
NYU School of Medicine

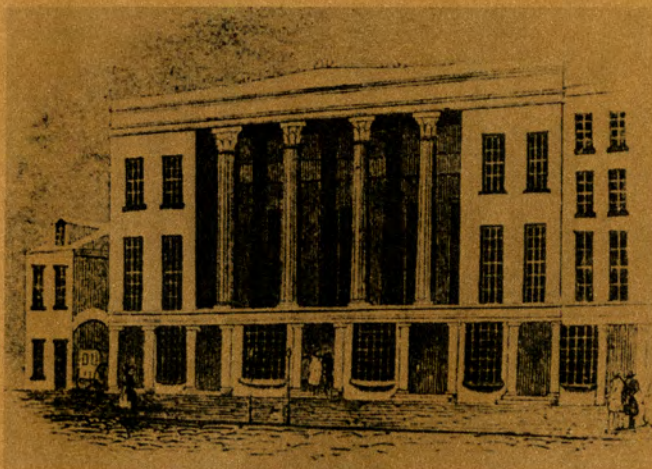
Origins

and Evolution

1841-1981

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The University Medical College, a precursor of the New York University School of Medicine, was founded 140 years ago. Commemorating this event as its 140th anniversary, the School of Medicine marks the passage of time and keeps fresh the knowledge of its origins.

In glancing back over the history of the School it seems appropriate to consider separately the 40 years that have just ended. This period, really "only yesterday," is a time too close still to chronicle as history. The earlier years have been described by the late Drs. George B. Wallace (1875-1945), professor of pharmacology and Claude E. Heaton '21 (1897-1977), associate professor of obstetrics and gynecology. Their contributions, reprinted here in abbreviated form, trace respectively the dual origin of the New York University School of Medicine from the University Medical College and from the Bellevue Hospital Medical College. Viewed from the perspective of the 140th anniversary, this origin from dissimilar institutions seems particularly significant, accounting in all likelihood for the School's exceptional vigor and endurance.

— Allan Eliot Dumont, M.D. '48
Jules Leonard Whitehill
Professor of Surgery
NYU School of Medicine
May, 1982

The University Medical College

George B. Wallace, M.D.

The University opened its doors for collegiate teaching in 1832, but it was nearly ten years later, in 1841, that it was found possible to effect finally the organization of the medical department. In this year the University Council elected a medical faculty and the Medical School was formally opened.

The faculty selected consisted of six professors: Valentine Mott, professor of surgery; Granville Sharp Pattison, professor of anatomy; John Revere, professor of theory and practice of medicine (and youngest son of Paul Revere); Martyn Paine, professor of institutes of medicine and materia medica; Gunning S. Bedford, professor of obstetrics and diseases of women and children; and John W. Draper, professor of chemistry. These were men of great eminence, and their



Valentine Mott

careful selection was evidence of the desire of the Council to have the new medical school one of the first rank.

It was through subsequent members of the faculty that the college continued its successful career. Many were leaders in New York medical circles. Among the professors of surgery are found the names of Samuel D. Gross, Alfred Charles Post, and Lewis A. Stimson; in medicine,

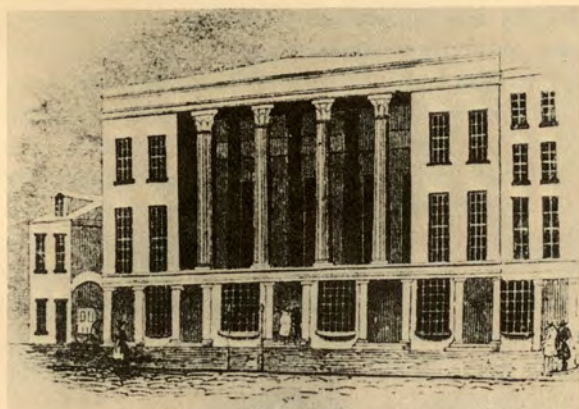
Alfred L. Loomis; in gynecology, William M. Polk; in physiology, Henry Draper and John W. S. Arnold; in venereal diseases, Prince A. Morrow; in ophthalmology, Herman Knapp and Charles S. Bull; in anatomy, Faneuil D. Weiss; in pediatrics, Joseph E. Winters.

The relationship of the medical school to the University was an indefinite one. The original faculty was appointed by the University Council and subsequent appointments followed recommendation from the faculty. Aside from this, the faculty was in reality an independent organization. Its members owned the medical building and equipment and had no financial dependence on, nor responsibility to, the University. Thus it differed in no wise from the other medical schools of the times, which, although some had a nominal University affiliation, were all actually proprietary schools, with the expenses and income shared by a group of faculty members who owned the college plant.

The system was a bad one, but not in its entirety, for it was necessary, for the preservation of the proprietary schools, that their faculties be selected with great care in order to attract and hold students. The faculties then were made up of men of high professional attainment and particularly of exceptional ability as teachers. The great and lasting stimulus received from personal contact with such men offset many of the faults of the inadequate curriculum.

The first home of the Medical College was the Stuyvesant Institute at 659 Broadway, which was purchased by the original faculty. After ten years occupancy, this building was sold, the faculty erecting a new building on 14th Street, near Third Avenue and next to the Academy of Music. The new building was a large and costly one and contained two museums and three lecture rooms each having a seating capacity of nearly 600. It was considered the most complete medical college building in the country. Teaching was carried on here until 1866. In the spring of this year, the burning of the Academy of Music occurred. The fire spread to the medical building and the latter together with its extensive and valuable museum specimens was totally destroyed. The college set-

tled temporarily in the old New York Hospital on Broadway and Worth Street. In 1869 the college moved to a new building on 426 East 26th Street. This in time proved inadequate and in 1875 a building was erected at 410 East 26th Street. Here the College remained until its consolidation in 1898 with Bellevue Hospital Medical College.



Stuyvesant Institute

The present-day medical student will view with wonder the medical course offered in the early years of the college. The course began at the end of October and was finished by the end of February, a period of sixteen weeks. It consisted of lectures by each of the six professors, a dispensary clinic once a week in surgery and medicine, a practical course in midwifery, and a course in dissection. The requirements for graduation were: The candidate must be 21 years of age; he must have attended two courses of lectures, one of which must have been delivered in the Medical Department of the University of New York; the candidate must have studied medicine for three years (the terms of attending lectures being included in these) under the direction of a respectable medical practitioner; he must write a medical thesis either in the English, Latin or French language.

When one examines into the medical training of that day, it is found to be not as inadequate as might appear, for medicine was vastly different then from what it is now. It was the day in surgery before anaesthetics and antiseptics. Bacteriology



The dissecting room, 1881

was an unknown word. There were no laboratories of physiology, pharmacology, pathology or physiological chemistry. The anatomical laboratory was the only one known to the student and he spent much or little time here, according to his inclinations. The lectures of one course were repeated for the second course and the student attended only those of interest to him. But he had the privilege of visiting various hospitals, witnessing operations, and, in private classes, of making daily or weekly hospital rounds and receiving some bedside teaching. In addition to the college courses, moreover, the student was obliged to serve for two years or more an apprenticeship under some reputable practicing physician, his preceptor. In some instances, the apprenticeship was very menial, the pupil running errands, cleaning the office, and even taking care of the doctor's horse. But in general the preceptor took an active interest in the progress of his apprentice, directing his reading, taking him on his round of visits and later turning over the management of some of the patients to him. In this way, it was possible for the student to acquire a very practical first hand knowledge of medicine, before he entered the college, or at least by the time he had graduated, and the possibility was taken full advantage of by the ambitious and intelligent young men who were determined to make their way in practice.

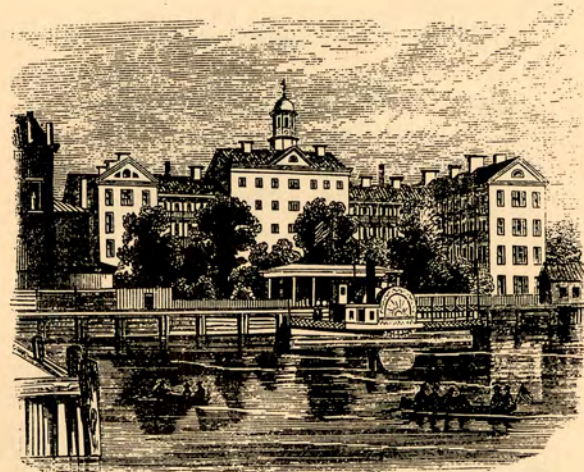
The curriculum was gradually broadened as time went on. One of the early innovations was the institution of formal hospital clinics. This was started by Professor Mott, who gave a surgical operative clinic. Shortly afterwards, hospital clinics were given also by the professor of medicine and diseases of women, and later hospital clinics were held for all of the clinical subjects. The College was one of the pioneers in this form of teaching. The course, as a whole, was not particularly changed, however, for thirty years or more. In 1874, ophthalmology and otology, dermatology and diseases of the mind and nervous system were given a regular place on the schedule, and in the same year a practical course in physical diagnosis was given at Bellevue Hospital by Professor Loomis. In 1875, a post-graduate course in connection with the Medical Department of the University was organized and a special faculty appointed for it. The leading spirit in this movement was Dr. D. B. St. John Roosa. The subjects taught in this course were largely the specialties, ophthalmology, otology, dermatology, orthopedic surgery and diseases of the nervous system. The post-graduate course met with great success. It remained a part of the University until 1881, when desiring greater independence, its faculty, led by Dr. Roosa, left the University and founded the Post-Graduate School and Hospital.

In 1890, the College instituted the system of entrance examinations. This was in conformity with laws passed by the state legislature, whereby all matriculants in New York medical colleges were required to pass an examination or present satisfactory evidence of having taken qualified courses in specified preliminary studies.

In the next year, 1891, a radical change in the curriculum was made. Up to this time the two courses required for a degree, although they had been lengthened and broadened, were essentially similar to those given when the College was founded. In 1891 a three years' graded course was begun. In this arrangement the student spent his first year in recitations, dissection and laboratory work in chemistry, histology and materia medica, his second year in lectures on the primary subjects and some clinics, and his third year in purely

clinical subjects. This system of a graded course, which is now universal, was not a new one. In fact, as far back as 1859, a graded course was established at the medical department of Northwestern University. Later on it was taken up at Harvard, the University of Michigan, and other colleges. It was very late in receiving proper recognition of its merits in New York.

The establishment of a three-year graded course was a marked advance in the college's educational progress. The last step was the adoption of a four years' graded course, which took place in 1896. The essential features of the new course were the increase in recitations, which were started only in 1891, and were now carried through the first three years; the increase in laboratory instruction, through the addition of pathology, bacteriology and clinical microscopy, and the section work in the dispensary and hospital.



Bellevue Hospital Medical College

The Bellevue Hospital Medical College

Claude E. Heaton, M.D.

Bellevue Hospital Medical College was organized some 20 years after the University Medical College. The first recorded suggestion for a distinct school of medicine appears in the minutes of the Medical Board of Bellevue Hospital under the date of December 18, 1860. "At the request of the Commissioners of Public Charities and Correction, a committee from the Medical Board of Bellevue Hospital has been appointed to examine and report upon the institutions under the control of the Commission." Dr. Isaac E. Taylor as chairman and Dr. James R. Wood constituted a sub-committee and in their report to the Medical Board pointed out that "it becomes an important question, where ere many days elapse, the Bellevue Hospital should have—nay, ought to have—connected with it, and established, A COLLEGE for the education of young men, independent of a Clinical Hospital, thus making it one of the largest schools and hospitals united together?" The Commissioners favored the proposal for a new school and gave permission to erect a college building upon the Hospital grounds. On April 2, 1861, the following ten members of the medical staff at Bellevue Hospital were appointed to the first faculty:

Stephen Smith, Principles and Practice of Surgery	
F.H. Hamilton, Surgery of Bones and Accidents	
James R. Wood, Operative Surgery and Surgical Pathology	
Alexander B. Mott, Surgical Anatomy	
Lewis A. Sayre, Orthopedic Surgery	
I.E. Taylor	} Obstetrics
Fordyce Barker	
George T. Elliot, Jr.	
B.W. McCready, Materia Medica and Therapeutics	
J.W.S. Gouley, Anatomy	

The faculty was finally completed by the appointment of the following: Austin Flint, principles and practices of medicine, Austin Flint, Jr.,

physiology, R.O. Doremus, chemistry and toxicology.

Bellevue Hospital was at this time, as it is still, the foremost general hospital in the country. Its origin goes back to 1736, at which time municipal hospital service was inaugurated in New York City with the erection of a workhouse and house of correction on the City Commons, the present City Hall Park. Here a little infirmary of six beds was set apart to be used for this purpose alone and placed in charge of Dr. John van Beuren.

As early as 1787, the Almshouse Hospital, which was still the only institution for the sick in New York, was being utilized for medical teaching. In that year Dr. Nicholas Romaine established a medical school, teaching anatomy, practice of physic, chemistry, and botany with such success that "he drew hearers from distant places, even from Canada." To promote his institution, the corporation of the City of New York committed to Dr. Romaine's charge "the sick in the Almshouse and the Bridewell, whose diseases are registered, together with daily reports of the symptoms, the prescriptions, and the effects of medicine, for the farther improvement of the students at physic." During the winter sessions clinical lectures were delivered every Saturday on the most important cases.

According to Dr. David Hosack, who studied at the Almshouse in 1788-1789, the Hospital was attended by Dr. Romaine, Dr. Benjamin Kissam, and Dr. William Moore as physicians and by Dr. Wright Post as surgeon of the establishment. "Under their united care, this infirmary was rendered a profitable school of medicine and surgery, while the sick received the benefits of physicians distinguished for their abilities and education, and by whom they were attended in rotation."

In 1796, the Almshouse was moved to Chambers Street where three years later the first lying-in ward in New York was opened under the care of Dr. Valentine Seaman. Dr. W. J. MacNeven, one of America's pioneer chemists, gave clinical instruction there from 1806 to 1808. Dr. David Hosack also pursued a brief surgical career

at the Almshouse Hospital from 1806 to 1810.

The buildings on Chambers Street were at this time in a ruinous condition and unfit for the accommodation of the poor. During the yellow fever epidemics, beginning in 1795, a temporary hospital had been opened on the Belle Vue Farm. In 1811, the City purchased a site for a new Almshouse, consisting of the balance of a plot north of the Belle Vue Farm which had been known for nearly a hundred and fifty years as the Kips Bay Farm. The Kips Bay Farm and the adjoining Rose Hill Farm were situated in a lovely spot, described by Dr. John Wakefield Francis as follows: "On the old road towards Kings Bridge, on the eastern side of the island, was the well-known Kips farm, preeminently distinguished for its grateful fruits, the plum, the peach, the pear, and the apple, and for its choice culture of the rosaceae. Here the elite often repaired and here our Washington, now invested with Presidential honors, made an excursion, and was presented with the Rosa Gallica, an exotic first introduced into this country in this garden; fit emblem of that memorable union of France and the American colonies in the cause of republican freedom."

The new Almshouse at Bellevue was formally opened on April 22, 1816. On December 5, 1825, the Common Council approved and adopted the following: "Resolved that the Building lately erected at Belvue, and intended as a Hospital shall hereafter be called and known by the name of Belvue Hospital." This referred to the fever hospital erected in 1826 at the foot of Twenty-third Street, through the efforts of Dr. David Hosack.

The cause of medical education in New York was greatly advanced in 1847 by the reorganization of the Almshouse Department and the creation of a permanent Medical Board at Bellevue Hospital, which made possible the utilization of the abundant resources of the Hospital for the teaching of students.

Surgery was a strong department in Bellevue Hospital Medical College from the very beginning. Frank H. Hamilton (1813-1886), who wrote the first complete and exhaustive treatise in English on fractures, did more, according to Stimson, to systematize and perfect the treatment of frac-

tures than any other American surgeon. He was probably the first to advocate skin grafting, many years before the procedure of Thiersch. Lewis A. Sayre (1820-1900) was the first professor of orthopedic surgery in this country and performed in 1854 the first successful resection of the hip joint in the United States.

Dr. James Rushmore Wood (1813-1882), the famous surgeon of the Bellevue Hospital of his day and generation, began his surgical career in the days before anesthesia and aseptic technique. Wood inaugurated the popular Saturday afternoon surgical clinics held at the hospital.

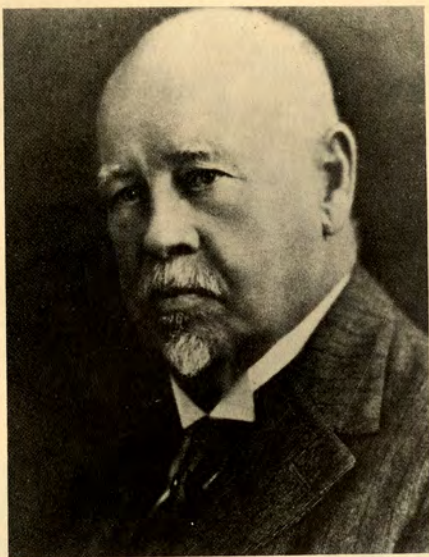


The Bellevue amphitheatre, ca. 1900

Wood, along with Stephen Smith, Austin Flint, and others, cooperated as advisory member of the special committee headed by Mrs. William H. Osborn, which in 1873 established the Bellevue Hospital Training School for Nurses, the first in America to be established in accordance with the ideas of Florence Nightingale, and a model for the many schools that quickly followed.

Other outstanding names in surgery were those of Frederic S. Dennis (1876-1914), Joseph Decatur Bryant (1845-1914), and George David Stewart (1862-1933).

William H. Welch (1850-1934) was appointed as assistant to the chair of principles and practice of medicine, occupied by Austin Flint. The



William H. Welch

following year he was made demonstrator in anatomy along with Frederic S. Dennis. Welch gave a private course in the laboratory in both the winter and spring sessions, the fee being fifteen dollars and the class limited to twelve. In 1881, he was made professor of pathological anatomy and general pathology, a position which he held until 1885 when he went to Johns Hopkins. This was the first full-time appointment of its kind in the country, establishing the fundamental importance of pathological anatomy in the medical curriculum. In recalling those days Welch once said, "My most active, vigorous years were here in New York. What I count as especially good fortune was my association with Austin Flint, the elder, a great physician and a man of wide vision."

In 1884, the Bellevue Hospital Medical College catalogue contained these significant words: "It is well known that recent investigations into the relations of micro-organisms to certain pathological conditions foreshadow a revolution in our ideas of the causation and pathology of many diseases; and that the results already obtained promise to be of incalculable value to humanity. It was with the view of fostering original research in this line of inquiry, and of disseminating a practical knowledge of what has

already been developed, that Mr. Carnegie has made his munificent gift to the college."

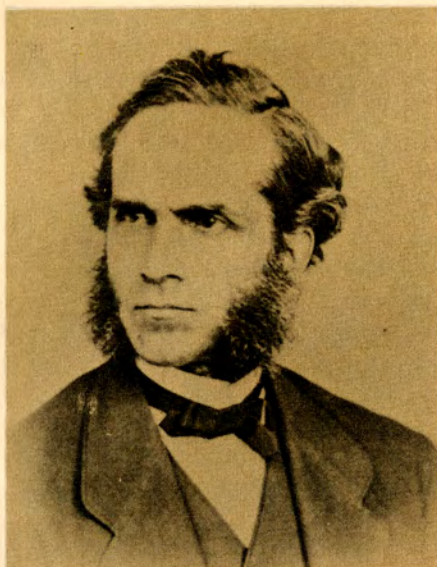
The Carnegie Laboratory was first used during the session 1884-1885. Janeway and Dennis were made directors and Hermann M. Biggs instructor. This was the first laboratory in the country established for teaching and investigation in bacteriology and pathology.

In 1886, the medical department of the University opened the Loomis Laboratory, named in honor of Alfred Lebbeus Loomis (1831-1895), professor of medicine from 1886 to 1895. It was the incessant energy of Dr. Loomis that was responsible for the steady growth of the school after the fire of May 1886. A victim of tuberculosis himself, Loomis specialized in diseases of the chest. "He discriminated between the patient and the disease, looking beyond the morbid process to the man fighting for his life."

At this time (1897) the old Bellevue Hospital Medical College was partially destroyed by fire. On March 18, 1897, the Council of the University invited the Bellevue Hospital Medical College to join the University. This invitation was unanimously accepted and the consolidated College was opened October 1, 1898, as the University and Bellevue Hospital Medical College.

The Bellevue faculty transferred to the University all its equipment and building, including the new building on the southwest corner of Twenty-sixth Street and First Avenue and the adjacent Carnegie Laboratory, which was occupied by the combined school in 1898.

Claude Heaton delighted in pointing out that the facade of the New York City Department of Health building on Worth Street contained the names of five alumni and/or faculty of the Bellevue Hospital Medical College. The names of Welch, Smith, Reed, Gorgas and Biggs appear next to those of Lister, Harvey, Jenner, Pasteur and Koch. The story of how Stephen Smith, a professor of surgery at the Bellevue Hospital Medical College joined this distinguished group was



Stephen Smith

related by Smith himself at the 50th Anniversary meeting of the American Public Health Association (1921).

"During my term of service in Bellevue Hospital, a severe epidemic of typhus fever prevailed, due to an immense immigration of Irish people, among whom it first appeared following a famine. Ten of our staff of 12 suffered attack, two of whom died. I was one of those who escaped. The pressure upon the accommodations of the hospital became so great that the commissioners established a fever hospital on Blackwell's Island, and I was appointed its visiting physician, being regarded as immune.

Upon examination of the records of admission of patients, I discovered that from one tenement house upwards of 100 cases had been received. On visiting the house, I found a veritable "fever nest." The doors and windows were broken, the cellar was filled with sewage, every room was occupied by families of Irish immigrants who had but little furniture and slept on straw scattered on the floor. I learned that the

house was the first resort of immigrants, as there was no one in charge and hence no expense.

My first effort to vacate and close this fever nest was an application to the Police Department. During my interview with the president, the attorney of the board was called, and upon hearing the case informed us that the police had no authority to act in such cases, and he knew of no department of the city government that could legally take the steps which I proposed, namely to abate a nuisance of such a kind.

I then determined to find the owner and endeavor to persuade him as a matter of public duty and humanity to put his house in proper sanitary condition. Visiting the tax office, I found that the taxes were paid by a wealthy gentleman living in Union Square. He received my request with a flat refusal to improve the house, alleging that it never paid anything and was a constant source of annoyance.

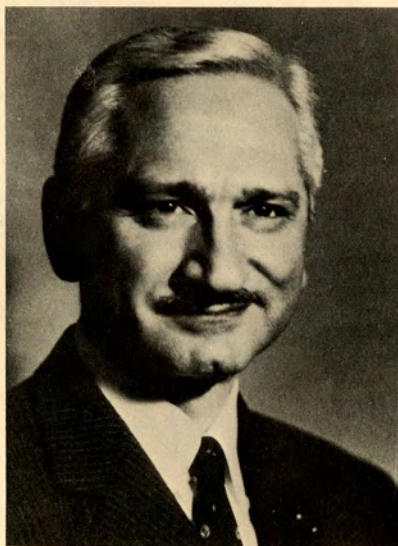
When I related the case, and my failures, to the secretary of the Citizens' Association, a powerful body of men, with Mr. Peter Cooper as president, organized to defeat the schemes of Tweed, then in full control of the city government, he was deeply interested and suggested that the reform of the Health Department was directly in line with the work of the Association. He suggested that I should join the organization and become a member of the "Council of Hygiene," a committee already in operation and named after a French commission. I followed his advice, was elected and assigned to the Council, and became its secretary."

Smith's account goes on to describe how, with the help of William Cullen Bryant and the threat of publicity in New York's *Evening Post*, the landlord was "brought to terms." New York City, State and National Boards of Health were formed as a direct result of this incident. Smith later served as Commissioner of both the City and State Boards of Health and was appointed to the

National Board by President Rutherford B. Hayes. In addition to these activities, which also included a pivotal role in developing institutional care for the mentally ill, Smith continued as a practicing surgeon at Bellevue, and an active teacher on the faculty of the Bellevue Hospital Medical College. He was particularly well known among surgeons of the day for his textbook, *The Principles and Practice of Operative Surgery*, which appeared in three editions.



Jonas Salk



Albert Sabin

In 1931, the University acquired the building of the Cornell University Medical College on First Avenue and 28th Street. And in 1935, during John Wyckoff's tenure as Dean, the name of the School was changed from the University and Bellevue Medical College to the New York University College of Medicine. A grateful world continues to acknowledge the special contributions of two alumni of this period, Albert Sabin '31 and Jonas Salk, '39.

—A.E.D.

1941-1981

Allan E. Dumont, M.D.

Forty years ago the New York University College of Medicine occupied three modest buildings along First Avenue and its affairs were pleasantly simple and circumscribed. Practically all the salaried full-time faculty were in pre-clinical departments. Several small rooms comprised the library which contained 24,000 volumes and operated on an annual budget of \$9,665. Tuition fees provided slightly less than one-half of the Medical School's total annual budget of \$802,400 and, in keeping with long-standing tradition, the balance was supplied by the University. These statistics acquire significance when contrasted with the situation today. The number of faculty members now engaged in full-time research and teaching is almost double the number of the entire faculty of 1941. The library has grown to 136,000 volumes, subscribes to 1,475 current periodicals, and operates on a budget of \$820,000 a year. Current annual expenditures for the entire Medical Center are about 250 times the 1941 figure. The character of the school has changed drastically and, in a sense, nothing emphasizes so sharply the nature of this transformation as the change in name to "School of Medicine of the New York University Medical Center."

At the time of its 100th Anniversary, in 1941, the school was well endowed in at least three respects: First, the unsurpassed opportunity to study the widest possible spectrum of diseases at Bellevue Hospital had given the School a reputation long before 1941; second, an unusually able

and determined group of students; third, the leadership provided by Dean John H. Wyckoff '07, in recruiting a farsighted and enthusiastic young faculty.

In the early 1940's, a vision and a plan for the school's development came from two of these recruits: Donal Sheehan, Professor of Anatomy and Acting Dean, and Howard C. Taylor, Jr., Associate Professor of Obstetrics and Gynecol-



Donal Sheehan

ogy. The first public effect of their vision was a symposium in the winter of 1944 to consider the future of medicine and medical education. Alan Gregg, Walter B. Cannon and other outstanding figures came to the school for discussions with the faculty. The essence of these discussions together with the recommendations of Donal Sheehan, Howard Taylor and the executive faculty were described in 1945 in a report to the University called "The Mission of a Medical School." In selecting this title for a remarkable document which took the long view of the School's purpose and which continues to have a bearing on medical school development throughout the country, Howard Taylor recalled that he and Donal Sheehan had been influenced by a recently published book by Ortega y Gasset called "Mission of a University." The proposals contained in the report were quickly accepted by the University and by the City as the basis for a long range plan.

In tracing the development of the New York University Medical Center from this point, it seems appropriate to use the words of Donal Sheehan and Howard Taylor to categorize important events.

"Worthy and Adequate Buildings"

In the Medical Violet of 1943, Donal Sheehan mentioned for the first time one of the major goals to be spelled out in detail in 1945: "I look forward to a time when the laboratories of teaching and research will be housed in worthy and adequate buildings; when the student body will have proper living and recreation quarters with dining and reading rooms."

By 1947, a site for the new Medical Center had been chosen and the following details completed:

1. The University was granted a charter to establish and operate a hospital and clinic.
2. The University formally established the New York University-Bellevue Medical Center, with its own Board.
3. The University acquired the 11 acres of land, between First Avenue and the East River Drive, from 30 to 34th Streets, and engaged architects.
4. The City agreed to close streets in the area and transfer title to the University, for which the University agreed to exchange a parcel of land for construction of an Institute of Forensic Medicine.

In 1945, with a contribution of \$75,000 from faculty and alumni, followed soon afterwards by a \$3,000,000 loan from the University for acquisition of land, financial help began to snowball and by 1947, \$6½ million had been raised. Units of the Medical Center then sprang up in the following order:

- Institute of Physical Medicine and Rehabilitation — 1951
- Medical Science Building and the Henry W. and Albert A. Berg Institute — 1954
- Rubin Hall of Residence and Alumni Hall — 1957
- University Hospital — 1963
- Institute of Rehabilitation Medicine

Research Building — 1968
Schwartz Lecture Rooms — 1973
Coles Student Laboratories — 1977
Helmsley Research Laboratories — 1978
Schwartz Health Care Center — 1979

“A Program of Graduate Education”

In the early 1940's, the faculty decided that there was an urgent need to provide educational opportunities for physicians returning from war service. With the help of a W. K. Kellogg Foundation grant, activities of the College of Medicine were expanded in 1945 by the creation of a Post-Graduate Division. This division merged with the New York Post-Graduate Medical School and Hospital in 1948 to form the New York University Post-Graduate Medical School. In an historic sense the merger was really a reunion; the original faculty of the New York Post-Graduate Medical School comprised a group of physicians who resigned from the University in 1882 to establish a center for postgraduate teaching. Under the terms of the 1948 merger the New York Post-Graduate Hospital and the New York Skin and Cancer Hospital became the University Hospital. At the same time, the fourth medical and surgical divisions of Bellevue Hospital became teaching services of the Post-Graduate Medical School. By 1960, corresponding clinical departments in each School had been merged. Functioning currently as a unit of the Medical Center, the Post-Graduate Medical School offers courses in all branches of medicine.



Cooperative Care facility in the Arnold and Marie Schwartz Health Care Center

The “University Clinic”

Anticipating the need for a facility which would allow the clinical faculty to provide comprehensive health care to outpatients, Drs. Sheehan and Taylor proposed the establishment of a “University Clinic.” They emphasized that such a unit should maintain a close connection with the laboratories of the School in order to assure that new advances in medicine would be applied at once to the care of patients. Designated the “Faculty Practice Offices” and installed originally in University Hospital, this activity now occupies several floors in the Cooperative Care Building. Completed in 1980, the latter houses patients who require a level of professional nursing care less than that offered at University Hospital. Using “cooperative care partners,” relatives or friends to help supervise the activities of patients, the Cooperative Care program has proven to be an effective approach to the problem of rising costs of health care.

“Expansion of the Activities of the University”

During the past 40 years, six distinct institutes have been incorporated into the Medical Center. In almost every instance the need for further development of the field to which these Institutes are devoted was emphasized in “The Mission of a Medical School.”

Physical medicine and rehabilitation was a virtually unknown and unexplored field before 1940. In cooperation with the Institute for the Crippled and Disabled, then an affiliate of Columbia University, the first such department in a general civilian hospital was established at Bellevue in 1941 and then set up as a division of the Medical School in 1945. This new branch of medicine received a great impetus during the war from attempts to understand the neuromuscular changes which followed disabling injuries. The Institute of Physical Medicine and Rehabilitation

For investigation of problems relating to occupational diseases and environmental health hazards, the Institute of Industrial Medicine was established in 1947. In recent years the concerns of this Institute have been extended to include studies of radiation effects. In 1963 expanded activities of this institute were shifted to University facilities at Sterling Forest in Rockland County and its name was changed to Institute of Environmental Medicine.

Forensic Medicine was also singled out in the 1945 "Mission" report as a special area of investigation that might flourish in a separate institute in cooperation with the Office of the Chief Medical Examiner of New York City. The Institute occupied its own building on the Medical Center campus in 1961.

Funds were provided in the will of Dr. Albert A. Berg to establish an institute in which the discipline of surgery, pathology and physiology could be applied jointly to unsolved problems in medicine. The Henry W. and Albert A. Berg Institute for Experimental Physiology, Surgery and Pathology occupied its present building, adjacent to the Medical Science Building, in 1955.

To meet the special needs of patients with facial disfigurement and to make the resources of the Medical Center available to patients requiring surgical correction of external deformities of any type, an Institute of Reconstructive Plastic Surgery was established in 1957 as a division of the Department of Surgery.

The Sackler Institute of Graduate Biomedical Sciences was established in 1981. Focusing on an interdisciplinary approach to research in the basic sciences and on the training of biomedical scientists, the Institute is supported by funds provided by Drs. Raymond R., Mortimer D., and Arthur M. Sackler '37.

"Close Proximity to Bellevue Hospital"

Recognizing that the prestige of the School of Medicine came in large measure from Bellevue, Donal Sheehan and Howard Taylor recommended that the new Medical Center remain "in close proximity to Bellevue Hospital."

In 1942, the School of Medicine assumed responsibility for professional psychiatric services at Bellevue, thus rounding out the circle of major clinical services that have been supervised by the faculty since 1861. In 1947, the School also established its own neurology and urology services at Bellevue. With termination of Cornell and Columbia Universities' affiliation with the Hospital in 1968, the School of Medicine became responsible for all patients in Bellevue.

A 1971 New York *Times* article by the late John Sibley described the 'old' Bellevue in the following terms: "Despite chronic underfinancing, peeling paint, broken down elevators and



The "New Bellevue"

shortages of nurses and nonprofessionals, there continues at Bellevue the unmistakable air of intellectual excitement that has traditionally marked it as a great teaching hospital." Com-

pleted in 1975, the 'new' Bellevue has 1200 beds and provides care for 30,000 inpatients and 400,000 outpatients annually.

With completion of the Manhattan VA Hospital in 1954, an additional 1200 beds were added to the School's clinical resources. Occupying a site just south of Bellevue Hospital and like the latter drawing its staff from the faculty of the School, it has become a most important component of the Medical Center's educational and research activities.

"Flexibility and Individuality in Learning"

"The Mission of a Medical School" aimed at changing the approach to medical education by providing for "flexibility and individuality in learning." During the past 40 years the faculty have continuously modified the course of study and experimented with new programs; in each case the goal has been to recognize the student as a mature person, to break away from the lockstep curriculum and to prepare the student for a profession that is changing constantly.

Some changes came from an awareness that practical medical knowledge would become obsolete at an unprecedented rate. For this reason the ranks of those who teach clinical subjects, by tradition practicing physicians, were mixed with those who investigate problems which are relevant to but not identical with the practice of medicine. Time available for elective work increased steadily and, under the aegis of the Honors Program, established in 1956 by a \$750,000 grant from The Commonwealth Fund, special lectures and discussion groups have been arranged at regular intervals. With additional grants for the Honors Program from the NIH, programs for advanced tutorials, summer research, a medical science year, intra-curricular fellowships and merit scholarships all became available as opportunities for interested students. Also with the help of Federal funds, the MD-PhD program for the development of scientists in medicine was initiated in 1962.

"Confidence in Research"

The faculty of the Medical School in 1945 stood united in the expectation that an exponential growth of knowledge was imminent. Donal Sheehan and Howard Taylor described the desire for new knowledge as medicine's most precious attribute. "Confidence in research", they wrote, "is indeed the most striking feature of the thinking of those who are concerned with medicine today."

Contributions of new knowledge have in fact come from the School's own laboratories in almost endless succession. Whole areas of medicine have changed as a result of investigations carried out here, and one need only consider a few well-known examples from the last four decades to illustrate this. An entirely new understanding of renal function developed from studies carried out at the beginning of this period by Homer Smith and his collaborators. Until recently it was difficult to name an outstanding active renal physiologist who either did not spend time in Homer Smith's department or whose work was not based on concepts developed there. Later on William S. Tillett's studies of streptococcal



Homer W. Smith



William S. Tillet

enzymes opened a new era of discovery in infections, blood clotting and reactions to disease. In 1959, Severo Ochoa was awarded the Nobel Prize for epochal studies in biochemical genetics and nucleic acids.

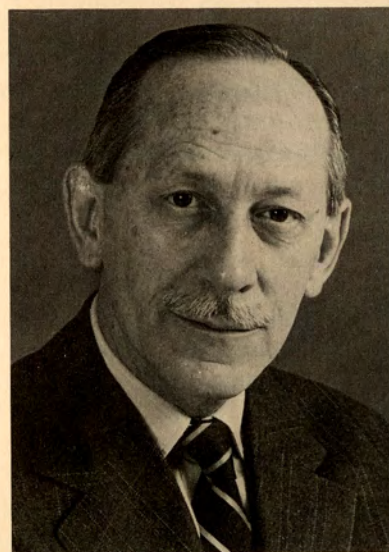


Severo Ochoa

A series of papers published recently in *Cellular Immunology* and dedicated to Alwin M. Pappenheimer (assistant professor—professor and chairman of microbiology, 1941-1958) by his former students and associates recalls the sense of commitment to research that began to pervade the School by the late 1940s. In an account by John Uhr '52, professor and chairman of the department of microbiology, Southwestern Medical School, the Department of Microbiology is described in the following terms: "The department, initially chaired by Colin MacLeod,

included such superb scientists as E. Racker, who quickly came to the forefront of molecular biology; Mark Adams, a pioneer in the study of bacteriophages; Alan Bernheimer, a former student of Pap's who was isolating and characterizing new streptococcal toxins, and Lane Barksdale, another former student of Pap's who was making major contributions to understanding the genetics of diphtheria toxin synthesis. The department was recognized as the premier department of microbiology in this country. Pap was determined to understand the molecular basis by which diphtheria toxin killed susceptible cells. It is not surprising that in the exciting intellectual milieu of MacLeod's department, Pap's creativity and perseverance led to fruitful investigations of the mechanism of action of diphtheria toxin." And Lewis Thomas recalls that Dr. Pappenheimer was "in the NYU tradition and had a hand in setting that tradition." According to Thomas, "Pap and Colin MacLeod were a sort of twin force and it was a marvelous experience to watch them influencing each other and then setting the tone, making the air right, for all their colleagues."

In the 1950's and 1960's, attention continued to focus on immunology. Descriptions of lymphocyte "transfer factor" by Dr. H. S. Lawrence and



H. Sherwood Lawrence



Saul Krugman

of the genetic regulation of immunological activity by Dr. Baruj Benacerraf (later to receive the Nobel Prize) emerged as a result of this effort. Development of vaccines against a number of viral agents including Type B (serum) hepatitis by Dr. Saul Krugman is still another and more recent example of research which has a direct and significant bearing on clinical medicine.

Nine new Chairs have been endowed during the past 10 years in order to provide for careers in which research is the predominant activity. During this same period, the research laboratories of the Departments of Cell Biology, Biochemistry, Pharmacology, Pathology and Physiology have been completely rebuilt and modernized. In each case, distinguished investigators have been drawn to the School to serve as chairmen of these departments.

Flourishing beyond expectation after a long passage from birth to maturity, the School of Medicine has responded to the invigorating touch of many individuals: Donal Sheehan and Howard Taylor, "whose singular praise it is to have done the best things in the worst times"; friends and trustees who generously contributed to its physical development; and the long line of faculty and students who carried on the School's traditions of learning.



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