

## Medicine and the city

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A bas-relief panel adorns the Hutchinson Memorial Medical Building. (Photo by Sally Asher)

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The seven young doctors—all under the age of 26—who created the medical school that would become Tulane University saw potential in New Orleans.

From its start, nearly two centuries ago, the fate of Tulane University has been inexorably intertwined with the fate of the city it called home. That feeling of

interconnectedness held true, even as Tulane University grew from a small medical school holding classes in professors' homes to a full-fledged international university that's now that city's largest employer.

"The Tulane University School of Medicine has been a prominent part of most of the history of New Orleans, contributing significantly to the health and economy of the region," said Dr. L. Lee Hamm, dean of the School of Medicine, who has taught at the school since 1992.

Today, on the eve of the city's tricentennial, that school-city bond may be tighter than it's ever been.

While taking care of the people of New Orleans has always been one of Tulane's missions, Hamm said, the medical school has stepped up its commitment to the city since Hurricane Katrina. As a result, Tulane helped set up a new network of community clinics after Katrina, and today Tulane students, residents and faculty volunteer widely to aid the underserved.

At the time of the school's founding, in 1834, New Orleans was the biggest city west of the Appalachian Mountains. Its population had tripled in the seven years after the 1803 Louisiana Purchase and was still climbing rapidly, as more Americans poured into the city.

The booming city was rife with dangers. Many seamen suffered grave injuries at its bustling international port. And a few years earlier, not far from the French Quarter, the workers digging the New Basin Canal were dying of cholera, malaria and yellow fever at startling rates—more than 8,000 would die by the time the waterway was completed.

The group of young physicians saw the city's frequent injuries and swampy pestilence as a perfect laboratory for surgeons and medical students that was superior to other cities. "(A)n awareness of the peculiar disease[s] which prevail in this part of the Union cannot be made in Cincinnati and Philadelphia," the doctors wrote in a notice published on the front page of *The New Orleans Bee* newspaper in September 1834. Through this notice, the physicians announced their decision to found a new medical school, which they called the Medical College of Louisiana.

There were a few other advantages to their chosen location, the doctors wrote, including low rent, with student lodging that came to roughly \$25 a month, and

ready access to thousands of patients at the city's Charity Hospital.

Because the oldest of the school's founding physicians was only 26, their notice in the Bee struck a youthfully optimistic tone, predicting their work would spur a local renaissance. "It will cause population to increase, agriculture to yield additional profits, trade and commerce to advance rapidly among us. In short, its operation will ... put New Orleans in a short time on an equal footing in medical knowledge with New York and Philadelphia," they wrote.

In some ways, their wildest dreams have materialized. The medical school's first class was made up of 11 men. Today, the school's number of yearly applicants has topped 11,000.

## **INFECTIOUS DISEASE BREAKTHROUGHS**

In 1848, the school that would be named Tulane temporarily became the Medical Department of the University of Louisiana. That year, for a notice placed in the Daily Picayune, school administrators shifted their original focus, downplaying the disease angle and emphasizing the city's affordability.

"For the correction of false statements, it is proper to mention that the extremes of boarding in this city are much reduced (and that) the epidemic, yellow fever, never prevails after the first week in November," the notice read.

It was a resolve to stanch yellow fever in New Orleans that created one of the school's first medical-research superstars. To adhere to the school's larger mission, Dr. John Riddell also served on the city's sanitation committee. But Riddell's main job was chairing the college's chemistry department.

In 1852, Riddell had developed the first binocular microscope that allowed viewing through a single lens, to test his theory that yellow fever was caused by a bloodborne pathogen. Using a microscope, he also conducted what is considered the earliest known study of cholera.

In the wake of an 1853 yellow-fever epidemic that killed thousands of people, the city looked to the medical school for help. Dr. Edward H. Barton, a professor who had led the Medical College of Louisiana in its earlier years, was asked to study the situation. In 1855, urged on by Barton, the state of Louisiana established the nation's first health department. Later, Tulane dean Stanford Chaillé became

nationally known for his advocacy for better sanitation and was a key force behind the establishment of the National Board of Health.

Barton, like many of his contemporaries, was focused on sanitation and quarantine measures, because it wasn't yet known that mosquitoes carrying yellow fever caused the city's annual epidemics. As it turned out, many of the procedures recommended in Barton's report—building a sanitary sewer system, proper disposing of waste, draining stagnant ponds—did eliminate mosquito breeding grounds and helped to prevent further widespread epidemics.

In 1884, the Louisiana Legislature passed an act formally shifting the public University of Louisiana and its medical department to a brand-new private institution called Tulane University, named for philanthropist Paul Tulane.

Despite the transitions and name changes, the founders' mission to solve disease remained.

"Infectious disease research has become a mainstay," said professor John Clements, who chairs the School of Medicine's Department of Microbiology and Immunology and specializes in developing vaccines for children in developing countries.

Like the founders of Tulane, Clements is optimistic about the better world created by research. "How many lives did Alexander Fleming save with penicillin or Jonas Salk with the polio vaccine?" he asked. In his own department, among other achievements, teams have made strides in fighting AIDS, Ebola, Zika and Lassa virus.

## **BRIGHT LIGHTS OF MEDICINE**

Every doctor looks at Tulane University School of Medicine and sees different bright lights and different key accomplishments.

Among the accomplished Tulane doctors are surgeons interacting with city residents by saving their lives in local operating rooms, like that of Charity Hospital; family physicians addressing the healthcare needs of children and mothers; cardiologists taking care of heart patients; and urologists developing treatment for prostate cancer.

Prominent faculty members also impact New Orleans in another way, by "bringing fame to the city," Hamm said.

Those with the most renown are two Nobel Prize winners associated with the university—Dr. Louis Ignarro and Dr. Andrew Schally.

Ignarro, a pharmacologist, did much of his work on the discovery of the signaling properties of the molecule nitric oxide, “the atom of cardiovascular health,” at Tulane but won the Nobel in 1998 while a UCLA faculty member. His discovery led to nutritional supplements for heart health and athletic performance and pharmaceutical drugs, including Viagra.

Schally, an endocrinologist whose research for the Tulane School of Medicine was conducted as part of a joint Tulane University–Veterans Administration team, received the Nobel in 1977 for his discovery of the way key hormones function in the hypothalamus, a section of the forebrain. His work led to the recognition that the hypothalamus regulates the function of the pituitary gland.

Other doctors often mentioned because of their commitment both to medicine and to their patients in New Orleans include:

Longtime medical school chair Dr. George Burch, well-known for his work in electrocardiography and research on heart disease and his work during the 1940s with Charity Hospital patients suffering from sickle-cell anemia.

Clinical nutritionist Dr. Grace Goldsmith, who found in the 1950s that the deadly disease pellagra, often seen in Charity’s wards, was caused by poor diets lacking in niacin.

She also conducted nutritional surveys of Louisiana schoolchildren, clarified the dietary roles of folic acid and vitamin B12, and established at Tulane medical school the nation’s first nutrition training for medical students.

Dr. Charles Bass, a former medical school dean, whose highly researched methods of toothbrushing and flossing are still taught in dental schools.

Dr. William Mogabgab, who worked with overflowing medicine wards at Charity and then lobbied the U.S. Surgeon General to improve flu vaccines.

Dr. Robert Heath, who developed theories of biologic psychiatry that transformed the field.

Cardiovascular researcher Dr. Gerald Berenson, principal investigator of the long-term, 16,000-participant Bogalusa Heart Study, which looks at heart-disease risk factors that begin in childhood.

Trailblazing trauma surgeon and “Father of EMS” Norman McSwain, who helped to set up emergency medical service (EMS) systems nationally and was a pioneer in emergency medicine. He was highly revered for his work saving gun-violence victims in New Orleans.

## **SURGERY ON TOP**

In conversations with Tulane’s faculty, surgeons often rise to the top of the list.

“If someone were asking me about strengths, I would say surgery. There’s no question that’s where it all began,” said Cynthia Hayes, who directs medical alumni relations and constituency programs, acting as a liaison between the medical school and its alumni.

Back in 1834, surgery was one of the founding departments of the Medical College of Louisiana. Today, Tulane has one of the oldest surgical residency programs in the nation and a legacy of high-profile surgeons.

“If I were to pick two people who were instrumental in building our school to what it is today, Rudolph Matas and Alton Ochsner stand out far above all others,” said Dr. Julius Levy. Levy, who graduated from the College of Arts & Sciences in 1954 and the School of Medicine in 1957, is a clinical professor of surgery and adjunct professor of cell and molecular biology.

Called “the Father of Vascular Surgery,” Dr. Rudolph Matas was elected head of surgery at Tulane University Medical College in 1894, a post he would hold for more than three decades. His name is remembered today on the Tulane downtown campus because of the Rudolph Matas Library of the Health Sciences.

Dr. Mary Killackey, who chairs Tulane’s surgery department, follows the tradition of all surgery chairs who followed Matas and is the custodian of his brain, which is preserved in a jar and displayed in her office. Killackey notes that Matas brought prominence to Tulane because of the surgery department, before the broader university became widely known in its own right. She now leads a dedicated and young leadership team, most in their 40s.

“I see innovation everywhere I turn,” she said, describing how her surgeons are leading the way through robotic and minimally invasive surgeries as well as other precise, cutting-edge surgical techniques, many of which allow complex surgeries to be accomplished through small incisions.

Matas was well-known for his surgeries on the chest, abdomen and blood vessels and is credited with a long list of achievements. He’d first gained prominence for a momentous Charity Hospital event that’s sometimes referred to as “the birth of vascular surgery”—the day when Matas successfully performed a technique called endoaneurysmorrhaphy on a patient whose brachial artery had been hit by a machete in Louisiana’s sugarcane fields. The technique treats an aneurysm, a blood-filled bulge in a blood vessel, by opening its sac and collapsing, folding and suturing its walls.

When Matas retired in 1927, Alton Ochsner, a heart surgeon who during his career operated on 20,000 patients, including Juan Peron, the president of Argentina; actor Gary Cooper; and pro golfer Ben Hogan, replaced him. Ochsner, who ended up leaving Tulane to start his own hospital, also is credited with linking smoking to lung cancer, an assertion that was first ridiculed, then confirmed by the U.S. Surgeon General in 1964.

Ochsner’s student, pioneering cardiovascular surgeon Dr. Michael DeBakey, who died in 2008 at age 99, won special favor after Katrina when he helped to facilitate an arrangement with his post-Tulane home, Baylor University College of Medicine in Houston, which took in all of Tulane’s medical students.

DeBakey was still a student at Tulane when he invented “the DeBakey pump,” a roller pump for blood transfusions that became a key piece of the heart-lung machines used during surgery and is crucial to open-heart surgeries. His more than 60,000 operations included a star-studded patient list dotted with world leaders, among them Richard Nixon, Lyndon B. Johnson and John F. Kennedy, Russian President Boris Yeltsin, and Jordan’s King Hussein bin Talal.

Having treated patients who did not have money to pay for his services, DeBakey became an outspoken advocate for the creation of Medicare health insurance. In this effort, he had the ear of two influential patients, Kennedy, who introduced a Medicare plan, and Johnson, who signed the legislation in 1965.

DeBakey said that his interest in community well-being began during his childhood in Lake Charles, Louisiana, and his training as a student at Tulane medical school. He recalled in a 1972 interview that Ochsner refused to charge patients who were ministers or schoolteachers, because they were “working for humanity.”

DeBakey’s observations watching his mentor, Ochsner, at Charity Hospital cemented convictions that the fate of Tulane and New Orleans were as one, he said. “There’s no way for each one of us to be a hermit. We’ve got to live together.”

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