

School to Career

focus on jobs in bioprocess technology



This page and its content were produced by the Newspapers in Education department of The News & Observer January 3, 2002. "School to Career" pages are archived online on the bizednetwork.org



If you would like to make a statement about your business' commitment to education, call Sheila Gould at 829-4639 or email sgould@newsobserver.com to find out how you can sponsor a School to Career Page.

WHAT YOU WEAR

Typical dress for most bioprocess technicians is a plant uniform with additional coversuit/jumpsuit required. In designated areas bioprocess technicians must also wear shoes, hair, and beard covers as well as gloves and safety glasses.

SKILLS REQUIRED

Employees in the biotechnology field need to work well as team members. They must pay attention to detail and be able to follow precise procedures. And they should enjoy being involved in the production of life-saving agents.

Critical skills include the ability to write and speak clearly and effectively; the ability to collect, record, and analyze data; the ability to identify and solve problems; and an interest in enhancing knowledge and skills through continuous learning.

RECOMMENDED CLASSES

High school classes that best prepare students for biotechnology careers are sciences and include biology, chemistry, mathematics, computer science, and technical writing.

ACTIVITY

Scan the Classified and look for jobs in the field of Bioprocess Technology. List the companies that are advertising for each position.

Biotechnology is a rapidly growing industry, which utilizes living cells and their molecules to improve and create new products. Biotechnology is involved with the research, development, and manufacture of vaccines, antibiotics, pharmaceuticals, and many agricultural products.

Biotechnology gives us a variety of products including, vaccines, home pregnancy tests, foods, and stonewashed blue jeans. This high tech industry is involved with the development of new treatments for disease, the creation of safer food products, and the formulation of less damaging chemicals. About seven percent of the new jobs in this growing industry are expected to be in the research and development field. Over 80 percent will be in production areas, which will require community college-level training as a minimum qualification.

The majority of the workers at bioprocessing sites will work directly with manufacturing by monitoring and operating equipment, preparing media and other reagents, and transferring materials from one operation to the next. Most of these workers are called process operators, process technicians, or manufacturing associates.

Bioprocess companies are seeking employees who know the science and technology, but who are also flexible, adaptable people who are good problem-solvers and who can work effectively with others. Major North Carolina biotechnology companies include Bayer Corp, Clayton; Biogen, Inc., Research Triangle Park; Glaxo Wellcome, Inc., Research Triangle Park; Maize Genetic Resources, Inc., Angier; Merial Select, Inc., Fuquay Varina; Wyeth Lederle Vaccines, Sanford.

EDUCATION Several North Carolina colleges and universities offer course work related to biotechnology. Four-year degrees in biology and chemistry are required for some entry-level positions in the biotechnology field.

For the majority of jobs in this field however, Community college-level instruction is required. Several specialized programs related to the biotechnology industry are offered by NC community colleges.

Those programs include bioprocess manufacturing technology at Central Carolina Community College, Sanford; chemical process technology at Guilford Technical Community College, Greensboro; industrial laboratory technology at Martin Community College, Williamston; industrial pharmaceutical technology at Wake Technical Community College, Raleigh; and chemical technology at Cape Fear Community College, Wilmington.

FINANCIAL AID Grants, scholarships, loans and work/study programs are available for college and private school students. For most of this aid, students should submit a Free Application for Federal Student Aid, which is available from high school guidance counselors and higher education financial aid offices.

FUTURE JOB OPPORTUNITIES One of the fastest growing industries in North Carolina, biotechnology offers the highest paying manufacturing jobs in the state and has competitive fringe benefits as well. Today the biotechnology work force stands at 20,000 and it is expected to top 100,000 in the next 20 years.

This rapid growth is creating job opportunities in scientific, technical, business and related jobs in North Carolina.

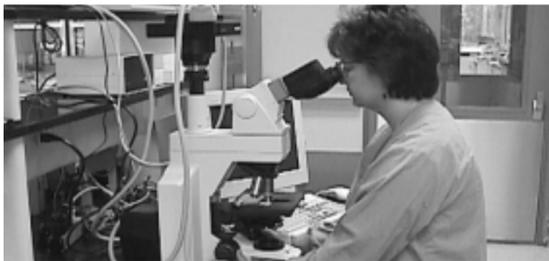
Workers in production and quality control divisions are in high demand. These are the people who actually make the products. Production often requires knowledge of industrial manufacturing technologies. A quality control technician monitors the manufacturing process to ensure the correct and reproducible procedures are followed.

WANT TO KNOW MORE

North Carolina Central Carolina Community College in Sanford (www.centralcarolina.org) offers a bioprocess technology program. This unique curriculum program features small classes, hands-on instructional techniques, and an active industry-based advisory committee.

Additional information is also available from the NC Biotechnology Center (www.ncbiotech.org)

For more information on federal financial aid programs, call 800 4-FEDAID



JOBS IN THIS FIELD

Job in this field	Education	Salaries*
Entry level positions		
Production or Lab Assistant	High School Diploma	\$19—25,000
Quality Control Inspector	Associate of Applied Science Degree	\$33—41,000
Instrumentation Technician	Associate of Applied Science Degree	\$29—40,000
Laboratory Technician	Associate of Applied Science Degree	\$29—40,000
Research Assistant	Associate of Applied Science Degree	\$33—41,000
Research Associate	Bachelor of Science Degree	\$36—45,000
Quality Control Analyst	Bachelor of Science Degree	\$36—45,000
Microbiologist	Bachelor of Science Degree	\$39—49,000

*These are average starting salaries. Salaries may vary widely depending upon prior experience, specific position and size of employer.

This educational partnership sponsored by:

Central Carolina Community College



PROFILE BRUCE KAYLOS CARY, NC



Bruce Kaylos is currently Plant Manager for Wyeth-Lederle's vaccine manufacturing facility in Sanford, North Carolina. In this position Kaylos says, "I have to be a jack of all trades. I am responsible for the manufacturing departments, engineering and maintenance, product production, materials management, human resources, and accounting." He came to Wyeth in 1987 as the Director of Manufacturing.

Kaylos always had an interest in living things and the environment. "I lived by the ocean and this gave me the perfect opportunity to explore both land and sea creatures. It increased my awareness of living organisms." He earned a Bachelor of Science degree from Tulane University, with a major in biology and a minor in chemistry. He graduated in 1972 and was out looking for a job in the height of the recession. He felt that he was fortunate to find a job in his field. He spent ten years with a biological company where he processed blood and blood products. When he left his first job he worked two years in an Interferon facility, working on products that would augment the immune systems to fight some types of cancers and viruses.

Biotechnology is such an interesting field, Bruce told us: "When you go to work, there are so many opportunities to do multiple tasks and have an opportunity to put your educational experiences to use, while earning a living. However, the most rewarding aspect of the profession is knowing that on a daily basis the products that are made at our facility are preventing disease and suffering in children both in the United States and around the world."

Anyone interested in this field should consider education in the following areas: Biology, Chemistry, Engineering, Business, Accounting, Human Resource Management, Computers and Math. Kaylos says, "this field requires that you continue your education through out your life, always learning new technologies. You get to work in a clean environment and are rewarded with the satisfaction of helping other people."

Kaylos also realizes the importance of educating our youth. Under his leadership Wyeth-Lederle provides volunteers to work in the schools in the community. The company gives back to the community in many ways, including donation of equipment in the Community Colleges and computers for local schools.

BEST ADVICE "My best advice to students is to always be open to the experiences of the sciences. Never be afraid to ask a question. The only stupid question is the one you didn't ask. Learn to work with people as a team. I can't overemphasize the contributions of all those who work together at our facility to make our products."