



Economic Opportunities - Technology

The East Lincoln area is an attractive location for an existing or start-up technology operation. It provides a well-educated labor pool, competitive salaries, proximity to several colleges, including the research centers at the University of North Carolina at Charlotte, and an attractive working climate.

- Factors that support creation of technology jobs include:
- Proximity to research institutions
- Available capital and economic assistance
- Established infrastructure and suppliers
- An available and educated workforce
- Reasonable costs of doing business
- Good climate and quality of life factors

All of these are present in the East Lincoln corridor.

Proximity to Research Institutions

Research focused colleges and universities provide the key drivers for technology product development. Primary research and subsequent applied research lead to development and commercialization of products, which in turn need to be manufactured. The University of North Carolina at Charlotte (UNCC) research budget ranks as one of the largest in the southeast region. In addition, the community college systems in the area (Central Piedmont Community College and Gaston provide opportunities for technology research and development at the undergraduate level.

UNC offers masters and doctoral degrees in the technology fields of mechanical engineering, electrical engineering, information technology, applied mathematics and biology. Its Charlotte Research Institute, on 100 acres of UNCC campus is a top-tier, nationally recognized research center.

- The **Center for Precision Metrology** is a National Science Foundation Center, and is funded by companies such as Intel, Boeing and Caterpillar to enhance the quality control processes in manufacturing operations.

- The **Center for Optoelectronics and Optical Communication** seeks to develop new components and devices that sense and communicate information. The US Department of Defense recently awarded \$8 million for this research.
- The **eBusiness technology Institute** was formed in partnership with Wachovia and Bank of America to conduct primary research in the area of internet-based information security. In its four years, it has spawned 221 inventions, filed 161 patents, assisted 93 companies and founded 16 startup companies.
- The **Center for Bioinformatics** pairs engineering and applied physics with biology. This has enormous implications for organ transplantation and surgery in general. More than \$2.5 million in funding has been received from the National Science Foundation and National Institutes of Health.
- The **Motorsports Engineering** program has developed more than \$2 million in programs related to vehicle technologies.
- The **Cameron Applied Research Center** conducts more than \$5 million of externally funded research annually. It provides programs in biotechnology, biomedical engineering, electronics, analytical chemistry and motorsports engineering.
- Research and technology education is also prevalent at the area's community colleges:
 - **Gaston College**, with campuses in Lincolnton and Dallas, offers several majors in technology and computer science leading to Associate Degrees. Its Lincolnton Campus has eleven full-time faculty, and it is building a new Science and Technology Center to serve the entire college.
 - **Central Piedmont Community College** covers the entire Charlotte metro area with eight campus locations. It offers courses and degrees in biology, computer engineering, information systems, electronic commerce, electronics, medical technologies, and mathematics.

Available Capital and Economic Assistance

Startup technology-based firms usually need to focus on getting capital. For established firms that are considering a move, capital may be needed for expansion. The East Lincoln area has many resources available to support capital needs and to provide incentives to move or expand.

Funding Sources

For startup firms funding is first from the internal resources of the entrepreneur, and then usually through Angel Investors. Due to economic climate of the Charlotte Region, and

the preponderance of retirees, there are numerous potential Angel Investors, especially given the location of East Lincoln on the western shores of Lake Norman. There is a structured angel investor capital fund created to assist start-up companies within a three-hour driving range of Charlotte. Charlotte Angel Partners provides a monthly closed forum in which start-up companies seeking from \$300,000 and \$700,000 can present their business ideas and plans to leading, accredited investors in the Charlotte area. www.capnc.com

Funding is available through the SBA's Small Business Investment Research (SBIR) program. SBIR targets the entrepreneurial sector because that is where most innovation and innovators thrive. However, the risk and expense of conducting serious R&D efforts are often beyond the means of many small businesses. By reserving a specific percentage of federal R&D funds for small business, SBIR protects the small business and enables it to compete on the same level as larger businesses. SBIR funds the critical startup and development stages and it encourages the commercialization of the technology, product, or service, which, in turn, stimulates the U.S. economy.

Small businesses must meet certain eligibility criteria to participate in the SBIR program.

- American-owned and independently operated
- For-profit
- Principal researcher employed by the business
- Company size limited to 500 employees

It is notable that many of the businesses spawned by the UNCC research community; have been funded through SBIR grants.

Finally, many technology ventures have been funded, especially in second or third round financing, through venture capital firms. There are several such firms in the region <http://www.venturedirectory.com/V/vcnc.htm>. In addition, the areas larger banks have venture capital divisions, many of whom specialize in technology funding. http://www.wachovia.com/small_biz/page/0%2C%2C446_612%2C00.html, http://www.bankofamerica.com/smallbusiness/equipment_finance/.

Workforce

Lincoln County can boast an abundance of skilled and educated labor that can be trained easily for technology-related jobs. However, the going wage rate is not nearly as high as it is in major cities, including Charlotte. Lincoln County pay can average 25% less than the Bureau of Labor Statistics data for computer-related occupations in Charlotte. http://www.bls.gov/oes/current/oes_3290.htm. Yet, given the proximity of the local

colleges, and their technology-rich curricula, there is a large body of well-educated people, who would prefer to work locally rather than commute to Charlotte.

Opportunities

East Lincoln can provide many opportunities for technology-rich companies. The labor force availability and wage rates can lead to many opportunities for “insourcing”, phenomena that is counterbalancing the rush to send technology jobs overseas. Many companies are setting up technology or customer service centers in rural areas, but with proximity to institutions of higher education. The end result is an abundance of technology-trained employees, but a lower labor and wage rate than in the metropolitan areas. Lincoln County is rural, and fits the profile.

Given the depth and breadth of research activity centered at UNC Charlotte, and the relatively close proximity to the campus, there is opportunity see a commercialization of that research in the east Lincoln County area. Some of the possibilities include:

- Motorsports Engineering – With UNCC’s work on safety systems for race cars, aerodynamic modeling, optimization of performance and automotive assembly, there is opportunity to expand or join the many NASCAR support and assembly companies that already operate in Lincoln County.
- Internet Security – The eBusiness Institute has already spawned 16 commercial companies from its nationally known security program. Several more are in the gestation stage.
- Bioinformatics – UNC Charlotte can boast of nationally recognized programs relating to computer security, data mining, management of large-scale databases, systems integration and collaborative systems. There is a major need and opportunity to apply those capabilities to the field of biomedical computing. With several large medical facilities within a 20 mile radius, there is opportunity for support of new or emerging companies in the biomedical arena.
- Information Technology – There are many possibilities for new software or information management ventures to tap into the work at UNCC in robotics, data management, urban planning, virtual simulation and homeland security.

The commercialization of technology is a process that is aided by local facilitators who will help coordinate access to labor, facilities, utilities, training, and other startup resources. This is a key mission of the Lincoln Economic Development Association.