

## THE HISTORY OF NEUROSURGERY AT EMORY UNIVERSITY IN ATLANTA, GEORGIA

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THE DEVELOPMENT OF neurosurgery at Emory University has paralleled the evolution of the science and practice of neurosurgery during the 20th century. This article features those individuals who have influenced and nurtured neurosurgery at Emory. It discusses the contributions of Crawford W. Long and further traces the development of the Emory University School of Medicine and Grady Memorial Hospital. Those individuals who have led neurosurgery at Emory are emphasized. Finally, the current Emory Department of Neurosurgery is featured, including facilities, faculty, and areas of subspecialty expertise.

**KEY WORDS:** Atlanta, Crawford W. Long, Emory University, Georgia, Grady Memorial Hospital, History of neurosurgery

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The continual growth and expansion of Emory University School of Medicine over the past century has fostered the environment needed to take the fledging section of neurosurgery, manned by general surgeons in 1915, and transform it into the multidisciplinary subspecialized department it has become today. As the sole academic neurosurgical center in the most populous metropolitan area in the southeastern United States, Emory has assumed the role of the region's tertiary care center for neurosurgical disease processes. The founding of Emory University and its merger with Georgia's first medical college were only the beginning. Equally essential has been the cast of individuals spanning from the antebellum South to the present day. It has been these individuals and their lasting influences that have made the Department of Neurosurgery at Emory University what it has become today.

### ANTEBELLUM MEDICINE: DR. CRAWFORD W. LONG

Two decades before Confederate cannons took their aim at the Union stronghold of Fort Sumter and ignited the Civil War, a country doctor by the name of Crawford Williamson Long was practicing medicine in the rural countryside of Georgia. Within the first year of starting his practice, this Georgian physician would develop the single most important

innovation in the field of surgery until then and the first major contribution that American medical science made to the world: anesthesia (6, 13, 14).

Crawford W. Long graduated from the University of Georgia in 1834 (*Fig. 1*). He then pursued further medical studies in Lexington, KY, and at the University of Pennsylvania. After an additional 18 months of surgical training in New York, Long started his practice in Georgia.

Now settled and practicing medicine, Long found himself among a circle of friends who were taken with adventuresome novelties of the age. This group of friends took an interest in the ether frolics and laughing gas parties that Long had participated in during his time in Philadelphia. It was during these frolics that Long noted that those who inhaled enough ether vapor "did not feel the least pain" after injuring themselves (14).

In the early spring of 1842, Long approached a patient with two large cysts on the back of his neck who kept postponing surgery for fear of the pain. Long knew this man was no stranger to ether and proposed to him resection of one cyst under the influence of that vapor. This was performed on March 30, 1842. His patient was so taken with the simplicity of the procedure that he returned for removal of the second cyst 2 months later. The following July, he amputated the toe of a boy under influence of ether and subsequently used ether on one or two patients annually thereafter. In December 1849,



**FIGURE 1.** Dr. Crawford W. Long, a quiet country doctor, was the first to discover the effect of ether and to use it in surgery. This marble statue, sculpted by J. Massey Rhind, stands in the National Statuary Hall Collection. It was donated by the state of Georgia in 1926 (15).

he published “An Account of the First Use of Sulfuric Ether by Inhalation as an Anesthetic in Surgical Operations” in the *Southern Medical and Surgical Journal* (2, 6, 9, 13).

The Emory Crawford Long Hospital medical complex commemorates the accomplishments and contributions of Long. The original building was erected in 1908 with the 26-bed Davis-Fischer Sanatorium. In 1931, the hospital was renamed in honor of Dr. Crawford W. Long (Fig. 2).

### ATLANTA MEDICAL COLLEGE AND THE CIVIL WAR

In 1853, a few short years after Crawford Long published his reports on painless surgery, Dr. John Westmoreland requested the Georgia State Legislature to write a charter for a medical college to be founded in Atlanta. In 1854, the first medical school in Georgia, the Atlanta

Medical College, was established on the corner of Butler and Armstrong Streets. This is now the site of Grady Memorial Hospital (see below). The doors, which opened with great promise in 1855 to a class of 78, were prematurely slammed shut in August 1861, 4 months after the start of the Civil War (10). The faculty of the Atlanta Medical College suspended classes and transformed the infant medical college into a Confederate soldier’s hospital. The march of Union forces onto Confederate soil brought about defeats in battle and the evacuation of cities. This in turn provided a steady (and at times



**FIGURE 2.** The original Crawford Long Memorial Hospital in Midtown Atlanta, northern facade.

overwhelming) flow of casualties to the medical college, which was the primary surgical center among the Confederate hospitals in Atlanta. As the war approached its inevitable end, the medical college actually endured months of Sherman’s artillery shelling while caring for both Confederate and Union soldiers. Even after General Sherman’s capture of the city on September 2, 1864, the bombed out Confederate hospital continued with its day-to-day operations (3).

After General Lee surrendered to General Grant at Appomattox in 1865, the unified country faced the daunting task of reconstruction, and the Atlanta Medical College began to rebuild its shelled-out walls to return to the purpose of its original charter. With casualties now ceasing to arrive, the fledgling medical college sought to rededicate itself to medical education. The new foundation for this endeavor would be laid by a series of visionary philanthropists that would ultimately yield Emory University School of Medicine.

### HENRY W. GRADY, GRADY MEMORIAL HOSPITAL, AND THE BIRTH OF EMORY UNIVERSITY SCHOOL OF MEDICINE



**FIGURE 3.** Henry Woodfin Grady (1850–1889), orator and philanthropist.

In 1890, the cornerstone was laid for the first municipal hospital in downtown Atlanta. What would in time become the largest hospital in the southeastern United States was named after a man just 39 years old. Henry Woodfin Grady was born on May 24, 1850, to a middle-income family in Athens, GA (Fig. 3). Grady graduated from the University of Georgia, Athens, in 1868, after the end of the Civil War. In 1879, he became the editor of the *Atlanta*

*Constitution*, the primary Atlanta newspaper of the day. Despite the loss of his father to a Yankee bullet during the Civil War, Grady passionately believed that the future of the South lay in the reconciliation between North and South and black and white. Throughout his short life, he worked tirelessly to this end. A riveting orator, Grady came to national attention with his “New South” speech. He became the spokesman for the New South and championed the industrialization of Georgia and vigorously urged the construction of a municipal hospital in Atlanta for the care of the indigent patient population. Grady died of pneumonia at the age of 39, an exceedingly young age, even in his time. It was said in his obituary that he died “loving a country into peace” (12, 16).

Several tributes and monuments were erected in memory of Grady, but his close friends found none of them to be a suitable memorial to the man Henry Grady was in life. The decision was then made to realize the vision that Grady had of a municipal hospital. The original cornerstone for a hospital was laid 1



**FIGURE 4.** *The original Grady Memorial Hospital as it stood in 1892. The building was located on Butler Street, across from the Atlanta College of Physician and Surgeons. It is on the registry of National Historic Buildings and continues in an administrative capacity today.*

year after Grady's death, on December 23, 1890, within one city block of the recovering Atlanta Medical College. The building was completed on May 24, 1892, and received its first patient on June 1 of that same year. In the hospital, there were 100 beds for indigent patients and 10 beds for private patients. As dictated by the laws of the time, the wards were segregated into black and white. There was one operating room with an amphitheater of 100 seats (*Fig. 4*). The stage was now set for the fusion of medical communities in Atlanta (12).

## EMORY UNIVERSITY SCHOOL OF MEDICINE

Several blocks away from this new hospital, medical schools were attempting to adapt themselves to the constantly changing arena of medical education in the United States. During the latter part of the 19th and the early part of the 20th centuries, several medical schools developed in Atlanta. They were of varied quality and repeatedly merged, split, and merged again. But in 1913, challenges arose for the medical schools when Abraham Flexner issued his now famous report recommending that all United States medical schools be affiliated with accredited universities to raise standards and maintain quality (7). At the same time, the American Medical Association Council on Medical Education was elevating standards for medical schools. This prompted the administrators of the newly reformed Atlanta Medical College to search for a university affiliation to comply with the Flexner report or risk losing their charter. W.S. Elkin, the Dean of Atlanta Medical College in 1913, did not have to look far (10).

### Emory and Coca-Cola

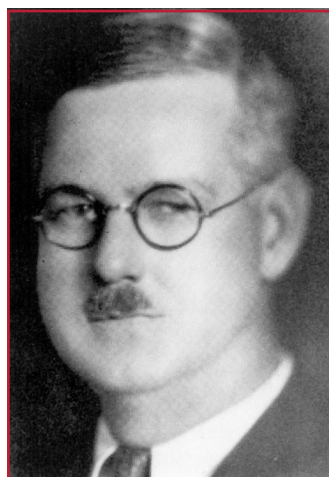
Asa Candler, the owner of the Coca-Cola Company and a devout Methodist, sought to establish a Methodist university in Atlanta. In 1915, Candler issued what came to be known as the "million dollar letter," in which he promised 75 wooded acres in Druid Hills (a suburb of Atlanta) as the location for the proposed university and the money to fund it. Thus, the

small college in Oxford was moved to Atlanta to become Emory University, and the Atlanta Medical College became affiliated with the university, thereby becoming Emory University School of Medicine (1). By 1917, the first- and second-year medical students were moved to the main Emory campus and the third- and fourth-year students were walking the wards at Grady Memorial Hospital. Thus, Grady and Emory began to walk hand in hand, a relationship that continues to this day (10, 16).

## NEUROSURGERY IN ATLANTA AND AT EMORY DURING THE FIRST HALF OF THE 20TH CENTURY

During the early part of the century, much of the neurosurgical work at Emory was done by general surgeons who had formal training in the care of head injury. They had knowledge of elevated intracranial pressure, the suspicion of subdural hematomas, and the capability to place burr holes. The World War I experience provided surgeons with the capacity to acquire extensive experience with head and peripheral nerve trauma. On their return from the war, these surgeons continued their interest in surgery on the central nervous system. Neurosurgery became an accepted specialty through the efforts of a number of leaders headed by the renowned Harvey Cushing. The vital contribution was the recognition of the fundamental approach in gaining knowledge in basic neurology, neurophysiology, pathology, and anatomy. Emory University School of Medicine had the various components to facilitate this, and Charles E. Dowman, Sr. became the first neurosurgical faculty member at Emory.

### Charles E. Dowman, Sr. (1882–1931)



**FIGURE 5.** *Charles Edward Dowman, Sr. (1882–1931) was the first professor of neurosurgery at Emory University and founding member of the Society of Neurological Surgeons.*

Charles E. Dowman (*Fig. 5*) completed his undergraduate studies at Emory College and then traveled to Johns Hopkins for medical school, where he was heavily influenced by Harvey Cushing. As was common in that day, Dowman sought further study abroad, first in Germany and then as a clinical clerk at the National Hospital Queens Square under Sir Victor Horsley (8).

On his return to the United States, Dowman settled in Birmingham, AL, to begin his practice of general surgery. There he became a professor of pathology at Birmingham Medical College in 1911 and was subsequently elected an associate in surgery at the University of Alabama in 1913.



That same year, while performing an autopsy, he acquired an infection of his right hand, which required extended convalescence. During this time, he decided to reunite with his previous mentor, Harvey Cushing, who was now at Peter Bent Brigham Hospital in Boston. Dowman spent 6 months with Cushing (with whom he would maintain a lifelong friendship) before returning to his surgical practice with a new focus.

By 1915, the full effects of the Flexner report were realized in Atlanta medical training. Emory College had evolved into a university and had transformed Atlanta Medical College into Emory University School of Medicine along the way. The need for full-time staff drew several physicians from several specialties to the area. The timing had been perfect for Dowman, now recovered from his infection and prepared to focus his surgical efforts on the central nervous system. He left Birmingham in 1915 and was appointed an instructor of surgery at Emory University School of Medicine (10).

However, before Dowman could establish much of a surgical practice, World War I began, and he went to the front as a medical officer. He became chief of a neurosurgical team in a mobile hospital unit that was cited for its work in the St. Michiel and Argonne offensives. Dowman's primary efforts were directed at repairing cranial defects and peripheral nerves. With skills sharpened by his experience on the battlefield, Dowman returned to Atlanta in 1919 and limited his practice exclusively to neurosurgery.

In time, he became professor and the first chief of neurosurgery at Emory and over the years contributed substantially to academic neurosurgery in Atlanta. He founded a neurosurgical clinic at Scottish Rite Hospital, where he worked unsuccessfully on the treatment of spasticity of cerebral palsy, established a pathology laboratory in the Steiner Clinic building on the Grady Memorial Hospital campus to categorize brain tumors according to the Bailey and Cushing classification system, and became one of the 11 founding members of the Society of Neurological Surgeons. When the Society met in Atlanta in 1930, Dowman entertained his guests with a brachial plexus exploration.

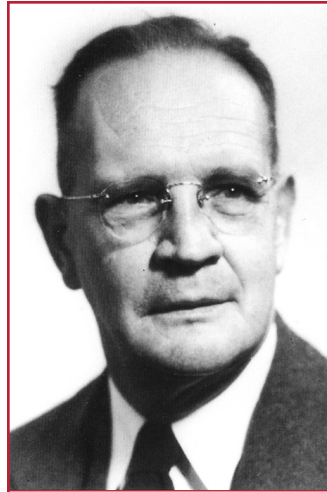
His contributions to the literature were also notable, including a series of 100 brain tumors operated on consecutively, the first description of thrombosis of the rolandic vein, and a novel approach for dealing with intracranial abscesses (4, 5).

For reasons that are not entirely clear, Dowman left Emory in 1924 and continued his neurosurgical practice at a community hospital in Atlanta. Tragically, Dowman was diagnosed with streptococcal sepsis in 1931 and died at the age of 49 before fulfilling his dream of a neurological institute.

Before his untimely death, Dowman had already laid the foundation for the next generation of neurosurgeons at Emory by developing interest in the field not only in his son, Charles Dowman, Jr., but in a young man by the name of Edgar F. Fincher.

### Edgar F. Fincher (1900–1969)

Edgar F. Fincher (*Fig. 6*) completed his medical degree at Emory in 1925, followed by an internship at Piedmont Hospital under the watchful eye of his mentor, Dowman, who was now



**FIGURE 6.** Edgar F. Fincher (1900–1969).

in private practice at that hospital. On completion of his internship, Dowman arranged for Fincher to train with Alfred Adson at the Mayo Clinic and then with Ernest Sachs at Washington University, and finally with his good friend, Harvey Cushing, who by now was close to retirement. Having completed perhaps the most extensive training available for neurosurgery at the time, Fincher returned to Atlanta and joined Dowman in private practice in 1930 (11). With Dowman's untimely death within a year of his arrival, Fincher assumed responsibilities of a

busy neurosurgical practice at a very young age. Despite this, he became a volunteer member of the Emory faculty in 1932 and became a full-time member of the Department of Surgery and chief of the neurosurgical service in 1944.

In 1947, a formal neurosurgery residency training program commenced at Emory in the Veterans Administration Hospital in Chamblee, GA, under the direction of George Perret. Within a year, Fincher developed the neurosurgery residency at Emory University Hospital and Grady Memorial Hospital, with the assistance of Homer Swanson. This would become the nucleus of the current training program at Emory University Affiliated Hospitals (10).

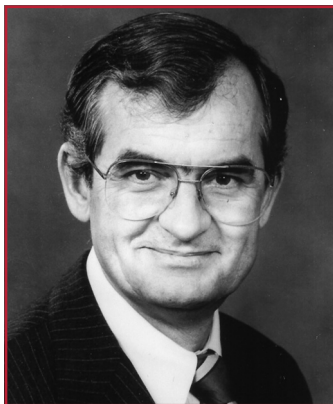
For 28 years, Fincher served as the section leader of neurosurgery, training two generations of neurosurgeons who have subsequently continued their practice throughout Georgia and the United States (*Table 1*). His supporting cast of Homer Swanson, George Gish, Fleming Jolley, and Robert Sears and later Ellis Keener and Dale Richardson were instrumental in the development of the neurosurgery program at Emory and especially the residency program. Fincher was a charter member of the Harvey Cushing Society and in 1944 served as its president. He also became a member of the Society of Neurological Surgeons and served as its president. After nearly three decades of instructing residents in neurosurgery, Fincher retired in 1968 because of progressively worsening medical problems.

After Fincher's retirement and death, Robert Sears served briefly as the section chief. The quality and morale of the neurosurgical training program deteriorated to the point that it was put on probation by the boards. W. Dean Warren, who had become Chairman of the Department of Surgery at the Emory Clinic, recognized the need for a new beginning. He asked Herbert Karp, the chief of neurology at the time, to begin a national search for a new section leader for neurosurgery. Karp contacted a colleague whom he knew well from his residency at Duke, George T. Tindall.

**TABLE 1. Neurosurgery residents trained at Emory from 1949 to 2007<sup>a</sup>**

Pre-1949 Gordon Strewler John C. Mc Nerney Clinton W. Morgan, Jr. Ashley Bird Harvey Ammerman William Warren Fred Boykin Homer Swanson (Fellow) Upton Clary	1972–1976 Michael T. Fleming	1995–1996 Kamran Sahrakar
1949–1950 George R. Gish, Jr.	1973–1977 John M. Patton C. Babson Fresh	1990–1996 David W. Barnett
1950–1951 Donald S. Bickers	1974–1978 Andrew D. Parent C. Scott McLanahan	1989–1995 Kevin L. Boyer Mark E. Harris
1953–1954 Fleming Jolley	1976–1980 Scott M. McCloskey John F. Raggio	1991–1997 C. Michael Cawley Michael A. Morone
1956–1957 Joseph Barnett	1977–1980 Mary M. Johnson	1992–1998 George J. Martin Cargill H. Alleyne
1957–1958 Charles Usher, Jr.	1977–1981 George S. Stefanis	1993–1999 Roger H. Frankel
1958–1959 Dale Richardson	1978–1982 Suzie C. Tindall	1993–2000 Karl D. Schultz, Jr.
1961–1962 Louis G. Guerrieri	1978–1983 Lawrence B. Schlacter Miguel A. Faria, Jr.	1994–2000 Stephen C. Houston Alan S. Waitze
1963–1964 Stephen Genest	1979–1985 Daniel L. Barrow	1995–2001 Kimberly T. Bingaman Matthew T. Mayr
1964–1965 Daniel Paysinger	1981–1986 David B. Kee	1996–2002 Daniel Suh Gregory Olavarria
1965–1966 Edward Robinson	1982–1987 Massimo S. Fiandaca	1997–2003 Prithvi Narayan
1966–1967 Benjamin A. Dvorak	1983–1988 Antonio R. Prats Kevin M. Sweeney Harold J. Colbassani	1999–2003 Gordan Tang
1967–1968 Grover Anderson	1984–1989 Kenneth W. Smith	1998–2004 Bryan B. Barnes Patrick R. Tomak
1968–1969 Harvey Wachsmann	1985–1990 Karin S. Bierbrauer Carl J. Herring Arthur M. Johnson	1999–2005 Jonathan Zhang Jonathan Hall
1969–1970 Cliff Cannon	1986–1991 Eric J. Woodard	2000–2006 Alexander Poisik Franklin Lin
1970–1971 Stephen Klein	1986–1992 Christopher E. Clare Javier Garcia-Bengochea	2002–2007 Michele Johnson
1970–1973 Joseph P. Williams	1987–1993 Andrew Reisner Nelson M. Oyesiku	2002–2008 Jeremy Ciporen
1971–1974 Walter M. Boehm	1988–1994 Michael R. Gallagher Ali F. Krisht	2003–2008 Luis M. Tumialán
1972–1975 Allan J. Korsower		

<sup>a</sup> A residency was established at Lawson Veterans Administration Hospital from 1946 to 1951 before a residency was established at Emory University Hospital. These were subsequently merged into the residency of the Emory University Affiliated Hospitals. Eighty-three residents have completed their neurosurgery training at Emory University School of Medicine.

**George T. Tindall (Born 1928)**

**FIGURE 7.** George T. Tindall, the first Chairman of the Department of Neurosurgery.

George T. Tindall became Chairman of the Division of Neurosurgery in 1973 and the first chairman of the Department of Neurosurgery in 1991 (Fig. 7). Born and raised in Magee, MS, he completed his undergraduate studies at the University of Mississippi and his medical school and surgical internship at Johns Hopkins. After fulfilling his military service as a general medical officer in the United States Air Force from 1951 to 1953, he completed his neurosurgical training at Duke University Medical Center in

1961 under Barnes Woodall and Guy Odom. He remained on the neurosurgical faculty at Duke before moving to Galveston, TX, to serve as Chief of the Division of Neurosurgery at the University of Texas Medical Branch in 1968.

He arrived at Emory to become Professor and Chairman of the Division of Neurosurgery in Dean Warren's surgery department in July 1973. Mark O'Brien and Fleming Jolley were the only two faculty members in the division at Emory at the time. O'Brien subspecialized in pediatric neurosurgery and would remain at Emory in charge of the pediatric neurosurgical service until 2003. Jolley would soon move to Brunswick, GA, to practice neurosurgery on a limited basis.

Tindall hired Alan Fleischer, who had trained with Joseph Ransahoff in New York. Alan was a technically gifted surgeon and a prolific writer. He spent a good deal of time at Grady Hospital working on head injury problems and also began to take over the neurovascular cases. He and Fleischer introduced the use of the operating microscope in the system. Tindall brought one resident with him from Galveston and was able to recruit several more promising men into the program. He also began to help other departments look for talented people who might enhance the neurosurgical endeavor. James Hoffman became the senior neuroradiologist, and Yoshio Takei headed neuropathology.

Tindall sought a subspecialty area to pursue at Emory. He visited Donald Becker in Virginia and observed a transsphenoidal removal of a pituitary tumor. On his return to Emory, he launched into transsphenoidal surgery with vigor. He performed the first transsphenoidal procedure at Emory University Hospital.

Tindall also went to the laboratory and established a bond with James D. Neill in physiology. Together they studied pituitary and hypophyseal function by performing surgery using transsphenoidal or transpalatal approaches to the pituitary in monkeys, sectioning the stalk and collecting stalk blood during various endocrinological manipulations. This work and an enlarging clinical pituitary series resulted in numerous publica-

tions. By the end of his career, Tindall had performed more than 1500 transsphenoidal procedures.

During his career, he authored or coauthored more than 150 articles in peer-reviewed publications, more than 60 book chapters, and three books (two on the pituitary gland and one textbook on neurosurgery.) He edited two volumes of *Clinical Neurosurgery* and founded the publication for continuing postgraduate education in neurosurgery, *Contemporary Neurosurgery*, which he edited for more than 10 years.

In 1978, the neurosurgical residency program was lengthened from 4 to 5 years. In 1984, an Emory neurosurgical service was begun at Crawford W. Long Hospital. Over the years, many excellent faculty members were recruited who have moved on to other opportunities. Among them were Nettleton Payne, James H. Wood, Roy A.E. Bakay, Suzie Tindall, Austin Colohan, and Regis Haid.

During his career, George Tindall trained more than 45 neurosurgical residents. As his program gained in size, financial stability, and national reputation, he began to lobby for more autonomy for neurosurgery. In July 1991, departmental status was granted to neurosurgery within the Emory University School of Medicine, and he became Professor and Chairman of the Department of Neurosurgery. He served as president of the American Association of Neurological Surgeons, the Congress of Neurological Surgeons, the Society of University Neurosurgeons, the Southern Neurosurgical Society, and the Georgia Neurosurgical Society.

During his 22 years as chairman, Dr. Tindall's major contributions included his work in pituitary physiology and the development of transsphenoidal surgery, outlining the surgical results in one of the largest series ever published. He elevated the prestige of the neurosurgical program at Emory and assimilated an excellent and diversified faculty, and his efforts eventually resulted in departmental status for neurosurgery at Emory.

**Daniel L. Barrow (Born 1955)**

Daniel L. Barrow succeeded George Tindall in 1995 as the



**FIGURE 8.** Daniel L. Barrow. Current MBNA/Bowman Professor and Chairman of the Department of Neurosurgery.

MBNA/Bowman Professor and Chairman of the Department of Neurosurgery (Fig. 8). A graduate of Westminster College in Fulton, MO, Dr. Barrow completed his medical studies at Southern Illinois University School of Medicine before arriving at Emory to begin his neurosurgical training under Dr. Tindall in 1979. Dr. Barrow completed his residency in 1985 and remained on the faculty at Emory. Following a neurovascular fellowship at the Mayo Clinic with Thoralf Sundt and David Piepgras and an additional experience at the Barrow





**FIGURE 9.** A, *Emory University Hospital.* B, *Winship Cancer Institute.*

Neurological Institute with Robert Spetzler, he returned to Atlanta and joined the neurosurgical faculty. From the beginning, Barrow's main interests were in neurovascular surgery, and he began to accumulate experience with vascular neurosurgical cases, authoring numerous articles on vascular neurosurgical topics. He became Deputy Chief of Neurosurgery at Grady Memorial Hospital in 1989, became an associate professor in 1990, and then vice chairman of the department in 1991 before being selected to succeed Dr. Tindall in 1995 as Chairman. He has served in a number of leadership positions, including Secretary and President of the Congress of Neurological Surgeons, President of the Georgia Neurosurgical Society, Vice President of the Academy of Neurological Surgeons, and Director and Secretary of the American Board of Neurological Surgery.

Barrow's response to the pressures and economic challenges of the current neurosurgical environment has been to sub-specialize even further and to develop specialized centers for treatment of specific neurosurgical problems. In response to both the marked increase in volume of subarachnoid hemorrhage patients arriving at Emory and the continually advancing treatment modalities for vascular pathology, the Emory Stroke Center was founded in 1995. With the philosophy that the complexities of subarachnoid hemorrhage patients are best managed in a multidisciplinary manner, Barrow established a ded-

icated intensive care unit for neurosurgical patients, recruited neurological intensive care physicians, and developed an extensive neuroendovascular program. Today, admissions to the Emory Stroke Center exceed 300 ruptured aneurysms annually in addition to electively managed unruptured aneurysms, arteriovenous malformations, cavernous malformations, and dural fistulae. The treatment modalities selected for these patients is approached in a multidisciplinary manner made possible by the assembly of neurosurgeons, interventional neuroradiologists, and neurointensivists.

### CURRENT FACILITIES

Emory University Hospital initially stood in downtown Atlanta as Wesley Memorial Hospital constructed in 1904 with 50 beds. Having quickly outgrown those facilities, it was moved to its current site in 1922. The original 275-bed facility was constructed on the Emory University Campus. Subsequent additions and expansions have yielded the current 587-bed acute care teaching facility (*Fig. 9A*). The campus is home to both the



**FIGURE 10.** *The new expansion to Emory Crawford Long Hospital, southern facade.*



**FIGURE 11.** *Grady Memorial Hospital.*

**TABLE 2. The current neurosurgical faculty at Emory University Hospital and affiliated hospitals**

**Current Neurosurgery Faculty**

*Daniel L. Barrow, M.D.*  
*MBNA/Bowman Professor and Chairman*  
*Director, Emory Stroke Center*  
*Cerebrovascular and cranial base surgery*

*Nelson M. Oyesiku, M.D., Ph.D.*  
*Lerner Professor and Vice Chairman*  
*Director, Molecular Neurosurgery and Biotechnology Laboratory*  
*Program Director, Neurosurgery Residency Program*  
*Neuroendocrine and neuro-oncology*

*Jacques Dion, M.D.*  
*Professor, Departments of Neurosurgery and Radiology*  
*Director, Interventional Neuroradiology Fellowship*  
*Interventional neuroradiology*

*Jeffery J. Olson, M.D.*  
*Professor*  
*Director, Translational Neuro-oncology Laboratory*  
*Neuro-oncology and cranial base surgery*

*Gerald E. Rodts, M.D.*  
*Professor of Neurosurgery and Orthopaedics*  
*Chief of Service, Crawford Long Hospital*  
*Director, Neurosurgery Spine Fellowship*  
*Spinal surgery*

*C. Michael Cawley, M.D.*  
*Associate Professor*  
*Director, Cerebrovascular Surgery Fellowship Program*  
*Cerebrovascular and interventional neuroradiology*

*William Benedict, M.D.*  
*Assistant Professor*  
*General neurosurgery*

*Nicholas M. Boulis, M.D.*  
*Assistant Professor*  
*Functional and stereotactic, peripheral nerve, pain*

*Jane L. Gilmore, M.D.*  
*Assistant Professor, Departments of Neurosurgery and Neurology*  
*Division of Neurointensive care*  
*Neurocritical Care*

*Robert E. Gross, M.D., Ph.D.*  
*Assistant Professor*  
*Functional and stereotactic*

*Sanjay K. Gupta, M.D.*  
*Assistant Professor*  
*General neurosurgery, trauma*

*Costas Hadjipanayas, M.D., Ph.D.*  
*Assistant Professor*  
*Neuro-oncology*

*Odette Harris, M.D., M.P.H.*  
*Assistant Professor*  
*General neurosurgery, trauma*

**TABLE 2. Continued**

*Franklin Lin, M.D.*  
*Assistant Professor*  
*General neurosurgery*

*Owen Samuels, M.D.*  
*Assistant Professor, Departments of Neurosurgery and Neurology*  
*Director, Division of Neurointensive Care*  
*Director, Neuroscience Critical Care and Stroke Units*  
*Neurocritical care*

*Frank Tong, M.D.*  
*Assistant Professor, Departments of Neurosurgery and Radiology*  
*Interventional neuroradiology*

*Wendy Wright, M.D.*  
*Assistant Professor, Departments of Neurosurgery and Neurology*  
*Division of Neurointensive Care*  
*Neurocritical care*

**Basic Research**

*Erwin Van Meir, Ph.D.*  
*Professor*  
*Director, Laboratory for Molecular Neuro-Oncology*

*Claire-Anne Gutekunst, Ph.D.*  
*Assistant Professor*

*Enrique Torre, Ph.D.*  
*Assistant Professor*

**Pediatric Neurosurgery**

*Roger J. Hudgins, M.D.*  
*Clinical Professor*

*William R. Boydston, M.D., Ph.D.*  
*Clinical Assistant Professor*

*Andrew Reisner, M.D.*  
*Clinical Assistant Professor*

*David Wrubel, M.D.*  
*Clinical Assistant Professor*

*Barunashish Brahma, M.D.*  
*Clinical Instructor*

Emory Stroke Center and Winship Cancer Institute (Fig. 9B). Emory University Hospital remains the main center for neurovascular, neuro-oncological, and functional neurosurgery. It is the primary site for neurosurgery resident training. Egleston Children’s Hospital and Scottish Rite Children’s Hospital serve as the primary sites for the pediatric neurosurgery experience.

Emory Crawford Long Hospital evolved from a 26-bed sanatorium in 1908 to a 583-bed hospital today located in Midtown Atlanta, a tribute to the local father of anesthesia (Fig. 10). It remains the site where all complex spinal surgeries are conducted in addition to a growing neuro-oncology service. Only blocks away from Crawford Long Hospital stands the largest



hospital in the southeastern United States, the monolithic 1100-bed Grady Memorial Hospital and the birthplace of Emory University School of Medicine (Fig. 11). Grady Memorial Hospital serves as the primary site for the neurotrauma experience for residents in addition to rich clinical experience caring for the underserved in Georgia. Finally, to address the need for additional comprehensive neurosurgical care in the greater metropolitan Atlanta area, Emory neurosurgery has expanded its faculty to Kennestone Hospital in Marietta, GA.

## EMORY NEUROSURGERY IN THE NEW MILLENIUM

Today, the Department of Neurosurgery at Emory University School of Medicine ranks among the nation's leading centers for neurosurgical patient care, teaching, and research. The most advanced practices and equipment in the southeast are used to achieve optimum care for patients with all aspects of neurosurgical illness. There is a large and diverse neurosurgical faculty with expertise in all subspecialty areas (Table 2). Unprecedented growth in research and clinical facilities during the past few years and a rich tradition of neurosurgical care ensure the promise for even greater service and accomplishments. Emory's Department of Neurosurgery is a vital collaboration where exemplary patient care services, rigorous research activities, and cutting-edge technology combine in an academically challenging environment to create a world-class referral center for neurological disease.

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## COMMENTS

In a town that is best known for *Gone with the Wind*, Coca-Cola, and CNN, Emory qualifies as a jewel in the Southern crown. It must be a source of immense pride to John Wesley that a university named after his Methodist acolyte would serve posterity that well. Ironically, Margaret Mitchell was killed in a motor vehicle accident at age 49; otherwise, perhaps the sequel to her book may have started at Grady Memorial Hospital! Tumialan et al. have given us a rich description of the history of neurosurgery at Emory University and the iconic pantheon that made it a neurosurgical *tour de force*.

The Civil War was a defining moment for the South, and the fact that the precursor for Emory's medical center would start a few years before the war, only to be shut down to take care of both the Confederate and Union soldiers and survive Sherman's relentless bombardment, is a tribute to its strong foundation. Clearly, Emory has been part of the "new South," and Crawford Long's introduction of anesthesia played a pivotal role in the development of the surgical sciences.

On the other hand, William Henry Hudson was almost an itinerant monk if not an itinerant neurosurgeon. In an era during which the medical industrial complex inundates us with different drills, here was a man who designed a drill bit that stood the test of time. A hospital director at our institution, Louisiana State University Health Sciences Center-Shreveport, who was at Emory in the 1950s fondly remembers Dr. Edgar F. Fincher's legendary dedication, compulsiveness, and attention to detail. These and the present day leaders had an enormous impact on neurosurgery, Atlanta, and the South. As the bard from Mississippi, William Faulkner, reminds us ". . . the South is a place where the past is never dead, it isn't even past." Southern tales, especially neurosurgical ones, make the quotidian humdrum of neurosurgery much more interesting.

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Tumialan et al. treat us to a whirlwind tour of the evolution of neurosurgery in Atlanta, Georgia. As is so frequently the case in such synopses, the strength of character of those who were the foundation of modern day neurosurgery at Emory University is not made obvious to the reader. Crawford Long did not take a Stanley Kaplan course to pave his way into a tailored medical school curriculum. He gleaned medical knowledge where he could and then supplemented his education with astute observations. How many doctors participated in ether frolics, but missed Long's insight into the use of ether in surgery? Edgar Fincher traveled to Rochester, MN; St. Louis, MO; and Boston, MA to gain the tools he needed to practice neurosurgery. His education beyond that was gleaned from his own experience, meetings of the Society of Neurosurgeons, and the rare neurosurgical articles that appeared in *Surgery, Obstetrics and Gynecology*, and *Annals of Surgery*. The knowledge underlying his practice of neurosurgery was not easy to come by. One can only wonder at the working schedule, working conditions, and dedication of the physicians and students that staffed the Atlanta Medical College during General Sherman's Civil War siege. Reading of such physicians should make the readers of **NEUROSURGERY** proud of their medical heritage.

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