

UNIVERSITY of MARYLAND SCHOOL of MEDICINE



A TOUR OF 200 YEARS OF PUBLIC MEDICAL EDUCATION IN AMERICA



BALTIMORE IN 1807: DISEASE, DEATH AND DAVIDGE

Thomas Jefferson is president and 40,000 people live in Baltimore, making it the young nation's third largest city. The natural harbor provides ideal conditions for communicable diseases, while poor sanitation contributes to outbreaks of cholera, malaria, tuberculosis, diphtheria, typhus and typhoid fever. The depletion theory of medicine prevails, including cupping, purging, blistering and bleeding.

Common medicines are mercury, opium and arsenic.

The legacy of America's oldest public medical school begins on a November evening as a mob of angry citizens gathers outside the Baltimore home of Dr. John Beale Davidge. The Annapolis native is a graduate of the University of Glasgow medical school, where he learned anatomy by dissecting cadavers. The crowd correctly assumes Davidge and his students are doing the same in the private teaching theater behind his home. Dissection may be accepted on the Continent and in Scotland, but Americans will have none of it.

Since the supply of bodies is low, "entrepreneurs" are available to open fresh graves and deliver the recently departed. The going rate is \$20 each.

bicentennial 1807-2007



1807-1857: TRIAL BY FIRE

When the mob ransacks and burns Dr. Davidge's laboratory, the public has little sympathy. However, a handful of university-educated colleagues are appalled and vigorously lobby the Maryland General Assembly to pass legislation establishing a medical college with legal protection. Similar efforts failed twice before, but now the legislature pays attention by chartering the College of Medicine of Maryland with unprecedented authority through a board of regents. One of their first actions is to name Dr. John Beale Davidge dean of the faculty.

1807



1808

1815

1818



Dr. William Gibson

1808 Seven students are admitted to the College of Medicine of Maryland.

1811 Dr. John Crawford, professor of natural history, explains his radical belief in a correlation between insects and human illness. Colleagues and patients shun him and his theory.

War of 1812 begins June 18, 1812

1812 The college is re-chartered as the University of Maryland, thus becoming the first university in the nation founded on a medical school. The faculty provides nearly \$40,000 for construction of the first building, later named for Dr. Davidge. The facility will be placed on the National Register of Historic Places and designated a National Historic Landmark as the oldest medical teaching facility in continuous use in the nation.

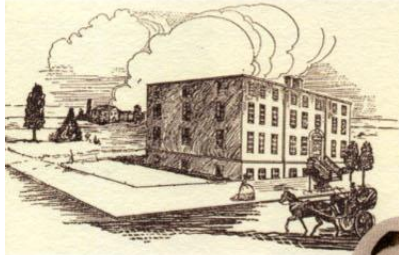
War of 1812 ends December 24, 1814

1815 A medical library opens with 500 volumes purchased from Dr. John Crawford's family.

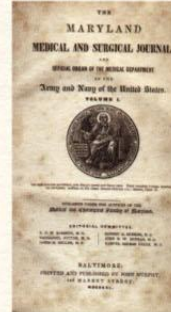
1818 Dr. William Gibson becomes dean. He is the first surgeon in the world to successfully ligate the common iliac artery and perform the first repeat caesarian section, which is particularly remarkable considering antiseptics and anesthesia have not been introduced yet.

1823 The School of Medicine is the first in the nation to build a hospital for clinical instruction. At this time, most schools emphasize classroom training.

1824 Dr. George Frick, lecturer in clinical medicine, publishes America's first treatise on eye disease.



Dr. George Frick



1823

1824



1833



1837

Thomas Jefferson

1833 The school establishes the nation's first medical course in preventive medicine under Dr. Robley Dunglison, physician to presidents Jefferson, Madison, Monroe and Jackson.

1837 Dr. Horace H. Hayden delivers America's first dental lectures. Two years later, he founds the Baltimore College of Dental Surgery, the first of its kind in the world.

1840 The faculty's publication, *The Maryland Medical and Surgical Journal*, is the first official publication adopted by the medical departments of the United States Army and Navy.

1848 The faculty votes to make anatomical dissection compulsory, a first for a U.S. medical school. Gas lamps are installed in Davidge Hall so dissections can be performed in the evening, allowing students to attend daytime lectures.

Civil War begins April 12, 1861

1862 Dr. William A. Hammond, professor of anatomy and physiology, is surgeon general of the U.S. Army and develops the world's first military hospital and medical system.

Civil War ends April 9, 1865

1867 The school establishes the nation's first chair in the combined fields of gynecology and pediatrics.

1869 President Ulysses Grant appoints William Maxwell Wood, class of 1829, the first surgeon general of the U.S. Navy.

1874 Roberts Bartholow, class of 1852, confirms that electrical stimulation of the human cortex on one side stimulates the muscles on the opposite side of the body.

1857-1907: WAR AND OPTIMISM

A divisive war between the states seems imminent, and the medical community fears the conflict will change the school. If students enlist, the drop in enrollment will reduce the state's trained physician population, resulting in dire financial consequences from lost tuition.

The faculty acts quickly in developing a popular course in military surgery. It also offers the hospital's facilities to the government for \$5 per week per soldier, which is \$2 more than the rate for private patients.

By the end of the Civil War, a curriculum shift to specialization attracts talented new students.



Dr. William A. Hammond

1840

1848



1862



1869

President Ulysses Grant

1887 A free lying-in hospital opens near campus through an annual \$2,500 state appropriation. A professor and obstetric demonstrator, plus two residents, are in charge.

1897 A five-story hospital building opens with 190 beds. It is funded by \$20,000 in public contributions and \$70,000 in bonds sold by professors.

Spanish-American War begins Feb. 15 and ends August 15, 1898

1898 Medical student Caleb D. Bradham works part time in a drug store. When his father's business fails, he drops out of school and opens a drug store back home in North Carolina, where he experiments with fountain flavors. One is Brad's Drink, which he re-names Pepsi-Cola.

1898-1900

Henry R. Carter, class of 1879, provides evidence supporting an earlier theory that yellow fever is carried by an insect and is not contagious. A U.S. Army Yellow Fever Commission goes to Cuba in 1900, with Walter Reed in charge and James Carroll, class of 1891, second in command. When Carroll exposes his arm to a laboratory mosquito and is bitten, he contracts the fever but recovers, solving the contagion mystery. His work and the collaboration of colleagues lead to a vaccine in the early 1900's.

1904 The medical school receives \$5,000, the first appropriation from the state legislature.



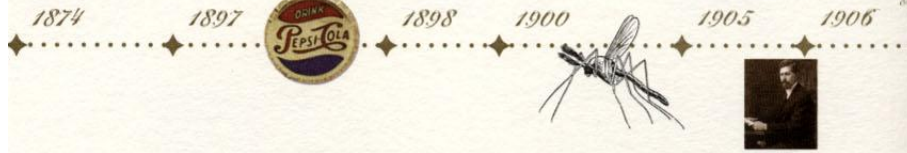
Roberts Bartholow



*Archibald
"Moonlight"
Graham*



Samuel T. Darling



1905 Archibald "Moonlight" Graham graduates. Already a star in the minor leagues, the New York Giants (then a baseball team) call him. Graham is in the field for part of one inning, which is enough to convince him to pursue a medical career. Graham settles in Chisholm, Minn., and practices family medicine the rest of his life. In 1988, Burt Lancaster will play Graham in the movie "Field of Dreams."

1906 Dr. Samuel T. Darling, class of 1903, writes the first clinical and pathological description of disseminated histoplasmosis, a disease with tubercle-like lesions in the lungs, liver, spleen and lymph nodes. For years afterwards, it is known as Darling's Disease.

DEANS OF THE SCHOOL OF MEDICINE

1807-12	DR. JOHN BEALE DAVIDGE
1812-13	DR. NATHANIEL POTTER
1813-14	DR. JOHN BEALE DAVIDGE
1814-15	DR. NATHANIEL POTTER
1816-17	DR. ELISHA DEBUTTS
1818-19	DR. WILLIAM GIBSON
1819-20	DR. RICHARD WILMOT HALL
1820-21	MAXWELL MCDOWELL
1821-22	GRANVILLE SHARP PATTISON
1821-22	DR. JOHN BEALE DAVIDGE
1822-25	DR. ELISHA DEBUTTS
1825-28	MAXWELL MCDOWELL
1828-30	DR. NATHAN RYNO SMITH
1829-31	DR. SAMUEL BAKER
1832-34	DR. ELI GETTINGS
1834-36	DR. ROBLEY DUNGLISON
1836-37	DR. ELI GETTINGS
1837-39	DR. RICHARD WILMOT HALL
1839-40	DR. SAMUEL GEORGE BAKER
1840-41	WILLIAM E.A. AIKIN
1841-42	DR. NATHAN RYNO SMITH
1842-44	DR. SAMUEL CHEW
1844-55	WILLIAM E.A. AIKIN
1855-69	DR. GEORGE W. MILTENBERGER
1869-1874	DR. JULIAN J. CHISOLM
1874-79	DR. SAMUEL CLAGGETT CHEW
1879-86	DR. LOUIS McLANE TIFFANY
1886-89	DR. JACOB EDWIN MICHAEL
1890-93	DR. ISAAC EDMUNSON ATKINSON
1893-96	DR. JACOB EDWIN MICHAEL
1896-97	DR. ROBERT DORSEY COLE
1897-1900	DR. CHARLES WELLMAN MITCHELL
1900-15	DR. ROBERT DORSEY COLE
1916-40	DR. JAMES M. H. ROWLAND
1940-43	DR. H. BOYD WYLIE
1943-46	DR. ROBERT URIE PATTERSON
1946-54	DR. H. BOYD WYLIE
1955-69	DR. WILLIAM SPENCER STONE
1969-73	DR. JOHN H. MOXLEY III
1973-90	DR. JOHN MURRAY DENNIS
1991-2006	DR. DONALD E. WILSON
2006-	DR. E. ALBERT REECE

1907-1957: YEARS OF MOMENTUM

A century after Dr. Davidge's confrontation with the mob outside his anatomy lab, the world seems smaller. German-born scientist Albert Einstein shares headlines with Italian teacher Maria Montessori and the revolutionary Hoover vacuum cleaner.

In addition to medicine, the University of Maryland has programs in law, dentistry, pharmacy, and a training school for nurses. The letters and sciences program is affiliated with St. John's College in Annapolis.

1907

1907



Theodore Roosevelt

1908



1910

1907 By the schools' centennial, completion of a four-year high school program is required for admission, tuition is up to \$570, enrollment is 350, and 64 instructors are on the faculty. They teach anatomy, chemistry, normal histology and embryology, and pathological histology and bacteriology. The *Baltimore American* calls the centennial celebration, "the greatest gathering of scholars and educators that Baltimore has ever witnessed."

1908 A school circular mentions that autopsies are being done with the permission of city hall. Third year students say they can follow a case "from the ward to the autopsy room."

1909 William H. Arthur, class of 1877, is the first commanding officer of Walter Reed Army Hospital in Washington, D.C.

1910 President William Taft selects James J. Richardson, class of 1889, as his personal physician. Richardson earlier served President Theodore Roosevelt in the same capacity and will do the same for President Warren G. Harding.

1916 *Bulletin* publishes Volume I. The alumni publication combines journals of three recently merged medical schools - Maryland, Baltimore Medical College, and College of Physicians and Surgeons. *Bulletin* will be the nation's oldest medical alumni publication.

World War I begins March 25, 1917

1917 University of Maryland Base Hospital Number 42 is created and serves with distinction in France. Physicians, surgeons, nurses and assistants from the school staff the unit for two years.

1918 Women are admitted to the School of Medicine on equal terms with men, primarily because of the shortage of men created by World War I, a public appropriation that will be controversial if half of Maryland's citizens cannot use it, and because women already are excellent students at the schools of dentistry and pharmacy.

World War I ends November 11, 1918

1918 Administrators suspend fall classes because of the

Theresa Ora Snaith



George E. Bennett



Eva F. Dodge



Theodore M. Davis



1916

1923

1925

1927

1928

Spanish Flu, which affects primarily young men and women. The virus kills 600,000 Americans.

1920 The Maryland General Assembly passes an act merging and consolidating the private University of Maryland and the State College of Agriculture, thus forming the state's public university in College Park. The School of Medicine is affiliated with 15 local hospitals.

1923 Theresa Ora Snaith is the first woman to graduate from the medical school. She will spend a lengthy career as a pediatrician in West Virginia.

1925 Eva F. Dodge, class of 1925, is Maryland's first female intern and resident in obstetrics and gynecology. She will spend 50 years as a physician, educator, consultant and public health administrator in eight states, South America, Europe and the Orient.

1927 George E. Bennett, class of 1909, organizes the nation's first rural crippled children's clinic in Lonaconing, Md. The project is the model for clinics throughout the country. He also will

be recognized for treating major league baseball players with bone, tendon, and joint injuries, causing many people to consider him the father of sports medicine.

1928 Theodore M. Davis, class of 1914 and an electrical engineer, invents the electromagnetic switch, permitting cutting current and coagulating current to be used through one electrode. The invention establishes him as the father of modern transurethral surgery and prostatic resections. He will be nominated for a Nobel Prize in 1965 for his contributions to urology.

1938 In his capacity as one of the first Civil Aeronautics Board medical examiners, Francis C. Hertzog, class of 1917, determines pilot Douglas Corrigan is fit to fly. Corrigan will soon earn the nickname "Wrong Way" after his famous flight from New York to Dublin.

World War II begins Sept. 16, 1940

1944 Alice S. Woolley, class of 1930, becomes president of the American Medical Women's Association. Earlier, she addressed Congress in support of a

1957-2007: REFORM, RESEARCH AND RECRUITMENT

As the School of Medicine celebrates its sesquicentennial, federal officials predict that medical cost increases will be higher than elderly citizens can afford. In response, Congress creates Medicare and Medicaid. What's more, the nation's medical schools are not producing enough physicians to keep up with the population boom after World War II.

Roderick E. Charles



1951

John C. Krantz, Jr.



1953



F. Mason Sones, Jr.

1956

1958



bill to allow women physicians in the U.S. Air Force.

1946 When Professor Frederick C. Dye introduces spinal anesthesia during childbirth, the University of Maryland School of Medicine is one of the few institutions in the world using it as standard treatment.

World War II ends Dec. 31, 1946

1949 Paul E. Carliner, class of 1934, is co-developer of Dramamine to combat seasickness.

Korean War begins June 25, 1950

1951 Roderick E. Charles and Donald W. Stewart become the School of Medicine's first African-American students.

1953 Dr. John C. Krantz, Jr., chair of pharmacology from 1932-65, introduces Fluoromar, the first fluorinated anesthetic. His studies of fluorinated organic compounds revolutionize anesthesiology by allowing patients to receive precise concentrations of potent drugs that are not flammable (like ether) and

from which they quickly recover without the harmful side effects of earlier anesthetics.

Korean War ends January 31, 1955

Vietnam Conflict begins Feb. 1, 1955

1956 The University of Maryland School of Medicine makes plans for a two-day 150th anniversary celebration during commencement week, including a commemorative coin.

1958 F. Mason Sones, Jr., class of 1943, discovers that arteries of the human heart can be catheterized and dyes injected safely to photograph their configuration.

1960 The Health Sciences Library opens and consolidates the libraries from the schools of medicine, pharmacy, dentistry, nursing, and psychiatry at a cost of \$1.2 million.

1961 Joseph S. McLaughlin, class of 1956, is professor and head of the division of thoracic and cardiovascular surgery and the first surgeon in the world to treat a traumatic mitral valve rupture with open heart surgery and placcation of the valve.

At the School of Medicine, the incoming class of 1962 is 25 percent larger than the prior year. The faculty implements curriculum changes, research increases, increasing numbers of eminent scientists arrive and the campus undertakes a renewal with \$4 million in federal funds.



1968

Robert O. Hickman

1973



Charles C. Edwards
1979

1967 Col. James B. Nuttall, class of 1939, is named director of the U.S. Air Force's first school of aerospace medicine. The evolving national space program also interests Ursula T. Slager, class of 1952, who wrote the textbook Space Medicine five years earlier as a resource for engineers, physicians and college students.

1968 Robert M. N. Crosby, class of 1943, writes The Waysiders, one of the first volumes on dyslexia.

1968 R Adams Cowley, class of 1944, creates the world's first shock-trauma center based on his combat experiences in France and Germany. He also proves the "Golden Hour" theory that a brief window of opportunity exists during which patients can be saved by specially trained doctors and nurses in surgical settings.

1973 Robert O. Hickman, class of 1957, invents the Hickman catheter to deliver multiple drug regimens to bone marrow transplant patients.

1974 Drs. Richard B. Hornick and Myron M. Levine establish a clinical research center

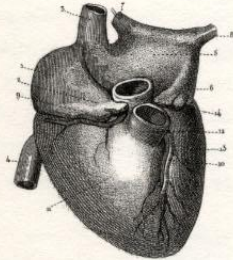
for vaccine development and evaluation in community volunteers. Two years later, under Levine's direction, the University of Maryland Center for Vaccine Development opens. As the first institution of its kind in the world, the center initiates novel vaccine research and trials in several nations.

Vietnam Conflict ends June 4, 1976

1979 Charles C. Edwards, professor and chief of orthopedic surgery and member of the class of 1968, and colleagues introduce adjustable external fixation to treat open fractures and major trauma in North America.

1981 Frederick W. Plugge IV, class of 1957, is commander of the U.S. Air Force Hospital in Wiesbaden Germany, when it receives 52 American hostages released by Iranian militants after 444 days in captivity.

1985 Radiation oncologist John C. Blask, class of 1969, and a small team of physicians, introduce a minimally-invasive technique using brachytherapy to treat



John C. Blask



1985

1987

Kenneth P. Johnson

1993

- prostate cancer. It becomes the standard of treatment.
- 1987 The first use of supported angioplasty to open blocked arteries is performed by Dr. Robert A. Vogel, head of the division of cardiology, and Dr. Steven R. Gundry Jr., in the division of thoracic surgery.
- 1989 The first collaborative plastic surgery training program opens at the University of Maryland and the Johns Hopkins Medical Institutions.

Persian Gulf War begins August 2 and ends February 28, 1990

- 1991 Philip A. Mackowiak, class of 1970 and professor of medicine, shows that 98.6 F, believed for a century to be the standard body temperature, is inaccurate. His research indicates normal temperature is 98.2 F and fluctuates with time of day, age, gender and race.
- 1993 Dr. Kenneth P. Johnson, professor and chair of the Department of Neurology, is a key investigator in a clinical trial leading to FDA approval of Betaseron, the first drug approved specifically to reduce the

number of attacks in MS patients and to delay the course of the disease.

- 1994 Dr. Eve J. Higginbotham becomes the first woman in America to chair a university-based department of ophthalmology.
- 1996 The Institute of Human Virology, headed by Dr. Robert C. Gallo, opens to bring together basic science, clinical research, epidemiology and prevention, animal models, and vaccine studies involving AIDS and other viral diseases.

- 2000 Dr. Carol O. Tacket, professor of medicine, is successful in producing a potato-based vaccine to combat Norwalk Virus, which is spread by contaminated food and water.
- 2000 School of Medicine filmmakers Susan Hannah Hadary and William Whiteford receive an Academy Award® for "King Gimp," a documentary chronicling 14 years in the life of a Baltimore boy with cerebral palsy.

Carol O. Tacket



Angela H. Brodie



Dean E. Albert Reece



*Susan Hannah Kudary
and William Whiteford*



2000

2005

2006

2001 The events of September 11 will impact the School of Medicine for many years to come. Federal funding begins to come in for studies on the potential effects of terrorism on health. Among the awards is a \$42 million grant to lead a regional center of excellence in biodefense and emerging infectious diseases research. Another is a contract to test medications that could treat people exposed to potentially lethal doses of radiation from a nuclear terrorist attack. Dr. Thomas MacVittie, professor of radiation oncology and pathology, heads that \$46 million project. Other studies look into the effectiveness of existing stores of smallpox vaccines to see if they can be diluted to make more doses available, while another evaluates a new anthrax vaccine.

Iraq War Begins March 20, 2003

2004 Dr. Brian Berman, professor and director of the Center for Integrative Medicine, and Dr. Marc Hochberg, professor and head of the division of rheumatology, publish results of the largest randomized trial in acupuncture ever undertaken in the nation.

It shows acupuncture is a safe and effective adjunctive treatment to decrease pain and improve function in patients with osteoarthritis of the knee.

2005 Dr. Angela H. Brodie, professor of pharmacology and experimental therapeutics, is the first woman to receive the Charles F. Kettering Prize in Research. She is recognized for creating the first selective aromatase inhibitor to treat breast cancer patients. The discovery leads to development of a class of drugs to prevent recurrence in postmenopausal women.

2006 E. Albert Reece, MD, PhD, MBA, is named the 30th dean of the University of Maryland School of Medicine. He is a specialist in obstetrics/gynecology and maternal/fetal medicine and an expert on the mechanism of diabetes-induced birth defects.

2007 Genome scientist and microbiologist Dr. Claire Fraser-Liggett is recruited to head the new University of Maryland School of Medicine Institute for Genome Sciences to apply genome sciences to the advancement of human health.

UNIVERSITY *of* MARYLAND SCHOOL *of* MEDICINE



A NATIONAL TREASURE 200 YEARS IN THE MAKING

The institution that became the University of Maryland School of Medicine began in 1807 because only a handful of local men received formal educations prior to practicing medicine. They were so mistrusted by the public that they had to risk their lives to teach eager students.

Two hundred years later, women scientists lead multi-million-dollar research enterprises that improve and extend human life.

The bridge of years between these two milestones is filled with stories of life and death, heroic aspirations, humble accomplishments, and hope for the next generation.

A handful of those stories are represented here.

AMERICA'S OLDEST PUBLIC MEDICAL SCHOOL

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bicentennial 1807-2007