



# NEW AND DEVELOPING MEDICAL SCHOOLS

Motivating Factors, Major Challenges, Planning Strategies

Michael E. Whitcomb, M.D.

*Professorial Lecturer in Health Policy*

*School of Public Health and Health Services*

*George Washington University*

Josiah Macy, Jr. Foundation  
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## Preface

The first expansion of medical schools in this country in more than 20 years represents an important moment for medical education nationally. The Josiah Macy, Jr. Foundation took advantage of this moment to sponsor a conference in October 2008 entitled, “Revisiting the Medical School Education Mission at a Time of Expansion.” A conclusion of the conference, directed at the new schools as well as all existing schools, was: “This period of expansion in enrollment must not result in ‘more of the same.’ Failing to take full advantage of the opportunity afforded by this natural experiment to advance the mission of medical education for the benefit of the public would be tragic.” A number of recommendations were made on ways to improve the educational programs of all medical schools to better align them with the needs of society.<sup>1</sup>

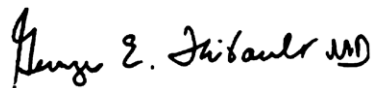
That conference was not designed to address the “how” and the “why” of each of the new schools or the expansion plans of existing schools. The case studies reported in this report explore the motivations, challenges, and responses of ten emerging new schools. Unlike the last major medical school expansion, which occurred in the 1960s and 1970s, there is neither a federal mandate nor funding for this expansion. As a consequence, it is not surprising that each of the stories is quite different with unique local

<sup>1</sup>Hager M, Russell S, editors.  
Revisiting the Medical School Educational Mission at a Time of Expansion.  
Proceedings of a Conference Sponsored by the Josiah Macy, Jr. Foundation;  
Charleston, South Carolina, in October 2008.

drivers, diverse sources of funding, and a spectrum of aspirations and goals.

Dr. Whitcomb is uniquely qualified to conduct this study because of his broad experience as a medical educator and administrator. His interviews and travels have enabled him to identify emerging trends that reflect the impact that changes in the delivery system, in the profession, and in academic structure have had on the new schools. These trends may be important harbingers of more changes to come. The importance of healthcare systems as partners or sponsors of new medical schools is one of these emerging trends. Another is the further evolution of two-year branch campuses of existing schools into full four-year programs, perhaps anticipating their becoming new freestanding schools. There are also differences in the departmental structure of new schools that have not necessarily replicated all of the traditional medical school departments. Furthermore, lessons may be learned from the rapidly expanding osteopathic schools, which have been innovative and flexible in their educational models.

This report represents a significant historical document for an important moment in the evolution of medical education in this country. But more than that, it should be a stimulus for broader discussions about the future of medical education. There is a great need for us to be working on educational innovations that produce a medical profession appropriate in numbers, skills, interests, and distribution to meet the needs of a changing society and a changing healthcare delivery system. This is an important contribution to that discussion.



George E. Thibault, M.D.  
*President, Josiah Macy, Jr. Foundation*

## Prologue

In 2000, the Governor of the State of Florida signed legislation authorizing Florida State University (FSU) to establish a new medical school. By the Fall of 2008, ten additional institutions had announced their intent to develop a new school. Review of the initiatives undertaken by those institutions makes it clear that the development of a new medical school is a costly undertaking that can take years to complete. An institution that is intent on establishing a new school will almost certainly face a number of unexpected challenges during the course of the planning process, which may result in significant delays in the opening of the school, or even lead the institution to decide not to proceed. It seems clear that those who might become involved in future efforts to develop a medical school would benefit from gaining an understanding of how those currently involved addressed the challenges they faced. The lessons to be learned should have value for university administrators, trustees, and state and local government officials who might become involved at some time in the future in discussions about starting a new medical school.

The Josiah Macy, Jr. Foundation, in keeping with its mission to enhance education in the health professions, commissioned a study to address three important questions related to the establishment of the new medical schools under development in the United States:

What factors motivated the institutions to decide to explore establishing a new medical school?

What major challenges did they confront during the process?

How did they respond to those challenges?

The study was limited to the establishment of allopathic medical schools. Thus, when the term “medical school” appears in the text, it refers to an allopathic school unless otherwise indicated. To be clear, the purpose of the study was not to explore the nature of the educational programs developed by the schools, or to document events that unfolded after students were enrolled. Rather, its aim was to address the questions outlined above. It is particularly fitting for the Macy Foundation to have commissioned the study because they played an important role in documenting the development of new schools during the 1960s and 1970s—the last period that witnessed a substantial increase in the number of medical schools in the United States.

When the Governor of Florida signed the legislation authorizing FSU to establish a medical school, I was serving as the Senior Vice President for Medical Education at the Association of American Medical Colleges (AAMC). In that capacity I was able to follow closely the development of the FSU College of Medicine, as well as efforts underway by other institutions to start a new medical school. When I retired from my position at the AAMC in June 2006, several institutions asked me to assist them in their efforts. I had the opportunity, therefore, to witness firsthand the challenges they faced as they proceeded. In the years that followed, I was asked to provide assistance to a handful of other institutions that were exploring the possibility of starting a new school. Thus, when I began work on the project that led to this report, I had a great deal of personal experience with the initiatives underway.

The information presented here was obtained through interviews of key individuals involved in the initial planning of each of the schools under development (university presidents, chancellors, provosts, and other senior administrators); review of documents relevant to those planning processes; and interviews with the founding deans and others responsible for guiding the schools through the implementation phase of the planning process. The case studies that appear in this report are presented roughly in the order in which the institutions first indicated their intent to establish a

new school. In each case, the sequence of events leading to the point at which the institution received approval to proceed with the development of a school is described in some detail because that history provides insight into the early challenges the institutions encountered along the way, and how they dealt with them.

## Introduction

During the period from 1960 to 1980, 40 new medical schools were established in the United States, resulting in an almost 50 percent increase in the total number of schools in the country. The development of the new schools was largely a response to the widely held view that the country was facing a major shortage of physicians, which could only be avoided by increasing significantly the number of students graduating from the nation's medical schools. In 1963, the U.S. Congress passed the Health Professions Educational Assistance Act to support this effort. That legislation was the first in a series of health manpower bills Congress passed during the 1960s and 1970s that provided federal funding to assist in the development of new medical schools and the expansion of enrollment in existing schools. The federal programs that were established in that era were responsible to a great extent, but not entirely, for the marked increase in the number of students graduating from medical school between 1960 and 1985. During that 25-year period, the number of graduates increased from approximately 7,500 to more than 16,000.

Although the development of new medical schools did not end until the late 1970s, the rate at which new schools were being established decreased considerably in the early 1970s, for two major reasons: First, most of the states that had planned to establish a new medical school—often the first medical school to be established in the state—had done so by

the early 1970s. And second, many of those interested in starting a new school recognized by the early 1970s that federal support for medical school expansion would not continue much longer because influential congressional leaders had already become concerned that continued growth in medical school enrollments would actually lead to a physician surplus. In 1976, the Graduate Medical Education National Advisory Committee (GMENAC) was established as a body charged by Congress to conduct an analysis of the state of the country's physician workforce. The development of GMENAC sent a clear signal that federal funding had run its course. Only three new medical schools were established after 1976, and none were established after 1978. GMENAC concluded in its 1980 report that the existing level of medical school enrollment would lead to a significant oversupply of physicians in the coming decades. The period of medical school expansion that began in 1960 had come to an end.

Indeed, no new medical schools were established in this country during the next two decades (1980s and 1990s). Several institutions that considered starting a new medical school during the 1990s were unable to do so because state and local officials who had to approve the establishment of the schools perceived that the schools were not needed. This was due in part to the fact that the Council on Graduate Medical Education (COGME), a body established by Congress in 1986 to provide advice on physician workforce issues, began in the early 1990s to issue reports reinforcing the view that the country would have a large surplus of physicians by the year 2000. A policy statement issued by six major professional organizations, including the AAMC, in the mid-1990s supported this position. In addition, the Pew Health Professions Commission, a privately funded body convened to study the state of the physician workforce, proposed in the mid-1990s that medical school enrollments be decreased by one fourth, primarily by closing existing schools.

Nevertheless, as stated in the Prologue to this report, in 2000, the Governor of Florida signed legislation authorizing FSU, a public university located in the state's capital (Tallahassee), to establish a new medical school. Since that time, ten institutions have announced publically their intent to start new schools; a handful of others have explored the possibility of doing so and decided not to proceed (University of Houston, Idaho State University, George Mason University, and St. Thomas University); and others continue to consider the possibility.

These ten institutions vary in a number of ways. Five of the institutions are private, and five are public. Four of the public institutions (University of Central Florida; Florida International University; the University of California, Riverside; and the Texas Tech University Health Sciences Center) are located in states where the establishment of a new medical school requires review and approval by a state authority (higher education body and/or legislature). Three of the proposed schools (Virginia Tech Carilion School of Medicine in Roanoke, Virginia; the Oakland University William Beaumont School of Medicine in a community outside Detroit, Michigan; and the Hofstra University School of Medicine, in partnership with the North Shore Long Island Jewish Health System) are being established as partnerships between a comprehensive university and a major healthcare system. One of the new schools—The Commonwealth Medical College of Pennsylvania—is a free-standing private institution that is not embedded within an existing university. The two remaining institutions on record as intending to start a new medical school—The Scripps Research Institute in San Diego, California and Touro College in Manhattan, New York—are private institutions that have degree-granting authority, although they are not traditional universities.

Nine of the institutions have formally notified the Liaison Committee on Medical Education (LCME), the body that accredits the undergraduate medical education program conducted by medical schools, of their intent, and the tenth intends to do so in the near future. At present, five of the institutions have been granted preliminary accreditation status by the LCME. Four (University of Central Florida School of Medicine, Florida International University School of Medicine, Texas Tech University Health Sciences Center Paul L. Foster School of Medicine, and The Commonwealth Medical College of Pennsylvania) enrolled their charter classes in the summer of 2009. The fifth, the Virginia Tech Carilion School of Medicine, which was granted preliminary accreditation in June 2009, will enroll its charter class in Summer 2010. Three of the institutions are still actively involved in the initial planning process for the development of a school and have not yet submitted to the LCME the materials required to begin the formal accreditation process (Oakland University William Beaumont School of Medicine; Hofstra University School of Medicine, in partnership with North Shore Long Island Jewish Health System; and the University of California, Riverside, School of Medicine). As a result, the earliest those institutions will be able to enroll students will be Summer

2011. The two remaining institutions (The Scripps Research Institute and Touro College) have suspended their planning for the time being.

Four major challenges exist for officials at institutions that hope to establish a new medical school. First, those leading the effort must be able to convince various stakeholders—university faculty, university trustees, community leaders, and government officials—of the value of establishing the school, and they must gain the support necessary to do so. Second, they must be able to obtain the funds required to cover the costs of the initial planning process and the actions required to prepare for implementation of the school's education program, primarily the recruitment of administrative staff and faculty. Third, they must develop a realistic plan for meeting the school's administrative and instructional space needs, including how funds will be obtained to cover the costs of any facility renovation or new construction that will be required. And fourth, they must be able to enter into clinical affiliation arrangements with various healthcare organizations to ensure the school's ability to provide appropriate clinical education experiences for its students.

In essence, these four challenges must be met if an institution is to develop an undergraduate medical education program that will meet the standards required by the LCME for accreditation purposes. Once institutional leaders are convinced that they will be able to meet the challenges, they are then in a position to begin to actively plan for the opening of the school. To accomplish this objective, they must recruit a founding dean who will be able to lead the effort required to convince the LCME that the institution is prepared to conduct the first two years of the school's education program. Once the LCME grants preliminary accreditation, the school can begin to recruit students for the charter class.

It is important also to recognize that the tradition of allopathic medicine creates an expectation that a medical school will offer more than an undergraduate medical education program. An allopathic medical school is also expected to do the following: 1) to provide an environment that encourages and supports the conduct of biomedical and health services research by its faculty; 2) to serve as the core of an academic health sciences center that offers a range of academic programs in other health professions; and 3) to create opportunities for clinical care programs that will serve the needs of the local community or region and provide a framework



for the clinical education experiences required by the education program. Thus, in addition to meeting the four major challenges of an undergraduate medical education program (as discussed previously), institutions wishing to establish a new medical school also face the challenge of deciding how the new school will pursue its missions for research and clinical care.

In addition to the ongoing development of the new medical schools, this decade has also witnessed the development of an entirely new model for medical school education: the establishment by an existing medical school of a full four-year undergraduate medical education program at a regional campus site (herein referred to as a branch campus). A large number of medical schools have for many years offered portions of their curricula at regional campus sites. However, the new branch campuses differ from these regional sites in an important way. The branch campuses will incorporate an entire undergraduate medical education program. Also, several of the branch campuses offer a curriculum that differs from that of the main campus (i.e., a separate track program).

To date, six allopathic medical schools have enrolled students at branch campuses. Three of the branch campuses were established as collaborative efforts involving two separate institutions (the University of Miami Miller School of Medicine at Florida Atlantic University; the University of Arizona College of Medicine at Phoenix, in partnership with Arizona State University; and the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University). The three other branch campuses have been developed within the organizational structure of a single university (Mercer University College of Medicine in Savannah, Michigan State University College of Human Medicine in Grand Rapids, and the University of Oklahoma School of Community Medicine in Tulsa). A number of additional branch campus sites are under development. The Medical College of Georgia has announced that it will enroll students at a new branch campus of the University of Georgia in Athens in 2010.

Although the branch campus operates under the jurisdiction of the medical school administration, its educational program is conducted almost in its entirety by a separate faculty, and a separate administrative staff handles day-to-day management. In addition, the leadership of the branch campus has direct relationships with the leadership of local institutions that do not relate in a similar fashion with the leadership of

the parent medical school. Thus, in a very real sense, the branch campus operates on a day-to-day basis as if it were an independent school. This situation exists because in most cases the branch campus site is some distance from the main campus of the medical school.

The development of a branch campus is certainly less challenging than the development of an independent medical school because the main campus can commit existing staff and resources to the effort and retain designated administrative responsibilities, such as student admissions. Also, because branch campuses usually begin with a relatively small student body, provision of adequate space for administration and instruction is less burdensome.

There is also no question that a branch campus can more easily transition to an independent medical school than an independent medical school can be developed on its own. Consequently, it is not surprising that several branch campuses are already considering the possibility of becoming independent medical schools. Indeed, at least one of the branch campuses was established with a tacit understanding that it would become independent at some time in the future. Therefore, it is logical to include information related to the development of branch campuses in this report, including case studies of branch campuses that have already enrolled students. These examples provide insight into the factors that were involved in the development of the branch campuses and the complex challenges faced by the institutions involved in establishing them (medical schools and universities).

The events that unfolded during the process of planning each of the new schools are described in the case studies that follow. In each case, the description of the events leading to each school's current status focuses on how the institution met the major challenges it faced along the way. The early history of each school's development is presented in detail because it is during that period that institutions encountered several of the major challenges they had to overcome in order to proceed. The first three case studies focus on the development of new medical schools in Florida, each of which was affected by changes that occurred in the early years of the decade in the way the state reacted to proposals for starting new schools.

## Case Studies

# Independent Medical Schools

### Florida State University College of Medicine

Florida State University (FSU) is a public institution located in the state's capital (Tallahassee). The university offers a wide range of undergraduate and graduate degree programs and has an enrollment of more than 40,000 students. Using the classification system developed by the Carnegie Foundation (Carnegie Classification for Institutions of Higher Education), FSU is classified as a Research University (very high research activity). The new FSU College of Medicine, which was authorized by the Legislature and the Governor in 2000, enrolled its charter class in 2001, to graduate in 2005.

In some respects, the development of the medical school at FSU is a natural evolution of the university's involvement in medical education. In 1970, FSU reached an agreement with the University of Florida College of Medicine that allowed FSU to provide the first year of the curriculum on its campus. The new medical program, called the Program in Medical Science (PIMS), accepted only 30 students, and only students enrolled as undergraduates at FSU, Florida A&M University, and the University of West Florida were eligible to apply for admission. The development of the FSU College of Medicine was to a great extent the direct result of efforts that the university had made during the 1990s to gain approval from the

University of Florida to expand the PIMS into a two-year or four-year medical education program. Given the University of Florida's unwillingness to expand the program, it is not surprising that FSU would ultimately take steps to establish its own medical school.

FSU's efforts to expand the PIMS began in 1991 when the university initiated a review to determine why students who had completed the program performed less well on Step 1 of the medical licensing examination (USMLE) than did other students enrolled in the University of Florida College of Medicine. After completing the review, university officials attributed the high failure rate to the fact that the students applying to the program from FSU, Florida A&M, and West Florida were not as strong academically as the students applying directly to the University of Florida College of Medicine. As a result, the policy governing admission to the PIMS was changed in 1992 so that any Florida resident could apply no matter where they were enrolled as undergraduates. Equally important, the PIMS review process convinced FSU officials that the university could offer a full four-year medical education program. Accordingly, in 1993, the university sought approval from the University of Florida to establish a four-year track at FSU—a request that the University of Florida denied.

By 1997, several other state universities had indicated their interest in establishing a medical education program on their own campuses. Anticipating that the institutions would ultimately seek approval to establish new medical schools, the Chancellor for Higher Education, with support from the Board of Regents for the State University System, indicated that no new medical schools would be established in the state for at least ten years. The Chancellor did indicate, however, that he would be supportive of establishing additional PIMS-like programs at other universities. The Board of Regents ultimately approved the establishment of a PIMS-like program on the campuses of two state universities (Florida Atlantic University and the University of Central Florida). During that period, FSU sought approval to extend their PIMS to a two-year program. That request was not approved.

Despite the Chancellor's position, members of the legislature had become concerned about the adequacy of the state's physician workforce and the ability of the state's medical schools to train an adequate number of new physicians. At the time, only three medical schools existed in



the state—the University of Miami, the University of Florida, and the University of South Florida—and all three had been in existence since 1971. The legislature was especially concerned because, although Florida was at that time the country’s fourth largest state in population and had the highest rate of population growth among large-population states, it ranked near the bottom among all states in the number of medical school positions available on a population basis. Although the number of physicians practicing in the state was near the average for all states, Florida ranked near the top in the percentage of practicing physicians who received their M.D. degrees from a non-U.S. medical school. Thus, the position taken by the Chancellor and the Board of Regents led to a mandate from the legislature to engage a consultant to evaluate the need for additional medical education programs in the state.

In 1999, the consultant submitted a review to the Board of Regents and the state legislature. The report concluded that Florida did need additional medical schools to provide more opportunities for Florida residents to study medicine within the state, thereby increasing the supply of physicians likely to serve the needs of the state’s population. In response, the Chancellor argued that state residents could be provided more opportunities to study medicine in the state if the existing medical schools increased their class sizes. He also pointed out that the supply of physicians for the state was determined by the size of the state’s graduate medical education system, not by the number of medical schools in the state. Nevertheless, he did recommend that a study be conducted to determine the feasibility of establishing a new medical school in the state at some future time.

However, based on the findings of the consultant report, key members of the legislature, who were aware that FSU had been denied the opportunity to expand the PIMS conducted on its campus to a two-year program, invited FSU to submit a proposal to establish an independent medical school. In working with the legislators, FSU developed a proposal to establish an innovative educational program that would help to meet several of the state’s special needs, particularly the need to provide greater access to healthcare for individuals living in underserved regions of the state and to elderly patients in need of special geriatric care. A bill authorizing FSU to establish such a school was passed by the legislature and signed by the Governor in 2000.

As a result of its longstanding involvement with the PIMS, the university was able to proceed quickly in establishing the new medical school because it already had the faculty and facilities required to conduct the first year of the curriculum. To accommodate the class size projected for full enrollment, the university constructed a new medical school building and a new biomedical research building in proximity to the medical school building. The cost of both buildings was covered by state-appropriated funds. In keeping with the original design concept for the curriculum approved by the legislature, the medical school established six regional clinical campuses across the state (Daytona Beach, Fort Pierce, Tallahassee, Pensacola, Orlando, and Sarasota) where students obtain clinical experiences that are largely ambulatory based. The school also established two sites in the Florida Panhandle to provide students with an opportunity to participate in a rural track.

## Florida International University College of Medicine

Florida International University (FIU) is a public institution the main campus of which is located in a western suburb of Miami. Although FIU was established by the legislature in 1965, it did not begin to enroll freshman and sophomore students until 1981 and did not receive approval to start graduate programs until 1984. The university has grown; now it offers a large number of undergraduate and graduate degree programs and has an enrollment of more than 32,000 students. FIU is also one of only two state universities located in South Florida, a region with a very large and growing Latino population. FIU is classified as a Research University (high research activity).

Interest in developing a medical school at FIU, which would provide opportunities for members of the growing immigrant population of South Florida to attend medical school, existed on the campus in the early 1990s. However, given the challenges inherent in developing a relatively young university, the university’s leadership was initially not supportive of the idea of trying to start a new medical school. A report issued by the University’s Strategic Planning Advisory Committee in the mid-1990s suggested the possibility of developing a medical school as a long-range strategic priority for the university. As a result, a Medical School Concept Committee was appointed in 1996 to develop a general approach for the establishment of a new school, and a White Paper proposing the

development of a community-based school at FIU was submitted to the Chancellor for Higher Education in 1997.

In July 1997, the State Chancellor met with officials from the University of Miami, FIU, and another relatively new university in South Florida, Florida Atlantic University, to discuss how the institutions might work together to address the growing interest in the establishment of medical education programs in South Florida. At the meeting, the Chancellor expressed support for the development of a PIMS-like program at Florida Atlantic University in partnership with the University of Miami. He also recommended that FIU develop a program in medical science with one of the other existing medical schools in the state, but FIU remained committed to the development of an independent medical school. When the legislature approved the development of the new FSU College of Medicine in 2000, FIU officials began once again to explore the possibility of establishing a new school.

The university's internal planning effort was fostered in part by a series of significant changes that occurred in the state's approach for providing oversight and management of the State University System—changes that had a dramatic impact on the approach for handling proposals for new medical schools. In 2001, the legislature abolished the Board of Regents, which had been opposed to the development of new medical schools. In 2003, a new body—the Board of Governors—was established to oversee and coordinate planning for the State University System. One of the first actions taken by this group was to ask the newly established Medical Education Subcommittee to study the need for additional schools in the state. Coincident with the establishment of the Board of Governors, FIU issued its 2003 Millennium Strategic Planning document, which set forth a vision for FIU as a top urban public research university. In the document, FIU indicated that establishing a medical school was an important step for achieving that goal.

The two-year intensive study conducted by the Medical Education Subcommittee assessed the state's physician workforce needs and how those needs might best be met. Following the Subcommittee's first meeting in 2004, the Board of Governors requested the state's Council for Education Policy, Research and Improvement (CEPRI), an independent office that had been established by the legislature in 2001 to prepare a long-range master plan for education in the state, to conduct a Medical Education

Needs Assessment. The CEPRI leadership appointed a Medical Education Study Advisory Committee, composed of leading medical educators and university administrators, to conduct the study and provide a report before the end of the year. During that year, the Board of Governors spent considerable time at each of its meetings examining issues related to medical school expansion. A number of local and national figures were invited to make presentations designed to educate the Board about the issues.

The CEPRI Report, issued in November 2004, examined two major issues: the adequacy of the physician workforce and options for addressing a physician workforce shortage. To address the first of these two issues, the report recommended that the legislature establish a physician workforce database that would provide accurate statistics on the nature of the state's physician workforce; the CEPRI Report also asked policymakers to develop a model for determining the adequacy of the workforce based on the data produced. The Report also included recommendations for dealing with the shortage. The most important of those recommendations was that increases in medical school enrollments should only occur after expansion of the state's graduate medical education system because increases in the state's supply of physicians was dependent on increasing the number of graduate medical education positions available in the state. The authors of the Report also noted that establishing a new medical school was the most expensive approach for increasing the number of students graduating from the state's medical schools. Following the release of the report, the Council of Medical School Deans sent a letter to the Board of Governors reinforcing the CEPRI recommendations for the establishment of a reliable physician database and for expansion of the state's graduate medical education capacity.

Despite these recommendations, officials from FIU and the University of Central Florida made presentations to the Board of Governors in January 2005 summarizing their planning efforts for new medical schools and their arguments for why they should be granted approval. Following a number of discussions at Board of Governors meetings, both universities submitted formal proposals to the Board in September 2005 seeking approval to establish new medical schools. In March 2006, after detailed analyses of the proposals and a special Board of Governors meeting devoted to an intense discussion of the proposals, the Board voted unanimously to approve the establishment of new medical schools at FIU and the

University of Central Florida. The charter class (40 students) of the FIU College of Medicine began studies in August 2009 in a renovated space located in one of the university's health sciences buildings. The new school will not be able to reach its projected enrollment of 120 students until a new medical school building has been constructed.

## University of Central Florida College of Medicine

The University of Central Florida (UCF) is a public institution whose main campus is located in Orlando. The university offers a large number of undergraduate and graduate degree programs and has a total enrollment of more than 50,000 students. The university is classified as a Research University (high research activity).

In the late 1990s, when the Chancellor for Higher Education was defending his position that no new medical schools should be established within the State University System, he indicated that he anticipated receiving proposals for new medical schools from several of the state universities (Florida State University, FIU, and UCF). Again, the Chancellor encouraged them to explore the development of a PIMS-like program with one of the state's existing medical schools. UCF officials did enter into such an agreement with the University of South Florida, but the program was not funded by the state legislature.

When the legislature approved the development of a new medical school at FSU in 2000, UCF officials began to consider establishing a new medical school on the UCF campus in Orlando. They believed that a medical school was a natural addition to their expanding portfolio of programs related to the health sciences and health professions education. Key community leaders, recognizing that Orlando was one of the largest metropolitan areas in the country without a medical school, fully supported the university's effort. In 2003, the UCF Board of Trustees encouraged the university leadership to explore the feasibility of establishing a new medical school at UCF.

When the new Board of Governors Medical Education Subcommittee began its work in 2004, it was apparent that UCF would almost certainly submit a proposal for starting a new medical school in Orlando. In January 2005, UCF officials, working closely with FIU, made a presentation to

the Board of Governors summarizing the status of their planning effort and explaining why they believed the Board of Governors should approve the development of a new school at UCF. Then in September 2005, once again in tandem with FIU, UCF submitted a formal proposal to the Board of Governors seeking approval to establish a new medical school. In March 2006, the Board approved that request.

The planning process that ensued was quite intense. To meet its goal of enrolling students by 2009, UCF had to make a number of decisions related to key issues that had been identified during the planning process. Perhaps most important was the location of the medical school. It had generally been assumed that the school would be located on the university's main campus in suburban Orlando. However, during the early planning process, the university was presented with an opportunity to take the lead in developing a new academic medicine complex in Orlando by establishing the medical school on land to be donated at a major new development site (Lake Nona) about 15 miles from the university campus. Although this was an attractive option, it also presented problems, not the least of which was how the medical school would relate to other academic units within the university if it were not physically present on the same campus.

The decision to build the medical school complex at Lake Nona became much easier when it became apparent that other institutions could contribute their efforts to this plan. Most important was a decision by the Burnham Research Institute of California to establish a satellite research laboratory in Florida and an agreement between Burnham and the state that the facility would be located on land adjacent to the site of the new medical school. Following that decision, the Veterans Administration (VA), which had decided to construct a new VA hospital in Orlando (projected completion in 2012), also decided to build on the Lake Nona site, as did the Nemours Health System, which decided to construct a new children's hospital at the site (projected completion in 2013).

In the midst of this activity, the university leadership decided to embed the Burnett College of Biomedical Sciences in the medical school as the Burnett School of Biomedical Sciences and to relocate the faculty to a new medical research building (198,000 sq ft) constructed adjacent to a new medical school facility (168,000 sq ft) on the Lake Nona site. Thus, within a few short years, the Lake Nona site will be home to a major new

academic medicine center complex, one of only a handful of such sites that have been developed during recent decades.

One of the truly remarkable things about the development of the medical school complex at Lake Nona is that it has occurred with relatively little state funding. The land on which the buildings are being constructed was donated, and private gifts accounted for most of the funds used for construction of the new buildings. The only state funds committed to the construction costs were provided by a state program that automatically matches funds on a formula-driven basis for private gifts dedicated to capital construction.

The new medical school enrolled its charter class of 40 students in August 2009 in temporary space on the main campus that had been renovated for this purpose. The class that enters in 2010 is expected to be the first to start in the new medical school building on the Lake Nona campus. The school will increase the size of the entering class by 20 students each year until it reaches its projected maximum class size of 120 students.

The medical school administration has been in active discussions with the major hospitals in Orlando about the nature of the relationships that should emerge as the medical school develops. The two major healthcare systems in the city—Orlando Regional Medical Center and the Florida Hospital System—have supported the establishment of the new medical school and have actively sought ways to cooperate as the school has evolved. The medical school currently has an affiliation agreement with Orlando Regional that will provide opportunities for medical students to participate in clinical clerkships during the third and fourth years of their education. The institutions are still in discussions about how the full-time clinical faculty at the hospitals who have been in place for years will relate to the medical school's desire to recruit full-time clinical faculty to staff clinical departments.

The medical school has also been discussing with hospital officials the role the school might play in graduate medical education. Orlando Regional has sponsored graduate medical programs in seven specialties (internal medicine, surgery, pediatrics, obstetrics/gynecology, emergency medicine, pathology, and orthopedics). The Florida Hospital System has for many years sponsored a family medicine residency and is starting new programs in internal medicine, surgery, and emergency medicine. The hospitals will

continue to sponsor these programs. Programs in neurology and psychiatry are also needed, and discussions are underway about how those should be developed.

## Texas Tech University Health Sciences Center Paul L. Foster School of Medicine

Texas Tech University is a public institution whose main campus is located in the West Texas city of Lubbock. The university offers a large number of undergraduate and graduate degree programs and has an enrollment of greater than 28,000 students. The university is classified as a Research University (high research activity).

Texas Tech's involvement with medical education began in 1969 when the Texas legislature granted the university the authority to establish a new medical school. At the time, there was some disagreement among government officials and community leaders about where the new medical school should be located. Although some favored placing the school in Amarillo or El Paso, a decision was ultimately made to locate the school on the university's main campus in Lubbock. To accommodate the interest of other West Texas communities, it was also decided that the medical school would provide clinical clerkship experiences in Amarillo and El Paso. In 1973, third- and fourth-year clinical clerkship rotations were established in El Paso.

In 1979, the university constructed a building in El Paso to provide classrooms and faculty offices on land adjacent to the county hospital, where most of the clerkship experiences were provided. As a result, the site was recognized as a Regional Academic Health Center. In the ensuing years, El Paso became the school's main site for clinical education. By the early 1990s, approximately half of the school's students were taking their clerkships in El Paso. As a result, El Paso became a natural location for the development of an independent medical school.

In 1996, the Regents of Texas Tech University approved a major change in the organizational structure of the university. The university's health sciences programs, including the medical school, were incorporated into a separate entity—the Texas Tech University Health Sciences Center



(TTUHSC)—thereby creating the Texas Tech University System. Under the reorganization plan, the Texas Tech University and the TTUHSC were to be led by university presidents, while the Texas Tech System was to be led by a chancellor. As soon as the new leadership team was in place, discussions began about establishing a second medical school within TTUHSC. In 1998, the Regents for the System approved the proposal to establish a second medical school within TTUHSC. In 2001, the legislature awarded the system \$3 million to study the feasibility of establishing a new medical school in El Paso.

That same year, the legislature asked the Texas Higher Education Coordinating Board to study the need for new health professions schools in the state. The Coordinating Board released its report in July 2002. The Board had concluded that the state had an inadequate number of practicing physicians and that many communities were underserved, particularly in the western and southern Rio Grande border areas. The Board recommended in their report that the number of students graduating from the state's eight medical schools should be increased, primarily by increasing enrollments in the schools with small student bodies (Texas Tech, Texas A&M, and North Texas State). The Board also recommended that if a new medical school was to be developed in the state it should be located in a region with a documented need for more physicians to improve access to medical care for the region's citizens.

In 2003, the legislature approved the establishment of a new medical school in El Paso. Although the legislature did not appropriate the funds required for the school's operation, it did appropriate funds for the construction of a new research building (99,000 sq ft) on land donated for the development of the new medical school. Funds were also provided to add space (43,000 sq ft) to the existing Regional Academic Health Center building. In the next biennial legislative session (2005), the legislature appropriated funds for the construction of a new medical education building (125,000 sq ft) on the site, and in 2007 appropriated the funds required for the school's operation. The school has received a number of private gifts. The largest of the gifts—\$50 million—resulted in the school being named the Paul L. Foster School of Medicine. The school enrolled its charter class of 40 students in July 2009 and plans to increase the size of the entering class by 20 students each year until it reaches the maximum projected class size of 100 students.

The school's research effort will focus on issues that primarily affect the health of the populations living on both sides of the border dividing West Texas and Mexico. The university has been quite successful in recent years in acquiring federal funds to support an Office of Border Health. The school will also be actively involved in graduate medical education. These activities will include sponsorship of eight such programs at the school's primary clinical affiliate, the local county hospital, and an additional residency with William Beaumont General Hospital, an army hospital in El Paso that provides clinical education experiences for the school's students.

## The Commonwealth Medical College of Pennsylvania

In 2002, a group of community leaders began to explore the possibility of establishing a medical school in Scranton, Pennsylvania. This group—the Northeastern Pennsylvania Medical Education Development Consortium—had two main reasons for trying to establish a medical school in the region. First, they hoped that a medical school might result in more physicians establishing practices in the region. This was an important consideration, because on a population basis the region has fewer practicing physicians than the average for the state as a whole, and most of the counties in the region are identified as Health Professions Shortage Areas by the federal government. In addition to the overall shortage of physicians, a disproportionate number of those practicing in the regions were graduates of non-U.S. medical schools. Second, the members of the Consortium hoped that the presence of a new medical school would have a favorable impact on the economy of the region, which had been declining steadily during recent decades, leading to a decline of almost one third of the population of Scranton, one of the largest cities in the region.

In 2006, the Consortium received a large grant from the Pennsylvania Department of Health to study the feasibility of establishing a new medical school in Scranton. The consultant report that resulted projected that a new medical school would have a favorable impact on the region's economy, provided that the school was an allopathic school that would pursue the traditional tripartite mission of education, research, and clinical



care. Based on those findings, the Consortium decided to begin formal planning for a new medical school in the region.

In 2007, the Consortium established the Commonwealth Medical Education Corporation, a 501(c)(3) entity, as the corporate home for the new medical school. This action was taken because the new medical school was to be established as a freestanding institution, rather than being embedded in a sponsoring university. A founding dean was recruited the same year, and plans were developed for the construction of a medical school building (200,000 sq ft) on land purchased in downtown Scranton. The Commonwealth of Pennsylvania awarded a \$35 million grant to help defray the construction costs, and Blue Cross of Northeastern Pennsylvania contributed \$45 million to the project. Because the school is a private, freestanding institution, its operating costs will be covered primarily by tuition and fee revenue.

The school enrolled a charter class of 60 students in August 2009. The education program will be conducted initially in renovated facilities rented from Lackawanna College. The school plans to increase its class size to 120 students when the new medical school building is available. In addition to the medical school facility located in downtown Scranton, the school is establishing regional campus sites in Scranton, Wilkes Barre, and Williamsport, which will provide clinical education.

## Virginia Tech Carilion School of Medicine

Virginia Tech University (VTU) is a public institution located in Blacksburg, Virginia. The university offers a large number of undergraduate and graduate degree programs and has an enrollment of more than 30,000 students. The university is classified as a Research University (very high research activity). Although the Edward Via Virginia College of Osteopathic Medicine is located in the university's research park, it is not a part of the university and has a limited relationship with it.

The Carilion Clinic, a major healthcare system in southwestern Virginia, has its main administrative offices in Roanoke, approximately 40 miles from Blacksburg. The system, which includes eight hospitals located throughout the region, employs approximately 500 physicians. The main hospital—Carilion Roanoke Memorial Hospital—has served for years as a

regional clinical campus site for the University of Virginia (UVA) School of Medicine. In addition to providing clerkship experiences for third- and fourth-year medical students from UVA, the hospital sponsors a number of graduate medical education programs that provide residency and fellowship training for approximately 170 resident physicians.

In June 2006, the Carilion leadership announced that the organization was embarking on a seven-year plan to transform the system into an organization like the Mayo Clinic. One element of the plan was to develop a new medical school that would be identified with the Carilion Clinic. The leadership of both the Clinic and VTU recognized almost immediately that developing the medical school as a partnership would enhance the prestige of the school and add value to both institutions.

The Virginia Tech Carilion (VTC) School of Medicine represents an important new model for establishing a medical school. The school is organized as a freestanding, not-for-profit, 501(c)(3) corporate entity that is governed by a Board of Trustees composed of individuals appointed by VTU and the Carilion Clinic. The school is not a component of either the university or the healthcare system; rather, it is the product of a unique partnership agreement between the two institutions.

The development of the school in Roanoke also presented an opportunity for the institutions to partner in expanding and enhancing biomedical research in the area. The two institutions had worked together on such an effort when Carilion decided in the early years of the decade to develop the Carilion Biomedical Institute in Roanoke. The Institute was viewed largely as a means of enticing biomedical research companies to move to the area. Although that effort was unsuccessful, it did establish a foundation for the institutions to build on in developing the new medical school and an associated research institute [Virginia Tech Carilion Research Institute (VTCRI)]. The administrative structure and governance of the two entities are different. The VTCRI, although located in Roanoke, is a component of VTU. The VTCRI director reports to the university's Senior Vice President for Research.

As noted above, the Virginia Tech Carilion School of Medicine is a freestanding, private entity governed by a Board of Trustees. The chief executive officer of the corporation—the dean of the medical school—reports directly to the Board of Trustees. Because both Virginia Tech and

Carilion contribute in important ways to the school's operations, the dean is required to maintain close lines of communication with the Virginia Tech Provost, the university's chief academic officer, and the Chief Medical Officer of the Carilion Clinic. Faculty based at Virginia Tech will have major teaching responsibilities in the medical school, as will physicians employed by Carilion Clinic. Scientists recruited to the VTCRI will hold appropriate faculty appointments at Virginia Tech and may be involved in teaching medical students.

Although the Commonwealth of Virginia indicated during the early planning for the new school that the university would not receive public funds to support the school's operations, the governor and legislature were highly supportive of the school's development. Indeed, the university received a \$59 million appropriation for the construction of a building (153,000 sq ft) to house the medical school and research institute on land owned by the Carilion Clinic. Because the medical school is not a component of the university, it will rent the space it occupies in the facility. The school's operations will be funded in part by the tuition and fee revenue generated from enrolled students. Although Virginia Tech cannot use funds appropriated by the Commonwealth for general operations, it can use other revenue sources to support the school. The Carilion Clinic will fund the clinical education experiences provided for students and contribute funds to support the school's general administration.

The medical school intends to enroll a charter class of 40 students in August 2010. No plans exist to increase the class size over time. The education program provided by the school will emphasize translational and clinical research in a thematic way throughout the four years of the curriculum. To provide students with the opportunity to interact with resident physicians as they rotate through the full range of clerkships, the Clinic is in the process of expanding the graduate medical education programs it sponsors to include emergency medicine and pediatrics.

## Hofstra University School of Medicine, in partnership with North Shore-Long Island Jewish Health System

Hofstra University is a private institution located in Suffolk County on Long Island (Hempstead, New York). The university offers a large number of undergraduate and graduate degree-granting programs and has an enrollment of approximately 8,000 students. The university is classified as a Doctoral/Research University.

The leadership of Hofstra University began to consider the possibility of establishing a medical school when a new president was appointed in 2001. At that time, two medical schools existed on Long Island. Stony Brook University, a public institution, was home to an allopathic school, and the New York Institute of Technology, a private institution, was home to an osteopathic school. The Hofstra leadership viewed the development of the school as a way to strengthen the university's biological and physical sciences programs while at the same time enhancing the university's academic standing and prestige. In pursuit of the goal, the university's new president met with key leaders of the AAMC in 2002 to gain a perspective on the challenges of starting a new school. Based on the advice received at the time, a decision was made not to proceed with a formal planning process.

However, when the AAMC issued a policy statement in 2006 indicating that enrollment in medical schools should be increased by 30 percent, the university decided to explore once again the possibility of establishing a new medical school. Knowing that the leadership of North Shore-Long Island Jewish Health System (North Shore-LIJ) had an interest in establishing a medical school, the university president approached the president and CEO of the health system to discuss the possibility of collaborating in the development of a new school.

North Shore-LIJ, headquartered in Great Neck, Long Island, is one of the country's largest healthcare systems. The system was formed in 1997 by the merger of North Shore Health System and Long Island Jewish Medical Center. It includes three tertiary care hospitals (North Shore University Hospital, Long Island Jewish Medical Center, and the Staten Island University Hospital), two specialty hospitals (Schneider Children's

Hospital and The Zucker Hillside Hospital, a psychiatric facility), eight community hospitals, and five long-term care facilities. The system employs more than 10,000 nurses and has a total workforce of more than 38,000 employees. The system serves over five million people living on Long Island, Queens, and Staten Island.

The system provides opportunities for clinical education for medical students enrolled in one of five medical schools based in the greater New York City area. It also supports one of the largest graduate medical education programs in the country and sponsors more than 60 residency and fellowship programs that provide clinical training for more than 1,200 residents. In addition to the clinical education programs it supports, the system includes a major research institute—The Feinstein Institute for Medical Research, a 501(c)(3) organization. The Institute has made a special commitment to the conduct of translational and clinical research with the opening of a new 55,000-square foot research building. At present, the institute receives more research funding from the National Institutes of Health than almost one third of the country's medical schools. The Institute is also home to the North Shore–LIJ Graduate School of Molecular Medicine, the Elmezzi Graduate School, which is accredited by the New York State Board of Regents and the Commissioner of Education to grant a doctoral degree. The school grants Ph.D.s to medical school graduates who have decided to pursue a career in biomedical research. Given the scope of its education and research programs, it is not surprising that the leadership of the healthcare system was receptive to the idea of collaborating with Hofstra in the development of a new medical school.

Each of the two institutions that merged to form North Shore–LIJ have a long history of involvement in medical education. Shortly after the Long Island Jewish Hospital opened in 1954, it established an academic affiliation with Downstate Medical School and subsequently entered into affiliation agreements with SUNY Stony Brook and Albert Einstein College of Medicine. North Shore Hospital, which opened in 1954, became a major affiliate of Cornell School of Medicine in 1969 and began at that time to develop a range of academic programs. In 1973, it changed its name to North Shore University Hospital to indicate its commitment to education and research.

Each of the hospitals has a history of trying to develop a more encompassing affiliation agreement with a medical school, rather than

serving as one of the sites used for student clinical rotations. In the 1980s, North Shore University Hospital negotiated with Cornell about the possibility of creating a Cornell satellite campus on property adjacent to the North Shore campus. Long Island Jewish Hospital attempted to become a campus of Albert Einstein College of Medicine during its early years of development in the 1950s and 1960s. When that failed to materialize, the hospital hoped to play a role in the development of a new medical school in Queens. The Queens Medical School proposal that surfaced in the 1970s was an outgrowth of numerous efforts to gain approval from the state legislature for the development of a public medical school in Queens. In 1976, a Temporary State Commission established by the legislature to study the need for a medical school in Queens recommended that a Queens Medical School Development Corporation be established to develop the plans for a new school. Despite considerable support for the initiative within state government, the project was abandoned in the mid-1980s.

In October 2007, the President of the university and the President and Chief Executive of North Shore–LIJ jointly announced plans to establish a new medical school. The nature of the partnership between Hofstra and the healthcare system has been a subject of discussion and negotiation ever since the institutions reached an agreement to proceed with the development of the new school. The institutions considered the possibility of establishing the school as a 501(c)(3) organization, but in the end they rejected that approach. North Shore–LIJ has committed to fund the costs of the clinical education experiences and to contribute to the school's administrative and operating costs. An oversight board with representatives from both institutions has been appointed, and the dean of the medical school will also serve as the Chief Medical Officer for the system. The school's name acknowledges that the system is a full partner in the school, not just a clinical affiliate.

North Shore–LIJ was clearly motivated to be an active partner in the development of the new medical school. The leadership recognized that the existence of the school would enhance the system's brand name and bring it recognition as one of the top healthcare systems in the country. In addition, the leadership envisions that the medical school will provide an impetus for changing how doctors are being educated in ways that will affect how medicine is being practiced. This concept is consistent with the system's commitment to enhance the education of its entire workforce,

as evidenced by the development in 2002 of the Center of Learning and Innovation (CLI).

The CLI represents the system's effort to create a corporate university that offers an array of educational programs for its employees that will help them to develop and maintain the skill set needed to manage change in the workforce environment and to advance their own careers. In pursuit of that goal, the CLI has partnership arrangements with corporations and a number of universities that are in a position to contribute to specific educational programs. Included in the portfolio of programs are an Institute for Nursing and a Physician Leadership Institute. The development of a new medical school is consistent with the thinking that led to the development of CLI. The leadership of the hospital system and the university intend to establish a nursing school in the near future. The faculty needs to establish that the medical school is largely in place due to the nursing education programs that have been offered to employed nurses by the Institute.

The school plans to enroll a charter class of 40 students in August 2011. The education program will be held in renovated space in a building formerly used as a training facility by the New York Jets professional football team. The amount of space being renovated is adequate to accommodate the projected class of 100 students. Nevertheless, plans to construct a new medical school facility and student housing are underway. The facilities will also provide space to house a new nursing school.

## Oakland University William Beaumont School of Medicine

Oakland University is a public institution located near Detroit in Rochester, Michigan. The university began as a branch campus of Michigan State University in the late 1950s, and was granted autonomy by the state legislature in 1970. The university offers a large number of undergraduate and graduate degree programs, and has an enrollment of approximately 18,000 students. The university has a longstanding commitment to the development of strong biomedical and health professions education programs. During the 1980s, the university established a Health Sciences School, a School of Nursing, and an Institute

of Biotechnology. In the 1990s, it added a Center for Biomedical Research and an Executive Management Program in Health Care. Throughout the years, the university has collaborated with the William Beaumont Hospital in nearby Royal Oak on a number of biomedical research projects. The institution is classified as a Doctoral/Research University.

William Beaumont Hospital is the largest private teaching healthcare system in the country. The main hospital in Royal Oak, which has over 1,000 beds, ranks first in the country in the number of inpatient admissions and second in the number of surgeries. The healthcare system includes three hospitals in communities north of Detroit (Royal Oak, Troy, and Gross Pointe), as well as numerous community-based medical centers, nursing homes, and an assisted living facility. Beaumont is also a major academic medical center. The hospital sponsors 37 graduate medical education programs that provide training for over 400 resident physicians. It is also a site for required and elective clinical clerkship experiences for students enrolled in the medical schools of the University of Michigan and Wayne State University, as well as a number of out-of-state schools. Its research component, the Beaumont Research Institute, has over 300 investigators on staff.

In early 2000, Michigan State University College of Osteopathic Medicine (MSUCOM) approached Oakland University about the possibility of becoming a branch campus of the college. Such an arrangement would have resulted in approximately 100 MSUCOM students taking the first two years of the college's curriculum on the Oakland campus. Although the two institutions were unable to come to an agreement, the discussions did lead the university to consider the possibility of establishing an entirely new osteopathic medical school on the campus. To that end, the university leadership had a preliminary discussion with the leadership of William Beaumont about the possibility of collaborating in the venture. Beaumont's leadership had little interest in becoming involved. Moreover, a number of representatives from the academic medicine community urged the university to consider the possibility of developing a new allopathic medical school if their intent was to create a medical school presence within the university. In 2006, the university leadership approached the leadership of William Beaumont again, this time to explore whether Beaumont would be interested in partnering with Oakland in the development of a new allopathic school.



The leadership at Beaumont was receptive to the idea because they had become interested in recent years in establishing the Institute as a major affiliate of a medical school. Given the size and scope of the institution's academic programs, the hospital did not want to continue to serve as a site for a large number of elective experiences for students from a number of different medical schools. To some degree, the hospital's interest evolved out of discussions with the leadership of the Wayne State University School of Medicine about becoming a major affiliate of the medical school. Wayne State's leadership initiated the discussion out of a concern about the viability of the school's longstanding affiliation relationship with the Detroit Medical Center. The discussions led to an agreement that Beaumont would serve as the site for required clinical experiences for 25 third-year Wayne State students, but did not go beyond that. Accordingly, the Beaumont leadership was receptive when approached by Oakland about the possibility of working together to establish a new medical school. Given Beaumont's interest, the two institutions entered into serious discussions about how to proceed.

As the two institutions began their discussions, the major challenge they faced was to determine how to structure the relationship in a way that would ensure that both institutions were equal partners in the governance, financing, and administration of the new school. The institutions considered a number of options, including the possibility of establishing the school as a separate 501(c)(3) corporate entity. Although this model was recognized as the one most likely to ensure that the two institutions would function as equal partners, it was ultimately deemed unworkable because it would have precluded Oakland from using any of its state-appropriated operating funds in support of what would have been a private school.

Under the agreement that was ultimately reached, Beaumont assumed responsibility for funding the school's clinical education program and agreed to share in the support of the school's administrative costs. In return, Beaumont was granted an exclusive affiliation agreement, and its name was incorporated into the name of the medical school. The schools also agreed that the medical school dean would serve as Beaumont's Chief Academic Officer. A steering committee composed of leaders from both institutions was established to ensure that the terms of the partnership agreement would be honored by both institutions. Thus, in October 2007,

the Oakland University President and the William Beaumont President and CEO jointly announced plans to establish a new medical school.

Oakland University faces two important challenges as it proceeds with planning for the development of the school: 1) how to fund the operating costs for the first two years of the curriculum, as well as its share of the school's administrative costs; and 2) how to meet the school's administrative and instructional space needs. Unlike the situation in other states, such as Florida, Texas, and California, the public universities in Michigan do not need approval from a higher education body or the state legislature before establishing a new medical school, nor do they need to obtain targeted state appropriations to do so. Thus, Oakland is free to reallocate from funds for existing resources to support the new school. However, given the state of the Michigan economy and the effect this economic downturn is having on funding of higher education, it will be a challenge for the university to reallocate funds currently committed to the support of existing academic programs.

The university originally intended that it would enroll the medical school's charter class of 50 students in late summer 2010. Current plans call for the charter class to begin studies in 2011. The university is remodeling a building on campus that will be adequate to accommodate a projected class of 125 students for an indefinite period. A new facility is planned, to be constructed at a research park site on campus. A new building for a nursing school and other health professions education programs is under construction. Projected completion of the new medical school facility is 2014.

## University of California, Riverside, School of Medicine

University of California, Riverside (UCR) is one of ten campuses within the University of California System. The campus is located about 50 miles east of Los Angeles in an area of the state referred to as the Inland Empire. The campus offers a large number of undergraduate and graduate degree programs and has an enrollment of more than 18,000 students. The university is classified as a Research University (very high research activity).



In March 2008, UCR submitted a formal proposal to the Office of the UC President for establishing a new medical school on the UCR campus. The UCR request was a direct outgrowth of health professions planning activities initiated by the UC President in 2003, including plans for a study to determine the adequacy of the health professions workforce serving the citizens of the state. This mandate has a historical basis in the adoption in 1960 of the State of California Master Plan for higher education, which granted the UC System exclusive jurisdiction over the granting of the M.D. degree. As a result, all of the public medical schools in the state are on campuses that are components of the UC System. Although the state legislature has absolute authority for deciding whether to fund a new medical school within the system, the UC Board of Regents has the authority to decide on which campus a new medical school might be established.

In response to the President's directive, the Office of Health Affairs charged a newly established subcommittee (University-Wide Health Sciences Committee) of the Academic Planning Council to conduct the analysis requested. The committee's report (Workforce Needs and Enrollment Planning) was issued in June 2005. The committee concluded that there would be a shortage of 17,000 physicians in the state by 2015. To address that shortfall, they recommended that by 2012 the university should increase the number of students graduating from the system's medical schools. They also recommended that planning should begin for the development of one or two new schools, and that the schools should be located in underserved regions of the state, primarily the Inland Empire and the Central Valley.

Following the release of the report, the Office of Health Affairs appointed the Advisory Council on Future Growth in the Health Professions to make recommendations for how the university should respond to the study's findings. The council issued its final report (A Compelling Case for Growth) in January 2007. They recommended that medical school enrollments be increased by 34 percent by 2020, primarily by incrementally increasing the class sizes of the system's existing medical schools. At the same time, the council recommended that one new medical school should be established within a timeframe that would result in the school graduating its first class by 2020. Given UCR's location in the Inland Empire and its longstanding involvement in medical education, it

is not surprising that the Regents decided in March 2008 to approve the UCR request that it be allowed to establish a new medical school.

UCR's involvement with medical education began in the early 1970s. At that time, the Riverside Chancellor decided to explore the possibility of establishing a medical education program on the campus in conjunction with UCLA School of Medicine. The Chancellor sought a relationship with UCLA because he believed that the existence of a medical education program on the UCR campus would increase the likelihood of recruiting high-quality students to the campus as undergraduates and would also enhance the university's biological sciences programs. This discussion led to a plan for a seven-year B.S.-M.D. Biomedical Sciences Program so that students could complete three years of undergraduate study and the first two years of the UCLA medical school curriculum at UCR. The students who successfully completed that course of study then transferred to the UCLA campus to complete the last two years of the medical school curriculum. The students who participated in the program received their B.S. degree from UCR after completing the first year of the medical school curriculum and then received their M.D. degree from UCLA upon completion of the curriculum.

The first group of students enrolled in the program as undergraduates in 1974. Each year approximately 200 to 250 entering freshmen students enrolled in the program. However, only 24 of these enrolled students could be accepted into the UCLA medical school component. Students enrolled as undergraduates at other UC campuses, or enrolled at UCR as undergraduates in other degree-granting programs, were not eligible to apply for the UCLA medical school positions offered on the UCR campus. Due to the limited number of positions available, competition for the medical school positions offered at UCR was intense. Indeed, the quality of the students who entered the medical school by participating in the program became apparent when their results on national board examinations became known. The students who participated in the Biomedical Sciences Program performed better on both Part 1 and Part 2 of the examination sequence than did students admitted to the UCLA medical school through the standard application process.

As originally designed, the program was to provide the first two years of the UCLA medical school curriculum on the UCR campus, with the

clinical experiences in the second year provided at a local county hospital (San Bernardino County Medical Center) that had an academic affiliation agreement with UCLA. When that affiliation agreement was terminated in 1982, the second year of the medical school curriculum was transferred from the UCR campus to UCLA so that the students could participate in clinical education at Harbor UCLA Hospital. Thus, during the period from 1982 to 1997, the Biomedical Sciences Program based at UCR was only four years in duration. The second year of the medical school program was re-established at UCR in 1997. At that time, the program was renamed the Thomas Haider Program in Biomedical Sciences at UCR. In 1999, the program, which up to that time had been embedded in the College of Natural and Agricultural Sciences, became an independent academic unit.

During the same period, various interest groups began to criticize the program for the way it was organized and conducted. Some of the criticism related to the fact that students enrolled in other majors at UCR, or as undergraduates at other campuses, were not eligible to compete for the medical school positions offered at UCR. Others expressed concern about the large number of students who enrolled in the program as undergraduates and then were unable to complete the program because of the limited number of medical school positions available. Another concern was that the intense competition for the medical school positions meant that minority students were underrepresented in the medical school phase of the program. These criticisms ultimately led to fundamental changes in the program.

A plan for restructuring the program was presented to the Chancellor in 2002. As a result of the restructuring, the undergraduate phase of the program was eliminated. The program was converted to one in which the first two years of the UCLA medical school curriculum continued to be conducted on the UCR campus. Although admission to the program continued to be limited to UCR undergraduates, any student, regardless of his or her major, could apply for entry into the medical school.

Coincident with the planning process that led to the changes in the Haider Program, UCR officials began planning for the possible development of an independent medical school. Thus, when the Universitywide Health Sciences Committee issued its report in June 2005 recommending that

planning should begin for establishing a new medical school in the Inland Empire, UCR proposed to the University officials that the new medical school should be at UCR, and they were granted approval to plan for the new school in November 2006.

When they granted approval in 2008 for the establishment of a new UCR medical school, the Regents placed significant constraints on how the campus could fund the development of the school due to the economic climate in the state. Consequently, UCR has not yet applied to the LCME to begin the accreditation process required before they can recruit and enroll a charter class. However, the campus has begun recruitment of a founding dean. The projected start date for the charter class is 2012. UCR officials are reasonably confident that they will be able to acquire from a variety of sources the funds required to support the pre-enrollment planning activities.

UCR plans to provide and renovate additional space in the building where the current UCLA medical students are housed in order to accommodate the projected size of the charter class (50 students). The school will ultimately increase the size of the entering class to 100 students once a new and larger medical school facility has been constructed on the campus. UCR also plans to construct a new health sciences research building using funds that may become available as a result of the federal economic stimulus package. UCR has also begun working with healthcare organizations in the region to develop new graduate medical education programs. The new medical school will serve as the institutional sponsor for these programs and provide financial support for the institutional and program level administration required.

## Case Studies

# Branch Campuses

### The Cleveland Clinic Lerner College of Medicine of Case Western Reserve University

Case Western Reserve University School of Medicine (CWRU SOM), located in Cleveland, Ohio, was the first medical school to establish a four-year separate track program (branch campus). CWRU SOM is one of the country's oldest allopathic medical schools, established originally in 1843 as the Cleveland Medical College in cooperation with Western Reserve College. The CWRU SOM ranks among the top 20 medical schools in research funding from the National Institutes of Health (NIH). It is also known as an innovator in medical student education by virtue of having introduced in the 1950s an organ system approach for organizing the curriculum. In recent years, the school has maintained major clinical affiliations with several hospitals and healthcare systems in Cleveland for educational purposes, including the Cleveland Clinic, the University Hospitals of Cleveland, MetroHealth Medical Center, and the local Veterans Administration Medical Center. The school also oversees a large General Clinical Research Center that manages clinical protocols involving patients from the latter three institutions.

The Cleveland Clinic is a major academic medical center that includes an 1,100-bed hospital, regional outpatient facilities in Ohio and Florida,

a research institute, an education institute, and a presence in Dubai. The research institute ranks as one of the top independent research institutes in the receipt of NIH funding. The Clinic manages an NIH-funded General Clinical Research Center that supports a large number of translational and clinical research projects. The Clinic also sponsors one of the largest graduate medical education programs in the country, with more than 50 accredited programs that provide training for over 900 resident physicians.

The Cleveland Clinic has had a longstanding interest in playing a greater role in medical student education, including the desire by many in the leadership to develop its own medical school. This goal began to take shape in the early 1990s when the Clinic entered into an affiliation with The Ohio State University (OSU), located more than 120 miles away in Columbus, which provided opportunities for Clinic staff to collaborate with OSU faculty on a full range of the university's academic endeavors. That relationship took on special meaning later in the decade when the possibility of establishing the Clinic as a regional campus of the OSU College of Medicine came up for discussion.

In the late 1990s, the Clinic appointed a new Chief Academic Officer who believed that a substantive undergraduate medical education program would enhance the Clinic's standing as an academic medical center. He began almost immediately to explore various approaches for accomplishing that goal, including the possibility of establishing a new medical school. Because the Clinic does not have degree-granting authority from the state, consultants recommended that an effort be made to develop a meaningful program with CWRU. That effort was stalled by major leadership changes in both institutions.

In January 2002, the dean of the University of Rochester School of Medicine was named the new president of CWRU. Knowing of the Clinic's interest in expanding its presence in medical student education, the Rochester dean began discussions with the leadership of the Clinic even before he assumed the office of president in June about how that could be accomplished with CWRU SOM. In May 2002, the Boards of both institutions approved the plans that had been developed for the establishment of a CWRU SOM program at the Clinic. This agreement allowed the Clinic to offer a separate curriculum for a select group of students enrolled in the medical school. Coincident with the ongoing planning activity, the Clinic received a \$100 million gift from a donor

who had a longstanding interest in seeing a medical school develop at the Clinic. Accordingly, the new program was named the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University to acknowledge the collaborative nature of the effort. In contrast to the standard medical curriculum, students enrolled in the Lerner College of Medicine complete a five-year course of study designed to prepare graduates for careers in translational or clinical research. The charter class of 32 students was enrolled in the summer of 2004. No plans have been made to increase the size of the student body.

It is important to note that the original agreement included provisions that related to other activities conducted by the two institutions. Most noteworthy, grants awarded to faculty of the Clinic were to be credited to CWRU, thus enhancing the institution's standing as a research university, and the Clinic's Cancer Center was to be identified as a CWRU Center. These agreements, along with the decision to name the program the Cleveland Clinic Lerner College of Medicine, became problematic over the next few years. An agreement reached between CWRU and the University Hospitals in 2006, which allowed the hospital to change its name to University Hospital Case Medical Center, created additional tension between CWRU and the Clinic. In response, the Clinic began to explore the possibility of shifting the Lerner College of Medicine affiliation to another university. Discussions were held initially with Columbia University in New York. The Ohio Chancellor of Higher Education has indicated that he would support the affiliation of the program with another of Ohio's universities rather than see it become affiliated with a university outside of the state.

## University of Miami Miller School of Medicine at Florida Atlantic University

The University of Miami is a private institution located in Miami, Florida. The university established the state's first medical school in 1952. Until the development of the new FIU School of Medicine, the University of Miami's medical school was the only allopathic medical school in southern Florida. The school's primary clinical affiliate has been the Jackson Memorial Hospital, a large metropolitan hospital located in downtown Miami next to the medical school.

Florida Atlantic University (FAU) is a public university whose main campus is located in Boca Raton, approximately 60 miles north of Miami. FAU was the first public university established in the southeastern region of the state, having been authorized by the state legislature in 1955. The university enrolled its first students in 1964 but could only admit upper-level undergraduate and graduate students until 1984. During a period of growth in the 1990s, FAU established six additional campuses in the region and increased substantially its level of research funding. The university now offers approximately 170 undergraduate and graduate level programs and has an enrollment of approximately 27,000 students.

In 1997, in response to growing pressure within the state for the establishment of new medical schools, particularly in southeastern Florida, the Chancellor for Higher Education convened a meeting of senior officials from the University of Miami, Florida International, and Florida Atlantic to explore the possibility of having the University of Miami School of Medicine establish a first-year medical education program with either FAU or FIU similar to the University of Florida's program in medical science at Florida State University. The following year, the University of Miami and FAU agreed to establish the first two years of the University of Miami curriculum on the FAU campus. In 1998, the legislature agreed to provide the funds required to support the planning for the program. During the same year, FAU received a gift to build a Biomedical Science Center to house the program.

Although funds were appropriated for program planning in the 1998–99 legislative session, no additional funds were appropriated until the 2003–4 legislative session because the legislature was already funding the establishment of the new Florida State University College of Medicine. Thus, the charter class of 20 students, which was expected to begin studies at FAU in 2002, could not be enrolled until 2004. By then, the state's Board of Governors had committed to study the need for additional medical schools in the state, largely in response to initiatives underway by FIU and the UCF. In response, the University of Miami and FAU requested that the Board of Governors approve the expansion of the program to a full four-year program. The Board of Governors and the legislature approved the request in 2005. The new four-year program was named the University of Miami Miller School of Medicine at Florida Atlantic University.



In January 2006, the University of Miami, FAU, and the Boca Raton Community Hospital entered into a tripartite agreement to establish an academic medical center in Boca Raton. That agreement set forth terms under which the two universities would cooperate, not only with regard to the conduct of education and research programs but also with regard to development of clinical practice and fundraising activities in Palm Beach County. The agreement also set forth the role that the hospital would play in support of the initiative, primarily through the construction of a new teaching hospital on the FAU campus and the development of new graduate medical education programs. A charter class of 32 students entered the four-year program in late summer 2007. A second class of 48 students entered the following year.

The administrative arrangements governing this cooperative program between the University of Miami and FAU were unique in many ways. The agreement represented a collaborative effort between a private university, a public university, and a community hospital, each with its own governance arrangements and far different levels of accountability to the state government. This reality created a great deal of ambiguity regarding the budgeting of program activities. At the core of the tension that developed over the next few years was the failure of the agreement to clearly define how tuition and fee revenues collected by the University of Miami Miller School of Medicine and state funds appropriated to FAU by the legislature for support of the program were to be applied in the budgeting process. Disagreement over how the main funding sources were to be used, along with conflicts over the role of FAU in the development of clinical practice and graduate medical education program activities, ultimately led to serious discussions between the leadership of the two universities about the future of the program.

In addition, the Boca Raton Community Hospital announced in 2008 that, because of serious financial difficulties, the institution would not be able to finance the new hospital that had been proposed for construction on the FAU campus. This not only made it untenable to base the future of the program on the presence of an academic medical center model but also made the tripartite agreement that governed the proposed program untenable. Accordingly, the two universities were forced to begin a process of negotiating a new operating agreement. That agreement is not yet in place.

## The University of Arizona College of Medicine – Phoenix, in partnership with Arizona State University

The University of Arizona College of Medicine was established as the state's first and only allopathic medical school in 1961 and enrolled its first class in 1967. In the years preceding the establishment of the school, a great deal of discussion occurred and numerous reports were issued about where the state's first medical school should be located. Many believed that the school should be located in Phoenix, the state's largest city, even though the state's premier university was in Tucson, a much smaller community approximately 100 miles away. In the end, the decision was made to locate the school and the new hospital on the university's campus in Tucson, thus making it possible to establish a comprehensive academic medical center on the site.

The discussion about establishing a second medical school in Tucson continued after the first school was established in Phoenix. The Carnegie Commission on Higher Education issued a report in 1971 in which it listed Phoenix as one of nine metropolitan communities in the country that should be home to an academic medical center. Members of the medical community in Phoenix, as well as community leaders, have been persistent in arguing that the university's medical school should have a greater presence in the city. This attitude ultimately led city and state government officials to take steps in the early years of this decade that led to creation of a medical school campus in Phoenix. The Phoenix campus was established with an understanding that it would offer a complete four-year undergraduate medical education program and develop research and clinical care programs as well. The establishment of the campus can be seen as a natural outgrowth of the medical school's involvement in Phoenix, which began in the 1970s.

In the 1970s, the medical school at Tucson did begin to send some of its third- and fourth-year students to Phoenix for clinical rotations. The decision to send students to Phoenix was prompted in part by the fact that the hospitals in Tucson could not meet the school's needs for clinical education. Given that situation, it made sense to send students to Phoenix, because a number of the Phoenix hospitals had sponsored graduate medical education programs for years and had substantial experience



in teaching clinical medicine. By the early 1980s, a sizeable number of the university's medical students were receiving much of their clinical education in Phoenix. As a result, those involved in teaching clinical medicine in Phoenix organized the Alliance of Phoenix Medical Educators in an effort to coordinate the medical education activities being conducted at various local hospitals. This initiative prompted members of the Phoenix medical education community to encourage the college of medicine to establish a more visible presence in the city.

In 1986, the dean of the college of medicine invited three nationally prominent members of the academic medicine community to evaluate the college's approach to clinical education and to make recommendations on how the program should evolve. The consultants reported that the clinical facilities in Tucson were inadequate to meet the college's needs and, thus, it would be important for the medical school to continue to send students to Phoenix. They also recommended that the college develop a more visible presence in Phoenix. Most important, they recommended that the educational experiences should be managed by a member of the college's central administration rather than by individual departments within the college. To accomplish that objective, they recommended that the college appoint an associate dean for clinical education who would be located full time in Phoenix.

In the years that followed, little change occurred in the nature of the college's presence in Phoenix. However, in 1991, the LCME cited the college for its failure to provide adequate management and oversight of the clinical education experiences being conducted in the city. As a result, in 1992 the college established an administrative office in Phoenix and the dean appointed an associate dean for Phoenix programs to manage it. The following year a report commissioned by a local foundation noted that, while University of Arizona medical students ranked clerkship experiences provided in Phoenix higher than those provided in Tucson, many of the recommendations from the 1986 consultants' report regarding the need to create a more visible presence for the medical school in Phoenix had not yet been addressed by the college's leadership.

It is not surprising that some people in Phoenix began to consider how to make the medical school a more active and visible component of the city. In 1993, the director of the Maricopa Medical Center, the local county hospital, approached the president of Arizona State University (ASU)

to explore the possibility that the two institutions might collaborate in the development of a new medical school. ASU ultimately proposed the development of a new health sciences center (ASU/Maricopa County Health Sciences Center) that would promote the development of a new medical school, as well as a number of health professions schools, as a means to improve the health of the state's underserved populations. The proposal also suggested approaches for increasing the pipeline of potential medical students from underserved communities throughout the state, particularly the Native American and Hispanic communities. ASU proposed that it could develop such a program in a relatively short time and at relatively little cost by using resources and faculty that were already in place.

The proposal received little support from the medical education community in Phoenix or from community leaders. Although University of Arizona officials expressed their views that the goals were laudable, they thought that these objectives could be achieved more sensibly through collaboration between the two universities. The following year (1994), the Arizona Board of Regents, the governing body for the three state universities (University of Arizona/ASU/and Northern Arizona University), voted not to approve the ASU proposal, but the Board encouraged the state universities to collaborate in the development of health professions education programs. To that end the Board mandated the establishment of a University Council on Health Professions Education, which was to include senior officials from each of the three universities. Once again, little of substance emerged in the years that followed.

However, interest in establishing a meaningful medical school presence in Phoenix increased to a considerable degree in 2001/2002, with a proposal to develop a biomedical research center in downtown Phoenix. In 2002 the governor of Arizona established the Arizona Bioinitiative Task Force to work toward that goal. In support of this project, the city's mayor agreed to provide land in downtown Phoenix that could be used to develop a biomedical research campus. Substantial funds were generated from foundations, private gifts, and government agencies for start-up. The following year the community leadership announced that the International Genomics Consortium had agreed to relocate to Phoenix, and one of the leading investigators in that field agreed to establish a Translational Genomics Research Institute (TGen) in the city. It was clear that having a medical school on the campus would contribute to the development

of the site as a major biomedical center. Thus, the University of Arizona leadership began exploring in more detail the possibility of enhancing the role of the medical school in Phoenix.

In June 2004, the dean of the medical school convened a task force to consider how the university should respond to the growing interest of having a more active medical school presence in Phoenix. The task force's recommendations were based on the assumption that a new four-year medical school might be established in Phoenix in the years ahead. The task force also recommended that a new hospital be constructed on the campus so that the university could develop a comprehensive academic medical center at the site.

In August 2004, the Arizona Board of Regents entered into a Memorandum of Understanding with the presidents of the University of Arizona and ASU establishing that the two universities would collaborate in planning a University of Arizona campus in Phoenix. The Board of Regents also indicated that the campus was to benefit ASU by providing opportunities for ASU faculty to obtain joint faculty appointments and collaborate in various educational programs conducted at the site. The Board instructed the university presidents to present plans for these developments at the Board's January 2005 meeting. However, before those plans could be developed, the governor established a special committee—the Arizona Commission on Medical Education and Research—to oversee planning of the new campus. During the next two years, the university encountered a number of serious difficulties in its effort to establish a major medical school presence in Phoenix.

One of the issues was the desire to develop a major teaching hospital on the site. The development of the hospital was viewed as critically important for the long-term success of the effort because a hospital would be needed to create a clinical faculty that would be actively involved in the translational and clinical research that would result from the work at TGen. In December 2006, the University of Arizona and Banner Health, a major health system that included Good Samaritan Hospital in Phoenix, signed a Memorandum of Understanding that set forth terms establishing Banner as the primary clinical affiliate for the college of medicine on the Phoenix campus. University of Arizona officials expected Banner to construct a new teaching hospital on the site. Because the two institutions could not reach agreement on the nature of the proposed new hospital, the

University of Arizona attempted in late 2007 and early 2008 to identify another healthcare organization that would be willing to construct the proposed new hospital. The University of Arizona is currently exploring this possibility with the Maricopa Integrated Health System.

In the midst of these events, the college was able to establish a medical school presence on the Phoenix campus by renovating space in an existing building to be used for administrative offices and instructional space. The college enrolled a charter class of 24 students on the Phoenix campus in 2007. A second class of 48 students began studies on the campus in 2008. The size of the entering class will remain unchanged until a new facility is built that can accommodate a larger number of students.

Beginning in early 2008, the university leadership was faced with another set of serious challenges. Because the leadership could not reach a consensus on how the Phoenix campus should relate administratively to the dean's office in Tucson, they accepted the resignations of the college of medicine dean based in Tucson and the regional dean of the Phoenix campus. The dean of the University of Missouri-Columbia School of Medicine was recruited to serve as the university's Vice President for Health Sciences, with an assumption that the deans of the two campuses would report to him. The ability to recruit individuals to fill those positions from outside the university was hindered by budget shortfalls due to the impact of the state's declining economy on the university budget. Although the acting regional dean in Phoenix was appointed as the dean of the campus, a dean has not yet been appointed for the Tucson campus. The budget shortfalls have also affected the plans for construction of new facilities on the Phoenix campus, thus limiting the ability of the campus to increase the size of its entering classes.

## Michigan State University College of Human Medicine in Grand Rapids

The Michigan State University College of Human Medicine (MSUCHM) was originally established in 1961 as a two-year preclinical program within the Institute of Biology and Medicine at Michigan State's main campus in East Lansing. In 1964 the program was converted to a full four-year undergraduate medical education program. Because the clinical facilities in

and around East Lansing were not adequate to accommodate the number of students to be enrolled in the college, the college leadership created regional campuses in Lansing, Flint, Grand Rapids, Saginaw, Kalamazoo, and the Upper Peninsula to provide the clinical education required in the third and fourth years of the program. This distributed system of clinical education represented a new model for organizing a medical school's clinical curriculum. It has remained intact over the years at MSUCHM, and other medical schools have adopted a similar approach to varying degrees.

In 2001, community leaders in Grand Rapids began to explore the possibility of creating a four-year undergraduate medical education program in the city in partnership with MSUCHM. At the time, approximately 35 of the college's students chose to take their clinical education in Grand Rapids. The program, as originally conceived, was to be known as the MSU West Michigan Medical School. After a great deal of internal discussion, the college leadership decided that there was merit in establishing such a program. In May 2004, the University Regents approved the concept in principle but established conditions that would have to be met before proceeding. The community leadership then embarked on a study to determine the feasibility of establishing the program. The Chair and CEO of Van Andel Institute, a private biomedical research enterprise in Grand Rapids, was asked to chair the study.

In late 2005, the study group presented a "Proof of Concept" document that outlined the feasibility of establishing the four-year education program in Grand Rapids. The document set forth a detailed plan for the development of the program, which called for Michigan State and key community institutions to develop collaborative agreements that would ensure the financial stability of the new campus. Subsequently, the university negotiated collaboration agreements with the Van Andel Institute, major healthcare providers in the community, and a local college. The development of the medical school in Grand Rapids was seen as an important factor in the city's desire to enhance the commercialization of the life sciences in the city.

Under the terms of the plan, the College of Human Medicine administration was to relocate to Grand Rapids, but the move was to have no effect on the governance of the college within the university. The plan also called for the construction of a new building in downtown Grand

Rapids, which would meet the administrative and instructional space needs of the program, while also providing research space. The university received a large private gift to help cover the costs of the new medical college building (Seccia Center).

The plan anticipated that the entire four-year program would be in place in Grand Rapids by 2010 but that students would begin to enroll in 2008. Accordingly, in 2007 the college increased its enrollment on the East Lansing campus from 106 to 156 with the understanding that 50 of the enrolled students would move to the Grand Rapids campus in 2008 to complete the remaining three years of the curriculum. With the completion of the Seccia Center in 2010, 100 students will be enrolled in the first year of the program on the Grand Rapids campus. Because the East Lansing campus will also enroll 100 students, the total enrollment of the college of medicine will increase from 106 to 200 students. As currently conceived, students from either campus will be able to take their clinical experiences in years three and four at any of the regional clinical campuses. It is anticipated that 75 of the students who initially enroll on the Grand Rapids campus will choose to remain in Grand Rapids for their clinical education. Although the majority of the students enrolled in Grand Rapids are likely to remain there for their clinical education, the total number of students that will need to be accommodated at the other regional clinical campus sites will be increased. The college leadership has entered into discussions with the sites about the possibility of taking additional students. In addition, the college is developing a new clinical campus in Traverse City, Michigan.

Spectrum Health, the largest provider in the region, has indicated its willingness to accommodate the increased number of students who will remain in Grand Rapids. Spectrum is a fully integrated healthcare system that includes seven hospitals and more than 150 ambulatory care sites. Hospitals in the region provide educational experiences for resident physicians enrolled in graduate medical education programs sponsored by the Grand Rapids Medical Education and Research Center in collaboration with MSUCHM.

## University of Oklahoma School of Community Medicine

The University of Oklahoma is a comprehensive university with an enrollment of approximately 30,000 students. The university offers a large number of undergraduate and graduate degree programs on three campuses. The main campus is in Norman. The University of Oklahoma Health Sciences Center (OUHSC) is located in Oklahoma City, approximately 25 miles northwest of Norman. OUHSC is one of only seven health sciences centers across the country that contains seven separate health professions colleges. The University of Oklahoma campus at Tulsa is the newest of these. Tulsa is approximately 100 miles away from Oklahoma City. Until recently, the Tulsa site served only as a regional clinical campus for the university's medical school. However, in recent years, a number of the university's colleges, including all but one of the university's health professions colleges, have begun to offer undergraduate and graduate courses on the Tulsa campus. The campus is supported by a line-item appropriation from the legislature. The dean of the school of medicine in Tulsa serves as the campus president.

Several years ago, the leadership of the school of medicine in Tulsa began to consider the possibility of developing a curriculum distinct from the one offered by the College of Medicine in Oklahoma City. The intent was to offer a curriculum that would expose students to the challenges of providing care to low-income families that find it difficult to obtain the care they need in the current healthcare system. Enabled by a \$50 million gift from a private donor, the school has developed an innovative curriculum that spans the entire four years of the medical school experience. The program, known as the University of Oklahoma School of Community Medicine, enrolled its first class of 20 students in Summer 2008.

This program differs from other branch campuses in that the students participate in the first two years of the standard curriculum in Oklahoma City along with all of the other students enrolled in the college of medicine. However, they are required to spend the summers before year one and between years one and two in Tulsa, where they participate in institutes that expose them to the healthcare realities faced by underserved populations. They also participate in special educational activities in

Oklahoma City during the first two years of the curriculum, and aspects of the standard curriculum, such as cases used in various case-based learning experiences, are tailored to meet the objectives of the community medicine curriculum. Similarly, the clinical clerkship experiences provided in Tulsa are tailored to that purpose.

The original 20 students enrolled in the program elected to enter the track after being admitted to the college of medicine. Now prospective students for the track complete a supplemental application when they apply to the college of medicine. Forty students have been accepted into the program for 2009. The university's Regents approved an increase in the total enrollment of the college of medicine from 162 to 200 students each year to allow the additional positions required by the program. The program will ultimately admit 70 students each year, resulting in a student body of 280. It is anticipated that many of the students who have chosen to enroll in the program will complete the course work required for a Masters Degree or Certificate in Public Health. Six of the original 20 students enrolled in a joint degree program (M.D.-M.P.H.).

## Mercer School of Medicine in Savannah

The Mercer University School of Medicine was founded in 1978 and enrolled its charter class in 1982. The school is located on the main campus of the university in Macon, Georgia, approximately 50 miles southeast of Atlanta. The school has one of the smallest student bodies of any U.S. medical schools, enrolling only 60 students each year.

In 1996, the school entered into an agreement with Memorial Hospital in Savannah, Georgia, and Memorial thus became its regional clinical campus. Savannah is approximately 165 miles southeast of Macon. Prior to entering into the agreement, the hospital had taken students from several Georgia medical schools for elective experiences. The hospital also has provided training for resident physicians in a number of graduate medical education programs. Under the terms of the agreement, the hospital became a primary clinical affiliate for Mercer and agreed to cease taking students from other medical schools. After entering into the agreement, the hospital changed its name to the Memorial Health–University Medical Center. About 20 students have moved to Savannah since that time to complete the third and fourth years of the curriculum.



In June 2007, Mercer officials announced that they intended to expand the size and scope of the education program offered in Savannah. They planned to develop a full four-year program on the hospital campus and to increase the number of students taking clinical clerkships on site. The Georgia legislature provided \$5 million to help fund the cost of the expansion. The medical school has relocated some faculty from Macon to Savannah and is also recruiting new faculty for Savannah. In August 2008, 30 students enrolled in the first year of the program offered in Savannah. With the completion of a new medical school building, 60 students will be enrolled in Savannah, matching the number enrolled in Macon.

## Analysis

The case studies make clear that undertaking the development of a new medical school is a daunting task. Each of the institutions that indicated their intent to start a new school encountered significant challenges along the way. As the decade comes to a close, it seems almost certain that eight of the ten institutions will be successful in starting a new school, although a number of them will not enroll a charter class for several years. It also seems likely that several of the institutions that indicated publically their intent to establish a new school will either not do so or will not enroll a charter class for many years. It is clear that almost all of the institutions that decided to consider the possibility of establishing a new school initiated planning efforts without fully appreciating the nature of the challenges they would encounter along the way. Although in some cases the challenges were unique to a given institution, in most cases the major challenges the institutions faced were similar.

Nonetheless, the nine institutions described in the case studies vary in important ways. It should not be surprising, therefore, that the approaches they have adopted to address the challenges they encountered in developing a new school would also vary. The approaches the institutions used to meet these challenges are discussed in the following text. In reviewing the information, it is important to recognize that only four of the institutions have progressed in their planning to the point of having

enrolled their first class of students. Thus, some of the institutions may not yet have decided how to solve one or more of the major challenges set forth above.

## Stakeholder Support

Institutions with an interest in establishing a new medical school will not be successful if they are unable to gain approval and support from various stakeholders. To achieve stakeholder support, the institutions argued that the establishment of a new medical school had the potential to accomplish the following: 1) enhance the academic standing of the university; 2) have a favorable impact on the economy of the community and region where the school would be located; 3) increase the supply of physicians inclined to practice in the community, region, or state; and 4) provide citizens in the community greater access to certain kinds of healthcare services. In presenting their case to various stakeholders, as well as to the public at large, the institutions varied the emphasis placed on one or another of these issues depending on the primary interest of the audience being addressed.

In some cases, the desire of community leaders, including the leadership of local universities and healthcare organizations, to be involved with a medical school was actually a positive force in gaining the support necessary to establish a new school. This was certainly a key factor in the development of the University of Central Florida School of Medicine, The Commonwealth Medical College of Pennsylvania, and the three schools being established with a health system as a full partner. This also was a force in the development of most of the branch campuses, including the Cleveland Clinic Lerner College of Medicine of Case Western Reserve, University of Miami Miller School of Medicine at Florida Atlantic University, Mercer School of Medicine in Savannah, and the University of Oklahoma School of Community Medicine. In several cases the desire of a community for a medical school presence has been the primary motivation. Community leaders played an important role in the development of the University of Arizona College of Medicine–Phoenix and the Michigan State University College of Human Medicine in Grand Rapids. Similar forces are at play in the development of several potential new branch campuses. When community leaders do not support the development of a new school, a serious barrier exists.

## University Community

The institutional leaders who decided to embark on an effort to establish a medical school recognized that the presence of a school within the university would enhance the university's prestige locally and nationally. However, the initial planning generally led to concerns expressed by faculty about the potential impact of the medical school on the allocation of existing university resources. Although some resources had to be diverted to the development of the school in these instances, the faculty, administration, and governing bodies recognized in the end that the presence of a medical school would add value to the academic environment and enhance the institution's reputation. In reality, most of the institutions involved in establishing a new school were primarily motivated by the potential impact the school would have on the institution's academic standing.

The value of adding a medical school to a university's academic portfolio relates to two factors. First, because the number of medical schools in the United States is relatively small (about 130 allopathic schools now exist), the very presence of a medical school establishes a university as being in a relatively small and select group of institutions. Second, the availability of biomedical research funding from the NIH, other government funding agencies, foundations, and commercial entities can enhance the university's ability to fund extramural research. This is an important issue because the level of funding can change a university's status to that of a research university and consequently elevate its ranking compared with other universities.

The Carnegie Classification of Institutions of Higher Education includes three categories of research intensity among the 282 research universities in the country. Of the 96 institutions classified as having very high research activity, 60 have medical schools embedded in their academic structure. Nineteen of the 103 universities classified as having high research activity have medical schools, whereas only four of the 83 classified as doctoral/research universities have medical schools. Two of the universities now involved in starting a new medical school are already classified as having very high research activity, three are classified as having high research activity, and two are classified as doctoral/research institutions.

## Community Leaders and Government Officials

The institutional leaders who hoped to establish a new medical school also recognized the importance of convincing community leaders and government officials of the added value that a medical school would bring to the community, region, and state. To accomplish that objective, the institutions focused attention on the school's potential favorable impact on the local economy and its capacity to increase the supply of physicians required to meet the healthcare needs of the local population. Those involved in the planning process engaged consultants to participate in the process in ways that would bring credibility to the institutional claims that a new medical school would be beneficial to the community.

In making their case to the stakeholders, the institutions also emphasized the favorable impact a new medical school would have on the local economy. In support of this approach, they cited studies that used standard economic modeling methodologies to document the scale of this economic impact. Thus, it made perfect sense for institutions seeking support from community leaders and government officials to provide an estimate of the economic impact that a new school would have on their community and region.

However, the economic impact of existing academic medical centers relates primarily to the size and scope of their research and clinical care enterprises. Thus, an economic impact study of a potential new school would require assumptions to be made about the size and scope of the school's research and clinical care enterprises at some time in the future. Clearly, it is not possible to judge the accuracy of the assumptions made about the productivity of those mission-related activities, or the timeframe in which they might be developed. Nevertheless, the institutions were not hesitant about presenting the results of an economic impact study in a variety of forums, nor did it appear that those from whom the institutions were seeking support for the development of the school were concerned about the validity of the study results.

Those involved in leading efforts to establish a new medical school also argued that the existence of the school would have a favorable effect on the supply of physicians in the community and region. On the surface, this argument appealed to many community leaders and state officials because it was consistent with the rationale for the proliferation of new schools

that occurred in the 1960s and 1970s, and recent positions advocated by government advisory bodies and professional organizations suggesting that the country was once again facing a shortage of physicians. Also, policy statements issued by the AAMC in 2003 and 2006 calling for an increase in medical school enrollment in response to the perceived shortage of physicians made the prospect of a new medical school seem like a good idea to local governments and community residents. It is not surprising, therefore, that many of the institutions with an interest in establishing a new medical school based their case on the potential to increase the physician supply.

In fact, the current period of medical school expansion will, in and of itself, have no impact on the supply of physicians in this country. Policy analysts and others involved in physician workforce policy debates have recognized since the early 1990s that the supply of physicians in this country is determined by the number of entry-level positions in the country's graduate medical education system, not the number of students graduating from U.S. medical schools. Thus, the increase in U.S. medical school graduates that will result from the current enrollment increases will have no effect on physician supply unless there is a corresponding increase in entry-level positions in the graduate medical education system. There is no reason to believe that that is going to occur in the near future.

Thus, it is not surprising that most of the institutions involved in establishing a new medical school focused their arguments on the impact the school would have on the supply of physicians who might choose to practice in the community or region where the medical school was to be located. Although this argument is consistent with known facts about where medical school graduates ultimately practice, it also overstates the potential impact that a new school might have on the number of physicians entering practice in the local community. Once again, physicians are more likely to enter practice in communities near where they completed their residency training, as opposed to where they graduated from medical school.

Finally, those involved in developing a new school argued that the establishment of the school had the potential to improve the local population's access to the kind of specialized clinical care services associated with academic medical centers. It is clear that access to this level of service is highly valued not only by local citizens but also by government officials.

If one examines the dynamics involved in the proliferation of medical schools that occurred in the 1960s and 1970s, there is no question that government officials committed to the development of a new medical school in their state endorsed this rationale for doing so. In addition, several private commissions supported the development of new medical schools for the purpose of increasing access to specialized healthcare services in the country as a whole.

In 1970, the Carnegie Commission on Higher Education argued that every community with a population of at least 350,000 should be the site of an academic medical center by virtue of the impact the center would have on medical care in the community. In addition, the National Fund for Medical Education, a private corporation chartered by the U.S. Congress in 1954, issued a report in 1971 in which they argued that medical schools should expand their role in providing healthcare services to local populations. These reports, supported by various government program initiatives, helped to catalyze the development of the modern academic medical center during the 1980s and 1990s.

In their attempts to convince stakeholder groups that they should support the establishment of a new medical school, the institutions tended to base their position on the forces described here, either singly or in combination.

## Acquiring Funds

Institutions used various approaches for obtaining the funds required to support the planning effort and for the operational costs of the new school once students were enrolled. Unlike the medical school expansion that occurred in the 1960s and 1970s, no federal government programs have been established to help defray the cost of the present efforts. In addition, none of the major foundations that helped to fund new and developing schools during that earlier period have developed similar programs to assist with the funding of new schools during the current period of expansion. Accordingly, the institutions interested in establishing a new medical school were forced to generate funds on their own. The amount required varied in accordance with the design of the proposed educational program, the level of the initial commitment to the development of a research enterprise, and the faculty and staff resources already available on campus. Regardless, initial planning costs exceeded several million dollars in each case.

State universities have an advantage over private institutions in being able to obtain direct state funding through the usual legislative appropriation processes. Private institutions involved in establishing a new medical school had to face the reality that they would almost certainly not receive state funds to support either the planning process or the costs of operating the school once students were enrolled. Under those circumstances, the institutions had to rely on internal funding and had to project tuition revenue at a level that would cover most of the costs of operating the school once students were enrolled. Each of the private institutions approached the funding challenges in a different way.

For example, the Scripps Research Institute indicated at the outset that it would proceed with its plan to establish a new medical school only if it were able to raise funds through private donations to operate the school without using any of its existing funding base. The development of the school is now on hold. Because it is not a component of any other institution, The Commonwealth Medical College of Pennsylvania also depended upon external funds to support its initiative. The institution was successful in acquiring a grant from the state to support its initial planning efforts, and they also received funding from Blue Cross of Northeastern Pennsylvania to help support the college's operating costs for an undetermined period of years. The new medical school proposed by Touro College was to be supported primarily from internal funding sources.

One of the most interesting approaches to funding is the approach used in establishing both the Hofstra University School of Medicine, in partnership with North Shore Long Island Jewish Health System, and the Virginia Tech School of Medicine. In both cases, the new school was established as a true partnership, not simply an affiliation arrangement, between a comprehensive university and a major healthcare system, in which each of the partners was committed to covering certain costs from existing revenue streams. The more innovative of the two partnerships is that involving Virginia Tech University and the Carilion Clinic because the medical school has been established by the two partnering institutions as a separate 501(c)(3) corporation with its own governing board.

Financing both the initial planning efforts and the operations once students are enrolled was a major challenge for all of the institutions. Although the financial challenge was initially far less severe for public institutions than for private ones, the nature of the challenge changed



dramatically for public institutions once the country's economic downturn adversely affected state revenues. The economic situation in California is clearly responsible for the delay in the development of the University of California–Riverside School of Medicine, which has been approved by the University of California Board of Regents, and undoubtedly affected the decision of the Regents not to proceed with the development of another medical school within the University of California System at Merced. The economic downturn in Florida clearly affected decisions regarding the level of funding to be provided in support of the new medical schools under development at Florida International University and the University of Central Florida. Finally, because of the economic situation in Michigan, it was clear from the outset that state funds would not be available to support the development of a new medical school by Oakland University. This situation may have contributed to the university's recent decision to delay the opening of the school for at least one year.

## Meeting Space Needs

To receive preliminary accreditation from the LCME, an institution wishing to establish a new medical school must be able to demonstrate that it is able to meet the new school's administrative and instructional space needs. With few exceptions, the institutions involved in starting a new medical school found themselves faced with the challenge of how to meet those needs. The space required will depend on the nature of the education program. The size of the facility will be affected by the number of lecture halls and small conference rooms required to support faculty-student interactions, the kind of library/learning resource center to be provided, and the amount of space to be devoted to student lounges, recreational activities, and independent study. Equally important is whether the program will require a traditional gross anatomy laboratory with space for cadaver storage, a simulation laboratory for demonstration of physiologic phenomena using computerized mannequins, and offices and support space for standardized patient encounters. In each case, the space required for these specialized educational activities will depend on the number of students that need to be accommodated during each instructional period.

For most of the institutions, those needs will be met in a phased manner. All of the institutions needed to renovate existing space to accommodate the charter class while awaiting the construction of a new facility designed

to accommodate the projected size of the student body at full enrollment. Limitations in the amount of space available for renovation meant that initial enrollment was limited to the number that could be accommodated in existing space. An institution's ability to achieve full enrollment depends ultimately on acquiring the funds needed for the construction of the new medical school facility.

Once again, state institutions have an advantage over private institutions in that they have the potential to acquire capital construction funds directly or indirectly from the state. Even so, competing needs and economic stress can make it difficult to acquire these funds. Consequently, institutions that enroll a limited number of students in renovated space, believing that funds would be appropriated for construction of a new facility, may be unable to increase enrollment to the planned level for an indefinite period of time. Several of the institutions involved in developing a new medical school find themselves in this situation.

Several of the private institutions involved in establishing a new medical school were able to acquire public funds to cover at least part of the cost of constructing a new facility. The State of New York provided a capital construction grant to Hofstra University to help fund the cost of constructing a new medical school facility on the campus, and the Commonwealth of Pennsylvania provided a similar grant to help defray the cost of constructing a facility in downtown Scranton to house The Commonwealth Medical College of Pennsylvania. Finally, the Commonwealth of Virginia provided funds to construct a research building in Roanoke to house the Virginia Tech Carilion School of Medicine Research Institute. About one third of the space in the new building will be used to meet the administrative and instructional space needs of the School of Medicine. Because the medical school is being established as a private corporate entity, the school will rent space in the building from Virginia Tech.

Another major determinant of the cost of constructing a new facility is whether the facility will also provide space for faculty offices and research laboratories. The decision to construct a facility that will provide a meaningful amount of research space depends upon a number of factors, including the space available for constructing a medical school complex, the ability to raise private funds that can be used to construct a separate research facility, and the institution's long-range strategic plan for the new medical school.

## Development of Clinical Affiliations

A medical school cannot provide an undergraduate medical education program if it is unable to provide the clinical education experiences required by the LCME. It is noteworthy that the LCME grants a new school preliminary accreditation, which allows the school to enroll students, before the school has affiliation agreements in place that ensure it will be able to provide the required clinical education once the students enter the major clinical phase of the curriculum, generally during the third and fourth years. The LCME does not make that determination until it reviews the school for provisional accreditation. That process does not generally occur until the charter class is halfway through the second year.

Obtaining the clinical affiliations needed to provide these experiences is one of the major challenges faced by new schools, as well as by existing schools planning major enrollment increases. The challenge relates to the availability of the range of required services within potential affiliates (individual hospitals and other healthcare organizations) and the ability of the potential affiliates to accommodate a defined number of students on each of the required clinical services. For example, medical schools are finding it increasingly difficult to identify sites that can provide an adequate number of clerkships in pediatrics and psychiatry. In addition, the LCME has an accreditation standard that states that medical schools should provide required clerkships that allow students to interact with resident physicians. In some cases, medical schools were forced to arrange clerkships in institutions that did not sponsor graduate medical education programs in all of the specialties required by the LCME.

Several of the institutions face significant challenges in developing affiliation agreements that will provide sufficient clerkships for the number of students they plan ultimately to enroll. This is not a problem for the institutions that are partnering with a major healthcare system (i.e., Virginia Tech Carilion, Oakland University William Beaumont, and Hofstra University–North Shore Long Island Jewish Medical Center), nor is it a problem for institutions establishing a new school in a community where there are healthcare organizations that sponsor a full range of graduate medical education programs and provide clerkship experiences for students enrolled in other schools (i.e., Texas Tech and the University of Central Florida). However, affiliation agreements present a problem for some of the other institutions.

The Commonwealth Medical College of Pennsylvania has developed clinical campuses at three sites in northeastern Pennsylvania where clinical clerkships will be provided. At present, there are no graduate medical education programs in psychiatry, pediatrics, obstetrics, surgery, neurology, and emergency medicine at any of those sites. Similarly, students are enrolled in the Florida International University College of Medicine in Summer 2009 even though the school has not yet established the affiliation agreements that will ensure that they can provide the required clerkship experiences for the planned enrollment. It is not yet clear when University of California–Riverside, Scripps Research Institute, and Touro College will enroll their charter classes. At the time of this writing, none of these institutions have required affiliation agreements in place.

## Pursuit of the Research Mission

The institutions currently involved in developing a new medical school have focused their attention largely on the development of the education program and have paid little attention to the research programs that they would like to see evolve. This approach is understandable to some degree because the full scope of a new medical school's mission-related activities cannot be realized unless the medical school's education program receives accreditation by the LCME. Nonetheless, there are good reasons for believing that if attention is not paid early on to the development of a new school's research mission, it is unlikely that the planning process will proceed in a way that leads to a productive research program in the near future, if ever. The reasons for this relate in part to strategic decisions that will need to be made about where the new school will be located, the kind of faculty to be recruited, the organization of the various disciplines within the academic structure, the kinds of facilities developed to support the school's programmatic activities, and the nature of the arrangements with clinical partners to support the school's mission.

An examination of the relative academic standing of the schools established in the 1960s and 1970s demonstrates the importance of attention to these strategies. Many of the schools from the earlier expansion period were developed as community-based schools whose clinical education experiences were provided in the offices of local practitioners and in the community hospitals where they practiced. The schools tended to be located in small communities, and many were not established as part of

a major research university. This approach resulted from focusing the planning process on the development of education programs that allowed the schools to be developed at less cost than would have been needed for a more traditional model, with a large cadre of basic science faculty and full-time clinicians and facilities for research.

However, the enduring effect of that approach is reflected by the fact that 24 of the schools developed during that period rank in the bottom half of all medical schools with regard to the level of NIH funding received to support their research mission. Fifteen are among the 23 schools that receive the lowest levels of NIH funding. The schools with a level of research funding that places them in the second quartile based on funding levels are those that were developed on the campuses of major state universities as components of new academic medical centers (i.e., University of Kentucky and University of Arizona), or as integral components of a statewide system (i.e., University of Texas–San Antonio and University of California–Davis). Only two of the schools established during that period—the University of California–San Diego, and Mt. Sinai School of Medicine—rank in the top quintile of schools based on their level of research funding. From a strategic planning perspective, both experiences are highly informative.

The University of California–San Diego School of Medicine was established in 1968, shortly after the university’s main campus. From the outset, the medical school was viewed as an integral component of the strategy adopted to ensure that the institution would become a top-flight research university. Accordingly, the medical school’s basic science faculty was fully integrated into university-wide basic science departments, rather than being located in separate departments within the medical school. This approach allowed the university to coordinate its research program more effectively.

The Mt. Sinai School of Medicine was established in 1968 by the leadership of the Mt. Sinai Hospital. The medical school was established as a component of the City College of New York, hardly a research-intense institution, because the hospital did not have degree-granting authority in the state. But the leadership of the hospital established the school to ensure that the hospital’s research and clinical care programs, which were already substantial, would continue to thrive. Mt. Sinai has retained its academic

standing in the ensuing years because of its institutional vision, although it has largely functioned as an independent institution.

Several of the institutions now developing new medical schools have taken steps to ensure that the new school serves as a focus for expanding the institution’s commitment to research. The planning processes conducted by the University of Central Florida and Texas Tech, both of which enrolled their charter classes in the summer of 2009, included clear strategies for the development of each institution’s research enterprise. The University of Central Florida is in the process of developing a new health sciences campus about 15 miles from the main campus. The health sciences campus will include research laboratories for the medical school and a research facility being developed by the Burnham Research Institute of California. The research scientists at the new Burnham facility will be involved in collaborative research with the full-time research faculty of the University of Central Florida School of Medicine. Texas Tech acquired funding for the construction of new research facilities in El Paso before obtaining funds to support the operating budget of new Paul L. Foster School of Medicine. They also developed a clear research focus for the new school before seeking approval for its establishment. A commitment to the research mission was key to the development of the Virginia Tech Carilion School of Medicine as well. The new Virginia Tech Carilion Research Institute, which houses the school, will accommodate up to 40 new research teams.

## Pursuit of Clinical Care Mission

None of the new medical schools described here has focused much attention on the development of the traditional clinical care programs that characterize major academic medical centers. This lack reflects the fact that the new schools are mostly being established in locations where the institutions have been able to enter into arrangements with existing clinical care organizations to provide the clinical education experiences required for future students. In that respect, the new schools resemble the community-based model that developed in the 1960s and 1970s. It is not yet clear whether any of the schools will attempt to develop some form of independent clinical faculty structure in the future, and if so, how that will be accomplished. As noted previously, three of the new schools are being established as collaborative efforts between a major university and a major

healthcare system in which the healthcare organization is a full partner in the organization and governance of the school. This model distinguishes those institutions from the community-based schools that were established in the earlier era.

## Discussion

For those who may become involved in starting a new medical school in the future, the key lessons to be learned from the experience of the current decade are that it is extremely important to appreciate the nature of the challenges that will be encountered in undertaking such an effort and that those challenges must be addressed in a realistic manner. The case studies and analysis presented in this report offer insight into the nature of the challenges and how they can be addressed. But those who might become involved in starting a new medical school in the future should also be aware of remarkable changes that have taken place during the decade in the fundamental organizational structure of the medical school. These changes may provide insight into additional changes and, thereby, guide individuals involved in the planning process in determining how to address some of the core challenges they will encounter.

Five important trends may affect the organizational structure of medical schools in the future. First, several of the new schools under development reflect important changes in the community-based medical school model. Second, the regional campus model has been expanded by the emergence of branch campuses that offer the entire four-year curriculum. Third, basic changes in the academic structure of medical education are emerging as the new schools forego developing separate basic science departments and the full array of clinical departments present in most existing schools. Fourth, the dynamics involved in the development of osteopathic medical



schools provide some potentially important lessons for those interested in developing a new allopathic school. And fifth, the current period of expansion has seen the emergence of for-profit medical schools. The significance of each of the changes is discussed below.

## Community-Based Medical Schools

Prior to the medical school expansion period in the 1960s and 1970s, medical schools tended to be located in close proximity to a hospital that provided the majority, if not all, of the clinical education required by the school's curriculum. The hospital also served as the primary site of practice for many of the school's clinical faculty. In a number of cases, the hospital was actually owned and operated by the medical school's parent university. In other cases, the primary teaching hospital was a major metropolitan or county hospital that served the needs of poor patients residing in the community. In addition, many medical schools were also affiliated with a local VA hospital that provided clinical education experiences for both medical students and resident physicians. However, a number of the schools founded in the 1960s and 1970s as community-based schools did not conform to that model. Instead, they relied on existing community hospitals and local practitioners to provide the clinical education required by the medical school curriculum.

The new medical schools now being developed reflect the kind of clinical affiliation arrangements that characterized the development of the community-based schools during the earlier era. The institutions have established relationships with existing hospitals and their medical staffs that will allow them to provide the required clinical education experiences for their students, or they are in the process of doing so. But, in considering how the community-based medical school model might evolve in the future, it is extremely important to note that in several cases a healthcare system will be a full partner in the development of the school. The establishment of a new medical school in which a healthcare organization is a full partner in the development, operation, and governance is clearly an evolutionary step in the development of this model.

## Regional Campuses

The development of regional campuses by existing medical schools was the other major innovation of the expansion that occurred in the 1960s and 1970s. A number of the schools in existence at the time developed regional campuses where students could be assigned for portions of the educational program in order to accommodate an increase in class size. Some only provided course work included in the preclinical curriculum, while others only provided clinical education experiences. It is not surprising that some of those sites would ultimately provide the foundation for the development of a new medical school.

For example, El Paso, the site of the new Paul L. Foster School of Medicine of Texas Tech, has served for decades as a site for the clinical education of students enrolled in the university's original medical school based on the Lubbock campus. Similarly, the Carilion Clinic served for decades as a regional clinical campus for the University of Virginia College of Medicine. University of California–Riverside has provided the first two years of the curriculum of the UCLA School of Medicine since the 1970s. Similarly, Florida State University provided the first year of the University of Florida College of Medicine curriculum for a select group of students during that same period. These institutions' longstanding involvement in medical student education provided experience that informed their decision to establish a new medical school.

The regional campus concept has also played an important role in the development of the new branch campuses that offer the entire four-year educational program. For example, Savannah has been the site of a regional clinical campus for Mercer University School of Medicine for several years. Phoenix has been a site for clinical clerkships for University of Arizona College of Medicine students since the 1970s. Tulsa has been a site for clinical clerkships for University of Oklahoma College of Medicine students for decades, and Grand Rapids has served as one of the regional clinical campuses for Michigan State College of Human Medicine since its founding in the 1970s. It is not surprising, therefore, that those sites may evolve into branch campuses that offer the entire four-year curriculum.

## Departmental Structure

The current period of medical school expansion has witnessed the emergence of a fundamental restructuring of the traditional departmental arrangements that have existed for decades in the overwhelming majority of medical schools. The development of the Florida State University College of Medicine set an example for other new schools by establishing only five departments—Biomedical Sciences, Clinical Sciences, Family Medicine and Rural Health, Geriatrics, and Medical Humanities and Social Sciences.

Few of the new schools are likely to develop the traditional departmental structure that characterizes most existing medical schools. Instead, recognizing that the integration of medical school faculty into existing departments on campus has the potential to produce a more collaborative environment that will ultimately benefit the university's education and research missions, the schools will incorporate new basic science faculty into existing university departments or existing research institutes. This model was actually adopted by the University of California—San Diego, when it established its medical school in the 1960s. In recent years a number of existing medical schools have substantially reduced the number of discrete basic science departments or eliminated them altogether by creating basic science centers or institutes.

It is also likely that the new schools will incorporate new clinical faculty into the organizational structure that exists for clinicians within their affiliate hospitals. Most of the new schools will depend on existing university faculty and the hospitals' medical staffs to provide leadership for the development and implementation of the schools' educational programs.

## Osteopathic Medical Schools

Changes in the organizational structure of osteopathic medical schools in the past decade have the potential to affect the emergence of new allopathic schools in the future. Many may view this as an unlikely development. However, because the majority of osteopathic medical school graduates are now entering and performing well in allopathic residency programs, it is not inconceivable that those interested in developing a new

allopathic medical school might take advantage of lessons learned from the ongoing development of osteopathic schools. During the current decade, six new osteopathic medical schools have been established, and several more are in development. In addition to the six new schools, three existing schools established branch campuses at sites some distance from their main campuses (Lake Erie College of Osteopathic Medicine—Bradenton Campus, Philadelphia College of Osteopathic Medicine—Georgia Campus, and Touro University College of Osteopathic Medicine—Nevada Campus). The dynamics involved in establishing these institutions differ fundamentally from those involved in establishing a new allopathic school. The time and cost required to establish a new osteopathic medical school are considerably less than those for establishing a new allopathic school.

None of the new osteopathic medical schools is embedded within the kind of institutions—comprehensive university, research institute, or healthcare system—that typically serve as a “parent” for a new allopathic school. Thus, the dynamics involved in the planning for a new osteopathic school are different from those involved in planning for a new allopathic school. Because the new osteopathic schools are not embedded in major institutions, the processes required to gain support and approval are far less rigorous than is the case for a new allopathic school. Although several of the schools established during the past two decades are components of small private colleges, the colleges had little to do with the initial planning. Several of the new osteopathic schools were essentially developed by local patrons who were interested in the establishment of a school in their community, generally a relatively small community in a rural area. Once these patrons were able to generate community support and meet the initial requirements established by the body that accredits osteopathic schools, they could proceed with the planning process without further review. Finally, because all of the new osteopathic schools established during the past two decades are private institutions, none was subject to the level of scrutiny that a number of the new allopathic schools received from their state governments. In this regard it is notable that four new osteopathic medical schools were established during the 1990s when no institutions interested in starting a new allopathic medical school could obtain the approval required to do so.

The very nature of an osteopathic medical school is also an important determinant of the kinds of challenges confronted by those involved in establishing a new school. Osteopathic medical schools do not generally

concern themselves with the development of research and clinical care enterprises that are associated with most allopathic schools. As a result, new osteopathic schools do not need to recruit the number of basic science and clinical faculty that would be recruited by a new allopathic school, to develop space to support the conduct of fundamental research, or to enter into clinical affiliation agreements that provide opportunities for clinical practice.

The development of clinical affiliations is one of the challenges that both new osteopathic and new allopathic medical schools share. As a general rule, the approaches that osteopathic and allopathic schools have taken to meet this challenge have been quite different. Over the years, osteopathic schools have adopted a distributed approach for providing clinical education experiences. Their students tend to be distributed in small numbers to a substantial number of varied clinical sites. In contrast, allopathic medical schools tend to assign their students to a relatively small number of sites, generally hospitals that sponsor graduate medical education programs and provide clinical practice opportunities for full-time clinical faculty.

Because the new osteopathic medical schools are private institutions that focus on the education of medical students, they also operate with a financial model that is different from that of most allopathic schools, including those that are private institutions. Osteopathic schools are far more dependent than are allopathic schools on the tuition and fee revenue they receive from enrolled students. This is due in part to the funding that allopathic schools embedded in public universities receive from state governments, but it is also due to the fact that both private and public allopathic schools have access to revenue generated through funded research and the clinical practice activities conducted by their faculty.

The differences in the financial models between osteopathic and allopathic medical schools are reflected most directly in the number of students enrolled in the new schools' charter classes. As noted previously, new allopathic medical schools tend to enroll a charter class composed of a relatively small percentage of the students that will ultimately be enrolled. The primary reason for this approach is that all of the schools plan to enroll students before the construction of a new facility. In most cases the new facility is expected to meet the school's administrative and instructional space needs and to provide space for faculty offices and

research laboratories. Unlike osteopathic schools, new allopathic schools have funding sources available to support their initial and subsequent programmatic needs. In contrast, the size of the charter classes of new osteopathic schools tends to approximate the number of students that will be admitted when the school reaches full enrollment because the schools are heavily dependent on tuition and fee revenue to support their educational activities.

Six of the nine new osteopathic institutions established during the current decade represent the expansion of an institution that already sponsors one osteopathic medical school into a new geographic region of the country. One of the new medical schools (A. T. Still University School of Osteopathic Medicine in Arizona) represents the second medical school established by an existing osteopathic health sciences university (A.T. Still University, Kirksville, Missouri), while another (Touro College of Osteopathic Medical School, New York) is a component of Touro College, an institution that had previously established an osteopathic medical school in California. Two of the four new colleges were established mostly through the efforts of local patrons, and one is the first for-profit medical school established since the Flexner Report was issued in 1910. In addition to the six new osteopathic medical schools, three existing medical schools established branch campuses that in many ways represent new colleges in communities that are quite distant from their main campuses. The Lake Erie College of Osteopathic Medicine established a branch campus in Florida; the Philadelphia College of Osteopathic Medicine established a branch campus in Georgia; and the Touro College of Osteopathic Medicine in California established a branch campus in Nevada.

There is reason to believe that additional osteopathic institutions will be established in the coming years. Based on initial planning activities currently underway, it does not appear that any new schools or branch campuses will be established in comprehensive universities. Interestingly, the University of North Texas Health Sciences Center, one of only six public universities with an osteopathic medical school, is currently considering developing a new allopathic school.

## For-profit Medical Schools

During the past decade, a viable for-profit sector has emerged in the country's higher education enterprise. This phenomenon has created the potential for the development of for-profit medical schools. The first for-profit osteopathic medical school in the United States is now in operation, and planning is underway for the development of a for-profit allopathic school. The Rocky Vista University College of Medicine is a new osteopathic medical school located outside of Denver, Colorado. The college was accredited in 2007 by the body that accredits osteopathic medical schools, and it enrolled a charter class of 160 students in 2008. A second for-profit osteopathic medical school is currently under development and will likely be established in the near future.

Planning for the development of a for-profit allopathic medical school is underway. The Palm Beach Medical College, a corporate entity based in Palm Beach, Florida, is actively involved in developing affiliation arrangements with a local university and healthcare system, which will allow it to offer an undergraduate medical education program in the not-too-distant future. Planning is not yet far enough along for the school to seek preliminary accreditation by the LCME. Because the LCME now states that a medical school should be, or be part of, a not-for-profit institution, the eventual outcome for Palm Beach Medical College will be monitored closely by others with an interest in developing a new for-profit medical school.

The development of additional for-profit schools seems highly likely given the continued growth in the for-profit sector of the country's higher education enterprise. At present, approximately eight percent of students enrolled in post-secondary educational programs are enrolled in a for-profit institution of some kind, and approximately two and a half percent of students enrolled in a degree-granting institution are enrolled in an institution that is for-profit. The U.S. Department of Education lists over 800 for-profit institutions that have received state, regional, or professional accreditation status, and many of those institutions grant associate to doctoral degrees. Included in that group are institutions that provide degrees in nursing and other health professions.

## Conclusion

The purpose of the project that led to this report was to gather information about the factors that motivated institutions to consider establishing a new medical school, the challenges they faced along the way, and how they responded to those challenges. Accordingly, the focus here is on the events that led to the decision to establish a new school and the planning activities prior to the enrollment of students. The institutions under study were those that had unequivocally indicated their intent to start a new medical school at the time the project began in early Fall 2008.

As indicated previously, several of the institutions that had announced their intent to start a new school have suspended their planning process. It is not clear at this time whether they will resume planning in the future, or abandon their initial plans altogether. In addition, the financial problems faced by state governments has affected the time frame originally announced for the development of a new school in one case, and the full development of a branch campus in another. Only time will tell how these planning efforts ultimately turn out.

Other institutions are likely to develop plans for establishing a new allopathic medical school, and additional osteopathic schools will almost certainly continue to appear. At present, Central Michigan University continues to plan for the development of a new medical school and has appointed a founding dean to lead the effort. The University of



North Texas Health Sciences Center has announced plans to explore the possibility of establishing a new allopathic medical school. This is a particularly interesting possibility because the institution already is home to an osteopathic medical school. If this plan proceeds, the University of North Texas will be only the second university to sponsor both an allopathic and an osteopathic medical school. Rowan University and Cooper University Hospital have announced plans to establish a new school in Camden, New Jersey, which will be known as the Cooper Medical School of Rowan University. This is also an interesting undertaking because the partnership has been facilitated by the governor's decision to ask the legislature for approval of a transfer of funds from the resources allocated to the University of Medicine and Dentistry of New Jersey to Rowan University. The Texas legislature has approved the establishment of a new school to be located in the southeastern region of the state, and it seems highly likely that the Texas legislature will approve funding for the school, to be called the University of Texas Health Sciences Center–South Texas. Finally, Louisiana College, a faith-based liberal arts college in central Louisiana, has announced its intent to establish a new medical school.

The case studies presented in this report do not describe the development and characteristics of the educational programs to be offered by the new and developing schools because the development of the programs is ongoing and will not be fully completed for a number of years. Nonetheless, several key issues relevant to the nature of the educational programs deserve to be mentioned.

First, there is a strong sense within the medical education community that the current period of medical school expansion provides an opportunity to re-examine the educational mission of medical schools and to address the deficiencies in the ways that medical schools are meeting that mission. In October 2008, the Josiah Macy, Jr. Foundation held a conference devoted to this subject<sup>2</sup>. The individuals who were invited to attend the conference were selected because of the leadership roles they held within the medical education community. After discussing over a three-day period the background papers prepared for the conference, the participants identified

a number of deficiencies in the ways medical schools were carrying out their educational missions and set forth a number of recommendations on how the deficiencies should be addressed. In summarizing the outcome of the conference, the Chair stated clearly that failure to take advantage of the opportunity afforded by the development of new medical schools to advance the mission of medical education for the benefit of the public would be tragic. It is too soon to know how the new and developing schools, as well as those already in existence, will respond to this challenge in the years ahead.

Second, it is clear that the clinical education to be provided by some of the new schools, as well as by an increasing number of existing schools, will undergo an important change in the coming years. At present, the LCME accreditation standards require clerkships in settings where resident physicians enrolled in accredited graduate medical education programs participate in teaching students. The current reality is that both new and existing schools are faced with having to place students in settings where their exposure to resident physicians will be limited because the healthcare institutions involved sponsor only a few residency programs. Given the current funding situation, it is unlikely that the institutions will be inclined to establish a full complement of programs covering the disciplines represented in required clerkships. It will be interesting to see how the LCME deals with this issue when the schools are reviewed for provisional accreditation.

<sup>2</sup>Hager M, Russell S, editors.  
Revisiting the Medical School Educational Mission at a Time of Expansion.  
Proceedings of a Conference Sponsored by the Josiah Macy, Jr. Foundation;  
Charleston, South Carolina, in October 2008.

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## About the Author

Dr. Michael Whitcomb served as the Senior Vice President for Medical Education at the Association of American Medical Colleges from 1995 to 2006, and as Editor in Chief of the association's journal, *Academic Medicine*, from 2002 to 2007. He previously served as dean of the schools of medicine of the University of Missouri–Columbia and the University of Washington and as founding director of the Graduate Medical Education Division at the American Medical Association. He was a founding member of the federal Council on Graduate Medical Education, and while on the faculty at The Ohio State University College of Medicine, established the university's Center for Health Policy Studies. Since his retirement, he has served as a consultant to a number of institutions considering the possibility of developing a new medical school.

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## Josiah Macy, Jr. Foundation

44 East 64th Street  
New York, NY 10065

212-486-2424

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