special education teachers, middle school
- Special education teachers, preschool, kindergarten, and elementary school

For more information, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cgs034.htm>.

CAREER RESEARCH

Career and Technical educators: <http://www.acteonline.org>

Early childhood educators: <http://www.naeyc.org>

Middle school principals and teachers: <http://www.nmsa.org>

School counselors: <http://www.schoolcounselor.org>

School principals: <http://www.naesp.org> and <http://www.nassp.org>

Science teachers: <http://www.nsta.org> and <http://careers.nsta.org/>

Special education teachers: <http://www.special-ed-careers.org>

Teacher organizations: <http://www.aft.org> and <http://www.nea.org>





Selected Careers

Occupation	Career Pathway(s)	Job Description	
Adult Literacy, Remedial Education, and GED Teachers and Instructors	Teaching/ Training	Teach or instruct out-of-school youths and adults in remedial education classes, preparatory classes for the General Educational Development test, literacy, or English as a Second Language. Teaching may or may not take place in a traditional educational institution.	
Education Administrators, Postsecondary	Administration and Administrative Support	Plan, direct, or coordinate research, instructional, student administration and services, and other educational activities at universities, colleges, and junior and community colleges.	
Education Administrators, Preschool and Child Care Center/Program	Administration and Administrative Support	Plan, direct, or coordinate the academic and nonacademic activities of preschool and child care centers or programs.	
Educational, Vocational, and School Counselors	Professional Support Services	Counsel individuals and provide group educational and vocational guidance services.	
Fitness Trainers and Aerobics Instructors	Administration and Administrative Support; Teaching/Training	Instruct or coach groups or individuals in exercise activities and the fundamentals of sports. Demonstrate techniques and methods of participation. Observe participants and inform them of corrective measures needed to improve skills.	
Kindergarten Teachers, Except Special Education	Teaching/ Training	Teach elemental natural and social science, personal hygiene, music, art, and literature to children from 4 to 6 years old. Promote physical, mental, and social development. May be required to hold state certification.	
Library Technicians	Professional Support Services	Assist librarians by helping readers in the use of library catalogs, databases, and indexes to locate books and other materials, and by answering questions that require only brief consultation of standard reference. Compile records, sort and shelve books, remove or repair damaged books, register patrons, and check materials in and out of the circulation process. Replace materials in shelving area (stacks) or files. Includes drivers who operate bookmobiles or light trucks that pull trailers to specific locations on a predetermined schedule and assist with providing services in mobile libraries.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$14.08/ 29,283	\$18.69/ 38,884	118	20.5	Bachelor's degree	✓	✓	✓
	\$21.00/ 43,683	\$36.79/ 76,521	239	22.3	Bachelor's degree or higher plus work experience	✓	✓	✓
	\$13.33/ 27,719	\$18.54/ 38,569	104	25.7	Bachelor's degree or higher plus work experience	✓	✓	✓
	\$16.12/ 33,526	\$21.80/ 45,337	214	18.8	Master's degree	✓	✓	✓
	\$8.36/ 17,399	\$13.98/ 29,082	247	25.4	One - two years of college			✓
	\$13.35/ 27,777	\$18.31/ 38,080	197	23.8	Bachelor's degree	✓	✓	✓
	\$10.53/ 21,892	\$13.98/ 29,076	196	16.6	Short-term on-the-job training			✓
NOTES 5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.								

Selected Careers

Occupation	Career Pathway(s)	Job Description	
Middle School Teachers, Except Special & Vocational Education	Teaching/ Training	Teach students in public or private schools in one or more subjects at the middle, intermediate, or junior high level, which falls between elementary and senior high school as defined by applicable State laws and regulations.	
Preschool Teachers, Except Special Education	Teaching/ Training	Instruct children (normally up to age 5) in activities to promote social, physical, and intellectual growth needed for primary school in preschool, day care center, or other child development facility.	
Special Education Teachers, Middle School	Teaching/ Training	Teach middle school subjects to educationally and physically handicapped students. Includes teachers who specialize and work with audibly and visually handicapped students and those who teach basic academic and life processes skills to the mentally impaired.	
Special Education Teachers, Preschool, Kindergarten, & Elementary School	Teaching/ Training	Teach elementary and preschool school subjects to educationally and physically handicapped students.	
NOTES (Source: North Carolina Employment Security Commission) 1. The average annual salary may vary in different service areas across the state. 2. This includes full-time and part-time employees. 3. Requires a minimum of an associate degree. 4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.			



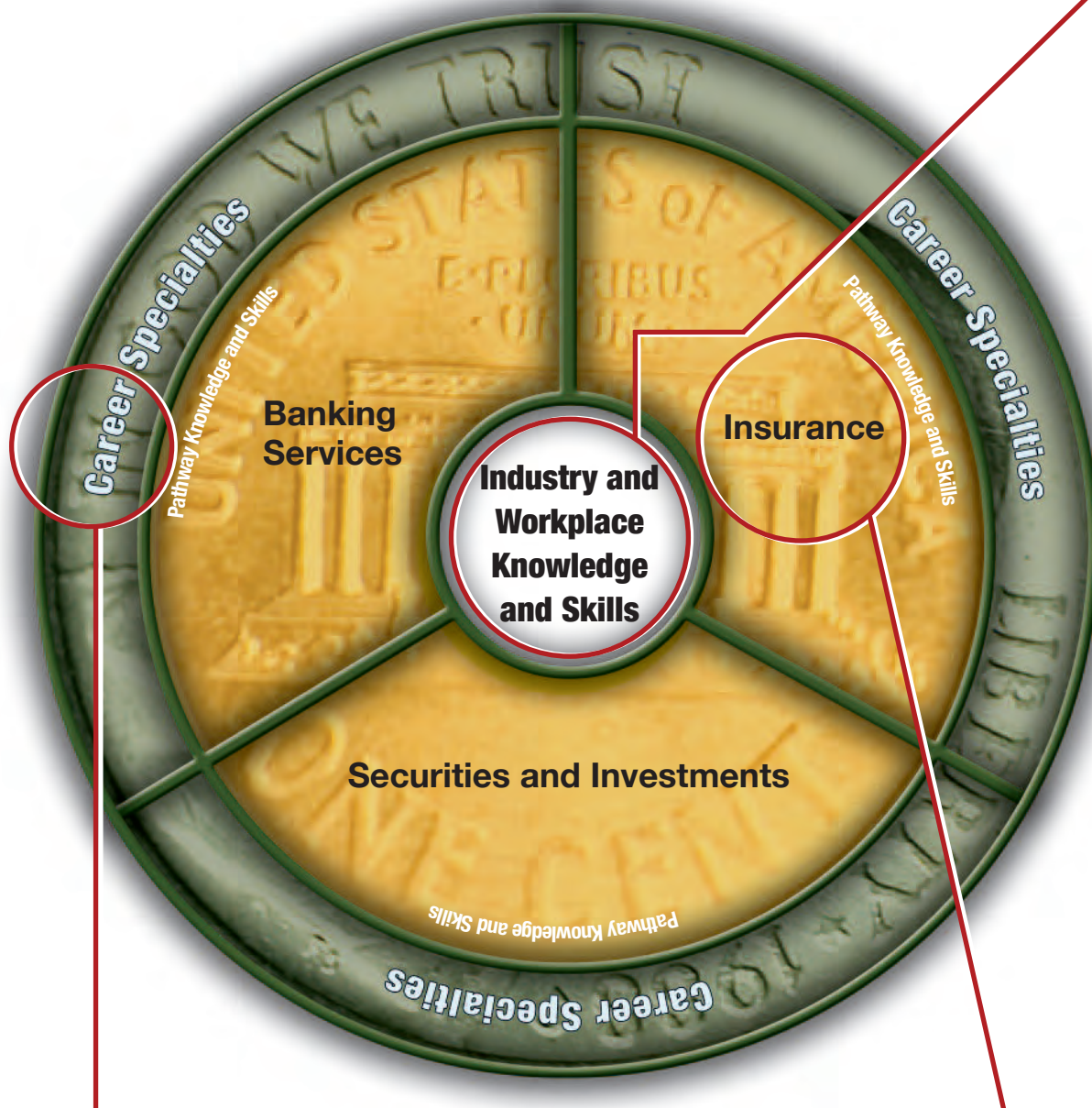
	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$13.40/ 27,876	\$18.78/ 39,057	880	19.6	Bachelor's degree	✓	✓	✓
	\$7.65/ 15,913	\$10.18/ 21,173	895	28.4	One - two years of college			✓
	\$14.32/ 29,782	\$19.44/ 40,439	145	24.0	Bachelor's degree	✓	✓	✓
	\$14.89/ 30,975	\$19.61/ 40,795	398	27.2	Bachelor's degree	✓	✓	✓
NOTES 5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.								





Planning, services for financial and investment planning, banking, insurance, and business financial management.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Securities and Investments	<ul style="list-style-type: none"> • Budget Analysts • Business Teachers, Postsecondary • Credit Analysts 	<ul style="list-style-type: none"> • Financial Analysts • Financial Managers • Financial Specialists • Loan Counselors 	<ul style="list-style-type: none"> • Loan Officers • Personal Financial Advisors 	<ul style="list-style-type: none"> • Securities, Commodities, and Financial Services Sales Agents
Banking Services	<ul style="list-style-type: none"> • Bill and Account Collectors • Credit Authorizers, Checkers, and Clerks 	<ul style="list-style-type: none"> • Loan Counselors • Loan Interviewers and Clerks 	<ul style="list-style-type: none"> • New Accounts Clerks • Tellers 	
Insurance	<ul style="list-style-type: none"> • Actuaries • Business Teachers, Postsecondary • Claims Adjusters, Examiners, and Investigators 	<ul style="list-style-type: none"> • Insurance Appraisers, Auto Damage • Insurance Sales Agents • Insurance Underwriters 	<ul style="list-style-type: none"> • Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products 	<ul style="list-style-type: none"> • Telemarketers



Career Spotlight

Name: Justin Hall

Occupation: Relationship Banker, Branch Banking and Trust Company

High School Programs Lead to a Career in Finance



Justin Hall was always interested in banking. While studying for a business administration degree at Southwestern Community College in Sylva, North Carolina, he concentrated primarily on the banking industry, but he remained flexible and explored many opportunities. While attending a campus job fair, he met with a representative from Branch Banking and Trust Company (BB&T). After an on-the-spot interview, he was hired before he even graduated.

Hall knew about the high job placement rates for students after

graduation, which was one reason he chose his educational pathway. “But it’s even better when you find employment before graduation,” Hall said. He has since completed his business degree and currently serves as the Relationship Banker at BB&T’s Sylva Office.

While he was a student at Smoky Mountain High School, Hall took Career and Technical Education (CTE) classes, which helped him get the foundational knowledge he would later use in his career. He also participated in the school’s New Century Scholars (NCS) program. The NCS program

is a partnership between public schools and Southwestern Community College.

Hall’s high school program included at least one CTE class each year, such as marketing, computer applications, and business. As an NCS student, Hall also took first-semester college classes at Southwestern, such as psychology and Western civilization.

Hall said that his participation in CTE classes and the NCS program prepared him for his career in finance.

Did You Know?

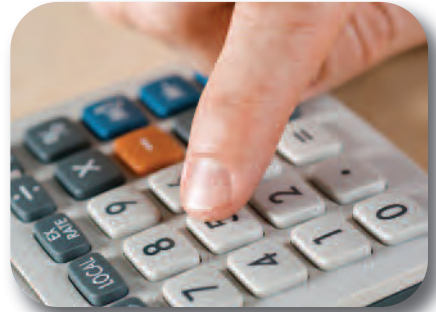
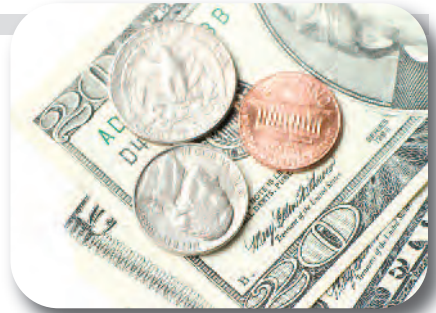
In North Carolina and across the nation, jobs are growing in the Finance Career Cluster in areas that include accounting, banking, insurance, and securities and investments.

In the banking industry, office and administrative support workers constitute two out of three jobs, and tellers account for about three out of 10 jobs, according to the *Career Guide to Industries*. High school Career and Technical Education provides needed skills. Good communication and customer service skills also are necessary for all occupations in the banking industry.

Many management positions in banking are filled by promoting experienced, technically skilled professional personnel who achieve various levels of certification. Typically, management, business, and financial positions require a bachelor's and sometimes a master's degree.

Similar kinds of education and skills are needed in the insurance industry and in the financial departments of corporations. However, top corporate financial jobs go to people with a bachelor's or a master's degree. Most workers in the securities and investment fields hold associate or bachelor's degrees.

For more information, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cg1006.htm>.



FINANCIAL CAREER INFORMATION

Actuarial Careers: <http://www.beanactuary.org>

American Institute of Certified Public Accountants: <http://www.aicpa.org>

(click on "Career Development and Workplace Issues"); also

<http://www.startheregoplaces.com>

American Statistical Association: <http://www.amstat.org/careers/>

Business Professionals of America: <http://www.bpa.org>

DECA: <http://www.deca.org>

Family, Career and Community Leaders of America (FCCLA): <http://www.fccla.com>

Future Business Leaders of America: <http://www.fbla-pbl.org>



Selected Careers

Occupation	Career Pathway(s)	Job Description	
Budget Analysts	Securities and Investments	Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports for the purpose of maintaining expenditure controls.	
Claims Adjusters, Examiners, and Investigators	Insurance	Investigate, analyze, and determine the extent of insurance company's liability concerning personal, casualty, or property loss or damages, and attempt to effect settlement with claimants.	
Financial Managers	Securities and Investments	Plan, direct, and coordinate accounting, investing, banking, insurance, securities, and other financial activities of a branch, office, or department of an establishment.	
Insurance Sales Agents	Insurance	Sell life, property, casualty, health, automotive, or other types of insurance. May refer clients to independent brokers, work as an independent broker, or be employed by an insurance company.	
Insurance Underwriters	Insurance	Review individual applications for insurance to evaluate degree of risk involved and determine acceptance of applications.	
Loan Officers	Securities and Investments	Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers on financial status and methods of payments.	
Personal Financial Advisors	Securities and Investments	Advise clients on financial plans; uses expertise in tax and investment strategies, securities, insurance, pension plans, and real estate. Duties include assessing clients' assets, liabilities, cash flow, insurance coverage, tax status, and financial objectives.	
Securities, Commodities, and Financial Services Sales Agents	Securities and Investments	Buy and sell securities in investment and trading firms. Provide financial services and counseling. May advise securities customers about stocks, bonds, and market conditions.	
Tellers	Banking Services	Receive and pay out money. Keep records of money and negotiable instruments involved in a financial institution's transactions.	

NOTES (Source: North Carolina Employment Security Commission)

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2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$19.78/ 41,145	\$28.45/ 59,176	29	13.4	Bachelor's degree	✓	✓	
	\$16.00/ 33,281	\$25.35/ 52,737	261	15.6	Long-term on-the-job training		✓	
	\$28.55/ 59,385	\$48.10/ 100,044	574	13.9	Bachelor's degree or higher plus work experience	✓	✓	
	\$11.14/ 23,170	\$24.61/ 51,195	491	19.1	Bachelor's degree	✓	✓	✓
	\$16.63/ 34,587	\$26.34/ 54,793	112	10.9	Bachelor's degree	✓	✓	
	\$16.13/ 33,561	\$25.18/ 52,371	281	12.7	Bachelor's degree	✓	✓	
	\$19.70/ 40,976	\$32.25/ 67,075	256	30.9	Bachelor's degree	✓	✓	✓
	\$20.99/ 43,650	\$42.57/ 88,551	247	18.9	Bachelor's degree	✓	✓	✓
	\$9.85/ 20,490	\$11.40/ 23,703	1,076	23.0	Short-term on-the-job training			✓

NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



*Government & Public
Administration*

Executing governmental functions to include Governance; National Security; Foreign Service; Planning; Revenue and Taxation; Regulation; and Management and Administration of the local, state, and federal levels.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Governance	<ul style="list-style-type: none"> • Administrative Services Managers • Chief Executives • Communications Teachers, Postsecondary • Eligibility Interviewers, Government Programs 	<ul style="list-style-type: none"> • Emergency Management Specialists • General and Operations Managers • Legislators • Managers • News Analysts, Reporters and Correspondents 	<ul style="list-style-type: none"> • Political Science Teachers, Postsecondary • Political Scientists • Postmasters and Mail Superintendents • Public Relations Specialists • Social and Community Service Managers 	<ul style="list-style-type: none"> • Surveying and Mapping Technicians • Transportation, Storage, and Distribution Managers
Planning	<ul style="list-style-type: none"> • Architecture Teachers, Postsecondary • Engineering Managers 	<ul style="list-style-type: none"> • Political Science Teachers, Postsecondary 	<ul style="list-style-type: none"> • Urban and Regional Planners 	
Revenue and Taxation	<ul style="list-style-type: none"> • Accountants and Auditors • Financial Examiners 	<ul style="list-style-type: none"> • Tax Examiners, Collectors, and Revenue Agents 	<ul style="list-style-type: none"> • Tax Preparers 	
Public Management and Administration	<ul style="list-style-type: none"> • Managers • Social and Community Service Managers 			



Career Spotlight

Name: Bill Geraty

Occupation: Officer, U.S. Navy Judge Advocate General's Corps

Paralegal Technology Student Achieves a Law Degree

In the late 1990s, while serving as a Marine at the Marine Corps Air Station in Cherry Point, North Carolina, Bill Geraty began his legal career in the Paralegal Technology program at Carteret Community College in Morehead City, North Carolina.

Continuing his education, Geraty recently completed law school, passed the bar exam, and was commissioned as an officer

in the U.S. Navy's Judge Advocate General Corps. The overall mission of the Office of the Judge Advocate General is to support the Judge Advocate General in providing legal and policy advice to the Secretary of the Navy.

Ensign Geraty, now stationed in Newport, Rhode Island, is a proud member of the Carteret Community College Alumni Association.



Did You Know?

Government jobs aren't just for politicians. Millions more professionals do the work of government. In fact, about 2 million people, in careers that span every Career Cluster, are federal government employees, according to the Bureau of Labor Statistics (<http://www.bls.gov/oco/cg/cgs041.htm>). Many of the following federal jobs are available in your state and locality as well:

Accountants, auditors
Aircraft mechanics, service technicians
Biological scientists
Business operations specialists
Compliance officers
Computer specialists
Conservation scientists, foresters
Construction, extraction occupations
Correctional officers, jailers
Detectives, criminal investigators
Drafters, engineering and mapping technicians
Electrical and electronic equipment mechanics, installers, and repairers
Engineers and engineering managers
Environmental scientists and geoscientists
Forest and conservation technicians
Inspectors, testers, sorters, samplers, weighers
Installation, maintenance and repair occupations
Judges, magistrates, lawyers, law clerks' and other judicial workers

Licensed practical and licensed vocational nurses
Management analysts
Management, business, and financial occupations
Natural sciences managers
Nursing aides, orderlies, attendants
Office and administrative support occupations
Physicians and surgeons
Police and sheriff's patrol officers
Production occupations
Professional and related occupations
Purchasing agents
Registered nurses
Secretaries
Service occupations
Tax examiners, collectors, and revenue agents
Transportation and material moving occupations



LOOKING FOR A GOVERNMENT JOB?

Many federal, state, county, and city government agencies have Web sites that list job opportunities. Search the following sites for government jobs in North Carolina and for jobs and student internships at the federal level:

- North Carolina Government Jobs: <http://www.osp.state.nc.us/jobs>
- Federal Government "e-Scholar" Programs: <http://www.studentjobs.gov/e-scholar.asp>
- Federal Government Student Jobs: <http://www.studentjobs.gov>
- USA Jobs: <http://www.usajobs.opm.gov>

Remember that most federal jobs are located in communities across the nation, so it's a wise idea to search the USA Jobs Web site.

Selected Careers

Occupation	Career Pathway(s)	Job Description	
Accountants and Auditors	Revenue and Taxation	Examine, analyze, and interpret accounting records for the purpose of giving advice or preparing statements. Install or advise on systems of recording costs or other financial and budgetary data.	
Administrative Services Managers	Governance	Plan, direct, or coordinate support services of an organization, such as recordkeeping, mail distribution, telephone operator/receptionist, and other office support services. May oversee facilities planning and maintenance and custodial operations.	
Engineering Managers	Planning	Plan, direct, or coordinate activities in such fields as architecture and engineering. May include research and development.	
General and Operations Managers	Governance	Plan, direct, or coordinate the operations of companies or public and private sector organizations. Includes formulating policies, managing daily operations, and planning use of materials and human resources.	
Public Relations Specialists	Governance	Engage in promoting or creating goodwill for individuals, groups, or organizations by writing or selecting favorable publicity material and releasing it through the media. May prepare and arrange displays, and make speeches.	
Surveying and Mapping Technicians	Governance	Perform surveying and mapping duties to obtain data used for construction, mapmaking, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data. May verify accuracy and completeness of topographical maps.	
Tax Examiners, Collectors, and Revenue Agents	Revenue and Taxation	Determine tax liability or collect taxes from individuals or business firms according to prescribed laws and regulations.	
Urban and Regional Planners	Planning	Develop comprehensive plans and programs for use of land and physical facilities of local jurisdictions, such as towns, cities, counties, and metropolitan areas.	

NOTES (Source: North Carolina Employment Security Commission)

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	\$18.78/ 39,061	\$28.59/ 59,467	1,049	16.4	Bachelor's degree	✓	✓	✓
	\$21.41/ 44,524	\$33.38/ 69,431	167	17.3	Bachelor's degree or higher plus work experience	✓	✓	✓
	\$36.85/ 76,651	\$54.23/ 112,804	215	14.5	Bachelor's degree or higher plus work experience	✓	✓	
	\$26.82/ 55,777	\$52.08/ 108,323	1,572	4.2	Bachelor's degree or higher plus work experience	✓	✓	
	\$15.28/ 31,790	\$24.42/ 50,801	132	19.2	Bachelor's degree	✓	✓	✓
	\$11.12/ 23,133	\$15.59/ 32,424	178	20.0	Moderate-term on-the-job training			✓
	\$13.97/ 29,050	\$21.70/ 45,127	65	11.6	Bachelor's degree	✓	✓	
	\$18.69/ 38,880	\$25.17/ 52,346	64	16.5	Master's degree	✓	✓	

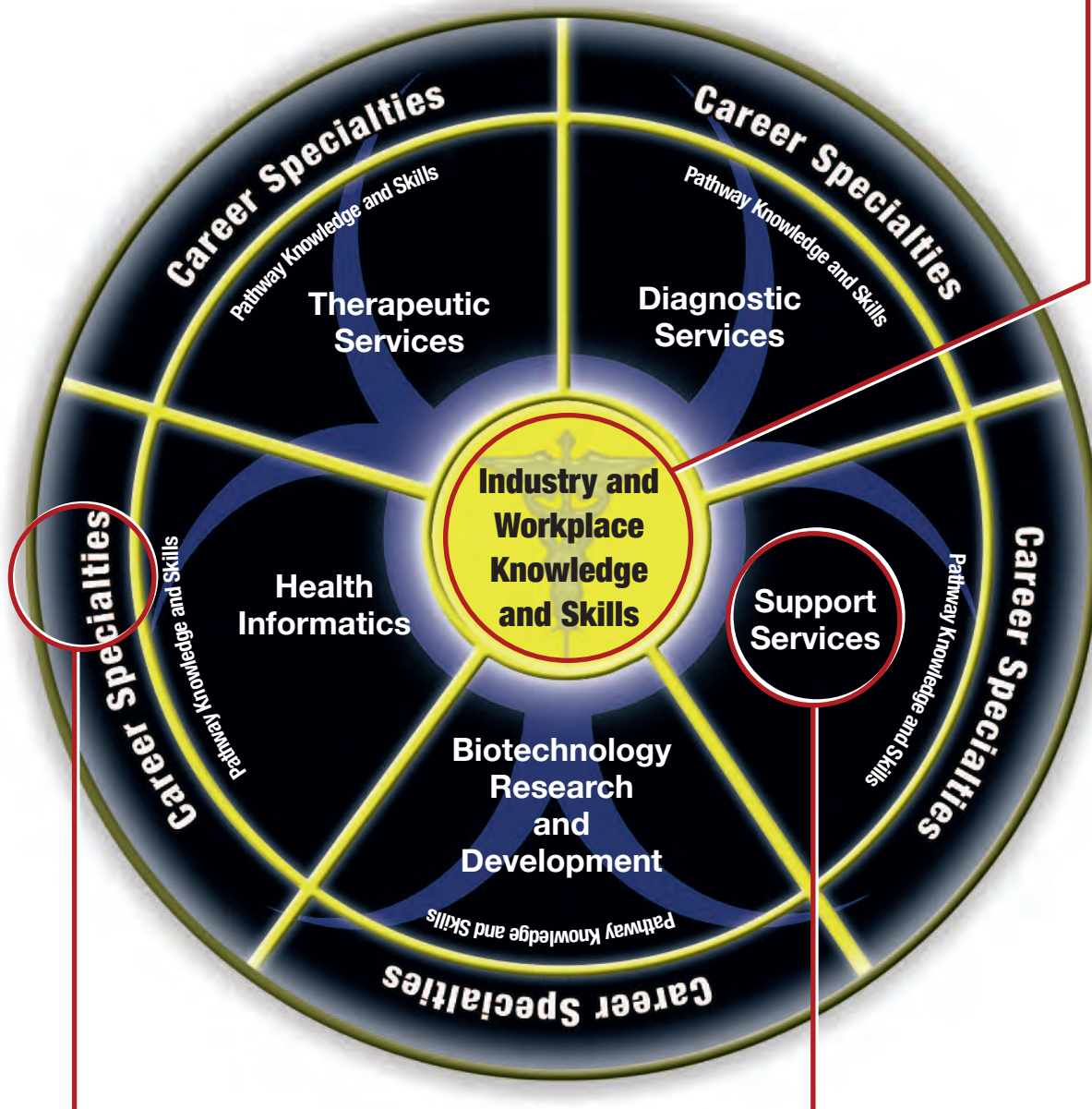
NOTES

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Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.

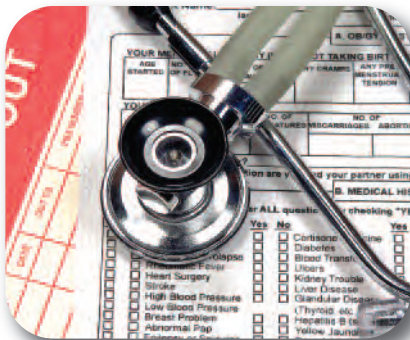


Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Therapeutic Services	<ul style="list-style-type: none"> Anesthesiologists Art, Drama, and Music Teachers, Postsecondary Audiologists Chiropractors Clinical, Counseling, and School Psychologists Community and Social Service Specialists Counselors Dental Assistants Dental Hygienists Dentists Diagnostic Medical Sonographers Dietetic Technicians Dietitians and Nutritionists Family and General Practitioners Health Diagnosing and Treating Practitioners Health Professionals and Technicians Health Specialties Teachers, 	<ul style="list-style-type: none"> Postsecondary Health Technologists and Technicians Healthcare Support Workers Home Health Aides Industrial-Organizational Psychologists Internists, General Licensed Practical and Licensed Vocational Nurses Life, Physical, and Social Science Technicians Massage Therapists Medical and Clinical Laboratory Technicians Medical and Health Services Managers Medical Equipment Preparers Medical Scientists, Except Epidemiologists Medical Secretaries Musicians and Singers Nuclear Medicine Technologists Nuclear Technicians 	<ul style="list-style-type: none"> Nursing Aides, Orderlies, and Attendants Nursing Instructors and Teachers, Postsecondary Obstetricians and Gynecologists Occupational Health and Safety Specialists and Technicians Occupational Therapist Aides Occupational Therapist Assistants Opticians, Dispensing Optometrists Pediatricians, General Pharmacists Pharmacy Aides Pharmacy Technicians Physical Therapist Aides Physical Therapist Assistants Physicians and Surgeons Podiatrists Psychiatric Aides 	<ul style="list-style-type: none"> Psychiatrists Psychologists Psychology Teachers, Postsecondary Radiologic Technologists and Technicians Registered Nurses Respiratory Therapists Social and Human Service Assistants Speech-Language Pathologists Substance Abuse and Behavioral Disorder Counselors Surgeons Therapists Veterinarians Veterinary Technologists and Technicians
Diagnostics Services	<ul style="list-style-type: none"> Ambulance Drivers and Attendants, Except Emergency Medical Technicians Athletic Trainers Cardiovascular Technologists and Technicians Diagnostic Medical Sonographers Emergency Medical Technicians and Paramedics Health Diagnosing and Treating Practitioners 	<ul style="list-style-type: none"> Health Professionals and Technicians Health Specialties Teachers, Postsecondary Health Technologists and Technicians Medical and Clinical Laboratory Technicians Medical and Clinical Laboratory Technicians Medical and Health Services Managers Medical Assistants 	<ul style="list-style-type: none"> Medical Equipment Preparers Medical, Dental, and Ophthalmic Laboratory Technicians Nuclear Medicine Technologists Nuclear Technicians Ophthalmic Laboratory Technicians Physical Scientists Physician Assistants Radiation Therapists 	<ul style="list-style-type: none"> Radiologic Technologists and Technicians Respiratory Therapy Technicians Surgical Technologists Veterinary Assistants and Laboratory Animal Caretakers
Health Informatics	<ul style="list-style-type: none"> Administrative Services Managers Claims Adjusters, Examiners, and Investigators Clinical, Counseling, and School Psychologists Communications Teachers, Postsecondary Computer and Information Scientists, Research Computer Programmers Computer Software Engineers, Applications Computer Support Specialists 	<ul style="list-style-type: none"> Dental Laboratory Technicians Editors Engineers Executive Secretaries and Administrative Assistants Fine Artists, Including Painters, Sculptors, and Illustrators First-Line Supervisors/Managers of Office and Administrative Support Workers Health Educators Health Specialties Teachers, Postsecondary 	<ul style="list-style-type: none"> Medical and Health Services Managers Medical Appliance Technicians Medical Assistants Medical Records and Health Information Technicians Medical Secretaries Medical Transcriptionists Mental Health Counselors Occupational Health and Safety Specialists and Technicians Occupational Therapists 	<ul style="list-style-type: none"> Orthotists and Prosthetists Physical Therapists Physicists Psychiatric Aides Psychiatric Technicians Public Relations Specialists Receptionists and Information Clerks Recreational Therapists Rehabilitation Counselors Substance Abuse and Behavioral Disorder Counselors Therapists
Support Services	<ul style="list-style-type: none"> Cooks, Institution and Cafeteria Dietetic Technicians 	<ul style="list-style-type: none"> Dietitians and Nutritionists Farm and Home Management Advisors 	<ul style="list-style-type: none"> First-Line Supervisors/Managers of Food Preparation and Serving Workers 	<ul style="list-style-type: none"> Food Batchmakers Home Economics Teachers, Postsecondary
Biotechnology Research and Development	<ul style="list-style-type: none"> Biological Scientists, All Other Computer Specialists, All Other 	<ul style="list-style-type: none"> Health Specialties Teachers, Postsecondary 	<ul style="list-style-type: none"> Natural Sciences Managers Pharmacists 	

A Career as a Health Care Professional



Did You Know?

In North Carolina and across the nation, the demands for workers in health care careers are great. If you learn and master the knowledge and skills required, you can find employment in 250-plus health care careers.

For more information about health care careers in North Carolina, go to <http://www.nchealthcareers.com> and the NC Hospital Association at <http://www.ncha.org>.

SITES TO EXPLORE

American Health Care Association: <http://www.ahca.org>

American Academy of Forensic Sciences: <http://www.aafs.org>

American Institute of Biological Sciences: <http://www.aibs.org>

Today's health care workers combine medical technology and the human touch, providing care around the clock and responding to the needs of millions of people – from newborns to the critically ill. As the population in North Carolina increases, the opportunities for health care professionals grow more numerous and continue to offer enormous personal satisfaction. Registered nurses, nursing assistants, dental care providers, physician assistants, and many allied health professionals now find themselves in high demand – not only in our state, but across the nation.

It's true that a lot of health professionals work directly with patients in need of care. There are, however, many careers in biomedical research, administration, and support services where your unique talents might also be suited. Whatever your interests, you most likely can apply them to some area of the health care industry. These jobs make a real difference in the lives of people and the well-being of whole communities.

As you research careers in health care and consider all your options for success, remember to tap into resources in your community. Talk with practitioners you know or those you meet. Ask your school counselor or teacher to help you with your investigation, and contact your regional AHEC (Area Health Education Center) for more information.

Allied Health?

Have you heard the term “allied health” and wondered what

it meant? It is easier to talk about people who are allied health care providers than to define the term. They are professionals who work in more than 200 health care disciplines in collaboration with licensed physicians, dentists, nurses, or chiropractors. In North Carolina, they constitute 37% of the health care work force. Overall, they comprise 60% of all health care providers in careers that include occupational therapists, physical therapists, radiologic technologists, respiratory therapists, speech-language pathologists, dental assistants, physician assistants, clinical laboratory scientists, medical assistants, health information managers, and a number of other health care disciplines. The vast majority of allied health careers involve direct, hands-on patient care.

The demand for allied health professions is likely to increase over time as the state's population continues to grow, and the median age increases. In fact, eight of the 10 fastest-growing occupations in the state, across all industries and all jobs, are allied health professions.

The Council for Allied Health in North Carolina represents more than 21,000 allied health professionals representing 29 professions. Since its inception in 1991, the council has worked to bring together the varied professions within the allied health arena. The council's major mission is to ensure the citizens of North Carolina access to a well-prepared, well-distributed allied health workforce that is representative of the diversity of our state's communities.

Check it out at www.alliedhealthcouncilNC.org. The Association of Schools of Allied Health Professions (www.asahp.org) lists the major universities that have allied health schools and programs in North Carolina and across the country.

Health Career Trends

You probably hear a lot about health care in the news or even in family conversations. Access to well-trained providers is important to communities, and the cost of that care is a huge concern to everyone. Once you understand what's going on in the health care industry, you can predict where the jobs will be when you are ready. There are several issues that impact North Carolina's health professionals, and many of these are national trends as well.

The Health Care Professional

Recent statistics show health care workers are in demand. So what does it take to get these good jobs? The typical health care professional has on-the-job experience, a compatible educational background, and a willingness to participate in ongoing education. These professionals are prepared to put in long hours when a crisis occurs, which can be quite often. Health care providers who work with patients are compassionate, service-oriented, and empathetic. Flexibility and good judgment are also crucial characteristics for the health care worker.

Financial strains and managed care are redefining the job responsibilities of some health professionals. It's common now for health care providers to develop multiple skills and work with interdisciplinary treatment teams to provide the best care at the most

efficient cost. In addition, physician assistants and nurse practitioners are taking more responsibility for patient care and extending physician resources. Multiskilled workers and midlevel practitioners can expect a booming job market.

The Patient

The population in North Carolina is changing dramatically. People are living longer – sometimes well into their 80s and 90s. Our state is also a popular place for retirement. The elderly population is typically a group with greater-than-average health care needs. As their numbers increase, so does the demand for health services – especially for

home health care, nursing, and personal care. Registered nurses, certified nursing assistants, physical therapists, occupational therapists, social workers, and other health professionals trained in geriatrics are needed to meet this demand.

Our state's rising Latino population is another major demographic trend affecting health care in the 21st century. Many hospitals, health departments, and individual practitioners are struggling now to overcome language barriers with their Spanish-speaking patients and are hiring medical translators to improve communication. In your career as a health professional, your



The Facts

- There are more than 11 million health care jobs in the U.S.
- The number of health care jobs is growing faster than jobs in almost any other industry.
- The number of health care jobs in North Carolina is projected to increase 3.2% annually.

Allied health professionals include people who:

- Perform X-rays, mammograms, MRIs, and other imaging services
- Perform lead and prostate cancer marker screenings
- Monitor individuals with liver disease, diabetes, and leukemia
- Provide speech, physical and occupational therapy
- Perform dental cleanings
- Provide emergency medical services (EMTs and paramedics)
- Dispense prescriptions (pharmacy technicians)
- Provide counseling services
- Code and manage medical records

familiarity with Spanish and other cultures and languages will increase your value to your employer, your community, and, most importantly, to your patients.

Patients also are becoming more informed consumers of health care. With greater use of the Internet and other media sources like television and magazines, patients know more about illnesses and treatments than ever before. It is not uncommon for patients to go to a medical provider with a diagnosis and treatment plan in mind. Sometimes patients find correct information in their research, and sometimes the information they find is misleading. Health care professionals must work with patients to assess their needs and provide the best treatment plan possible.

Alternative and Complementary Medicine

Patients are taking more and more personal responsibility for their health. Along with this development, less-traditional health care methods are becoming more popular with patients and more widely used among health care professionals. Alternative and complementary medicine may be used in addition to traditional treatments. Patients may investigate a variety of treatments such as acupuncture, stress management, homeopathic remedies, or massage therapy.

New Technology

Advances in technology change health care for the patient, the provider, and the industry. Technology puts information at the fingertips of practitioners

and patients, improves treatment options, and changes the way practitioners are educated. Thanks to special telehealth computer terminals, some patients receive care without having to leave their homes, regardless of their distance from a hospital.

Advances in medical technology continue to improve the survival rate of severely ill and injured patients who need extensive therapy. New technologies often lower the cost of treatment and diagnosis and also enable identification and treatment of conditions not previously treatable.

North Carolina Health
Careers 2008-2010 –
www.nchealthcareers.com

Career Spotlight

Name: Dominique Nicole Jones

Occupation: Public Health Advocate

CTE and FBLA Provide Health Advocate with Strong Leadership Skills

Dominique Nicole Jones recently graduated magna cum laude from North Carolina Central University (NCCU) in Durham, North Carolina, earning a Bachelor of Science degree in Health Education. Currently, she is pursuing a career in the public health field working as an advocate for the voiceless on health policy issues and social justice. Dominique actively works throughout the central region of North Carolina promoting awareness of STDs and HIV/AIDS and encouraging behavior change strategies to prevent these diseases among young adults and adolescents.

During high school and college, Jones was passionately involved in Future Business Leaders of America (FBLA) and in Career and Technical Education (CTE). At The William G. Enloe High School in Raleigh, North Carolina, where she graduated in 2004, Jones was FBLA's public relations officer in her junior year and president in her senior year. She also competed in the Public Speaking I and II event at the regional and state levels during her time in office. Her high school CTE classes included Keyboarding, Computer Applications I and II, Accounting I and II, Principles of Business and Personal Finance and E-commerce.

During the 2007 North Carolina FBLA State Leadership Conference in Greensboro, Jones presented a workshop entitled "You Are on Your Own." The workshop focused on using money management and effective communication skills to manage real-life scenarios that average college students face on a daily basis. In 2008, she assisted the FBLA State Advisor with the planning and preparing for the 2008 State Leadership Conference and managed the headquarters operation during the conference.

Jones' experiences, leadership opportunities and academic achievements in CTE and FBLA provided her with strong leadership skills and a level of dedication far beyond her years. CTE and FBLA also provided her with numerous opportunities to develop integrity, exceptional time management, teamwork and decision-making skills. Her past experiences have allowed her to travel internationally to Hong Kong, Tokyo, and Ghana, West Africa, to study abroad. Jones also was selected as a Thurgood Marshall Scholarship Fund Leadership Institute Scholar in 2007, inducted into the national health education honor society Eta Sigma Gamma, and served as president of a collegiate student organization that promotes HIV/AIDS awareness

and prevention to fellow college students and the local community.



Selected Careers

Occupation	Career Pathway(s)	Job Description	
Dental Hygienists	Therapeutic Services	Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop X-rays, or apply fluoride or sealants.	
Medical Assistants	Health Informatics; Diagnostics Services	Perform administrative and clinical duties under direction of physician: scheduling appointments, maintaining medical records, billing and coding for insurance purposes, taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed.	
Medical Records and Health Information Technicians	Health Informatics	Compile, process, and maintain medical records of hospital and clinic patients per regulatory requirements. Process, maintain, compile, and report patient information for health requirements and standards.	
Physical Therapist Assistants	Therapeutic Services	Assist physical therapists in providing treatments and procedures. May assist in developing treatment plans, carry out routine actions, document progress, and modify treatments according to patient status and within scope of treatment plans established by a physical therapist.	
Physical Therapists	Health Informatics	Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and decrease or prevent deformity of patients suffering from disease or injury.	
Physician Assistants	Diagnostics Services	Provide services typically performed by a physician, under the supervision of a physician. Conduct physicals, provide treatment, and counsel patients. May prescribe medication. Must graduate from an accredited educational program for physician assistants.	
Radiologic Technologists and Technicians	Diagnostics Services; Therapeutic Services	Take X-rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes.	
Registered Nurses	Therapeutic Services	Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. May advise patients on health maintenance and disease prevention or provide case management.	
Veterinarians	Therapeutic Services	Diagnose and treat diseases and dysfunctions of domestic pets and/or farm animals.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$23.06/ 47,962	\$28.99/ 60,290	270	32.1	Associate degree	✓	✓	✓
	\$10.07/ 20,951	\$12.87/ 26,769	581	40.8	Moderate-term on-the-job training			✓
	\$9.92/ 20,642	\$13.70/ 28,501	290	26.2	Associate degree	✓		✓
	\$17.13/ 35,634	\$21.96/ 45,669	122	39.7	Associate degree	✓	✓	✓
	\$26.60/ 55,318	\$34.32/ 71,388	209	32.9	Master's degree	✓	✓	✓
	\$31.63/ 65,785	\$37.86/ 78,759	164	35.0	Bachelor's degree	✓	✓	✓
	\$18.51/ 38,492	\$23.58/ 49,044	246	20.9	Associate degree	✓	✓	✓
	\$20.80/ 43,269	\$26.88/ 55,920	3,820	27.9	Associate degree	✓	✓	✓
	\$24.74/ 51,452	\$41.03/ 85,345	121	34.8	First professional degree	✓	✓	✓

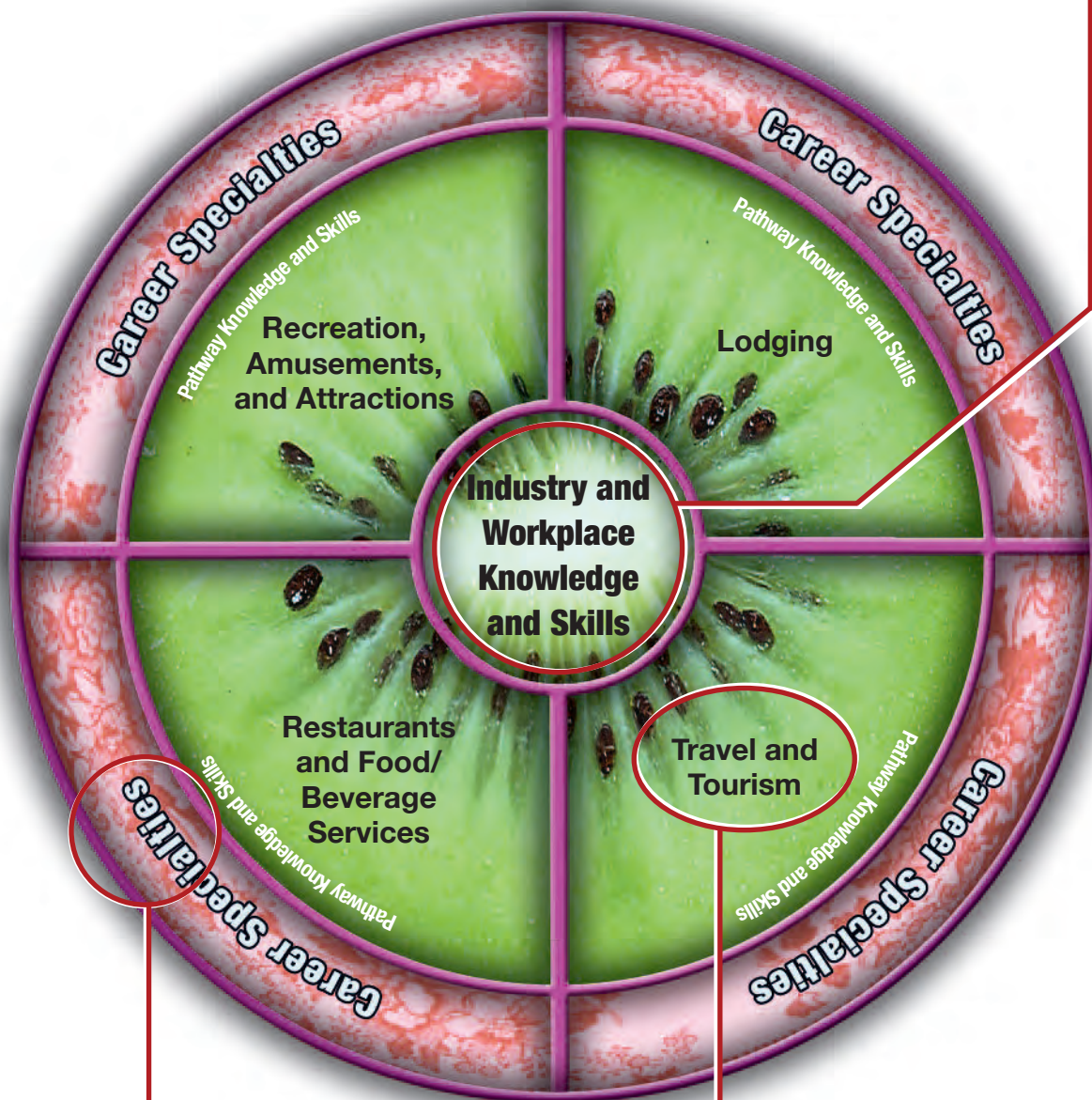
NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Hospitality & Tourism encompasses the management, marketing, and operations of restaurants and other food services, lodging, attractions, recreation events, and travel-related services.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Restaurants and Food/Beverage Services	<ul style="list-style-type: none"> • Bakers • Bartenders • Butchers and Meat Cutters • Chefs and Head Cooks • Combined Food Preparation and Serving Workers, Including Fast Food • Cooks • Cooks, Fast Food 	<ul style="list-style-type: none"> • Cooks, Institution and Cafeteria • Cooks, Restaurant • Cooks, Short Order • Counter Attendants, Cafeteria, Food Concession, and Coffee Shop • Dining Room and Cafeteria Attendants and Bartender Helpers 	<ul style="list-style-type: none"> • Dishwashers • First-Line Supervisors/Managers of Food Preparation and Serving Workers • Food Preparation Workers • Food Servers, Nonrestaurant • Food Service Managers • Gaming Managers 	<ul style="list-style-type: none"> • Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop • Meat, Poultry, and Fish Cutters and Trimmers • Slaughterers and Meat Packers • Waiters and Waitresses
Lodging	<ul style="list-style-type: none"> • Food Service Managers • Lodging Managers 	<ul style="list-style-type: none"> • Residential Advisors 		
Travel and Tourism	<ul style="list-style-type: none"> • Food Service Managers • Lodging Managers • Managers 	<ul style="list-style-type: none"> • Reservation and Transportation Ticket Agents and Travel Clerks 	<ul style="list-style-type: none"> • Tour Guides and Escorts • Travel Agents 	
Recreation, Amusements, and Attractions	<ul style="list-style-type: none"> • Farm and Home Management Advisors • Lodging Managers 			



Career Spotlight

Name: Anthony Wilkins

Occupation: Executive Chef, Centerplate at the Raleigh Convention Center

Wake Tech Graduate Mixes It Up at the New Raleigh Convention Center



In the midst of all the fanfare surrounding the grand opening of the new Raleigh Convention Center, Anthony Wilkins was at the helm of a talented culinary team preparing world-class cuisine for the big event. The Wake Technical Community College alumnus is Executive Chef for Centerplate, the convention center's in-house catering service. His role is a mix of artistic culinarian and business manager with responsibilities that range from creating unique, customized menus to developing long-term organizational growth strategies.

"I've known from a very young age that I wanted to become a chef – I spent a lot of time in the kitchen with my grandmother," Wilkins said. "I noticed that special events, from birthdays to Thanksgiving feasts, had a common element that made people happy – food. I wanted to make my living bringing that kind of joy to people."

In middle school, Family and Consumer Sciences (FACS) courses helped Wilkins realize that he was definitely interested in food. So he continued to pursue this Career and Technical Education field at The William G. Enloe High School in Raleigh, achieving an academic excellence award in the Foods II – Advanced class. His experience working in the classroom's full kitchen setup solidified his desire to work with food.

Wilkins found that Wake Tech offered exactly what he needed – a culinary degree program with a solid reputation. Like many Wake Tech students, he worked full-time while going to school. He'll never forget his first job as a prep cook, shucking three bushels of oysters. It took him 16 hours!

Wilkins persevered, even after that test of endurance and many others, and advanced to Sous Chef and House Chef at prominent local venues such as the Cardinal Club and the RBC Center. He credits Wake Tech instructors with motivating him to succeed, giving him individualized attention, and providing the critical cooking skills on which his success has been built.

Wilkins feels prepared for the challenges ahead. "Creating an exemplary team and paying attention to the fine details and accoutrements that make an event special – that's what I do."



Did You Know?

Whether traveling for business or pleasure, the first services visitors think about are lodging and food. Those two services alone create millions of jobs for entry-level workers and for highly skilled specialists and managers. The Hospitality & Tourism Career Cluster prepares students to work in the interdependent lodging, food service, tourism, and recreation-related industries.

The worldwide tourism and recreation industry includes such diverse settings as theme parks, fitness facilities, tour operations, cultural and natural attractions, events and festivals, transportation industries, sports and entertainment venues, tourism promotion agencies, convention and meeting services, shopping centers, historic preservation districts, and retirement communities.

Hotels and other accommodations provided 1.8 million wage and salary jobs in 2006. Food and beverage services, which rank among the nation's leading employers, provided about 9.4 million wage and salary jobs.

One of the largest career fields in both of these industry subsectors relates to food. That's why jobs for chefs, head cooks, and restaurant cooks are growing from 5 to 21 percent. Technology influences lodging and food services as well, so these skills are a plus. Larger hotels rely on computer specialists and information technology and audiovisual technicians to service Web sites and computer and communications networks. Food services rely on technology to enhance efficiency and productivity.

When it comes to jobs like these and an opportunity to move up to management careers, Career and Technical Education and postsecondary certificates and degrees pay off. For more information, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cg1009.htm>.

EXPLORING CAREERS

American Hotel & Lodging Educational Institute: <http://www.ei-ahla.org>;
click on "High School Program."

National Restaurant Association: <http://www.restaurant.org>

National Restaurant Association Educational Foundation: <http://nraef.org>

U.S. Travel Industry Association: <http://www.tia.org>





Selected Careers

Occupation	Career Pathway(s)	Job Description	
Bakers	Restaurants and Food/Beverage Services	Mix and bake ingredients according to recipes to produce breads, rolls, cookies, cakes, pies, pastries, or other baked goods.	
Chefs and Head Cooks	Restaurants and Food/Beverage Services	Direct the preparation, seasoning, and cooking of foods. May plan and price menu items, order supplies, and keep records and accounts. May participate in cooking.	
Cooks, Restaurant	Restaurants and Food/Beverage Services	Prepare, season, and cook foodstuffs in restaurants. May order supplies, keep records and accounts, price items on menu, or plan menu.	
Farm and Home Management Advisors	Recreation, Amusements, and Attractions	Advise, instruct, and assist individuals and families engaged in agriculture or related processes, or home economics activities. Includes county agricultural agents, feed and farm management advisers, home economists, and extension service advisers.	
Food Service Managers	Restaurants and Food/Beverage Services; Travel and Tourism; Lodging	Plan, direct, or coordinate activities of an organization or department that serves food and beverages.	
Lodging Managers	Travel and Tourism; Lodging; Recreation, Amusements, and Attractions	Plan, direct, or coordinate activities of an organization or department that provides lodging and other accommodations.	
Reservation and Transportation Ticket Agents and Travel Clerks	Travel and Tourism	Make and confirm reservations and sell tickets to passengers and for large hotel or motel chains. May check baggage and direct passengers to designated concourse, pier, or track; make reservations, deliver tickets, arrange for visas, contact individuals and groups to inform them of package tours, or provide tourists with travel information, such as points of interest, restaurants, rates, and emergency service.	
Tour Guides	Travel and Tourism	Escort individuals or groups on sightseeing tours or through places of interest, such as industrial establishments, public buildings, and art galleries.	
Waiters and Waitresses	Restaurants and Food/Beverage Services	Take orders and serve food and beverages to patrons at tables in a dining establishment.	

NOTES (Source: North Carolina Employment Security Commission)

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2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$7.87/ 16,379	\$10.36/ 21,552	100	11.9	Long-term on-the-job training			
	\$10.65/ 22,152	\$17.61/ 36,620	86	16.4	Work experience in a related occupation			
	\$7.36/ 15,316	\$9.77/ 20,312	1,344	21.8	Long-term on-the-job training			✓
	\$13.50/ 28,086	\$21.68/ 45,100	23	9.8	Bachelor's degree	✓	✓	
	\$16.10/ 33,488	\$24.39/ 50,740	403	12.5	Work experience in a related occupation		✓	
	\$14.01/ 29,148	\$21.23/ 44,168	133	12.4	Work experience in a related occupation		✓	
	\$11.45/ 23,809	\$15.91/ 33,092	100	1.3	Short-term on-the-job training			
	\$7.56/ 15,715	\$9.51/ 19,774	36	16.8	Moderate-term on-the-job training			
	\$6.81/ 14,167	\$8.01/ 16,666	5,307	21.1	Short-term on-the-job training			✓

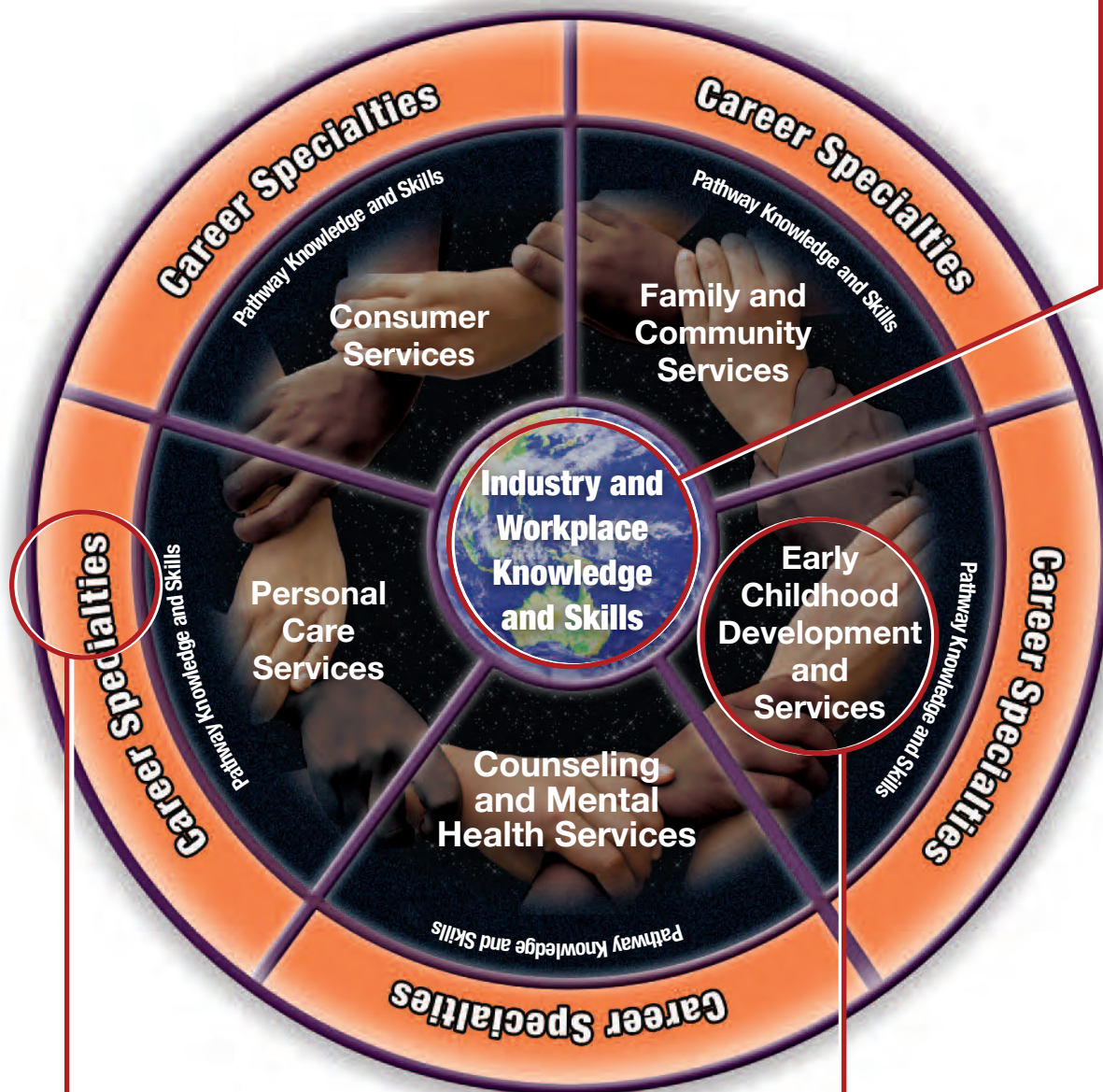
NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Preparing individuals for employment in career pathways that relate to families and human needs.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Early Childhood Development and Services	<ul style="list-style-type: none"> • Child Care Assistants • Directors, Child Care Facilities • Educators for Parents 	<ul style="list-style-type: none"> • Elementary Teachers and Counselors • Family and Consumer Sciences Teachers 	<ul style="list-style-type: none"> • Nannies • Preschool Teachers • Teachers Assistants 	
Counseling and Mental Health Services	<ul style="list-style-type: none"> • Area, Ethnic, and Cultural Studies Teachers, Postsecondary • Clergy • Clinical, Counseling, and School Psychologists • Counselors • Directors, Religious Activities and Education • Epidemiologists 	<ul style="list-style-type: none"> • Health Educators • Marriage and Family Therapists • Mathematical Science Teachers, Postsecondary • Mathematicians • Medical and Public Health Social Workers • Mental Health and Substance Abuse Social Workers 	<ul style="list-style-type: none"> • Mental Health Counselors • Natural Sciences Managers • Philosophy and Religion Teachers, Postsecondary • Psychologists • Psychology Teachers, Postsecondary • Recreation Workers • Religious Workers 	<ul style="list-style-type: none"> • Social Work Teachers, Postsecondary • Substance Abuse and Behavioral Disorder Counselors
Family and Community Services	<ul style="list-style-type: none"> • Chief Executives • Child Care Workers • Child, Family, and School Social Workers • Counselors • Eligibility Interviewers, Government Programs • Emergency Management Specialists 	<ul style="list-style-type: none"> • Family and Consumer Sciences Teachers • Farm and Home Management Advisors • Legislators • Managers • Marriage and Family Therapists • Political Scientists 	<ul style="list-style-type: none"> • Probation Officers and Correctional Treatment Specialists • Protective Service Workers • Social and Community Service Managers • Social Science Research Assistants 	<ul style="list-style-type: none"> • Social Scientists and Related Workers • Social Work Teachers, Postsecondary • Social Workers • Sociologists
Personal Care Services	<ul style="list-style-type: none"> • Barbers • Embalmers • Funeral Attendants • Funeral Directors • Hairdressers, Hairstylists, and Cosmetologists 	<ul style="list-style-type: none"> • Laundry and Dry-Cleaning Workers • Makeup Artists, Theatrical and Performance • Manicurists and Pedicurists 	<ul style="list-style-type: none"> • Pressers, Textile, Garment, and Related Materials • Sewers, Hand • Sewing Machine Operators • Shampooers • Skin Care Specialists 	<ul style="list-style-type: none"> • Tailors, Dressmakers, and Custom Sewers • Tailors, Dressmakers, and Sewers • Textile Bleaching and Dyeing Machine Operators and Tenders
Consumer Services	<ul style="list-style-type: none"> • Bankers • Certified Financial Planners • Consumer Advocates • Consumer Credit Counselors 	<ul style="list-style-type: none"> • Customer Service Representatives • Event Specialists • Farm and Home Management Advisors 	<ul style="list-style-type: none"> • Family and Consumer Sciences Teachers • Market Researchers • Marketing Managers • Public Relations Specialists 	<ul style="list-style-type: none"> • Sales Consultants • Sales Managers • Small Business Owners



Career Spotlight

Name: Sarah Seehorn Wilson

Occupation: Mental Health Counselor

Active Involvement in CTE and FBLA Pay Off for Mental Health Counselor



Sarah Seehorn Wilson is a practicing mental health counselor in Charlottesville, Virginia. She currently works as a provider of intensive in-home counseling services for at-risk children. Wilson graduated from Whiteville High School in 1999, received her B.S. degree in Psychology from Appalachian State University in 2003, and

received her M.Ed. and Ed.S. degrees in Counselor Education from the University of Virginia in 2006.

Wilson was actively involved in Career and Technical Education (CTE) and Future Business Leaders of America (FBLA) throughout high school and college. Wilson's CTE studies in high school included

keyboarding, accounting, principles of business, and business law. In high school, she was the FBLA Southeast Region One vice president her sophomore year, State FBLA historian in her junior year, and local chapter president in her senior year. In 1999, Wilson was recognized as Ms. FBLA and by Who's Who of FBLA for North Carolina FBLA. She also represented the state chapter at the national leadership conference. Wilson also was a member of the Professional Division of FBLA throughout college and served as the Professional Division President in 2002-2003.

Wilson's education, experiences, and leadership opportunities in CTE and FBLA provided her with a strong professional background that has been valuable in her work as a counselor. These experiences provided her with the opportunity to develop excellent organizational, time management, leadership, and decision-making skills. Her training has been critical in helping Wilson to be efficient and productive in the fast-paced and hectic world of human services. Her past experiences have allowed her to develop strong written, verbal, and interpersonal communication skills to assist in her work with clients, parents, school personnel, and treatment team members.

Did You Know?

Sometimes people may need assistance finding a job or appropriate child care, learning skills to find employment, locating safe and adequate housing, and getting nutritious food for their family. Human services personnel help meet these and other human and family needs.

Many jobs in this industry are professional positions that require a bachelor's or a master's degree and a state license, according to the *Career Guide to Industries*. Professional and related occupations include social workers, counselors, health educators, and social and human service assistants.

About 36 percent of the jobs in the industry are service occupations, which require little education beyond a high school diploma. These workers include personal and home care aides and home health aides. A number of employers provide in-service training for these workers, such as seminars and workshops. Other employers prefer that workers have an associate or a bachelor's degree in human services or social work.

Home health aides whose employers receive reimbursement from Medicare must pass a competency test. As a result, many home health aides receive some training prior to taking the exam. Some states also require aides to be licensed.

For more information, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cgs040.htm>.

RESEARCH HUMAN SERVICES

American Counseling Association: <http://www.counseling.org>

American Psychological Association: <http://www.apa.org>

American Association for Marriage and Family Therapy: <http://www.aamft.org/>

American Mental Health Counselors Association: <http://www.amhca.org>

Family, Career and Community Leaders of America (FCCLA): <http://www.fccla.com>

International Coach Federation: <http://www.coachfederation.org/>

National Association for the Education of Young Children: <http://www.naeyc.org>

National Organization for Human Services: <http://www.nationalhuman-services.org>





Selected Careers

Occupation	Career Pathway(s)	Job Description
Child Care Workers	Family and Community Services	Attend to children at schools, businesses, private homes, and child care institutions. May include dressing, feeding, bathing, and overseeing play.
Clergy	Counseling and Mental Health Services	Conduct religious worship and perform spiritual functions associated with beliefs and practices of religious faith or denomination. Provide spiritual and moral guidance and assistance.
Funeral Directors	Personal Care Services	Perform various tasks to arrange and direct funeral services, such as coordinating transportation of body to mortuary for embalming, interviewing family or other authorized person to arrange details, selecting pallbearers, procuring official for religious rites, and providing transportation for mourners.
Hairdressers, Hairstylists, and Cosmetologists	Personal Care Services	Provide beauty services such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May also apply makeup, dress wigs, perform hair removal, and provide nail and skin care services.
Medical and Public Health Social Workers	Counseling and Mental Health Services	Provide persons, families, or vulnerable populations with the psychosocial support needed to cope with chronic, acute, or terminal illnesses, such as Alzheimer's, cancer, or AIDS. Services include advising family care givers, providing patient education and counseling, and making necessary referrals for other social services.
Mental Health and Substance Abuse Social Workers	Counseling and Mental Health Services	Assess and treat individuals with mental, emotional, or substance abuse problems, including abuse of alcohol, tobacco, and/or other drugs. Activities may include individual and group therapy, crisis intervention, case management, client advocacy, prevention, and education.
Mental Health Counselors	Counseling and Mental Health Services	Counsel with emphasis on prevention. Work with individuals and groups to promote optimum mental health. May help individuals with addictions; family, parenting, and marital problems; suicide; stress management; self-esteem; and issues with aging and emotional health.
Social and Community Service Managers	Family and Community Services	Plan, organize, or coordinate the activities of a social service program or community outreach organization. Oversee budget and policies regarding participant involvement, program requirements, and benefits.

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.

2. This includes full-time and part-time employees.

3. Requires a minimum of an associate degree.

4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$6.93/ 14,420	\$9.15/ 19,025	993	20.0	Short-term on-the-job training			✓
	\$15.82/ 32,897	\$23.11/ 48,072	776	24.0	First professional degree	✓	✓	✓
	\$13.36/ 27,793	\$27.01/ 56,183	45	6.8	Associate degree	✓	✓	
	\$7.01/ 14,575	\$13.13/ 27,305	568	28.4	One - two years of college			✓
	\$15.67/ 32,600	\$20.09/ 41,787	200	33.4	Bachelor's degree	✓	✓	✓
	\$14.92/ 31,035	\$19.33/ 40,215	256	43.4	Master's degree	✓	✓	✓
	\$13.22/ 27,496	\$18.94/ 39,393	150	43.5	Master's degree	✓	✓	✓
	\$16.60/ 34,532	\$25.17/ 52,353	155	33.3	Bachelor's degree	✓	✓	✓

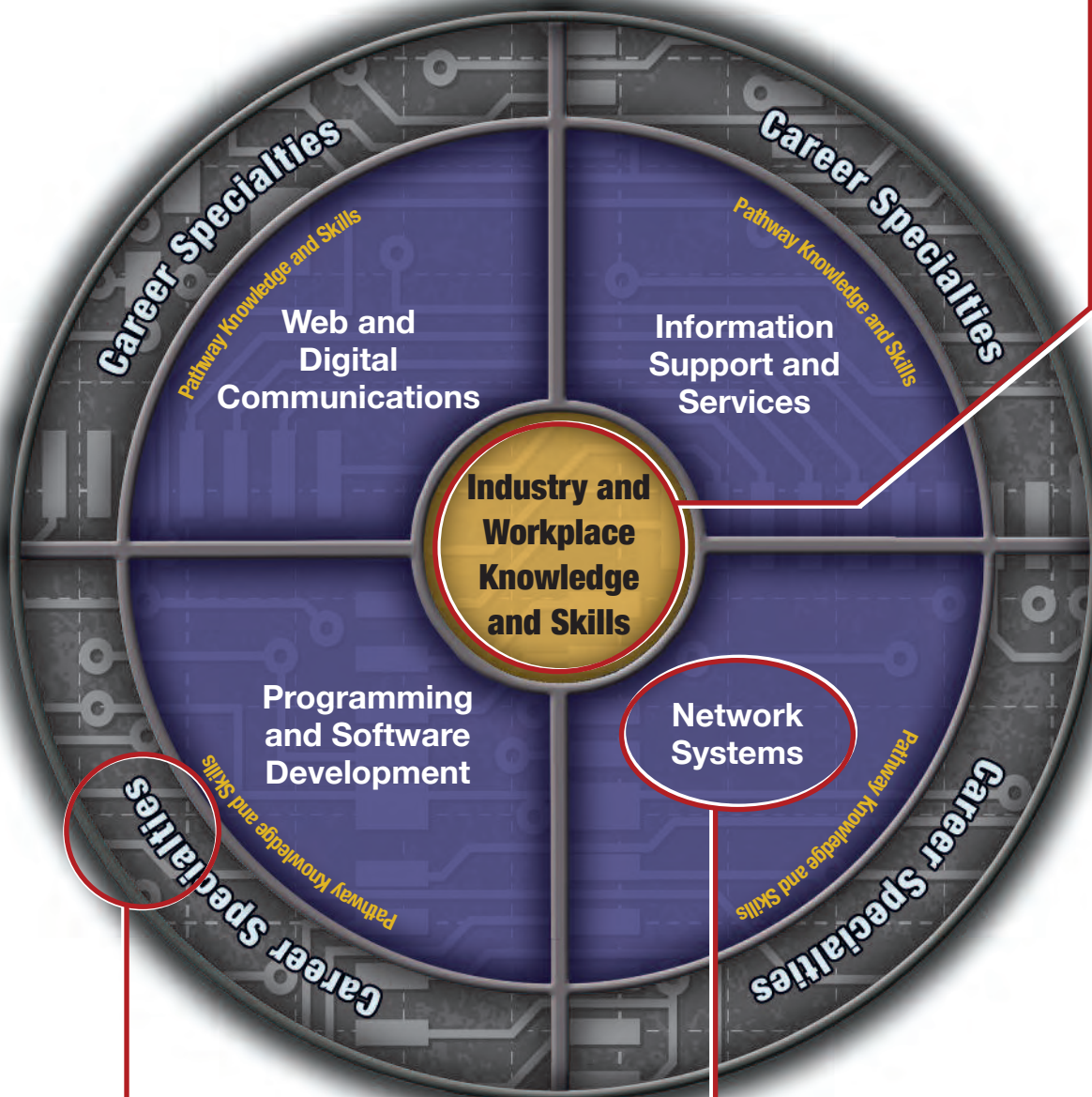
NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multi-media, and systems integration services.

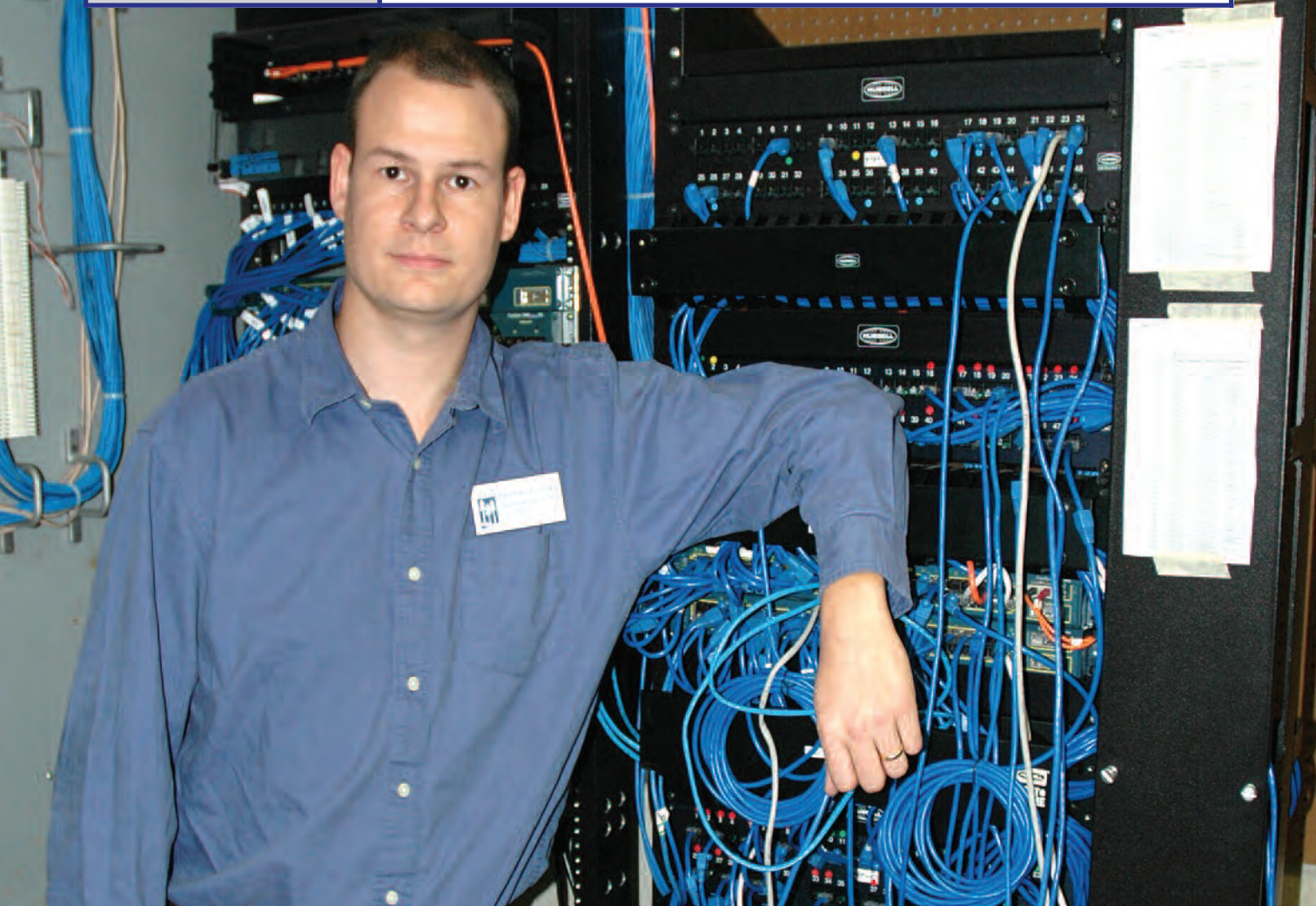
Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Network Systems	<ul style="list-style-type: none"> • Computer and Information Scientists, Research • Computer and Information Systems Managers • Computer Programmers 	<ul style="list-style-type: none"> • Computer Science Teachers, Postsecondary • Computer Software Engineers, Applications 	<ul style="list-style-type: none"> • Computer Software Engineers, Systems Software • Computer Specialists • Graphic Designers • Multi-Media Artists and Animators 	<ul style="list-style-type: none"> • Network and Computer Systems Administrators • Network Systems and Data Communications Analysts
Information Support and Services	<ul style="list-style-type: none"> • Computer and Information Scientists, Research • Computer and Information Systems Managers • Computer Operators 	<ul style="list-style-type: none"> • Computer Science Teachers, Postsecondary • Computer Software Engineers, Applications • Computer Software Engineers, Systems Software 	<ul style="list-style-type: none"> • Computer Specialists • Computer Support Specialists • Computer Systems Analysts • Database Administrators 	<ul style="list-style-type: none"> • Network and Computer Systems Administrators • Network Systems and Data Communications Analysts • Numerical Tool and Process Control Programmers
Web and Digital Communications	<ul style="list-style-type: none"> • Computer and Information Scientists, Research 	<ul style="list-style-type: none"> • Computer Programmers • Computer Software Engineers, Applications 	<ul style="list-style-type: none"> • Computer Software Engineers, Systems Software 	<ul style="list-style-type: none"> • Computer Systems Analysts
Programming and Software Development	<ul style="list-style-type: none"> • Computer and Information Scientists, Research • Computer Hardware Engineers • Computer Programmers • Computer Science Teachers, Postsecondary 	<ul style="list-style-type: none"> • Computer Software Engineers, Applications • Computer Software Engineers, Systems Software • Computer Systems Analysts • Database Administrators 	<ul style="list-style-type: none"> • Engineering Managers • Engineering Teachers, Postsecondary • Network and Computer Systems Administrators • Network Systems and Data Communications Analysts 	<ul style="list-style-type: none"> • Numerical Tool and Process Control Programmers



Career Spotlight

Name: Trent Helms

Occupation: Technology Instructor – Computer and Electronics Engineering,
Stanly Community College

From Student to Teacher

After graduating from West Stanly High School in Oakboro, North Carolina, Trent Helms didn't really know what he wanted to do. He just knew that he wanted to go to college. What Helms did realize is that he had always enjoyed computers, electronics, and technology in general.

While in high school, Helms followed the College/Tech Prep plan. Tech Prep is a Career and Technical Education program. Often referred to as a "2 + 2" program, the Tech Prep sequence encompasses a two-year high school course of study that leads to two years of related community college education and an associate degree. As part of the Tech Prep program, Helms took a computer class at Stanly Community College (SCC) in Albemarle during his senior year of high school.

"That's when I made the decision to go to Stanly Community College and get my degree in Computer Engineering," said Helms. "As a work-study student, I helped do everything from sort out parts and work on computers to completely rebuilding a lab. The skills I learned were invaluable."

While attending SCC, Helms became involved in SkillsUSA, a national organization serving high school and college students



pursuing careers in trade, technical, and skilled service occupations. He competed in the postsecondary Computer Maintenance Technology contest and placed first in state. Then he went to the national competition in Kansas City and placed eighth. Helms wanted to go back to the SkillsUSA competition in Kansas City, so he took Information Systems Security at SCC and Cisco CCNA classes to broaden his skills. In 2008, he became a state SkillsUSA judge for Internetworking and served as a national judge.

Since graduating from SCC in 2004 with two A.A.S. degrees – one in Computer Engineering Technology and one in Electronics Engineering

Technology – Helms has been a full-time instructor at the community college. "At the age of 19, I found myself staring at 30 students. I was very intimidated since I, the instructor, was the youngest person in the whole class! I soon found out that this was the best thing that I had ever done," said Helms.

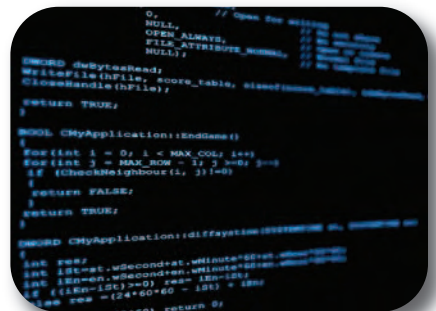
In addition to teaching, Helms attends East Carolina University where he is working on a Bachelor of Science degree in Industrial Technology with an Information and Computer Technology concentration. In all, Helms' education and SkillsUSA experiences have been essential to his success.

Did You Know?

Professional and related workers in information technology (IT) fields will enjoy the best job prospects, reflecting continuing demand for higher-level skills needed to keep up with changes in technology. Among those workers are computer specialists, who accounted for 54 percent of all employees in this industry in 2006, and computer system administrators.

There are many paths of entry to these occupations, according to the *Occupational Outlook Handbook*. Employers prefer to hire applicants with some formal college education such as an associate or a bachelor's degree. For some jobs, employers may substitute relevant computer experience and certifications for formal education.

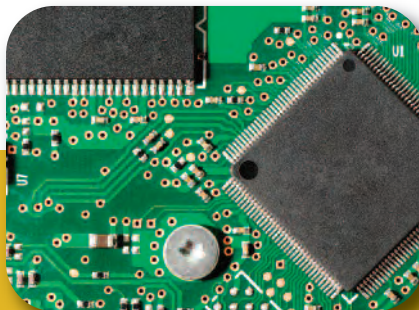
For more information about IT careers, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cgs033.htm> and the *Occupational Outlook Handbook* at <http://www.bls.gov/oco/ocos268.htm>.



EXPLORE INFORMATION TECHNOLOGY

Each of North Carolina's 58 community colleges offers courses in the IT industry, ranging from basic, short-term training to associate degree programs. This means that in North Carolina you are never more than 30 miles from quality IT training.

For certification information, go to <http://www.microsoft.com/learning/mcp/default.mspx> and <http://certification.comptia.org>.





Selected Careers

Occupation	Career Pathway(s)	Job Description	
Computer and Information Scientists, Research	Information Support and Services; Web and Digital Communications; Programming and Software Development; Network Systems	Conduct research into fundamental computer and information science as theorists, designers, or inventors. Solve or develop solutions to problems in the field of computer hardware and software.	
Computer and Information Systems Managers	Information Support and Services; Network Systems	Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.	
Computer Hardware Engineers	Programming and Software Development	Research, design, develop, and test computer or computer-related equipment for commercial, industrial, military, or scientific use. May supervise the manufacturing and installation of computer or computer-related equipment and components.	
Computer Software Engineers, Applications	Web and Digital Communications; Information Support and Services; Network Systems; Programming and Software Development	Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design or customize software for client use. May analyze and design databases.	
Computer Support Specialists	Information Support and Services	Provide technical assistance to computer system users. Answer questions or resolve computer problems for clients.	
Computer Systems Analysts	Information Support and Services; Programming and Software Development; Web and Digital Communications	Analyze science, engineering, business, and other data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$25.20/ 52,412	\$43.59/ 90,666	18	21.3	Doctoral degree	✓	✓	
	\$35.72/ 74,308	\$53.05/ 110,353	301	15.2	Bachelor's degree or higher plus work experience	✓	✓	
	\$28.67/ 59,639	\$43.63/ 90,740	74	18.4	Bachelor's degree	✓	✓	
	\$27.91/ 58,056	\$40.87/ 85,019	696	39.0	Bachelor's degree	✓	✓	✓
	\$14.15/ 29,442	\$21.33/ 44,370	758	15.8	Associate degree	✓	✓	
	\$23.80/ 49,510	\$35.92/ 74,714	833	26.1	Bachelor's degree	✓	✓	✓

NOTES

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Selected Careers

Occupation	Career Pathway(s)	Job Description	
Database Administrators	Information Support and Services; Programming and Software Development	Coordinate changes to computer databases, test and implement the database applying knowledge of database management systems. May plan, coordinate, and implement security measures to safeguard computer databases.	
Multi-Media Artists and Animators	Network Systems	Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.	
Network and Computer Systems Administrators	Information Support and Services; Programming and Software Development; Network Systems	Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet system or a segment of a network system. Maintain network hardware and software and monitor to ensure network availability and security.	
Network Systems and Data Communications Analysts	Information Support and Services; Programming and Software Development; Network Systems	Analyze, design, test, and evaluate network systems, such as local area networks (LAN), wide area networks (WAN), Internet, intranet, and other data communications systems.	

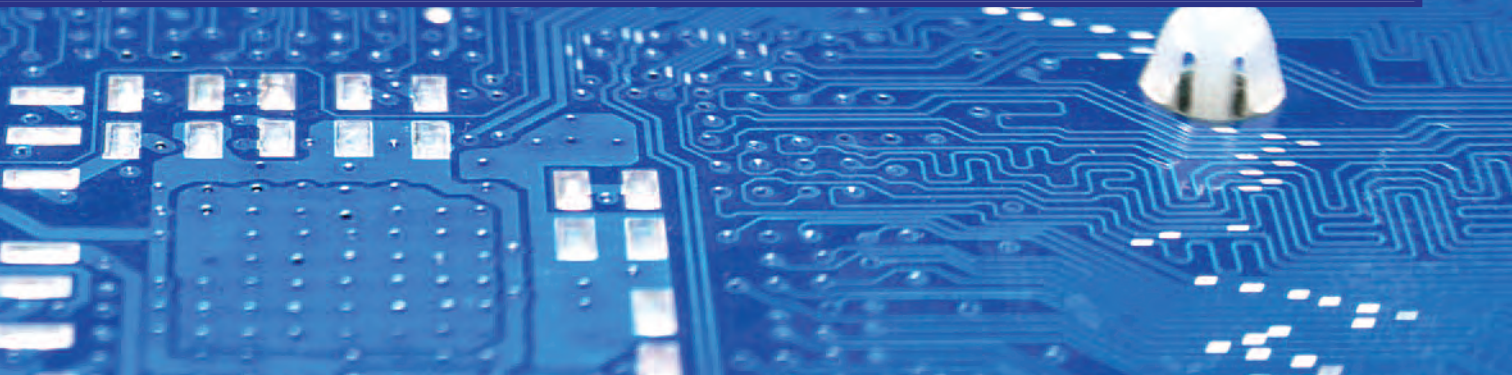
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	\$22.42/ 46,636	\$33.13/ 68,903	105	23.7	Bachelor's degree	✓	✓	✓
	\$15.51/ 32,261	\$25.05/ 52,094	139	27.2	Bachelor's degree	✓	✓	✓
	\$20.58/ 42,798	\$31.12/ 64,733	380	24.9	Bachelor's degree	✓	✓	✓
	\$20.74/ 43,149	\$32.26/ 67,101	506	41.7	Bachelor's degree	✓	✓	✓

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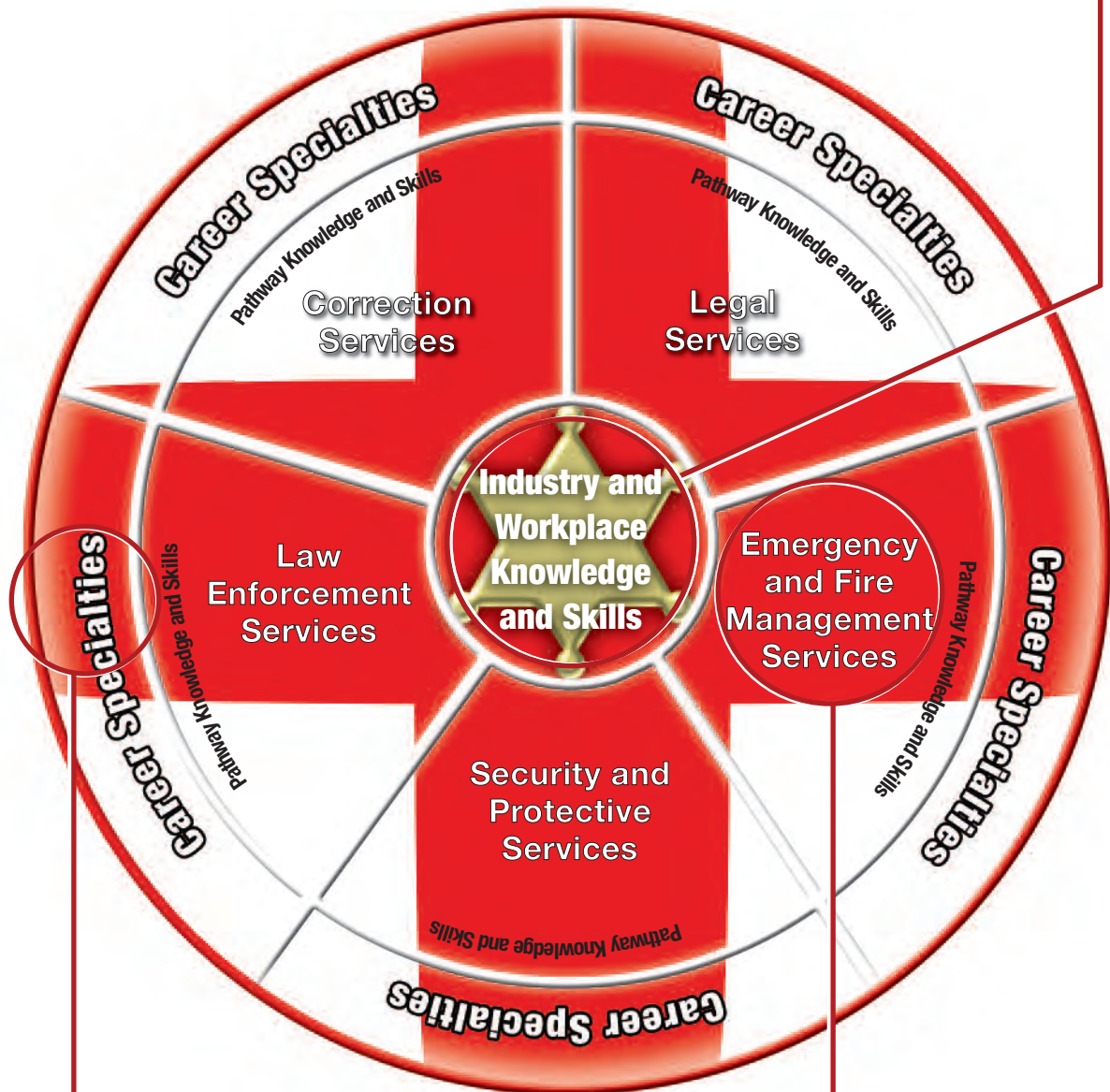
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Planning, managing, and providing legal, public safety, protective services, and homeland security, including professional and technical support services.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Correction Services	<ul style="list-style-type: none"> • Child, Family, and School Social Workers • Criminal Justice and Law Enforcement Teachers, Postsecondary 	<ul style="list-style-type: none"> • First-Line Supervisors/Managers of Correctional Officers • First-Line Supervisors/Managers of Police and Detectives 	<ul style="list-style-type: none"> • Lifeguards • Protective Service Workers • Psychology Teachers, Postsecondary • Security Guards 	
Emergency and Fire Management Services	<ul style="list-style-type: none"> • Correctional Officers and Jailers • Fire Fighters • Fire Inspectors and Investigators 	<ul style="list-style-type: none"> • First-Line Supervisors/Managers of Fire Fighting and Prevention Workers 	<ul style="list-style-type: none"> • Forest Fire Inspectors and Prevention Specialists 	
Security and Protective Services	<ul style="list-style-type: none"> • Animal Control Workers • Criminal Justice and Law Enforcement Teachers, Postsecondary • Crossing Guards • Fire Fighters • First-Line Supervisors/Managers of Protective Service Workers, Except Police, Fire and Corrections 	<ul style="list-style-type: none"> • Lifeguards, Ski Patrol • Parking Enforcement Workers • Police and Sheriff's Patrol Officers • Private Detectives and Investigators • Recreational Protective Service Workers 	<ul style="list-style-type: none"> • Security Guards • Transit and Railroad Police 	
Law Enforcement Services	<ul style="list-style-type: none"> • Anthropology and Archeology Teachers, Postsecondary • Bailiffs • Correctional Officers and Jailers 	<ul style="list-style-type: none"> • Criminal Justice and Law Enforcement Teachers, Postsecondary • Detectives and Criminal Investigators 	<ul style="list-style-type: none"> • First-Line Supervisors/Managers of Police and Detectives • Forensic Science Technicians 	<ul style="list-style-type: none"> • Police and Sheriff's Patrol Officers
Legal Services	<ul style="list-style-type: none"> • Administrative Law Judges, Adjudicators, and Hearing Officers • Arbitrators, Mediators, and Conciliators • Court Reporters 	<ul style="list-style-type: none"> • Farm and Home Management Advisors • Judges, Magistrate Judges, and Magistrates • Law Clerks 	<ul style="list-style-type: none"> • Law Teachers, Postsecondary • Lawyers • Legal Secretaries • Legal Support Workers 	<ul style="list-style-type: none"> • Paralegals and Legal Assistants • Title Examiners, Abstractors, and Searchers



Career Spotlight

Name: Jenna Watson

Occupation: Legal Assistant, Mecklenburg County District Attorney's Office

Paralegal Graduate Impressed with Program Quality

A graduate of the Paralegal Technology program at Central Piedmont Community College (CPCC) in Charlotte, North Carolina, Jenna Watson was impressed with the quality of the program, which is approved by both the American Bar Association and the North Carolina Bar Association.

She also appreciated CPCC's affordable cost and her ability to tailor classes that fit her lifestyle. "The paralegal program, as well

as many other programs at CPCC, offers a variety of night and Internet classes to fit any student's busy schedule. There were always advisors and other faculty members readily available to help with admission and registration issues and questions," Watson said.

Shortly after receiving her degree, Watson was hired by the Mecklenburg County District Attorney's Office as a victim/witness legal assistant. Her degree

also provides opportunities for career advancement.

"I love my job, which allows me to use the skills and knowledge I acquired at Central Piedmont," said Watson, who was a college prep student at Harding University High School in Charlotte. "I hope to one day work in private practice, specializing in family law. I know that with my degree from Central Piedmont there are endless possibilities."



Did You Know?

There are thousands of careers in the Law, Public Safety, Corrections & Security Career Cluster. Students need a solid background in math, science, and technical skills to prepare for these careers according to a brochure published by the States' Career Clusters Initiative. Education and training can be obtained in high school Career and Technical Education programs, at two- and four-year colleges, and at technical schools and institutes. To find and view the brochure, go to <http://www.careerclusters.org>, click on "Resources," then "Career Clusters Brochures."

Under the "Resources" tab, also click on "Career Cluster Models." There you'll find a list of many jobs that fall into five different Career Cluster pathways:

- Correction Services
- Emergency and Fire Management Services
- Security and Protective Services
- Law Enforcement Services
- Legal Services

For more information about jobs that interest you, go to the *Occupational Outlook Handbook* at <http://www.bls.gov/oco/oco1002.htm#legal>.

INFORMATION INVESTIGATION

American Bar Association: <http://www.abanet.org/>

Institute for Information Security, University of Tulsa: <http://www.cis.utulsa.edu>

Department of Homeland Security: <http://www.dhs.gov/> and

<http://www.usajobs.opm.gov/homeland.asp>

Federal Bureau of Investigation careers: <https://www.fbijobs.com>

Forensic Sciences Foundation: <http://www.forensicsciencesfoundation.org>

Legal assistants, legal secretaries and paralegals: <http://www.nala.org> and

<http://www.legalsecretaries.org>



Selected Careers

Occupation	Career Pathway(s)	Job Description
Child, Family, and School Social Workers	Correction Services	Provide social services and assistance to improve the social and psychological functioning of children and their families and to maximize the family well-being and the academic functioning of children. May assist single parents, arrange adoptions, and find foster homes for children. May address teenage pregnancy, misbehavior and truancy, and advise teachers on how to deal with problem children.
Correctional Officers and Jailers	Law Enforcement Services; Emergency and Fire Management Services	Guard inmates in penal or rehabilitative institution in accordance with established regulations and procedures. May guard prisoners in transit between jail, courtroom, prison, or other point.
Court Reporters	Legal Services	Use verbatim methods and equipment to capture, store, retrieve, and transcribe pretrial and trial proceedings or other information. Includes stenocaptioners who operate computerized stenographic captioning equipment to provide captions of live or prerecorded broadcasts for hearing-impaired viewers.
Detectives and Criminal Investigators	Law Enforcement Services	Conduct investigations related to suspected violations of federal, state, or local laws to prevent or solve crimes.
Forensic Science Technicians	Law Enforcement Services	Collect, identify, classify, and analyze physical evidence related to criminal investigations. Perform tests on weapons or substances, such as fiber, hair, and tissue to determine significance to investigation. May testify as expert witnesses on evidence or crime laboratory techniques. May serve as specialists in area of expertise, such as ballistics, fingerprinting, handwriting, or biochemistry.
Lawyers	Legal Services	Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, and manage or advise clients on legal transactions.

NOTES (Source: North Carolina Employment Security Commission)

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	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$15.00/ 31,200	\$19.67/ 40,919	416	22.5	Bachelor's degree	✓	✓	✓
	\$13.43/ 27,929	\$14.85/ 30,886	778	18.5	Moderate-term on-the-job training			✓
	\$14.89/ 30,961	\$20.76/ 43,177	17	31.5	One - two years of college		✓	
	\$16.00/ 33,270	\$22.78/ 47,374	139	25.0	Work experience in a related occupation		✓	✓
	\$13.35/ 27,772	\$18.12/ 37,691	39	29.2	Associate degree	✓	✓	
	\$24.37/ 50,699	\$49.81/ 103,611	574	21.9	First professional degree	✓	✓	✓

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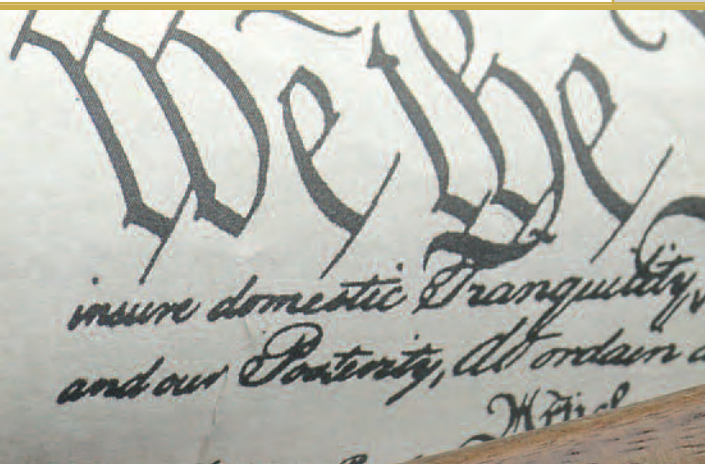
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Selected Careers

Occupation	Career Pathway(s)	Job Description
Legal Secretaries	Legal Services	Perform secretarial duties using legal terminology, procedures, and documents. Prepare legal papers and correspondence and assist with legal research.
Paralegals and Legal Assistants	Legal Services	Assist lawyers by conducting research, investigating facts, or preparing legal documents.
Police and Sheriff's Patrol Officers	Security and Protective Services; Law Enforcement Services	Maintain order, enforce laws and ordinances, and protect life and property in an assigned patrol district. May patrol specific areas, direct traffic, issue traffic summonses, investigate accidents, apprehend and arrest suspects, or serve legal processes of courts.
Private Detectives and Investigators	Security and Protective Services	Detect occurrences of unlawful acts or infractions of rules in a private establishment, or seek, examine, and compile information for client.

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3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.



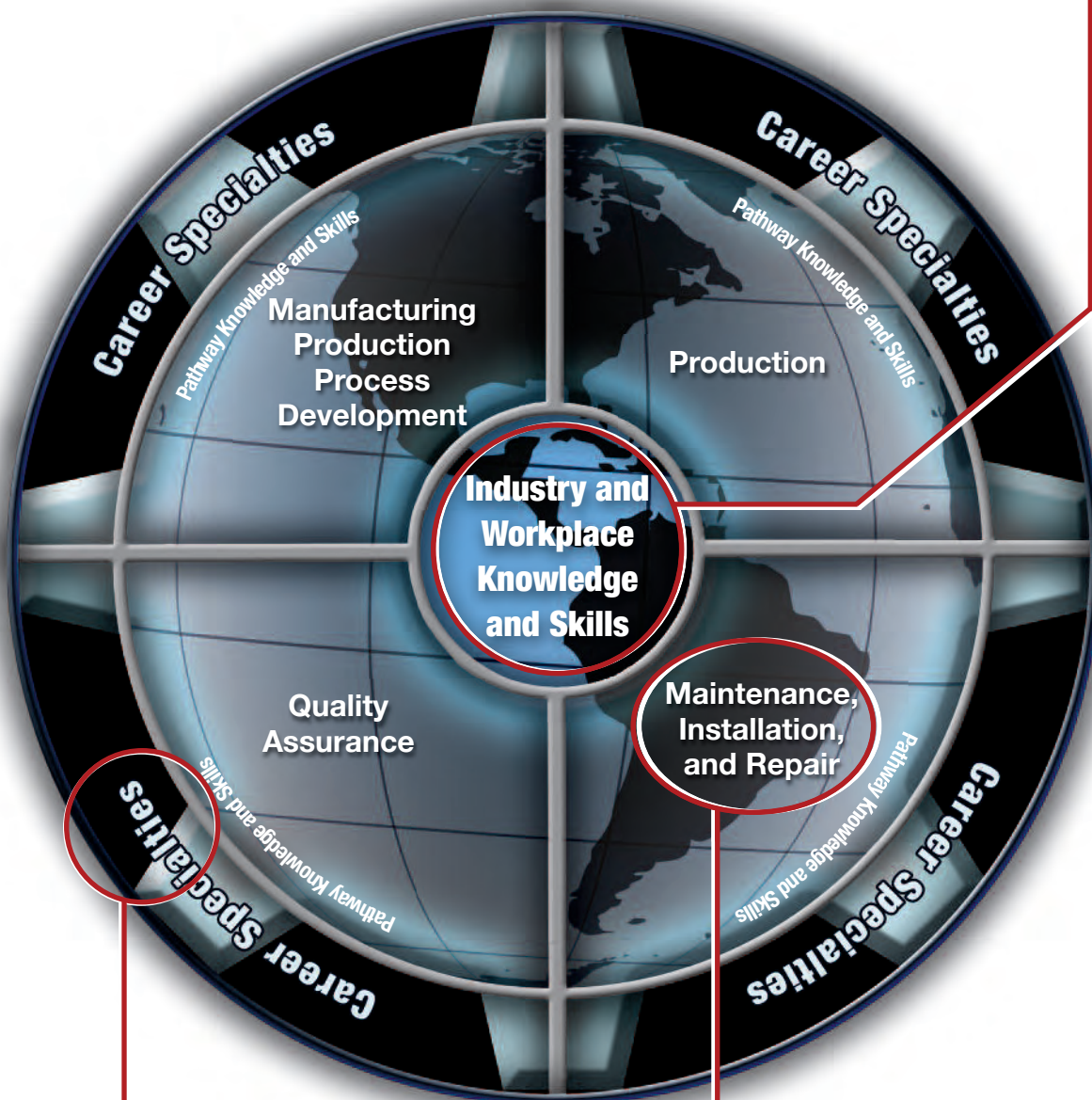
	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$11.25/ 23,409	\$16.63/ 34,596	230	25.5	One - two years of college			✓
	\$13.04/ 27,121	\$18.37/ 38,201	402	32.8	Associate degree	✓	✓	✓
	\$14.08/ 29,287	\$18.99/ 39,506	793	15.9	Long-term on-the-job training		✓	
	\$12.05/ 25,061	\$20.09/ 41,788	72	22.1	Work experience in a related occupation		✓	
	NOTES 5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.							





Planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Production	<ul style="list-style-type: none"> Cabinetmakers and Bench Carpenters Cementing and Gluing Machine Operators and Tenders Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders Coating, Painting, and Spraying Machine Setters, Operators, and Tenders Computer-Controlled Machine Tool Operators, Metal and Plastic Cooling and Freezing Equipment Operators and Tenders Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic and Synthetic and Glass Fibers 	<ul style="list-style-type: none"> Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders Fiberglass Laminators and Fabricators Forging Machine Setters, Operators, and Tenders, Metal and Plastic Foundry Mold and Coremakers Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders Furniture Finishers Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic Hazardous Materials Removal Workers Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic Lay-Out Workers, Metal and Plastic Machine Feeders and Offbearers Machinists 	<ul style="list-style-type: none"> Material Moving Workers Metal Workers and Plastic Workers Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic Mixing and Blending Machine Setters, Operators, and Tenders Model Makers and Patternmakers, Wood and Metal and Plastic Molders, Shapers, and Casters, Except Metal and Plastic Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic Nuclear Power Reactor Operators Packaging and Filling Machine Operators and Tenders Painting Workers Paper Goods Machine Setters, Operators, and Tenders Patternmakers, Metal and Plastic and Wood Photographic Process Workers and Processing Machine Operators Power Distributors and Dispatchers Power Plant Operators 	<ul style="list-style-type: none"> Production Workers Recreational Vehicle Service Technicians Rolling Machine Setters, Operators, and Tenders, Metal and Plastic Sawing Machine Setters, Operators, and Tenders, Wood Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders Sheet Metal Workers Shoe and Leather Workers and Repairers Shoe Machine Operators and Tenders Structural Metal Fabricators and Fitters Tire Builders Tool and Die Makers Tool Grinders, Filers, and Sharpeners Upholsterers Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders Woodworking Machine Setters, Operators, and Tenders, Except Sawing
Manufacturing Production Process Development	<ul style="list-style-type: none"> Chemical Equipment Operators and Tenders Chemical Plant and System Operators Chemical Technicians Electrical and Electronic Engineering Technicians 	<ul style="list-style-type: none"> Electromechanical Equipment Assemblers Environmental Science and Protection Technicians, Including Health 	<ul style="list-style-type: none"> Fabric and Apparel Patternmakers Farm and Home Management Advisors Fashion Designers 	<ul style="list-style-type: none"> Life, Physical, and Social Science Technicians Nuclear Technicians Textile, Apparel, and Furnishings Workers
Maintenance, Installation, and Repair	<ul style="list-style-type: none"> Automotive Service Technicians and Mechanics Biological Technicians Camera and Photographic Equipment Repairers Civil Engineering Technicians Coil Winders, Tapers, and Finishers Computer Software Engineers, Applications Computer Support Specialists Computer, Automated Teller, and Office Machine Repairers Construction and Related Workers Electric Motor, Power Tool, and Related Repairers 	<ul style="list-style-type: none"> Electrical and Electronic Engineering Technicians, Equipment Assemblers and Repairers Electromechanical Equipment Assemblers Elevator Installers and Repairers Engine and Other Machine Assemblers Engineering Technicians, Except Drafters Hazardous Materials Removal Workers Industrial Engineering Technicians and Machinery Mechanics Inspectors, Testers, Sorters, Samplers, and Weighers 	<ul style="list-style-type: none"> Installation, Maintenance, and Repair Workers Jewelers and Precious Stone and Metal Workers Maintenance Workers, Machinery Mechanical Engineering Technicians Medical Equipment Repairers Millwrights Mobile Heavy Equipment Mechanics, Except Engines Musical Instrument Repairers and Tuners Precision Instrument and Equipment Repairers Rail Car Repairers 	<ul style="list-style-type: none"> Refractory Materials Repairers, Except Brickmasons Semiconductor Processors Telecommunications Line Installers and Repairers Textile Cutting Machine Setters, Operators, and Tenders Textile Knitting and Weaving Machine Setters, Operators, and Tenders Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders Timing Device Assemblers, Adjusters, and Calibrators
Quality Assurance	<ul style="list-style-type: none"> Environmental Engineering Technicians 	<ul style="list-style-type: none"> Inspectors, Testers, Sorters, Samplers, and Weighers 	<ul style="list-style-type: none"> Occupational Health and Safety Specialists and Technicians 	

Career Spotlight

Name: Tawana Gorham

Occupation: Welder, Hackney Division of VT Specialized Vehicles Corporation

Woman Finds Rewarding Career in Welding

As a young girl growing up in Chocowinity, North Carolina, Tawana Gorham enjoyed working on car and motorcycle engines with her brothers and the neighborhood boys. Today, Gorham is a welder for the Hackney division of VT Specialized Vehicles Corporation in Washington, North Carolina. She assembles fire trucks, refrigerated beverage vehicles, and other types of trucks for the manufacturer of service truck bodies.

A former nurse's assistant who graduated from Chocowinity High School (now Aurora High School), Gorham came to her new field on the recommendation of a male cousin who was studying welding at the time.

At Beaufort County Community College (BCCC) in Washington, Gorham learned TIG (gas tungsten arc) and MIG (gas metal arc) welding techniques. To reinforce her TIG skills, she entered the on-site training program at a local industry operated under the auspices of BCCC, and she passed all the required tests early in her training.

"Learning welding was a life-changing experience for me," Gorham said. "I am financially stable and able to do a better job of helping my family."



Did You Know?

Are you looking for a manufacturing job? Welding jobs are projected to grow by 17 percent in North Carolina between 2006 and 2016. Jobs for biological technicians are projected to grow by 24 percent.

For more information about a particular job, go to <http://online.onetcenter.org/find> and ...

- Type in a job name in the keyword box. Or go to “Advanced Manufacturing” under the “In-Demand Industry Clusters” menu.
- Click on a job title, and move to the bottom of the page.
- Under “State & National,” select North Carolina.

MANUFACTURING CAREER RESEARCH

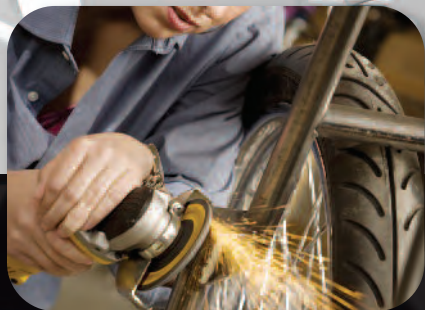
Advanced manufacturing: <http://www.CareerVoyages.gov/advmanufacturing-main.cfm>

Manufacturing Career Guide: <http://www.khake.com/page40.html>; links to manufacturing career information

Manufacturing engineers: <http://www.sme.org>

Metallforming careers: <http://www.pmaef.org/occupations/>

Welding careers: <http://www.aws.org/w/a/education/career.html>





Selected Careers

Occupation	Career Pathway(s)	Job Description
Biological Technicians	Maintenance, Installation, and Repair	Assist biological and medical scientists in laboratories. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs.
Electrical and Electronic Engineering Technicians	Manufacturing Production Process Development; Maintenance, Installation, and Repair	Apply electrical and electronic theory and related knowledge to design, build, repair, calibrate, and modify electrical components, circuitry, controls, and machinery for subsequent evaluation and use by engineering staff in making engineering design decisions.
Industrial Engineering Technicians	Maintenance, Installation, and Repair	Apply engineering theory and principles to problems of industrial layout or manufacturing production. May study and record time, motion, method, and speed involved in performance of production, maintenance, clerical, and other worker operations for such purposes as establishing standard production rates or improving efficiency.
Life, Physical, and Social Science Technicians, All Other	Manufacturing Production Process Development	All life, physical, and social science technicians not listed separately.
Mobile Heavy Equipment Mechanics, Except Engines	Maintenance, Installation, and Repair	Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining.
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	Production	Set up, operate, or tend more than one type of cutting or forming machine tool or robot.
Sheet Metal Workers	Production	Fabricate, assemble, install, and repair sheet metal products and equipment, such as ducts, control boxes, drainpipes, and furnace casings. May involve setting up and operating fabricating machines shaping metal over anvils, blocks, or other forms, and smoothing seams and joints.

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$13.69/ 28,472	\$19.52/ 40,606	208	24.4	Associate degree	✓	✓	✓
	\$17.29/ 35,961	\$23.88/ 49,679	102	8.5	Associate degree	✓	✓	
	\$16.15/ 33,587	\$24.35/ 50,644	72	14.7	Associate degree	✓	✓	
	\$14.36/ 29,865	\$18.59/ 38,664	188	19.7	Associate degree	✓	✓	✓
	\$14.11/ 29,357	\$19.07/ 39,656	134	19.2	One - two years of college		✓	✓
	\$11.46/ 23,828	\$17.32/ 36,023	150	23.6	Moderate-term on-the-job training			✓
	\$11.18/ 23,261	\$15.38/ 31,991	330	21.8	Long-term on-the-job training			✓

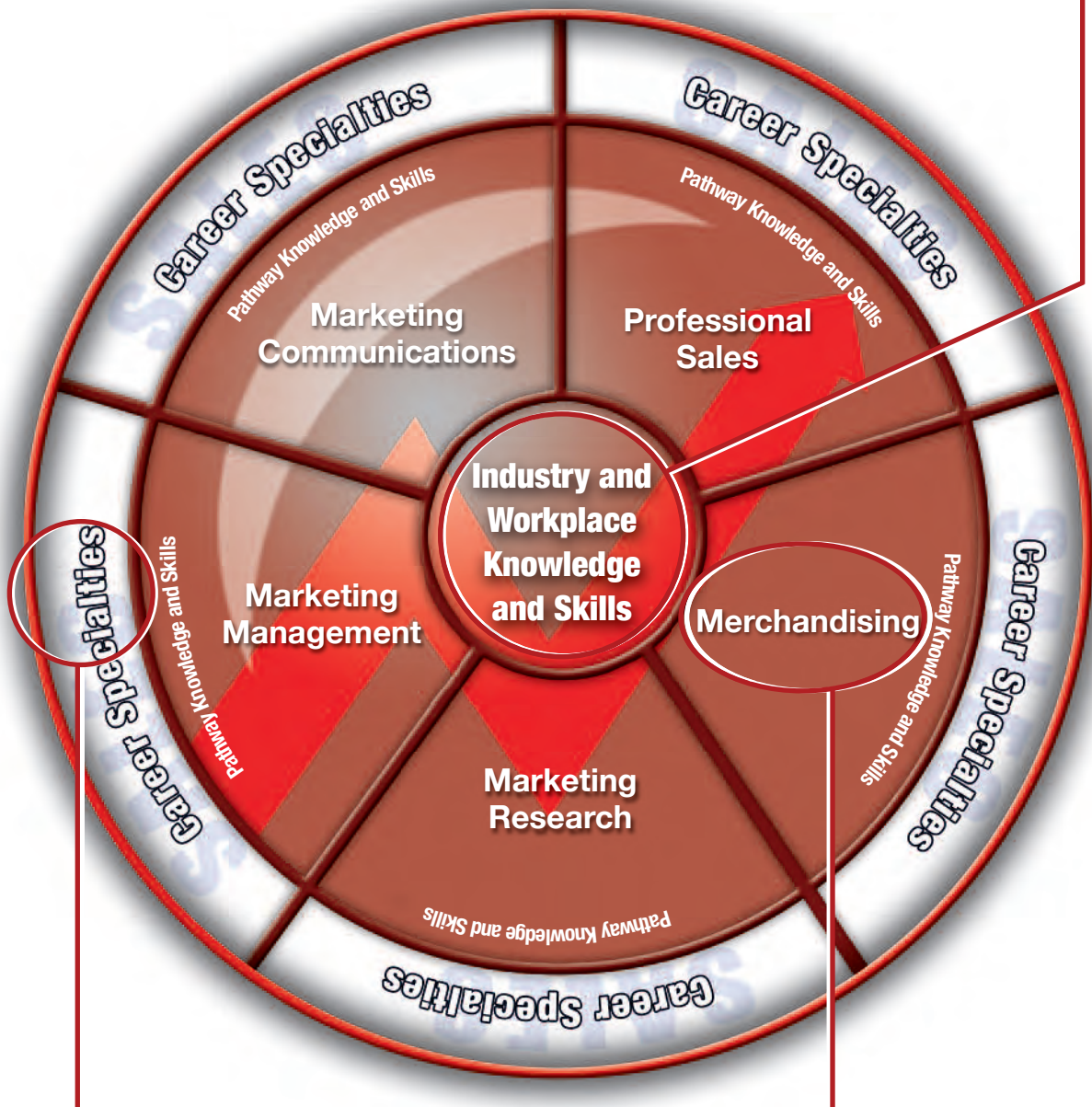
NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Planning, managing, and performing marketing activities to reach organizational objectives.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Marketing Management	<ul style="list-style-type: none"> Advertising and Promotions Managers Business Teachers, Postsecondary Marketing Managers Sales Managers 			
Professional Sales	<ul style="list-style-type: none"> Appraisers and Assessors of Real Estate Cashiers Counter and Rental Clerks Demonstrators and Product Promoters Door-To-Door Sales Workers, News and Street Vendors, and Related Workers Driver/Sales Workers First-Line Supervisors/Managers of Non-Retail Sales Workers First-Line Supervisors/Managers of Retail Sales Workers Gaming Change Persons and Booth Cashiers Hotel, Motel, and Resort Desk Clerks Interior Designers Lodging Managers Marketing Managers Meeting and Convention Planners Models Parts Salespersons Property, Real Estate, and Community Association Managers Real Estate Brokers Real Estate Sales Agents Reservation and Transportation Ticket Agents and Travel Clerks Retail Salespersons Sales and Related Workers, All Other Sales Engineers Sales Representatives, Services Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products Stock Clerks and Order Fillers Telemarketers Transportation Attendants, Except Flight Attendants and Baggage Porters Travel Agents Travel Guides Wholesale and Retail Buyers, Except Farm Products 			
Merchandising	<ul style="list-style-type: none"> Purchasing Agents, Except Wholesale, Retail, and Farm Products Retail Salespersons Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products Telemarketers Wholesale and Retail Buyers, Except Farm Products 			
Marketing Communications	<ul style="list-style-type: none"> Computer Programmers First-Line Supervisors/Managers of Retail Sales Workers Sales Managers 			
Marketing Research	<ul style="list-style-type: none"> Business Teachers, Postsecondary Market Research Analysts Marketing Managers Survey Researchers 			



Career Spotlight

Name: Dennis Robinson

Occupation: General Manager, Hatteras Marlin Motel

Active DECA Member and Community Business Leader

Dennis Robinson is a 1999 graduate of Cape Hatteras Secondary School in Cape Hatteras, North Carolina. While a student at Cape Hatteras, Robinson enrolled in every marketing course offered and was an active member of Distributive Education Clubs of America (DECA). He excelled in both. He was a top DECA winner at the state level for two years and advanced to competition on the national level.

Robinson's knack for marketing led him to East Carolina University

(ECU) in Greenville, where he earned a degree in Hospitality Management. While a student at ECU, he continued to be active in DECA. Upon graduation, he accepted a position as General Manager of the Hatteras Marlin Motel in Hatteras, where he is still employed.

Robinson remains active in DECA, still serving as an event manager at district competitions and as a competition judge at state and national events. In 2007, he received the North Carolina

DECA Honorary Life Membership Award for his support of DECA on the local, state, and national levels. He was one of the youngest people in North Carolina to ever receive this award.

Robinson also is very active in the local Hatteras Island community. He currently serves on the board of the Hatteras Village Civic Association and is Vice President of the Kiwanis Club of Hatteras Island.



Did You Know?

If you explore the Marketing Career Cluster, you'll discover that there are dozens of diverse careers along the cluster's five pathways. Those pathways and some related careers include:

Marketing Management – Business owners and executives, customer service representatives, and administrative support personnel

Professional Sales – Inbound call managers, client relationship managers, and related support personnel

Merchandising – Retail marketing coordinators, merchandise buyers, and sales associates

Marketing Communications – Advertising and public relations managers, graphic designers and copywriters, and sales promotion managers

Marketing Research – Database managers, strategic planners, product planners, and research associates

For more information, go to the *Occupational Outlook Handbook* at <http://www.bls.gov/oco/oco1004.htm> and the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cgs030.htm>.

MARKETING RESOURCES

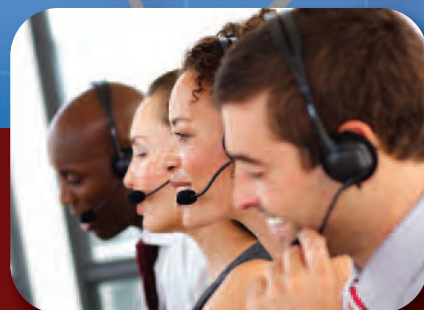
American Marketing Association: <http://www.marketingpower.com>

Association of International Product Marketing and Management: <http://aipmm.com>

Marketing Career Descriptions: <http://www.marshall.usc.edu/marketing/resources/resources-overview.htm>

Student Marketing Association: <http://www.ncdeca.org>

Sales & Marketing Executives: International: <http://www.smei.org>





Selected Careers

Occupation	Career Pathway(s)	Job Description
Advertising and Promotions Managers	Marketing Management	Plan and direct advertising policies and programs or produce collateral materials to create extra interest in the purchase of a product or service for a department, an entire organization, or on an account basis.
Appraisers and Assessors of Real Estate	Professional Sales	Appraise real property to determine its fair value. May assess taxes in accordance with prescribed schedules.
Demonstrators and Product Promoters	Professional Sales	Demonstrate merchandise and answer questions for the purpose of creating public interest in buying the product.
Market Research Analysts	Marketing Research	Research market conditions to determine potential sales of a product or service. May gather information on competitors, prices, sales, and methods of marketing and distribution. May create marketing campaigns.
Marketing Managers	Marketing Management; Marketing Research; Professional Sales	Determine the demand for products and services offered by a firm and its competitors and identify potential customers. Develop pricing strategies, oversee product development, or monitor trends that indicate need for new products and services.
Meeting and Convention Planners	Professional Sales	Coordinate activities of staff and convention personnel to make arrangements for group meetings and conventions.
Real Estate Sales Agents	Professional Sales	Rent, buy, or sell property for clients. List property, interview prospective clients, accompany clients to property site, discuss conditions of sale, and draw up real estate contracts.
Sales Managers	Marketing Management; Marketing Communications	Direct the distribution or movement of a product or service to the customer. Coordinate sales distribution by territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics to determine sales potential and inventory requirements and monitor customer preferences.
Survey Researchers	Marketing Research	Design or conduct surveys. May supervise interviewers who conduct the survey in person or over the telephone. May present survey results to client.

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$20.67/ 42,986	\$36.63/ 76,191	33	13.2	Bachelor's degree or higher plus work experience	✓	✓	
	\$14.26/ 29,659	\$24.03/ 49,978	89	16.7	One - two years of college		✓	
	\$8.18/ 17,010	\$13.31/ 27,680	186	25.8	Moderate-term on-the-job training			✓
	\$19.04/ 39,612	\$32.08/ 66,724	97	14.3	Master's degree	✓	✓	
	\$30.29/ 62,995	\$51.24/ 106,588	153	14.6	Bachelor's degree or higher plus work experience	✓	✓	
	\$13.62/ 28,326	\$19.77/ 41,116	43	19.3	Bachelor's degree	✓	✓	
	\$13.32/ 27,715	\$30.19/ 62,800	427	17.1	One - two years of college		✓	✓
	\$22.34/ 46,475	\$46.07/ 95,818	461	11.8	Bachelor's degree or higher plus work experience	✓	✓	
	\$14.11/ 29,355	\$20.32/ 42,273	18	23.5	Master's degree	✓	✓	

NOTES

- Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.

Greening the Workforce

Have you noticed that suddenly everyone seems a lot more interested in anything “green”? It’s not the color that is important; it’s what green represents: a focus on preserving natural resources and the development of renewable energy.

As you plan your educational pathway, consider just what effect going green will have on your career. When gas prices spike to more than \$4.00 per gallon, it is easy to see the need for homegrown fuel that promotes American agriculture and industry. Whenever you hear about the prospect of a Category 5 hurricane making landfall on the North Carolina coastline, everyone begins to pay closer attention to the effects of global warming. With issues so big, you might think that you cannot possibly make an impact on these truly global issues, but the truth is that you can.

Thirty years ago, anyone planning a career working with computers would have most likely sought a four-year degree in computer science, but now it is difficult to find an occupation or industry where computer technology is not a significant part of daily operations. The computer has become a tool by which we perform nearly every task. It is likely that green concepts will firmly root into any occupation that either uses energy or impacts the environment. In short, every job will be transformed at some level. Career and Technical Education (CTE) participants are likely to be the first affected by this change and will take a leadership role in clean energy production and environmental sustainability.

Whether you enter the skilled trades or the sciences, the ability to reduce one’s “carbon footprint,” is becoming paramount in the workplace. In the skilled trades, home builders are incorporating recycled materials, energy efficient appliances, and with increasing frequency, energy-generating fixtures, such as solar panels and wind turbines. This is changing the service industry that maintains these homes by creating a need for skilled technicians who understand and are trained to work with these new technologies.

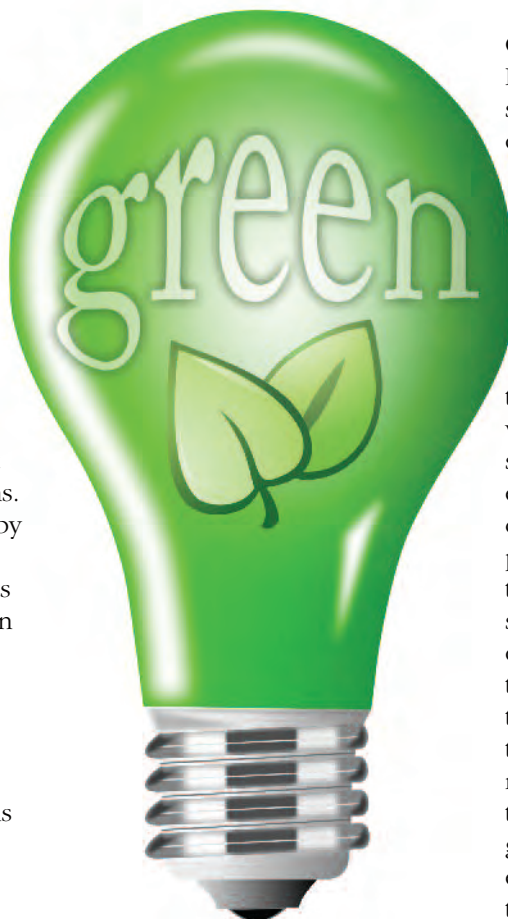
In the sciences, researchers are focused on new and renewable energy production, making the products we already rely upon

use less energy and finding ways to sanitize the energy that we already use. For each of these researchers, there is an estimated need for six “highly skilled” employees, which requires at least an associate degree, to work in support positions.

According to an October 2008 Issue Brief from the Association for Career and Technical Education (ACTE), “An estimated \$71 billion was invested in new renewable energy capacity worldwide in 2007, and clean energy was the third-largest area of venture capital investment.” The result of this is several million jobs being created or transformed to address the needs of the green movement. A critical need for workers with skills and knowledge of sustainable systems continues to expand.

CTE is leading the way! Across North Carolina’s educational system, new programs are being developed and existing programs are retrofitting to support the burgeoning green-collar workforce. These jobs are high-skill, high-demand, and high-wage and are in fields as diverse as the workforce itself.

Unfortunately, there is a tremendous shortage of individuals with the necessary skills in sustainability practices, and employers seeking more “green-collar” workers often face bleak prospects. In many instances, while the technologies to support the sustainability industry have been or are being created, industry lacks the skilled workforce necessary to implement and use these technologies. To some extent, the need for human capital is proving to be a barrier to the continued growth and expansion in energy efficiency and sustainability. At a time when unemployment rates are growing, this lack of skilled



workers leaves high-paying employers unable to fill positions of critical need.

CTE is evolving to fill these gaps. Through the concept of Career Clusters, curricula are linked so that students have clear pathways leading ultimately to these lucrative career options with industries desperate for skilled workers. CTE focuses on skills attainment as much as completion of academic programming.

These green concepts are rapidly filtering into all curricula; however, many green-collar programs are already offered across the state. One example, which was developed closely with industry and the North Carolina Biofuels Center, is an associate degree in Alternative Energy Technology: Biofuels and related certificate programs at Central Carolina Community College. Green program offerings will continue to expand. In February 2009, the State Board of Community Colleges approved the following courses that will be available across the State:

- Sustainable Development
- Green Building Overview
- Green Construction
- Green Consumerism
- Green Purchasing
- Alternative Fuels Technology
- Photovoltaic (PV) Technology
- Solar Thermal Technology
- Wind Power Technology
- Building Efficiency Operator
- Home Energy Rater
- Indoor Air Quality
- Microbial Investigation and
- LEED (Leadership in Energy and Environmental Design) Exam Preparation

North Carolina is on the forefront of developing a green workforce. Please remember to consider this as you establish your own education and career paths.

Top Green Jobs

The *Green Jobs Guidebook: Employment Opportunities in the New Clean Economy*, created by the Economic Defense Fund, has compiled a list of more than 200 jobs that are related to either preventing or adapting to climate change. The following is an abbreviated list of some of these new opportunities by industry sector. The entire Guidebook can be accessed at <http://www.edf.org/article.cfm?contentID=8466>.

Low Carbon Power and Renewable Power Generation

- Solar Hot Water Heater Manufacturing Technician
- Solar Lab Technician
- Solar Residential Installation Electrician
- Solar Operations Engineer

Wind Development, Manufacturing, Installation, and Maintenance

- Wind Farm Electrical Systems Designer
- Wind Turbine Electrical Engineer
- Wind Field Technician

Hydroelectric Power Operation Development, Manufacturing, Installation, and Maintenance

- Hydroelectro Component Machinist
- Hydroelectro Plant Structural Engineer
- Hydroelectro Installation Technician
- Hydrogeologist and Hydrologist

Geothermal Power Plant Development, Manufacturing, Installation, Engineering, and Management

- Geothermal Sheet Metal Worker
- Geothermal Electrical Engineer
- Geothermal Power Generation Engineer

Biogas and Biomass Generated Energy and Collection

- Landfill Gas Technician
- Biomass Plant Operations, Engineering, and Maintenance
- Biomass Collection, Separating, and Sorting

Plant Environmental, Health, and Safety

- Environmental, Health, and Safety Engineering Manager
- Plant Technical Specialist – Safety Equipment Testing
- Safety Investigator/Cause Analyst

Green Building Projects

- Residential or Commercial Green Building and Retrofit Architect
- Industrial Green Systems and Retrofit Designer
- Water Purification Systems Service Technician
- Weatherization Operations Manager

Automotive Operations, Vehicle Production, Manufacturing, and Modification

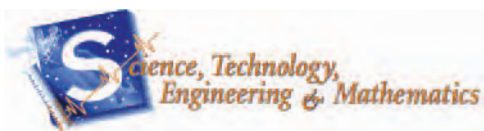
- Diesel Retrofit Installer
- Electric Vehicle Electrician
- Air Pollution Specialist

Biofuel Production Facilities Operations and Management

- Biofuel Plant Operations Engineer
- Biodiesel/Biofuel Plant Field Technician
- Alternative Fuels Policy Analysts and Business Sales

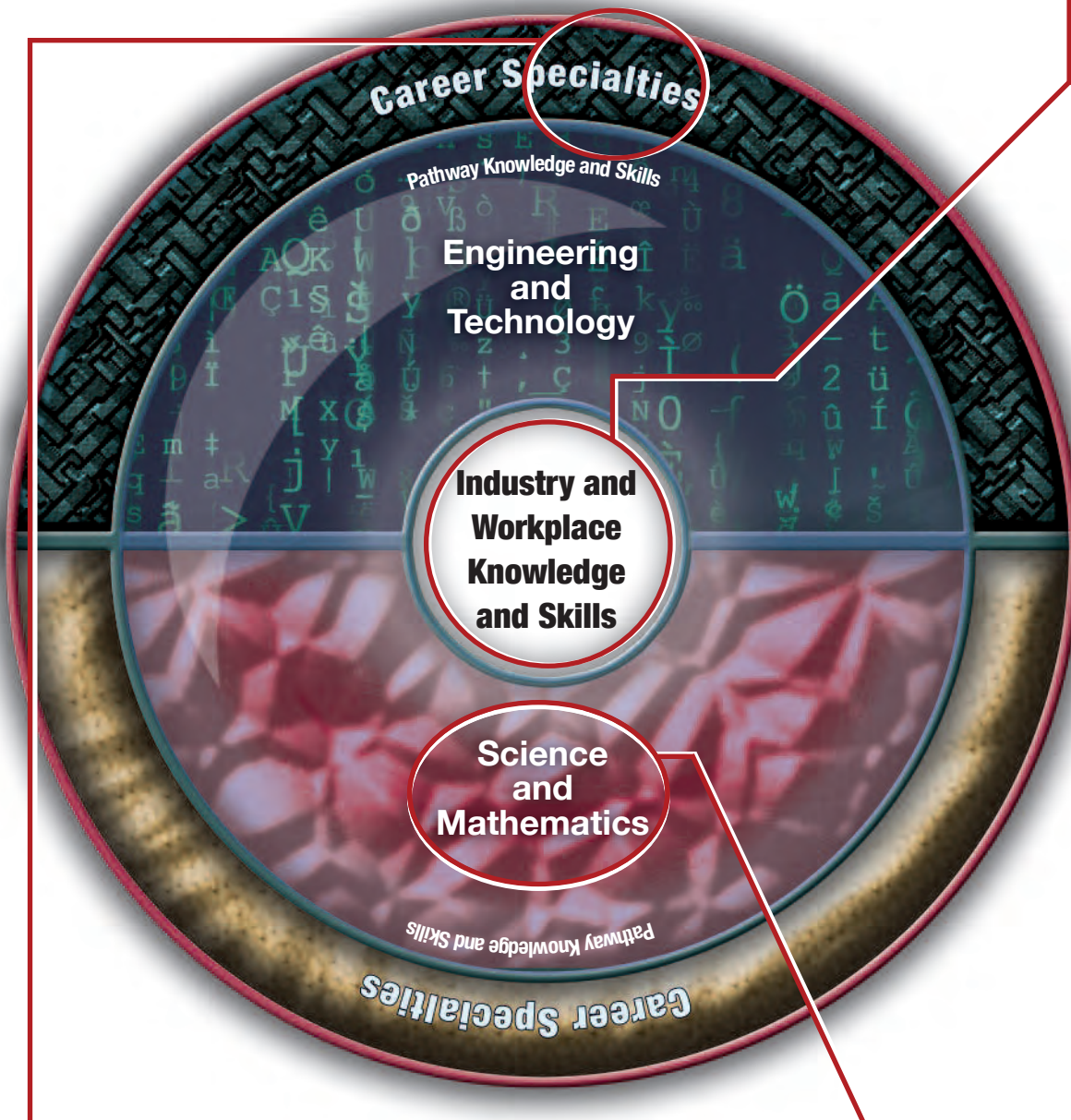
Climate Change Adaptation and Climate Studies

- Environmental Scientist
- Environmental Sampling Technician
- Climatologist



Planning, managing, and providing scientific research and professional and technical services including laboratory and testing services, and research and development services.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Engineering and Technology	<ul style="list-style-type: none"> • Aerospace Engineers • Agricultural Engineers • Architecture Teachers, Postsecondary • Biomedical Engineers • Chemical Engineers • Civil Engineers • Computer Hardware Engineers • Cost Estimators • Drafters 	<ul style="list-style-type: none"> • Electrical Engineers • Electro-Mechanical Technicians • Electronics Engineers, Except Computer • Engineering Managers • Engineering Teachers, Postsecondary • Engineers • Environmental Engineers 	<ul style="list-style-type: none"> • Health and Safety Engineers, Except Mining Safety Engineers and Inspectors • Industrial Engineering Technicians • Industrial Engineers • Marine Engineers and Naval Architects 	<ul style="list-style-type: none"> • Materials Engineers • Mechanical Engineers • Mining and Geological Engineers, Including Mining Safety Engineers • Nuclear Engineers • Nuclear Technicians • Petroleum Engineers
Science and Mathematics	<ul style="list-style-type: none"> • Anthropologists and Archeologists • Anthropology and Archeology Teachers, Postsecondary • Astronomers • Atmospheric and Space Scientists • Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary • Biochemists and Biophysicists • Biological Science Teachers, Postsecondary • Biological Scientists • Cartographers and Photogrammetrists • Chemistry Teachers, Postsecondary • Chemists • Community and Social Service Specialists • Computer Programmers 	<ul style="list-style-type: none"> • Computer Software Engineers, Applications • Computer Specialists • Computer Support Specialists • Dietetic Technicians • Dietitians and Nutritionists • Economics Teachers, Postsecondary • Economists • Engineering Managers • Engineering Teachers, Postsecondary • Epidemiologists • Family and General Practitioners • Geographers • Geography Teachers, Postsecondary • Geoscientists, Except Hydrologists and Geographers • Health Specialties Teachers, Postsecondary 	<ul style="list-style-type: none"> • Hydrologists • Life Scientists • Market Research Analysts • Materials Scientists • Mathematical Science Teachers, Postsecondary • Mathematical Scientist Occupations • Mathematical Technicians • Mathematicians • Medical Scientists • Medical Scientists, Except Epidemiologists • Microbiologists • Natural Sciences Managers • Physical Scientists • Physicists • Physics Teachers, Postsecondary • Political Science Teachers, Postsecondary 	<ul style="list-style-type: none"> • Political Scientists • Psychologists • Social Scientists and Related Workers • Social Sciences Teachers, Postsecondary • Sociologists • Statisticians • Survey Researchers • Zoologists and Wildlife Biologists



Career Spotlight

Name: Rachel Burton

Occupation: Co-founder, Piedmont Biofuels Industrial, LLC

Entrepreneur's Company Produces Renewable Biodiesel Fuel

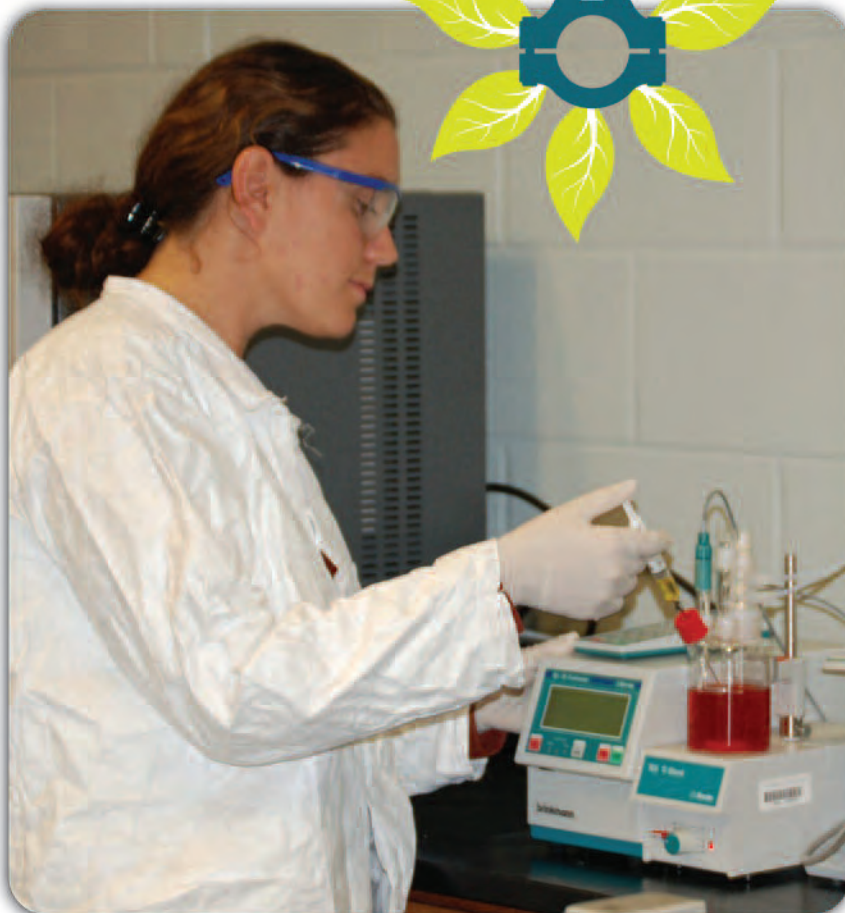
Rachel Burton knows that the answer to the world's dependence on polluting, nonrenewable fossil fuels is to develop clean, renewable energy sources. This knowledge led the 1996 liberal arts graduate of the University of North Carolina at Chapel Hill to enroll at Central Carolina Community College (CCCC). There she earned both a Certificate in Sustainable Agriculture in 1998 and an A.A.S. in Automotive Technology in 2000.

Burton and others then encouraged CCCC to offer a biodiesel fuel class, which she helped teach. That class led to the creation of the college's biofuels associate degree program, unique in the North Carolina Community College System. Burton serves on the program's advisory board.

"Central Carolina fosters an environment for innovative thinking with a hands-on learning approach," said Burton, a graduate of Mount Tabor High School in Winston-Salem. "These were the tools I needed to explore my interests in renewable energy."

In 2004, Burton co-founded Piedmont Biofuels Industrial, LLC, a commercial biodiesel fuel producer in Pittsboro. In 2008, Piedmont Biofuels produced about one million gallons of biodiesel.

The company has received the North Carolina State Energy Office's Sustainable Energy Leadership Award and the Alternative Fuels Leadership Award. It is the state's first biodiesel producer to achieve the BQ9000 accreditation from the National Biodiesel Accreditation Commission.



Did You Know?

Careers related to the Science, Technology, Engineering & Mathematics Career Cluster, often called STEM careers, can be found across industries that include:

- Agriculture
- Computer systems design and related services
- Construction
- Education
- Financial services
- Health services
- Information services, including broadcasting, the Internet, motion picture and video industries, software and other publishing, and telecommunications
- Manufacturing
- Natural resources
- Transportation

Most related careers pay well, and jobs for people with STEM-related education and experience are growing. Educational pathways include Career and Technical Education, certificate programs, two- and four-year degrees and higher.

For more information, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cgs053.htm>. Also go to the following *Occupational Outlook Handbook* pages at <http://www.bls.gov/oco/ocos115.htm> and <http://www.bls.gov/oco/ocos027.htm>.

SITES TO EXPLORE

American Chemical Society: <http://www.chemistry.org>

American Institute of Biological Sciences: <http://www.aibs.org/careers>

Cool Careers in Science: http://www.pbs.org/safarchive/5_cool/53_career.html

Engineering: <http://engineeringk12.org>, <http://www.jets.org>, <http://www.swe.org> and <http://www.eteducation.org>

Engineering Education: <http://www.asee.org>

FIRST: <http://www.usfirst.org>

International Technology Education Association: <http://iteaconnect.org>

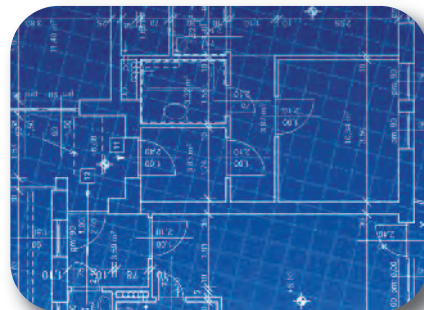
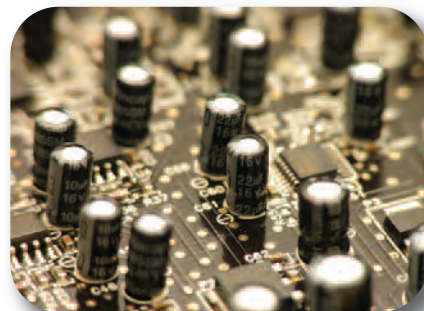
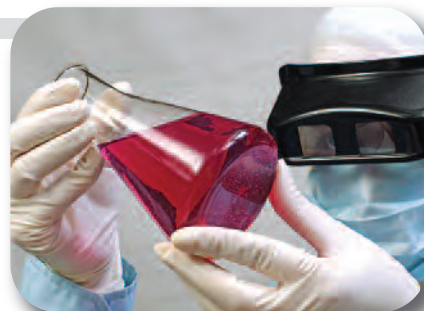
Mathematics: <http://www.maa.org/careers/>

National Society of Black Engineers: <http://national.nsbe.org>

Physics: <http://www.aps.org/careers/>

Project Lead the Way: <http://www.pltw.org>

Technology-related student sites: <http://www.tsaweb.org> and <http://skillsusa.org>



Selected Careers

Occupation	Career Pathway(s)	Job Description	
Aerospace Engineers	Engineering and Technology	Perform a variety of engineering work in designing, constructing, and testing aircraft, missiles, and spacecraft. May conduct basic and applied research to evaluate adaptability of materials and equipment to aircraft design and manufacture. May recommend improvements in testing equipment and techniques.	
Biomedical Engineers	Engineering and Technology	Apply knowledge of engineering, biology, and biomechanical principles to the design, development, and evaluation of biological and health systems and products, such as artificial organs, prostheses, instrumentation, medical information systems, and health management and care delivery systems.	
Environmental Engineers	Engineering and Technology	Design, plan, or perform engineering duties in the prevention, control, and remediation of environmental health hazards using engineering disciplines. May include waste treatment, site remediation, or pollution control technology.	
Geoscientists, Except Hydrologists and Geographers	Science and Mathematics	Study the composition, structure, and other physical aspects of the Earth. May use knowledge to explore for oil, gas, minerals, or underground water or in waste disposal, land reclamation, or other environmental problems. May study the Earth's internal composition, atmospheres, oceans, and its magnetic, electrical, and gravitational forces.	
Medical Scientists, Except Epidemiologists	Science and Mathematics	Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation or other research, production, technical writing, or related activities.	
Natural Sciences Managers	Science and Mathematics	Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, mathematics, and statistics, and in research and development in these fields.	
Statisticians	Science and Mathematics	Engage in the development of mathematical theory or apply statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information.	

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$28.43/ 59,130	\$36.20/ 75,301	24	25.2	Bachelor's degree	✓	✓	
	\$24.27/ 50,489	\$35.98/ 74,841	35	32.8	Bachelor's degree	✓	✓	
	\$24.00/ 49,917	\$34.21/ 71,158	99	23.7	Bachelor's degree	✓	✓	
	\$16.32/ 33,937	\$29.24/ 60,810	23	29.7	Master's degree	✓	✓	
	\$22.78/ 47,391	\$38.90/ 80,910	197	36.7	Doctoral degree	✓	✓	✓
	\$34.18/ 71,090	\$53.98/ 112,288	71	25.6	Bachelor's degree or higher plus work experience	✓	✓	
	\$22.23/ 46,235	\$33.93/ 70,582	40	22.6	Master's degree	✓	✓	

NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.



Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Industry and workplace knowledge and skills are taught and reinforced in all pathways and at all levels.



Highly specific career specialty skills are taught at the postsecondary level by colleges, apprenticeships, or other training options.

High schools offer some or all pathways to students and teach pathway-specific knowledge and skills.

Pathway	Specific Occupations			
Transportation Operations	<ul style="list-style-type: none"> • Aerospace Engineering and Operations Technicians • Air Traffic Controllers • Air Traffic Controllers and Airfield Operations Specialists • Aircraft Cargo Handling Supervisors • Aircraft Pilots and Flight Engineers • Airfield Operations Specialists • Airline Pilots, Copilots, and Flight Engineers • Automotive Service Technicians and Mechanics • Boilermakers • Bookbinders • Bridge and Lock Tenders • Bus Drivers • Bus Drivers, School 	<ul style="list-style-type: none"> • Bus Drivers, Transit and Intercity • Captains, Mates, and Pilots of Water Vessels • Commercial Divers • Commercial Pilots • Crane and Tower Operators • Excavating and Loading Machine and Dragline Operators • First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand • First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators • Hoist and Winch Operators 	<ul style="list-style-type: none"> • Laborers and Freight, Stock, and Material Movers, Hand • Locomotive Engineers and Operators • Motor Vehicle Operators • Occupational Health and Safety Specialists and Technicians • Operating Engineers and Other Construction Equipment Operators • Parking Lot Attendants • Rail Yard Engineers, Dinkey Operators, and Hostlers • Railroad Brake, Signal, and Switch Operators • Sailors and Marine Oilers • Service Station Attendants • Ship and Boat Captains and Operators • Ship Engineers 	<ul style="list-style-type: none"> • Subway, Streetcar, and Rail Transportation Workers • Supervisors, Transportation and Material Moving Workers • Taxi Drivers and Chauffeurs • Transportation Inspectors • Transportation Workers • Transportation, Storage, and Distribution Managers • Truck Drivers, Heavy and Tractor-Trailer • Truck Drivers, Light or Delivery Services
Logistics Planning and Management Services	<ul style="list-style-type: none"> • Administrative Services Managers • Chief Executives • Logisticians • Managers 	<ul style="list-style-type: none"> • Transportation, Storage, and Distribution Managers 		
Warehousing and Distribution Center Operations	<ul style="list-style-type: none"> • Production, Planning, and Expediting Clerks • Shipping, Receiving, and Traffic Clerks • Traffic Technicians 			
Facility and Mobile Equipment Maintenance	<ul style="list-style-type: none"> • Aircraft Mechanics and Service Technicians • Aircraft Structure, Surfaces, Rigging, and Systems Assemblers • Automotive Body and Related Repairers • Automotive Glass Installers and Repairers • Automotive Service Technicians and Mechanics 	<ul style="list-style-type: none"> • Avionics Technicians • Bicycle Repairers • Bus and Truck Mechanics and Diesel Engine Specialists • Cleaners of Vehicles and Equipment • Electrical and Electronics Installers and Repairers, Transportation Equipment 	<ul style="list-style-type: none"> • Electronic Equipment Installers and Repairers, Motor Vehicles • Engine and Other Machine Assemblers • Installation, Maintenance, and Repair Workers • Jewelers and Precious Stone and Metal Workers 	<ul style="list-style-type: none"> • Motorboat Mechanics • Motorcycle Mechanics • Outdoor Power Equipment and Other Small Engine Mechanics • Painters, Transportation Equipment
Sales and Service	<ul style="list-style-type: none"> • Parts Salespersons 			



Career Spotlight

Name: Lindsey Candelaria

Occupation: Autobody Repair Student, Forsyth Technical Community College

Autobody Student Wants to Learn More About Cars

When Lindsey Candelaria started at Forsyth Technical Community College in Winston-Salem, North Carolina, she did not plan on majoring in Autobody Repair.

"I was in the Criminal Justice Technology program for about a year," she recalls. "Then I got my '81 Datsun 280ZX, and I wanted to see about getting it restored down in autobody."

After Candelaria described her interest in cars, the autobody instructor suggested that she fix the car herself. Candelaria recognized a good idea when she heard it and shortly thereafter enrolled in the Autobody Repair program.

Being in the autobody program inspired Candelaria to learn more about the inner workings of her car. "I'm switching to Automotive Systems Technology next," she said. "I'm going to take some automotive, and then eventually I hope to switch to Race Car Technology at some point."

In fact, now that she's discovered the joys of learning about cars at Forsyth Tech, she's in no hurry for her education to end. "I'm a recurring student," she said with a laugh. "I don't want to leave!"



Did You Know?

Careers in the Transportation, Distribution & Logistics Career Cluster are expected to grow along with the U.S. population. And as in most fields, workers who have higher-level skills usually have higher wages, according to the *Occupational Outlook Quarterly*.

Truck drivers, for example, must pass both written and field evaluations before receiving certification, and with more experience, they earn both higher wages and more control over their routes.

Other high-growth occupations in the field include aircraft and avionics equipment mechanics and service technicians, automotive service technicians and mechanics, water transportation occupations, and construction equipment operators.

For more information, go to the *Career Guide to Industries* at <http://www.bls.gov/oco/cg/cg1004.htm>. Also go to <http://www.careervoyages.gov>, and click on the Advanced Manufacturing, Aerospace, Automotive Services, and Transportation tabs. Find related careers in the *Occupational Outlook Handbook* at <http://www.bls.gov/oco/oco1011.htm>.

CAREER RESEARCH

American Society of Transportation and Logistics: <http://www.astl.org>

Council of Supply Chain Management Professionals: <http://www.careersinsupplychain.org>

Jobs in Logistics: <http://www.jobsinlogistics.com>



Selected Careers

Occupation	Career Pathway(s)	Job Description
Administrative Services Managers	Logistics Planning and Management Services	Plan, direct, or coordinate support services of an organization, such as recordkeeping, mail distribution, telephone operator/receptionist, and other office support services. May oversee facilities planning and maintenance and custodial operations.
Aircraft Mechanics and Service Technicians	Facility and Mobile Equipment Maintenance	Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems.
Automotive Service Technicians and Mechanics	Transportation Operations; Facility and Mobile Equipment Maintenance	Diagnose, adjust, repair, or overhaul automotive vehicles.
Bus and Truck Mechanics and Diesel Engine Specialists	Facility and Mobile Equipment Maintenance	Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines.
Electrical and Electronics Installers and Repairers, Transportation Equipment	Facility and Mobile Equipment Maintenance	Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment.
Logisticians	Logistics Planning and Management Services	Analyze and coordinate the logistical functions of a firm or organization. Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.
Operating Engineers and Other Construction Equipment Operators	Transportation Operations	Operate power construction equipment such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment.
Transportation Inspectors	Transportation Operations	Inspect equipment or goods in connection with the safe transport of cargo or people. Includes rail transport inspectors, such as freight inspectors, car inspectors, rail inspectors, and other nonprecision inspectors of other types of transportation vehicles.
Truck Drivers, Heavy and Tractor-Trailer	Transportation Operations	Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 GVW, to transport and deliver goods, livestock, or materials in liquid, loose, or packaged form. Requires commercial drivers' license.

NOTES (Source: North Carolina Employment Security Commission)

1. The average annual salary may vary in different service areas across the state.
2. This includes full-time and part-time employees.
3. Requires a minimum of an associate degree.
4. Above the current average annual statewide salary (\$36,903 for 2007). The average annual salary for your service area may vary across the state.

	NC Entry-Level Wage Hourly/ Annual	NC Average Wage Hourly/ Annual ¹	Average Total Annual Openings ²	% Change 2006-2016	Minimum Usual Education	High Skill ³	High Wage ⁴	High Demand ⁵
	\$21.41/ 44,524	\$33.38/ 69,431	167	17.3	Bachelor's degree or higher plus work experience	✓	✓	✓
	\$14.84/ 30,862	\$20.01/ 41,618	170	22.0	One - two years of college		✓	✓
	\$11.01/ 22,901	\$17.77/ 36,970	861	16.9	One - two years of college		✓	✓
	\$13.33/ 27,718	\$18.15/ 37,759	303	13.6	One - two years of college		✓	
	\$13.91/ 28,934	\$19.36/ 40,266	15	15.2	One - two years of college		✓	
	\$20.41/ 42,447	\$28.93/ 60,170	97	25.7	Bachelor's degree	✓	✓	
	\$12.03/ 25,026	\$15.23/ 31,669	621	22.7	Moderate-term on-the-job training			✓
	\$16.98/ 35,323	\$26.17/ 54,430	25	26.1	Work experience in a related occupation		✓	
	\$12.31/ 25,605	\$18.06/ 37,574	1728	11.7	Moderate-term on-the-job training		✓	

NOTES

5. Projected employment growth rate above the average growth rate (1.6% for 2006) and at least 100 projected annual openings in North Carolina. This includes full-time and part-time employees, but excludes proprietors, owners, and partners of unincorporated firms, unpaid family workers, workers on unpaid leave, military, independent contractors, and temporary agency employees not on a company payroll.

Graduating Future Ready

What do you want to be when you grow up? Students and adults alike have tried to come up with an answer to that question, and many have changed their minds a number of times. In fact, choosing a career is a major decision that will affect the rest of one's life. That's why the courses students take in high school matter so much.

With North Carolina's new Future-Ready Core Course of Study, high school is the best chance for students to prepare for whatever they decide to do as adults. The Future-Ready Core was developed to provide students with a strong academic foundation and as many options as possible when they graduate from high school. With a strong foundation and the skills needed to be successful in college or in the work force, it will never be too late for students to decide what they want to do when they graduate.

Future-Ready Core Requirements

The three major components of the Future-Ready Core Course of Study include:

1. The course requirements
2. Testing requirements and
3. The North Carolina Graduation Project

The illustration on the next page contains the Future-Ready Core Course Requirements for

a high school diploma. Much more information is available for students and parents at the following Web sites:

- www.ncpublicschools.org/docs/curriculum/home/graduationrequirements.pdf
- www.ncpublicschools.org/docs/gradrequirements/resources/frcbrochure.pdf
- www.ncpublicschools.org/docs/parents/resources/makingthegrade/2008fall.pdf

Setting a Course for the Future

Becoming Future Ready begins in the spring when eighth grade students, parents, teachers, and school counselors work together to select courses students want to take in ninth grade. School counselors will be happy to answer questions about how to meet the requirements of the Future-Ready Core. Graduating "future ready" will give students the options they need to meet life goals.





1. Future-Ready Core Course Requirements for a High School Diploma

English: 4 credits

Mathematics: 4 credits

Algebra I, Geometry, Algebra II, or Integrated Math I, II, III*, and a fourth math course aligned with the student's post-high school plans.

Science: 3 credits

A physical science course, Biology, Earth/Environmental Science

Social Studies: 3 credits

Civics and Economics, U.S. History, World History

Second Language:

Not required for graduation but required for admission to the UNC system.

Computer Skills:

No specific course required but students must score proficient on the Computer Skills test.

Health and Physical Education: 1 credit

Electives or Other

Requirements: 6 credits

Two elective credits of any combination from either Career and Technical Education, Arts Education, Second Languages. Four elective credits strongly recommended from one of the following: Career and Technical Education, JROTC, Arts Education, any other subject area (e.g. mathematics, science, social studies, English).

21 TOTAL CREDITS REQUIRED FOR GRADUATION

** A student, in rare instances, may be able to take an alternative math course sequence as outlined under State Board of Education policy. Please see your school counselor for more details.*

2. Testing Requirements

End-of-course tests are required for the five essential courses that all students take: Algebra I, Biology, Civics and Economics, English I, and U.S. History. Students must score proficient on the Computer Skills test and meet any additional local requirements as well. End-of-course test results also count as 25 percent of every student's final grade in the course.

3. The North Carolina Graduation Project Requirement

Students are encouraged to complete the North Carolina Graduation Project. The project is the culmination of four years of high school work. The four-part project includes:

1. A research paper demonstrating the student's research and writing skills.
2. A product created through the use of knowledge and skills in a meaningful way to accomplish a goal.
3. A portfolio, which is a learning record of the student's process

and progress through all the steps of the graduation project. This physical record will help students keep track of their work.

4. An oral presentation during which the student will present information on a chosen topic to a review panel.

All of these are skills that students will need in the workplace and in college. For more information, go to www.ncpublicschools.org/graduationproject.



Sample Career Cluster Plan of Study

Student Name _____ Career Goal _____

Career Cluster _____ Postsecondary Goal _____

Pathway _____

Ninth Grade	Tenth Grade	Eleventh Grade	Twelfth Grade
English I	English II	English III	English IV
Algebra I or Integrated Math I	Geometry or Integrated Math II	Algebra II or Integrated Math III	Math course aligned with career goal
Earth/Environmental Science	Biology	A Physical Science course	
World History	Civics and Economics	US History	
Health and Physical Education			
Electives			
Two credits from Career and Technical Education, Arts Education, or Second Languages			
Four-credit concentration of elective courses aligned with career goal			
Extended Learning			
Work-Based Learning Job Shadowing Service Learning Cooperative Education Internship Apprenticeship Career Technical Student Organization (CTSO) See page 124			
Apprenticeship (http://www.nclabor.com/appren/) Community College (see page 129) College/University (see page 128)			

High School

Postsecondary

Career and Technical Student Organizations

All students enrolled in Career and Technical Education programs have an opportunity to develop and extend their learning through participation in Career and Technical Student Organizations (CTSOs) associated with their program. CTSOs develop character, citizenship, technical, leadership, and teamwork skills essential for students who are preparing for the workforce and further education. These organizations enhance students' civic awareness and provide opportunities for developing social competencies and a wholesome attitude about living and working.



SkillsUSA is a partnership of high school and college students who are preparing for careers in trade, technical, and skilled service occupations, including health careers. Teachers and industry representatives work together with students to ensure America has a skilled workforce. <http://www.skillsusa.org>



DECA supports the development of marketing and management skills in career areas such as hospitality, finance, sales and service, business administration, and entrepreneurship. DECA provides recognition and leadership activities directly related to attainment of specific occupational and leadership skills. <http://www.deca.org>



Health Occupations Students of America (HOSA) promotes career opportunities in the health care industry and enhances the delivery of quality health care to all people. HOSA provides a unique program of leadership development, motivation, and recognition exclusively for secondary, postsecondary, adult, and collegiate students enrolled in health science technology education programs. HOSA is 100% health care! <http://www.hosa.org>





The **National FFA Organization** uses agricultural education to create real-world success for students. There are more than 7,000 FFA chapters that offer students opportunities for leadership, personal growth, and career growth. FFA programs are managed on local, state, and national levels and represent more than 300 careers in the food, fiber, and natural resources industry. <http://www.ffa.org>



Family, Career and Community Leaders of America (FCCLA) is a national organization for students who participate in Family and Consumer Sciences Education. Focusing on multiple roles of family member, wage earner, and community leader, members develop character, creative and critical thinking skills, interpersonal communication, and practical knowledge in addition to preparing for careers. <http://www.fccla.com>



The **Technology Student Association (TSA)** is devoted exclusively to the needs of students interested in technology. TSA's membership includes more than 150,000 middle and high school students in 2,000 schools spanning 47 states. Members learn through exciting competitive events, leadership opportunities, and much more. <http://www.tsaweb.org>



A quarter million students prepare for careers in business and business-related fields as members of **Future Business Leaders of America-Phi Beta Lambda**. The high school division has 215,000 members, and the post-secondary division reaches over 11,000 college students. Membership and career recognition programs designed for each division also provide personal and chapter development opportunities. <http://www.fbila-pbl.org>



Web Sites

Organizations

America's Career Resource Network (ACRN)

<http://cte.ed.gov/acrn/>

America's Career Resource Network consists of state and federal organizations that provide information, resources, and training on career and education exploration. The network is funded by a grant from the U.S. Department of Education and operates in every state and territory.

American School Counselor Association (ASCA)

<http://www.schoolcounselor.org>

ASCA is a professional organization that works to support school counselors as they guide students in academic and social development.

Association for Career and Technical Education (ACTE)

<http://www.acteonline.org>

ACTE is the largest national association dedicated to the advancement of education that prepares students for careers. The association promotes career-focused education through publications, teacher resources, professional development activities, and public policy initiatives.

High Schools That Work (HSTW)

<http://www.sreb.org/programs/hstw/hstwindex.asp>

An education reform model developed by the Southern Regional Education Board, HSTW emphasizes 10 key practices for improving high school education including opportunities for out-of-classroom education and higher standards for all students. HSTW

looks for methods to improve student performance and helps schools apply them in their local settings.

National Research Center for Career and Technical Education (NRCCTE)

<http://www.nccte.org>

The National Center is a consortium of four major research universities and five related organizations involved in career and technical education. The National Center uses its Web site to make available a wealth of information on career-oriented education.

States' Career Clusters Initiative (SCCI)

<http://www.careerclusters.org>

SCCI is an organization that disseminates information on the 16 federally defined Career Clusters. It has published brochures as well as knowledge and skill statements (catalogs of knowledge and skills required for different occupations) for each of the 16 clusters of jobs. Both sets of publications are available online at the organization's Web site.

U.S. Department of Education

<http://www.ed.gov>

Explore volumes of education information at the U.S. Department of Education Web site.

College and Career Planning Resources

America's Career InfoNet

<http://www.acinet.org/acinet>

This is the place to search for occupational information, industry information, and state-specific labor market information.

American Careers Programs

<http://www.carcom.com>

American Careers educational programs are standards-based, integrated curriculum resources. Career Communications is committed to helping students and adults in transition learn, stay in school, or continue their education and make good decisions about their future.

Career Voyages

<http://www.careervoyages.gov/>

This is a career planning resource for students, parents, career changers, and career advisors. Explore in-demand careers by taking the ultimate road trip to career success.

COIN Educational Products

<http://www.coinedu.com/>

COIN provides a variety of educational products for the elementary, middle school, high school, and postsecondary markets.

College.gov

<http://www.college.gov>

College.gov is being built by the U.S. Department of Education in collaboration with students. This site is intended to be the go-to source for information and resources about planning, preparing, and paying for postsecondary education (such as 2- or 4-year colleges and universities, and vocational or career schools). Most importantly, college.gov is intended to provide inspiration and hope to all students, and encourage them to consider and pursue a postsecondary education.

College Foundation of North Carolina (CFNC)

<http://www.cfnc.org>

CFNC is a nonprofit partnership between Pathways of North Carolina, College Foundation, Inc., and the North Carolina State Education Assistance Authority. These organizations have broad expertise in helping students to prepare successfully for college and to find the best financial aid alternatives. Together, they provide a complete and comprehensive source of information – and real solutions – for students and their families.

Career Cruising

<http://www.careercruising.com/>

Career Cruising is a user-friendly, Web-based career exploration and planning program that helps students meet their educational goals and educators track their students' success.

InDemand

<http://www.careervoyages.gov/indemandmagazine-main.cfm>

Check out InDemand – Connecting today's students with the careers of tomorrow. Each issue explores careers in a different high growth industry. It provides students as well as guidance counselors, parents, and teachers with interesting and relevant information about career opportunities, education, and the skills needed for various jobs. It offers resources to explore careers and tips about how to help students build successful futures.

Futures for Kids

<http://www.f4k.org>

Futures for Kids bridges the gap between the hopes and dreams of our students and the workforce development needs of our

communities. F4K uses the Internet to help students discover what makes them tick, allows kids to explore careers that match their unique talents, gives every student a career coach to talk to, empowers educators with information about their kids' career goals, enables businesses to grow their future workforce locally, and shows our kids careers that can make them happy.

KUDER

<http://www.kuder.com>

The Kuder system gives students resources to help them make better-informed decisions in planning their futures. Students have lifetime access to an education planner, resume builder, and educational and occupational exploration options.

National Career Pathways Network

<http://www.cord.org/ncpn-index.cfm/>

NCPN is a membership organization for educators and employers involved in the advancement of Tech Prep, career pathways and related educational reform initiatives that help students make smooth transitions from secondary to postsecondary education and careers.

NC Career Resource Network

<http://www.ncsoicc.org>

Follow this link to helpful career management resources for job seekers, career explorers, educators, and counseling professionals.

NC Community Colleges Education Catalog and Chart

http://www.nccommunitycolleges.edu/Programs/education_catalog.htm

The Education Catalog provides information about the curriculums

offered by the North Carolina Community College System. The Chart identifies the colleges that are offering the various curriculums available in the North Carolina Community College System.

NC Department of Commerce

<http://www.nccommerce.com/en/WorkforceServices/FindInformationForIndividuals/JobLinkCareerCenters>

JobLink Career Centers offer employment and training services to help job seekers find a new or better job. Adults ages 18 or older are eligible to receive services. The majority of services are free. Many centers provide services to youth.

NC Employment Security Commission (NCESC)

<http://www.ncesc.com/>

The NCESC site is your guide to employment, labor market, and business services in North Carolina. Search for jobs, get career planning information, and even file an unemployment claim.

*O*NET (Occupational Information Network)*

<http://online.onetcenter.org>

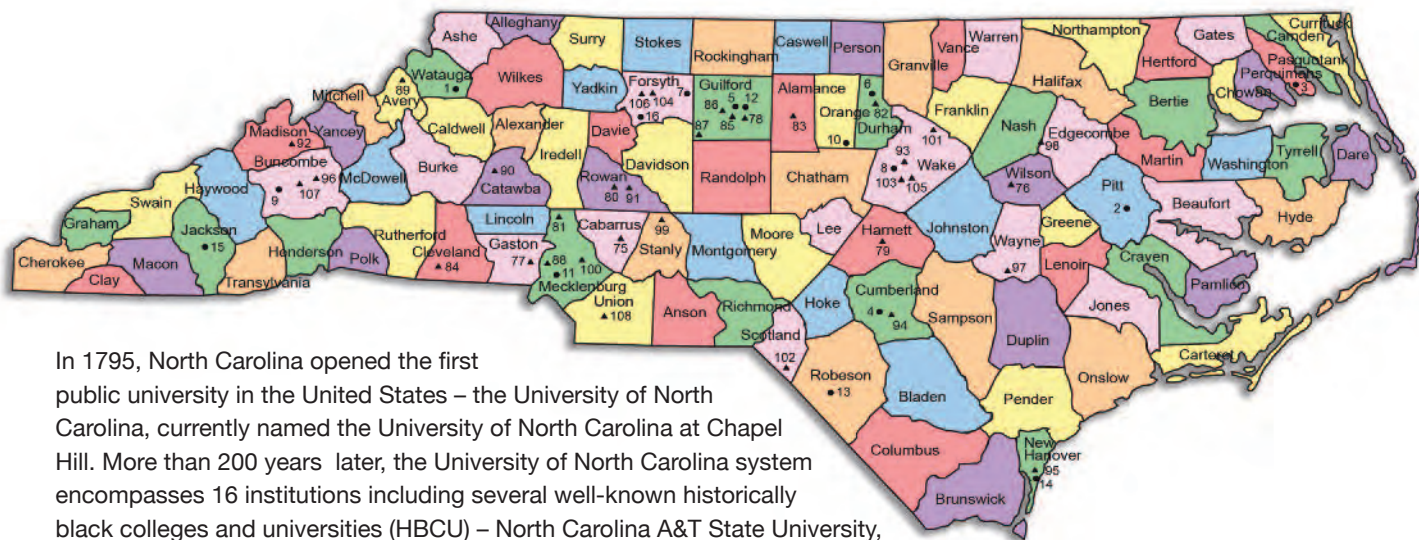
O*NET provides full information on occupations including compensation, employment prospects, and skill matching for students. Information on compensation is available on a state-by-state basis.

U.S. Department of Labor Occupational Outlook Handbook

<http://www.bls.gov/oco>

The handbook is your guide to training and education needed for various positions, their salary ranges, working conditions, and job market conditions in your area.

Colleges and Universities in North Carolina



In 1795, North Carolina opened the first public university in the United States – the University of North Carolina, currently named the University of North Carolina at Chapel Hill. More than 200 years later, the University of North Carolina system encompasses 16 institutions including several well-known historically black colleges and universities (HBCU) – North Carolina A&T State University, North Carolina Central University, Winston-Salem State University, Elizabeth City State University, and Fayetteville State University.

The North Carolina Community College System is a statewide network of 58 public community colleges. From Manteo to Murphy, the system enrolls over 800,000 students annually. Many prestigious private colleges and universities are also located across North Carolina. No matter where you are in North Carolina, you are never very far from a quality higher education.

PUBLIC INSTITUTIONS

- 1 Appalachian State University
- 2 East Carolina University
- 3 Elizabeth City State University
- 4 Fayetteville State University
- 5 North Carolina Agricultural and Technical State University
- 6 North Carolina Central University
- 7 North Carolina School of the Arts
- 8 North Carolina State University
- 9 University of North Carolina at Asheville
- 10 University of North Carolina at Chapel Hill
- 11 University of North Carolina at Charlotte
- 12 University of North Carolina at Greensboro

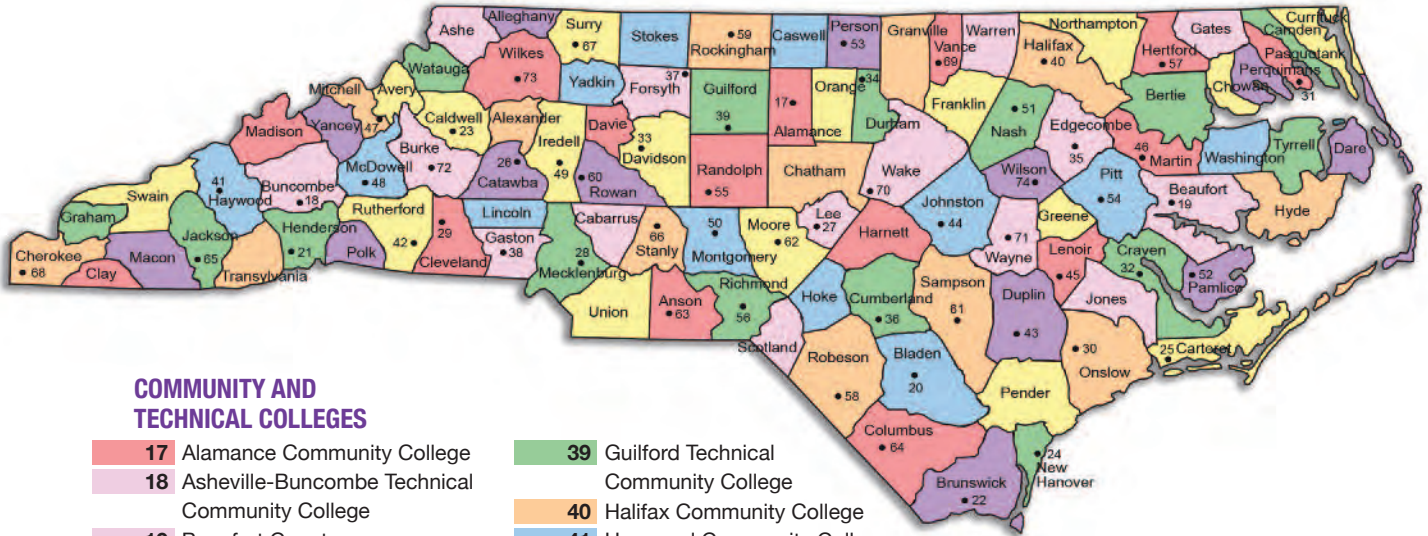
- 13 University of North Carolina at Pembroke
- 14 University of North Carolina at Wilmington
- 15 Western Carolina University
- 16 Winston-Salem State University

PRIVATE INSTITUTIONS

- 75 Barber-Scotia College
- 76 Barton College
- 77 Belmont Abbey College
- 78 Bennett College
- 79 Campbell University
- 80 Catawba College
- 81 Davidson College
- 82 Duke University
- 83 Elon University

- 84 Gardner-Webb University
- 85 Greensboro College
- 86 Guilford College
- 87 High Point University
- 88 Johnson C. Smith University
- 89 Lees-McRae College
- 90 Lenoir-Rhyne College
- 91 Livingstone College
- 92 Mars Hill College
- 93 Meredith College
- 94 Methodist University
- 95 Miller-Motte College
- 96 Montreat College
- 97 Mount Olive College
- 98 North Carolina Wesleyan College
- 99 Pfeiffer University
- 100 Queens University of Charlotte
- 101 Southeastern Baptist
- 102 St. Andrews Presbyterian College
- 103 St. Augustine's College
- 104 Salem College
- 105 Shaw University
- 106 Wake Forest University
- 107 Warren Wilson College
- 108 Wingate University

Community Colleges in North Carolina



COMMUNITY AND TECHNICAL COLLEGES

- | | | |
|--|--|--|
| 17 Alamance Community College | 39 Guilford Technical Community College | 67 Surry Community College |
| 18 Asheville-Buncombe Technical Community College | 40 Halifax Community College | 68 Tri-County Community College |
| 19 Beaufort County Community College | 41 Haywood Community College | 69 Vance-Granville Community College |
| 20 Bladen Community College | 42 Isothermal Community College | 70 Wake Technical Community College |
| 21 Blue Ridge Community College | 43 James Sprunt Community College | 71 Wayne Community College |
| 22 Brunswick Community College | 44 Johnston Community College | 72 Western Piedmont Community College |
| 23 Caldwell Community College and Technical Institute | 45 Lenoir Community College | 73 Wilkes Community College |
| 24 Cape Fear Community College | 46 Martin Community College | 74 Wilson Technical Community College |
| 25 Carteret Community College | 47 Mayland Community College | |
| 26 Catawba Valley Community College | 48 McDowell Technical Community College | |
| 27 Central Carolina Community College | 49 Mitchell Community College | |
| 28 Central Piedmont Community College | 50 Montgomery Community College | |
| 29 Cleveland Community College | 51 Nash Community College | |
| 30 Coastal Carolina Community College | 52 Pamlico Community College | |
| 31 College of The Albemarle | 53 Piedmont Community College | |
| 32 Craven Community College | 54 Pitt Community College | |
| 33 Davidson County Community College | 55 Randolph Community College | |
| 34 Durham Technical Community College | 56 Richmond Community College | |
| 35 Edgecombe Community College | 57 Roanoke-Chowan Community College | |
| 36 Fayetteville Technical Community College | 58 Robeson Community College | |
| 37 Forsyth Technical Community College | 59 Rockingham Community College | |
| 38 Gaston College | 60 Rowan-Cabarrus Community College | |
| | 61 Sampson Community College | |
| | 62 Sandhills Community College | |
| | 63 South Piedmont Community College | |
| | 64 Southeastern Community College | |
| | 65 Southwestern Community College | |
| | 66 Stanly Community College | |



Glossary

A

Academy – A school within a school.

A career academy has a career theme.

ACTE – Association for Career and Technical Education, the largest national education association dedicated to the advancement of education that prepares youth and adults for careers.

Advocate – As a noun, supporter or promoter. As a verb, to campaign for, promote, or support.

Analytical – Logical, methodical, organized, scientific.

Apprenticeship – A system of training someone in a skill such as carpentry, plumbing, or other field. Usually includes paid-for, on-the-job learning and academic instruction over a period of four or five years. For more information, see <http://www.careervoyages.gov/apprenticeship-main.cfm>.

Articulation Agreement – Allows students to receive community college credit for completion of identified Career and Technical Education courses while in high school.

Associate Degree – An academic degree typically awarded by a community college after completion of a two-year program of study. Some associate degrees are transferable, which means they are designed for students who want to complete general education requirements at a community college and then transfer to a college or university to complete requirements for a four-year bachelor's degree.

B

Bachelor's Degree – An academic degree typically awarded by a college or university after completion of a four- or five-year program of study.

Benefits – Non-wage compensation for work performed. May include health insurance, retirement payments, vacation leave, sick leave, profit sharing, etc.

Biodiesel – A nontoxic, biodegradable fuel for diesel engines that is derived from natural oils like soybean oil or animal fats.

Biodegradable – Able to decompose in a natural way.

Biofuel – Fuel to power vehicles that is made from living or recently living renewable biological resources such as corn, sugar beets and vegetable oil.

Biotechnology – Technology based on biology; used primarily in agriculture, medicine, and transportation.

C

Career – A chosen profession, field of work or calling usually pursued throughout a lifetime.

Career Academy – A personalized experience for a group of students in a high school. All studies focus on a particular career area.

Career and Technical Education – A planned program of study and related academic and technical learning experiences that lead to postsecondary education and careers in industry-related career clusters.

Career and Technical Student Organization – Organization recognized by the U.S. Department of Education that is related to a specific Career and Technical Education field. For more information, go to <http://www.ed.gov/about/offices/list/ovae/pi/cte/vso.html>.

Career Clusters – An organizing tool for curriculum design and instruction based on common knowledge and skills shared by groups of occupations/career specialties. Pathways are sub-groups of career clusters. For more information, see <http://www.careerclusters.org>.

Career Specialty – Used as a synonym for pathway. A subgroup of occupations that require the same or similar knowledge and skills to be successful.

CDC – Career Development Coordinator. Helps middle and high school students with career exploration and development programs.

CFNC – College Foundation of North Carolina, a State agency that provides low-interest loans to pay for college education.

Certificate – An occupational credential typically awarded by a community college or other educational provider after completion of a short-term program in a career specialty.

Community College – Typically a public postsecondary educational institution that awards occupational certificates and two-year associate degrees in a variety of fields. Usually accepts students from the local community.

College – A postsecondary educational institution that typically offers a four-year bachelor's degree.

College Tech Prep – See Tech Prep.

Continuing Education – College courses that are not part of a certificate or degree program. Often taken for personal enrichment.

Cooperative Education – A structured combination of academic and Career and Technical Education with work experience.

Credential – A proof of competency issued to an individual who has successfully completed a specific training program.

Culinary; Culinarian – Adjective related to cooking; noun related to a cook or a chef.

Curriculum/Curriculum Program – A set of courses, including prescribed content, that is offered at a particular school or university; may be used to describe general requirements or a specific course; usually considered in broader terms than program of study “Curriculum” and “curriculum program” are sometimes used interchangeably.

E

Employability Skills – Skills such as punctuality, responsibility, dependability, honesty, teamwork, and integrity, which can all be translated into the work environment.

Entrepreneur – A person who organizes and operates a business.

Entry-Level Workers – Those individuals who are new to the work in a particular occupation. They usually perform less-complicated tasks at this level.

Environmental – Related to the natural world or to one's surroundings.

Equity – A personal quality related to being fair and unbiased.

F

First Professional Degree – An academic degree awarded in certain professions that are usually licensed or regulated by the government. The first professional degree is required by law to practice the profession without limitation.

Fossil Fuel – High-carbon fuel, such as coal and liquid petroleum, that is made from nonrenewable natural resources that lived up to 300 million years ago.

G

Green Career – A career that works toward reducing the use of fossil fuels, increasing the efficiency of energy usage, decreasing pollution, decreasing greenhouse gas emissions, recycling materials, and adopting renewable sources of energy.

H

HBCU – Historically Black College or University.

I

Internship – Structured on-the-job training that provides experiences for students in order to help them determine their interest in a career and meet contacts in the field. Salary or school credit sometimes provided.

Interview – A conversation between two people where one is asking questions of the other.

J

Job – A particular task or assignment performed as a part of one's occupation; a term that is sometimes used to designate the title for a particular role.

Job Shadowing – A temporary, unpaid work experience where students learn about a job by spending a workday with an experienced worker.

JROTC – An abbreviation for Junior Reserve Officer's Training Corps, a Federal program sponsored by the United States Armed Forces in high schools across the United States to instill the values of citizenship, service to the United States, personal responsibility, and a sense of accomplishment.

L

LEED – Leadership in Energy and Environmental Design, the U.S. Green Building Council's Green Building Rating System™. A nationally accepted benchmark for design, construction, and operation of high-performance green buildings.

Liberal Arts – Courses related to academic disciplines such as art, music, languages, literature, history, philosophy, mathematics, and science as distinct from courses related to professional, vocational, and technical studies.

M

Major – Area of specialization in college.

Mock Interview – A practice interview that simulates a real job interview.

N

Nontraditional Career – An occupation where less than 25 percent of the workers are of one gender.

O

Occupation – A classification of work with distinct tasks that separate it from other occupations.

OJT – On-the-job training is a way of learning skills in a work environment rather than in a classroom.

P

Paralegal – A nonlawyer qualified by education, training, or work experience who is employed or retained by a lawyer, law office, corporation, governmental agency or other entity to perform specifically delegated legal work.

Pathway – In the Career and Technical Education context, a subgroup of one of the 16 Career Clusters. At the pathway level, knowledge and skill requirements are targeted toward a very specific group of occupations that share common abilities.

Portfolio – A collection of creative work, photographs of products, awards, a résumé, letters of recommendation, and other materials. Often placed in a notebook or other kind of binder

to display skills, especially to a potential employer.

Postsecondary – Adjective related to education following high school graduation.

Private School – An educational institution that is funded through tuition, fundraising, private grants, and donations.

Program of Study – A sequence of courses that, when successfully completed, prepare a student to be certified, licensed, or otherwise ready for further education or employment.

Public School – An educational institution that is funded primarily by tax dollars.

S

Salary – Consistent payment made to an employee for completing a regular term of work.

Service Learning – An educational strategy that includes community service, instruction, and reflection that promotes civic responsibility and hands-on work experience.

Stereotype – An oversimplified opinion, generalization, attitude, image, or idea of a particular type of person or thing that is often unfair or misleading.

T

Tech Prep – Sequence of technical courses in high school that continues at a community college, which leads to an associate degree and high-skill, high-wage employment.

U

University – A postsecondary educational institution, often consisting of several colleges, that offers bachelor's, master's, and doctoral degrees and research opportunities in various branches of learning.

W

Wage – Money that is paid for regular work or services, usually calculated by the hour, day, or week.

WBL – Work-based learning. An experience where the learning takes place in a work situation, away from the school. This includes job shadowing, cooperative education, internships, and apprenticeships.

Sixteen Career Clusters and Their Pathways

A Career Cluster is a grouping of occupations and broad industries based on commonalities. The sixteen Career Clusters provide an organizing tool for schools, small learning communities, academies, and magnet schools.

Agriculture, Food & Natural Resources

Food Products and Processing Systems
Plant Systems
Animal Systems
Power, Structural & Technical Systems
Natural Resources Systems
Environmental Service Systems
Agribusiness Systems

Architecture & Construction

Design/Pre-Construction
Construction
Maintenance/Operations

Arts, Audio/Video Technology & Communications

Audio and Video Technology and Film
Printing Technology
Visual Arts
Performing Arts
Journalism and Broadcasting
Telecommunications

Business Management & Administration

General Management
Business Information Management
Human Resources Management
Operations Management
Administrative Support

Education & Training

Administration and Administrative Support
Professional Support Services
Teaching/Training

Finance

Securities & Investments
Business Finance
Accounting
Insurance
Banking Services

Government & Public Administration

Governance
National Security
Foreign Service
Planning
Revenue and Taxation
Regulation
Public Management and Administration

Health Science

Therapeutic Services
Diagnostic Services
Health Informatics
Support Services
Biotechnology Research and Development

Hospitality & Tourism

Restaurants and Food/Beverage Services
Lodging
Travel & Tourism
Recreation, Amusements & Attractions

Human Services

Early Childhood Development & Services
Counseling & Mental Health Services
Family & Community Services
Personal Care Services
Consumer Services

Information Technology

Network Systems
Information Support and Services
Web and Digital Communications
Programming and Software Development

Law, Public Safety, Corrections & Security

Correction Services
Emergency and Fire Management Services
Security & Protective Services

Law Enforcement Services
Legal Services

Manufacturing

Production
Manufacturing Production
Process Development
Maintenance, Installation & Repair
Quality Assurance
Logistics & Inventory Control
Health, Safety and Environmental Assurance

Marketing

Marketing Management
Professional Sales
Merchandising
Marketing Communications
Marketing Research

Science, Technology, Engineering & Mathematics

Engineering and Technology
Science and Math

Transportation, Distribution & Logistics

Transportation Operations
Logistics Planning and Management Services
Warehousing and Distribution Center Operations
Facility and Mobile Equipment Maintenance
Transportation Systems/Infrastructure Planning, Management and Regulation
Health, Safety and Environmental Management
Sales and Service

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- Take online tours of more than 100 NC colleges and universities
- Access free test prep and a 2,000-word vocabulary builder
- Apply to college online
- Find scholarships, grants, the NC 529 savings plan, and other ways to pay for college

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Helping you plan, apply, and pay for college

College 
Foundation
of North Carolina

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North Carolina Career Clusters



The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources. Mining and mineral extraction are included in the Agriculture, Food & Natural Resources cluster.



Careers in designing, planning, managing, building, and maintaining the built environment.



Designing, producing, exhibiting, performing, writing, and publishing multi-media content including visual and performing arts and design, journalism, and entertainment services.



Business Management & Administration careers encompass planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. Business Management & Administration career opportunities are available in every sector of the economy.



Planning, managing, and providing education and training services, and related learning support services.



Planning, services for financial and investment planning, banking, insurance, and business financial management.



Executing governmental functions to include Governance; National Security; Foreign Service; Planning; Revenue and Taxation; Regulation; and Management and Administration of the local, state, and federal levels.



Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.



Hospitality & Tourism encompasses the management, marketing, and operations of restaurants and other food services, lodging, attractions, recreation events, and travel-related services.



Preparing individuals for employment in career pathways that relate to families and human needs.



Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multi-media, and systems integration services.



Planning, managing, and providing legal, public safety, protective services, and homeland security, including professional and technical support services.



Planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.



Planning, managing, and performing marketing activities to reach organizational objectives.



Planning, managing, and providing scientific research and professional and technical services including laboratory and testing services, and research and development services.



Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.