PIONEERING MEDICINE

The Evolution of NYU Langone Medical Center
PIONEERING MEDICINE
The Evolution of NYU Langone Medical Center
CONTENTS

PAGE 07 FOREWORD

PAGE 08 FOUNDERS

PAGE 24 ADVOCATES

PAGE 38 CLINICIANS

PAGE 56 TEACHERS

PAGE 80 RESEARCHERS:

PAGE 85 ALUMNI RESEARCHERS

PAGE 99 FACULTY RESEARCHERS

PAGE 125 NOBEL LAUREATES

PAGE 134 THE NEXT CHAPTER

PAGE 146 VISIONARIES
"We leave traces of ourselves wherever we go, on whatever we touch."

That wonderful observation, by Dr. Lewis Thomas—a remarkable teacher, scientist, and author who was the 11th dean of our School of Medicine—gives us an opportunity to reflect on the countless individuals whose passion and dedication have helped make NYU Langone Medical Center what it is today.

Since NYU School of Medicine was officially founded in 1841, our physicians and researchers have made discoveries that have revolutionized the practice of medicine. They have set new standards for the diagnosis and treatment of diseases and have continuously pushed the boundaries of knowledge and science. And they have shown an unwavering commitment to training future generations of physicians, many of whom went on to make groundbreaking discoveries and bring medical advances to patients all over the globe.

Pioneering Medicine highlights just some of the great number of contributions that our doctors, scientists, and alumni have made throughout history.

Today, NYU Langone Medical Center’s physicians and researchers are committed to building upon this outstanding legacy of discovery and service. As we set out to advance medical education, scientific research, and patient care, we look to these illustrious pioneers as a source of inspiration, gratitude, and pride.

Robert I. Grossman, M.D.          Kenneth G. Langone  
Saul J. Farber Dean and Chief Executive Officer     Chairman, Board of Trustees
In 1841, six eminent physicians and scientists opened a medical college under the aegis of the University of New York, one of the nation’s first progressive universities dedicated to providing widely accessible higher education. Valentine Mott, John William Draper, Granville S. Pattison, Gunning S. Bedford, John Revere, and Martyn Paine made major contributions to the diagnosis and treatment of disease, as well as to medical research and education, defining the three fundamental aspects of NYU Langone Medical Center’s mission today: to serve, to teach, to discover.
The most famous American surgeon of his day, Valentine Mott began teaching surgery at Columbia College at the age of 26 and in 1818 performed the first recorded ligature of the innominate artery, a procedure considered the most formidable operation of that day. He left Columbia to become one of the founding faculty of the University of New York Medical Department in 1841. He was syndyke for the bedside teaching and training of society, and was known and respected from all parts of the United States and abroad came to observe the work in the operating room of Bellevue Hospital.

Mott initiated the “clinique” as a teaching method, bringing patients into the operating theater to present their ailments to the medical students, followed by a discussion of causes and demonstration of appropriate treatment. This emphasis on actual patients and treatment, as opposed to theoretical study of texts and abstract anatomy, helped revolutionize the teaching of medicine. Mott also introduced the use of individual patient history charts at every hospital bedside, and his four-volume translation of Velpeau’s Operative Surgery (1847) became the 19th-century surgeon’s bible. In 1849, by unanimous vote, Mott was elected to the presidency of the New York Academy of Medicine.

Valentine Mott (1785–1865)
Founder and Professor of Surgery,
Medical Department,
University of New York
Draper investigated the application of chemistry and physics to physiology, and as president of the Medical Faculty from 1850 to 1873, he spearheaded the legalization of dissection of the human body. His highly regarded textbook, *Human Physiology, Statical and Dynamical* (1856), argued for a strictly chemical basis of life, rather than following the dominant vital force theory, whose proponents claimed that living systems contained a nonchemical force that gave them life.

An early pioneer in photography, Draper produced, with Samuel F.B. Morse, the first daguerreotype portraits by an American. The two taught photography at the University of New York and counted Mathew Brady, the famed photojournalist, among their students. Draper made the first photograph of the moon to show its features (1840), and the first photographic plate of the solar spectrum (1843). He was also one of the first to take photographs of specimens under a microscope. Draper helped found the American Chemical Society in 1876 and served as its first president.
...he (Pattison) almost made the dead body before him speak... His success in fortifying the student in the knowledge... to make free and bold incisions... made him one of the most successful lecturers that ever adorned a medical college.

—Student describing Pattison's anatomy class
Gunning S. Bedford (1806–1870)
Founder and Professor of Diseases of Women and Children, Medical Department, University of New York

An innovator in women’s health, Bedford used anatomical instruction and clinical training to improve the safety of obstetric procedures. His textbooks, Diseases of Women and Children (which went through ten editions during his lifetime) and Principles and Practice of Obstetrics (five editions), were translated into French and German. He designed and introduced the Bedford forceps in 1846, to assist in deliveries.

Bedford opened the first obstetrical clinic in the United States, where as many as ten thousand women received care without charge each year. His promotion of safe obstetric procedures and his instruction to students helped raise the existing standard of care for women. He was one of the founders of the New York Academy of Medicine in 1851.

Gunning S. Bedford (1806–1870)
Founder and Professor of Diseases of Women and Children, Medical Department, University of New York

An innovator in women’s health, Bedford used anatomical instruction and clinical training to improve the safety of obstetric procedures. His textbooks, Diseases of Women and Children (which went through ten editions during his lifetime) and Principles and Practice of Obstetrics (five editions), were translated into French and German. He designed and introduced the Bedford forceps in 1846, to assist in deliveries.

Bedford opened the first obstetrical clinic for indigent women in the United States, where as many as ten thousand women received care without charge each year. His promotion of safe obstetric procedures and his instruction to students helped raise the existing standard of care for women. He was one of the founders of the New York Academy of Medicine in 1851.

Gunning S. Bedford (1806–1870)
Founder and Professor of Diseases of Women and Children, Medical Department, University of New York

An innovator in women’s health, Bedford used anatomical instruction and clinical training to improve the safety of obstetric procedures. His textbooks, Diseases of Women and Children (which went through ten editions during his lifetime) and Principles and Practice of Obstetrics (five editions), were translated into French and German. He designed and introduced the Bedford forceps in 1846, to assist in deliveries.

Bedford opened the first obstetrical clinic for indigent women in the United States, where as many as ten thousand women received care without charge each year. His promotion of safe obstetric procedures and his instruction to students helped raise the existing standard of care for women. He was one of the founders of the New York Academy of Medicine in 1851.

Gunning S. Bedford (1806–1870)
Founder and Professor of Diseases of Women and Children, Medical Department, University of New York

An innovator in women’s health, Bedford used anatomical instruction and clinical training to improve the safety of obstetric procedures. His textbooks, Diseases of Women and Children (which went through ten editions during his lifetime) and Principles and Practice of Obstetrics (five editions), were translated into French and German. He designed and introduced the Bedford forceps in 1846, to assist in deliveries.

Bedford opened the first obstetrical clinic for indigent women in the United States, where as many as ten thousand women received care without charge each year. His promotion of safe obstetric procedures and his instruction to students helped raise the existing standard of care for women. He was one of the founders of the New York Academy of Medicine in 1851.

Gunning S. Bedford (1806–1870)
Founder and Professor of Diseases of Women and Children, Medical Department, University of New York

An innovator in women’s health, Bedford used anatomical instruction and clinical training to improve the safety of obstetric procedures. His textbooks, Diseases of Women and Children (which went through ten editions during his lifetime) and Principles and Practice of Obstetrics (five editions), were translated into French and German. He designed and introduced the Bedford forceps in 1846, to assist in deliveries.

Bedford opened the first obstetrical clinic for indigent women in the United States, where as many as ten thousand women received care without charge each year. His promotion of safe obstetric procedures and his instruction to students helped raise the existing standard of care for women. He was one of the founders of the New York Academy of Medicine in 1851.

Gunning S. Bedford (1806–1870)
Founder and Professor of Diseases of Women and Children, Medical Department, University of New York

An innovator in women’s health, Bedford used anatomical instruction and clinical training to improve the safety of obstetric procedures. His textbooks, Diseases of Women and Children (which went through ten editions during his lifetime) and Principles and Practice of Obstetrics (five editions), were translated into French and German. He designed and introduced the Bedford forceps in 1846, to assist in deliveries.

Bedford opened the first obstetrical clinic for indigent women in the United States, where as many as ten thousand women received care without charge each year. His promotion of safe obstetric procedures and his instruction to students helped raise the existing standard of care for women. He was one of the founders of the New York Academy of Medicine in 1851.

Gunning S. Bedford (1806–1870)
Founder and Professor of Diseases of Women and Children, Medical Department, University of New York

An innovator in women’s health, Bedford used anatomical instruction and clinical training to improve the safety of obstetric procedures. His textbooks, Diseases of Women and Children (which went through ten editions during his lifetime) and Principles and Practice of Obstetrics (five editions), were translated into French and German. He designed and introduced the Bedford forceps in 1846, to assist in deliveries.

Bedford opened the first obstetrical clinic for indigent women in the United States, where as many as ten thousand women received care without charge each year. His promotion of safe obstetric procedures and his instruction to students helped raise the existing standard of care for women. He was one of the founders of the New York Academy of Medicine in 1851.
The youngest son of patriot Paul Revere, John Revere was born in Boston and attended Magendie’s Physiology from the original French. He received a classical education at Harvard and studied medicine there with Dr. James Jackson. He also studied in Paris and graduated from the University of Edinburgh in 1811. Revere practiced medicine in Boston, and helped found the University of New York Medical Department in 1841, where he taught the Theory and Practice of Medicine. He died just six years later, the victim of typhus contracted in the course of attending a sick medical student. Highly regarded by his peers, Revere was eulogized by Valentine Mott in his Biographical Memoir of the Late John Revere, M.D.

“Both as a physician and as a man, (Revere) was a model gentleman… There was indomitable honor, cool determination, unflinching devotion to truth, and an abhorrence of deceit and treachery.” — Valentine Mott
A traditional medical practitioner, Martyn Paine is said to have prescribed bleeding for virtually all complaints, outraging Oliver Wendell Holmes, among others. His most popular book, *The Institutes of Medicine* (which went through many editions between 1847 and 1870), devotes almost 100 pages to the subject of bloodletting, leeching, and cupping, in addition to documenting an 1822 operation by Valentine Mott. In 1853 Paine successfully lobbied in Albany for passage of the New York State Anatomy Act (commonly referred to as the “Bone Bill” at the time), which passed in 1854, legalizing the use of human bodies for the teaching of anatomy.

“It was a popular school from its beginning. Such professors as Mott, Draper, Payne, Pattison, Post and Bedford could not fail to draw from all parts of the Union young men who desired to put themselves in relations with the best sources of medical knowledge, and the best exhibitions of surgical skill.”

—Rev. Howard Crosby, Chancellor of New York University (1870)
ADVOCATES | Promoting Health and Healing Around the World
As they better understood the biological basis of disease through the 19th and 20th centuries, the doctors and scientists of NYU’s medical school and Bellevue Hospital’s medical school increasingly turned their attention to its causes and prevention, in addition to its treatment. They advocated for sanitation, both urban and personal, and worked to eliminate breeding sites for disease and its carriers. They championed the development of vaccination, quarantine, record keeping, and other methods of minimizing the spread of disease, transforming the landscape and expectations of public health, a transformation that continues into the 21st century.

Advocate (noun) one who pleads another’s cause, supports or urges by argument, publicly recommends a cause or proposal.
Van Buren was born in 1819 and grew up in a medical family. He attended the University of Pennsylvania Medical School and graduated in 1842. After graduation, he served as a surgeon in the U.S. Navy during the Mexican-American War.

Van Buren was named professor of anatomy at the University of Pennsylvania Medical School in 1852. He later became the dean of the school's medical department. During his time there, he was involved in the development of the new operating amphitheater at the hospital, which was completed in 1849. He also helped organize the United States Sanitary Commission, a civilian organization that cared for sick and wounded soldiers and their dependents during the Civil War.

Van Buren was instrumental in organizing the United States Sanitary Commission, a civilian organization that cared for sick and wounded soldiers and their dependents during the Civil War. He helped organize the publication of a series of monographs for use by Army surgeons. Among these was his book, “Rules for Preserving the Health of the Soldier,” which was published in 1861. His texts on surgical procedures included “Contributions to Practical Surgery” (1865) and “Lectures on the Principles of Surgery” (1884).

After the war, Van Buren served as a member of New York City’s Council of Hygiene and Public Health. The council’s 1865 report has been called the most thorough health survey ever made in an American city, and it led to the establishment of the New York City Department of Health in 1866.
One of the first American physicians to specialize in neurology, William A. Hammond (1828–1900), the first American to do so in the U.S., was a neurologist, who wrote *A Treatise on Diseases of the Nervous System* (1871), the first American text on the subject. His early career was spent chiefly in the U.S. Army, which he entered as an assistant surgeon only a year after graduating from the medical school, serving for 11 years. As surgeon general of the Army (1862–64), he improved Civil War field hospitals and established the U.S. Army Hospital for Diseases of the Nervous System and the Army Medical Museum.

William A. Hammond (1828–1900)
Alumnus, Class of 1848, Medical Department, University of New York; Professor of Diseases of Mind and Nervous System (1867–74), Professor of Materia Medica and Therapeutics (1872–74), Bellevue Hospital Medical College; Professor of Mind and Nervous System (1874–82), University Medical College
An unrelenting critic of the unsanitary conditions common in New York City tenements, Smith waged a lifelong battle to improve sanitation in the city, exposing irresponsible landlords and challenging city officials. His work led to the establishment of the Department of Health in 1866—the first such public health agency in the United States—and he was responsible for drafting the act which gave it virtually autocratic powers. In addition to his sanitation efforts, Smith was also an early proponent of vaccination.

Smith later founded the American Public Health Association and was its first president. He wrote Amputations for the United States Sanitary Commission, and his Handbook of Surgical Operations is said to have been issued to every Union army surgeon throughout the Civil War. In his 90s, Smith was appointed president of the Department of Charities, where he initiated reforms which outraged Tammany Hall and resulted in his dismissal “for the good of the service,” which Smith regarded as a great tribute to his efforts.

“Nuisances dangerous to life and detrimental to health existed everywhere. Large areas were undrained, giving rise to miasmatic fevers in the Autumn. The cobble-stone paved streets were lined and littered with garbage. Small butcher shops were in every section, requiring herds of cattle, sheep and hogs to be driven through the streets; the scavenger’s cart, loaded with filth, filled the night airs with suffocating odors; the river front was lined with fat melting and other offensive industries.”

Stephen Smith (1823–1922)
Founder and Professor of Principles and Practice of Surgery, Bellevue Hospital Medical College; Professor of Clinical Surgery, University of New York
ADVOCA TES

HERMANN M. BIGGS (1859–1923)
Alumnus, Class of 1883, Bellevue Hospital Medical College; Professor of Pathological Anatomy (1885–94), Professor of Materia Medica, Therapeutics, Diseases of Nervous System, Clinical Medicine (1892–97), Professor of Therapeutics and Clinical Medicine (1898–1912), Associate Professor of Medicine (1912–16), University and Bellevue Hospital Medical College.

The first American physician to systematically apply bacteriological knowledge and methods to control disease, Biggs introduced diphtheria toxin-antitoxin into the United States in 1894 and supervised its production and distribution through the city's health department. For the first time, it was possible to combat an epidemic by providing free and effective therapy to the poor.

Biggs also developed highly successful methods to control tuberculosis, the leading cause of death among adults in New York in the 1880s. He issued a widely distributed pamphlet on its prevention in 1887 and made it a reportable disease in New York City in 1897. Biggs also started the first municipal program for the control of venereal disease in 1912. He served as chief medical officer of the U.S. Department of War during 1911–1918, making him a model for cities across the nation. In 1914, he was called to Albany to serve as the state's health commissioner, a post he held continuously until his death in 1923.
Baker was appointed director of the city’s new Bureau of Child Hygiene in 1908, and developed programs for public health nurse training, home visits, and preventive care. She expanded her city-wide programs, home visits by city nurses rose from one thousand to one hundred thousand per month, and the Bureau became a model for many other programs around the United States.

Sara Josephine Baker (1873–1945)
Alumna, Class of 1917, University and Bellevue Hospital Medical College; Lecturer (1920–32), University and Bellevue Medical College
NYU Langone Medical Center physicians and researchers have always pushed the limits of medicine, expanding its scope and redefining its functions. Disciplines like pediatrics, forensic medicine, rehabilitation medicine, surgery, and psychiatry have been pioneered or developed at NYU School of Medicine to better serve patients and to advance the practice of medicine everywhere. Innovative surgical procedures and treatment options have prolonged lives, diagnostic screening and early treatment have prevented unnecessary suffering, and a better understanding of the emotional needs of patients and their caregivers has radically transformed medical care today.
In 1917 Lincoln became one of the first female physicians to be accepted as an intern at Bellevue Hospital, where she later recalled being advised to take her meals with the nurses, but insisted on eating with the other interns. She founded the Chest Clinic of the Children’s Medical Service at Bellevue Hospital in 1922 and directed it until her retirement in 1956, studying the progress of the disease among children and testing many possible treatments. In the 1930s, one in every five children admitted to Bellevue with tuberculosis died; nearly within a year. Thanks in part to Lincoln’s studies of the new drugs streptomycin, promixole, and isoniazid in the 1940s and ’50s, the death rate declined dramatically.

Lincoln joined the faculty of the Presbyterian and Bellevue Hospital Medical College in 1930, and 20 years later was named clinical professor of pediatrics. In 1939 Lincoln was elected chair of the pediatrics section of the New York Academy of Medicine. She was named Outstanding Young Alumna of the Year in 1941, awarded the Townsend Harris Medal in 1942, and elected a fellow of the American Academy of Arts and Sciences in 1943. In 1950 she was elected to the American Academy of Pediatrics as a member physician who had made the most outstanding contributions to the cause of children’s health. In 1958 she was awarded the Trudeau Medal of the National Tuberculosis Association for her early work and continuing leadership in the treatment of childhood tuberculosis.
The first African-American woman to graduate from University and Bellevue Hospital Medical College, Chinn interned at Harlem Hospital, but was denied hospital privileges there and elsewhere in New York. She became a hand-down doctor, performing major medical procedures in her patient’s homes and minor procedures in her office. She was highly respected among patients at Harlem Hospital in 1940.

In 1949 Chinn joined the staff of the Strang Clinic, a premier cancer detection facility affiliated with Memorial and New York Infirmary Hospitals, and worked there for 29 years, helping to develop the Pap smear test for cervical cancer.

May Edward Chinn (1896–1990)
Alumna, Class of 1926, University and Bellevue Hospital Medical College


1919, May Edward Chinn (second from right) in women’s suffrage march, New York City.

1930, May Edward Chinn with a young patient at the Strang Clinic. Photograph credits: Estate of Dr. May Edward Chinn.
The “father of rehabilitation medicine,” Rusk worked with the Army during World War II on a variety of rehabilitation programs for injured soldiers. He joined the NYU medical faculty in 1948 and founded the Institute of Physical Medicine and Rehabilitation, using more than $1 million donated by Bernard Baruch. He spent his life working to improve what happens to severely disabled people “after the stitches are out and the fever is down,” as he put it in a 1982 interview.

Rusk founded the World Rehabilitation Fund in 1955 to provide technical assistance programs for rehabilitation in underdeveloped countries, and served as its president until 1982. He wrote weekly on medical topics as a columnist for *The New York Times* from 1946 to 1969. He was awarded more than 11 honorary degrees.

“What is being done for the two million persons in this country whose correctible physical disabilities prevent them from holding jobs? What happens to the thousands disabled each year from industrial, automobile and home accidents? Where can these casualties of the home front go to receive the aid they need?”

—Howard Rusk in the Medical Violet in 1947

Howard A. Rusk (1901–1989)

Founder and Director (1948–78), Institute of Physical Medicine and Rehabilitation; Professor and Chairman (1948–78); Department of Rehabilitation and Physical Medicine, and Distinguished University Professor (1976–89), New York University School of Medicine

Opposite page: The nearly completed Institute of Physical Medicine and Rehabilitation in 1949. The institute was renamed the Rusk Institute of Rehabilitation Medicine in 1984, in honor of Rusk. This is the cover image of Howard A. Rusk in his office in the 1970s. Rusk is to the left, 1974. A rehabilitation unit at a physician of the era is seen at the back wall.
The nine distinct and characteristic qualities of children, as identified by the New York Longitudinal Study, which was started by Chess and her husband. Chess's book (with her husband Alexander Thomas) on children's temperament, *Know Your Child*, published in 1987.

Chess and her husband, Alexander Thomas, originated the New York Longitudinal Study, begun in 1956 and still ongoing, in which 133 children were carefully observed from infancy to adulthood. The study identified three broad categories of temperament: "the easy child," "the difficult child," and "the slow-to-warm-up child." The study documented that children's temperament is stable and predictable. The study also challenged the notion that children's problems are caused by bad parenting.

During the 1960s and '70s Chess studied psychiatric disorders in children who had contracted rubella, or German measles, and explored the possibility that the rubella virus was a cause of autism. She was the author of several popular books for parents, including *Know Your Child* (1987) and *Temperament and Development* (1977), written with Thomas, and a practical book for parents, *Your Child Is a Person* (1965), with Thomas and Robert Bird.

**Activity**
- Persistence & Attention span
- Regularity
- Sensitivity
- Distractibility
- Adaptability
- Intensity
- Mood

**Initial Reaction**
- Activity
- Regularity
- Initial Reaction
- Adaptability
- Mood

**Characteristics**
- Persistence & Attention span
- Regularity
- Sensitivity
- Distractibility
- Adaptability
- Intensity
- Mood

**Opposite page, from left:** Portrait of Stella Chess. Stella Chess in 1974.

**This page:** The nine distinct and characteristic qualities of children, as identified by the New York Longitudinal Study, which was started by Chess and her husband. Chess's book, *Know Your Child*, published in 1987.
A pioneer in open-heart surgery, Spencer introduced at Bellevue Hospital techniques developed by John W. Kirklin at Mayo Clinic that successfully used a Gibbon-type pump-oxygenator to maintain circulation during surgery. What was originally a highly risky surgery became an almost routine procedure, and Bellevue Hospital became a national center for open-heart surgery. Spencer's seminal work on coronary artery bypass grafting and other techniques helped form the foundation of modern-day cardio surgery. Spencer's research into this area, including left ventricular assist devices and total artificial hearts, has been recognized by the American Heart Association (AHA) and American College of Cardiology (ACC). Additionally, Spencer has been involved in the development of new surgical techniques and has continued to contribute to the field of cardiothoracic surgery. He is a past president of the American College of Cardiology and has received numerous awards for his contributions to the field of surgery.

Frank C. Spencer

Professor of Surgery and Chairman (1966–98), Department of Surgery, New York University School of Medicine

"Vivid in the N.Y.U. medical student's memory is the barely audible voice of Dr. Frank C. Spencer looking in the eyes of a chief resident standing in 'the pit' and asking, 'What did you learn?'"...This Medical Resident

Frank C. Spencer

(b. 1925)

Professor of Surgery and Chairman (1966–98), Department of Surgery, New York University School of Medicine

In addition to surgery, administrative responsibilities, and publishing, Spencer has always made teaching a major priority, and has received numerous accolades for his teaching and interest in his students. He has been equally involved in maintaining strong relationships with his colleagues—both staff, faculty, and national surgical associations. Spencer was a vital part of the Surgical Morbidity Mortality Conference at Bellevue and has conducted the majority of these over three decades.
Dancis was a pioneer in the study of the placenta and its crucial role in the immediate welfare of the fetus and newborn, as well as its contribution to some late-appearing adult diseases, such as hypertension and diabetes. He advanced the understanding of the role of the placenta in the metabolism of maternal and fetal components, and made major contributions to knowledge about genetic diseases including maple syrup urine disease, Lesch-Nyhan disease, dysautonomia, and Sellweger's syndrome. He later developed interests in the transfer and metabolism of anti-HIV drugs intended for use during pregnancy to prevent the transmission of the virus.

In recognition of his academic excellence, Dancis was appointed chair of pediatrics at NYU School of Medicine in 1974. He led the Department of Pediatrics for the next 15 years and became mentor to many of the trainees and young faculty. In 1983 he was elected president of the American Pediatric Society and subsequently, in 1986, received its most prestigious award, the Howland Award.

Dancis was also a pioneer in the field of medical education, believing that the educational process should be driven by the students themselves. He believed that a medical education should be more relevant to the stated objectives of the student... and it is the students themselves who are the driving force behind this change.
In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialists, immunologists, oncologists, epidermiologists, and others—were among the first in the world to identify an alarming increase in Kaposi’s sarcoma, opportunistic infections, and immune system failure among young gay men and alert public health authorities to an imminent health catastrophe, soon to be known as HIV/AIDS. As the years progressed, NYU School of Medicine faculty members wrote many of the initial papers on opportunistic infections, have been involved in the clinical development of the vast majority of drugs used for the treatment of HIV/AIDS, were the first to demonstrate in a randomized clinical study that a combination of three drugs was able to hold HIV at undetectable levels, and have contributed to the search and development of a vaccine.

In the early 1980s, clinicians and researchers at NYU School of Medicine—a diverse group of dermatologists, infectious disease specialist
TEACHERS | Leading the Way in Medical Education
From its origins in a master-apprentice teaching model to the team-based experience that it is today, medical education has evolved to meet the realities of its time and the expanding scope of its subject matter. New York City has always been at the forefront of educational progress, promoting scientific investigation and even licensing the first medical school for women. NYU’s medical school was among the first to initiate an M.D./Ph.D. program, and today it is redefining itself yet again, to create a uniquely integrated program in which patient care, research, and education work together synergistically to the benefit of all.

TEACHER
(noun) one who imparts knowledge or guides in the study of a subject or acquisition of a skill.
A promising young physician whose career was interrupted when he developed tuberculosis, Loomis took on diseases of the lungs and heart as his specialty. He was appointed consulting physician to Bellevue Hospital in 1859 and became professor of the theory and practice of medicine in the Medical Department of the University of the City of New York in 1866. When the medical department's building burned in May of that same year, it was largely due to Loomis's efforts that the school continued to grow steadily. The Loomis Laboratory, built in 1888, was named in recognition of his work.

Loomis was twice president of the New York Academy of Medicine (1890–91 and 1891–92), and in 1893 served as president of the Association of American Physicians.

**ALFRED LEBBEUS LOOMIS**

Alfred Lebbeus Loomis (1831–1895), Professor of Pathology and Practical Medicine (1866–95), Medical Department, University of New York
A graduate of the Columbia University College of Physicians and Surgeons (1827), Post studied in Paris, Vienna, Berlin, and London, and taught at Castleton Medical College in Vermont before joining the faculty of the University of New York Department of Medicine in 1851 as professor of surgery. He became the second president of the medical faculty in 1873, a position he held until 1877. Post invented several surgical instruments and appliances, and wrote *Observations on the Cure of Stammering* (1841). He was an active member of the New York Medical Missionary Society and a director of Union Theological Seminary. Post was a fellow of the Academy of Medicine (serving as its president in 1867–1868), and the New York Pathological Society, of which he was elected president in 1861.

**Alfred C. Post** (1806–1886)  
Professor of Surgery (1851–75), President of the Faculty (1873–77), Department of Medicine, University of New York
Wyckoff joined the faculty of University and Bellevue Hospital Medical College in 1910, soon after his graduation. He served in the Bellevue Unit of Army Medical Corps at Base Hospital No. 1 in Stettin. In 1917, he served as dean of the New York University College of Medicine from 1911 to 1917. Wyckoff guided it through the depression and reorganized it. Wyckoff played an important role in the admission of Jewish students fleeing Nazi Europe, encouraging liberal admission policies for these applicants in contrast to other schools. This resulted in at least one-half of NYU students being Jewish between 1920 and 1940.

A distinguished cardiologist, Wyckoff made the Bellevue Cardiac Clinic a model for other hospitals and introduced the idea of a three-fold cardiac diagnosis—etiological, anatomical, and physiological—which became the standard diagnostic nomenclature. He is also known for his work in standardizing the dosing of the cardiac drug digitalis.
An expert on rheumatic diseases, McEwen worked at Rockefeller Institute for Medical Research (now Rockefeller University) before joining the NYU faculty in 1932. He served as dean of the College of Medicine from 1937 to 1955. At the urging of Albert Einstein, McEwen invited Otto Loewi to join the faculty of NYU at the beginning of World War II, helping him to escape Nazi Europe. McEwen himself served in the U.S. Army Medical Corps during the war.

McEwen was instrumental in creating the Medical Center complex as it now exists and the 1956 "Report to the Medical Center Advisory Committee" outlined his vision for the Medical Center after his tenure. An internationally known authority on the hybridization of irises, he also wrote more than 100 articles on horticulture and won an award from the American Horticultural Society.

O. Currier McEwen (1902-2003) Alumni, Class of 1926; University and Bellevue Hospital Medical College; Professor of Medicine (1932-70); Dean (1937-55), New York University College of Medicine.
When the laboratories of teaching and research will be housed in worthy and adequate buildings, when the student body will have proper living and recreational quarters with dining and reading rooms, and when the medical library will have grown, our Center will have become a mecca for all past and present students.

Sheehan and Taylor wrote “The Mission of a Medical School” in 1945, which was based in part on Gertrude Himmelfarb’s “The Mission of a University.” This vision of a modern NYU medical school called for “worthy and adequate buildings,” a “program of graduate courses,” “research and development,” “close proximity to medical centers,” and “a program of medical research.” The document became the basis for a long-range plan and helped build the NYU Langone Medical Center of today.

Donal Sheehan (1908–1964), Professor of Anatomy (1937–63), Acting Dean (1943–46), and Dean (1955–60), New York University College of Medicine

Howard C. Taylor Jr. (1900–1985), Professor of Obstetrics and Gynecology (1935–46), New York University College of Medicine

Obstetrics and Gynecology

The Mission of a Medical School

The Mission of a Medical School

When the laboratories of teaching and research will be housed in worthy and adequate buildings, when the student body will have proper living and recreational quarters with dining and reading rooms, and when the medical library will have grown, our Center will have become a mecca for all past and present students.

Sheehan and Taylor wrote “The Mission of a Medical School” in 1945, which was based in part on Gertrude Himmelfarb’s “The Mission of a University.” This vision of a modern NYU medical school called for “worthy and adequate buildings,” a “program of graduate courses,” “research and development,” “close proximity to medical centers,” and “a program of medical research.” The document became the basis for a long-range plan and helped build the NYU Langone Medical Center of today.

Donal Sheehan (1908–1964), Professor of Anatomy (1937–63), Acting Dean (1943–46), and Dean (1955–60), New York University College of Medicine

Howard C. Taylor Jr. (1900–1985), Professor of Obstetrics and Gynecology (1935–46), New York University College of Medicine

Obstetrics and Gynecology

The Mission of a Medical School

When the laboratories of teaching and research will be housed in worthy and adequate buildings, when the student body will have proper living and recreational quarters with dining and reading rooms, and when the medical library will have grown, our Center will have become a mecca for all past and present students.

Sheehan and Taylor wrote “The Mission of a Medical School” in 1945, which was based in part on Gertrude Himmelfarb’s “The Mission of a University.” This vision of a modern NYU medical school called for “worthy and adequate buildings,” a “program of graduate courses,” “research and development,” “close proximity to medical centers,” and “a program of medical research.” The document became the basis for a long-range plan and helped build the NYU Langone Medical Center of today.

Donal Sheehan (1908–1964), Professor of Anatomy (1937–63), Acting Dean (1943–46), and Dean (1955–60), New York University College of Medicine

Howard C. Taylor Jr. (1900–1985), Professor of Obstetrics and Gynecology (1935–46), New York University College of Medicine

Obstetrics and Gynecology

The Mission of a Medical School

When the laboratories of teaching and research will be housed in worthy and adequate buildings, when the student body will have proper living and recreational quarters with dining and reading rooms, and when the medical library will have grown, our Center will have become a mecca for all past and present students.

Sheehan and Taylor wrote “The Mission of a Medical School” in 1945, which was based in part on Gertrude Himmelfarb’s “The Mission of a University.” This vision of a modern NYU medical school called for “worthy and adequate buildings,” a “program of graduate courses,” “research and development,” “close proximity to medical centers,” and “a program of medical research.” The document became the basis for a long-range plan and helped build the NYU Langone Medical Center of today.

Donal Sheehan (1908–1964), Professor of Anatomy (1937–63), Acting Dean (1943–46), and Dean (1955–60), New York University College of Medicine

Howard C. Taylor Jr. (1900–1985), Professor of Obstetrics and Gynecology (1935–46), New York University College of Medicine

Obstetrics and Gynecology

The Mission of a Medical School

When the laboratories of teaching and research will be housed in worthy and adequate buildings, when the student body will have proper living and recreational quarters with dining and reading rooms, and when the medical library will have grown, our Center will have become a mecca for all past and present students.

Sheehan and Taylor wrote “The Mission of a Medical School” in 1945, which was based in part on Gertrude Himmelfarb’s “The Mission of a University.” This vision of a modern NYU medical school called for “worthy and adequate buildings,” a “program of graduate courses,” “research and development,” “close proximity to medical centers,” and “a program of medical research.” The document became the basis for a long-range plan and helped build the NYU Langone Medical Center of today.

Donal Sheehan (1908–1964), Professor of Anatomy (1937–63), Acting Dean (1943–46), and Dean (1955–60), New York University College of Medicine

Howard C. Taylor Jr. (1900–1985), Professor of Obstetrics and Gynecology (1935–46), New York University College of Medicine

Obstetrics and Gynecology

The Mission of a Medical School

When the laboratories of teaching and research will be housed in worthy and adequate buildings, when the student body will have proper living and recreational quarters with dining and reading rooms, and when the medical library will have grown, our Center will have become a mecca for all past and present students.

Sheehan and Taylor wrote “The Mission of a Medical School” in 1945, which was based in part on Gertrude Himmelfarb’s “The Mission of a University.” This vision of a modern NYU medical school called for “worthy and adequate buildings,” a “program of graduate courses,” “research and development,” “close proximity to medical centers,” and “a program of medical research.” The document became the basis for a long-range plan and helped build the NYU Langone Medical Center of today.
An expert on everything to do with the kidney, Smith's elegant experiments in the 1930s proved beyond any doubt that it operated according to physical principles, both as a filter and a secretory organ, eliminating the last vestige of vitalism in physiology. He introduced the use of small polysaccharide inulin to measure glomerular filtration rates, and his book *The Kidney: Structure and Function in Health and Disease* (1951) was the definitive work on the topic.

Smith also explored the relationship between medical science and morality through his essays and books, including *From Fish to Philosopher* (1953), for which Albert Einstein wrote the foreword. In *Man and His Gods* (1952), he says, "The work is a broadly conceived attempt to portray man's fear-induced animistic and mythic ideas with all their far-flung transformations and interrelations... The book is a biologist speaking, whose scientific training has disciplined him in a grim objectivity rarely found in the pure historian. This objectivity has not, however, hindered him from emphasizing the boundless suffering which, in its end results, this mythic thought has brought upon man."
A gifted teacher, poet, and essayist, Thomas explored the relationship among science, the arts, and the world through the popular press and books, including *Lives of a Cell* (1974), for which he won a National Book Award. He was an early champion of ecology and nuclear disarmament and often wrote about the cultural repercussions of scientific developments. His autobiography, *The Youngest Science: Notes of a Medicine Watcher*, is a record of a century of medicine and the changes which occurred in it.

Thomas was a member of the NYU faculty for 15 years, serving as chairman of the Department of Pathology from 1954 to 1958 and of the Department of Medicine until 1966. He then became dean of NYU School of Medicine, serving until 1969, creating its Honors Program and promoting interdisciplinary and collaborative research. He left in 1969 to become dean of Yale Medical School and subsequently president of Memorial Sloan-Kettering Institute. Thomas was elected to the American Academy of Arts and Sciences in 1961 and to the National Academy of Sciences in 1972.

“We leave traces of ourselves wherever we go, on whatever we touch.”

LEWIS THOMAS

Charles Thomas (1913–1993)
Chairman (1954–48), Department of Pathology; Chairman (1958–68), Department of Medicine; and Dean (1966–69), New York University School of Medicine

72

CELLULAR IMMUNOLOGY

AN INTERNATIONAL JOURNAL

SAUL J. FARBER

Saul J. Farber (1918–2005)
Alumnus, Class of 1942, New York University College of Medicine; Professor (1949–66) and Chairman (1966–2000), Department of Medicine, New York University College of Medicine; Acting Dean (1963–66 and 1979–81), Acting Dean and Provost (1982–87), Dean (1987–98), New York University School of Medicine, and Provost (1987–98), NYU Medical Center.
The pre-eminent medical illustrator of the 20th century, whose contributions advanced the study of human anatomy, Netter was a commercial artist in the 1920s before enrolling in medical school at his parents’ urging. He worked in advertising as a medical illustrator to earn his way through school and later to supplement his income as a physician during the Great Depression. As an army officer in World War II, he illustrated manuals on first aid and survival in the field, and returned to the sketchpad.

Netter began a lifelong relationship with the pharmaceutical company CIBA in the 1930s, creating a series of educational illustrations on new drugs (including Novocain), which were distributed to physicians, and later collected in eight volumes as the CIBA Collection of Medical Illustrations. Netter’s Atlas of Human Anatomy (first published in 1989) became a staple of medical education and has been translated into many languages and published in many editions, including an interactive format.


Frank H. Netter (1906–1991) Alumnus, Class of 1931, New York University School of Medicine
As the 14th dean of NYU School of Medicine, Glickman brought a renewed sense of purpose and energy to the Medical Center, as it evolved into a leading research institution, as the home to outstanding physicians and providers of clinical care, and as one of the nation’s great medical centers. During his tenure, new departments in cardiovascular surgery, emergency medicine, and child and adolescent psychiatry were established; new department chairs were created; and multiple departments were strengthened by bringingboard of the nation’s leading scientists and physicians with national and international reputations in key fields such as cancer, cardiology, imaging, and radiation oncology. Glickman also oversaw the expansion of the clinical and research facilities, through such major endeavors as the full merger with the Hospital for Joint Diseases and the creation of the Smilow Research Center and the Clinical Cancer Center.

A highly respected gastroenterologist by training and practice, Glickman held numerous leadership positions in professional associations, including serving as the president of the Association of American Physicians, and was elected to the Institute of Medicine in 1995.
RESEARCHERS | Breaking New Ground in Medical Research
Many of the most important medical discoveries of the 20th century were made by physician-scientists who studied or taught at NYU’s medical school. From the near eradication of a crippling global scourge like polio, to the manipulation of neurotransmitters at the cellular level to alleviate depression and mental illness, NYU medical school researchers have helped to create better medicine and better lives for millions of people.
A L U M N I  Since its founding in 1841, NYU School of Medicine has bestowed more than 25,000 medical degrees. Not only has the breadth and depth of our medical education imparted these alumni the scientific skills to pursue advanced research, but we’ve always cultivated in them the passion and sense of wonder intrinsic to the demands of rigorous research. Many of our alumni went on to prominent research careers in the basic and clinical sciences. Some stayed at NYU after graduating, while many others took their service to far corners of the world. With a sense of inquisitiveness and commitment to advancing science, our alumni have made their mark on science.
A pioneering immunologist, Lawrence is best known for his discovery, in 1949, of a substance known as the "transfer factor," a product of T-lymphocytes, which when transferred from immune to non-immune animals could enhance the body's defenses against a wide variety of infectious agents. He also identified the link between the way cells respond immunologically to microbes like the bacterium that causes tuberculosis, and conducted research on the immune responses involved in the rejection of transplanted organs. Lawrence was director of NYU's Cancer Center from 1974 to 1979, and director of its AIDS Research Center from 1989 to 1994.

H. Sherwood Lawrence (1916–2004)
Alumnus, Class of 1943, New York University College of Medicine; Professor of Immunology (1949–59), New York University College of Medicine; Head of Infectious Diseases and Immunology (1959–2000), Jeffrey Bergstein Professor of Medicine (1979–2000), New York University School of Medicine; Co-director of Medical Services (1964–2000), Bellevue and NYU Hospitals

H. Sherwood Lawrence (1916–2004)
RESEARCHERS

Salk testing his vaccine for polio on a young girl in 1953. Iron lungs filled hospital wards in the United States during the height of the polio outbreaks of the 1940s and 1950s. Meanwhile, several of the world’s leading medical journals published papers on polio vaccines in 1952.

Opposite page, from left:

Jonas Salk on the cover of Time magazine, March 29, 1954.

Schoolchildren lined up for their immunizations in 1956.

“Because of Doctor Jonas E. Salk, our country is free from the cruel epidemics of poliomyelitis that once struck almost yearly. Because of his tireless work, untold hundreds of thousands who might have been crippled are sound in body today…”

—Presidential Medal of Freedom citation, 1977

Jonas Salk (1914–1995)
Alumnus, Class of 1939, New York University College of Medicine

A 1939 alumnus of NYU College of Medicine, Salk joined the faculty of the University of Pittsburgh School of Medicine in 1947 and in 1948 undertook a study on polio funded by the March of Dimes. At the time polio was considered the nation’s number one public health problem. The previous United States. In 1952 nearly 58,000 cases were reported, resulting in 3,000 deaths and 20,000 victims. One of those children, Sallys, had lost her walking ability. Salk developed the first effective vaccine against polio in 1955, and it was released in 1956, making front-page headlines around the world and saving untold thousands of cases worldwide.

Salk founded the Jonas Salk Institute for Biological Studies at University of California, La Jolla, in 1963, and wrote several books about science for a popular audience. In 1956 he received the Lasker Award and, in 1977, the Presidential Medal of Freedom. Later in life Salk worked to find a vaccine for another deadly epidemic, AIDS.
A celebrated authority on viruses and viral therapy, Albert Sabin graduated from University and Bellevue Hospital Medical College in 1931. He joined the Children’s Hospital Research Foundation in Cincinnati in 1939 to pursue his search for a vaccine for polio. This search was interrupted by World War II, during which he served with the U.S. Army Epidemiological Board’s Virus Committee, developing vaccines for encephalitis (sleeping sickness), sand-fly fever, and dengue fever. Returning to Cincinnati after the war, Sabin developed the first live-virus vaccine for polio, which not only prevented most of the complications of polio as Salk’s vaccine had done, but prevented the initial intestinal infection as well, breaking the chain of transmission.

Recommended by the World Health Organization for international testing in 1957, Sabin’s vaccine was not approved for use in the United States until 1960. Administrative delays resulted in further use of the Salk vaccine. As a consequence, live-virus commercially licensed products became available in the United States and dramatically reduced its devastating impact throughout the world. In 1972, Sabin donated his strains of the polio virus to the World Health Organization to increase their availability in developing countries. Sabin received the Lasker Award in 1965, the National Medal of Science in 1970, and the Presidential Medal of Freedom in 1986.
Franklin isolated the rheumatoid factor as an antibody in 1957, while still a research associate at Rockefeller University. This led to an understanding of the mechanism of rheumatoid arthritis. He joined the NYU medical faculty the following year and did pioneering work in immunology, leading to the designation of Franklin's disease, a disorder marked by production of abnormal immunoglobulin. His work on gamma globulin, rheumatoid factor and ANA served as the background for his subsequent discovery of heavy chain disease.

In the early 1970s, working with his wife, Dr. Dorothea Zucker-Franklin, also professor of medicine at NYU, he discovered that the extracellular amyloid deposits seen in different diseases result from aggregation into fibrils of specific serum proteins and/or their degradation products. This discovery helped open ground in the study of aging processes. In 1979 he was elected to the National Academy of Sciences for "distinguished work and continuing achievements in original research."

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.

Most discoveries in research aren't so great that wouldn't have been found later by someone else. No matter how successful you are in research, your greater contribution, in the long run, is the influence you've had on students. —EDWARD C. FRANKLIN

Dr. Franklin Named to National Academy
Edward C. Franklin, M.D., professor of medicine, director of the Irvington House Institute and head of the rheumatic disease study group, has been elected to membership in the National Academy of Sciences. He is one of 60 new members recognized for "distinguished and continuing achievements in original research."

The election was held on April 24 and Franklin was elected to membership in the Academy. Election to membership in the Academy is considered to be one of the highest honors that can be accorded an American scientist or engineer. Those elected in April bring the total to 1,234.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.

"Most discoveries in research aren't so great that wouldn't have been found later by someone else. No matter how successful you are in research, your greater contribution, in the long run, is the influence you've had on students."

—EDWARD C. FRANKLIN

Dr. Franklin Named to National Academy
Edward C. Franklin, M.D., professor of medicine, director of the Irvington House Institute and head of the rheumatic disease study group, has been elected to membership in the National Academy of Sciences. He is one of 60 new members recognized for "distinguished and continuing achievements in original research."

The election was held on April 24 and Franklin was elected to membership in the Academy. Election to membership in the Academy is considered to be one of the highest honors that can be accorded an American scientist or engineer. Those elected in April bring the total to 1,234.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.

"Most discoveries in research aren't so great that wouldn't have been found later by someone else. No matter how successful you are in research, your greater contribution, in the long run, is the influence you've had on students."

—EDWARD C. FRANKLIN

Dr. Franklin Named to National Academy
Edward C. Franklin, M.D., professor of medicine, director of the Irvington House Institute and head of the rheumatic disease study group, has been elected to membership in the National Academy of Sciences. He is one of 60 new members recognized for "distinguished and continuing achievements in original research."

The election was held on April 24 and Franklin was elected to membership in the Academy. Election to membership in the Academy is considered to be one of the highest honors that can be accorded an American scientist or engineer. Those elected in April bring the total to 1,234.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.

"Most discoveries in research aren't so great that wouldn't have been found later by someone else. No matter how successful you are in research, your greater contribution, in the long run, is the influence you've had on students."

—EDWARD C. FRANKLIN

Dr. Franklin Named to National Academy
Edward C. Franklin, M.D., professor of medicine, director of the Irvington House Institute and head of the rheumatic disease study group, has been elected to membership in the National Academy of Sciences. He is one of 60 new members recognized for "distinguished and continuing achievements in original research."

The election was held on April 24 and Franklin was elected to membership in the Academy. Election to membership in the Academy is considered to be one of the highest honors that can be accorded an American scientist or engineer. Those elected in April bring the total to 1,234.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.

"Most discoveries in research aren't so great that wouldn't have been found later by someone else. No matter how successful you are in research, your greater contribution, in the long run, is the influence you've had on students."

—EDWARD C. FRANKLIN

Dr. Franklin Named to National Academy
Edward C. Franklin, M.D., professor of medicine, director of the Irvington House Institute and head of the rheumatic disease study group, has been elected to membership in the National Academy of Sciences. He is one of 60 new members recognized for "distinguished and continuing achievements in original research."

The election was held on April 24 and Franklin was elected to membership in the Academy. Election to membership in the Academy is considered to be one of the highest honors that can be accorded an American scientist or engineer. Those elected in April bring the total to 1,234.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.

"Most discoveries in research aren't so great that wouldn't have been found later by someone else. No matter how successful you are in research, your greater contribution, in the long run, is the influence you've had on students."

—EDWARD C. FRANKLIN

Dr. Franklin Named to National Academy
Edward C. Franklin, M.D., professor of medicine, director of the Irvington House Institute and head of the rheumatic disease study group, has been elected to membership in the National Academy of Sciences. He is one of 60 new members recognized for "distinguished and continuing achievements in original research."

The election was held on April 24 and Franklin was elected to membership in the Academy. Election to membership in the Academy is considered to be one of the highest honors that can be accorded an American scientist or engineer. Those elected in April bring the total to 1,234.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.

"Most discoveries in research aren't so great that wouldn't have been found later by someone else. No matter how successful you are in research, your greater contribution, in the long run, is the influence you've had on students."

—EDWARD C. FRANKLIN

Dr. Franklin Named to National Academy
Edward C. Franklin, M.D., professor of medicine, director of the Irvington House Institute and head of the rheumatic disease study group, has been elected to membership in the National Academy of Sciences. He is one of 60 new members recognized for "distinguished and continuing achievements in original research."

The election was held on April 24 and Franklin was elected to membership in the Academy. Election to membership in the Academy is considered to be one of the highest honors that can be accorded an American scientist or engineer. Those elected in April bring the total to 1,234.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its application for the promotion of human welfare. Elected in 1980, Dr. Franklin is a member of the Academy's board of directors, the council of the academy and the National Academy of Medicine. In 1982 he was elected president of the Academy.
The undisputed “father of radioimmunoassay,” Berson began his work with Rosalyn Sussman Yalow in 1950 when he became a member of the Radioisotope Service at the Bronx Veterans Affairs Hospital. Together they developed the radioimmunoassay (RIA) in 1959, which is used to measure insulin and other hormones in human blood and tissue. Requiring only a tiny sample, RIA invigorated endocrinology, making possible major advances in diabetes research, diagnosis and treatment of hormonal problems related to growth, thyroid function and fertility, as well as blood screening, illegal drug testing, and detection of drug use.

When Berson died in 1972 at the age of 54, Yalow named her lab in his honor so his name would continue to appear on her published research. Yalow was awarded the Nobel Prize in Physiology or Medicine in 1977 and, during her acceptance lecture, acknowledged Berson’s important contributions.

“From 1930 until his untimely death in 1972, Dr. Solomon Berson was joined with me in this scientific adventure and together we gave birth to and nurtured through its infancy radioimmunoassay, a powerful tool for determination of virtually any substance of biologic interest. Would that he were here to share this moment.”

—Rosalyn Yalow, Nobel lecture, 1977

Solomon A. Berson (1918–1972)
Alumnus, Class of 1945, New York University College of Medicine

Opposite page, from left: An illustration of the technique of radioimmunoassay. Berson and Yalow in Pittsburgh with a check they won from the University of Pittsburgh.

This page: Portrait of Solomon A. Berson.
HiRSCHHORN

World-renowned geneticist, pediatrician, and educator, Hirschhorn received both undergraduate and medical degrees from NYU and joined the faculty of the School of Medicine in 1958, starting a genetics clinic and a course in genetics for medical students. He discovered independently (1960) that familial growth retardation is a genetic disorder responsible for a vast birth defect characterized by severe psychomotor retardation, mental deficiency, facial and heart defects, and other malformations. This condition was subsequently named Wolf-Hirschhorn syndrome.

In 1966 Hirschhorn began a four-decade-long association with Mount Sinai, where he established a new medical genetics program patterned on his efforts at NYU School of Medicine. In 1969 he co-founded the first program in genetic counseling in the U.S. at Sarah Lawrence College, which has trained half of the nation’s genetic counselors. Hirschhorn received the 2006 March of Dimes/Colonel Harland Sanders Award for lifetime achievement in the field of genetic sciences.


OPPOSITE PAGE: Portrait of Kurt Hirschhorn circa 1960. TRIMMED FROM TOP: The WHSC1 gene is located on the short (p) arm of chromosome 4 at position 16.3. More precisely, the WHSC1 gene is located from base pair 1,842,920 to base pair 1,953,727 on chromosome 4. Hirschhorn with his wife Rochelle, an alumna of the class of 1957 and a critical co-investigator with him during his early days at NYU. Rochelle Hirshhorn spent her entire career at NYU School of Medicine, rising to professor of medicine, cell biology, and pediatrics. Since 2007, she has been a professor emerita in these departments.
As a leading research institution, NYU School of Medicine attracts some of the greatest scientific minds to the faculty. Our school has been the incubator of many biomedical discoveries and advances by those who have come to the medical center with a commitment to pushing the boundaries of science. From advances in our understanding of the pathology of disease to the creation of a new pharmacological agent for inflammatory diseases to bringing the promise of a malaria vaccine closer to reality, the efforts of our current and former faculty members are among some of the greatest examples of pioneering medical research.
“He showed almost superhuman detective power in ferreting out the hidden cause of disease, combined with wonderful zeal and enthusiasm for his work.... He represented the best type of physician and... his name should be held in grateful remembrance throughout the history of medicine in this country.”

—William M. Welch

Edward G. Janeway (1841–1911)
Lecturer in Medicine (1866–72), Professor and Chairman of Pathological and Practical Anatomy (1872–98), Bellevue Hospital Medical College, Chair (1898–1905), University and Bellevue Hospital Medical College

Janeway championed the use of the microscope in medicine and taught “moral” (pathological) anatomy and histology at Bellevue Hospital Medical College from 1866 until it joined with NYU in 1898. In 1884 he became co-founder and director, with William H. Welch, of the Carnegie Laboratory, the first laboratory building in the United States devoted entirely to the study and research of bacteriology, pathology, and other areas of medicine. From 1875 to 1905, he served simultaneously as health commissioner of New York City, where he advocated the use of autopsies as a public health tool.

Janeway had an interest in many areas of medicine, including cardiology. In 1899 he described unusual lesions on the hands and feet of patients with infectious endocarditis ("Janeway lesions"), defining a key symptom in the diagnosis of the disease. Among his writings is the first American description of leukemia (1876). In 1898 Janeway became the first dean of the combined University and Bellevue Hospital Medical College, a post he held until 1905.
Norris was appointed chief medical examiner for the City of New York in 1918, the first post of its kind in the nation. He was given the power to order an autopsy when he judged it necessary, without court approval. Appalled by the lack of understanding of gunshot wounds, Norris and his assistants fired all kinds of guns into different materials from various ranges and angles, studying the gunpowder marks and shot patterns, and then applied this knowledge to cases.

Norris, who had been director of laboratories at Bellevue Hospital prior to his appointment as chief medical examiner, has been called the "Father of forensic medicine." He was the first professor appointed to NYU’s new Department of Forensic Medicine in 1932, the first such department in the United States.

Charles Norris (1867–1935)
Founder and Professor, Department of Forensic Medicine, New York University College of Medicine (1932–35); Chief Medical Examiner (1918–35), City of New York
Milton Helpern (1902–1977)
Professor of Forensic Pathology (1931–71), New York University School of Medicine; Chief Medical Examiner (1954–73), City of New York

Helpern received his medical degree from Cornell University in 1926 and studied pathology under Charles Norris at Bellevue Hospital. He joined the staff of the New York City Medical Examiner’s Office in 1931, and selected premature babies for testing in dealing with infected drug addicts, which prevented a serious outbreak of infected malaria from becoming epidemic. In 1954 Helpern became New York City’s chief medical examiner and built the office into a world-renowned center for service, research, and training.

Helpern taught forensic pathology at NYU School of Medicine from 1931 until 1971 and trained many pathologists who went on to establish medical examiner offices in cities throughout the country. During his tenure, NYU’s Institute of Forensic Medicine was created, and in 1977 the institute was named in his honor. He wrote Where Death Delights, documenting his life and work.

The last four years have seen a good many changes in Pathology, chief among them being the loss of Dr. Thomas, to Medicine and the Harvard School of Public Health. However, the department has been strengthened by the addition of Drs. Benacerraf, B. Bower (for a time), Goldberg, Green, Griver, Streem and Thorbecke to the staff. Frenkel and others have made way for clinical clearance and RCA. The departmental training program, combining residency training in pathology at Bellevue with research training in the medical school has attracted a number of recent graduates. There is much enthusiasm for the facilities which will be provided in the new University Hospital Department of Pathology, which will undoubtedly contribute a great deal to the effectiveness of undergraduate teaching.

Chandler A. Stetson, Jr., M.D.

We're going to give you the best pathology course in the country.
Charles S. Hirsch was appointed chief medical examiner for the City of New York in 1989, and has trained many medical examiners for New York and elsewhere, in addition to supervising one of the busiest medical examiner’s offices in the nation.

Following the terrorist attack on the World Trade Center on September 11, 2001, Hirsch was charged with caring for and identifying the remains of the thousands of people who perished at Ground Zero. A parking lot near Bellevue Hospital was given over to tents housing temporary morgues and refrigerated trucks holding remains of the victims. Many medical students, staff, and faculty volunteered in assisting in the task of dealing with the dead and their grieving families. The efforts of identifying remains was still continuing, and Hirsch has been widely praised for his sensitivity in handling the human remains still to be identified.

Charles S. Hirsch (b. 1937) Professor of Pathology (1989–present), Professor and Chairman (1989–present), Department of Forensic Medicine, New York University School of Medicine, Chief Medical Examiner (1989–present), City of New York
Krugman spent his career studying infectious diseases in children and seeking ways to combat them. In 1960 he showed that children could be protected from measles by a live attenuated virus, virtually eradicating that common childhood disease in the United States. In 1969 he confirmed the effectiveness of the first vaccine for rubella, virtually ending the threat of brain-damaged and severely physically disabled babies born to women who contracted the disease while pregnant.


Krugman was awarded the Albert Lasker Public Service Award in 1983, for “his courageous leadership in conceiving, developing and testing vaccines against various viral diseases, especially hepatitis B, with vast impact on world health.”

**Saul Krugman (1911-1995)**
Professor and Chairman (1956-74), Department of Pediatrics, New York University School of Medicine
The Nussenzweigs first collaborated on research while in medical school at the University of São Paulo in Brazil. Together, during their third year in medical school, they discovered a way to kill Trypanosoma cruzi, the parasite which causes Chagas disease and often infects blood meant for transfusions. Both joined the faculty at NYU medical school in 1965. In 1967, Ruth Nussenzweig found that one could inactivate the malaria parasite at the stage in its life cycle before it enters the human liver by irradiating it and showed that the irradiated parasites were capable of inducing protective immunity. Since then, they have dedicated their work to the development of vaccines against malaria, some of which are now in clinical trials.

Notable awards include the Paul Ehrlich and Ludwig Darmstaedter Prize awarded to Ruth Nussenzweig in 1985 and the Lifetime Achievement Award granted to Victor Nussenzweig by BioMalPar in 2006.
A distinguished teacher, Tillett's most important research contribution was his discovery in 1933, while at Johns Hopkins, of the bacterial protein fibrinolysin (now known as streptokinase), which is involved in blood clotting. The drug developed from his research found initial clinical application in treating hemothorax and tuberculous meningitis. After Tillett joined NYU in 1937, he continued to explore the enzyme's unique thrombolytic applications, leading to its current successful clinical application in the treatment of coronary thrombosis.

In the course of certain diseases, particularly following injury, an accumulation of protein in the circulating plasma, which may precipitate disability or even death. The treatment of such conditions has been a major goal of pharmacological scientists, which often included major protein dissociations for recovery. Through the distinguished collaborative investigations of Dr. William S. Tillett and Dr. L.R. Christensen at New York University College of Medicine, "antithrombotic enzymes" have been discovered and developed on a new therapeutic principle of important clinical significance. In addition to the knowledge of the nature of the proteolytic digestive enzyme of human blood, several clinical applications have been developed for the treatment of various types of blood clots. After Tillett joined NYU in 1937, he continued to explore the enzyme's unique thrombolytic applications, leading to its current successful clinical application in the treatment of coronary thrombosis.

Tillett made a number of important contributions related to studies of penicillin therapy of pneumococcal lobar pneumonia from 1942 to 1945. He served as chairman of the College of Physicians and Surgeons from 1942 to 1943. In 1945, he served as chairman of the College of Physicians and Surgeons from 1942 to 1943. In 1945, he received the Lasker Award in 1949.
Researchers

Jan T. Vilcek

Vilcek’s studies of soluble mediators (cytokines) that regulate the immune system, including interferon and tumor necrosis factor (TNF), led to the creation in 1989, with colleague Junming Le, of a monoclonal antibody against TNF alpha, a powerful promoter of inflammation. Collaborating with the biotechnology company Centocor, Vilcek and Le helped to develop the biologic drug known commercially as Remicade. Remicade is a potent anti-inflammatory agent used in the treatment of rheumatoid arthritis, Crohn’s disease, ulcerative colitis, psoriasis and other inflammatory diseases. The success of Remicade encouraged the development of numerous other anti-TNF agents. In 2005, Vilcek made a donation of $105 million to NYU School of Medicine, believed to be the largest philanthropic gift ever made by an active faculty member to an academic medical center, and in 2010, he and his wife, Marica, gave an additional gift of $21 million.
Together with Oswald Avery and Maclyn McCarty, MacLeod made one of the most important discoveries of the century, announcing in 1944 that DNA is the active component responsible for genetic transformation—and in retrospect, the physical basis of the gene. They extracted nucleoid purified DNA, proteins, and other materials from S bacteria. When they mixed R bacteria with these different materials, they found that only those mixed with DNA transformed into S bacteria.

Although there was considerable reluctance to accept the conclusion that DNA was the genetic material at the time, scientists including both the Avery, McCarty, and MacLeod experiment have stood at the beginning of molecular genetics. The team was nominated several times for the Nobel Prize. While chairman of NYU College of Medicine's Department of Microbiology from 1941 to 1956, MacLeod was also instrumental in creating the M.D./Ph.D. program. In 1951, MacLeod was asked by President John F. Kennedy to be chairman of the Life Sciences Panel of his Science Advisory Committee and in 1963, he was appointed the first deputy director of the Office of Science and Technology (OST), a post he held until returning to NYU in 1966.
Sabatini has made major contributions to cell biology, beginning with the introduction of glutaraldehyde as a fixative for electron microscopy, which revolutionized the field and allowed the discovery of new subcellular structures. He was a pioneer in the field of protein traffic and in 1966 discovered the co-translational vectorial discharge of polypeptides into the lumen of the endoplasmic reticulum. In 1971, together with Günter Blobel, he formulated the signal hypothesis. At NYU School of Medicine, Sabatini’s laboratory introduced the now widely adopted MDCK cell system for the study of epithelial cell polarity, and subsequently, his group reported the discovery of the asymmetric budding of specific enveloped viruses from the different surfaces of polarized epithelial cells, which provided a model system for viral membrane biogenesis.

Sabatini is a member of the American Academy of Arts and Sciences (1980), the National Academy of Sciences (1985), the American Philosophical Society (2000), and the Institute of Medicine (2000). He received the Grand Medaille d’Or from the French Academy of Sciences in 2003 and was made Chevalier of the Legion of Honor in 2006. Sabatini was named department chairman in 1972, and served in that position until 2011.

David D. Sabatini (b. 1931) Frederick L. Ehrman Professor and Chairman, Department of Cell Biology, New York University School of Medicine
Llinás has served as the chairman of the Department of Physiology and Neuroscience since 1976 and has been the Thomas and Suzanne Murphy Professor of Neuroscience since 1985. He received his medical degree from the Universidad Javeriana (Bogota, Colombia) and his Ph.D. in neurophysiology from the Australian National University (Canberra, Australia). Llinás's research encompasses many aspects of neuroscience and global brain function. He is especially known for his work on the physiology of the cerebral cortex, the thalamus, thalamocortical dysrhythmia, as well as his pioneering work on the inferior olives, on the squid giant synapse and on human magnetoencephalography (MEG). Llinás has written that the brain evolved mainly as a motor-driven intentionality system with ever increasing predictive ability to gauge the consequences of its behavior.
The Nobel Prizes, first awarded in 1901, were established by Alfred Nobel to honor those who “shall have conferred the greatest benefit on mankind.” One prize was dedicated to the “person who shall have made the most important discovery within the domain of physiology or medicine.” NYU School of Medicine is proud to have among our alumni and former faculty four recipients of the Nobel Prize in Physiology or Medicine: Baruj Benacerraf (1980) for “discoveries concerning genetically determined structures on the cell surface that regulate immunological reactions,” Otto Loewi (1936) for “discoveries relating to chemical transmission of nerve impulses,” Severo Ochoa (1959) for “discovery of the mechanisms in the biological synthesis of ribonucleic acid and deoxyribonucleic acid,” and Eric Kandel (2000) for “discoveries concerning signal transduction in the nervous system.”
"You have been responsible for turning what at first appeared as an esoteric area of basic research on inbred mice into a major biological system of the greatest significance for the understanding of cell recognition, immune responses and graft rejection. We have the rare esthetic pleasure of seeing a series of fundamental discoveries, coupled with immediate applications in clinical medicine."

—Nobel Prize presentation speech by Professor Georg Klein, Karolinska Medical-Chirurgical Institute, 1980

Baruj Benacerraf began his studies of allergies in 1948 at Columbia University and in Paris, and joined NYU in 1956. While on the faculty, Benacerraf conducted groundbreaking research on the genetic regulation of the immune system and served as an exceptional mentor to many notable immunologists. He discovered the IR (immune response) genes that govern transplant rejection. He subsequently became director of the laboratory of immunology of the National Institute of Allergy and Infectious Diseases in 1968, and in 1970 became chair of pathology at Harvard. While at Harvard, Benacerraf did the work that led to the award of the Nobel Prize. Benacerraf received the Nobel Prize in Physiology or Medicine in 1980, shared with Jean Dausset and George Snell for their independent discoveries concerning genetically determined structures on the cell surface that regulate immunological reactions. Benacerraf showed that genetic factors intimately related to the genes that determine an individual's unique constitution of H antigens actually regulate the interaction among the various cells belonging to the immunological system and are thereby important to the strength of an immunological reaction. Benacerraf received the National Medal of Science in 1990.

Baruj Benacerraf (1920–2011)
Professor of Pathology (1956–68), New York University School of Medicine
Often referred to as the “father of neuroscience,” Loewi was a professor of pharmacology at the University of Graz, where he studied the sympathetic nerve system and conducted the famous experiment that established proof of the chemical transmission of nerve action. Loewi described the experiment as literally coming to him in dreams on two successive nights, and rushing to his lab at three in the morning lest he forget the dream a second time. He took fluid from one frog heart and applied it to another, slowing the second heart and demonstrating that synaptic signaling used chemical messengers. For this discovery and proof, Loewi was awarded the Nobel Prize in Physiology or Medicine in 1936, shared with Sir Henry Dale.

Two years later when the Nazis invaded Austria, Loewi, who was Jewish, was imprisoned, and was only released three months later on the condition that he turn over all his worldly goods to the Nazis. He and his wife used his Nobel cash award to bribe their way out of the country. After brief stays in London, Brussels, and Oxford, Loewi came to New York in 1940 and joined the faculty of NYU School of Medicine. He continued his research and teaching at NYU until his death in 1961.

“While the idea that nerve stimulation could be brought about by the release of certain substances was not entirely new, it is nevertheless thanks to Loewi that the idea was brought from the realm of unproven hypotheses on to the firm ground of certain experience.

You, Professor Loewi, first succeeded in establishing proof of the chemical transmission of nerve action in determining the nature of the effective substance... The importance of such discoveries, however, does not only lie in the fact that they bring clarity and understanding to a number of observations previously unexplained; it also poses new problems and stimulates into new channels. The intimate working of the problem throws light on old questions connected with the above observations proves convincingly what stimulating effects the fresh ideas connected with the transmission of nerve stimulations have already had.”

—Nobel Prize Presentation Speech by Professor G. Liljestrand, Member of the Staff of Professors of the Royal Caroline Institute, 1936
‘Just as man and woman are responsible for the regeneration of mankind, likewise is the interplay between proteins and nucleic acids the only and universally repeated basic mechanism of life... Deoxyribonucleic acids, which Arthur Kornberg has now synthesized, are mainly present as the hereditary substance in chromosomes. The ribonucleic acids, which Severo Ochoa has synthesized, have other functions, such as to assist in the synthesis of proteins. The discovery of the mechanisms in the biological synthesis of ribonucleic acid and deoxyribonucleic acid... have helped us to advance quite some distance on the road to understanding the mechanism of life.’

— nobel prize presentation speech, professor H. Theorell, Royal Caroline Institute, 1959

Severo Ochoa (1905–1993) Professor of Biochemistry (1942–74), New York University School of Medicine
A graduate of NYU College of Medicine in 1956, neurobiologist Kandel taught in its Department of Physiology and Psychiatry from 1965 until 1974, when he left to join the Columbia University faculty. In 2000 he was awarded the Nobel Prize in Physiology or Medicine (with Arvid Carlsson and Paul Greengard) for research on the physiological basis of memory storage in neurons. Beginning with the study of a single cellular mechanism through a single neural circuit, he had gone on to show how the molecular mechanisms by which memory is consolidated, and the associated growth and plasticity of the synaptic connections necessary for its transmission. He has written several textbooks, including In Search of Memory: The Emergence of a New Science of Mind (2006), which traces advances in understanding learning and memory as well as our own life and intellectual development.

"(The human brain) consists of 100 billion nerve cells, which is the same number of cells as the total number of human beings that have ever lived on this earth. Eric Kandel’s work has shown us how these transmitters, through second transmitters and protein phosphorylation, create short- and long-term memory, forming the very basis for our ability to exist and interact meaningfully in our world."

—NOBEL PRIZE PRESENTATION SPEECH, URBAN UNIVERSITY, NOBEL COMMITTEE, KAROLINSKA INSTITUTET, 2000

Opposite page, from left: Kandel’s In Search of Memory (2006). Portrait of Eric R. Kandel. This page: The large neurons of the Aplysia, a giant marine snail, were used by Kandel in the research that led to his Nobel Prize.

Eric R. Kandel (b. 1929)
Alumnus, Class of 1956, New York University College of Medicine; Professor of Physiology and Psychiatry (1965–74), New York University School of Medicine
THE NEXT CHAPTER | Creating an Environment Commensurate with Our Legacy of Excellence
NYU Langone Medical Center has set out to fulfill an ambitious new vision: being a world-class patient-centered integrated academic medical center. Key to achieving this vision is the transformation of our campus. Our researchers will have state-of-the-art laboratories and technologies, built to encourage and support collaboration to accelerate the translation of scientific discoveries to the patient bedside. Our students and teachers will benefit from modern facilities outfitted with the latest technological capabilities to enhance education. And most importantly, with every brick we lay and wall we build, our patients’ and families’ needs, comfort, and convenience will be paramount.
The most sweeping revitalization in our 170-year history, the campus transformation will set a new standard for academic medical centers and define our future for decades to come. Here are some of the highlights.
THE CENTER FOR MUSCULOSKELETAL CARE

333 EAST 38TH STREET: An outpatient facility occupying 110,000 square feet, the center will integrate research, clinical practice, rehabilitation, and wellness services for conditions involving the spine, arthritis, autoimmune diseases, sports injuries, and total joint replacement. It will be the largest freestanding facility of its kind in the United States.

AMBULATORY CARE CENTER

WHAT IT INCLUDES: 340 EAST 38TH STREET:
Approximately 300,000 square feet of condominium space will accommodate a broad range of outpatient programs from the NYU Cancer Institute, the Rusk Institute of Rehabilitation Medicine, and other services.

TISCH HOSPITAL

ELEVATOR & LOBBY EXPANSION & RENOVATION:
The addition of an 18-story tower containing four new elevators will dramatically improve patient access to the upper floors of Tisch Hospital. The main lobby of Tisch will also be expanded and reconfigured to include many more patient and visitor amenities. Later, once the Kimmel Pavilion is fully complete, additional construction will take place to renovate, rewire, and refresh the facility. These projects are funded by an extraordinary gift from the Tisch family.

CENTER FOR EMERGENCY SERVICES

500 FIRST AVENUE: A new expanded emergency department with state-of-the-art technology, which will more than double the department’s current size (from 6,900 to 16,900). Improvements include separate treatment areas for pediatric patients.
ENERGY BUILDING
A new 78,600-square-foot plant, adjacent to the Kimmel Pavilion, the Energy Building will meet the campus’ growing energy needs by wielding combined heat and power generation. It will also provide a new and roomier home for the Department of Radiation Oncology.

SCIENCE BUILDING
A new 300,000-square-foot center, located at the southwest corner of the medical center’s campus where Rubin Hall and a section of Schwartz Lecture Hall are currently, will enable NYU Langone to expand its strong translational research efforts, turning laboratory advancements more quickly into clinical innovation. Emphases will include the neurosciences, immunology, inflammation, and infection.

HELEN L. & MARTIN S. KIMMEL PAVILION
A new 800,000-square-foot hospital, the Helen L. and Martin S. Kimmel Pavilion will offer state-of-the-art, patient-centered acute care. Funded by a generous leadership gift from Helen L. Kimmel, it will integrate seamlessly with the existing Tisch Hospital to concentrate inpatient clinical services in the northern area of the medical center’s campus.

HASSENFELD PEDIATRIC CENTER
A new child and family-friendly 160,000-square-foot pediatric hospital within the Kimmel Pavilion, funded by a generous gift from the Hassenfeld family.
Over the last 170 years, the evolution of NYU Langone Medical Center has been guided and enabled by a group of individuals committed to creating a premiere academic medical center of international renown. Through their commitment to pursuing dreams, their investments in the future, and their energetic drive, our visionary benefactors and leaders have supported a community of pioneering physicians and scientists and have fostered our growth. We are indebted to their service and contributions, which have touched countless lives.
VISIONARY SUPPORTERS

Throughout our history, friends of NYU Langone Medical Center have made remarkable gifts to help advance our educational initiatives, research and patient-centered care. In the list below, we gratefully acknowledge those who have given generously to our fine institution.

$100,000,000 and Above

The Druckenmiller Foundation
Helen L. and Martin S. Kimmel
Elaine A. and Kenneth G. Langone
The Family of Wilma S. and Laurence A. Tisch
Marica and Jan Vilcek

$10,000,000 – $99,999,999

American Cancer Society, Inc.
Leon H. Chauncey
Dr. Jerome S. Cole and Mrs. Geraldine Cole
Dysautonomia Foundation, Inc.
Edith K. and Frederick L. Ehrman
Laurence and Lori Fish
Charlotte and Henry E. Fleck
Adene and Arnold Goldstein
The Hasenfeld Family
The Irma T. Hirschl Trust
Howard Hughes Medical Institute
Stanley Allan Isenberg, MD ’43

Elaine A. and Kenneth G. Langone
The Family of Wilma S. and Laurence A. Tisch
Marica and Jan Vilcek
Kate Macy Ladd Fund
Evan F. Lilly Memorial Trust
Ruth and Leonard Lipton
Frederick Laebers
Suzanne and Thomas Murphy
National Foundation for Facial Reconstruction
Ronald O. Perelman
Bernard and Irene Schwartz
The Skirball Foundation
Mr. and Mrs. Joel E. Smilow
Anita and Joseph Steckler
The Family of Joan H. and Preston Robert Tisch

VISIONARY LEADERS (1850–PRESENT)

Founded in 1841 by six visionary physicians, our evolution has been guided by a succession of leaders committed to making world-class contributions that place service to human health at the center of an academic culture devoted to excellence in research, patient care, and education.

John W. Draper (1850–1873)
Alfred C. Post (1873–1877)
Charles Insville Pardee (1877–1897)
Egbert Le Fevre (1897–1898 *)
Edward G. Janeway (1898–1905)
Egbert Le Fevre (1905–1914)
William H. Park (1914–1915 *)
Samuel A. Brown (1915–1932)
John H. Wyckoff (1932–1937)
Currier McEwen (1937–1945)
S. Bernard Wortis (1960–1965)
Saul J. Farber (1965–1970*)
Lewis Thomas (1965–1965)
Ivan L. Brunet, Jr. (1965–1982)

* served on acting or interim basis

[Source: NYU Langone Medical Center]
Produced by the
Office of Communications & Public Affairs,
NYU Langone Medical Center.

Deborah Loeb Bohren
Vice President for Communications

Lisa Greiner
Senior Director, Institutional Communications
and Special Projects

Lori Donaghy
Senior Communications Specialist

Cody Weber
Senior Communications Specialist

Suzanne Randolph Fine Arts
Creative Consultant

Daniel Stark  Stark Design
Book Design

©2011
Printed by Finlay, Bloomfield, Connecticut.