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The Rockefeller University Hospital: A Bridge  
Between Science and Medicine

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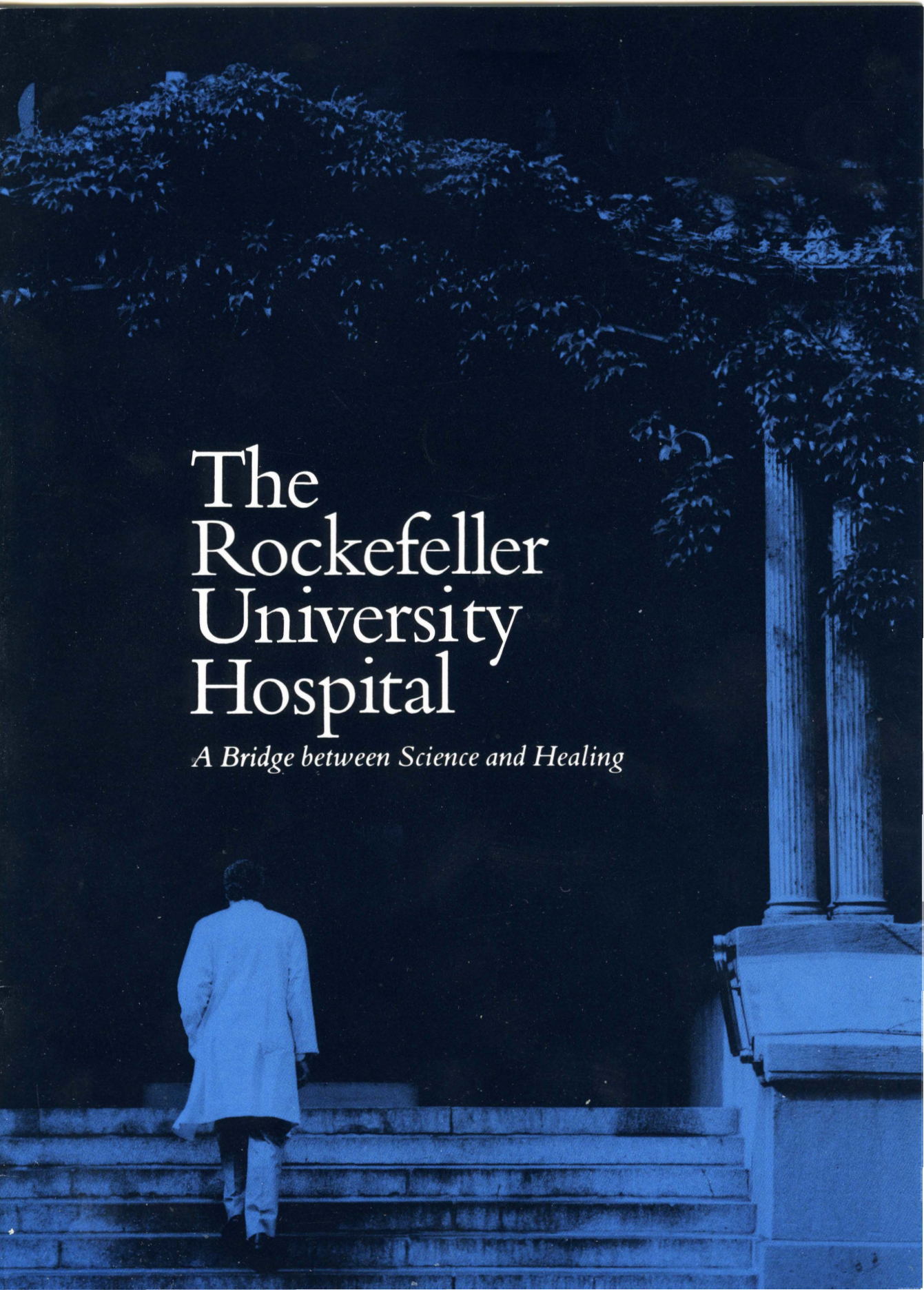
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## The Rockefeller University Hospital: A Bridge Between Science and Medicine

The Rockefeller University

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A person in a white lab coat is seen from behind, walking up a wide set of stone steps. The person is positioned in the lower left of the frame. To the right, a classical building with large columns is partially visible, with dense vines growing over it. The background is a dark, leafy tree. The overall scene is captured in a monochromatic blue tone.

# The Rockefeller University Hospital

*A Bridge between Science and Healing*









*Every year  
The Rockefeller University Hospital  
mails to 30,000 physicians a list  
of conditions under study by its clinical  
research staff.*

*Some of these disorders are very rare,  
such as acute intermittent porphyria,  
a genetic liver disease which  
afflicts only one person in 150,000.*

*Others, such as diabetes,  
heart disease, cancer, and arthritis  
are major national health problems.  
What is the connection?*

All of these diseases are complex, chronic, and degenerative. Their causes, as yet unknown or poorly understood, are multiple, involving genetic and environmental factors. Methods of preventing and treating them are either inadequate or nonexistent. They challenge the clinical researcher because a better understanding of how they originate and develop can yield important insights into the biological mechanisms underlying *all* human disease. Thus a rare genetic disease may provide a clue to major biological processes whose consequences extend far beyond the disease itself. By their very prevalence, the more common health problems demand rigorous and sustained investigation of their causes and possible therapies.

The conditions under study at the Hospital include, among others, rheumatoid arthritis, systemic lupus erythematosus and other collagen diseases, problems of cholesterol metabolism, acute and chronic glomerulonephritis, obesity, and diabetes. Disabling dermatologic

disorders and endocrine-related cancer have recently been added to the list. Other areas of research are rheumatic fever, a variety of genetic disorders such as the porphyrias, the relation of nutrition to disease and drug therapy, alcoholism, drug addiction, and disorders caused by environmental chemicals.

These disorders usually require intensive, long-range studies. Working with selected patients for extended periods, the Hospital's physicians use the latest scientific concepts and laboratory techniques to explore the clues uncovered during observation and treatment on the ward and in the clinic. Crucial to their work is a staff of nurses and dietitians trained in research techniques.

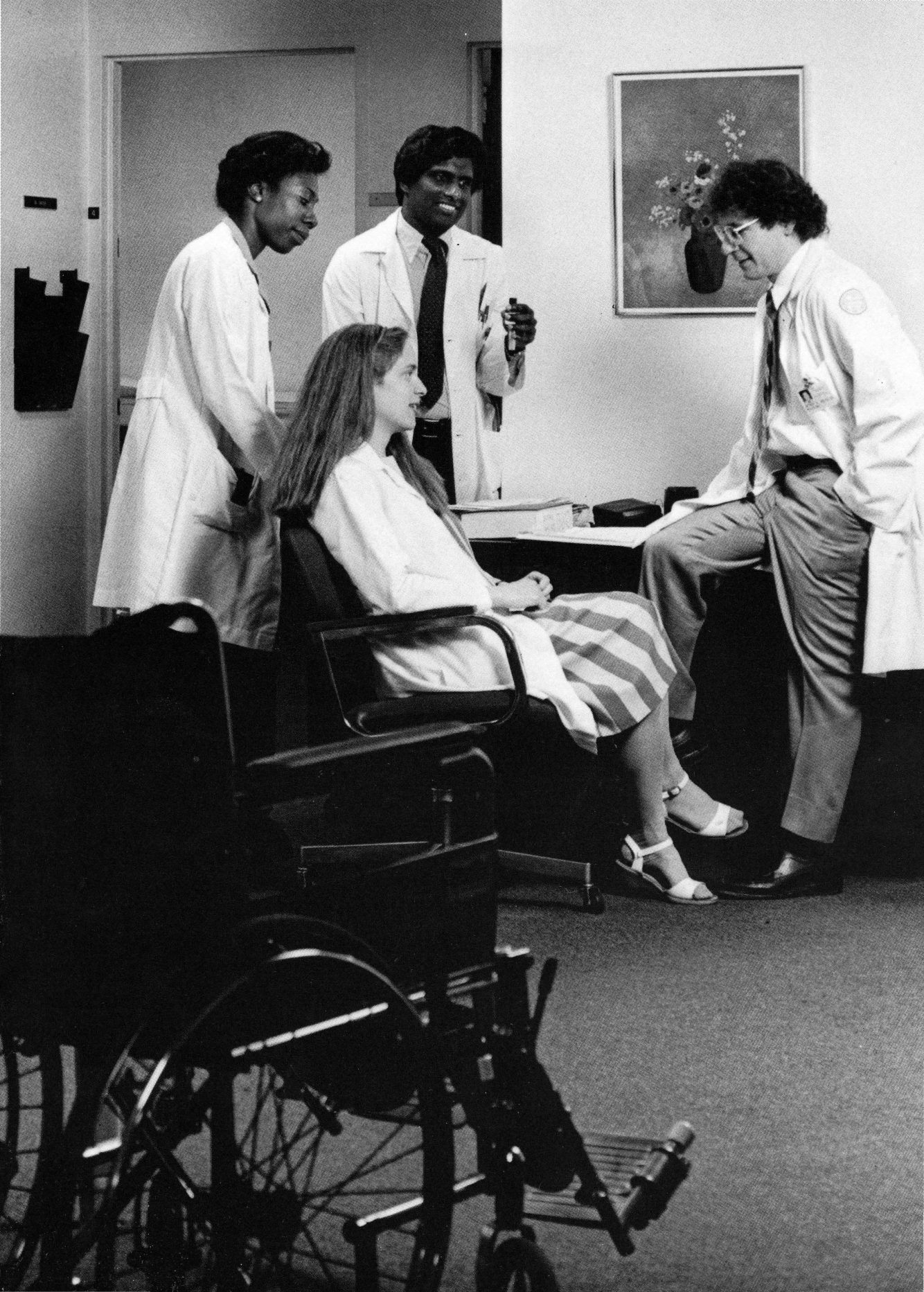
### *Patient Referral and Care*

The patients referred to The Rockefeller University Hospital by their physicians or through other sources come from the New York metropolitan area, from other states, and other countries. The Hospital logs about 8,000 inpatient days each year and 5,000 outpatient visits. To all these patients, it offers the most modern and complete care possible, at no cost to them.

Researchers follow their patients as long as their studies require and, beyond that, as long as is necessary to assure a continuity of good clinical care. Many patients remain in touch after their discharge from the Hospital, either through the outpatient clinic or through periodic communications and reports from their private physicians. The Hospital prides itself on the quality of its patient care. But it is a commitment it makes to its patients in the context of its primary scientific mission—to make discoveries that will enable medicine to prevent and treat disease more effectively.

Besides its clinical and research responsibilities, The Rockefeller University Hospital plays a major role in preparing M.D.s to become accomplished laboratory scientists. These young physicians, fully trained in medicine, relinquish financial opportunities open to them in private practice to come to the Hospital to study science. Why do they make such a choice? "The answer is simple," one of them has written. "Here I can work at the forefront of scientific knowledge."

In recent years, fewer and fewer medical students and graduates







Courtesy of The Rockefeller University Archives

The day after the Hospital of The Rockefeller Institute for Medical Research was officially inaugurated on October 17, 1910, the utilitarian brick structure was opened to the public. Several thousand visitors toured the facility. But only the more observant or those familiar with other hospitals of that time would have appreciated the advanced features of its patient services and laboratories. Not apparent—and still untried—was the Hospital's approach to clinical research, which was to have a major impact on the development of medical science in America.

From its founding in 1901, the leaders of The Rockefeller Institute for Medical Research, later to become The Rockefeller University, had planned that it should have a hospital closely integrated with the basic research

laboratories, but possessing its own research facilities as well. At the insistence of Rufus Cole, the Hospital's first director, it was staffed by full-time, salaried physicians working in their own laboratories and at the patient's bedside, but also free to collaborate with the Institute's scientists. In 1910 this was a radical concept. The Rockefeller Hospital was the first clinical research center in this country where human disease could be studied in a setting of rigorous, scientific inquiry.

The New York Times evaluated the Hospital's goal in these words: "From the standpoint of the sick man or woman or child, this will mean the enlisting of all known forces that fight for his recovery . . . From the standpoint of medical science it will mean an almost unequalled opportunity for study—the study



of selected cases, with freedom to concentrate all the resources of medical knowledge and the most approved scientific methods if need be, on a single disease.”

For the sick man or woman or child participating in its studies, the Hospital provided full medical service at no charge.

Not only did the Hospital set the pace for the advance of medical research in America, it also provided an ideal environment for the training of young physicians in the sciences relevant to medicine. Hundreds of pioneer investigators devoted to patient-oriented research were to complete their scientific training at the Hospital and move on to influential positions in medical schools and hospitals all over the world. Others would help build new centers of research and teaching.

*“Central Lab” and The Rockefeller Hospital ca. 1912.*

In the 1950s, the 40-bed Rockefeller Hospital served as a model for the federally supported clinical center, with 500 beds, established by the National Institutes of Health in Bethesda, Maryland, as well as for the smaller clinical research centers set up, with federal funding, by more than 80 American medical schools.

Since the establishment of the NIH, clinical research at Rockefeller has been supported in part by federal grants. However, The Rockefeller Hospital, which celebrated its 75th anniversary in 1985, remains the only facility in the country exclusively devoted to clinical research and sustained in large part by private resources.

have taken up the challenge of research, a trend that threatens to impair the growth of medical knowledge. To help counter this decline, The Rockefeller University has established a Clinical Scholars Program. To a select group of young men and women who have completed their postgraduate clinical training, the program offers full financial support, including salary, laboratory facilities, and faculty appointments. This program is supported entirely by private funds.

Each Clinical Scholar joins a laboratory group at the Hospital and learns through experience to recognize investigative challenges, to frame pertinent questions, and to design and execute the laboratory and clinical studies required to answer these questions. Their work-day is spent both in the laboratory and at the patient's bedside. Once they have mastered the discipline of patient-oriented research, these investigators are much sought after in academic medicine.

### *Freedom of Inquiry*

The Rockefeller University Hospital has inherited the flexibility of organization unique to the University. Rockefeller scientists enjoy a wide freedom of inquiry and set their own goals. The administrative structure is built around laboratory groups, each of which is headed by a senior faculty member who coordinates the research activities of colleagues with common interests. Although these groups vary in size and research interests, individual investigators are encouraged to cross disciplinary lines and pursue overlapping interests with their colleagues in other groups.

Ten of The Rockefeller University's 55 laboratories currently devote some part of their research programs to clinical investigations at the Hospital. The hospital laboratories are united by their common interests in experimental medicine, in the broad sense, but this is the only distinction between them and the other university laboratories in which basic research is pursued in the biomedical, behavioral, and physical sciences. There are no conventional hospital departments such as pediatrics or medicine and laboratory programs tend to be defined in terms of scientific disciplines. They span such fields as immunology, microbiology, metabolism, nutrition, biochemistry, pharmacology, endocrinology, and dermatology.





Clinical studies carried out at the Hospital are likely to involve a wide range of scientific techniques and extensive collaborations within and outside the University. A collaboration may start with a conversation over lunch or during a stroll from one building to another, with a clinical researcher trained in some basic discipline, thinking “chemically” about a medical problem, or with a chemist’s speculation on the clinical import of a basic scientific finding. As a result, the Hospital’s clinical researchers have contributed significantly to the sum of basic scientific knowledge and the nonclinical faculty of the University has provided major biological insights into the processes of human disease.

### *Basic Discoveries in Clinical Research*

In 1944, for example, a clinical investigation at the Hospital focusing on the serious problems of pneumococcal pneumonia produced what has been described as the most important biological discovery of the 20th century. While studying the chemistry of the infectious agent of this form of pneumonia, Oswald T. Avery and his associates, Colin MacLeod and Maclyn McCarty, demonstrated for the first time that DNA is the basic material of heredity.

The fundamental discoveries that followed from this insight have revolutionized biological research. Scientists at The Rockefeller University and around the world have deciphered the genetic code, basic to all life, and are engaged in revealing a detailed picture of the structure of genes and the elements controlling their function. In the course of this research, they and others have developed powerful new techniques that have given rise to applications in medicine, agriculture, and industry. Little more than 40 years after Avery and his colleagues published their findings on DNA, investigators at The Rockefeller University Hospital continue to probe at the most fundamental level into the mechanisms of a wide range of human disorders.

The decorative motif on the exterior of the Hospital is the caduceus, symbol of the healing art. It is a reminder that, within a university of science, The Rockefeller Hospital is the bridge to the practicing physician and the great public beyond.







*For further information write to  
Physician-in-Chief,  
The Rockefeller University Hospital,  
1230 York Avenue, New York, New York 10021*

