Research Triangle Park Succeeds Beyond Its Promoters' Expectations

Chapel Hill, North Carolina. The Research Triangle Park about 12 miles east of here began 20 years ago as little more than a promoter's slogan. But just as life sometimes follows art, it also sometimes follows promotion and PR, particularly if underlying the promoters' dreams there are a few sound ideas.

The park has succeeded handsomely enough that the name Research Triangle now carries wide recognition, and if not quite that of a Palo Alto or Cambridge, at least of a place that is clearly up and coming. Last year the triangle reaped a lush harvest of publicity, with articles proclaiming it as a vibrant new center of research activity appearing in the *New York Times*, *Time*, *Fortune*, and even the *Times* of London.

Situated on a gently rolling tract of 5500 acres in the eastern Carolina Piedmont, the park takes its name from the fact that it is roughly equidistant from the University of North Carolina in Chapel Hill, Duke University in Durham, and North Carolina State University in Raleigh. The Research Triangle Park Foundation which runs the park was formed under the leadership of the late Governor Luther Hodges and with the help and participation of the three universities as well as a number of North Carolina business leaders. Moreover, the universities helped to found—and are the owners of—the nonprofit Research Triangle Institute (*Science*, 12 November 1965) which does contract research for government and industry and has flourished along with the rest of the park.

According to the park foundation, the private and governmental entities that have sprung up in the park currently employ some 12,000 persons (although some are located in facilities in the triangle cities) and have a total annual payroll exceeding $170 million. Investment in buildings either already constructed or now going up in the park is now greater than $250 million. Furthermore, although the triangle metropolitan area of 419,000 ranks only 76th in population nationally, it ranks first in number of Ph.D.'s per capita—there are now nearly 3000 Ph.D. scientists and engineers in the area and about 600 of them work in the park itself.

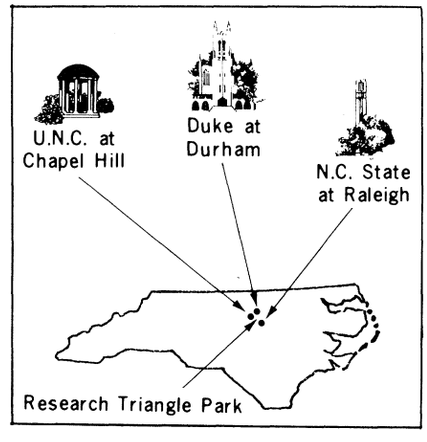
What is more remarkable is the surprising strength the park and the triangle area have come to have in the environmental health and life sciences. The medical schools at Duke and U.N.C. have been there all along, and since the mid-1960's (when the park began to "take off," so to speak) a good half-dozen research entities in the environmental health and life sciences have arrived.

First, there was the Johnson Administration's decision in 1965 to establish the Environmental Research Center there. With its four major laboratories, this center is now the largest research activity the Environmental Protection Agency has anywhere; it is engaged for the most part in establishing the scientific foundation for air pollution control.

The next year saw the beginning of the National Institute of Environmental Health Sciences, established in the park as a distant offshoot of the National Institutes of Health in Bethesda, Maryland; to date NIEHS has occupied temporary quarters, but early in the 1980's it will move into new buildings on a handsome 500-acre site which was given to the government by the park foundation.

Then, in 1970, the Burroughs Wellcome Company left its old corporate home in Tuckahoe, New York, and moved into its striking new headquarters and laboratory building in the park. A major pharmaceutical firm, Burroughs Wellcome now has about 900 persons employed in the park and about 100 of them are research scientists.

Besides the above-named enterprises in the environmental and life sciences, there are others in these two fields located in the park, including the National Center for Health Statistics Laboratory of the U.S. Public Health Service, the Becton, Dickinson & Company Research Center (doing research aimed at development of medical devices and other health care products), the Research Triangle Institute (its life sciences group is reputed to be one of RTI's strongest), and the Chemical Industry Institute of Toxicology (CIIT).



The CIIT, housed in temporary quarters in Raleigh pending completion of laboratory facilities in the park, is one of the more interesting new ventures in the triangle, and its presence there both adds to and reflects this area's strength in the fast-growing field of toxicology. Created by the chemical industry to do research on nonproprietary "commodity chemicals" (the industry's "building blocks") in the face of the growing regulatory pressures, CIIT already employs more than a score of Ph.D. staff scientists.

A big consideration in the decision to locate the CIIT in the triangle was the fact that medical schools, good technical libraries, and computer and chemical analysis capabilities would be close at hand, not to mention the academic ambience found in the park as well as on the three university campuses. "I don't think that there is anywhere else such a concentration of toxicologists," says Leon Golberg, who heads the CIIT. In Golberg's view, the triangle area is unmatched not only with respect to the sheer numbers of toxicologists present but also with respect to the professional interaction that goes on among them and the quality of their scientific work.

The CIIT scientists keep in close touch with toxicologists at the EPA research center and at NIEHS, as for instance in regard to the improvement of toxicological testing. Also, the CIIT, along with NIEHS, EPA, Burroughs Wellcome, and other research entities in the park, helps complement the universities' efforts in the field of toxicology education by providing specialized training opportunities. Besides accepting students and postdocs on its laboratory staff, the institute figures in a plan to offer next year a two-semester course for graduate students and others who are qualified.

In addition, several CIIT scientists hold adjunct professorships at the universities, and a considerably larger number are expected to do so later. Golberg points out that the pathology and pharmacology departments at the U.N.C. medical school have just submitted to the NIEHS a request for funds to support a new curriculum in toxicology.

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The web of professional interrelationships among park scientists is also evident in the fact that Golberg is now a member of the board of governors of the Research Triangle Institute, which is adding to its competence in toxicology by building a new animal facility. The CIIT expects to place some contracts with RTI, whose total volume of contracts this year is likely to exceed $30 million (the volume has tripled in the last 5 years and doubled in the past two).

The idea of advertising the intellectual resources and cultural amenities associated with a region's colleges and universities as a come-on to research enterprises and high-technology industries is, of course, an old one. It goes back to the early success of the Stanford Industrial Park, which was established in 1951 in Palo Alto. But while the basic concept of such a park is valid and straightforward, success seems to come from a combination of conditions, circumstances, and luck that is relatively rare. A survey of research parks published in May 1971 by *Industrial Research* magazine found that of the some 81 research parks that had been started, only about a fourth of them were doing well and few indeed showed promise of duplicating the success of the Stanford park.

The triangle park itself got off to a slow start. Seven years after the park began, the only substantial enterprise there besides RTI (then with a modest $3^1/_2$ million in contracts) was the Monsanto Chemical Company's Chemstrand Research Center.

(Today, basic research is no longer the fashion in the synthetic fibers industry, which is now emphasizing applied work closely integrated with manufacturing operations. The large research staff employed by Chemstrand 13 years ago—about a fourth of the 500 Chemstrand employees were Ph.D.'s—has since been sharply reduced and part of its facility has been leased to the EPA. Two other synthetic fibers research laboratories that were established in the park in the 1960's have shut down entirely.)

The park's first great leap forward came in early 1965 when, within the space of a few months, plans were announced for the Environmental Research Center and for the establishment by the IBM Corporation of a major regional facility for the development and manufacture of communications systems equipment and subassemblies. To accommodate IBM, the park foundation relaxed its restrictions—originally no manufacturing of any kind was to be allowed in the park—and designated a sizable area for light, applied-science manufacturing. Even today, IBM, which employs about 3500 people in the park and another 2500 elsewhere in the triangle area, remains the park's largest single employer by far, although its relative importance has declined with the growth of activity in the environmental sciences.

To put one's finger on the reasons why one research park succeeds and another fails is not easy. The triangle park has had going for it the presence of not just one university with respectable academic credentials but three. Also, the Carolina Piedmont offers almost year-round golfing weather, an easy suburban life style, and the privilege of getting about in an unfrenzied manner (the traffic maelstroms and tie-ups of the Northeast are almost unknown). In addition, the very spaciousness of the park and its restrictions against building on more than 15 percent of the land have made for a campus-like setting that is appealing.

Beyond all this, however, one may have to credit the promoters who have been behind the park with applying an extra measure of balm and persuasiveness. And, in this, they have had the full cooperation of people at the universities. For instance, it is said to be almost standard operating procedure for Ned Huffman, the affable executive vice president of the park foundation, to have officials or research directors of companies he is eyeing as prospects come around to meet various deans, department chairmen, and distinguished professors in their fields of interest.

Few people around the triangle or in the state at large are blasé about the possibility of attracting new research activities and high-technology industry. It has long been recognized that North Carolina suffers from the preponderance of its traditional low-wage industries, textiles, furniture, and tobacco.

Just how far the business and university leaders associated with the park will go in encouraging the establishment of new centers of research or intellectual activity can be seen in the way the new National Humanities Center has come to the triangle.

The prime mover behind the center has been a committee of the American Academy of Arts and Sciences made up of humanists such as Charles Frankel of Columbia University (president of the new center), Morton Bloomfield of Harvard, Gregory Vlastos of Princeton, and Meyer H. Abrams of Cornell. The promotional flair and hype evidently displayed by this academy committee, which had nothing much to offer but an idea, belies the notion that humanists are innocents in the world of affairs.

The committee actually got a brisk competition going among a number of universities which wanted to be the home for the center, of which the Center for Advanced Study at Princeton and the Center for Advanced Study in the Behavioral Sciences in Palo Alto are the prototypes. The triangle park was chosen as the site in no small part because the financial support promised by the North Carolinians was extraordinarily generous. It included a gift of land, a $3 million building fund, and the promise of a $225,000 annual contribution from the triangle universities for the first 5 years.

This all adds up to handsome treatment for an activity which, while it may be good in itself, has no direct bearing on the problem the founders of the triangle park meant to address—that of expanding job opportunities in high-technology industry. But the center is an interesting new ingredient in a mix that does include better jobs.

For example, when Burroughs Wellcome moved its headquarters and research laboratory to the park it also created 1200 new jobs in Greenville, North Carolina (about 100 miles east of the triangle), by moving all of its manufacturing operations there. Furthermore, a number of new manufacturing plants more or less of the "high-tech" variety have been established in the triangle area or just beyond it. The Edward W. Weck Company, a subsidiary of E. R. Squibb, which makes surgical instruments, has a facility just outside the park, as does the General Electric Company with a facility for the production of generators. The Bristol-Myers Company and Cutter Laboratories, drug and medical supply manufacturers, are among other companies now in the triangle area.

The park itself continues to attract new research activities. The J. E. Sirrine Company, a consultant engineering firm of Greenville, South Carolina, recently announced that it will establish a sizable laboratory to do research in solar and nuclear energy. The Research Triangle Institute also hopes to expand its work in the field of energy R & D by winning final approval from the Department of Energy for a large demonstration of photovoltaic cell technology.

In sum, as a promotional concept the Research Triangle has succeeded, and is succeeding, probably beyond all expectations. Roughly half of the manufacturing jobs in North Carolina are still to be found in the old triumvirate of textiles, furniture, and tobacco. But the research triangle is clearly helping to move industrial development in the desired direction—LUTHER J. CARTER