

Table of Contents



Downstate Dreamers..... 2

by Brian Kell

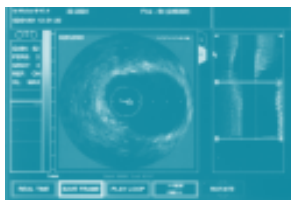
Without Downstate, much of what we take for granted in medicine today might not exist. From its beginnings as the first American medical school to be founded within a hospital, Downstate has left its mark on medicine. In this article, we look at 25 faculty and alumni contributions to medicine and public health.



Earthquake 20

by Kavita Patel

On January 26, at 9:26 a.m., the worst earthquake in India's history struck western India. Third-year medical student Kavita Patel was part of a volunteer team of physicians that traveled throughout the devastated region to provide medical relief. This is her story.



Briefly 23

*by Doris Youdelman, Ellen Watson, Ron Najman,
and Lila Lande*

photos by Ernest A. Cuni

A selection of campus news items, including new appointments, new centers, new equipment, plus Celebrating Downstate's Academic Alumni... HIV Center Grants....Polytechnic Affiliation...and more.

25 Contributions that Changed the Face of Medicine

by Brian Kell

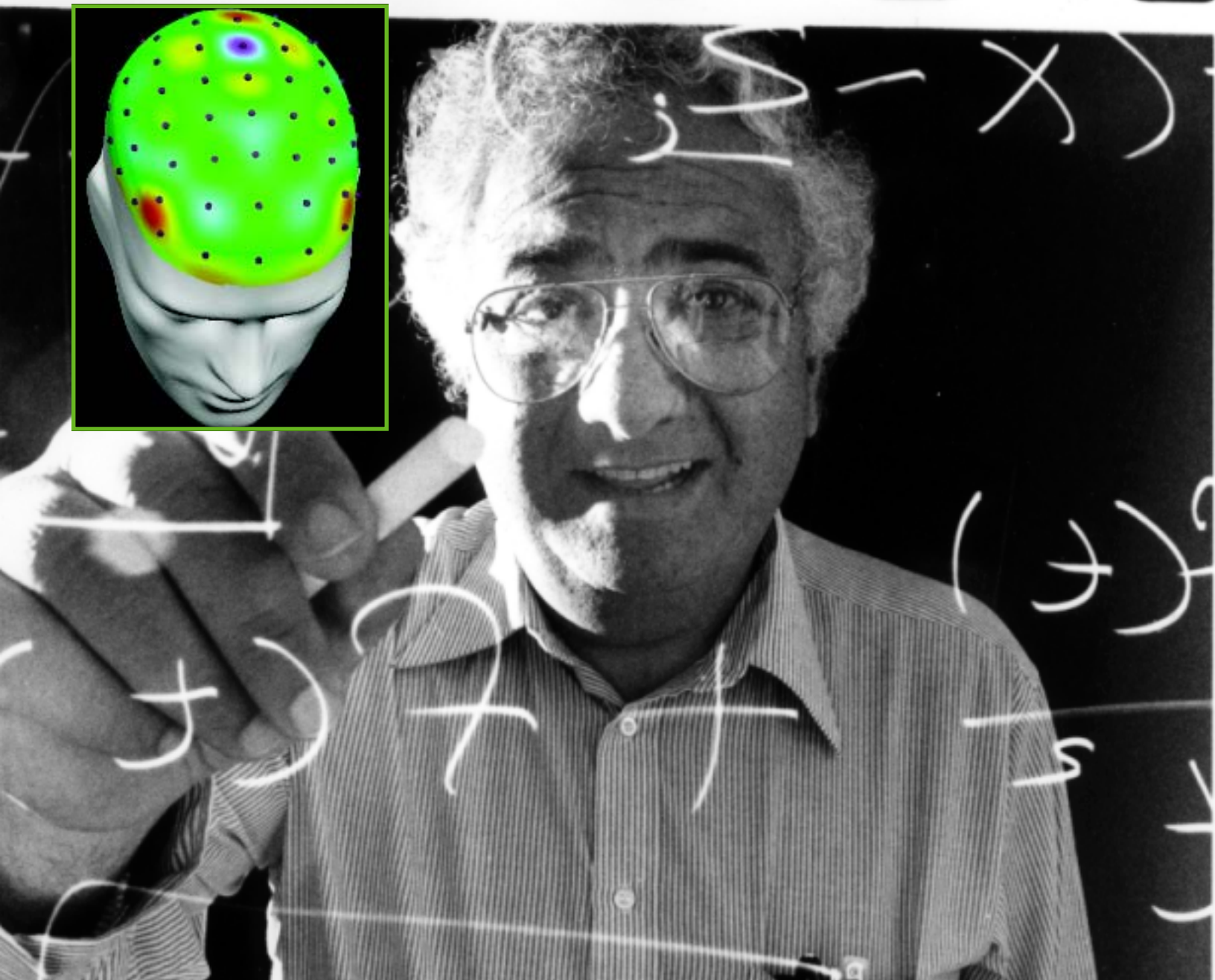
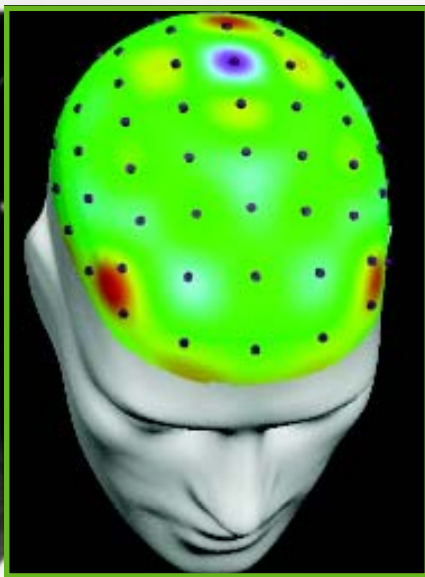
SUNY Downstate traces its roots to a historic day, March 29, 1860, when a new medical school opened in downtown Brooklyn. Unlike other medical schools in the country, the new school was founded within a hospital, the Long Island College Hospital. **Incorporating patient care into the curriculum** was a revolutionary idea, but the wisdom of the approach was apparent immediately. Medical schools throughout the country adopted the approach, and the revolutionary philosophy guiding the school's founding was soon regarded as essential pedagogy.

Since then, SUNY Downstate has made **medical history** in innumerable ways. Many of the founding members of the faculty were leaders in medicine, and **new generations** of researchers and teachers have also left their mark on medicine. So have Downstate's graduates.

This article **highlights 25 major contributions that Downstate faculty and alumni made to medicine**. They represent only a small fraction of the contributions the medical center has made to medicine, but they tell an important story. Without Downstate, American medicine would be severely diminished.

It is difficult to generalize about the nature of these 25 achievements. Some **changed the practice of medicine** virtually overnight, while others have **opened new vistas for research** that promise to change the future of medicine. Some have improved our ability to detect illness, while others have **increased our understanding** of that illness. Some have added years to our life span, while others have improved the **quality** of our lives.

All, though, share one thing in common: Like the beginnings of SUNY Downstate's predecessor institution more than a 140 years ago, they have **advanced medicine** in revolutionary and necessary ways.



Alcoholism's Genetic Link

Despite the stereotypic notion that alcoholics have addictive personalities or lack will power, many scientists suspected a genetic predisposition to the disease. They lacked proof, however, until Henri Begleiter began studying the disease. Dr. Begleiter's initial studies focused on the acute and chronic effects of alcohol on electrical activity in the brain. He found, for example, that an important brain wave called P3 is depressed among alcoholics and remains so long after they quit drinking.

At first, Dr. Begleiter assumed that alcohol causes permanent brain damage, but he quickly became intrigued with another hypothesis: Could it be that low P3 activity is a predictor of alcoholism, rather than a consequence? In a landmark article published in *Science* in 1984, Dr. Begleiter reported on a study of 25 boys who were children of alcoholics. None of the boys had touched alcohol, and yet all of them exhibited abnormally low P3 activity. It was the first time that a biological marker had been identified for alcoholism.

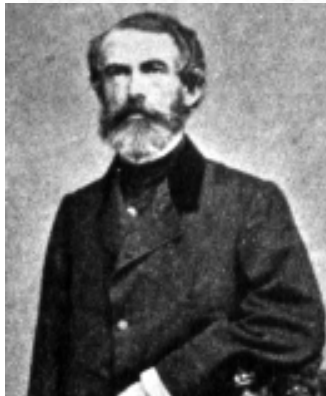
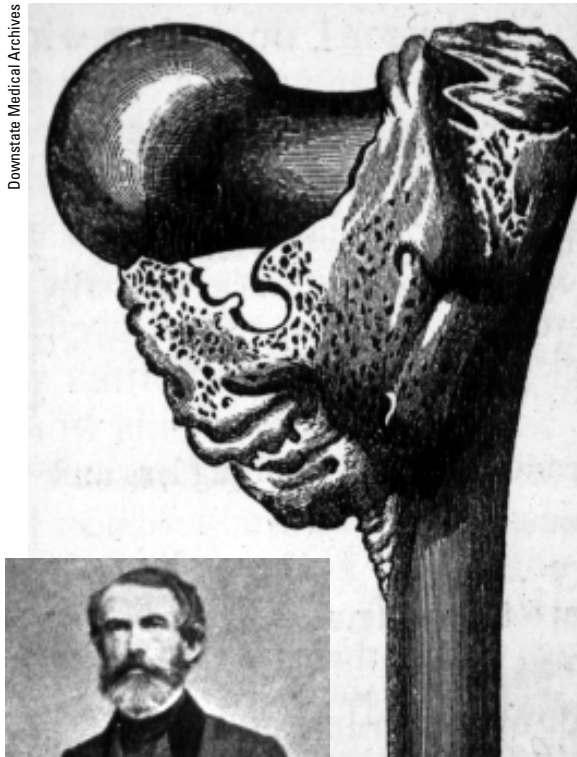
Today, Dr. Begleiter is the principal investigator of a \$110 million, multisite genetic study funded by National Institute on Alcohol Abuse and Alcoholism. The study has already identified several chromosomal loci involved with the risk to develop alcoholism.

Dr. Henri Begleiter leads a \$110 million study of the genetics of alcoholism. Inset: This computer simulation of a normal brain shows three major areas of neural activity. In an alcoholic, activity would be greatly diminished.

Right: A woodcut illustration from the *Treatise on Fractures and Dislocations* of an extra-capsular fracture of the femur.

Bottom: Dr. Frank Hamilton believed it important to publish only what has been "confirmed by experience or established by dissection."

Downstate Medical Archives



Fractures and Dislocations

By the time he became a founding member of Downstate's faculty in 1860, Dr. Frank Hamilton was already recognized as a leading authority on the treatment of fractures. The year before, he published his *Treatise on Fractures and Dislocations*—the first comprehensive work on the subject. The *London Medical Times* proclaimed the book "the most valuable text-book on injuries of bone and tendons on both sides of the Atlantic."

Dr. Hamilton would go on to publish three more editions of the text, illustrated by scores of precise wood cuts. In each edition, he embraced the latest, medically proven information. "Very little space has been dedicated to what is now only historical," he wrote in the preface to the 800-page volume, "except so far as was necessary to correct certain time-consecrated errors...and by careful exclusion of whatever has not been confirmed by experience or established by dissection, I have endeavored to make this treatise ...a reliable exponent of the present state of our art upon those subjects of which it treats."

A History of Firsts

Before Eli Friedman launched a dialysis program at Kings County Hospital in 1964, patients with chronic kidney failure essentially had a death sentence. Dr. Friedman's dialysis clinic—the first to receive federal funding—quickly became the model for programs around the country. Since then, a million people have undergone dialysis in the United States. Along the way, Dr. Friedman, who is distinguished teaching professor, set many records. The first African-American, Hispanic, and Orthodox Jewish patients on dialysis received their treatment through the program. The first person to be ordained a Catholic priest while on dialysis was a patient, as was the first person to attend medical school. Until his death earlier this year, Dr. Peter Lundin, who graduated summa cum laude in 1972, was director of dialysis at Kings County Hospital. He had been on dialysis for 31 years—itself a record.

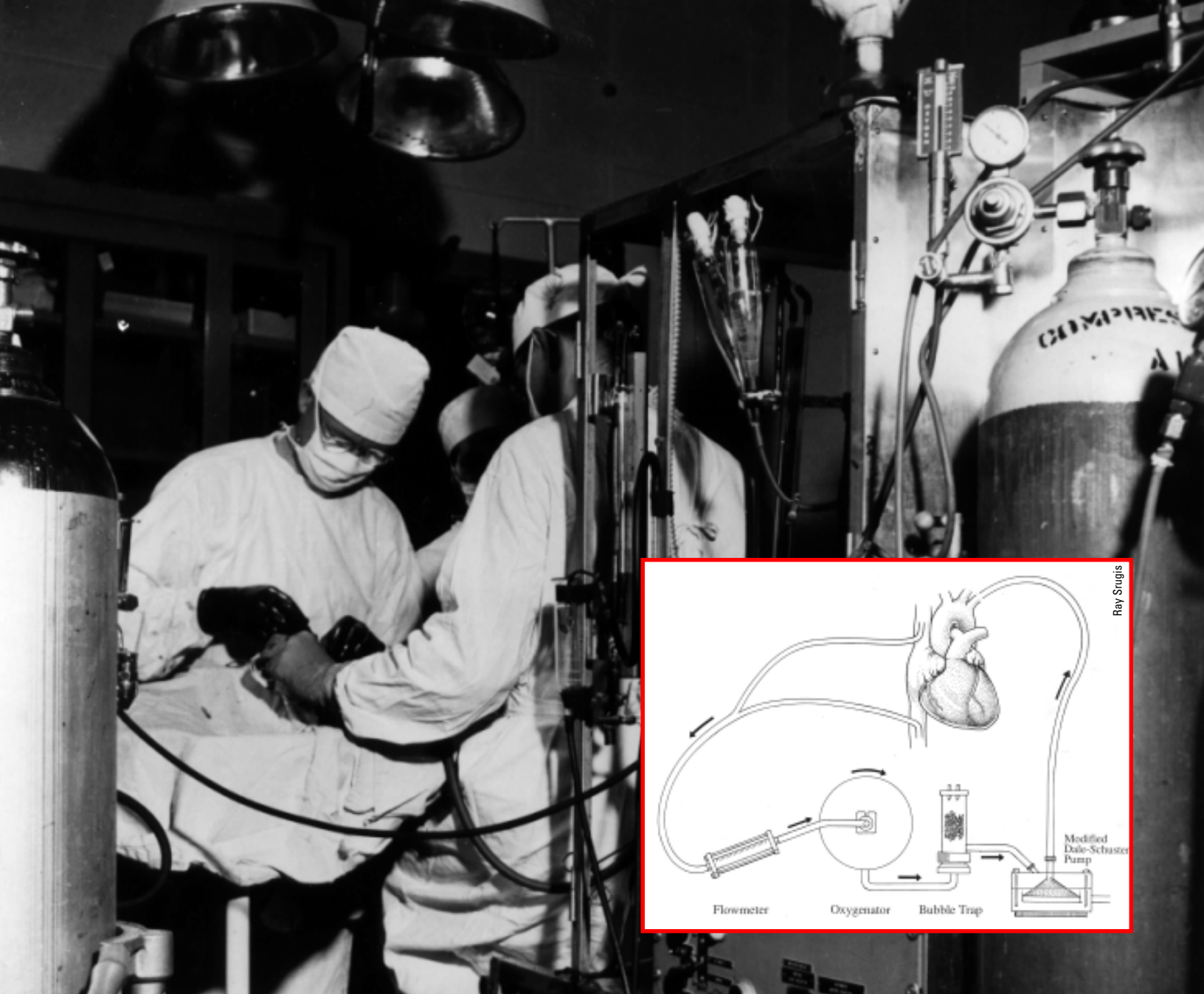
While extending lives, Dr. Friedman's program opened new chapters in medicine. Like Dr. Lundin, many of the leaders in nephrology today received their training at Downstate. One associate, Dr. Barbara Delano, pioneered home dialysis. Dr. Friedman, himself, invented the "suitcase kidney," a portable dialyzer. And dialysis continues to contribute immensely to kidney transplantation by keeping patients in good health until a suitable kidney can be found.

Perhaps, though, the greatest contribution has been made by dialysis patients themselves. Six of Dr. Friedman's original patients formed the National Association of Patients on Hemodialysis, now the American Association of Kidney Patients. In 1972, the group successfully lobbied Congress for Medicare funding for dialysis. The bill passed handily, ensuring that virtually any American who needs Dr. Friedman's life-saving procedure will receive it.

John Zubrovich



Dr. Eli Friedman, Class of '57, and his invention, the suitcase kidney.



Open-Heart Surgery

Given Clarence Dennis's determination and vision, it might surprise some to learn that the idea of building a heart-lung machine that would facilitate open-heart surgery was not his. The idea was hatched when his mentors in surgery and physiology met one evening to discuss a suitable research project for their brilliant protege. More than a decade later, in 1951, Dr. Dennis attempted the first open-heart surgery using a machine to temporarily pump and oxygenate the patient's blood. The procedure failed in large measure because the patient's condition was far more complicated than had been diagnosed.

Four years later, Dr. Dennis—by then chairman of surgery at SUNY Downstate—performed the first successful open-heart surgery in New York State (and the second anywhere) using his heart-lung machine.

Dr. Dennis's heart-lung machine is now part of the Smithsonian collection. Although he had a prototype when he left the University of Minnesota for Brooklyn, he refined the machine considerably once he got to Downstate. In the beginning, he did much of the work himself—the machine shop that was put at his disposal had more experience fixing beds than designing surgical equipment. In the process, he trained others and created a true division of scientific and medical instrumentation at the medical center.

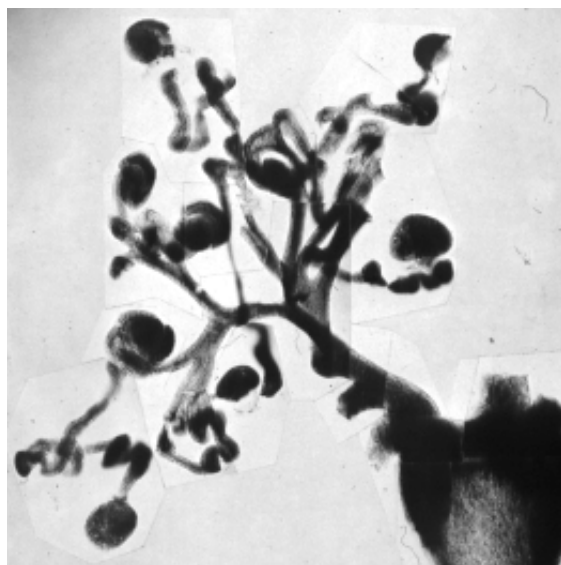
Dr. Clarence Dennis performed the first successful open-heart surgery procedure in New York State and the second ever. Inset: Open-heart surgery looks simple on paper, but it took nearly two decades to perfect.

Form Follows Function

For engineers and designers, “form follows function” is a creed neglected at professional peril. It also defines Jean Redman Oliver’s extraordinarily productive career. From 1915, when his first article appeared in the *Journal of Experimental Medicine*, to 1968, when he published *Nephrons and Kidneys: A Quantitative Study of Developmental and Evolutionary Mammalian Renal Architectonics*, Dr. Oliver’s primary concern was to demonstrate the link between anatomy and function in the healthy and diseased kidney.

Shortly after being appointed chairman of pathology at Downstate in 1929, Dr. Oliver wrote in a monograph on chronic Bright’s disease, that the “correlation of function and anatomical structure” in the diseased kidney remains “a complete mystery” and the “basic and all-important problem.” For the next 40 years, Dr. Oliver refined the techniques of microdissection to the point where an individual nephron, just barely visible to the naked eye, became a world unto itself. Some of the images he captured using microdissection—a technique that others had abandoned in their study of the kidney—were not seen again until the electron microscope had been perfected.

This *tour de force* eventually led to the first clear delineation of nephron anatomy and physiology in a variety of diseases commonly lumped together under the rubric of “acute tubular necrosis.” Dr. Oliver also studied the kidney during acute renal failure. The latter work was published in an issue of *The Journal of Clinical Investigation* in 1951 devoted entirely to his findings. Among other things, Dr. Oliver showed which parts of the kidney were damaged and which structures had to remain intact for cellular repair to happen following an episode of acute renal failure.



Dr. Jean Oliver's microdissection of nephrons—here the tubules and glomeruli are pictured—led to new insights into how the kidney functions.

Jerry Spier



The Early Intervention Program was the first in the state to accept HIV-positive children as well as other children who are developmentally delayed.

Women, Children, and AIDS

At a time when the public and most of the medical establishment considered AIDS a disease of gay men, SUNY Downstate launched the first federally funded study of HIV transmission from mother to baby. The year was 1985, and the leaders of the study—Drs. Sheldon Landesman, Howard Minkoff, and Hermann Mendez—foresaw the epidemic becoming a disease of poor, minority women. That meant Brooklyn’s children were at risk as well. Today, AIDS is the leading cause of death among black women of reproductive age living in New York City.

Among the major findings of the study: HIV-positive mothers are significantly more likely to develop medical complications during pregnancy; maternal infection has little demonstrable impact on birth weight, head circumference, or Apgar scores of babies; and the median age of appearance of the disease in babies is five months. The study was the first of many firsts for Downstate’s HIV Center, a national leader in studying and treating the disease among women and children. Dr. Joan Hittelman created the state’s first early intervention program for developmentally delayed children that included HIV-positive children. Dr. Minkoff launched the first federally funded study of the manifestation of AIDS in women. And, with funding from NIH’s Fogarty International Center, Dr. Jack DeHovitz established the Central/East European HIV Education Center to train health care workers in these regions in HIV prevention and treatment methods.



Downstate Medical Archives

A Thousand Marriages

For most of Robert Latous Dickinson's remarkable career in obstetrics and gynecology, he labored in the long shadows of Victorian attitudes toward sexuality. Dr. Dickinson, a Downstate alumnus and faculty member, struggled to cast light on subjects considered taboo. As remarkable as his career as a physician was—he introduced electric cauterization in the treatment of cervicitis and aseptic ligatures for tying umbilical cords—his greatest contribution came after retiring from practice. It was then that he published the data collected during his practice. Before seeing his patients, Dr. Dickinson had requested they complete a four-page questionnaire that asked, among other things, how frequently they had intercourse, whether they masturbated, and how they prevented conception. His two landmark volumes, *A Thousand Marriages* and *The Single Woman*, paved the way for Alfred Kinsey and other human sexuality researchers.

Dr. Dickinson also made contributions to the teaching of medicine. As a student, he had been disappointed with the quality of illustration of sexual organs in medical textbooks. After retiring he trained himself in medical illustration and created *The Atlas of Human Sex Anatomy* and *The Birth Atlas*. He also created three-dimensional, life-size teaching models showing physical changes during pregnancy and labor. The largest group of these, called the Birth Series, was shown at the 1939 World's Fair.

"When the time comes that diagrams and descriptions of the normal functions of these universal organs are as generally accessible and as much taken for granted as are pictures of other life processes," Dr. Dickinson wrote, in explaining his efforts, "we shall doubtless wonder at our artificially fostered mystifications and many of our elaborately manufactured attitudes of shame."

After retiring from private practice, Dr. Robert Dickinson taught himself to draw so that medical students would have better illustrations for anatomic study. Dr. Dickinson's life-size models of pregnancy and birth were exhibited as part of the 1939 World's Fair.

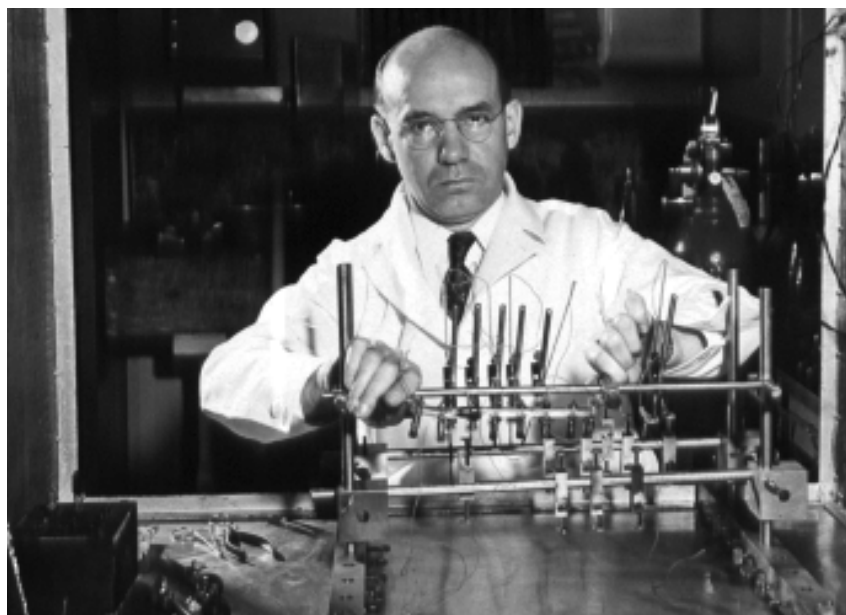
Neuroendocrinology and Other Connections

Chandler McCuskey Brooks spent his life studying connections. His early research focused on the relationship between the nervous and endocrine systems. Ultimately, Dr. Brooks, who was chairman of physiology, founding dean of the graduate school, as well as a distinguished professor of the State University, was able to prove a long-held hypothesis: that neurons in the brain secrete hormones as well as produce electrical impulses. His later research recorded the propagation of neural impulses down the stalk connecting the hypothalamus and the pituitary. That work, conducted with Dr. Kiyomi Koizumi, professor of physiology at Downstate, firmly establishing the validity of a new discipline: neuro-endocrinology.

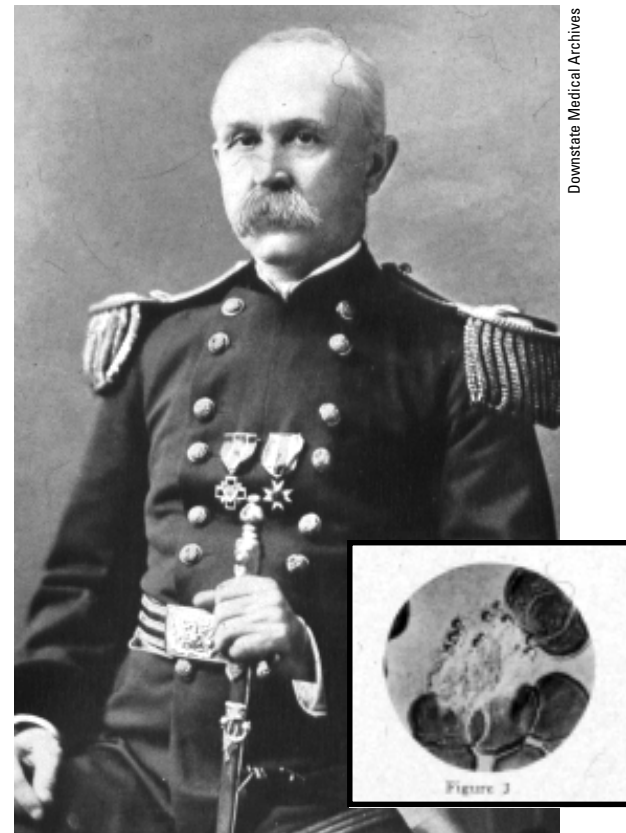
Dr. Brooks also made major contributions to cardiac physiology, increasing our understanding of ventricular fibrillation and antiarrhythmic drugs and laying the groundwork for cardiac pacemakers. His book, *Excitability of the Heart*, cowritten with Brian Hoffman, a graduate of the Class of '47, is considered a classic.

Dr. Brooks, the first Downstate faculty member elected to the National Academy of Sciences, was interested in larger connections as well. He founded SUNY Press. His laboratory hosted 23 long-term visitors from 14 countries, and in 1979, the Japanese Emperor presented him a Medal of Honor for his work in promoting scientific research and education in Japan. And during the last years of his life, Dr. Brooks, the son of a Presbyterian minister, studied the relationship between science and religion as a fellow at Princeton's Center for Theological Inquiry.

Dr. Chandler Brooks made major contributions to cardiac physiology and neuroendocrinology, a field he basically invented.



Downstate Medical Archives



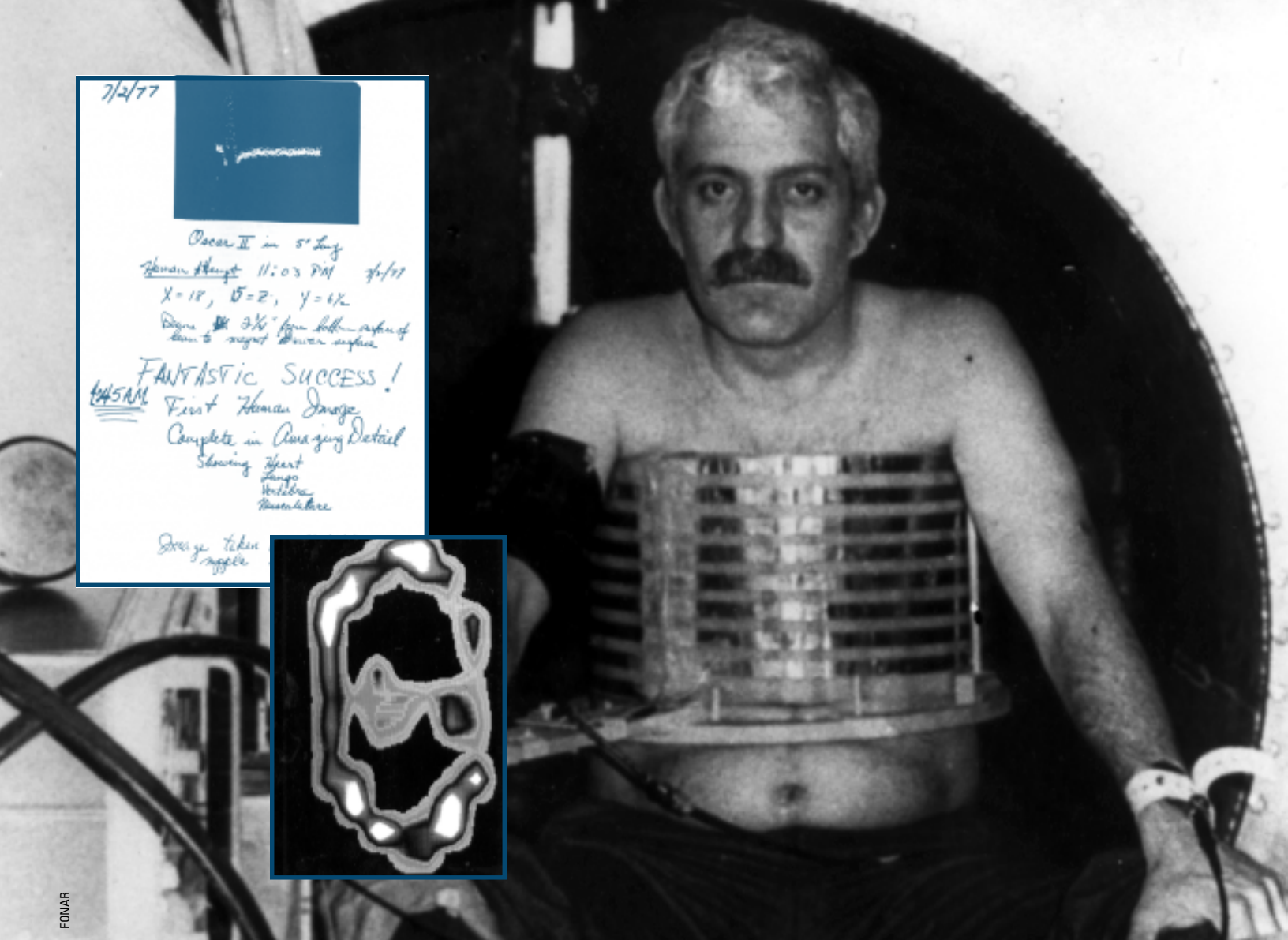
Downstate Medical Archives

Above; Dr. George Sternberg wrote a 900-page *Manual of Bacteriology* before being named Surgeon General. Inset: He also examined the blood of Yellow Fever victims, becoming an expert on the subject.

Understanding Infectious Diseases

When George M. Sternberg joined Downstate's faculty in 1888, he was already America's leading expert on infectious diseases. If others sought that appellation, their aspirations were extinguished by the publication of his 900-page opus, *Manual of Bacteriology*. The manual details the author's discoveries of the bacteria that cause pneumonia, tuberculous, and typhoid fever, as well his experiments with disinfectants and other methods of disease control.

His role in eliminating Yellow Fever as a major public health concern is arguably Dr. Sternberg's greatest contribution to medicine. For more than a quarter century he studied the tropical disease, disproving several popular theories of how the disease is transmitted. After leaving Downstate to become Surgeon General, Dr. Sternberg appointed his protege, Walter Reed, to head up the Army's commission on Yellow Fever. Drawing on Sternberg's studies, the commission set up shop in Havana and soon identified mosquitoes as the carriers of the virus. A program to eliminate mosquitoes soon ended the epidemic there and the occurrence of outbreaks in cities as far north as Boston, leading to one of the first public health victories of the twentieth century.



Magnetic Resonance Imaging

Raymond Damadian's genius lies in thinking big. He took a well-established technique for analyzing substances in test tubes—nuclear magnetic resonance—and turned it into one of the most powerful tools for imaging the human body: magnetic resonance imaging. Little wonder Dr. Damadian's original idea drew skepticism ranging from the polite to the derisive. Still, he persisted, dubbing the huge machine he built from materials found along Manhattan's Canal Street the "Indomitable."

In his first attempt at producing a human image, in May 1977, he strapped on a cardboard vest containing an antenna and climbed into a large superconducting magnet. It failed. Theorizing that his physique was too large for Indomitable's rudimentary capabilities, the inventor asked his slender laboratory assistant, Larry Minkoff, to volunteer to be scanned. After weeks of soul-searching and keeping a close eye on his mentor for any tell-tale signs of ill effects, Minkoff consented, and on July 3, 1977, the first human images using MRI were produced in Downstate's Basic Sciences Building.

Dr. Damadian's breakthrough technology garnered him the National Medal of Technology, and there is speculation that he will be Downstate's second Nobel Prize winner in Medicine. Though the Indomitable is now part of the Smithsonian's collection, Dr. Damadian is not content to rest on his laurels. Shortly after his discovery, he founded FONAR, the first company to manufacture MRI machines, on Long Island. Under his leadership, FONAR pioneered open MRI and is now creating MRI surgical suites that will enable surgeons to operate within the magnetic field while viewing, in real time, MRI's exquisite images of soft tissue.

Although Dr. Raymond Damadian was his own first subject, he was unable to get an image of himself using magnetic resonance imaging. He theorized correctly that his rudimentary machine was unable to scan his large physique. Inset: The first MRI image of a human being was produced by Dr. Raymond Damadian's machine, an accomplishment he noted in his journal as a "fantastic success."



Dr. Alfred Adler's emphasis on the individual, rather than types, broke new ground in psychology.

Inferiority Complex

"Inferiority Complex" is such a common expression that one might suspect it bears little relationship to the condition Alfred Adler was describing when he coined the phrase. Not so. Dr. Adler's thoughtful analysis of the condition continues to define the term. Dr. Adler, who was a visiting professor of medical psychology at Downstate from 1932 to 1937, argued that some individuals lack self-worth because they do not feel they are progressing toward a better life—a goal, he believed, was universal.

Though he was at one time a colleague of Sigmund Freud's, the two parted company over Adler's Theory of Individual Psychology. Because he believed that each person is unique, Dr. Adler resisted categorizing people into types. Many of his theories underpin current psychological thought: Self-esteem is fostered by parents who neither indulge or overprotect their children. Happiness is only possible when a person experiences success in work, love, and social interaction. And those who do good for the sake of society are most likely to enjoy a healthy lifestyle. "One must sense that not only the comforts of life belong to one, but also the discomforts," he wrote. "One must feel at home on this earth with all its advantages and disadvantages."

Conquering Pneumonia

Pneumonia is a leading cause of death, particularly among the elderly. Many of these deaths could be prevented, thanks to the vaccine developed by Drs. Robert Austrian and Gerald Schiffman at Downstate in the 1960s. The vaccine is effective in protecting about 80 percent of all patients from pneumococcal pneumonia, a common form of pneumonia. In developing the vaccine, the two went against conventional wisdom at the time, which championed powerful new antibiotics. In a study of patients at Kings County Hospital, Dr. Austrian demonstrated that "antimicrobial therapy has little or no effect upon the outcome of infection among those destined, at the onset of illness, to die within five days."

Developing the pneumococcal vaccine was a complicated piece of science. The bacterium comes in 84 different varieties, although 23 of those varieties account for 90 percent of all deaths. The vaccine that Drs. Austrian and Schiffman created is capable of stimulating the body's immune response to the deadliest forms of the bacteria. To test the body's response to the vaccine, Dr. Schiffman created a radioimmunoassay. Today, the assay is used to measure the immunological strength of geriatric, sickle-cell, and AIDS patients.

Dr. Gerald Schiffman, with Dr. Robert Austrian, developed a vaccine for the most common, and deadly, forms of pneumonia.



Christopher Little



Ernest Cuni

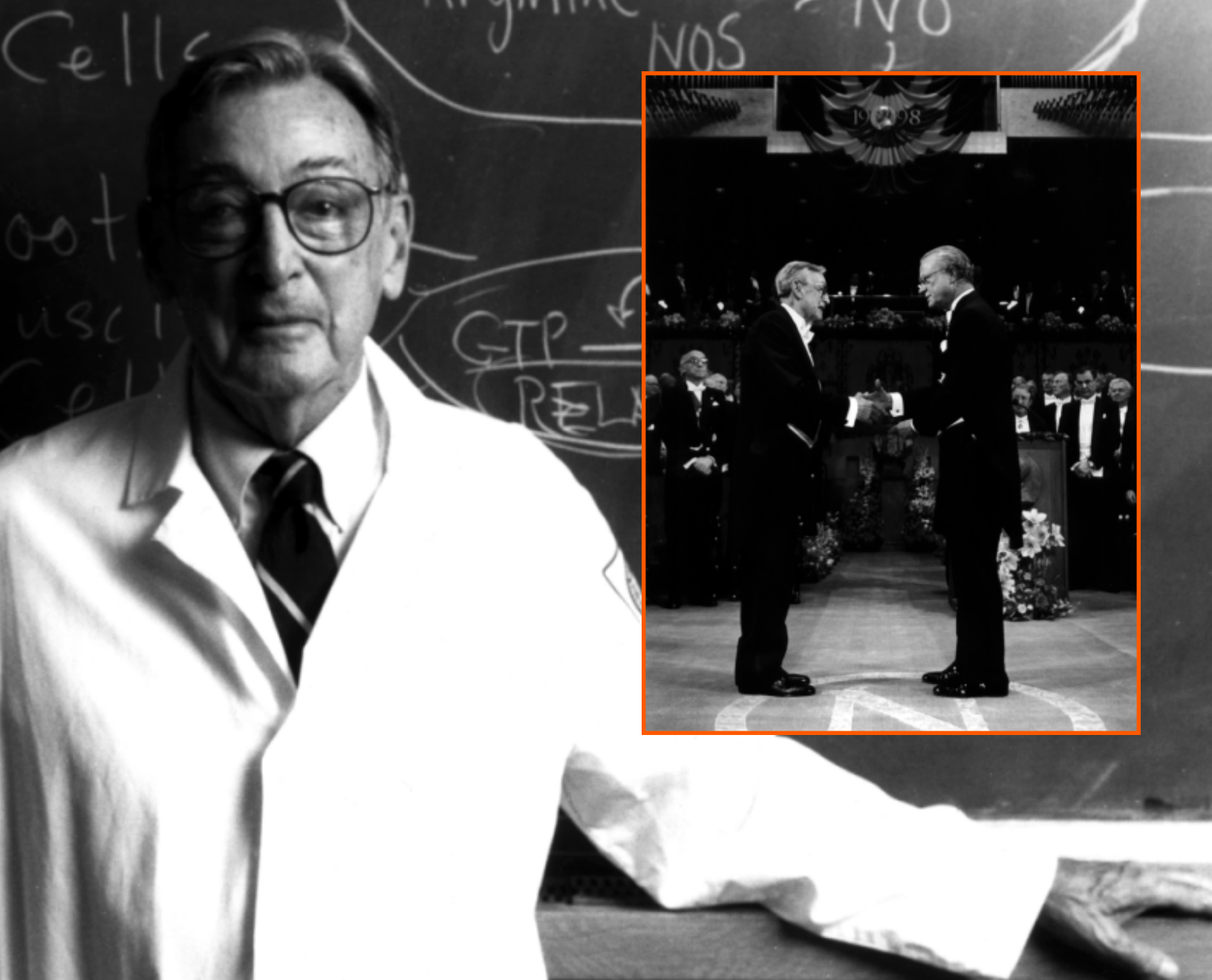
Dr. Gerald Deas, Class of '62 with Surgeon General David Satcher.

Eliminating Laundry Starch from Diets

While a resident at Kings County Hospital, Dr. Gerald Deas noticed a disturbing fact. Many of the black women he saw had iron-deficiency anemia. Dr. Deas traced the problem to an unlikely snack: ARGO laundry starch. "It was a holdover from an ancient African custom of eating clay," Dr. Deas explained. Some women were eating as much as a pound a day.

Researchers had already demonstrated that laundry starch can block the absorption of iron. And yet, the product's manufacturer refused to warn women of the risk. In fact, the starch was typically stocked in the confectionary aisle of the grocery store, along with cookies, candy, and other snacks. The problem was particularly acute in pregnant women, some of whom believed that eating cakes of starch would lighten the skins of their babies. It did, temporarily of course, until doctors could reverse the anemia.

In his practice, Dr. Deas, who graduated from Downstate in 1962, was able to steer women away from the danger, but it wasn't until he began producing a regular health segment for "Black News," a show hosted by television journalist Bill McCreary, that he was able to eliminate the problem nationally. Shortly after a report on the hazards of eating laundry starch was aired on the show, the manufacturer agreed to place a warning label on the box, remove the product from food aisles, and distribute the starch in an unappetizing powdered form. The Food and Drug Administration honored Dr. Deas and Mr. McCreary for their investigative reporting.



Nobel Prize

Serendipity often plays a role in scientific research, but rarely does it lead to a Nobel Prize. That it contributed to Dr. Robert Furchgott's discovery is doubly surprising. The meticulous researcher won the 1998 Nobel Prize in Medicine for uncovering the extraordinary role NO—nitric oxide—plays in the human body. Previously, no one had suspected that this simple but ubiquitous molecule has any great significance. Today, legions of scientists from around the world are building on Dr. Furchgott's discoveries to understand and find new treatments for heart and vascular diseases, eating disorders, immune disorders, memory loss, impotence, and mental illnesses, including schizophrenia and bipolar conditions.

Dr. Furchgott's revolutionary discovery was made late in his career (though late is a relative term; now, in his 80s, the distinguished professor emeritus still comes to his laboratory virtually every day). At the time, he was conducting experiments in another field he helped pioneer: cell-receptor pharmacology. When a laboratory technician prepared a sample incorrectly, producing an unexpected result, Dr. Furchgott began his historic investigation. Shortly after winning the Nobel Prize, Dr. Furchgott shrugged off his accomplishment with characteristic modesty, explaining that he had done what any good scientist would do. "When you find something that is unexpected, that seems contrary to current theory, it's best, obviously, to look into it."

Dr. Robert Furchgott won the 1998 Nobel Prize in Medicine for his work on vascular physiology. Inset: Dr. Robert Furchgott receiving the 1998 Nobel Prize in Medicine.

Seeing Beyond His Patients' Eyes

Ophthalmologists have an advantage that many of their clinical colleagues envy: They can actually see the disorders they are attempting to treat. This ability, ironically, proved to be a major barrier when it came to understanding the causes and exploring new treatments for uveitis, inflammation of the vascular middle layer of the eye.

For many years, a chilling consensus that nothing would be gained by studying uveitis in animals kept physicians from looking beyond their patients' eyes for clues to treating this sight-threatening disorder. Then along came Robert Nussenblatt, a 1972 graduate of the College of Medicine. As chief of clinical ophthalmic immunology at the National Eye Institute, Dr. Nussenblatt helped develop animal models that have changed our understanding of the causes of the disorder and have led to more effective treatments.

One of the first hypotheses that Dr. Nussenblatt tested was that uveitis might represent an autoimmune disorder. By stimulating an immunological response far from the eye, Dr. Nussenblatt confirmed that some forms of uveitis, particularly in the back of the eye, are caused by immune disorders.

This work led Dr. Nussenblatt to use cyclosporin to treat uveitis that does not respond to corticosteroids. Today, cyclosporin, a drug widely used to prevent organ rejection, is also prescribed to treat difficult cases of uveitis. For this work, Dr. Nussenblatt, now scientific director of the National Eye Institute and co-author of the definitive text, *Posterior Uveitis: Diagnosis and Management*, won the 1991 Proctor Award from the Association for Research in Vision and Ophthalmology. More importantly, the models he developed have opened up new avenues in treating uveitis, including gene therapy. The models have also proved useful in studying other eye disorders. Dr. Nussenblatt, himself, has built a world-renowned center for the study of ocular inflammation, including complications due to AIDS, at the NEI.

Dr. Robert Nussenblatt, Class of '72, demonstrated that cyclosporin is an effective, sight-saving treatment for eye inflammations that do not respond to standard treatments.



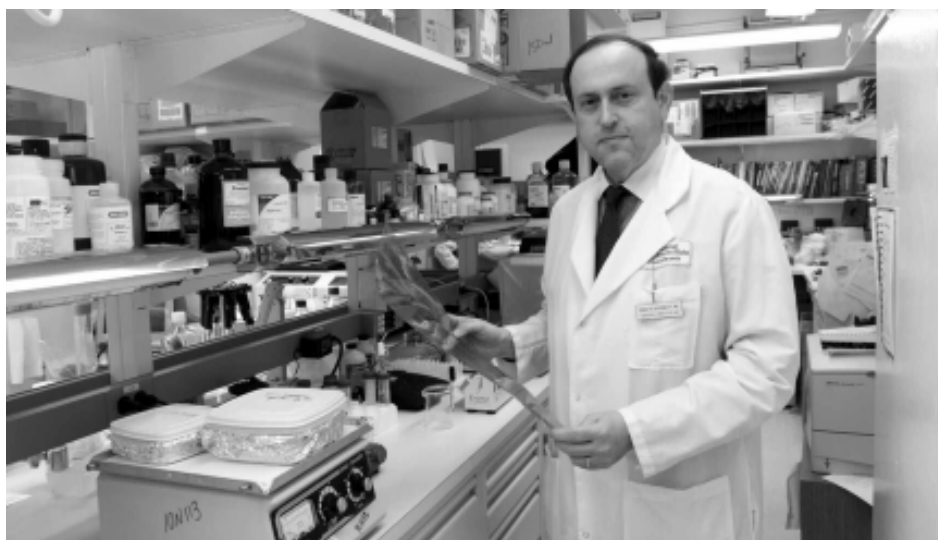
Downstate Medical Archives

Dr. Austin Flint did more than any other physician to introduce the stethoscope into American medical practice.

Austin Flint's Murmur

Austin Flint is often called the American René Laennec because he championed the Frenchman's remarkable invention, the stethoscope, and he used it to elaborate and refine Laennec's technique of diagnosing illness through sound. A founding member of Downstate's faculty, Dr. Flint was the first to insist that the pitch of sounds, as well as the sounds themselves, are an important diagnostic clue. Using pitch, he was able to detect tuberculosis in its early stages—a technique that is still in use today. He also relied upon pitch to characterize a heart condition that now bears his name. Austin Flint murmur occurs when blood from the aorta returns to the heart.

Dr. Flint's *Treatise on the Principles and Practice of Medicine* is a medical classic. In it, he anticipated many modern concepts of medicine, including the necessity for systematic study of the natural history of diseases. Dr. Flint's views of the physician-patient relationship were also foresighted. "It is a mistaken notion," he told the 21 young men of Downstate's first graduating class, "that success is compromised by frankness in the intercourse of physician and patient. It enhances respect and confidence with intelligent persons to express professional opinions with the utmost candor and plainness."





Robert Trippett

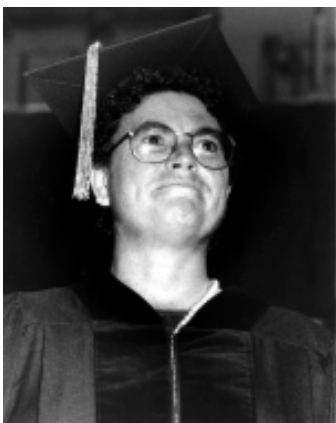
Genius for Midwifery

When the MacArthur Foundation awarded Ruth Lubic one of its “genius prizes” in 1993, it described her as “the driving force behind the expansion of the midwifery profession.” Her decision to become a nurse-midwife was influenced, ironically, by her own obstetrician. He not only allowed her husband to be present at the birth of their son—something that was uncommon at the time—he encouraged his patient to seek training as a midwife. That’s what brought the young mother, then a nurse, to Downstate, where Louis Hellman, chairman of obstetrics and gynecology, set up a midwifery training program. Through the program, Lubic learned the importance of involving the entire family in decisions—a conviction that was strengthened by home visits following the birth of the child.

She graduated from the program, went on to get a Ed.D. in applied anthropology, and become general director of the Maternity Center Association, an organization founded to combat high maternal and infant mortality at the beginning of the last century. In 1975, MCA founded the first freestanding birthing center in the country. Located in Manhattan, the center approximates a home setting and permits not only the mother’s partner to be involved but also parents and children.

With the money she received from the MacArthur Foundation, Dr. Lubic decided to address a health problem that she said “has been on my professional conscience”: the shamefully high mortality rates in certain inner-city neighborhoods. Today, she is president and CEO of the District of Columbia Developing Families Center, a collaborative one-stop service for childbearing and childrearing families. Located in Washington’s Ward 5, where infant mortality rates are 25.1 deaths per 1,000 births, the center provides comprehensive social services to young families. In addition to mental health and substance abuse services, housing assistance, job counseling, and child care, the center offers maternity services based on the model Dr. Lubic pioneered more than a quarter century earlier.

Dr. Ruth Lubic used the money she received from the MacArthur Foundation “genius award” to open the Developing Families Center in Washington, D.C.



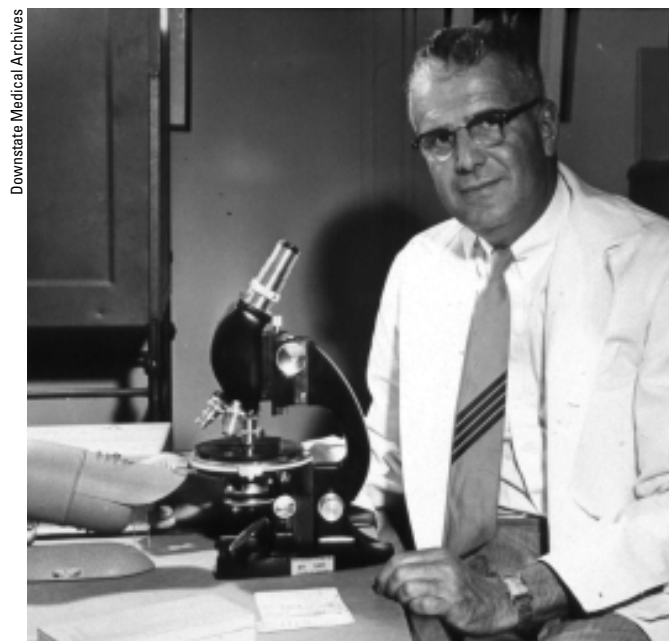
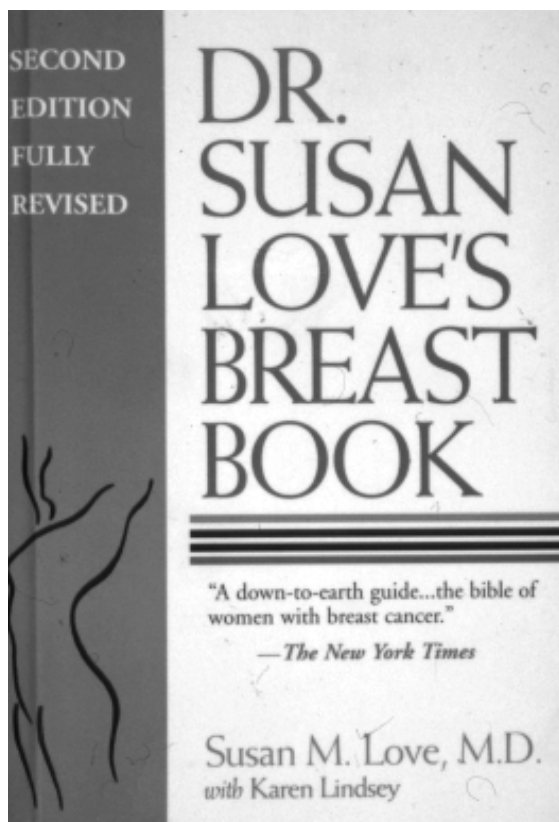
Dr. Susan Love, Class of '74, has been an outspoken advocate for more money for breast cancer research.

Below: Dr. Susan Love's *Breast Book* has helped patients and their families cope with breast cancer.

The Breast Cancer Bible

The *New York Times* has called Dr. Susan Love's *Breast Book* "the Bible for women with breast cancer." Since it was first published in 1990, millions have turned to the book for information and guidance when they, or someone they love, have been diagnosed with the disease. Although it focuses on breast cancer, the *Breast Book* is a comprehensive guide to breast health. Described as "reassuring and compassionate" by the *Journal of the American Medical Association*, Dr. Love provides readers with information on everything from breast development and implants to advice on brassieres and breast feeding.

In the medical community, Dr. Love, who graduated from Downstate in 1974, is considered one of the foremost breast cancer surgeons in the country. Her *Atlas of Surgical Techniques in Breast Surgery* is the definitive text in the field, and she was the first to develop comprehensive practice guidelines for diagnosing and treating breast disease. An outspoken advocate for more research on the disease, she founded the National Breast Cancer Coalition, which successfully lobbied Congress to increase federal funding for breast cancer research from \$90 to \$410 million in two years.



Dr. Louis Hellman was a leader in many aspects of obstetrics and gynecology, including using sonography, advocating for midwives, and establishing the first division of gynecological oncology in the country.

Contraception for the Poor

Louis Hellman's tenure as chairman of obstetrics and gynecology set in motion several revolutions in the field. Dr. Hellman established the first division of gynecological oncology in the nation, he launched one of the first midwifery training programs, pioneered sonography in obstetrics, and single-handedly broke an unwritten ban on providing contraception to patients of the city's public hospitals.

The year was 1958 when Dr. Hellman informed the Commissioner of Hospitals that he was fitting a severely diabetic mother at Kings County Hospital with a diaphragm. While the patient was still on the examination table, the commissioner prohibited the procedure. Dr. Hellman leaked the story to the *New York Times*. At first the Board of Hospitals moved to reinforce the ban by committing it to writing; two months later, however, the board voted 8 to 2 to lift the ban. The change was front-page news around the country, and it sparked a national effort to provide poor women with access to contraception. Dr. Hellman continued to fight for that access after he left Downstate to become deputy assistant secretary for population affairs in the Nixon Administration.

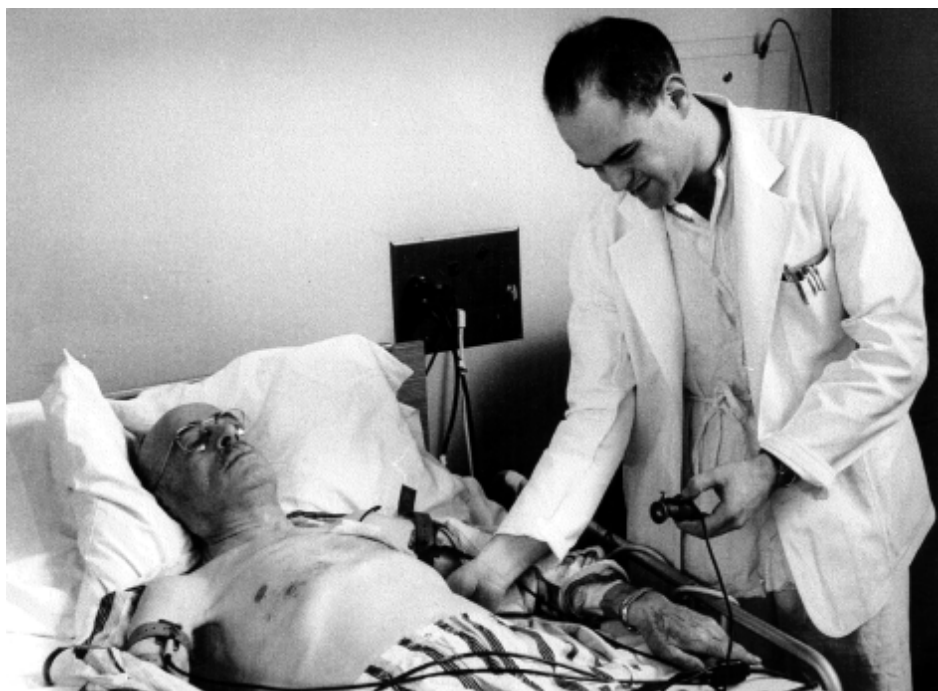


Transplant Pioneer

In 1972, when Dr. Samuel Kountz came to Downstate to start a kidney transplantation program, he was already a bona fide superstar among transplant surgeons. Working at UCSF, he launched the first clinical study of living-unrelated kidney transplants based on human leukocyte antigen, or HLA, matching. Today, refined methods of HLA matching are the basis of determining the immunological compatibility of donor and recipient.

At Downstate, Dr. Kountz continued to make history. Building on the strength of Downstate's dialysis program, he made University Hospital of Brooklyn's transplantation programs one of the best and largest in the country. He seized on the borough's diversity to offer transplantation to minority group members, who until that time largely had been excluded from this major medical advance. And he pioneered transplantation in children—the group he felt could benefit most. Rather than living with a death sentence, he said, transplantation meant “a young person could have a long and productive life.” In 1976, he performed a successful kidney transplant on the youngest patient ever: a three-month-old girl.

Dr. Samuel Kountz, already a transplant pioneer, came to Brooklyn because he believed that Downstate was uniquely positioned to bring the lifesaving procedure to minorities. He also pioneered the methods used today to determine the immunological compatibility of donor and recipient.



Dr. Seymour Furman, Class of '55, with Pincus Shapiro, the second patient he paced by delivering the electric stimulation directly inside the heart.

Restoring the Heart's Rhythm

If you wanted a new radio during World War II, you had to put it together yourself. While some might have found this consequence of the war effort an imposition, 12-year-old Seymour Furman undertook the task with considerable joy. Later, the utility of assembling radios from their component parts helped Dr. Furman contribute to a remarkable breakthrough in medicine: the development of the cardiac pacemaker. Dr. Furman drew on his childhood experience to create the hardware necessary to deliver lifesaving electrical stimuli to a heart whose rate and rhythm-setting mechanism had gone awry.

After graduating from Downstate in 1955, Dr. Furman worked at Montefiore Medical Center. His time was divided between learning cardiac catheterization and working in the surgical research laboratory, where one of his responsibilities was building a heart-lung machine. Dr. Furman's invention brought the two programs together.

It was already known that electrical stimuli could restart and stabilize the beating of the living heart, but this was done painfully through the intact chest or by wires leading directly into the heart muscle through the open chest. Both methods were limited in their ability to keep patients alive for long. Dr. Furman's use of a catheter to deliver the electrical stimuli to the inside the heart at the location responsible for cardiac rhythm was a breakthrough.

Dr. Furman successfully paced the first patient using this new technique on July 16, 1958. Within a couple of years, more than 20 patients had undergone the procedure at Montefiore, and many lived for decades with a pacemaker. Today, his transvenous technique of delivering electrical stimuli to the heart is universally applied and is the standard technique for implantation of cardiac pacemakers and cardioverter defibrillators.

Phoenix House

Phoenix House began in 1967 when a young New York City deputy commissioner learned that six heroin addicts, just out of detoxification, had moved to the same Manhattan tenement, so they could help each other stay straight. Mitchell Rosenthal, M.D., deputy commissioner of the newly formed Addiction Services Agency, seized on the self-help concept and made it a cornerstone of the city's drug treatment program.

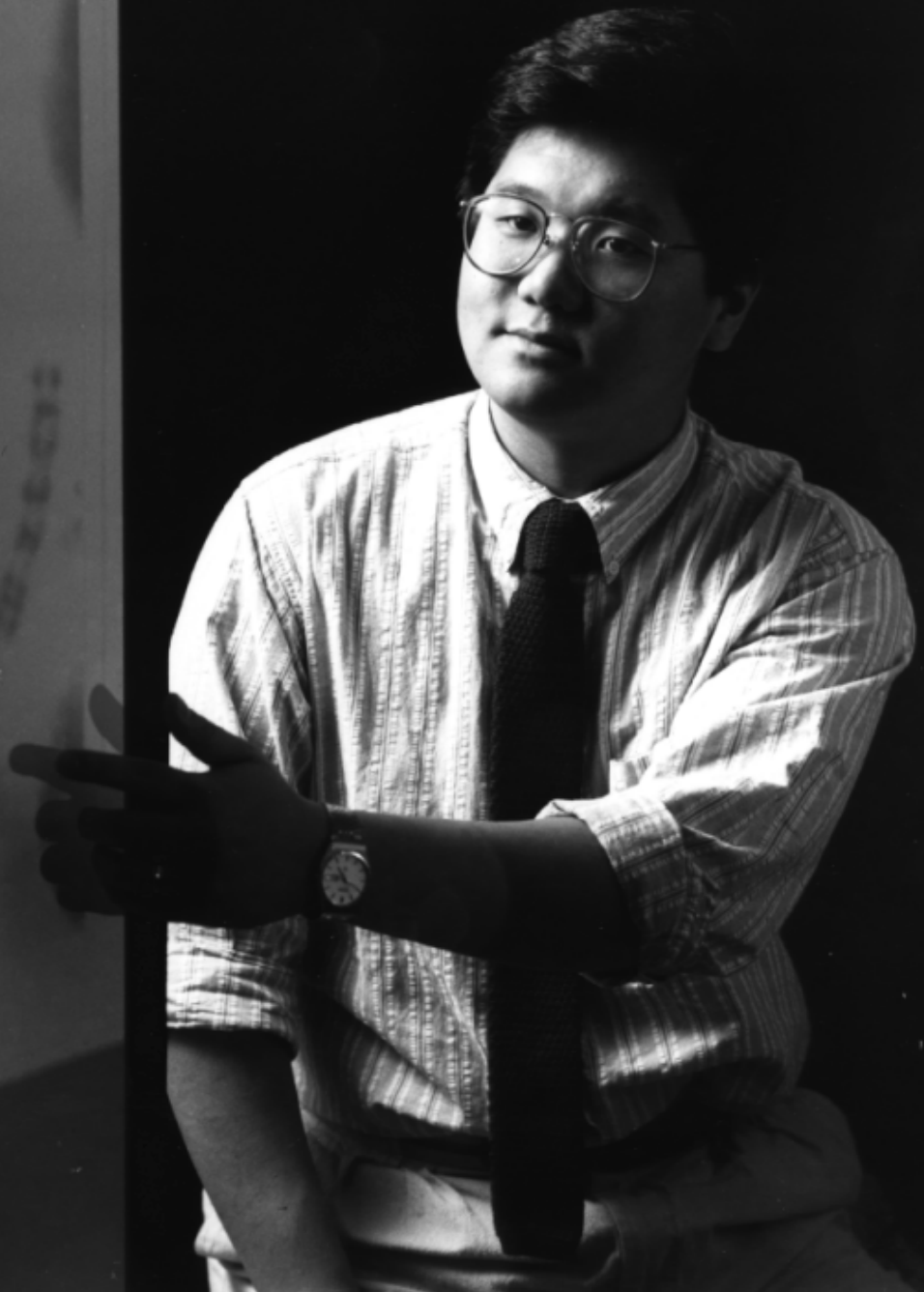
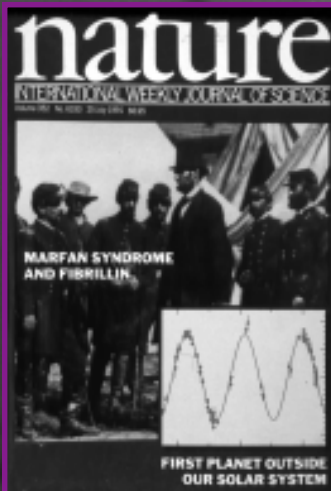


Five years later, Phoenix House became independent of the city, and Dr. Rosenthal resigned his post to become its first president. Since then, the organization has emerged as the leading nonprofit substance-abuse service organization in the country, with programs in eight states. Each year, Phoenix House treats more than 5,000 adolescents and adults in a variety of settings, including long-term residential facilities, correctional facilities, homeless shelters, and outpatient programs. The organization also has established residential high schools, runs an alternative day school, and provides in-school intervention programs for thousands of teens.

Dr. Rosenthal, who graduated from Downstate in 1960, became interested in substance abuse while serving as a Navy psychiatrist. He was one of the first to recognize the vital role families play in arresting drug abuse. His book, *Drugs, Parents and Children*, is considered the seminal work in the field.



Dr. Mitchell Rosenthal, Class of '66, greets residents of Phoenix House in Manhattan.



The Marfan Gene

When researchers published definitive evidence in 1991 that they had found the Marfan gene, news of the discovery spread rapidly beyond the scientific press to the general media. The disease, which is relatively uncommon, is nonetheless well known because historians have long suspected that Abraham Lincoln suffered from Marfan's syndrome. Physical characteristics of the disease include loose joints, elongated limbs and fingers, and weakening of the aorta.

The discovery was also remarkable because a key member of the research team was a medical student. Brendan Lee was in his third year of medical school at Downstate when the discovery was announced in *Nature*. Dr. Lee had already completed his Ph.D. as part of Downstate's combined M.D./Ph.D. program and was collaborating with eight other researchers in a team headed by Dr. Francesco Ramirez, his Ph.D. mentor. Despite his young age, Dr. Lee, who was born in Hong Kong, was instrumental in finding the gene. He created the radioactively tagged genetic probes—a laborious process at the time—that allowed the team to identify the gene responsible for Marfan's within a year of embarking on the project. Although a cure has yet to be found, the discovery has resulted in better management of the disease and a prenatal diagnostic test for Marfan's.

Dr. Brendan Lee, Class of '93, was a student when he helped discover the gene that causes Marfan's syndrome Inset: The discovery made the cover of *Nature*.

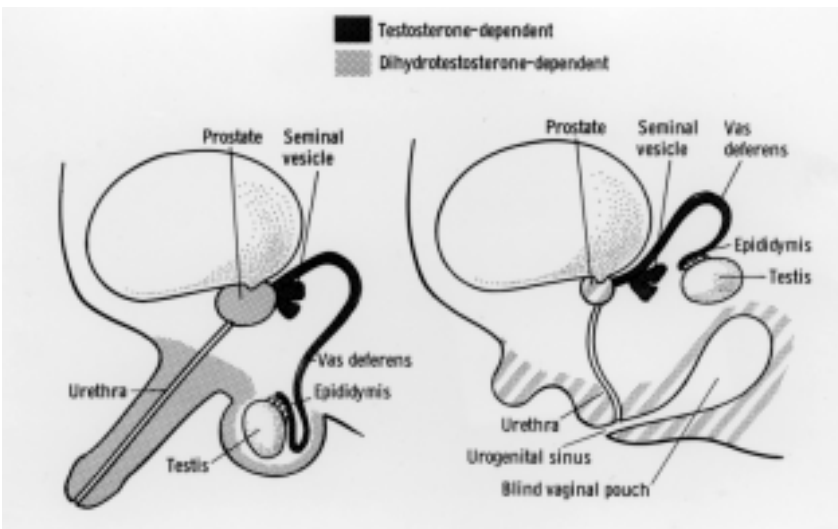
PROSCAR

In an unusual scientific quest, Julianne Imperato-McGinley, a 1965 graduate of Downstate, has traveled to a Caribbean island undergoing a political revolution and a Middle Eastern village perched atop a treacherous mountain. Her far-flung travels, however, pale in comparison to the far-reaching implications of her research. In identifying a new form of male pseudohermaphroditism, Dr. Imperato-McGinley not only challenged the prevailing wisdom that gender is socially acquired and fixed at an early age, but also paved the way for the first effective treatment for the non-cancerous enlargement of the prostate, known as benign prostatic hyperplasia, a common problem in older men that interferes with normal urination.

Found in only three villages around the world, the form of pseudohermaphroditism she documented is rare. Babies born with the disorder are first believed to be girls, but with the onset of puberty, they begin to feel and act like young men. In landmark articles published in *Science* and the *New England Journal of Medicine* in 1974 and 1979, respectively, Dr. Imperato-McGinley, chief of endocrinology and program director of the General Clinical Research Center at New York Hospital-Cornell Medical Center, demonstrated that a deficiency of an enzyme, 5 α reductase, prevents the conversion of testosterone to dihydrotestosterone at birth.

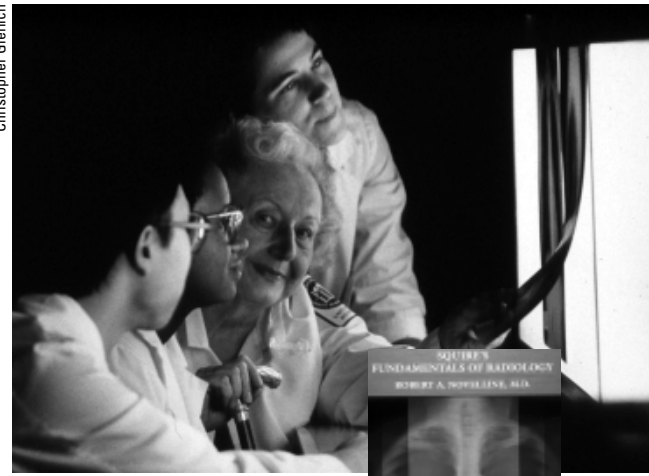
More powerful than testosterone, dihydrotestosterone is responsible for male genitalia formation and also—significantly—prostate development and male pattern baldness. This discovery led ultimately to the development of finasteride (marketed by Merck as Proscar). By creating a deficiency of the 5 α reductase enzyme, finasteride inhibits the formation of dihydrotestosterone, causing the prostate to shrink.

Dr. Julianne Imperato-McGinley's research has changed the medical profession's views on how sexuality develops. It also led to the drug PROSCAR.



Dr. Julianne Imperato-McGinley, Class of '65, has identified the different roles that testosterone and dihydrotestosterone play in developing the male's sex organs.

Christopher Gierlich



Dr. Lucy Squire was a consummate professor who learned how to teach by listening to her students. Inset: *Fundamentals of Radiology* has been a standard textbook for medical students for over 40 years.

Squire's Fundamentals of Radiology

For nearly 40 years, *Fundamentals of Radiology* has been the standard textbook for medical students in the field—and for good reason. Its author, Lucy Frank Squire, devoted her career to learning how students learn. The book survives her thanks to Dr. Robert Novelline, her coauthor for the fifth edition, who renamed it *Squire's Fundamentals of Radiology* following her death.

At Downstate, where she was a distinguished service professor, Dr. Squire pioneered small group learning exercises that encourage students to collaborate in making diagnoses. Medical schools across the country and abroad have adopted Dr. Squire's multimedia program. On campus, her idea was transplanted to other departments, which developed collaborative learning as an integral part of their curriculum.

Dr. Squire's genius for innovation drew on an unconventional way of viewing challenges. She saw the answer to the explosion in medical knowledge as an opportunity for students to take charge of their own medical education and become lifelong learners. Even being wrong, she wrote to the Class of 1990, who dedicated their yearbook to her, was a welcome experience. "After the initial sting of humiliation, being wrong ought to be refreshing [for] you have learned something new. The subject about which you have been mistaken will take on a fresh importance and you will develop a special interest in it...and out of your interest you weave a rich fabric of facts where, once, things were very threadbare indeed."

Earth

On January 26, at 9:26 a.m., the worst earthquake in India's history struck Kutch, Gujarat. At its epicenter, the earthquake measured 9.6, leveling villages and killing at least 17,000, with another 60,000 injured. An estimated 125,000 individuals are unaccounted for. Kavita Patel, Class of 2002, was part of a volunteer team of physicians that traveled throughout the impacted area to provide medical relief.

February 17

We leave for India from Kennedy airport. Our team consists of two orthopedic surgeons, a general surgeon, two internists, two medical students (including myself), an engineer, and a photographer. We travel with 40 boxes of medical and surgical supplies worth about \$250,000, which Air India ships at no cost. Supplies include plaster casts, dressing materials, surgical instruments, gowns, gloves and masks, as well as specialized orthopedic equipment. The Indian team that joins us in Gujarat includes our host family of five and an orthopedic surgeon from Baroda, Gujarat.

February 18

We fly into Ahmedabad. Although personal baggage arrives, the 40 boxes of supplies do not. They are sitting hours away in Bombay, stuck in customs. It takes 10 hours of paperwork and threats of sending our supplies back to New York to get them released. One hurdle passed, only to meet a second: At our first stop, the Government Civil Hospital in Rajkot, we are told by administrators and government doctors that the crisis is over and we have arrived too late to help.

It takes persistence, but finally we are led to the orthopedic ward, where we find many patients whose dressings and casts need changing. Dr. Yogendra Patel, the team's general surgeon, diagnoses a patient with a femoral artery aneurysm secondary to trauma, which he repairs with help from the medical students,

Over the

including me. When we leave Rajkot, we leave behind surgical instruments and orthopedic implants, such as plates and screws.

February 21

Our next stop is Sadbhavana Charitable Trust Hospital in Morbi. Here we are in the right place at the right time. The orthopedic team expected from Bombay has not yet arrived. The first patient we see has severe leg pain; the external fixator used to stabilize her leg fracture is loose and grossly infected. She begs us not to touch her leg but, clearly, she needs surgery to remove the fixator and drain the pus. Afterwards, she is relieved to be able to walk with her new cast. We change casts on many other patients and teach crutch walking. We cannot find even a pair of scissors to change the casts so we use the one pair that we brought with us. Stitches are removed with a Swiss Army knife. We do not have gloves. Several patients are discharged home. As news of our presence spreads, patients begin lining up in the corridor to be examined.

February 22

Our next destination is Gandhidham, where the main hospital has been destroyed. Dr. Hotchandhani, who runs a small orthopedic hospital, had started to treat patients in the street minutes after the earthquake with supplies from his own hospital. We operate on several of his patients. The surgeries include skin grafts on guillotine amputations and hip fracture reduction. I hold a flashlight on the operating field during the surgeries as the lighting is very poor.

This evening, we attend a prosthetic workshop at a charitable organization called the PNR Society. The society is using an abandoned train as a medical



facility, and each car serves a different function. Some cars are operating rooms while others are wards. Dr. Vijay Naik shows us the prosthesis that he developed for the PNR Society, which allows amputees to sit with legs folded on the ground, the customary sitting position in India. The mechanism consists of a string that is pulled to externally rotate the knee and invert the leg. The PNR society provides free prostheses to the patients. Their cost of making a “below the knee” prosthesis is \$50 and “above the knee” prosthesis is \$100. These are paid for by donations. We gave the PNR society five boxes of supplies for their mobile train hospital, since they plan to camp in Gandhidham for another nine months.

February 23

We spend the day traveling through Bachau and Anjaar. Hardly a habitable house is seen. Tents are ubiquitous. A large open-air hospital in Bachau has



been set up. The doctors in this clinic sleep in tents. They go to the bathroom in the open. They shower once every few days. We find these doctors to be somewhat burnt out and frustrated. Some volunteers within the clinic are fighting among themselves. They seem to need another team of doctors to relieve them.

February 24

Our destination is a hospital in Bidada village. Here, the administrators are courteous and organized. Along with two orthopedic surgeons, I make rounds in an open-air tent housing 125 patients. We sort out patients who need surgical treatment and send them to the operating room—though surgery cannot begin until the anesthesiologist arrives. He is called at his home in Bhuj, two hours away. We finish rounds at 6:00 p.m. that evening and operate until midnight. The anesthesiologist travels two hours back to his home in Bhuj, as he does not feel comfortable sleeping in a building. He prefers to sleep in a tent outside his demolished home in Bhuj.

In Bidada, we see many people who are the only survivors in their family. Some are elderly and some small children. They are generally grateful to be alive. One young girl sings a traditional Indian song beautifully while patients and nurses gathered around. One of her legs is amputated. We see another young boy who has fractured his elbow. Just prior to surgery, the anesthesiologist examines the child, using the only equipment available, a stethoscope and blood pressure cuff. After he listens to the boy's heart, the anesthesiologist silently passes the stethoscope to me. I listen and hear a very loud murmur. I observe the child's chest and see a noticeable thrill. The anesthesiologist and I agree that surgery should be deferred until a further cardiac work up is performed. He feels uncomfortable administering general anesthesia to a child without any monitors of basic physiological functions. The orthopedic surgeon does not hear the murmur but agrees not to do the surgery. We spend a total of three days at Bidada Trust Hospital. We leave them with six boxes of surgical supplies.

February 28

Our next visit is to the director of Hari Om Ashram of Nadiad, Mr. Nandubhai. A philosopher, social worker, and spiritual leader, he is 97 years old. Mr. Nandubhai leads us to the Anupam Mission in Vallabha Vidhyhagar, where they designed, packed, assembled, and transported more than 4000 tents to Kutch. The tents, used both for surgery and living, are furnished with needs for everyday use, such as utensils, flashlights and blankets. Anupam Mission intends to adopt 100 young women orphaned by the earthquake and educate them until marriage.

March 1

Before we return home, I visit my maternal grandfather in Nadiad. I also visit my father's childhood home in Baroda. I purchase several traditional Indian dresses for upcoming weddings in my family. We spend the last two days of our trip battling Air India to confirm our tickets home. We have heard that every outgoing flight to the West is bumping passengers because of overbooking. If we don't get on a flight now, the next available seats will be on March 26, in three weeks. We visit the Air India offices in both Baroda and Ahmedabad and finally get our tickets "stamped and stickered."

The government has done very little. We did not see any help centers or government clinics during our travels. Government officials took 24 hours to reach the earthquake site. Foreign aid arrived before government aid. Many supplies, such as tents, have been held up in customs by the Indian government, and the best tents have been sorted out for use by politicians during campaigning.

I think that the sense of community in the Indian culture will carry the earthquake victims through this hard time. It is very difficult to explain how the people genuinely care for strangers. I have become very grateful for the simple things that I enjoy in my daily life. Earthquake relief work in India was most gratifying but boarding the plane back to JFK was equally gratifying. I am very glad that I went to India but I am very glad to be home.

—Kavita Patel

Scan Van

Physicians and researchers now have a remarkable tool for visualizing internal body organs and tissues. SUNY Downstate has acquired a positron emission tomography (PET) scanner — the only one of its kind in Brooklyn, Queens, and Staten Island. Housed in a mobile van, it has been operating at Downstate for two days a week since last September.

Unlike conventional imaging tools, PET provides direct measures of the body's metabolic functions, giving PET advantages over other modalities. It can detect early metabolic changes that may be precursors to disease, monitor response to treatment, and potentially eliminate the need for costly testing or invasive surgical procedures. Currently, PET's most widely used application is in the detection of cancer.

"The PET scanner is the most effective — and most cost-effective — method of staging and managing many cancers," said Arnold Strashun, M.D., director of nuclear medicine at Downstate. "It is revolutionizing the way oncologists practice, because it provides such clear and precise pictures of even the slightest traces of tumor activity."

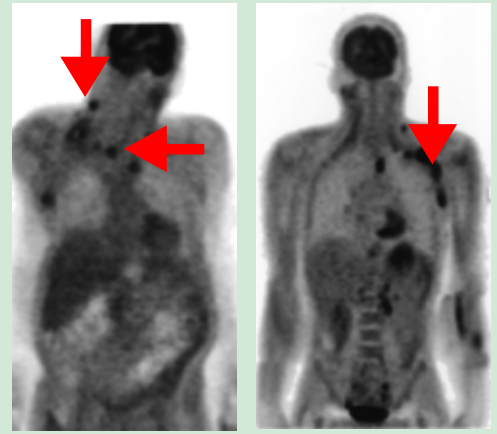
In the case of lymphoma, for example, the PET scanner can detect small residues of cancer following conventional treatment. This informs the physician of the need to administer more chemotherapy, before the cancer can regrow, thus offering a much greater chance of remission.

Because of their effectiveness, the Health Care Financing Administration (HCFA) has expanded Medicare coverage for PET scans. Cancers covered include recurrent colorectal cancer and melanomas, staging

PET Scan

Right-side lung carcinoma with metastasis, seen as dark black spots. (r): Left-side lymphoma.

PET provides both exact data and a clear visual image of abnormalities before they would be visible utilizing CT or MRI imaging modalities.



of lymphomas and non-small cell lung cancers, and solitary pulmonary nodules. Breast cancer assessment should be added shortly, and approval for cardiac flow and seizure management is pending.

Downstate's machine, through a collaboration with

Mobile P.E.T. Systems, Inc., is the most advanced machine on the market and meets all HCFA standards for Medicare reimbursement.

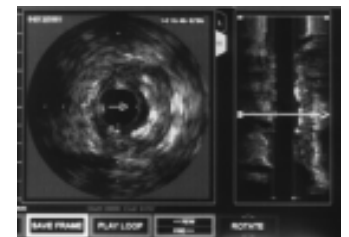
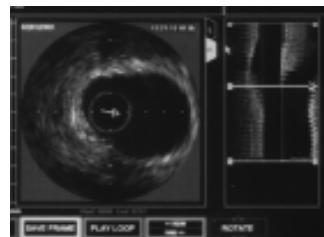
Physicians wishing to schedule scans for their patients should contact Dr. Strashun at (718) 270-2916.

New Dimensions in Vascular Imaging

Dr. Alan Feit, who heads the Cardiology Division's catheterization lab, considers the new In-Vision ultrasound imager to be the jewel in the crown among the lab's vascular imaging systems. By playing back a computerized view made up of hundreds of cross-sectional images, intravascular ultrasound (IVUS) allows physicians to accurately visualize the extent of disease within the wall

of an artery. IVUS can demonstrate how severe a blockage may be and immediately assess the results of angioplasty and stent procedures before the catheter is removed.

Since time is a crucial factor in a cath lab, Dr. Feit believes the \$100,000 investment will save lives and also spare some patients unnecessary procedures.



Left: IVUS image showing normal lumen. Right: A severely obstructed artery. Downstate's cath lab is extremely busy; since the formal dedication of its new facility on the second floor of University Hospital of Brooklyn, volume last year increased by over 1,000 cases.

Mad Cows and Englishwoman

Could “Mad-Cow,” disease endanger the U.S. beef supply?

Unlikely, but....

Dr. Suzanne Mirra, chair of the Department of Pathology, recently invited Dr. Jeanne E. Bell, a distinguished neuropathologist from the University of Edinburgh and the UK’s CJD Surveillance Unit to campus to discuss bovine spongiform encephalopathy (BSE) and its human equivalent, Creutzfeldt-Jakob disease (CJD). Both are caused by abnormal prion proteins that accumulate in the brain causing rapidly progressive neurologic disease.

BSE has devastated the

British cattle industry; worse, a potential link to infected beef has been implicated in 85 European cases of “new variant of CJD.” To date, no cases of new variant CJD have been identified in the USA, although sporadic CJD unrelated to mad cow disease occurs here with an incidence rate of approximately one per million. There is no cure for CJD of any type, which carries a 100 percent mortality rate.

The U.S., which has banned importation of British beef since 1989, should be concerned but not panicked. Still, not enough is known about

CJD transmission. It has not yet been established whether CJD can be spread by blood or blood products. Iatrogenic transmission in Britain has occurred,

however, through use of contaminated tissue grafts, corneal transplants, and human growth hormone extracts, as well as improperly sterilized neurosurgical instruments. Potential risks from occupation-related



Channel 11's Mary Murphy was on hand to cover Dr. Bell's lecture.

exposure to veterinarians, farmers, butchers — as well as pathologists and neurosurgeons — may exist. Fortunately, however, vanishingly few cases have been attributed to such occupational exposure.

AOA: Worthy to Serve the Suffering

In 2002, Alpha Omega Alpha (AOA), the national medical honor society, will celebrate its centennial anniversary. Look for a series of special events at Downstate to mark the upcoming occasion.

Launching the year-long celebration was a visit from Dr. Edward D. Harris, Jr., AOA's national executive secretary. Dr. Harris, Barnett Professor of Medicine at Stanford University School of Medicine and editor of the society's journal, *Pharos*, was on campus in April for a two-day visiting professorship. During his stay, Dr. Harris delivered the annual AOA lecture.



“AOA is the only national medical honor society in the world, and its mission — to promote scholarship and research in medical school and high standards of character and practice — dovetails with the educational aims of our university,” explains Arthur H. Wolintz, M.D., distinguished teaching professor of ophthalmology and current advisor, or councillor, to Downstate's chapter.

Since 1992, Dr. Wolintz, and his wife, Carol, have been the chapter's guiding light. Both have volunteered their time and effort to ensure that the Downstate chapter continues to grow, both in membership and achievement. Their efforts have been assisted by Dr. Donald Gerber, professor of medicine, who serves as secretary-treasurer. It's obvious that the team of Wolintz and Gerber are appreciated: both continue to be re-elected by

students to successive three-year terms.

To be elected to AOA, students must rank in the top 25 percent of their class academically. But scholarship is not the only criterion for election: integrity, capacity for leadership, compassion, and fairness in dealing with one's colleagues and patients are considered to be of equal significance. Only one-sixth of the members of a graduating class can be elected.

The Downstate AOA chapter was founded in 1948, with Dr. Duncan W. Clark, professor emeritus of preventive medicine and dean of the College of Medicine, accepting the first charter and serving as the first faculty councillor. Only two others have held that honor: Dr. Charles Plotz and Dr. Wolintz.

Since its founding, many Downstate AOA members have achieved distinction, including Dr. Eli Friedman, '57, and Dr. Susan Love, '74, who are profiled in this issue of *Science & Health* for their contributions to medicine. (See, “25 Contributions that Changed the Face of Medicine,” page 3.)

Students slated for induction this year show equal promise. Among them is Ronak Shah, '01, who has special ties to Downstate. His mother, Dr. Binita Shah, is professor of clinical emergency medicine and pediatrics at Downstate and director of the Pediatric Emergency Medicine Department at Kings County Hospital. And Ronak himself is a Downstate baby, born here at University Hospital 25 years ago.

AOA was founded in the pre-Flexner days, when the primary standard for admission to medical school was ability to pay the tuition. In 1902, a group of medical students at the University of Illinois founded AOA to protest, in the words of their leader, William Root, “the rowdiness, boorishness, immorality, and low educational ideas” among their fellows. From that time to the present, the organization's motto — “Worthy to serve the suffering” — and goals have remained unchanged. So has the determination that race, ethnicity, gender, and social/economic background should never be barriers to membership.

AOA

Dr. Arthur H. Wolintz, AOA's councillor and guiding light.

Downstate/Polytechnic Come Together

Rescuer rats. Robots controlled by the twitch of a neuron. Molecular motors. These products and more may some day become commercially available, thanks to a new collaboration between SUNY Downstate and Polytechnic University. Brooklyn's two high-tech giants have joined forces to create new joint degree programs and to share their expertise on research ventures.

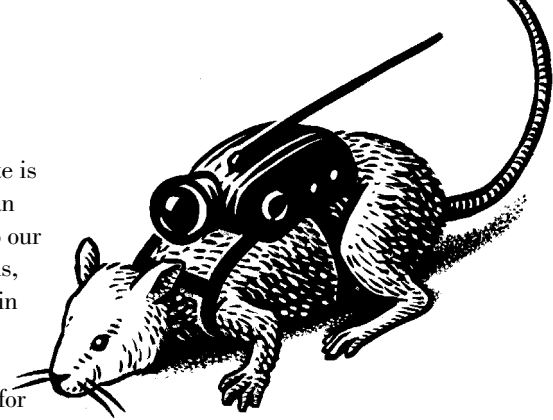
A new master's program is set to debut this fall, with an M.S.

degree in biomedical engineering to be granted by Polytech; down the road, joint bachelor's and Ph.D. programs will be offered. Students will be able to take advantage of Polytechnic's expertise in telemetry, polymers, and microchip sensors and Downstate's strengths in molecular biology and the neurosciences.

Both institutions have plans in the works for "biotech incubators" — facilities that nourish budding technology

companies. Downstate is looking to establish an incubator adjacent to our East Flatbush campus, while Polytechnic is in the early stages of planning its own in Dumbo (an acronym for the area Down Under the Manhattan Bridge Overpass). The pay-off could be big, with interest from venture capitalists and start-up biotech companies already in high gear. Not to mention potential millions to be gained in research grants and licensing rights.

The rescuer rats could be one patentable project. Researchers are envisioning a system in which emergency workers could direct a rat equipped with a tiny video camera to crawl through rubble after a building collapse or earthquake to help in rescue efforts. Developing these programmable rats would involve melding Downstate's research into the hippocampus, navigation, and place cells with



Polytech's wireless technology studies.

An affiliation agreement between the two schools was formally signed in January. Downstate's new partner is the nation's oldest private technology university, founded in 1854, and it is a leader in telecommunications, information science, and technology management. Polytechnic is also credited with originating polymer science.

"In order for biotech to proceed as it should, it needs technological expertise," noted Susan Schwartz-Giblin, Ph.D., dean of the School of Graduate Studies, who worked closely with Polytechnic to shape and bring the affiliation to fruition.



The Polytechnic/Downstate agreement was signed at Brooklyn's Borough Hall. Attending were (l to r): William R. McShane, vice president and dean of engineering and applied sciences, Polytechnic; Polytechnic President David C. Chang, Ph.D.; Brooklyn Borough President Howard Golden; Susan Schwartz-Giblin, Ph.D., dean, School of Graduate Studies, Downstate; Richard Gross, Ph.D., Mark Chair and professor of polymer chemistry, Polytechnic; and SUNY Downstate President John C. LaRosa, M.D.

Downstate Ranks High in Training Minority Physicians

In February, more than 200 undergraduates from colleges throughout the Northeast came to Downstate to learn about the medical school admissions process. It was the first time that the Student National Medical Association — the country's oldest and largest minority medical student association — has held its Annual Premedical Forum on our campus.

Downstate's prominence as a leader in the education of minority physicians is recognized in a report recently issued by the Association of American Medical Colleges. It ranks our College of Medicine tenth nationally in the number of black doctors trained during the

period the report covered, nearly half a century. The report also notes that from 1950 to 1998, 12 schools — ours among them — graduated nearly 30 percent of all minority physicians practicing in the United States. Among medical schools in New York State, ours is first in the number of African-American students currently enrolled.

Our success in training minority doctors is in large measure due to programs that foster an interest in medicine among young African American and minority students. The Early Medical Education Program, for example, prepares undergraduates at six participating CUNY colleges to enter medical school. Nine graduates

of the program have enrolled at Downstate.

The Health Science Academy, a program of the Arthur Ashe Institute for Urban Health, reaches out to younger students at Brooklyn high schools. To date, more than 100 students have graduated from the program, and all are in college or college-



Over 200 students attended the Student National Medical Association's Annual Premedical Forum at Downstate. The organization promotes diversity in medical education. Downstate's Spencer Nabors, COM '02 (standing, far right) was among those providing information and encouragement.

bound, with most majoring in the sciences or premed.

John A. Fallon, M.D., M.B.A., Appointed Senior Vice President for Clinical Affairs

John A. Fallon, M.D., M.B.A., has joined Downstate as senior vice president for clinical affairs. Dr. Fallon is the former founder/CEO of North Shore Health System and executive vice president and chief medical officer of the North Shore Medical Center, both near the Boston area.

Dr. Fallon has broad managerial experience in the physician practice, hospital, and managed-care arenas. He served as chair of Partners Community HealthCare Inc. (PCHI), a physician network of over 1,000 primary-care and 4,000 specialty-care physicians and affiliated hospitals. PCHI is the network of Partners HealthCare System (PHS) founded by the Brigham and Women's Hospital (BWH) and Massachusetts General Hospital (MGH), teaching affiliates of Harvard Medical School. In addition to BWH and MGH, three other community hospitals are part of the Partners HealthCare System.

This is a new position created by President John LaRosa to provide oversight for both clinical care and clinical business management at Downstate. University Hospital of Brooklyn and the Clinical Practice Management Plan (CPMP) will report to Dr. Fallon, who will oversee, coordinate, and integrate clinical care. Dr. Fallon will be working with UHB administrators, nursing staffs, and department chairs, as well as CPMP to strengthen clinical activities both on campus and beyond and to undertake initiatives that enhance overall efficiency and quality of care. These include, for example, developing business plans for new and existing services, reducing length of stay, enhancing revenue collection, and improving customer satisfaction. He will also work to develop an integrated ambulatory system to support University Hospital's outpatient services, including oversight of the three community satellites and the recently opened Dialysis Center on Parkside Avenue. One of his first tasks is to lead the development of the strategic plan for the clinical enterprise.



New Faculty Appointments

Michael E. Zenilman, M.D., Downstate's new chief of surgery, comes to us from Albert Einstein College of Medicine and Montefiore Medical Center, where he served as vice chairman of surgery, chief of the surgical service, and director of the surgical residency program.

A Downstate alumnus who graduated *summa cum laude* in 1984, Dr. Zenilman says that his deep affection for the institution and the community it serves was one of the key reasons he decided to return. He plans to establish a division of gastrointestinal/surgical oncology as well as a division of laparoscopic surgery. Additional long-range plans include a program in geriatric surgery, with links to local nursing homes.

Widely known for his research in gastrointestinal and pancreatic surgery, Dr. Zenilman will continue his work as principal investigator on an NIH-funded study of the physiology of pancreatic regeneration.

Dennis Andrulis, Ph.D., M.P.H., has joined the Department of Preventive Medicine and Community Health as research professor.

Dr. Andrulis is past director of the Office of Urban Populations at the New York Academy of Medicine, where he conducted research and education programs concerning vulnerable populations, their providers and communities. He also directed the New York State Forum for Child Health; conducted a national survey on public hospital systems, managed care, and the treatment of



pregnant and parenting women; and most recently, organized the second national conference on health care for culturally diverse populations. Among his chief interests is the need to identify strategies that will help states and communities develop policies and programs that promote health literacy and cultural competence for residents in urban areas.

Howard A. Crystal, M.D.,

professor of neurology, recently joined the effort to create a center of excellence in Alzheimer's disease treatment and research at Downstate. Formerly professor of neurology at Albert Einstein College of Medicine, Dr. Crystal is a behavioral neurologist specializing in dementia. With a special interest in mild cognitive impairment (MCI), especially as it affects African- and Caribbean-Americans, he will be involved in clinical trials on the use of experimental drugs to halt cognitive impairment. He believes that early treatment may delay the onset of more severe impairment or slow its rate of progression. In addition to clinical work, Dr. Crystal plans to do basic research on the role of brain rhythms, how they change with age, and how they affect thinking.



John Chapin, Ph.D., professor of physiology and pharmacology, is a leader in the emerging field of neurorobotics. Formerly professor of neurobiology and anatomy at the MCP Hahnemann School of Medicine in Philadel-



phia, Dr. Chapin is studying ways to help paralyzed patients regain motor functions by extracting their brain signal commands and directing them to control robotic, prosthetic limbs. In the future, patients may also be taught to shape their brain activity to control external motor devices.

David Desmond, Ph.D.,

assistant professor of clinical neuropsychology, with joint appointments in the



departments of neurology and pathology, comes to us from Columbia University College of Physicians and Surgeons. Dr. Desmond is a leader in neuroepidemiological research focusing on the association between ischemic stroke and dementia. His research suggests that many characteristics and health factors that are more prevalent in our patient population — including stroke, diabetes, limited access to health education, and being of African/Caribbean-American race — increase the risk of dementia. Dr. Desmond's expertise in diagnosing dementia and identifying its probable causes will make him an invaluable member of the team that is being assembled to research and treat cognitive disorders.

William Lytton, M.D.,

formerly at the University of Wisconsin, has joined our faculty as associate professor of physiology and pharmacology, and neurology. Using data derived from rat studies, he



does computational modeling to understand how the brain performs its calculations. Computer simulation, which allows experimental hypotheses to be tested, is being used extensively to improve our understanding of neurological diseases, especially epilepsy and stroke. Dr. Lytton's research centers on normal and abnormal hippocampal circuitry to investigate conditions that regulate memory at the cellular level. He is also studying the role of the thalamus in childhood epilepsy.

Michael A. Weber, M.D.,

professor of medicine and associate dean for clinical investigation, is an expert on



hypertension. Prior to coming here, Dr. Weber was chairman of the Department of Medicine at Brookdale University Hospital and Medical Center.

One of his primary goals at Downstate is to stimulate clinical research and translate basic research into clinical treatments, with special attention to diabetes, heart disease, cancer, and other diseases that are widespread among Brooklyn's African-American and immigrant populations.

Together with other experienced researchers at Downstate, he plans to create a formal training program in clinical research, not only for the purpose of teaching young faculty but also to assist more senior faculty who wish to integrate clinical with basic science research. A course is now being developed, which is intended eventually to become part of a degree-granting program.

UHB's New State-of-the-Art Ambulatory Dialysis Center Opens

In early March, SUNY Downstate celebrated the official opening of its new Dialysis Center, located adjacent to the campus on nearby Parkside Avenue. The spacious, ultra-modern facility is able to meet the needs of every type of dialysis patient. Featuring 20 adult and 4 pediatric stations, as well as home hemodialysis and peritoneal dialysis training, the Dialysis Center is equipped

for both ambulatory patients and those who travel via ambulettes.

The Dialysis Center is part of University Hospital of Brooklyn's long-range strategic plan to further serve community needs and expand access to health care.

Patients or physicians wishing more information should call (718) 703-5900.



SUNY Downstate's new state-of-the-art Dialysis Center.



Downstate's new Dialysis Center opened with a formal ribbon-cutting ceremony that brought friends and well wishers from far and wide. Dr. Willem J. Kolff, inventor of the first artificial kidney machine, did the honors of cutting the ribbon while other looked on. (L to r): Linda Cohen, R.N., assistant director of nursing; Dr. Norma J. Goodwin, founder and president of Health Watch; Dr. Eli Friedman, chief, Renal Division; Dr. Kolff; Dr. Thomas Manis, professor of medicine at SUNY Stony Brook; and Dr. John A. Fallon, senior vice president for clinical affairs.

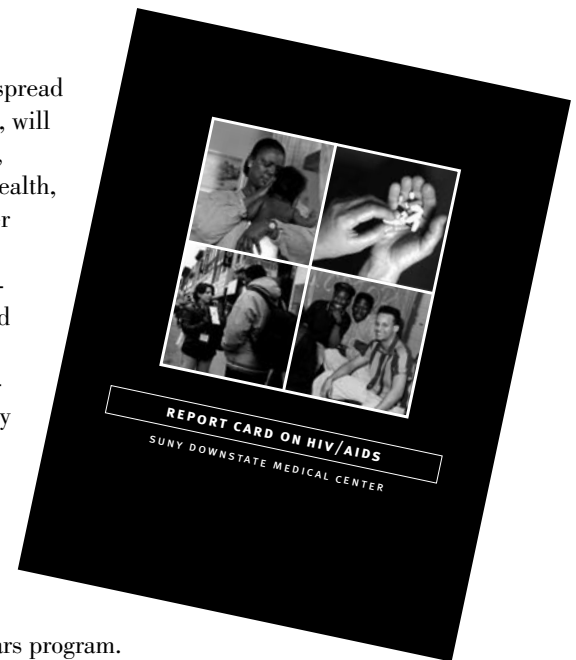
Funding Successes for AIDS Programs

The Borough of Brooklyn has been particularly hard hit by the AIDS epidemic. Brooklynites are 3.5 times more likely to have the disease than their fellow Americans; with women and children particularly vulnerable. Last year, for the first time since health officials began tracking AIDS data, Brooklyn virtually tied Manhattan in the number of newly reported cases. Yet, despite the fact that Brooklyn is at the epicenter of the epidemic, the lion's share of federal funding received by New York City continues to be apportioned to Manhattan agencies.

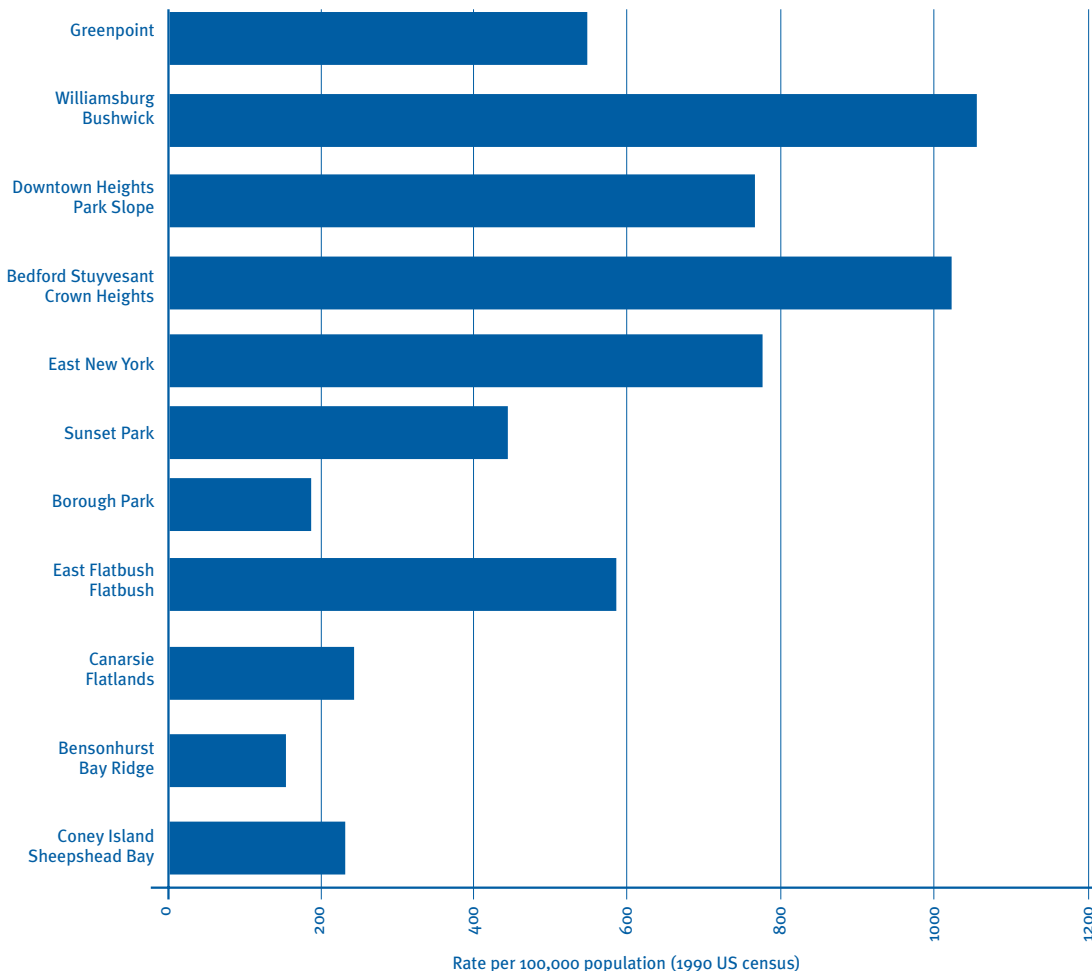
In view of the difficulty of attracting extra funding for Brooklyn, Downstate's HIV Center for Women and Children has done a remarkable job in growing its research, treatment, and prevention services.

In the past year, the center's Special Treatment and Research (STAR) Health Center has attracted close to \$9 million in multiyear grants. Of these, \$2.3 million from the NIH will go toward developing and testing nonvaccine methods of stemming the spread of AIDS, and another \$2.3 million in Ryan White CARE Act Title III expansion

funds (HRSA), spread over three years, will support clinical, social, mental health, dental, and other primary-care services. A four-year study aimed at improving partner notification is backed by \$1.5 million from the CDC. And \$1.25 in state funding provides fellowships for a clinical scholars program.



AIDS IN BROOKLYN'S NEIGHBORHOODS, 1999



In an effort to train health-care professionals to prevent the spread of HIV infection in Central and Eastern Europe, Dr. Jack DeHovitz, director of The HIV Center, has been awarded \$2,373,050 over five years to expand the Fogarty International Center training program.

Dr. DeHovitz believes that "these sources of additional funding will greatly help our efforts to reduce the impact of HIV disease in Brooklyn and around the world."

Note: SUNY Downstate has recently published a "Report Card on HIV/AIDS" in Brooklyn. To obtain a copy, call the Office of Institutional Advancement at 718-270-1176.

No Brooklyn neighborhood is immune to the ravages of AIDS; however, the number of cases varies greatly among the neighborhoods. People living in north and central Brooklyn are far more likely to be living with the disease than those living elsewhere in the borough.