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1981-2021: The Early Development of the Marshall University Joan C. Edwards School of Medicine and its Department of Medicine

Maurice A. Mufson
Marshall University, mufson@marshall.edu

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Maurice A. Mufson, MD, HonDSc, MACP
Marshall University
Joan C. Edwards School of Medicine
Emeritus Professor of Medicine and Emeritus Chair of Medicine

Contents

Prologue

Diane C. Mufson's weekly op-ed column encouraged me to write this book.

About five years ago, my wife, Diane (Deedee, DCM), was asked by Linda S. Holmes, director of development and alumni affairs for the School of Medicine, whether she would devote one of the opinion columns she wrote each week for our local newspaper, *The Herald-Dispatch*, to the forthcoming School of Medicine fundraiser for medical student scholarships, Outstanding in Our Field (OIOF), now called Standing Out in Our Field (SOIOF). The new dean of the School of Medicine, Joseph Shapiro, MD, MACP, asked Linda Holmes to organize this annual fundraiser.

Deedee had written a weekly opinion column for more than a decade for *The Herald-Dispatch*, and she agreed to write about OIOF. She planned to include in her column some of the history of the School of Medicine. She highlighted that when we arrived in Huntington, the physician shortage was so extreme that we, who had great medical connections, found it difficult to locate physicians who accepted new patients. We invited the first class of medical students, the Class of 1981, who began medical school in January 1978, their spouses, and all faculty and spouses to our home for an evening of fellowship and food (Appendix 1: The First Graduating Class, the Class of 1981). The first class included twenty-four students, and everyone invited fit in our house for the gathering. Within three years, the medical students and staff had grown so much that they all no longer fit in our home. Since then, the School of Medicine has grown immensely. Class size now numbers about eighty medical students in each year and the faculty numbers several hundred.

After reading Deedee's column, several people commented to her that they were surprised they never knew that we entertained the entire first class and faculty in our home. They encouraged her to write more of the early history of the School of Medicine. So, Deedee turned to me and said that I should write the history of the Department of Medicine. I did so as a tribute to the faculty and administration who navigated many initial complexities and paved the pathways to its success. I accepted her challenge and, consequently, that motivated me to write the history of the Department of Medicine. This is that tribute.

Doctors' Memorial Hospital was first established as the C & O Railway Employee Hospital in the early 1900s. After the original hospital closed, Doctors' Memorial housed Marshall's School of Medicine from 1974 until 1997, when the Marshall University Medical Center was erected. Offices for the dean and clinical chairs were housed on the top floor.

CHAPTER ONE

Introduction

The Department of Medicine began with my appointment as chair.

I aspired to a chairmanship of a Department of Medicine for the first time only after I was promoted to full professor of medicine at the University of Illinois College of Medicine in Chicago, and administered for several years the research and education programs at the West Side VA Hospital. The chair of medicine, Dr. Morton Bogdonoff, graciously submitted my name and credentials to U.S. medical schools that were in search of a chair of medicine. I interviewed at several established and new medical schools. Some expressed interest in me and some did not, similar to my experience when I searched for my first full-time faculty position. Marshall University School of Medicine, a new allopathic medical school, offered the chair position to me. After my wife visited Huntington and liked the city, it seemed like a good fit, and I accepted the offer. Thus, my adventure began down a path I never experienced previously.

Few opportunities existed in U.S. medical schools to begin a new Department of Medicine, as it did when Congress enacted Public Law 92-541 on October 24, 1972, which authorized the development of five new medical schools in association with existing VA hospitals. This law was entitled, "Veterans' Administration Medical School Assistance and Health Manpower Training Act of 1972." Of the few community physicians in Huntington interested in the establishment of a medical school, the single determined physician was Albert C. Esposito, MD, a board-certified ophthalmologist practicing in Huntington. He recognized that Public Law 92-541, derived from the Teague-Cranston Act, gave life to his long-time desire to establish a medical school at Marshall University and the Huntington VA Hospital, now

known as The Hershel "Woody" Williams VA Medical Center. Dr. Esposito "pulled out all the stops" to make the medical school at Marshall a reality—a gamble that he alone accepted.

In 1951, Huntington, Dr. Esposito, and the entire medical community had lost an opportunity for the proposed new medical school approved by the Fiftieth Legislature of West Virginia. The Legislature authorized Governor Okey L. Patteson to select its location, and he selected Morgantown and West Virginia University. That year, the Cabell County Medical Society and its president Lawrence B. Gang, MD, prepared comprehensive documents for Gov. Patteson that detailed the substantial medical resources available in Huntington—then the largest city in West Virginia with a population of 86,358—to "jump start" a new medical school. Ironically, the Huntington VA Hospital with 290 beds headed Dr. Gang's list of existing medical resources.

Twenty-five years later in 1976, the VA Hospital anchored the grant application for a medical school in Huntington under Public Law 92-541. Dr. Gang also alerted Gov. Patteson that the proposed Cabell Huntington Hospital, which received approval of Hill-Burton Act funds, state funds, and a bond issue, would serve as a teaching hospital for the new medical school. Despite the disappointment of the governor not selecting Huntington, Drs. Gang and Esposito and other members of the Cabell County Medical Society held firm to a vision that Huntington would develop into a major medical center once it received approval for a School of Medicine, and it did.

Dr. Esposito never abandoned his quest for a School of Medicine in Huntington. He recognized that Public Law 92-541 represented a second opportunity for Huntington and Marshall University to acquire a medical school. He convinced West Virginia Governor Arch A. Moore, Jr. that Marshall University should be the site of a medical school that would benefit all southern West Virginia. Governor Moore convinced the West Virginia Board of Regents to vote unanimous approval of the School of Medicine at Marshall, exercising the raw power of his bully pulpit, and they did, except for one member who resigned so he wouldn't have to vote. Their action advanced the approval by the U.S. Veterans Administration of the Marshall University School of Medicine. Gov. Moore submitted the State of West Virginia application for assistance under the Veterans Administration Medical School Assistance and Health Manpower Training Act of 1972 in support of the Marshall University School of Medicine to The Hon. Donald E. Johnson,

Administrator of Veterans Affairs on Feb. 27, 1974. The application received unqualified approval.

Dr. Esposito succeeded in his quest for a medical school at Marshall University. His quest represented a personally felt goal that he never abandoned, and he never missed an opportunity to convince the important "players"—including Gov. Moore; West Virginia's two senators—the Honorable Jennings Randolph, the senior Senator, and the Honorable Robert C. Byrd, the junior Senator; and U.S. Representative Olin E. Teague, chair of the House Committee on Veterans' Affairs (1955-1972)—that the new medical school would increase the number of physicians in all areas of the state, especially in its southern part. Dr. Esposito single-handedly carried the flag for the Marshall University School of Medicine and, without his perseverance, my guess is that it might never have happened until years later.

In 1976, Marshall University School of Medicine received its Letter of Reasonable Assurance from the Liaison Committee of Medical Education (LCME), which signaled the go ahead for the School of Medicine's dean and his staff to recruit faculty, select an entering class, and plan the curriculum for all four medical school years.

The first dean, Robert C. Parlett, MD, PhD, a microbiologist, in his short tenure (1974-1976) recruited the chairs of several basic science departments, the chairs of Surgery and Pediatrics, and a few faculty members in the Department of Preventive Medicine. I first visited Marshall at his invitation. After he resigned, Robert W. Coon, MD, a pathologist, stepped in as acting dean, and he postponed further visits until he settled into his new role. However, soon after, he invited me to visit the Marshall campus again and I visited twice, the second time with my wife, Diane (Deedee). During the second visit, Dr. Coon and I concluded negotiations and I accepted the position of the first chair of the Department of Medicine. After we returned home, Deedee and I initiated plans to move to Huntington in the summer of 1976, not without some trepidation, which was to be expected. But 45 years later, after 24 years as Chair of Medicine, we still call Huntington our home, and I became an emeritus professor in 2002.

When I started the department, no instruction book or roadmap existed for the formation and organization of a new Department of Medicine. To my knowledge, such a guide never existed, and this was long before the days of the internet. Every Department of Medicine of a U.S. medical school developed its own unique personality influenced by the chair and

its faculty. I initiated my plan for "a running start." Energy motivated the original faculty to join me in the department—all of us a group of pioneers who aimed to build the best Department of Medicine, the cornerstone of a new and successful medical school. Most of the critical tasks proved easy to discern and no one in the school's administration or among the community of physicians argued that "we don't do things that way here."

On my first day on the "job," I worked alone, the only faculty member in the Department of Medicine. As a new medical school, few departments enjoyed the leadership of a chair. The dean's office included only Dr. Coon, the second dean of the medical school, Donna Beckett, his secretary, and Paul Collins, the dean's assistant administrator, appointed by Dr. Robert B. Hayes, president of the university.

My first few months on the job contained little structure. My high priority tasks included employment of a secretary, recruitment of faculty, completion of the application for an internal medicine residency, management of my research laboratory at the Huntington VA Hospital, and employment of a research technician. I wrote individual letters to the chairs of medicine at medical schools in neighboring states to announce my appointment, and I received congratulatory notes from a few of them.

The challenge of a new department attracted the original faculty. All original faculty helped establish the way we accomplished tasks, set the rules, and held everyone to high standards. A close camaraderie attracted them because the faculty number remained relatively small for the first two or three years of development. The faculty met several times each day. They often worked in their offices, as space assigned to the department occupied the third floor and the outpatient clinics on the ground floor in the school's first medical building, Doctors Memorial Building (DMB).

All original faculty of the Department of Medicine recognized themselves as pioneers from the start of their tenure, embraced the opportunity to build their clinical sections from the ground-up, and contributed to the development of the department from the start. I do not recall that faculty discussed the idea of being pioneers, but we were.

After I arrived in Huntington, I established a congenial friendship with Dr. Esposito. He graciously gave me a copy of the original medical school planning document that he relied on to convince Gov. Moore, Sen. Randolph, Sen. Byrd, and Congressman Teague of the importance and value of their aggressive support for winning approval of the medical school

(Appendices 2 and 3). The approval included funds for faculty salaries for the first seven years of the School of Medicine and funds for construction of a medical school building, including equipment, at the Huntington VA Hospital.

Most of the community physicians proved helpful at the outset of my tenure and thereafter. Several internists taught the medical students physical diagnosis at the bedside and a few presented an occasional Medical Grand Rounds. They welcomed me into the local medical society and did the same for the faculty I recruited to the department. Except for several individual physicians, the Huntington medical community supported the establishment of the Marshall University School of Medicine. Charles H. Moffat, PhD, a Marshall University historian and faculty member opined that "It is indisputable, however, that several individual members of the Cabell County [the local] Medical Society opposed the creation of the medical school." ("*A History of the Cabell County Medical Society in West Virginia, 1800-1985.*" McClain Printing Company, Parsons, WV, 1986, p. 85). Other influential academians in West Virginia also aimed to scuttle Dr. Esposito's goal but failed to do so.

The Department of Medicine mounted strong and diverse clinical care and medical research programs soon after I became the chair and moved to Huntington. I recruited bench-credentialed clinical research faculty during my first few years, especially in Infectious Diseases and Endocrinology, supported by substantial research grant funds. The 1980s was a golden decade of research accomplishment in the Department of Medicine. Five of us each arranged a sabbatical year, in outstanding laboratories throughout the worldwide science community. I encouraged faculty in the Department of Medicine to pursue a sabbatical year because such programs in the best laboratories moved their research forward.

I arranged a sabbatical leave first as I had served on the faculty longest (see Chapter 8). I conducted research on the surface proteins of respiratory syncytial virus (RSV) at the Virology Department of the Karolinska Institute in Stockholm, Sweden. As I assessed my years at Marshall, my sabbatical year at the Karolinska Institute proved an excellent year of my career.

Other clinician investigators in the Department of Medicine arranged sabbatical leaves, the only clinical department with faculty to do so. Robert B. Belshe, MD, pursued basic studies of mutations in the RNA of the influenza viruses at Mill Hill Research Institute in London, England. Bruce S.

Chertow, MD, conducted endocrinology research at the Research Institute in Melbourne, Australia. Anthony J. Bowdler, MD, visited several research laboratories in Europe to discuss and gather data and a new understanding for his book on the spleen, which he authored during his sabbatical year. In 1997-1998, Kevin W. Yingling, RPH, MD, conducted a research project in London, England, on the effectiveness of intradermal administration of drugs. He was the last faculty member in the Department of Medicine to complete a sabbatical year.

The approval of the Marshall University School of Medicine by the LCME represented a sea of change for the City of Huntington, Marshall University, and for comprehensive health care throughout the tri-state and Southern West Virginia. Eventually, many people came to believe that the School of Medicine and the support of its community-affiliated hospitals—Cabell Huntington Hospital and St. Mary's Hospital—provided the enduring broad-based health care and financial landscapes the area needed. Today, in 2021, we know how farsighted that prediction proved to be.

The School of Medicine matured during the four decades after it was established, and the entire health care system in Huntington became the second dominant one in West Virginia. Not only did the scope of health care grow and evolve, the School of Medicine's academic pursuits earned recognition as an R2 research university by the Carnegie Classification of Institutions of Higher Education in 2019, quite a distinguished achievement. With the appointment of Joseph I. Shapiro, MD, in 2012 as the fifth dean, research by the basic science and clinical faculty excelled through his leadership. In 2019, the LCME, based on its on-site review, awarded the School of Medicine eight years of accreditation, the longest period of approval available and the first time Marshall University's School of Medicine achieved this success.

CHAPTER TWO

History of the School of Medicine

Marshall University School of Medicine answers the need of West Virginia for more physicians.

In my search for a chairmanship, the choice was between an established medical school or a new one; a school with many students in each class or not so large; with a traditional faculty structure or an experimental structure; or in a large metropolitan area or a small city. I preferred some of these choices, but not all. The options available to me depended upon which schools invited me to visit—and several did. Of those schools that invited me for a second visit, I particularly liked the unique opportunity to build my own department from the ground up at the Marshall University School of Medicine. The school faced stiff opposition mainly from outside the community, but also some opposition from inside the community. Dr. Albert C. Esposito, a Huntington ophthalmologist, obtained support of the state, because of his dogged perseverance and relentless determination. The School of Medicine received the necessary funds from the U.S. Veterans Administration and the state government, recruited a qualified dean, Dr. Robert Coon, and other faculty in the basic sciences. The first class enrolled on January 3, 1978, a momentous day, one of many more to come. I was proud and privileged to welcome the Class of 1981.

The history of the School of Medicine likely began some thirty years before its actual establishment when several prominent community physicians failed in their attempt to have Huntington selected as the site for the state medical school. Unheeded was a 1951 feasibility study which concluded that

Huntington was the only desirable location in West Virginia for a four-year school of medicine. Even in that earlier era, physicians found that sometimes medicine mixed no better with politics than it does today.

During the 1960s and 1970s, forecasts of the national needs for a physician workforce for the 1990s and beyond anticipated significant deficits in the numbers of physicians. The needs seemed especially acute for physicians in the primary care areas, specifically internal medicine, family practice, and pediatrics, and for emergency room physicians. A 1974 report for West Virginia on current distribution of physicians and projections for 1984 of the needs of selected specialties statewide estimated large deficits in all categories. The report projected a need for an additional 221 family physicians, 142 specialists in internal medicine, 112 psychiatrists/neurologists, sixty-nine obstetricians/gynecologists, fifty-five pediatricians, forty-nine anesthesiologists, and forty-seven general surgeons. Was it coincidental that the Orwellian Year was chosen as the target year for this dire projection?

One answer to the nation's and to West Virginia's needs for physicians was to organize and build new medical schools. In 1971, Rep. Olin E. Teague (D-TX) and Sen. Alan Cranston (D-CA), introduced companion bills to establish five new medical schools in collaboration with VA hospitals in five different states. This was called the Teague-Cranston Act, or the Comprehensive Health Manpower Training Act of 1971. Congress responded with the Veterans Administration Medical Assistance and Health Training Act of 1972 (Public Law 92-541). This legislation provided funds for the establishment of five new medical schools at state supported universities in conjunction with existing VA hospitals. Community physicians in Huntington and Marshall University officials acted quickly to complete and submit the necessary application for Assistance in the Establishment of a New State Medical School. The application was signed in February 1974 by then Gov. Arch A. Moore Jr. and the president of Marshall University, Dr. John G. Barker.

Nevertheless, it was not quite that easy to start the School of Medicine. Initially in January 1972, Dr. Albert C. Esposito, the feisty enthusiast of a medical school for Marshall University, pioneered in the preparation of one more feasibility study which he submitted to the governor and to the West Virginia Board of Regents. He secured pledges of support from the West Virginia members of the U.S. Senate and House of Representatives, and of course, from the governor. Dr. Esposito told his story of meeting with Gov.

Moore and of the governor's interest with a special enthusiasm and special sense of satisfaction that time had nurtured. Less than two years later, the Board of Regents enacted a resolution on December 4, 1973, which authorized the president of the Board and the chancellor to take all necessary actions to establish and implement a four-year medical school at Marshall University, and authorized President Barker of Marshall University to proceed with the application and for the governor to provide sufficient funds for the school in the 1974-1975 budget. Semantics never seemed more relevant than in the definition of "sufficient funds," then and now.

After the School of Medicine accepted its first class, the Class of 1981, and they began classes on January 3, 1978, the School held its first recognition ceremony on January 10. Dr. Esposito accepted his honorary degree, awarded in recognition of his very special commitment to starting the Marshall University School of Medicine.

West Virginia Senators Jennings Randolph and Robert C. Byrd provided the essential support on the national level, and Gov. Moore on the state level, which ensured the success of Marshall University in obtaining the needed federal funds from the Veterans Administration. Why was the establishment of the new medical schools funded through the Veterans Administration, rather than through the Department of Health, Education, and Welfare (now the U.S. Department of Health and Human Services [HHS])? On the one hand, by this mechanism the senate exerted a measure of control over the geographic location of the new medical schools, and on the other, the affiliation of a state medical school with a VA hospital meant mutual support that promoted increased quality of care at the hospital and provided a substantial base for the clinical programs of the medical school. Both the Marshall University School of Medicine and the Huntington VA Hospital benefited greatly from this arrangement.

Late in 1974, Dr. Robert B. Hayes, was installed as the president of Marshall University. Dr. Robert Parlett was appointed the dean of the School of Medicine and in 1975 the first few faculty members joined the School of Medicine. Their immediate goal was to gain accreditation for the school from the Liaison Committee on Medical Education (LCME), and it was not an easy task. When Dr. Parlett resigned, Dr. Hayes appointed a Search Committee headed by Carlton Smith, then hospital director of the Huntington VA Hospital, to select a new dean. Dr. Robert Coon became the new dean of the School of Medicine in July 1976; he was familiar with the situation at

Marshall as he had been vice chancellor for health education of the West Virginia Board of Regents and acting dean for several months.

The LCME issued its "Letter of Reasonable Assurance of Accreditation" to Marshall early in 1976, which was official recognition that sufficient progress had been made to reasonably anticipate full accreditation of the School of Medicine. It also meant that the Veterans Administration could release nearly $15 million for assisting in the establishment of the School of Medicine, monies without which the school would have been unable to develop in a timely fashion, or maybe at all. The proposals to the state had emphasized that the School of Medicine could be established using predominantly federal financing and little state assistance. At the time, this seemed the prudent approach; and, perhaps, no other approach would have been possible. The LCME sent site visitors to the campus several times and they reviewed detailed reports prepared by the dean and the faculty. Authorization to enroll the first class of medical students was withheld until the fall of 1977.

Earlier that spring, the mood of the faculty and Dean Coon became more optimistic than at any previous time in the relatively brief existence of the School of Medicine. He charged the Admissions Committee with reviewing applications for admission from students who were prepared to start in September 1977. Twenty-four students were selected for the first class, the Class of 1981; they were alerted that their official entering date could not be set until the LCME responded. Since the LCME approval for preliminary accreditation arrived late in the fall, the first class began in January 1978. Dean Coon and the faculty arranged for their second semester during the summer months, and by September of 1978 they were on the usual academic year schedule.

At the start of the School of Medicine, the chairs of the clinical departments included:

Maurice A. Mufson, MD, Chair of Medicine, 1976-2000
Ray M. Kessel, MD, Chair of Family Practice, 1976-1982
George J. Hill, MD, Chair of Surgery, 1976-1981
David Charles, MD, Chair of Obstetrics and Gynecology, 1978-1987
Mildred Mitchell-Bateman, MD, Chair of Psychiatry, 1977-1982
Ruth C. Harris, MD, Chair of Pediatrics, 1976-1981

and the chairs of the basic science departments included:

Eugene Aserinsky, PhD, Chair of Physiology, 1976-1986
Frederick J. Lotspeich, PhD, Chair of Biochemistry, 1977-1991
Albert G. Moat, PhD, Chair of Microbiology, 1978-1993
James E. Moreland, PhD, Chair of Anatomy, 1975-1980
James D. Fix, PhD, Chair of Anatomy, 1980-1997
Leonard B. Victor, Chair of Pathology, 1978-1980
Donald S. Robinson, MD, Chair of Pharmacology, 1977-1984

The grant application submitted in February 1974 to the Veterans Administration for funding of the School of Medicine reflected both the emphasis on economic restraint and the economic picture at the time. The budget requested for the first year—July 1, 1974, to June 30, 1975—was $2,850,652 and the total budget requested for the allowed period of seven years—July 1, 1974, to June 30, 1981—was $14,989,152. The support staff projections included, for example, fourteen stenographers each at $5,000 per annum, six secretaries each at $6,000 per annum, and three animal caretakers each at $7,000 per annum. Faculty salaries were no less unrealistic. The chair of surgery was listed at $45,000 per annum, and the chairs of medicine, obstetrics and gynecology, pediatrics, family practice, and psychiatry each at $40,000 per annum. Associate and assistant professors in the clinical departments were to be paid much less and the chairs and basic science faculty even less. The format of the grant required the projection of salaries at the same level as the first year for the seven years of Veterans Administration financial support. The inflation of the 1970s caught the School of Medicine in a serious dollar crunch, but the stern fiscal policies of Dean Coon were designed for its survival.

Austereness also characterized the original plans for construction of medical school classrooms, laboratories, and faculty and administrative offices. Existing buildings on the campus of the Huntington VA Hospital were to be renovated for use by the faculty and students of the School of Medicine. They included the main Hospital, a separate auditorium (Building 4), a vacant residence hall for nurses (Building 5), and two residential buildings that housed various administrative offices. Building 5 was to be remodeled as an Educational Research and Resources Center and as Teaching Laboratories, and Building 4, the auditorium, as the medical library. Eventually, the library was located in hospital space and the auditorium preserved as a lecture hall. When the first faculty joined the School of Medicine, their

offices and laboratories were housed in Building 5. However, the offices of the dean and of the chairs of the clinical departments were set up in rented space on the fifth floor of the original Chesapeake and Ohio Railroad (C&O) Hospital, known as the Doctors' Memorial Building (DMB), one block south of the University campus and near downtown Huntington. One year later, the fourth floor was rented and very soon after, as the number of faculty increased, the dean and the president of Marshall University decided to purchase the DMB. Although no state funds had been allocated for new buildings for the School of Medicine, eventually the DMB was purchased by the Board of Regents with funds graciously contributed by local groups who understood the need for a "bricks and mortar" medical school building. The City of Huntington, the Cabell County Commission, and the Frank E. Gannett Newspaper Foundation each gave $50,000, and Gov. Moore added $50,000 in discretionary funds available to his office and coaxed the Appalachian Regional Commission for $150,000. The acquisition of DMB —"the last hurdle"—strengthened the chances of the School of Medicine in obtaining full accreditation when the first class graduated.

The years after admission of the first class were marked by continuing growth, as well as "growing pains." The class size increased in the following years to thirty-six and then to forty-eight students. The first class graduated in 1981 with 14 graduates. The Veterans Administration spent $8 million for construction of the Medical Education Building (the MEB) on the campus of the Huntington VA Hospital. Its completion and occupancy provided essential space for the basic science departments, student laboratories, and some clinical departments. The faculty competed for extramural research funds, published creditable research, and gained a measure of recognition for the School of Medicine, especially in the areas of infectious diseases and vaccines research, endocrine function and disorders, and neuropharmacology and neuroanatomy.

However, each of the next few successive years the School of Medicine had to survive challenges to its continuance in the State legislature, including inadequate State funds. It survived. If the quality of its graduates, the residency programs they selected and that selected them, and their desire to remain in West Virginia represent the measure of our success, the School of Medicine accomplished much more than "just survive."

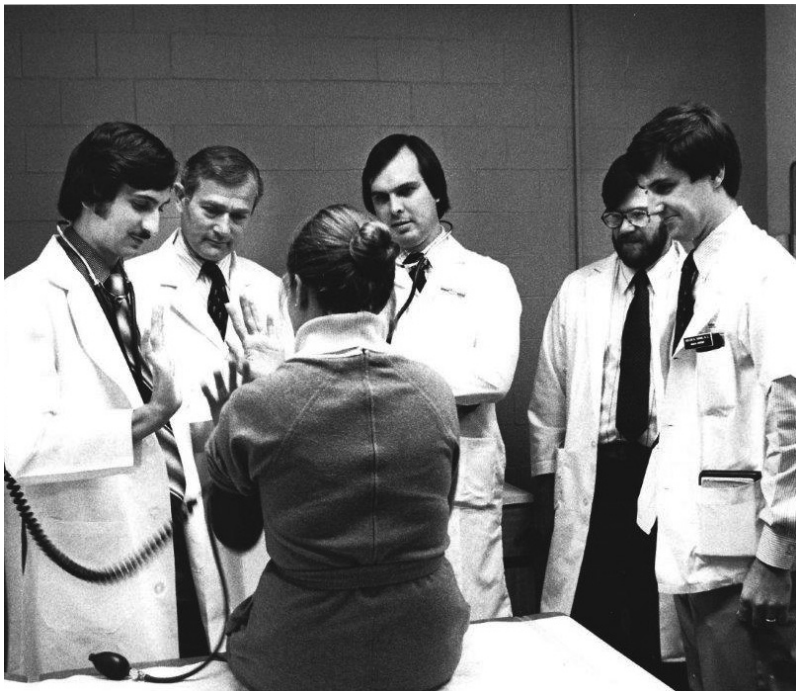
The history of the School of Medicine during its second ten years was a blend of the changing character of the practice of medicine, the quality

and quantity of its financial base, and the accomplishments of its faculty and students. By contrast with the second ten years, the first ten years seemed easy.

Dean Coon retired as dean in 1985. As a lasting tribute of his personal imprint on the Marshall University School of Medicine, the Medical Education Building (MEB) at the VA Medical Center was named in his honor.

In the summer of 1985, Lester R. Bryant, MD, ScD, became the third dean. He served four years and then accepted an appointment as dean at the University of Missouri-Columbia School of Medicine. Charles H. McKown. MD Jr., a long-time practicing radiologist in Huntington, was appointed as the fourth dean of the School of Medicine and vice president of health sciences in 1989.

Joseph I. Shapiro, MD, became the fifth dean of the School of Medicine in 2012, marking a sea change in the growth of the School of Medicine, its residency and fellowship programs, construction of new facilities, and its hospital affiliations. Dr. Shapiro nurtured new research programs, and the School of Medicine's National Institutes of Health (NIH) funding increased dramatically. It was a new beginning. In 2019, Marshall University received designation as a R2 research institution by the Carnegie Classification of Institutions of Higher Education, which reflected exceptional growth in NIH funded research programs, mainly in the School of Medicine. In 2019, Cabell Huntington Hospital, the School of Medicine's primary teaching hospital, purchased St. Mary's Medical Center and the two hospitals formed Mountain Health Network. This network grew the health care system dramatically in Huntington and neighboring counties in West Virginia and the surrounding counties in Ohio and Kentucky. The Mountain Health Network elevated health care in Huntington to the second largest health care system in West Virginia. After the School of Medicine accepted its first class of medical students in 1977, no one affiliated with the School of Medicine or its two affiliated hospitals ever envisioned that the system would grow into a health care behemoth, all to the benefit not only of people of the region, but also of the people of the State of West Virginia.



L to R: Marc Subik, Maurice A. Mufson, Donald Melnick, Rich Buscho, Shelton Thomas

CHAPTER THREE

My Journey as Founding Chair of the Department of Medicine

Nobody changes until they are very uncomfortable.
– Diane C. Mufson

When you build a medical school department from day one, no matter the outcome, you own it. I followed the plan I envisioned even before I moved to Marshall and Huntington, and none of the faculty in other departments, and none of the first faculty members I recruited to the Department of Medicine, could ever caution me "that is not the way we do it here." We adhered to the plan and I tweaked it as needed based on new information that became obvious once I settled into the community, interacted with the dean, and met the important community and VA Medical Center physicians. I needed help and employed a secretary, Mrs. Joyce Ray, who worked with me for more than two decades. Without question, the recruitment of an initial cadre of faculty members for the department represented the most important task for any chairman. I relied on Joyce for all secretarial support, began the identification of faculty candidates, and employed several by the end of my first year. I depended on my new colleagues for the confidential advice that every chair needed, none more than a new chair in a new medical school. They were there at every turn and it proved easy to own the rapidly developing department.

My journey to appointment as the founding chair of the Department of Medicine of the Marshall University School of Medicine began in July 1965, when I was appointed Assistant Professor of Medicine in the Department of Medicine, University of College of Medicine, and Chief Resident in Medicine

at the University of Illinois Division of Cook County Hospital. After I completed my third year as an internal medicine resident, I was selected for the position of chief of virology at the Hektoen Institute for Medical Research of Cook County Hospital. I was assigned a fully equipped virology laboratory and start-up research funds. I recruited a nurse colleague, Helen Krause, RN, who directed our on-ward ongoing epidemiologic surveillance of acute respiratory tract disease among children, which was the main thrust of my research, and of invasive pneumococcal disease in children and adults. I also conducted research on acute hemorrhagic cystitis in children with Lowell Zollar, MD. We were the first U.S. research group to describe that adenovirus type 11 infection caused acute hemorrhagic cystitis in children. Bob Belshe, then a first-year medical student in the Independent Study Program of the College of Medicine, joined me in this research and satisfied the requirement for his research project in that program. After he graduated medical school and completed his internal medicine residency at the University of Illinois College of Medicine, he accepted appointment in the research laboratory of Robert M. Chanock, MD, at the Laboratory of Infectious Diseases (LID), National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), as I had done several years earlier.

During my eleven years at the University of Illinois, I was promoted in academic rank to associate professor of medicine and then full professor of medicine. In 1971, I resigned from the Hektoen Institute for Medical Research and accepted appointment at the West Side VA Medical Center as associate chief of staff for Research and Education (ACOS/R&E). The research program received more than $1.5 million annually. The education program included eighty resident physician positions and the medical library, which housed a substantial audiovisual collection directed by two staff members, Mr. Edward Dzierzak and Mr. John Griffin. During my years at the West Side VA Medical Center, I negotiated an increase of about 50 resident physicians to a total of 130 resident physicians. When I joined the Marshall University School of Medicine, Edward Dzierzak asked me to alert him to any open position in the Health Science Library at the School of Medicine, which I did, and he applied and joined the library in 1978. He was appointed director of the Health Science Library in 1983, the position he held until his retirement in 2019.

After I had served as a faculty member of the University of Illinois College of Medicine in Chicago, Illinois, for about ten years, I sought a career

change, and I became interested in seeking a chair position in a Department of Medicine. Morton Bogdonoff, MD, a friend and chair of medicine at the University of Illinois College of Medicine, graciously agreed to submit my name to several medical schools in search of a chair of medicine and on his recommendation, I was invited to interview at several medical schools.

When I was contacted by Dr. Robert Parlett at the Marshall University School of Medicine, then in the earliest stages of development, I expressed interest in visiting the school and discussing the position with him. He was a microbiologist, who had been on faculty at the George Washington School of Medicine. I had heard of him when I was at the NIAID in Bethesda, Maryland, and appointed as a volunteer clinical faculty member in the Department of Medicine, but we had never met. When I told my wife I planned to consider the chair of medicine at Marshall, her first comment was "where?" and "where is Huntington?" I assured her that I am "only looking and do not to jump to conclusions." Alexander "Mac" Schmidt, MD, then dean of the University of Illinois College of Medicine, counseled me during my search that "if you have at least five percent interest in a position, then visit and interview." Before I joined Marshall, he was named head of the U.S. Food and Drug Administration (FDA).

My first visit to Huntington in mid-1975 proved interesting, enlightening, and highly unusual. I traveled to Huntington from Chicago non-stop by Piedmont Airlines. Dr. Parlett met me at the Huntington Tri-State Airport, which had an antiquated, unattractive passenger waiting area and wood-covered, but otherwise wide open, walkways to the gates. However, Huntington had an excellent schedule of several daily non-stop flights to major cities, including Chicago, Washington, D.C., and Atlanta, which encouraged me and the faculty candidates I would later invite to the campus to interview for a faculty position. Dr. Parlett hosted my first visit and he booked a room for me at the Holiday Inn on U.S. 60, across from a shop selling sculptures carved from coal. It probably was the nicest shop on that strip of road. The Holiday Inn was about three miles from downtown Huntington. Unfortunately, the new modern Holiday Inn in downtown Huntington was still under construction.

The next morning, we met for breakfast at the hotel. Dr. Parlett and I discussed the status of the School of Medicine, his vision for its development, the position as chairman of the Department of Medicine and the Huntington medical community. During day one, I interviewed with a few faculty mem-

bers already recruited to basic science departments and also met with several community physicians. In particular, I was hosted at a lunch by physicians from the Huntington Internal medicine Group (HIMG), the largest internal medicine group in the Huntington area. Lunch was held in the dining room at their practice building. The main course was a very tasty and healthy fish dish, regularly served in their practice offices. Two HIMG physicians served on the committee for the chair of the Department of Medicine. One of these physicians, Charles "Skip" Turner, MD, a cordial and soft-spoken locally influential community physician, chaired the committee, and after I was appointed chair and we moved to Huntington, the two of us became good friends.

Before my first visit to Marshall, I spoke with two of the senior administrative staff in education service at the VA Central Office, in Washington, D.C., whom I had met several times through my position as ACOS/R&E at the West Side VA Hospital and when I was a candidate for a senior administrative position in the education service a few months before I interviewed at Marshall. Their best judgment was that Marshall University School of Medicine had an excellent chance to succeed, and we know now that their judgment was correct, although no one could have envisioned the extraordinary growth and influence that the School of Medicine would attain in the next forty years. Although I had interviewed at other medical schools, my interest in the position at Marshall intensified more than that for any other school. The opportunity to start a new Department of Medicine not only proved an intellectually intriguing challenge but was almost irresistible because it involved building a new Department of Medicine from scratch.

Deedee joined me for my second visit to Marshall at Dr. Parlett's invitation. I arrived a day or two before Deedee and I traveled with Dr. Parlett to the Beckley VA Hospital the day she arrived. The Beckley VA Hospital was affiliated with the medical school and at intervals the VA Dean's Committee was scheduled to meet there. Dr. Parlett's secretary met my wife at the airport and escorted her to the Holiday Inn, which she understood was brand new and located in Huntington's downtown district. Once in the room, she called me frantically and asked whether I knew that downtown Huntington did not have sidewalks or nicely paved roadways and that the shops across from the hotel belied explanation. Eventually, she learned she was booked into the Holiday Inn, just out of Huntington, because the new one had not yet opened.

Later, we did tour downtown Huntington; the shops were only open during the days and on Monday evenings, and none opened on Sunday. We attempted to open a charge account at Anderson-Newcomb, the main downtown department store. Despite the fact that we possessed charge cards for Saks, Marshall Fields, and other major stores, the credit clerks were unfamiliar with those department stores. Consequently, they delayed issuance of our credit card for some time.

Skip Turner's wife, Linda, proved very gracious to my wife and me at both of my recruitment visits and especially during the second visit when I was accompanied by my wife. She hosted Deedee for an informal lunch, which led to a close and long-lasting friendship. This meeting played a decisive influence in her interest in Huntington. They remain very good friends to this day.

Our previous experiences in small cities were positive. Our models were the two small towns in which we went to our respective undergraduate universities. I graduated from Bucknell University in Lewisburg, Pennsylvania, and Deedee graduated from the University of Vermont, in Burlington, Vermont. Deedee was a member of the school board in our hometown of Elmhurst, Illinois, and she had spoken with a senior administrator of Cabell County Schools who confirmed what the superintendent of Elmhurst Schools suspected, that some of the schools in Huntington were very good.

Soon after our second visit to Huntington and Marshall, Dr. Parlett suffered a critical difference of opinion with the president of Marshall University, Dr. Robert Hayes, and Dr. Parlett vacated the deanship. At that point, Dr. Hayes prepared the additional information for the accreditation process to proceed and he appeared at the Liaison Committee on Medical Education (LCME) in Chicago, and secured the Letter of Reasonable Assurance, the document that authorized the administration to enroll the first class. Providing it satisfied all LCME requirements, the school would receive its accreditation upon graduation of the first class. This was the key development for me, as I would not agree to join the Marshall University School of Medicine unless and until the School of Medicine received its Letter of Reasonable Assurance.

I was informed of the change in medical school leadership and that the search for a chair of medicine was on hold for an unspecified time. Deedee and I decided to renovate the kitchen in our Illinois house. It seemed that

just a soon as the renovation was completed, the new acting dean at Marshall, Robert W. Coon, MD, called and invited me to visit the campus again.

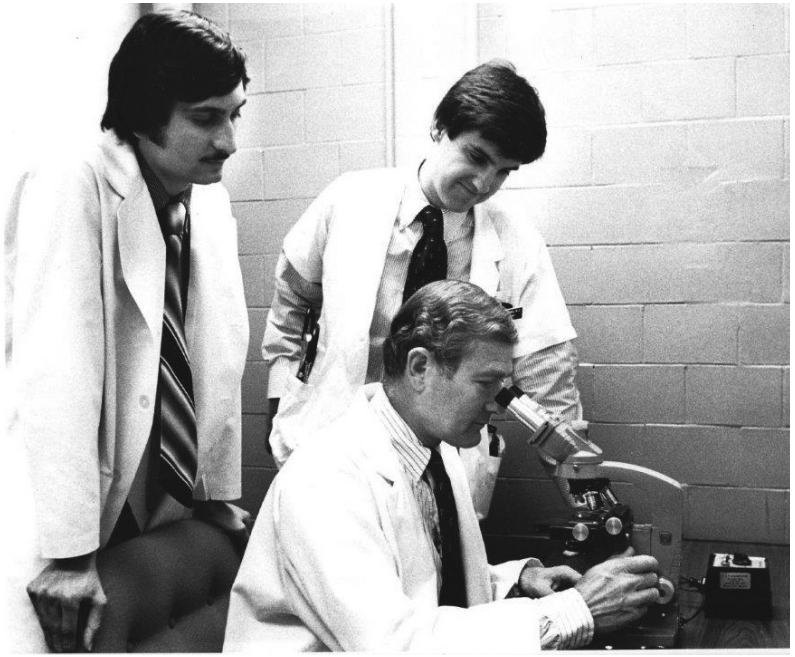
Coincidentally, several weeks before Dr. Coon called me, the dean of the University of Illinois College of Medicine appointed me as the representative from the Chicago campus to a search committee for the dean at the satellite campus in Rockford, Illinois. Among the candidates for this position was Dr. Coon, and I interviewed him. He was on the circuit interviewing for a deanship. After his visit to Rockford, he accepted the position as vice chancellor for health affairs with the West Virginia Board of Regents. When Dr. Parlett exited Marshall, Dr. Coon agreed to serve as acting dean at Marshall. The search committee to select a permanent dean, which was chaired by Mr. Carlton Smith, then hospital director of the Huntington VA Hospital, quickly offered the position to Dr. Coon and he accepted. He and his wife Judy moved to Huntington. A new era began for the School of Medicine.

In 1975, Dr. Coon, now the permanent dean, telephoned and arranged my visit to Huntington again to discuss the chair of medicine position. At that visit we discussed salary, projected staff requirements, and a budget for the Department of Medicine. I returned home and Deedee and I enthusiastically agreed that I should accept Dr. Coon's offer. We began to prepare for our move to Huntington, an adventure that just wasn't on our radar when I first visited Marshall. Moreover, we never envisioned that we would stay for more than forty-five years. We comfortably made our home in Huntington longer than in any other city of our lives, enjoyed the university, raised our three children, and pursued our careers in a city where, within a few years, we felt at home. Deedee qualified for her license to practice psychology and in 1979, started a private psychology practice, which she pursued successfully for more than thirty years. Both of us, accustomed to "big city living" in New York City, Washington, D.C., and Chicago, easily adapted to Huntington and became part of the growth of the School of Medicine and the two community affiliated hospitals, as well as the ensuing emergence of an excellent health care system. Now after forty-five years in Huntington, it remains our home, and although my New York City accent persists, our love for Huntington and Marshall University stays strong.

My appointment began July 1, 1976, and in those next several months after Deedee and our three children—Mike, Karen and Pam—arrived in Huntington we settled in, but not without the uncertainties of moving to a new city and state, which didn't resemble any of our former locations. In

some ways it proved foreign to us. In the 1970s, Huntington's population reached about 75,000 people. During the forty-five years we resided there, it lost about one-third of the population. Huntington developed a strong and diverse restaurant culture, the Huntington Symphony Orchestra flourished, the Huntington Museum of Art—the only art museum in West Virginia—matured, and Marshall University and its academic growth strengthened, as did its outreach programs.

I had my new position and each weekday I went to the office and found a small community with endless activities to do. My wife, on the other hand, relinquished all of her Illinois connections and positions in Elmhurst when we moved to Huntington. She had served on Elmhurst's local school board and taught psychology part-time at Elmhurst College, a small liberal arts college just ten minutes or so from our house, which provided her two special communities. Unable to obtain a part-time position teaching at Marshall, she attempted to find a new career and within one month she secured a position at the Region II Mental Health Center (now the Prestera Mental Health Center) as a research associate on a grant that supported investigation of rape and incest in rural West Virginia. It was not easy for her. I realized that other trailing spouses might feel the same way. Consequently, this situation explained the most common reason faculty candidates who declined the offer of a position in the Department of Medicine gave, namely "my wife could not live in Huntington." Unfortunately, no come-back exists to counter that reasoning; "the unwilling-to-move wife excuse" always prevailed.



L to R: Marc Subik, Shelton Thomas, Maurice A. Mufson

CHAPTER FOUR

My Initial Thoughts About Rummaging Around a Vacant Department

On my first day in the Department of Medicine, I was its only member.
– Maurice A. Mufson, MD

All medical schools are not alike, all medical communities are not alike, notwithstanding size, climate, and location. Any newly recruited chair of a Department of Medicine in a medical school located in a community in which they never resided or only toured when they were recruited might well be in for "culture shock." We were. Whoever we met in Huntington during the course of our move there, even to this day, never failed to comment on our accents. I grew up in upper Manhattan, New York City, and my wife in Long Beach, New York, and our accents seemed normal to each other and millions of northeasterners. Nevermind that the accent of native West Virginians obfuscated our understanding of their meaning. "Give it time," people said, and within three years I understood everyone "as clear as a bell." Nonetheless, West Virginians were always very friendly to us. Many Huntingtonians held receptions during our first year at Marshall to which they invited the new clinical chairs and other faculty and lots of their friends. I went to my office at the medical school, started fast, and met many new people, unlike my wife's experiences during our first year in Huntington. My wife gave up her work, community involvement and friends in Illinois to become "the trailing spouse." In Huntington, her professional and social milieu re-establishment required time especially because she helped our three school-aged children adjust to the move. Both of us needed to establish

our own identities in Huntington and when we did, we enjoyed our new life in Huntington.

When I began my tenure in July 1976, the entire faculty of the School of Medicine consisted of several basic scientists and a few clinicians, none in the Department of Medicine, except for Guy Hollifield, MD, located in Beckley, West Virginia. Dean Coon appointed several internists from the Huntington medical community, two from the single dominant multi-physician internal medicine practice, Huntington Internal medicine Group (HIMG), and three in private practices, to serve as the search committee for the chair of the Department of Medicine. The search committee was chaired by Charles "Skip" Turner, MD, a gastroenterologist from HIMG, and the members included Wynn John, MD, a family practitioner; Sheffer Clark, MD, a nephrologist; Harry Tweel, MD, a pulmonary diseases specialist; and David Daniels, MD, an internist also from HIMG. I only learned the names of the members on the search committee at my 20-year anniversary as chair, in 1996, when Dr. Turner revealed them to the audience.

At the anniversary reception, Dr. Turner mentioned the key qualities the search committee desired in candidates in the letter he sent to chairs of Departments of Medicine in all U.S. medical schools. These included administrative ability, well-developed interest with past experience, appropriate academic activities, such as teaching and research, and a willingness to serve full-time and assume full responsibility for the development of a high-quality medicine program for undergraduate, graduate, and continuing medical education.

I added my list of key qualities—or "Mufsonisms" if you will—that represented the important values for the chair of a Department of Medicine on the road to success:

1. Always set a high standard for your colleagues and staff and never ask them to do something that you are not willing to do yourself.
2. Be supportive of your colleagues whenever you can.
3. Help people think younger than they are in years.
4. Maintain a very broad scope of interests.
5. Always be ready to listen, consider, and learn.
6. Never say "no" to anyone who wants to try something new.

7. Be true to your word.
8. Be open to new ideas.
9. He who controls the minutes controls the meeting.
10. Never mess with the data – the data is the data.

The members of the search committee interviewed me, along with other members of the medical community. They treated me to lunch at the practice offices of HIMG, augmenting my contacts with the practicing internists in the community. The search committee recommended my appointment as chair of the Department of Medicine to Dean Coon. The search committee members expressed much enthusiasm for the School of Medicine and endorsed approval of its accreditation by the LCME. In retrospect, personal feedback and comments indicated that few physicians in the medical community believed that the School of Medicine would gain LCME approval.

The impression the medical school administration communicated to the medical community, or perhaps the perception they held at the time the School of Medicine began, was that the community physicians would provide most of the bedside instruction of medical students and resident physicians, and the full-time faculty physicians in the Department of Medicine would be involved mainly in didactic instruction and research. Dean Coon championed this approach and some community physicians agreed to the plan, but I judged it unrealistic because bedside instruction of medical students and resident physicians represented a time intensive activity that community physicians could not relinquish from their time with private patients on any regular basis schedule.

I asked several community internists to serve as a committee to review credentials and recommend clinical faculty appointments, including rank, for the community internists who wanted to teach. The committee members approached this assignment in a deliberate manner and decided that, in general, appointments should be "entry level," except for the few senior and distinguished community physicians. The committee members indicated that clinical faculty appointments by this process required a substantial commitment of time in the instruction of medical students and resident physicians in the Department of Medicine and, on that basis, they would merit promotion or not, in contradistinction to the committee of surgeons who recommended professorial rank based on time in practice, as many surgeons had practiced in Huntington for years and years.

During the ensuing two decades, the faculty of the Department of Medicine and the community physicians enjoyed reasonably good relationships. Some modicum of "town-gown" friction existed at the start of the School of Medicine. A few community physicians expressed it more than others did, but most of them retained appointments and contributed to the teaching of medical students and residents. Several internists who moved to Huntington a few years after the Department of Medicine "grew up," also applied for faculty appointments.

The School of Medicine faculty practice plan from its onset proved to be the major competition for community physicians, much to their distress. Until the School of Medicine became established, the community physicians enjoyed a monopoly of medical care in most of their general and specialty practices. The faculty practice plan threatened their comfortable hold on the practice of medicine in Huntington. Over the next forty-five years, the faculty practice plan, designated as Marshall Health in 2012, grew to become the dominant medical care group in Huntington and surrounding market area.

On my first day in the Department of Medicine, I was its only member, which I expected and which I sought to change in quick order. The department occupied a few offices on the fifth floor of the Doctors' Memorial Building (DMB), located on Sixth Avenue and Eighteenth Street, near the Marshall University undergraduate campus (now a parking lot for students). Subsequently, the Department's offices relocated to the fourth floor and then to the third floor, which became its home until the School of Medicine built a new building adjacent and attached to Cabell Huntington Hospital in 1998. The first person to join me in the Department of Medicine was Mrs. Joyce Ray, my secretary. A few years later, she accepted the position as administrative assistant for the internal medicine residency.

At the start of the School of Medicine, neither the medical school nor the VA Hospital in Huntington contained research laboratory space. As part of my move to Huntington, I brought my collection of research laboratory equipment that I had in two laboratories at the West Side VA Hospital in Chicago and needed to relocate in comparable research space at Marshall or the Huntington VA Hospital. The collection included specialized equipment, such as microscopes, water baths, tissue culture equipment, pH meters, centrifuges, all manner of glassware, two refrigerators and, especially, three sub-zero freezers filled with virus harvests, specimens at -70F, and more than

30,000 serum specimens collected from 1966-1976. At that time, I held staff appointments both at the Hektoen Institute for Medical Research of Cook County Hospital and the West Side VAMC, and a faculty appointment at the University of Illinois College of Medicine in Chicago.

As the Huntington VA Hospital lacked even one research laboratory, what was my "unconventional research laboratory?" Previously, I had met the Huntington VA Hospital Director Carlton Smith and he identified the only possible research space at the hospital that could be transformed into a research laboratory, and it was the stage of the auditorium. It had four rooms, two on each side, accessible by metal staircases, that in an earlier era might have served the performers, if there were any, and had been designed to serve as dressing rooms for actors and actresses in anticipation that the stage would be used for live theater. To my knowledge, it had never been used for that purpose.

I arranged to move my laboratory and VA research funds from the West Side VA Medical Center (VAMC) in Chicago, where I was the associate chief of staff for research and education and professor of medicine at the University of Illinois College of Medicine, to the Huntington VA Hospital. The two institutions in Chicago were located only about two blocks from each other. The Engineering Service at West Side VAMC called the engineers at the Huntington VA Hospital and advised them of the equipment I needed to move to Huntington, including several Sub-Zero freezers that required special electrical outlets. Research Service at West Side VAMC arranged to contract with a trucking company in Chicago to provide a refrigerated truck. My research staff and I rolled the freezers into the very cold compartment of the truck and the driver drove all night to arrive early in the day at the Huntington VA Hospital. The Huntington VAMC engineering group moved my freezers into my "unconventional research laboratory" and connected them. Thankfully, their subzero temperatures had maintained well.

Director Carlton Smith arranged for a private company to outfit each dressing room as a microbiology transfer room with benches, full sets of biocontainment cabinets, gas, water and vacuum utilities. The stage became our place to house the freezers, refrigerators and a large centrifuge, as well as our desks and file cabinets. It worked very well.

It required about one-year to organize my new "unconventional" laboratory and start my research on virus infections of the respiratory tract. At the Huntington VA Hospital, I was appointed acting associate chief of staff for

research, and within a few months, I selected Teresa Mathis as the secretary of the research service.

Access to the research transfer rooms required climbing up a staircase. So, when I worked in one of the transfer rooms on the north side and a technician worked in one on the south side, and that technician wanted to show me a result, I had to scramble down the first staircase, walk across the stage and climb the second staircase to the technician's transfer room. When done, I retraced my path to my transfer room on the other side. It was a clumsy and cumbersome approach to collaborative research. The transfer rooms did not have intercoms. Cell phones had not become part of laboratory technology, or for that matter, everyday technology. The stage accommodated three desks, several sets of metal shelves each about seven feet high and four feet wide for storage of non-perishable supplies, three Sub-Zero freezers and two refrigerators. It was a creative, but makeshift approach for research laboratory space, but it served us well. However, the stage was separated from the auditorium only by a heavy-duty curtain, a red, standard theater curtain. Several years after I began my research "on stage," the chief fire marshal ordered the hospital administration to replace it with a genuine firewall, that safely contained the research laboratory.

For several years, we conducted our research studies on respiratory viruses and pneumococcal diseases in this environment. I published many articles in peer-reviewed scientific journals that described our results. When representatives visited from a pharmaceutical company that signed us to participate in their clinical drug or vaccine trial, they smiled in amusement at my on-stage laboratory, but continued our funds without hesitation. When Dean Coon designated the old nurse's residence building at the Huntington VA Hospital as a research facility, he asked me to suggest a plan to remodel the small rooms as research space. I kept my on-stage laboratory and assigned the remodeled laboratory space to newly recruited faculty in medicine who conducted research "at the bench." The on-stage research laboratory worked for me and it proved the adage, "if there's a will, there's a way."

My VA Research Award paid two full-time technicians, Ms. Susan Chandler and Ms. Janice Justice. Both resigned to pursue careers in chiropractic. Next, Mr. Thomas Styer joined me from California. He had excellent virology research experience. However, one or two years after he began in my research laboratory he matriculated as a first-year medical student in the

Marshall University School of Medicine. Today, he is a successful emergency room physician and long-time friend whom I meet from time to time at Marshall's medical school activities. Ms. Dallas Hughey joined me next as the only technician, which she preferred, and worked with me for several years until she matriculated in the School of Business at Marshall University to pursue an MBA. Finally, Mr. Ronald J. Stanek joined me on September 25, 1989, following completion of his M.S. degree in biological sciences at Marshall University. We worked together continuously in my research laboratory for three decades. September 25, 2019, we celebrated our thirty-year anniversary as research colleagues. He proved a worthy associate and our research progressed extremely well during those many years and continues to do so.

I started the recruitment of faculty members to the Department of Medicine with a focus on candidates with whom I judged a real chance of their recruitment; for example, they came from states east of the Mississippi, because proximity encouraged their visits. Besides, candidate visits from nearby neighboring states proved less expensive, which was important for a medical school department with a limited budget.

Mostly, "matching markets" provided the most productive approach for the recruitment of new faculty members. Matching markets meant I searched for faculty candidates among faculty and fellows in medicine at medical schools with like interests as Marshall's Department of Medicine. First, I wrote the chair of the Department of (Internal) Medicine at each of the medical schools in the states adjoining West Virginia and, later, sent letters to every chair of medicine east of the Mississippi. These were all "snail mail" communications long before the days of the Internet. My secretary courageously pushed out these letters using an electric typewriter.

Graham Jeffries, MD, chair of the Department of Medicine at Pennsylvania State University School of Medicine in Hershey, Pennsylvania, and a gastroenterologist, invited me to "shadow" him for a couple of days to learn his schedule and how he went about his crowded day. We devoted some time for private discussions in his office. The visit to Hershey proved very valuable and Graham and I became friends. It wasn't an eye-opener, however, because I knew what I was up against from my experience as an administrator at the University of Illinois College of Medicine and the West Side VA Hospital. My chair position at Marshall held unforeseen challenges because none of

the University administrators, except for Dean Coon, understood what it meant to build a Department of Medicine from the ground up.

At its start, the School of Medicine had only a modicum of infrastructure that supported faculty and staff. One annoyance was non-delivery of mail during the Christmas holidays, which was the standard on the undergraduate campus, but interrupted the normal business of the faculty in the School of Medicine, who treated patients on most of those days. A second annoyance during the first winter, was an order issued by a low-level administrator in the School of Medicine to close the School of Medicine the morning after snow fell the previous night despite the large number of patients who braved the snow to get to their appointments with faculty physicians in the DMB. The patients were forced to wait outside in the snow until we convinced the administrator that, snow or not, it was business as usual for patient care. Then, he unlocked the doors.

All new faculty candidates who accepted appointment to the Department of Medicine had to undergo mandatory processing procedures, including obtaining a State of West Virginia medical license, which sometimes proved interesting. Usually, this process involved an interview by a member of the licensing board, located in Charleston, at a monthly meeting, and presentation to the interviewer of their original medical school diploma, framed and all, for verification. Such interviews required the physician to attend a licensing board meeting and depending upon the number of physicians scheduled for interview, consumed one or two hours or more. Only much later in the development of the Department of Medicine did the licensing board designate a member in Huntington who could interview physicians in Huntington, including new faculty members.

I was interviewed in Charleston by Dr. N.H. Dyer, state director of the West Virginia Department of Health, who also served as the president of the Medical Licensing Board. His secretary accompanied me into his office and introduced me. He chatted briefly with me, and I told him about my appointment at Marshall University School of Medicine and my special interests in infectious diseases and epidemiology. He asked whether I believed in preventive medicine, and I said I did. We chatted a bit more and he announced that I was licensed. Dr. Dyer advised me that I did not have to appear before the licensing board at its next meeting, but if wanted to do so he would gladly welcome me. His secretary, who had stood just out of his line of sight, shook her head vigorously sideways several times to prompt

me and I declined his invitation. In the outer office she confirmed, almost cautioned, that I did not need to attend the next board meeting.

When I returned to the medical school, Dean Coon asked whether I was licensed, and I answered that I was. He wanted to see a document confirming that, but the secretary at the licensing board did not issue any document to me at my interview. He asked me to call the licensing board and inquire about a document and the same secretary answered the telephone and she said, "Once Dr. Dyer, the president of the board, affirmed you were licensed, then you will receive your license soon and if any medical facility in Huntington questions you just tell them to call my office and I will verify that you had been approved for a medical license." The experience was a little unique and old fashioned, but it worked for me. Previously, I was licensed in New York and Illinois and both states followed a more traditional approach. In a month or so, my official West Virginia medical license arrived.

A few months later, the Association of American Medical Colleges (AAMC) sponsored a one-week course/workshop/retreat for new chairs of Departments of Medicine. I applied and was accepted. It was held at The Woodlands Resort and Conference Center in The Woodlands, Texas. About twenty chairs of medicine from twenty different medical schools attended this program. Two faculty members from the Sloane School of Management of MIT, in Boston, and one faculty member from the School of Journalism at The Ohio State University taught the course. It was an excellent program. I never forgot their parting admonition: "After you arrive at your home school of medicine, reread the information from the course, think about it, but 'let it cook' about six months before you upset any of your faculty by the introduction of lots of new ideas from this course." It was good advice for that program and lots of others since then.

Faculty of the Department of Medicine, 1990

Front Row, left to right:
Bruce Chertow, Maurice A. Mufson, Gretchen Oley, Anthony Bowdler

Second Row, left to right:
Nancy Munn, Henry Driscoll, Shirley Mae Neitch, Nancy Scher, Ralph Webb, Haytham Jabi, Prathap Chandran

Third Row, left to right:
Thomas Kiernan, Thomas Savory, Marc Subik, Robert Touchon, Vernon Humbert, Unidentified, John William Leidy, Andrew Burger

CHAPTER FIVE

Faculty Recruitment Proved Difficult, Exciting and Rewarding

All the easy jobs are filled.
– Maurice A. Mufson, MD

My first test as chairman, at least as I perceived it, was to recruit a full group of quality faculty members to the Department of Medicine, as the other chairs also did. As I alone comprised the entire Department of Medicine at the beginning, and thus, I alone conducted all aspects of each search, at least until I recruited some senior faculty who shared in this endeavor. My model of a faculty candidate, irrespective of their subspecialty, mirrored my interest in research, had experience in a research laboratory, mainly "at the bench," authored several publications in refereed journals, was well respected as a clinician by colleagues and teachers, and evinced interest in the instruction of medical students, residents, and fellows. Such candidates existed. The question that weighed on my mind was could I convince them to visit Marshall, let alone recruit them to a new department in a new medical school? I never gave this question any thought until the first day in my office at Marshall. However, I was cognizant that my success depended on whether the candidate liked me as much as the package of salary, title, office, laboratory, and schedule of work. I worked hard on the management of each search and I recruited a full group of faculty members within five years of my appointment.

No single formula existed for effective management of a new Department of Medicine or for becoming a "really good chair," a laudable goal, which engendered different interpretations at each medical school. I followed a few of my own truisms. First, get along well with the dean. Second, recruit into your faculty at least one member who will inform you of the below-surface issues in the department that no one otherwise wants to tell the Chair because it is uncomfortable to do so. I had two senior faculty members in my department who heard everything in the School of Medicine and at the community hospitals and relayed it to me. Information is the most valuable commodity imaginable, and you can ill afford to be the last one to know something important. Third, develop a consistent management style that staff and faculty can depend upon. In public, I always defended the staff and faculty members, irrespective of whether they were right or wrong; however, in private, just between the two of us, I discussed the issue with them and if I judged that they failed to appropriately represent the department, I told them so and we resolved it. I labored diligently to have my word mean that faculty and staff could count on it and they did; initially, no paper trail was needed, but as the number of faculty increased, a paper trail became essential so that I met all the commitments to which I agreed in writing for individual faculty members.

Finally, chairs need to act primarily for the advancement of their faculty rather than themselves. They need to nurture the growth and accomplishments of the younger faculty members in the department and always offer them, when asked, the best advice, confidently and unselfishly. The Chair must attain Erik Erikson's seventh stage of social development, namely, "generativity" and concern themselves with the advancement and the career development of their faculty (Erickson, E.H.: *Childhood and Society.* WW Norton & Company, New York, 1950, 1963). Another way of thinking of generativity, according to a saying attributed to Oliver Wendell Holmes, the chair should have completed "carving your initials on the wall" and now help junior faculty do the same.

Within the first six months of my tenure, I hosted thirty-three candidates for faculty appointment in the Department of Medicine. I almost camped out at the Huntington Tri-State Airport, on the outskirts of town, more often than I did in my office. I alone hosted these candidates, showed each one of them the best parts of the City of Huntington, walked through the offices of the School of Medicine and affiliated hospitals and toured the

surrounding areas. I reviewed with them the 10-year plan for the development of the Department of Medicine.

I accompanied each candidate faculty member on the same route from the airport to downtown Huntington, which represented some of the best parts of southside residential Huntington, Ritter Park and one of the two community affiliated hospitals. We drove from the airport on Interstate-64 East to Exit 8, down Fifth Street hill and left on Twelfth Avenue to my house. Then, we turned left at Fourth Street and left again at North Boulevard toward Ritter Park and the elegant, stately houses that fronted the park, including the house of the president of Marshall University. We continued to Enslow Boulevard and at Sixteenth Street turned north to drive past Cabell Huntington Hospital, and then to downtown Huntington. Each faculty candidate viewed at least two or three nice residential neighborhoods and understood that Cabell Huntington Hospital was nearby.

During the 1970s and early 1980s, few faculty positions were advertised in medical journals. I placed a line listing in a table published by the American Federation for Medical Research (AFMR) in their journal *Clinical Research* (now named the *Journal of Investigative Medicine*). Usually, the "ad" comprised a single line per medical school that listed all open faculty positions by specialty and rank. Only about one-third of American medical schools advertised in clinical research. The cost was $100 annually for a listing that appeared in at least four issues of the journal, very reasonable by today's prices. Infrequently, we received an inquiry from the listing. Nonetheless, it seemed important to announce our search for faculty candidates.

However, the best chance for the recruitment of faculty to the Department of Medicine remained direct contact with faculty physicians in other medical schools whom I knew personally. Initially, I approached friends and colleagues with who I had bonded at different medical schools. I judged they seemed sufficiently foresighted to recognize the opportunities and excitement of "getting in on the ground floor" of a new medical school. Among this group were Robert B. "Bob" Belshe, MD (infectious diseases), Bruce S. Chertow, MD (endocrinology), Rich O. Buscho, MD (general internal medicine), and Robert E. "Bob" Burch, MD (metabolism), all of whom I knew from my tenure at the University of Illinois College of Medicine and the West Side VA Hospital in Chicago. Bob Belshe and Rich O. Buscho conducted research projects with me at the University of Illinois, and we published our results together in refereed medical journals. Bruce Chertow served on the

medical staff at Rush Medical College, adjacent to Cook County Hospital. Robert Burch and I served on a VA Central Office research committee; he held a staff position at another VA Hospital in the midwest.

For a first recruitment visit, I invited the faculty candidate alone. This approach of mine did not allow any changes. If a candidate expressed interest in a faculty appointment and I thought they would be an excellent addition to the department, I invited that candidate for a second visit, together with their spouse. The department paid the travel costs for both. At each faculty candidate's first visit I hosted them at dinner and, at the beginning of recruitment when I had not signed anyone to a contract, I invited Paul Guilfoil, MD, the chief of staff at the Huntington VA Hospital and a chest surgeon, to join me because he represented academic medicine and spoke for the hospital director. When I asked about equipment purchases and technical support for the candidate who dined with us, Dr. Guilfoil made the commitments for which he had authority. He was a team player, as was Mr. James DeNiro, the hospital director. Faculty candidates who failed to commit by the second visit were not invited for a third visit. The process ended with the second visit, a firm rule of mine. Candidates who failed to decide by the end of their second visit and requested a third visit were denied it, as my experience convinced me that these candidates never signed on.

Within one year, several faculty members joined the Department of Medicine. Bob Burch became professor of medicine and the chief of medical service at the Huntington VA Hospital in October 1977. He became a longtime friend after we met at a Research Service committee meeting at the VA Central Office. All faculty recruited to the Department of Medicine during the first ten years received joint appointments at the Huntington VA Hospital, meaning that the Department of Medicine and the medical service at the VA Hospital comprised the same cadre of internists and subspecialists. The next three faculty candidates to join the Department of Medicine were Robert J. "Bob" Crisalli, MD, a pulmonary diseases subspecialist; John C. Huntwork, MD, a rheumatologist, appointed chief of the section of rheumatology; and Donald S. Robinson, MD, a clinical pharmacologist, appointed chief of clinical pharmacology and also chair of the Department of Pharmacology. Of the new schools of medicine, Marshall was first to establish a section of clinical pharmacology in the Department of Medicine. This nucleus of faculty members assisted me in the development of the medical student

curriculum for the first three years of medical school and the preparation of the department's application for the internal medicine residency.

By July 1978, several more faculty members joined the Department of Medicine. The Department boasted eleven full-time faculty members by the start of my third year. It certainly was more faculty than the community physicians ever thought would join the Department of Medicine and it happened so quickly. At this early stage in its development, the Department of Medicine represented a creditable medical practice group that on the one hand competed remarkably well in the community, and on the other offered consultations in some sub-specialties not otherwise available in the Huntington area—for example, infectious diseases.

The initial faculty included Bob Belshe as section chief of infectious diseases; Lee P. Van Voris, MD, in the section of infectious diseases; Bruce S. Chertow, MD, as section chief of endocrinology; Herbert Spencer, MD, a generalist, as chief of staff at the Huntington VA Hospital; Nancy S. Scher, MD, in the section of hematology and oncology; Paul Murphy, MD, in the section of general internal medicine; Donald E. Melnick, MD, in the section of clinical pharmacology; and Michael Kinney, MD, in the section of nephrology.

In 1979, the three additional faculty members who joined the department included Nicholas "Nick" Baranetsky, MD, in the section of endocrinology; Rich O. Buscho, MD, in the section of general internal medicine; and Frank Rivas, MD, a non-invasive cardiologist, appointed as section chief of cardiology. Thus, at the end of the year, the faculty numbered 16 full-time members, including me. Moreover, I had plans to recruit additional subspecialty faculty during the next academic year.

In 1980, six more full-time faculty members joined the department, including Jack Bernstein, MD, and William Graham, MD, both in the section of infectious diseases; Anthony Bowdler, MD, as chief of the section of hematology and oncology; James Kemp, MD, in the section of general internal medicine; William Sivitz, MD, in the section of endocrinology; and Duane D. Webb, MD, in the section of gastroenterology. In 1981, Thomas Savory, MD, and Renata Kadzielawa, MD, joined the section of general internal medicine.

Thus, at the completion of my first five years, I had recruited twenty-three full-time faculty members who formed the core of the Department of Medicine, more than any other clinical department. The faculty devoted

much time and energy toward development of all facets of the Department of Medicine. Initially, I served as the course director for the first-year course in internal medicine, the second-year courses in physical diagnosis and Introduction to Clinical Medicine, and the third-year internal medicine clerkship. With the growth and development of the department, I needed to assign the responsibility of the course directorships to individual faculty members, as well as preparation of faculty inpatient and outpatient schedules and assignment of residents. Faculty also helped develop fourth-year electives for medical students, both in general medicine and subspecialty "bench" and clinical research. I offered an elective in infectious diseases to the fourth-year medical students.

All of us contributed to and experienced the excitement and satisfaction as pioneers in building the department. Therefore, the department successfully moved forward in these beginning years. The department comprised a very strong physician group with diverse medical school and residency backgrounds, many of whom had graduated from well-respected medical schools and had served on the faculty of other well-respected medical schools. They accepted appointment at Marshall because of a once-in-lifetime opportunity to become part of the faculty team that would build a Department of Medicine in a new medical school. I felt that pioneer spirit also or I would not have accepted appointment as chair of the Department of Medicine.

During the next decade, a few faculty members moved on as their careers dictated and new faculty members joined the department. Overall, the number of faculty increased, which was important because of the increased obligations that accrued to the department as the School of Medicine matured. In 1982, we added Sarah A. McCarty, MD, in general internal medicine, and Robert C. Touchon, MD, as the new section chief of cardiology. Seven new faculty members joined in 1983, including Geoffrey J. Gorse, MD, and Edwin L. Anderson, MD—who as a pediatrician enlarged the scope of patient care and clinical trials—in the section of infectious diseases; Andrew J. Burger, MD, and Joseph F. Hanna, MD, in the section of cardiology; Nancy J. Munn, MD, in the section of pulmonary diseases; Michael D. Webb, MD, in the section of endocrinology; and Shirley Neitch, MD, a geriatrician, in the section of general internal medicine. In 1984 and 1985, six more faculty members joined the department, including Dr. Marc Subik, MD, as chief of the section of gastroenterology; Sammy T. Bebawy, MD, and Albert Magnin, MD, in the section of pulmonary diseases, Gretchen E. Oley, MD, as chief

of the section of general internal medicine; and Prathap G. Chandran, MD, and Vernon Humbert, MD, in the section of cardiology.

Administration of the department proved to be my most time-consuming function as chair in the early years. I met numerous new faculty candidates, escorted them and introduced them to other members of the faculty to recruit them and grow the department. I was involved in the recruitment of residents in the Department of Medicine's internal medicine residency and assisted sections in developing subspecialty fellowships in the department, including infectious diseases, endocrinology, pulmonary, and geriatrics. With each successive year, more residents joined the Department of Medicine's program and subsequently residents who graduated from the internal medicine residency accepted positions as faculty members in the Department of Medicine, including Drs. Oley, Subik, and McCarty.

During the next decade, I participated in the residency directors' national organization and the organization for chairs of departments of medicine in the United States, called the Association of Professors of Medicine (APM). I was elected to the council of the APM, and then in sequence became president-elect in 1995, president in 1996-1997, and past-president in 1997. I was the first president of the APM from a small U.S. medical school, let alone a new one. In 1998, the American College of Physicians awarded a mastership in the college to me, and I am one of about 600 so honored.

During the 1980s and early 1990s, the Department of Medicine was awarded more than $500,000 annually from the VA Research Service to conduct research on diseases important to veterans, especially major infectious diseases and endocrine disorders. We were one of the first medical schools in the United States to receive research funding from the National Institutes of Health (NIH) for research on AIDS and to develop an AIDS vaccine. Dr. Belshe successfully directed these research projects and they grew annually.

The principal focus in infectious diseases research, which was led by Dr. Belshe, and included Dr. Van Voris, Dr. Gorse, and me, were acute respiratory infections caused by viruses. From 1979 to 1981, we tested a respiratory syncytial virus (RSV) vaccine in young children and subsequently tested a new experimental HIV vaccine in normal adults.

The programs of research in the Department of Medicine attracted nationwide interest. The infectious diseases section garnered substantial amounts of money from the NIH to conduct its research on HIV and other vaccine programs. These programs received more than $1.5 million in the

1980s. Dr. Belshe was the recipient of one of only four awards nationwide from the NIH to establish a Vaccine Center for the evaluation of vaccines, especially of new vaccines for bacterial and viral diseases. He, Dr. Van Voris, and I collaborated on the RSV vaccine trial. In 1987, the NIH awarded $1.4 million to Dr. Belshe to test investigational vaccines for HIV. His research was at the cutting edge of investigations on HIV and attracted national press coverage.

As the Department of Medicine grew and developed a variety of teaching programs, the number of faculty also grew. I asked other members of the department to accept the responsibility of directing courses for medical students. Dr. McCarty assumed responsibility of the second-year medical courses and Dr. Driscoll assumed responsibility for the internal medicine clerkship. I directed the internal medicine residency until the middle 1990s when Dr. Kevin Yingling accepted the position as director of the internal medicine residency. Throughout the time of my tenure as chairman, I continued to conduct research in infectious diseases, especially in respiratory viruses and pneumococcal disease. The studies on pneumococcal disease we conducted started in 1978 and continue to present (2021), representing the longest continuous studies on the epidemiology of invasive (bacteremic) pneumococcal disease in a single community in the United States. Our research program resulted in publication of a number of important articles in the medical literature. During my tenure as chairman, I published more than 200 articles in the journals and books, many with other members of the faculty in the Department of Medicine. In the late 1990s, I co-edited a book with Dr. Shirley Neitch entitled, *Becoming a Clinician - a Primer for Medical Students.* And about that time, I also edited a book entitled, *Pathophysiology*, which comprised several hundred questions for medical students to test themselves in preparation for Part I of the National Board of Medical Examiners. This book had gone through two revisions and, in 2004, I edited the third revision.

From the beginning of the department, several original faculty members remained for many years. Bob Belshe continued development of the program in clinical infectious diseases and the research program in vaccines. Until he accepted an appointment as chief of the section of infectious diseases at St. Louis University in Missouri in 1989. In 1984, he had published a *Textbook of Human Virology*, which was widely distributed and well received in the United States and worldwide. Several members of the department, including Dr. Van Voris and me contributed one or more chapters to this book. Dr. Belshe published a second edition in 1991, to which we all contributed revisions of our chapters.

Dr. Bruce S. Chertow, section chief of endocrinology, established an outstanding program in the treatment of diabetes, especially in difficult-to-manage patients. He started a diabetes center in the late 1990s at the outpatient facility of the School of Medicine. Dr. Chertow also conducted outstanding research during the many years he served in the Department of Medicine, such as in diabetes and vitamin A and insulin secretion. He published many original research articles in major medical journals. Dr. Driscoll collaborated with Dr. Chertow on many of these studies. Dr. Chertow retired from the department in 2008 and Dr. Driscoll retired in 2019.

In the 1990s, Dr. Neitch organized a geriatric treatment center and obtained funding for it. The center was named in honor of one of the people responsible for major financial assistance, namely, The Frank Hanshaw Geriatric Center. The center represented a major addition to the clinical care programs of the Department of Medicine, especially since elderly persons now represent a very large proportion of population. Dr. Neitch retired from the Department in 2019.

As faculty joined the Department of Medicine, I needed research laboratories to accommodate their research programs. In 1979, Dr. Coon designated some monies for the School of Medicine as part of Public Law 92-541 to renovate the vacant nurses' residence building at the Huntington VA Hospital. This new research space accommodated newly recruited faculty with "bench credentials." However, I kept the stage of the auditorium as my research laboratory, so that new faculty could fully utilize this new research space. Some rooms were also used as offices for newly recruited basic science faculty, none of whom had research programs. The VA Medical Center had maintained a residence building for nurses, perhaps because in the years before the medical school began, Huntington had limited apartment rentals and a cadre of nurses worked at the hospital for short periods only. Besides, living on hospital grounds avoided lengthy travel to and from the hospital and Huntington, which was about five miles away. However, the building had remained vacant for years before I arrived.

The Doctors' Memorial Building (DMB) located on Sixth Avenue and Eighteenth Street, close to university campus, was purchased from the C&O Health Care System and became the home of the Department of Medicine

and several other clinical departments. All faculty moved their offices to this building. The research laboratories remained at the renovated research building at the VA Hospital. The DMB became the first "bricks and mortar" home of the School of Medicine, without which it would have faced a difficult time securing accreditation.

When I began recruitment of faculty to the Department of Medicine, I attracted them because the faculty positions offered interested physician investigators at the start of their careers research laboratory and office space that proved an intriguing prize. Many of the faculty who comprised the nucleus of the new Department of Medicine possessed excellent research credentials and had previously conducted noteworthy research published in peer-reviewed journals.

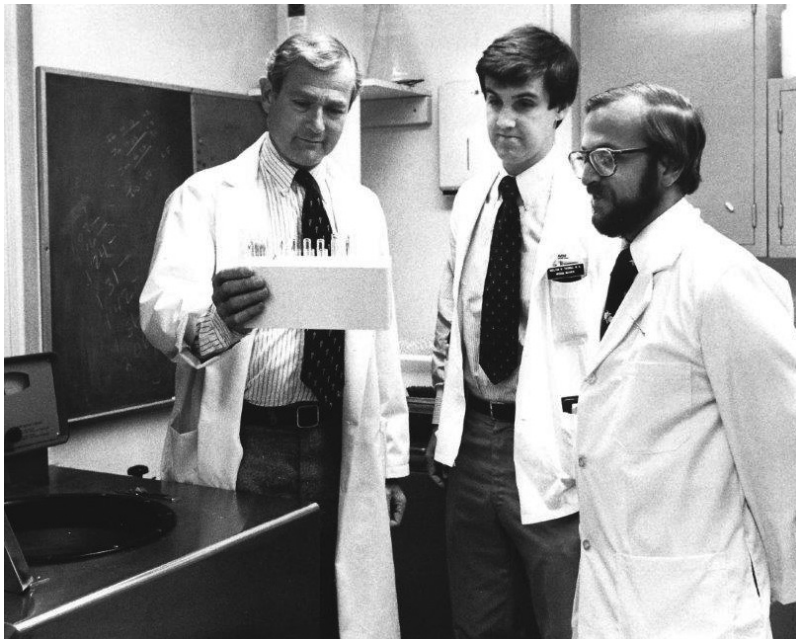
Physicians interested in a new faculty position in the Department of Medicine, either as a move up or as a first faculty position after fellowship, found our department attractive because I offered designated protected time to conduct research; salary support for such protected time; and a start-up research package composed of mainly of three offers — a research laboratory, seed research funds for three years, and salary support for a research technician. In the late 1970s and early 1980s, the School of Medicine proceeded to develop a faculty practice plan which billed for the treatment of patients in each faculty member's name. However, it was early and, although the amount of money collected was modest, it yielded some discretionary funds for the department to cover portions of some faculty salaries and seed research funds. During the first seven years, especially the first four, of the medical school, Public Law 92-541 funds covered a major amount of faculty salaries.

During the 1990s, the number of subspecialties represented in the Department of Medicine increased to include all the major subspecialties of internal medicine. The teaching in subspecialties and the teaching in general internal medicine formed the infrastructure of the internal medicine residency. Faculty in the subspecialties managed many difficult and challenging patients, establishing major clinical care programs for the Huntington area and a wide geographic area around Huntington. The section of infectious diseases began again and continued through the 1990s under Dr. Rushton, with a major clinical treatment program for AIDS.

In addition to becoming licensed in West Virginia, new faculty candidates needed to apply for hospital privileges at the affiliated hospitals.

As faculty candidates worked the way through securing licensure and hospital privileges, they needed to apply for approval of Medicare and Medicaid and other private insurers and receive their ID numbers required for billing of medical care. We learned more of the nuances of the system as we processed each new faculty member and soon enough of them completed the process before they were scheduled to start the treatment of patients.

Before Marshall University purchased the DMB, the C&O Health Care System, a first-dollar covered health care for C&O beneficiaries and family members, proved the one health care system that resisted granting privileges to faculty in medicine, especially subspecialist privileges. They originally maintained the outpatient clinics in the DMB and the Department of Medicine treated C&O patients for general medicine care in those clinics. Eventually, the administration of the C&O changed course and admitted most of our subspecialists to their system, even before the university bought the building.



L to R: Maurice A. Mufson, Shelton W. Thomas, Bruce S. Chertow

CHAPTER SIX

Internal medicine Residency

Residents' stipends represented the largest cost and were covered fully by Medicare.

The internal medicine residency represents an important component of any Department of Medicine, as it did in our department. Its establishment required the investment of endless hours for the preparation of the application by a cadre of faculty from all subspecialties. Once the residency application gained approval, then the work started in full force, meaning in order for the residency to succeed, a substantial commitment of faculty time was required for the recruitment of qualified senior medical students as resident physicians and for their instruction at the bedside and in the classroom. The next year, and each successive year, the faculty repeated the process of recruitment of a new group of senior medical students to the residency. In time, a few of the residents, at the completion of their residency years, joined the Department of Medicine as junior faculty at the rank of assistant professor of medicine in the section of general medicine. The cycle renewed the Department of Medicine, much to the excitement of all faculty and of new senior medical students who became interested in our residency. During the first four years of residency, the annual recruitment of new resident physicians never proved easy. However, six years into the process we, the faculty, managed to recruit a full, or nearly full, cadre of residents each year. Now, the faculty do that every year.

Several months elapsed in the first academic year before I could allocate adequate time to begin preparation of our application to the Accreditation Council for Graduate Medical Education (ACGME) for an internal medicine residency. I prepared and submitted the Department of Medicine's

application for an internal medicine residency to the ACGME. The three affiliated hospitals—two community hospitals, Cabell Huntington Hospital and St. Mary's Hospital, and the Huntington VA Hospital—concurred and supported our application. The designated site visitor from the ACGME, a retired obstetrician and gynecologist, reviewed our application in detail and he recognized, it seemed to me, that as I was new to this process, he urged the process forward. The faculty members of the Department of Medicine listed in our application included the few full-time faculty members I had recruited during the first two years who had assisted in its preparation, as well as several community physicians who practiced subspecialties that the department lacked among full-time faculty and had agreed to teach residents. When the site visitor asked, for example, who served as chief of the section of nephrology, I submitted the name of a community nephrologist who agreed to fill the position as acting chief. The site visitor checked the box on his form and continued with more questions. In each instance that I submitted the name of a community subspecialist as an acting chief of a section, the site visitor acknowledged his approval. Similarly, he pointed the way for other issues that were somewhat in flux.

Most importantly, the ACGME recommended provisional approval of our internal medicine residency in their letter of April 1, 1977. However, their letter arrived after that year's deadline for inclusion in the list of approved internal medicine residency programs in the National Intern and Resident Matching Program (NIRMP), renamed National Resident Matching Program (NRMP) in 1978. For the 1978-1979 year, we signed two unmatched medical students as first-year residents, Drs. David Wu and Renata Kadzielawa. Dr. Kadzielawa, after her residency, joined the Department of Medicine in the section of general medicine. Importantly, the following year the NRMP listed our program in the match with more satisfactory results. In 1979-1980, we recruited five PGY-1 residents, including Sarah McCarty and Marc Subik, both of whom joined the Department of Medicine, and in 1980-1981, we recruited nine PGY-1 residents and signed a total of eighteen residents. In November 1981, the ACGME awarded full accreditation of our program for three years. The internal medicine residency moved forward on strong footing. Of the 18 residents who trained in our program for three years, from 1978-1984, six (33 percent) accepted appointments in the Department of Medicine, a proven method of recruitment of dedicated and quality young faculty members.

In our first application to the ACGME, we described the Internal medicine residency as follows:

> The Marshall University Department of Medicine residency training in internal medicine is an integrated program of three years duration and based equally at the three teaching hospitals affiliated with the School of Medicine, the Huntington VA Hospital (federal), Cabell Huntington Hospital (community), and Saint Mary's Hospital (private). The VA Hospital has service patients, and the Cabell-Huntington and St. Mary's Hospitals have private patients. Outpatient Clinics are in the Family Care Outpatient Clinic of the medical school building. The Medical School and the three hospitals are geographically close to each other.
>
> The resident in medicine has full responsibility for the care of patients, both service and private, including performance of the admission history and physical examination, selection of diagnostic procedures and ordering of therapeutic measures, and the responsibility to see that those measures are carried out and revised as necessary during the patient's hospitalization. Areas of assignment of residents in the participating hospitals include medical inpatients, emergency room, intensive care unit, pulmonary diseases ward, renal dialysis ward, and electives. The resident can select electives from among the medical subspecialities including cardiology, endocrinology, nephrology, gastroenterology, hematology, infectious diseases, pulmonary diseases, and rheumatic diseases. On a regular basis the conferences held include basic science, endocrinology-metabolism, tumor, respiratory diseases, hematology and cardiology conferences and a clinical pathological conference (CPC).
>
> In the three hospitals and the clinic, the attending physician has the responsibility for reviewing with the resident in medicine the course of the patient and the therapeutic measures. At Cabell Huntington and St. Mary's Hospitals, attendings who are the patient's private physician conduct daily working rounds with the resident. Three times weekly, the attending meets with the residents in medicine for teaching rounds and they are joined in this activity by full time faculty.
>
> Management of service patients at the VA Hospital was handled in the same manner; daily working rounds and three times weekly teach ing rounds are conducted by full time faculty, who are appointees of the staff of the VA Hospital. All attending physicians are members of the Department of Medicine of the School of Medicine.

Medical students in their second, third and fourth years will be taught by the Department of Medicine staff including residents. Residents at all levels will instruct students assigned to their medical inpatient and outpatient services. PGY-3 residents will teach physical examination of the patient also. Residents can conduct investigative work with faculty during their elective periods.

The first few faculty members I recruited early to the Department of Medicine assisted in preparation of our application for an internal medicine residency. They included Dr. Robert "Bob" Burch as chief of medicine at the Huntington VA Hospital; Dr. John Huntwork, chief of the section of rheumatology; and Dr. Robert Crisalli, chief of the section of pulmonary diseases. Until I recruited a substantial number of full-time faculty members for the Section of General Medicine and all the subspecialties, I needed the help of community physicians. A few community physicians graciously agreed to teach residents on the inpatient services at the two community hospitals using their own patients, until a sufficient number of full-time faculty and our Department of Medicine practice developed.

Bob Burch and I calculated the initial approximate number of resident positions based on estimates of inpatient beds available as teaching beds at the three affiliated hospitals, namely the two community hospitals, Cabell Huntington Hospital (CHH) and St. Mary's Hospital (SMH), and the Huntington VA Hospital (VAH). As usual, each of the three affiliated hospitals would pay monthly stipends for the number of internal medicine residents assigned to their hospital. At CHH and SMH, the funds were provided by Medicare and at the VAH, residents received their stipend from education funds provided by the VA Central Office. Irrespective of the teaching hospital to which residents were assigned, they all earned the same annual stipend and fringe benefits for the level of their post graduate year (PGY). Eventually, to avoid inequalities and considerable concern among the residents, on the manner fringe benefits were calculated, CHH and SMH agreed to transfer the funds for resident stipends to the medical school for disbursement to the individual residents.

The development of the internal medicine residency required education funds beyond stipends. Although stipends represented the largest cost of the residency, they were covered fully by Medicare. Other education funds were needed for the salary of the program director, the administrator of the

residency and a secretary for the administrator's office, teaching materials and, in the era before PowerPoint, teaching slides, for which the hospitals did not provide any funds. The School of Medicine budget assigned by the dean to the Department of Medicine did not include any of these costs.

So, the only place to turn to obtain all or part of these funds were to the hospital directors of the two community hospitals. After all, hospitals carried on educational programs for the different services to meet the certification goals of the professionals the hospital employed. Medicare funded the salaries of residents assigned to the hospital at an amount more than their stipend and fringe benefits. It seemed reasonable that some of the Medicare funds that the hospital received could underwrite the additional costs of the internal medicine residency.

Importantly, no blueprint existed for negotiating funds with directors of the two community hospital to fund part of the educational costs of the internal medicine residency or some of the residency educational costs in other clinical departments of the School of Medicine. No other source of funds was available to the chairs, certainly not from the minimal budget provided by the dean or from the School of Medicine's practice plan as it was still in the planning stages.

I telephoned the Health Care Cost Review Authority (HCCRA), now the West Virginia Health Care Authority (WVHCA), which provides Certificates of Need (CON) and distributed the Medicare funds for resident stipends to hospitals in West Virginia with residency programs, and requested information on the amounts sent to each community hospital in Huntington. The committee staffer sent a copy of the printout detailing these amounts.

I met frequently with the CEO of St. Mary's Hospital, Mr. Steve Soltis, and of Cabell Huntington Hospital, Mr. Kenneth Wood. Both provided some financial support for the internal medicine residency program which partly covered these other educational costs.

The stipend for PGY1 residents in 1979-1980 was $15,000 annually. By 1991, PGY1 residents received $25,000, reflecting an emerging trend in academic medicine. In 1996-1997, they received $29,250 and in 2010-2011 they received $48,000. Each PGY level from PGY2 to PGY5 received an additional increment of $1,000, representing a satisfactory wage even for resident physicians with families, and moved the residencies at Marshall into the modern era.

In 2021, a PGY1 resident received a stipend of $52,000 and PGY2 to PGY5 residents received an increment of $1.000. A first-year fellow (F-1) received a stipend of $55,000 and each fellow from F-2 to F-4 received an increment of $1,000. Residencies in all primary care and specialty care attract many candidates, with few unfilled positions. The residency programs represent a major asset for the School of Medicine and its affiliated hospitals, Cabell Huntington Hospital and St. Mary's Medical Center, now part of Mountain Health Network.

CHAPTER SEVEN

Research by Faculty of the Department of Medicine at the Huntington VA Hospital 1976 to 1991

"Every patient is a one-person research project and forms the basis for research on large groups."
– Maurice A. Mufson, MD

Physician investigators play a crucial role in clinical departments, especially those who work in a research laboratory or "at the bench." Besides the opportunity to discover important basic information—for example, in endocrine function or the growth and function of micro-organisms which might have application "at the bedside," or as a vaccine—the physician investigator represents a role model for medical students, residents and fellows and junior faculty. These medical personnel who evinced curiosity in the laboratory should be encouraged to participate in a research project under the guidance of the physician investigator. Many senior investigators satisfied their early interest in research in that manner, as I did, and a very few of them made important discoveries. However, many investigators discovered pieces of the "puzzle" and bit by bit advanced our knowledge of a disease. Groups of investigators who collaborated together, each from their own laboratory, may have recognized the fit of "pieces of the puzzle" of one disease. When many of these investigators became interested in research as medical students or residents, a physician investigator opened a door for them in their laboratory.

When Congress passed Public Law 92-541 in 1972, they created an opportunity to develop several new state medical schools nationwide in affiliation with VA Hospitals in order to bring improved health care to underserved veterans and regions of the country distanced from advanced healthcare opportunities, as well as the development of research programs that mainly focused on diseases of veterans. The bill also funded the selected VA hospitals for infrastructure and new clinical programs. Immediately, the Marshall University School of Medicine and the Huntington VA Hospital became partners to the lasting benefit of both institutions. This partnership formed because both senators from West Virginia — Sen. Jennings Randolph and Sen. Robert Byrd — spearheaded the selection of a new medical school in Huntington and succeeded in pushing state government to establish the Marshall University School of Medicine.

At that time, no research programs existed at the Huntington VA Hospital. It lacked research laboratories, research funds, and physician investigators. Neither did research laboratories exist at the medical school. Before I accepted appointment as founding chair of the Department of Medicine I spoke with friends in the Office of Education Service at the Veterans Administration (VACO), especially Ms. Martha Phillips, who expected that the medical school at Marshall "would be a go" and it would be successful. These expectations proved amazingly prescient.

As I began recruitment of faculty physicians for the Department of Medicine, many with "bench credentials" to conduct research, I chose to remain in the laboratory on the stage and accommodate the new faculty in other new research laboratories. Each new faculty physician who joined the Department of Medicine was also appointed as a part-time physician in medical service at the Huntington VA Hospital.

When I arrived in Huntington, the vacant old residence for nurses on the west end of the VA Hospital hill provided offices for several basic scientists. They soon moved to the medical school's newly acquired building, the DMB, near the Marshall undergraduate campus in Huntington. Dr. Robert Coon, dean of the School of Medicine, then designated the residential building for nurses as a research facility, with the concurrence of the hospital director, and the renovated building became the first "real research laboratories" at the VA Hospital for use by faculty physicians who also had appointments at the VA Hospital.

Dr. Coon asked me to review the blueprints for the building and decide which walls to remove so two or three "dormitory" rooms could be combined to make individual research laboratories. He allocated money from Public Law 92-541 funds for building construction to this renovation. The basement was to be remodeled as an animal facility and we were required to achieve accreditation through the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC), which we did. Marshall has been continuously approved since then. Several years after we were first accredited, VACO Research awarded funds to modernize the animal facility and among other improvements was that those floors were finished with an epoxy paint the walls were tiled in order to provide the best environment for the animals.

Among the faculty physicians I soon recruited was Robert Burch, MD, in 1977, as chief of medical service at the Huntington VA Hospital, with a joint appointment in the Department of Medicine at the medical school. He assisted greatly with recruitment of other faculty, especially faculty who were jointly appointed at the VA Hospital and were excellent researchers with "bench research" qualifications and many publications. The first of such faculty members recruited was Robert B. Belshe, MD, as chief of the section of infectious diseases, a former student and a longtime friend and colleague. Soon after, I recruited Bruce Chertow, MD, as chief of the section of endocrinology. Drs. Belshe and Chertow applied to VACO for Merit Review funding for their research projects. They both received such awards and moved into newly equipped laboratories in the renovated residential building for nurses, now Research Building 5.

Then, other infectious disease physicians joined Dr. Belshe in the infectious diseases section, including Lee Van Voris, MD, and Edwin Anderson, MD, a pediatrician. Two endocrinologists joined Dr. Chertow, including William Sivitz, MD and Nicholas Baranetsky, MD. Some of these faculty members received Merit Review Research Awards also.

To jump start the division of infectious diseases, I invited Dr. Stuart Levin, a close friend and director of Infectious Diseases at Rush College of Medicine in Chicago, as visiting professor. Dr. Belshe took the opportunity to obtain sage advice on starting and growing his division of infectious diseases. Dr. Levin's key advice—obtain research funds from the VA, industry, and NIH and add funded faculty to expand the research. Also, he advised, "Run

a strong clinical service from day one—you can't change a weak reputation if you have a slow start."

The applications went out and research funds began to flow in. The ID Merit reviews with Dr. Bob Belshe as Principal Investigator (PI) included (1) Development of Live Attenuated Parainfluenza Virus Vaccines, 1980-1984 ($80,000); (2) Evaluation of Live Attenuated Influenza A Vaccines in High Risk Adults, 1983-1986 ($175,000); (3) Development and Evaluation of Parainfluenza Virus and Influenza A Virus Vaccines, 1985-1988 ($326,000); and (4) Studies on Parainfluenza Virus Vaccine: Laboratory and Clinical Evaluation, 1988-1991 ($333,800). I arranged for Dr. Belshe to lead an RSV vaccine efficacy study for Merck, which amounted to $300,000 (1978-1980) and added six research nurses to the infectious diseases staff. This also provided for community viral surveillance on all children admitted to hospitals with acute respiratory disease. The ID division was off and running.

Dr. Lee Van Voris ran a strong consulting service at the affiliated hospitals. Laboratory surveillance of the results of virus cultures (influenza, respiratory syncytial virus [RSV] and other viruses) were reported back to the community, and this generated strong community support for clinical trials of vaccines in children and adults. Support was so enthusiastic, Dr. Belshe applied for and was awarded one of the few Vaccine Center Contracts from the National Institute of Allergy and Infectious Diseases (NIAID) including: (1) Center to Develop and Evaluate Live Virus and Killed Bacterial Vaccines in Volunteers, March 1980 - March 1985 ($1,600,000) (2) Principal Investigator, Center for Vaccine Development, February 1, 1985 - October 7, 1989 ($1,898,799); and (3) AIDS Vaccine Studies, supplemental funding, 1987-1989 ($1,400,000). The infectious diseases section soon added two additional faculty members, Ulf Westblom, MD, and Jack Bernstein, MD; a head nurse, Ms. Linda Nerhood; and a head technician, Ms. Fran Newman.

The section of endocrinology thrived under the leadership of Dr. Bruce Chertow, who published many research articles in prestigious Endocrinology journals. He recruited endocrinologists with bench credentials early on including Drs. Bill Sivitz and Nick Baranetsky, and later, John William Leidy, MD, PhD, and Henry Driscoll, MD. The section received Merit Review Research Awards and contributed in a major way to success of the Department of Medicine research program.

Consequently, VA Hospital Research Service grew exponentially and thrived during the 1980s. During the 1980s, the research budget reached

nearly $500,000 per annum. The faculty researchers in the Department of Medicine led all clinical departments with their publications, most of which were accepted by high impact scientific journals.

Dr. Robert B. Belshe

CHAPTER EIGHT

Sabbatical Leaves

Our sabbatical leaves rocketed forward our research endeavors and accomplishments.

A sabbatical leave at Marshall University represented an opportunity earned by faculty members to devote one year to research every seven years, usually at a stellar research institution, either somewhere in the U.S. or overseas in Europe, Australia, or New Zealand. Many colleges and universities offered sabbatical leaves. When I requested a sabbatical leave to conduct new studies that employed monoclonal antibodies in the investigation of respiratory syncytial virus (RSV) surface proteins at the Virology Department of the Karolinska Institute in Stockholm, Sweden, I had already authored 110 research articles and 33 abstracts. I judged that these credentials would earn approval from Dean Coon and the president of the university, and they did. I discovered that the strains of RSV segregated into two groups, designated group A and group B; thus, for the first time we proved that RSV comprised more than one strain. Group A strains predominated.

My sabbatical leave proved to be a very productive year. I chose a career in academic medicine because of my interest in research, but serendipitous events led me to a lifetime of study of respiratory viruses and invasive pneumococcal diseases. The Department of Medicine alone in the 1980s included several clinician researchers with bench credentials. I encouraged each of them to arrange a sabbatical leave and several did with great success. Our results confirmed that a new department in a new medical school can nurture faculty development as well as an established department.

Clinical faculty engaged in bench research in an academic medical center derive substantial benefit from a sabbatical leave to pursue new ideas with a distinguished mentor and their team in a laboratory equipped so can they start the sabbatical research project(s) quickly. A productive sabbatical leave opens new areas of research and achieves important research findings, as well as advancing the faculty member's career. When timed to the evolving career of a faculty member, a sabbatical leave represents an important opportunity to conduct research in a nurturing environment with special attributes, not otherwise available at home.

Among the original faculty who joined the Department of Medicine, several faculty members in the sections of Infectious Diseases and of Endocrinology were accomplished physician investigators/bench researchers. Even though the Department of Medicine was a young department, we boasted a small, but strong cadre of faculty whose research results compared well with larger, older departments of medicine. The faculty published the results of their research in high impact refereed journals, served on editorial boards, and often spoke at regional and national meetings. Five of us pursued sabbatical leaves during the 1980s as a means of broadening our interactions with physician investigators in other laboratories.

Sabbatical leaves benefited the five faculty members of the Department of Medicine who pursued bench research project(s) with mentors in high power laboratories throughout the world. The sabbatical leave that each pursued allowed them to immerse themselves in an environment dedicated to research alone. On sabbatical leave they had no requirement to answer the call of in-patient and outpatient medical obligations or other academic obligations, so that they concentrated on the one or two approved research projects. Each of them achieved new research findings worthy of one or more publications in refereed journals and a successful grant application, as was the case for several of us in the Department of Medicine: Bob Belshe, Bruce Chertow, Kevin Yingling, and me.

A sabbatical leave also benefited faculty members who conducted clinical and survey research or authored books, enabling them to interact with faculty with similar research in laboratories in other countries, refine their clinical acumen in their specialty, and publish a book or an article in refereed journals. Anthony Bowdler published his landmark book, on *The Spleen*, which he wrote, in part, during his sabbatical.

At the start of the Department of Medicine in 1976, all faculty received most of their annual salary from State of West Virginia funds ("hard money"), but much less from the practice plan ("soft money"), which was in its formative stage. At that time, faculty members approved for a sabbatical leave had the option to receive their full salary for six months or one-half salary for 12 months. Therefore, faculty members whose salary comprised mainly State of West Virginia funds received their full salary for a sabbatical leave of six months. Each of us elected this approach but augmented our sabbatical leave months by saving annual leave to account for at least two additional months at full salary.

As the School of Medicine grew in number of faculty members, the State salary of an individual faculty member was reduced to $25,000—the minimum amount to appoint a faculty member to a tenured track position—and the remainder of their salary was derived from the practice plan. The dean recovered substantial state salary funds in this manner to establish more state salary lines of about $25,000 each. Without the availability of a large "hard money" salary, their potential salary on sabbatical leave suffered. Although they could apply for a grant to cover most of their salary on sabbatical, if not available, then the lack of "hard money" salary funds likely discouraged most faculty members from seeking a sabbatical.

During the 1980s and the1990s, five faculty members in the Department of Medicine each received approval of their application for a sabbatical leave, the first of the full-time clinical faculty from any clinical department to do so. I was the first clinical faculty member to receive approval for a nearly year-long sabbatical and my experience proved exceptionally rewarding. When I submitted my application for a sabbatical to Dean Coon, his non-verbal communication at that moment—as I read his look—suggested that he intended to deny my application. It was only a momentary peek for me behind his thoughts. However, when I reminded him that Dr. Erling Norrby, Head of the Virology Department at the Karolinska Institute in Stockholm, one of the world's great medical and research institutions, had accepted me for my sabbatical he approved my request and forwarded it to the university president with his written recommendation of "APPROVAL."

I encouraged the other faculty members who conducted bench research to arrange a sabbatical leave somewhere overseas at the best research institutions and several did. The other faculty members in the Department of Medicine who arranged their own sabbaticals for the years after I returned

to Huntington from Stockholm, included: Bob Belshe, in 1987, conducted research on influenza virus mutations at Mill Hill Research Institute in London, England; Bruce Chertow, in 1991, pursued research in Endocrinology at the Baker Institute in Melbourne, Australia; and Anthony J. Bowdler, in 1989, utilized his sabbatical to complete his textbook, *The Spleen,* and conducted research on aging and blood flow. We were clinician investigators, well bench-credentialled, and our sabbaticals rocketed forward our research endeavors and accomplishments, as described in this chapter. The fact the Department of Medicine was a young department at the time did not hold us from widening our research capabilities.

Unfortunately, during the next two decades, no member of the Department of Medicine pursued a sabbatical leave. I did not learn the exact reasons; however, I suspect that at least two factors played a role, the lack of sufficient "hard money" salary and the increased difficulty in obtaining research grants.

Sabbatical Leave of Maurice A. Mufson, MD, HonDSc, MACP, 1984-1985

In 1983, when I began inquiries about a position in an international virus laboratory for my sabbatical year in research to retool my laboratory techniques, I telephoned Bob Chanock for advice (Robert M. Chanock, MD, head of the Respiratory Virus section in the Laboratory of Infectious Diseases, NIAID, NIH, with whom I worked from 1961 to 1965) and he immediately suggested that I work with Professor Erling Norrby, head of the Department of Virology at the Karolinska Institute School of Medicine, Stockholm, Sweden. Bob telephoned Erling that day and he confirmed my acceptance for the academic year 1984-1985. In the early 1960s, I had met Erling on his first visit to the USA, when he came to confer with Bob Chanock.

During the summer of 1983, Deedee and I toured Stockholm so that we could get information on schools for Pam and Karen, and became somewhat familiar with the city. Deedee and I found English line classes for Pam's ninth grade in a Swedish public school near to where we rented an apartment in Wenner-Gren Center, an apartment building for visiting scientists from all countries. Erling arranged our rental.

Erling and I began our discussions of the research project by long

distance. He suggested that I conduct research on detailed characterization of respiratory syncytial virus (RSV) structural components with particular emphasis on peplomer glycoproteins (surface)and evaluate the role and importance of these structural antigens in immune protection. RSV represented a major cause of serious pneumonia, bronchiolitis and croup among infants and children, as well as a cause upper respiratory tract disease in adults. At the time of my sabbatical (and currently as well), no safe and effective vaccine for RSV has been developed (and none was developed in the interim to this date). The number and nature of RSV structural components had been partly elucidated by immunologic procedures. In Erling's laboratory, several monoclonal antibodies against differing structural components of RSV were generated and preliminarily characterized. I learned the procedures to produce monoclonal antibodies and applied this technique to producing additional monoclonal antibodies to RSV. In addition, I learned the ins and outs of vertical slab gel electrophoresis and, of all visiting scientists in the Virology Department, I ran more gels than most of them, about 183 gels. For these studies, I employed the prototype RSV strain, the Long strain, and several isolates of RSV recovered from infants and children hospitalized with serious lower respiratory tract disease in Huntington, West Virginia and environs.

At that time, it was generally believed that all RSV strains comprised a single group. No published data existed that pointed to more than one serotype (or serogroup). The panel of monoclonal antibodies reactive with the different surface proteins of RSV that Erling prepared and characterized provided the raison d'ĕtre for our project. In my laboratory, we isolated many strains of RSV—and I brought with me 12 of these strains. I selected two strains from each of the last six years. Each strain was inoculated into two roller tubes with a layer of HEp2 cells on the inside and the tubes were filled with tissue culture medium and capped. I wrapped the roller tubes carefully and carried them in my coat pockets on the flights to Stockholm. They arrived safely and upon transfer of the cultures to fresh HEp2 cells, all twelve viruses grew well. Today, I could not take this direct approach for the transportation of virus cultures safely from Huntington to Stockholm. Did antigenic variation exist among RSV strains? This remained to be identified. We asked the question whether more than one subgroup of RSV existed? We pursued this question employing a panel of monoclonal anti-

bodies directed against the surface proteins of RSV. Immunologic analyses using monoclonal antibody procedures might provide basic information on virus structure that would open opportunities for the development of a vaccine using purified components of the virus. I conducted several studies previously of the association of RSV with acute respiratory disease in infants and children. My colleagues in the Department of Medicine at the Marshall University School of Medicine and I showed the major importance of this as a cause of acute lower virus respiratory disease among children residing in urban and rural areas of West Virginia.

When we reacted the panel RSV monoclonal antibodies with the 12 RSV strains from Huntington, we discovered that the strains divided into subgroups, designated subgroup A—more common—and subgroup B, which we originally called subtypes in our first manuscript, but corrected it to subgroups. Subgroup A strains differed from subgroup B strains by reaction with monoclonal antibodies to the G glycoproteins. Subsequently, we showed that only a single five amino acid sequence among a nested set of twenty amino acid sequences from each G glycoprotein accounted for the difference between the two subgroups. Erling and I were the first to report two subgroups (initially designated subtypes) of RSV. Our manuscript was published during my sabbatical in the Journal of Virology, only about eight months after I began my research with Erling. It was selected for the review "Some highlights of animal virus research in 1985" in the Journal of Virology.

In the fall of 1984, Erling obtained two tickets for Deedee and me to attend the Nobel Ceremony; we had excellent seats. That year, the Nobel Laureates received the award for studies of monoclonal antibodies, which opened an entire new field for the treatment of many difficult-to-treat diseases using specially designed monoclonal antibodies. I attended the lectures that each of the three laureates presented at the Karolinska Institute, and I attended the reception that followed the lectures.

During the sabbatical year, Deedee was prohibited from working according to the instructions included on her visa. However, the Swedish Government would pay for Swedish language class, six hours daily, five days each week for seven months with other foreigners. By Christmas, she spoke Swedish nicely and when we booked a Swedish tour to Israel, she could understand the Swedish guide on the buses to and from the airports quite well. Additionally, Deedee, Karen, Pam, and I traveled

to several European cities for brief holidays. All the European cities that proved difficult to get to from Huntington were just short flights from Stockholm. Moreover, during Swedish Sports week in February, we booked a holiday in Tenerife and enjoyed the sunny and warm Spanish islands. Sports week evolved from a mandatory mid-winter school holiday begun during World War II to conserve heating fuel by not heating all the public schools. Unlike in Huntington, Swedish television had only two channels, Channel 1 and Channel 2, and most of the shows that the four of us watched were British. The Swedish TV shows had subtitles in English.

Importantly, Bob Belshe agreed to serve as acting Chairman during my sabbatical. When I returned to Huntington at the completion of my sabbatical, Bob confessed that he learned one very important lesson, he did not want to be a department chair.

For the duration of my sabbatical leave we engaged a fourth-year medical student, Ezra Riber and his wife, to live in our house and watch our dog, Muffin. This proved a good decision.

Overall, Erling and I published four manuscripts during my sabbatical year:

- Mufson MA, Orvell C, Rafnar B, Norrby E. Two distinct subtypes of human respiratory syncytial virus. J Gen Virol. 1985 Oct;66 (Pt 10):2111-24. doi: 10.1099/0022-1317-66-10-2111. PMID: 2413163. [This article was included as a highlight of animal virus research in 1985 McGeoch DJ. Some highlights of animal virus research in 1985. J Gen Virol. 1986 May;67(Pt 5):813-30. doi: 10.1099/0022-1317-67-5-813. PMID: 3009687.]
- Utter G, Mufson MA, Norrby E. Detection of antigen in immune precipitates by silver staining of SDS-polyacrylamide gels. J Virol Methods. 1986 Apr;13(1):35-42. doi: 10.1016/0166-0934(86)90070-4. PMID: 2424925.
- Norrby E, Mufson MA, Sheshberadaran H. Structural differences between subtype A and B strains of respiratory syncytial virus. J Gen Virol. 1986 Dec;67(Pt 12):2721-9. doi: 10.1099/0022-1317-67-12-2721. PMID: 3540207.

- Norrby E, Löve A, Örvell C, Utter G, Appel MJG, Mufson MA. Component vaccines containing paramyxovirus glycoproteins. In: Chanock RM, Lerner RA, Brown F, Ginsburg H, editors. Vaccines '87: Modern Approaches to New Vaccines: Prevention of AIDS and Other Viral, Bacterial, and Parasitic Diseases. Cold Spring Harbor (NY): Cold Spring Harbor Laboratory, 1987, pp 311-315.

- The data from this research project formed the basis of my Merit Review Research Award submitted to the Veterans Administration Research Service in 1984 and approved and funded for three years. This project was entitled "Characterization of Respiratory Syncytial Virus Antigenic Variation," (vide infra). In 1988, I submitted a follow-up Merit Review Research Award application, entitled: "Characterization of Respiratory Syncytial Virus Subgroups," which was also approved and funded. In the few years after my sabbatical leave, I published several more articles, also in refereed journals, on our RSV subgroup research. Unquestionably, my sabbatical year was the very best year of my career.

Research Awards

- Veterans Administration Merit Review Research Award. Maurice A. Mufson, Principal Investigator. Characterization of Respiratory Syncytial Virus Antigenic Variation. 1984-1987 ($150,600).

- Veterans Administration Merit Review Research Award. Maurice A. Mufson, Principal Investigator. Characteristics of Respiratory Syncytial Virus Subgroups. 1988-1991 ($161,385).

- My national and international honors include:
- 1986—Marshall University named me the University Scholar (the Meet-the-Scholar Award). 1989—Marshall Sigma-Xi Society named me the Outstanding Researcher of the Year.
- 1996-1997 academic year—I served as President of the Association of Professors of Medicine, the organization of Chairs of Departments of Medicine of US medical schools, and as Past-President the following year.

- 1994—West Virginia Chapter of the American College of Physicians gave me its Laureate Award.
- The Journal of Clinical Infectious Diseases named me a co-recipient of the Louis Weinstein Award for the best clinical article published in the journal between July 1993 and June 1994.
- 1997—New York University School of Medicine selected me to receive the Solomon A. Berson Alumni Achievement Award in Health Science.
- 1998—The American College of Physician's awarded me a Mastership.

Reminiscences of a Sabbatical Leave by Robert B. Belshe, MD, 1985-86

There are lots of reasons to take a sabbatical: professional growth, personal growth, escape from the ordinary, learn a new language, immerse in another culture, meet new colleagues, or read a new area. The benefit of taking every seventh year to renew one's skills is worth thinking about for every faculty—just the dream engenders a mood for creativity. I think most faculty do dream about a year to do something different, but most faculty don't actually take advantage of the sabbatical. The pressures from family and children's schooling, money and mortgage, the family dog and cat each create a higher and higher "energy of activation". Most faculty members fantasize about their sabbatical, but few faculty members actually budget the time and energy to make their sabbatical a reality. The sabbatical is a family event, and my wife, Pat and I included our children, Bobby and Bonnie, in the discussion of where to go and when. The sabbatical is a great perk. Just do it.

I did a lot of thinking about what to do and where to do it. At Marshall, the research was growing and taking a more and more clinical direction. Funding was flowing in from the NIH for vaccine clinical trials, but my lab skills were becoming dated. Culturing viruses had gotten our research group well-funded, and we won one of the prestigious NIH vaccine center awards with millions in annual funding. I could see that within a few years, we would have to contract out lab studies to support the clinical trials, or we could get ourselves retrained for the era of molecular diagnostics. As always, the chairman was supportive, and he encouraged me to get going after his own sabbatical experience.

Hearing about others who had done sabbaticals was a great way to get tips on how to select a colleague with a suitable lab and location. The

chairman had a great experience in Sweden. Having lived through my Dad's sabbatical in Japan at age 6, I had some insight into what my kids would need in another culture. A friend from NIH had just completed a sabbatical year—with family in tow—in the UK, and he had a wonderful and productive experience; another NIH friend spent a sabbatical in a small university town in Europe, but the family had trouble adjusting to the language difference, so they left early. John LaMontagne, a leader in influenza studies at the NIAID, suggested that since I wanted to work on influenza, I should contact John Skehel and Alan Hay at the Medical Research Council, London, England, the equivalent of our NIH. John and Alan led one of the premier labs in the world studying the molecular biology of influenza.

After an introductory letter, I gave John Skehel a call, and he invited me to visit. About one year before my proposed sabbatical, I flew to London and took the tube to Mill Hill where the MRC had its labs. John was a great host and he had invited me to stay at his home. We met in the lab and discussed various projects, and ultimately settled on studying the molecular mechanism of influenza haemagglutinin activation during viral entry into cells. John arranged for us to rent a flat in housing owned by the MRC which was much less expensive than commercial rents. Marshall University was going to pay a portion of my salary, and I needed travel funds, so I wrote a grant. Ultimately it was not funded, but we cashed in some savings and went anyway—one of the best decisions that my wife and I have made. It was to be a great experience for all of us that defined the next two decades of my research and led to a second sabbatical.

About six months before the start, we began preparations in earnest. One of our medicine residents and his family would live in our house rent free, but he would pay the utilities. That was a good deal for all of us.

Our passports were ready, we had a letter from the MRC inviting me, a letter from the university saying who I was and that I was to return in one year to Marshall University, letters of credit from the bank, and a letter from our car insurance company. All of these letters were required at one time or another. At entry the British customs checked our MRC invitation and university letter, and customs instructed us to register within 30 days as "Aliens." The kids loved that!! Aliens! We

are aliens! The children were eight and ten years old and had visions of space invaders. This was when Donald Trump was a minor buffoon, and no one had heard of Boris Johnson.

We opened a bank account at Barclay's with our Letters of Credit. We bought a used Ford Escort hatchback for £3,000 and got insurance with our letter from State Farm.

The boxes we shipped from Huntington arrived on time, and we moved into our three bedroom, one bath flat in Hamstead, a nice neighborhood in the northern part of London. The flat was on the ground floor and it was clean and had old furniture but generally was Spartan. We had an Apple computer with floppy drive shipped to us, and I purchased a new green screen in London with the correct power. The carpet was felt (sic) glued to concrete so we purchased a small Chinese rug—which we still use thirty-five years later—and two sheepskin rugs so the kids could lie on the floor and study or watch television without freezing.

We were adjusting to the new culture. It was surprisingly different from our life in the US, but less so today. Electricity was purchased by putting 10p coins in a meter box hanging just outside our bedroom. When you ran out of your 10p worth of electricity, everything went black including the mini fridge. We soon learned to keep a tall stack of 10p coins (about fifteen cents = 10p) on top of the box and every time we went by the box we would drop in two or three. After about three weeks the box was full, and it needed to have the coins removed—just like a parking meter. When I called the MRC and asked to have it emptied, I heard that it was not due to be emptied for another 2 months. Fortunately, they came the next day.

Although there is no way of enforcing it, we purchased the required television license for £55. We got four channels via antenna. Mostly they aired dog trials and cheese making shows in 1985 (remember the movie *European Vacation* with Chevy Chase). Old black and white movies from were popular with the kids (*I Was a Male War Bride* was their favorite).

Pat and I wanted the children to go to a neighborhood school (State School) as opposed to a private school (called Public School in the UK). We met with the headmaster of the local elementary school, and he found places for both children. The classes were filled with kids

from all over the British Empire. Both adapted quickly, made friends, and acquired a lovely London accent which they could turn on and off at will. I learned this when we went clothes shopping, and Bobby said "Dad, let us do the talking." I was surprised to hear their cultured British accent when they discussed what they wanted with the clerk; the shopkeeper had no idea we were American until I paid with my Amex card. The children had made the correct observation that shopkeepers gave better service to citizens than tourists.

I started driving to the lab at Mill Hill early to beat the traffic. It was an easy anti-commute at 7 a.m. and many British did not start work until 9 or 10. They would, however, work late. Also, they were one hour later than the continent, so it was common to hear complaints about British hours from other countries. Alan Hay was in early so he and I would meet and talk about the various projects in the lab. He had recently described the genetic changes that occur in influenza to make the virus completely resistant to the antiviral drugs amantadine and rimantadine. Rimantadine had recently been FDA approved for treatment of influenza in the US, and the first reports of resistant flu were reported. My project was to sequence the genome of clinical isolates of flu before and after treatment to see what genetic changes were making the viruses resistant in clinical use.

The sequencing project taught me several new techniques. Although there are now machines to genetically sequence anything or anybody, in 1985 we sequenced by hand using Sanger's method. First, I had to grow each virus, purify the virus to be sequenced using ultracentrifugation, and then extract the RNA and radiolabel it. The technique used the radioisotope P32 and agar gel electrophoresis. These gels were large, the size of chest x-ray film, and to read the gels we clamped each one to a sheet of x-ray film overnight. When the film was developed it revealed images of RNA segments according to their length and whether the last base was A,C,T or G; if the biochemistry had been done right, it was a simple matter to read the genetic sequence of 200-300 base pairs per each piece of film. By varying the primer used in the initial reaction we varied the section of influenza genome that was sequenced.

Within two or three months I was proficient in the techniques needed to genetically sequence viruses, and I had received clinical isolates from Robert Betts at the University of Rochester isolated from

patients ill with influenza and from before and after treatment with rimantadine. Shortly thereafter I had completed the sequence of the suspect gene, M2, of all of the viruses and every drug resistant virus had a genetic change in M2 compared with the pretreatment drug sensitive viruses. The changes were in the same region of four amino acids in the trans-membrane portion of M2. These findings indicated that the resistant viruses were clinically significant since they occurred so readily and that resistant viruses were probably going to spread. That turned out to be the case, and most human influenza is completely resistant to rimantadine today. Physicians no longer use the drug because it no longer inhibits influenza. Alan Hay went on to show that the M2 protein is an ion channel that performs critical functions for the virus, and that amantadine and rimantadine were ion channel blockers. Changing just one amino acid in the ion channel does not alter its function but results in complete resistance to the antiviral properties of amantadine and rimantadine. The virus evolution was clearly driven by use of this type of drug so that influenza today is resistant.

London is a great city to explore museums, theater, concerts (The Barbican) or take the river taxi to Greenwich. The musical *Cats* was THE show to see that year in London, and we loved it. My work schedule followed the school year—when the kids were in school, I was working. The schools are in session ten to eleven months a year, but there was one full week off every six weeks. We took advantage of the break time and traveled to Normandy (via car and ferry), Scotland, Spain, and for the two-week Christmas holiday we enjoyed a safari in Tanzania and Kenya. Many non-holiday weekends we drove to the Cotswolds, Oxford, Cambridge, Brighton, or one of the many castles or manor houses in England. We ate and stayed in pubs or pub hotels. We learned that the B&B's in Scotland and Normandy were great. We did not want to leave, but it was time to come home.

I published several papers based on the work I did with Alan Hay and John Skehel. The techniques I learned were successfully brought back to Marshall and the ID Division. Labs and research funding continued to grow and be productive. Alan Hay and I still interact at influenza scientific meetings, and we sometimes chair international symposia together.

I noted earlier some of the reasons to take a sabbatical—professional growth, personal growth, escape from the ordinary, learn a new language, immerse in another culture, meet new colleagues, or read a new area—are some goals that fill faculty dreams. Except for learning a new language (unless you count understanding Scottish accents), we achieved all of these. The first sabbatical led to a second sabbatical a decade later to refresh my skills by learning reverse genetics. However, no experience will ever replace that first great year of renewal at the Medical Research Council in Mill Hill.

Sabbatical Leave of Bruce S. Chertow, MD, FACP, 1991

In 1991, I had the opportunity to take a sabbatical. Our four children were at an age where they could be independent. My interest was in the role of retinoids in islet cell growth and differentiation and insulin secretion. Research at the cellular level had moved to interest in gene regulation using methods to isolate mRNA and measure mRNA transcripts. Therefore, I needed to tool up, learn these methods, apply them to islets and islet cells, and study the effects of retinoids measuring gene regulation of retinoic acid receptors and their regulation in islet cells. I was familiar with studies at the Baker Institute of Medical Research in Prahran, Victoria, Australia. John Funder, MD, the director, is a cardiovascular endocrinologist recognized internationally for his clinical and research studies of aldosterone and mineralocorticoid receptors, and the management of primary aldosteronism. It was an excellent fit for me as I was a clinical endocrinologist with research interest in cytoplasmic and nuclear receptors and their regulation and everyone spoke English. My main goal was to tool up on methods to study retinoic acid receptor transcripts in insulin secreting RIN5F cells, alpha and beta cells, and their regulation. I worked in the laboratory of the late Zigmunt Krozowski and was given free way to laboratory equipment in his lab and throughout the institute. I was aided by faculty at the University of Melbourne who provided RIN5f beta cells for me to use for study. During my nine-month stay, I learned to isolate and quantitate mRNA transcripts. Communication with my laboratory back home continued throughout the period to provide real time continuity to what experiments were being performed back home in West Virginia. Over the next few years, this led to publications of several manuscripts

describing retinoid effects on transcripts and gene regulation in insulin secreting cells. It also served as research accomplished in the body of subsequent grants submitted to the VA and NIH. I met many of the other researchers at the Institute and learned about their interests and results. It was also an interesting experience for my wife Jan, who on many nights joined me in changing cell culture media and assisted me by stuffing pipettes.

John Funder was a very gracious host. When I arrived, I bought a Renault auto. On departure, he bought the auto from me for one of his children. John was a visiting professor at our JC Edwards SOM. During his visit, we went white water rafting in the New River Gorge. During one of our ups and downs, we almost lost him in the New River.

Melbourne was an exciting city. We arrived a couple of weeks prior to starting the sabbatical to visit New Zealand which probably has more scenery per square mile than any other place and just in time to Australia to attend the Australian Open Tennis Tournament. During our stay there, we had opportunity to travel Australia and visit many places in the country. We spent time in Kakadu National Park in the Northern Territory, Uluru (formerly Ayers Rock), Blue Mountains, Adelaide, and Sidney, where we saw *Arsenic and Old Lace* at the Sidney Opera House. At the Great Barrier Reef, I was certified for scuba on Fitzroy Island. Jan and I took sailing lessons in Port Phillip Bay, and I played tennis on grass courts for the first time. We saw Billy Joel in concert, saw *Phantom of the Opera*, went to Australian footy games. We visited the Queens Gardens frequently and unique animal sanctuaries in and about Melbourne. Australia is an amazing country.

Publications

- Chertow BS, Blaner WS, Rajan N, Primerano DA, Meda P, Cirulli V, Krozowski Z, Smith R, Cordle MB. Retinoic acid receptor, cytosolic retinol-binding and retinoic acid-binding protein mRNA transcripts and proteins in rat insulin-secreting cells. Diabetes. 1993 Aug;42(8):1109-14. doi: 10.2337/diab.42.8.1109. PMID: 8392009.
- Chertow BS, Driscoll HK, Primerano DA, Cordle MB, Matthews KA. Retinoic acid receptor transcripts and effects of retinol and retinoic acid

on glucagon secretion from rat islets and glucagon-secreting cell lines. Metabolism. 1996 Mar;45(3):300-5. doi: 10.1016/s0026-0495(96)90282-6. Erratum in: Metabolism 1996 Jul;45(7):922. PMID: 8606635.

- Chertow BS, Goking NQ, Driscoll HK, Primerano DA, Matthews KA. Effects of all-trans-retinoic acid (ATRA) and retinoic acid receptor (RAR) expression on secretion, growth, and apoptosis of insulin-secreting RINm5F cells. Pancreas. 1997 Aug;15(2):122-31. doi: 10.1097/00006676-199708000-00003. PMID: 9260196.
- Chertow BS, Driscoll HK, Goking NQ, Primerano D, Cordle MB, Matthews KA. Retinoid-X receptors and the effects of 9-cis-retinoic acid on insulin secretion from RINm5F cells. Metabolism. 1997 Jun;46(6):656-60. doi: 10.1016/s0026-0495(97)90009-3. PMID: 9186301.

Grants

United States Department of Agriculture Research Grant. Role and Requirements for Vitamin A in Islet Cell Development and Secretion. $120,000, 1996-1998.

Department of Health and Human Services Grant, National Institutes of Health, Academic Research Enhancement Award. Vitamin A Deficiency, Islet Development and Diabetes. $100,000, 2000-2003.

Sabbatical Leave of Anthony J. Bowdler, MD, Ph.D., 1989

Dr. Anthony J. Bowdler, chief of the Section of Hematology and Oncology, received approval for a sabbatical leave in 1989, at the time the fourth faculty member in the Department of Medicine to do so. His sabbatical leave began April 1, 1989, and ended September 30, 1989.

Unfortunately, Dr. Bowdler died several years ago. Consequently, I (MAM) prepared this description of his goals, activities and accomplishments, relying mainly on his sabbatical application and final report. I also searched selected internet sites including PubMed, Amazon, and Michigan State Medical Licensure website.

Dr. Bowdler's main goal was to complete editing of his textbook entitled, *The Spleen: Structure, Function and Clinical Significance*, which was partly done when he began his sabbatical (but he needed the dedicated time afforded by a sabbatical for its completion). "The spleen had been the subject of considerable research and clinical investigation during the past fifteen to twenty years, but in 1989 there was no standard reference text." He completed the book, and it was published in 1990.

In his post-sabbatical report (which I edited), he described his progress on the book:

"This textbook has been prepared under my editorial guidance and has 24 contributors. When published, it will be approximately 600 pages in length, with 150 illustrations. Few textbooks devoted to the spleen have been published, largely because it has been difficult to investigate clinically and its unique structure "encouraged unsupported speculation concerning its function and pathology. Recent advances in immunology and radiology improved understanding of the organ. The publishers, Chapman and Ball, London, England, anticipated that this will become the standard work of reference.

"Much of the sabbatical was devoted to obtaining the remaining chapters from authors, correcting manuscripts before transmission to the publishers, correcting first proofs, and reviewing and revising illustrations. In order to facilitate this [process], I spent some time in London visiting the publisher to reduce the led time to completion. [I] anticipated that the book will emerge from its first printing before the end of December 1989." [MAM: The book was published in 1990.]

In 1990, Dr. Bowdler left Marshall as emeritus professor, and relocated to Ann Arbor, Michigan. Subsequently, he authored a second edition of his book, with a somewhat different title, namely *The Complete Spleen: Structure, Function and Clinical Disorders*. It was published in 2001.

Additional goals of Dr. Bowdler's sabbatical included plans to submit a research application to the NIH [MAM: postponed, as he received other funds], for which he prepared an outline only, mainly for further studies, on the effect of donor aging on flow properties of blood, with special reference to vascular degenerative disease. The preparation of several manuscripts related to his recent laboratory investigations—one was completed during the sabbatical and "is now in manuscript," namely, **"**A Comparative Study of Age-Related Flow Properties of Blood in Man." Also, his application for an extension of a grant-in-aid to the West Virginia Affiliate of the American Heart Association that concerned, "The Effect of Donor Aging on the Flow Properties of Blood," received approval in August 1989.

"However, studies conducted during the earlier period of [his] sabbatical leave indicated significant recent advances occurred in methodology and interpretation of rheological studies, but virtually none of these originated in the United States. Of these two aspects, the laboratory project was pursued satisfactorily, and sufficient data were obtained to support an application for continuing funds for the project. I therefore extended my visit to London, and later travelled to several [medical] centers in Australia and New Zealand, to obtain an introduction to newer instrumentation and discuss newer concepts with investigators active in the field.

"The library work [essential] to the project was [continued] by further studies at the Royal Society of Medicine, London, and at the medical school libraries of the University of Otago in Wellington and the University of Auckland, New Zealand. Additional information on the present state of rheological studies was obtained especially from Dr. Nash (London, UK), Drs. Collings and Bajenov (Sydney, Australia), Professor Stehbens (Wellington, New Zealand), and Dr. B.K.A. Bullivant (Auckland, New Zealand).

"In summary, it seemed apparent that the state-of-the-art of the technology with respect to red blood cell deformation is currently [in 1989] the Technicon filtration apparatus, with video recording of cell aspiration into a micropipette, simultaneous aspiration pressure recording and statistical programing. Blood viscosity studies appeared now to be optimally performed by ultrasound pulsing." Dr. Bowdler noted that at present [1989] neither form of instrumentation was available in the USA."

Dr. Bowdler concluded the report of his sabbatical leave at this point. He gave me an autographed copy of the first edition of his book *The Spleen: Structure, Function and Clinical Significance*, which I cherish and to which I occasionally refer. My search of PubMed for his publications revealed only two citations dated after he completed his sabbatical and neither was related to the rheological studies that occupied his efforts during the sabbatical. I found details of the second edition of his book *The Complete Spleen,* on Amazon, which is in print.

Sabbatical Leave of Kevin Yingling, MD, FACP, 1997-1998

I completed my sabbatical in the field of clinical pharmacology, 1997-1998. Senior mentors were Sir Charles George and Professor Andrew Renwick via a visiting academic physician appointment in the clinical pharmacology group from the University of Southampton. This work was approved

by the Southampton and S. W. Hants joint research ethics committee at the Southampton General Hospital.

Cutaneous microdialysis was the research platform. Dermal and transdermal therapy was a dynamic area of research and clinical pharmacology at Southampton University. Cutaneous micro data analysis provides information about transdermal diffusion process allowing for characterization of the pharmacokinetic and pharmacodynamic profile of drugs delivered by the skin. The accurate and reproducible assessment of drug concentrations or metabolites in skin was the primary aim of the clinical pharmacology work. Cutaneous microdialysis was an additional in vivo method adding to the area of research such as skin blister fluid assessment, infrared and mass spectroscopy, magnetic resonance imaging, multiple by skin biopsies, etc. The technique of microdialysis and artificial capillary for the diffusion of compounds in the direction of lowest concentration has been used extensively for neurochemical investigations. Microdialysis is the diffusion of analyte from extracellular fluid through a semipermeable membrane of an implanted fiber which is perfused with physiologic solution. The three types of probes used in cutaneous dialysis include the loop probe, the concentric probe, and the linear probe. Semipermeable membranes used as probes allow for molecular weight molecules to cross the membrane in the range from 5000-100,000 Dalton. Essentially, microdialysis makes possible the study of penetration through the skin of a therapeutic agent using small amounts applied across a small area. The assessment of drug delivery, including bioequivalent and therapeutic equivalents, under various conditions and (penetration enhancers, occlusion, vehicle alterations, etc.) is possible.

Initial work in the clinical pharmacology unit specifically focused on "in vivo microdialysis sampling for the study of transdermal drug absorption of Carbaryl in humans." Carbaryl is a cholinesterase inhibitor commonly used as an insecticide, particularly in farm animals. It is considered toxic to humans and can lead to a variety of toxicities including peripheral neuropathy. Among the studies completed, absorption of Carbaryl through the skin was confirmed and altered by a variety of topical applications.

Additional focus of the sabbatical provided opportunities in the medical education. This focus was in clinical pharmacology in active learning or flipped classroom design. Progressive for its time, medical students and physicians in training were taught in an active learning/flipped classroom concept at Southampton University Hospitals. I participated in these ses-

sions for the entirety of the sabbatical. This experience became foundational for classroom design and learning as founding Dean of the School Pharmacy at Marshall University. Additionally, I was provided opportunity to audit activities of the British National Formulary during the sabbatical. This informed me about cost-effectiveness analysis for the addition or exclusion of n

The graduating class of 1981.

All clinical, research and teaching experiences in the sabbatical were directed by Sir Charles George. He was Dean of Faculty at Southampton University and Professor of Clinical Pharmacology during the sabbatical. Later, he was medical director for the British Heart Foundation and president of the British Medical Association. He was knighted by Queen Elizabeth II for services to medical education and medicine in 1998. He chaired the joint formulary committee responsible for overseeing the production of the British National Formulary. Additionally, direct laboratory supervision was provided by Dr. Andrew Renwick. Dr. Renwick has significant experience and publications in the field of artificial sweeteners, regulatory toxicology, and pharmacology. He is an European expert in regulatory toxicology and pharmacology of artificial sweeteners.

The experiences in research and leadership were valuable in guiding my career and professional activities for the next two decades. The life experiences for my family, four children ages two to twelve, were proven to be priceless. Travels through England, Scotland, Wales and Europe served as mind expanding for our children around culture and history. It served to "open the world" to them via reading, travel, history, museums, and daily life in a society different than West Virginia and the United States.

CHAPTER NINE

Three Sections of Excellence: Infectious Diseases, Endocrinology and Clinical Pharmacology

We can learn together.

As I started recruitment of faculty, I identified candidates for the Department of Medicine from among former students and friends at the University of Illinois College of Medicine. Two of them, Drs. Bob Belshe and Bruce Chertow, had extensive research laboratory experience, as I had when I joined the faculty at the University of Illinois College of Medicine. Also, each had published numerous articles in scientific journals that reported the results of their research. I aimed my recruitment of faculty, at least for some of them, on the classic physician investigator model. Both Bob Belshe and Bruce Chertow accepted appointments with me at Marshall and they developed two Sections of Excellence, Infectious Diseases and Endocrinology, respectively, and proceeded to recruit several section members. Through connections at the University of Vermont School of Medicine, Donald Robinson joined the department and formed the Section of Clinical Pharmacology, which quickly became a Section of Excellence. Only in retrospect did I judge these three sections as Sections of Excellence, because the faculty of each section carried a full teaching load, treated many patients in the outpatient offices and in-hospital, pushed the boundaries of their research, and won grant monies. The Department of Medicine comprised faculty who excelled in clinical care, teaching, and research, whether the research was clinical, epidemiological, or laboratory-based. Importantly, they collaborated across sub-specialties and the patients, medical students, residents, fellows, and faculty all benefited as befits unselfish faculty members.

Dr. Bob Belshe joined the Department of Medicine in 1978 as chief of the Section of Infectious Diseases. A longtime friend and colleague, we met at the University of Illinois College of Medicine in Chicago in 1970 when Bob matriculated and chose the Independent Study (James Scholar) Program. This program enabled him to design his curriculum throughout the four years of medical school, with the supervision and approval of a faculty mentor. I was selected as his mentor and we bonded. Of all the medical students I mentored at the University of Illinois College of Medicine, he proved the most successful. The James Scholar Program required that each student conduct research and present their results to a faculty committee or publish

their results in a refereed medical journal. Bob pursued his research project in my laboratory and joined our ongoing research on the viral etiology of acute hemorrhagic urinary cystitis (AHC) in children. We were the first U.S. laboratory to identify adenovirus type 11 as the etiologic agent of AHC. Employing immunofluorescent procedures, Bob demonstrated adenovirus type 11 in exfoliated urinary cells of ill children. As a James Scholar he published four articles in refereed medical journals and three abstracts and presented his research at a regional medical meeting. After he completed an Internal medicine residency at the University of Illinois Hospitals, he joined Robert M. Chanock, MD, Chief of the Laboratory of Infectious (LID) at the National Institute of Allergy and Infectious (NIAID), National Institutes of Health (NIH), Bethesda, Maryland, the laboratory in which I had conducted research with Bob Chanock, many years previously. Bob published twelve articles mainly on broad ranging research of respiratory syncytial virus (RSV) during his tenure with Bob Chanock. He established a long-standing opportunity for new development and testing of vaccines, which benefitted the Department of Medicine when he joined the Marshall University School of Medicine. At Marshall, he built an outstanding Section of Infectious Diseases that excelled in clinical care and infectious diseases research.

Bruce Chertow and I were friends and colleagues in Chicago at the University of Illinois School of Medicine and at the West Side VA Hospital and I discussed with him the opportunity at Marshall in the Department of Medicine as the Chief of the Section of Endocrinology. An accomplished clinician investigator and endocrinologist, he visited Marshall and accepted appointment as the section chief. He also recruited several endocrinologists with bench credentials to the Section and they applied and received grant funds from the VA Research Service. Recruitment of section chiefs proved easiest when I had colleagues—also friends—who were accomplished clinicians and clinician investigators and I knew their character and accomplishments so that I could offer them important positions in the Department and rely on them fully.

The start of the Section of Clinical Pharmacology began through another relationship. Dean Coon had been head of pathology at the University of Vermont before joining Marshall. He had many contacts at the University of Vermont and, consequently, Donald Robinson, a trained and experienced clinical pharmacologist, was recruited by the dean to join Marshall as chairman of the Department of Pharmacology. During Don's visits to Huntington,

we discussed the opportunities in clinical pharmacology and I offered him the position of section chief of clinical pharmacology, which he accepted. Immediately, he recruited two section members from the University of Vermont, one who had completed his fellowship in clinical pharmacology and one who had completed his Internal medicine residency. Very quickly, the Section of Clinical Pharmacology in the Department of Medicine was fully formed and readied the curriculum in pharmacology. For a new Department of Medicine in a start-up medical school, Marshall was ahead of the curve.

These three sections enabled the Department of Medicine to become a force in the community and to compete in the difficult academic world of research grants and contracts. Consequently, Marshall had high visibility in academic medicine in these areas.

Infectious Diseases: Roots, Research and Clinical Applications 1978-1988 – Robert B. Belshe, MD, Chief of Section

"We can learn together."

Prologue

Maury Mufson was my research advisor in medical school at the University of Illinois College of Medicine. When I entered medical school in 1970, the faculty was experimenting with new education methods to stimulate some of the stronger first-year students to pursue research careers. Twenty of us were accepted as James Scholars, the program that encouraged independent study. Each scholar could set their own curriculum. We did not have to attend class, but we did have to pass the examinations of the National Board of Medical Examiners. Most of us in the program had exceptionally strong basic science training as undergrads, so many of us entered clinical clerkships directly. In my case, since I completed graduate courses in advanced physical chemistry, biochemistry, and endocrinology at William and Mary, I was confident I could hold my own.

After some planning sessions with Maury, I chose a combination of a research lab and an organ systems approach to medical education. I chose subspecialty clerkships in cardiology, pulmonology, neurology, and gastroenterology in my first year alongside fourth year students. The senior students and house staff and faculty were very gracious with their time and I quickly learned that the "see one, do one, teach one" approach to medicine really works. I continued other subspecialty rotations and added general

clerkships such as pediatrics, orthopedics, surgery, and obstetrics in my second and third years. I attended the pathology lab course and studied slides at night so when I took the pathology practical exam "for fun," I scored a near perfect. Most of the clerkships allowed time for reading and outside study; I spent those hours in Maury's research lab.

Maury was studying children with acute hemorrhagic cystitis, an acute infection of the bladder wall caused by Adenovirus type 11. He added me as an investigator and taught me how to collect clinical samples, abstract clinical data, culture the viruses, and serotype the adenoviruses. We developed a rapid test to identify infected bladder cells by immunofluorescence, and we attempted, unsuccessfully, to develop an animal model. I presented oral abstracts at the University of Illinois student research days and my research abstracts were selected for oral presentation at regional scientific meetings, such as the Central Society for Clinical Research. My academic career was underway; Maury and I generated four manuscripts that were published in refereed medical journals.

- Belshe RB, Mufson MA. Characterization by hemagglutination-inhibition of adenovirus 11 strains from urine of patients with hemorrhagic cystitis. Proc Soc Exp Biol Med. 1973 Jul;143(3):835-8. doi: 10.3181/00379727-143-37424. PMID: 4737045.
- Mufson MA, Belshe RB, Horrigan TJ, Zollar LM. Cause of acute hemorrhagic cystitis in children. Am J Dis Child. 1973 Nov;126(5):605-9. doi: 10.1001/archpedi.1973.02110190487004. PMID: 4355446.
- Belshe RB, Mufson MA. Identification by immunofluorescence of adenoviral antigen in exfoliated bladder epithelial cells from patients with acute hemorrhagic cystitis. Proc Soc Exp Biol Med. 1974 Jul;146(3):754-8. doi: 10.3181/00379727-146-38187. PMID: 4366509.
- Mufson MA, Belshe RB. A review of adenoviruses in the etiology of acute hemorrhagic cystitis. J Urol. 1976 Feb;115(2):191-4. doi: 10.1016/s0022-5347(17)59130-2. PMID: 175174

I skipped summer vacations and worked right through the year. By the end of my third year, I completed more clerkships than students usually take in four years and I had excellent board scores, so the university let me graduate early. Also, I had paid tuition for those extra summer sessions and

the bursar was happy. The cost of medical school was $245 per academic quarter "in good old days."

Early graduation meant I had not participated in the senior match program where students and hospitals are matched by computer for internship and residency training. Maury came to the rescue and arranged for the VA and University of Illinois Hospital to hire me as an extra house staff. I spent two years in the internal medicine program at the University of Illinois and continued to work in Maury's lab for elective months. Maury had me attend the annual meetings of the Infectious Diseases Society of America. It was a small society of 300 experts in infectious diseases in 1973, and this was before there was a subspecialty board for ID. I had a chance to interact with Albert Sabin and other giants in infectious diseases. Albert explained that Maury was his scientific grandson, via Robert Chanock, and therefore, I was his scientific great grandson.

After two years of a medicine residency, it was time to pick a fellowship and Maury encouraged me to participate in the NIH selection process for ID fellows. I matched with Robert Chanock and his lab; my wife, Pat, and I moved to Bethesda, Maryland. We spent three great years at the NIH where I could devote 100 percent effort to research. I generated data for twelve manuscripts at NIH, which were accepted for publication in refereed journals (four are listed below).

- Belshe RB, Richardson LS, London WT, Sly DL, Lorfeld JH, Camargo E, Prevar DA, Chanock RM. Experimental respiratory syncytial virus infection of four species of primates. J Med Virol. 1977;1(3):157-62. doi: 10.1002/jmv.1890010302. PMID: 416176.
- Belshe RB, Richardson LS, Schnitzer TJ, Prevar DA, Camargo E, Chanock RM. Further characterization of the complementation group B temperature-sensitive mutant of respiratory syncytial virus. J Virol. 1977 Oct;24(1):8-12. doi: 10.1128/JVI.24.1.8-12.1977. PMID: 904033; PMCID: PMC515904.
- Belshe RB, Richardson LS, Prevar DA, Camargo E, Chanock RM. Growth and genetic stability of 4 temperature sensitive (ts) mutants of respiratory syncytial (RS) virus in newborn ferrets. Arch Virol. 1978;58(4):313-21. doi: 10.1007/BF01317823. PMID: 736795.
- Belshe RB, Richardson LS, London WT, Sly DL, Camargo E, Prevar DA, Chanock RM. Evaluation of five temperature-sensitive mutants

of respiratory syncytial virus in primates: II. Genetic analysis of virus recovered during infection. J Med Virol. 1978;3(2):101-10. doi: 10.1002/jmv.1890030203. PMID: 104003.

A Career Move to Marshall

With 18 months left in my fellowship and having recently passed the Specialty Board for Internal medicine, I started to look around at available positions. In the interim, Maury had accepted the position as founding chairman of medicine at Marshall, and he began to build the medicine department for a new medical school.

The University of Iowa reached out to me—they needed a virologist. I made a first visit to Iowa City; it went very well. Maury was, of course, one of my key references, and he wrote a strong recommendation. But he also called me and asked if I would consider taking on the task of building a Division of ID at Marshall. "I don't know anything about running a division" was my initial reaction. His immediate response was "That's okay I don't know much about being a department chairman. We can learn together."

My NIH colleagues finished their fellowships and headed to junior faculty positions at Hopkins or Columbia or other big name universities with huge endowments; this was the classic pathway for a career in academia. I could follow the crowd or accept Maury's offer and contribute to the shared vision of building a new, badly needed medical school. Pat and I discussed the options, and I made a visit to Marshall. We found that Huntington was a jewel and the college community invigorating.

Carpe Diem

We packed up our collection of hand me down family furniture and on July 1, 1978, moved to our 1930s brick home at 305 Twelfth Avenue in the Southside neighborhood. We paid about $55,000 for it in 1978, and the interest rates were high, over 10%. Inflation was rampant, 9 percent that year and we felt (correctly as it turned out) that inflation would get worse. We had purchased the home almost six months early not only because of the expectation of inflation, but also because our landlord in Bethesda was anxious for us to move. In Bethesda, we lived in an all-adult building, and we had no children when we moved in. Pat was expecting and we told the property management that we needed a family unit. By the time manage-

ment got around to noticing, our two babies had been born at Walter Reed. We stalled on moving to a different apartment, and ultimately it was cheaper for the landlord to let us live where we were for another year rather than try to evict our young family.

Barbara Silverstein and her three little boys were waiting on the sidewalk to greet us as we pulled into the driveway in Huntington. Barbara and Pat became best friends, and half the stress of moving was solved. Now, it was up to me to put together an ID Division.

Recruiting additional faculty to join the new division became my top priority as I wrapped up my last few months at NIH. At the Infectious Diseases Society meeting in the fall of 1977 (New York City was the host city), I started interviewing faculty candidates. There was a lot of interest in the idea of building a new division in a new medical school, and I interviewed at least ten good candidates. Lee Van Voris would complete his fellowship in 1978 at the University of Rochester—the ID group at Rochester was a very strong program in Clinical ID—and he had experience in virology and vaccine research. Lee and Anne Van Voris and their two young children (soon to be three children) joined us in Huntington in August of 1978. It was a good match. Lee had great clinical training, and he organized the clinical service. I had strong research skills and devoted my first few months to getting the labs running. I hired Fran Newman as my lab manager. She was to be my longtime lab manager, and together we built a lab operation that was highly productive for more than thirty years. I did not know it at the time, but the lab would support the future Vaccine Center at Marshall University and attract millions in NIH funding.

One of the fun things Maury arranged was to conduct physical exams for the Marshall athletes, and in return we had wonderful seats in a small gymnasium (the Field House) where Marshall played basketball. Our seats were card table chairs placed right on the courtside, literally. To go to the "loo," I had to climb over the rail into the stands. Those were fun years starting up a new school and learning about the University and community. Marshall basketball and football went big time, and construction of a new basketball stadium ended our faculty opportunity. The NCAA probably frowns on tickets for physical exams these days.

Learning on the Job

Maury arranged for Dr. Stuart Levin, division director of Infectious Diseases at Rush College of Medicine, to spend two days as a visiting professor at Marshall University. That visit was designed for me to pick his brain and get advice on running a division. I still remember much of the conversations I had with Stu. "You need a big chunk of funding" was the first thing he said. We talked about the role of industry funding in ID— "don't turn it down"—and the importance of the clinical service staying immediately responsive to the community. Funding was needed to hire more faculty and staff to cover a busy clinical service and conduct research. He cautioned against relying on clinical income because "there was not a lot of income generated by ID physicians." Other specialties had medical procedures that were money making, but ID had only advice. Long term we would need NIH and industry research support. When Maury and I discussed the points that Stu made, he revealed that he had an offer from Dr. Maurice Hilleman, head of vaccine research at Merck, to conduct a field trial of their RSV vaccine in children. That clinical study would ultimately power the division start up and expand the faculty and staff to put us on the national stage.

Dr. Lee Van Voris started out strong and the community physicians loved having clinical ID available to help manage difficult cases. He and I alternated months, but he carried much of the clinical load while I worked on hiring and lab training. Within six months we had our research laboratory set up to isolate and identify viruses from clinical samples. We employed a research head nurse, Linda Nerhood, and Fran Newman and Dr. Lee Van Voris added Janet Lahey as Lee's lab tech and Fran's assistant. We developed lab methods for measuring antibodies to RSV by ELISA. In those days, ELISA readers were homemade because it represented a new technology, and equipment manufacturers had not yet gotten on board with the new method. We had blueprints from NIH on how to make a reader. Robert Yolken, another fellow in Bob Chanock's lab in the rotavirus section, developed ELISA into a practical assay and, with the help of NIH engineers, he built the first readers. NIH would not sell us one, but they released the blueprints under the Freedom of Information Act.

We invested Merck's funding wisely. We added three additional lab staff and five additional nurses, including Carol Berry and Sally Wells. Both would continue their research nursing careers with me for many productive years. The Merck project called for enrollment of 300 young children in a live RSV vaccine vs placebo randomized double blind clinical trial and monitor

the children for RSV infection and disease to determine whether the vaccine "worked," meaning it provided immunity to infection. We vaccinated children in pediatrician offices in Huntington and we made house calls when the children became ill. We visited the two hospitals in town each day and swabbed every child admitted with respiratory disease and cultured those samples for viruses. The results were reported to the admitting pediatrician. This gave us great credibility in the community and the physicians often expressed surprise at the viruses we isolated. They liked knowing the etiology of all those respiratory diseases. Periodically, Merck requested that we fly to Hilleman's offices outside of Philadelphia to confer on the study. After two years the results were clear. The vaccine did not prevent RSV and the antibody titers stimulated by the vaccine were too low to be effective. Hilleman was not happy, but the data were the data. I wrote an abstract and sent it to a large virology meeting. It was accepted for oral presentation but, at the last minute, I was forced to withdraw the abstract under threat of Merck stopping payment for the ongoing study. I learned a valuable lesson about industry funding in general and Maurice Hilleman in particular. Eventually, we did publish the complete details of the study.

- Belshe RB, Van Voris LP, Mufson MA, Buynak EB, McLean AA, Hilleman MA. Comparison of enzyme-linked immunosorbent assay and neutralization techniques for measurement of antibody to respiratory syncytial virus: implications for parenteral immunization with live virus vaccine. Infect Immun. 1982 Jul;37(1):160-5. doi: 10.1128/iai.37.1.160-165.1982. PMID: 7107002; PMCID: PMC347505.
- Belshe RB, Van Voris LP, Mufson MA. Parenteral administration of live respiratory syncytial virus vaccine: results of a field trial. J Infect Dis. 1982 Mar;145(3):311-9. doi: 10.1093/infdis/145.3.311. PMID: 7037983.

Dr. Lee Van Voris and Jerry Shaffer, the infection control nurse, made important clinical observations at the VA which revealed a large nosocomial outbreak of Influenza B in hospitalized veterans. We contributed the data to Morbidity and Mortality Weekly Report (MMWR). It was an important observation at the time since little was known about Influenza B in elderly patients. In seniors, flu B behaved very much like influenza A, and flu B virus was not just a disease of children. Lee subsequently published his observations in the *Annals of Internal medicine.* Lee and Janet Lathey developed an ELISA-assay for measuring antibody to Influenza B to further define the clinical and laboratory observations.

- Van Voris LP, Belshe RB, Shaffer JL. Nosocomial influenza B virus infection in the elderly. Ann Intern Med. 1982 Feb;96(2):153-8. doi: 10.7326/0003-4819-96-2-153. PMID: 7059061.
- Turner R, Lathey JL, Van Voris LP, Belshe RB. Serological diagnosis of influenza B virus infection: comparison of an enzyme-linked immunosorbent assay and the hemagglutination inhibition test. J Clin Microbiol. 1982 May;15(5):824-9. doi: 10.1128/jcm.15.5.824-829.1982. PMID: 7047553; PMCID: PMC272196.

Growth in the ID Division

The Division of ID had an advantage over many other divisions. We did not compete with any ongoing services in Huntington. In contrast, most other subspecialists (cardiology for example) competed directly with clinicians in the private sector. Our clinical reputation was good thanks to Lee's leadership in hospital consultations. We provided a lab service—virus isolation—that was new for the community, and funding began to flow from the VA and NIH.

Our success in conducting a large clinical trial in infants and young children was noticed by NIH. I traveled to Robert Chanock's lab at the NIH and gave a seminar on our results. Although the study outcome was negative, the study was done right. And we produced data on the epidemiology of RSV and other respiratory viruses in Huntington.

We applied for funding as a Vaccine Center, and we joined the existing units at Baylor, Hopkins, University of Maryland, and Vanderbilt as NIAID Vaccine Study Units. Our application scored high in the review, but no one at NIH had ever heard of Marshall, so they sent a team to visit. I picked up the site visitors at the Huntington Tri-State Airport and showed them the Medical School, Marshall's campus, and the VA with its lab facilities. The visitors seemed pleased with what I showed them, and they left Marshall with a sense that we knew what we were doing. The NIH proceeded to award us with our first of several large contracts to conduct vaccine studies.

NIAID Contract NO1-AI-02644. Principal Investigator. Center to Develop and Evaluate Live Virus and Killed Bacterial Vaccines in Volunteers. March 1980 - March 1985 ($1,600,000).

NIAID Contract N01-AI-52575. Principal Investigator. Center for Vaccine Development. February 1, 1985 - October 7, 1989 ($1,898,799).

The VA Merit review grant system was critically important in starting our research program. Funding from industry was helpful, but the lab building was at the VA, we had part time clinical appointments at the VA, and both Lee Van Voris and I applied for VA Lab funding. We were successful and that started our core labs that made us successful.

Development of Live Attenuated Parainfluenza Virus Vaccines. Robert Belshe, Principal Investigator. 1980-1984 ($80,000).

Veterans Administration Merit Review Award. Robert Belshe and Lee Van Voris Principal Investigators. Evaluation of Live Attenuated Influenza A Vaccines in High Risk Adults. 1983-1986 ($175,000).

Veterans Administration Merit Review. Robert Belshe Principal Investigator. Development and Evaluation of Parainfluenza Virus and Influenza A Virus Vaccines. 1985-1988 ($326,000).

The clinical service was booming, the research funding was flowing, and we had basic research lab funding from the VA, and clinical trials to conduct for the NIH. We needed more faculty and staff, and I began to recruit other faulty in earnest. Fran added additional lab technicians and Linda Nerhood added research nurses to build capacity in the clinical research unit.

Lee and I started a fellowship program, and we did have one fellow for three years; however, we did not think he was qualified to be board certified since most of his evaluations were not good. The ID Board backed us up. I learned that any future training program needed more faculty, an expanded curriculum, and a fellowship staff manager. Also, I knew that we would be much more selective in the candidates going forward.

Lee and I were busy on the clinical service, and we needed more clinical faculty. We added two faculty in 1980, Jack Bernstein and William Graham,

to make four of us in the division. Jack Bernstein finished his ID fellowship at Rochester; he had lab skills in RSV research, and he was from the same strong training program as Lee Van Voris. Jack and his wife, Mary Ann, joined us in July 1980. Jack applied for and was given a Merit Review Award to study RSV.

Glycoproteins of respiratory syncytial virus: Purification and immunogenicity. Jack Bernstein Principal Investigator. $70,000. VA Merit Review, 1981 – 1984.

William Graham was trained at Brown University, and he stayed there and did his residency and ID Fellowship at the University Hospital. He had an interest in and was trained in antibiotic clinical trials. I anticipated he would generate research dollars by conducting studies for industry with new antibiotics. He arrived in 1980, and he assumed attending roles in both general medicine and ID. He was a talented teacher and clinician. His research never got going to the extent we hoped, and he moved on to private clinical practice in Texas in a few years.

The Recession of 1980-1983

By 1980, we were well established, but the university and West Virginia had fallen on hard economic times as the U.S. economy slumped. Inflation was 12 percent in 1980 and the U.S. economy went into a dive that did not recover until 1983. The state froze all new hiring, and there would be no pay raises. For a new medical school, that could be fatal. For an academic division funded nearly entirely on grants and contracts, it was counterproductive to freeze all hiring, and to stop annual pay raises meant our research nurses and lab staff would start to leave. One year the state decided to furlough faculty and employees at no pay to balance the budget. Faculty prepared to move, and staff were looking for jobs.

Maury and the dean, Robert Coon, pointed out to the university president that the NIH was giving the university hundreds of thousands of dollars in research overhead in addition to the direct payments for salaries and supplies. The media, including the *Washington Post*, widely reported the state's trouble. I had a call from the NIH asking if we could fulfill our contract. The crisis continued to escalate. Our sister university, West Virginia University in Morgantown, suffered also. Maury and the dean were effective

at unfreezing grant and contract funds, and we continued to be productive. We did lose some staff, but we pushed hard, and eventually the division was able to replace them since we were spending federal dollars. However, the net effect was strongly negative on research at the medical school, and we wasted hours and hours of effort that could have been productively used in research grant writing and patient care instead of dealing with the state hiring freezes. It took years to recover from the combination of economic recession and the shortsighted response of the state's managers in Charleston.

As the recession ended and housing prices firmed up a bit, Lee Van Voris decided to take a practice opportunity in Erie, Pennsylvania; it was a clinical practice opportunity closer to his and Ann's family roots. He gave me plenty of notice which allowed me to hire a replacement, and Lee relocated in 1983.

The ID Club of West Virginia meets at Smiley's Motel

There were ID physicians in Charleston, Beckley, and Morgantown, and when we met at national meetings, we would compare notes on ID clinical and research topics in West Virginia. Dr. Ed Anderson was in Charleston, and he was the only pediatric ID physician in the state. Lee and I were seeing children with complicated cases and offering advice on treatment, but Ed had real insight and advice to offer. We jumped at the chance to meet monthly part way between Huntington and Charleston and present cases to each other and share knowledge. Smiley's Motel was located halfway, and we rented a meeting room there for $50. At those meetings I befriended Ed Anderson and familiarized him with our research in children.

Expansion of the Vaccine Center

Ed was exceptionally well trained; he completed residency at the Medical College of South Carolina, and he had subspecialty training in pediatric ID and pediatric intensive care. It was a logical and easy move for Ed and his family to relocate from the Charleston Area Medical Center in order to work at Marshall. We added Ed to our division, and he integrated into the Vaccine Center. Ed offered great advice on a surprising range of topics.

Ed's reading list included business literature, which emphasized that computers were going to help us from word processing to schedules to data capture and analysis. These are things we all take for granted now, but then we were at the vanguard of technology that would facilitate our research. We bought Apple computers in 1983 and became knowledgeable users quickly. No one in the university had an email account. The division's first email

address was at Compuserve.com. Just think about how much technology has changed since 1982. We used beepers to find each other—no one had a mobile phone. Maury set up the first fax in the university about this time. I was a big user of it to communicate with NIH.

There were several major vaccine needs for children in the early 1980s. Ed assumed a larger role in the Vaccine Center, and we hired Julie Bartram as our head nurse. Together Ed and Julie helped develop a series of vaccine projects that were funded by the NIH.

Pertussis (whooping cough) vaccines were causing adverse reactions in young children with an unacceptable frequency. Some of the reactions were severe and included persistent screaming and collapse in infants. At the time, pertussis vaccine was manufactured using whole pertussis bacteria. Dead bacteria were the problem. Subunit antigens were isolated from the bacterial surface of Haemophilus pertussis. The subunit vaccines were significantly less reactogenic as a vaccine than were pertussis bacteria. Now in the USA, subunit pertussis vaccines are the standard and safe and effective. However, the current problem with today's pertussis subunit vaccines is the short-lived immunity. Work continues.

- Anderson EL, Belshe RB, Bartram J, Gurwith M, Hung P, Levner M, Vernon SK. Clinical and serologic responses to acellular pertussis vaccine in infants and young children. Am J Dis Child. 1987 Sep;141(9):949-53. doi: 10.1001/archpedi.1987.04460090026016. PMID: 3618569.
- Anderson EL, Belshe RB, Bartram J. Differences in reactogenicity and antigenicity of acellular and standard pertussis vaccines combined with diphtheria and tetanus in infants. J Infect Dis. 1988 Apr;157(4):731-7. doi: 10.1093/infdis/157.4.731. PMID: 2894399.

Another vaccine needed for children in the 1980s was an effective Haemopilus influenzae B (HiB) vaccine. Haemophilus was the most common cause of meningitis, and unfortunately many children died before they could be treated with antibiotics. Children who survived often were left impaired; many became deaf. New technology demonstrated that the surface polysaccharides of Haemophilus and other bacteria could be chemically linked to a protein, and the linked polysaccharide-protein complex would stimulate high levels of protective antibodies. It was one of the most successful vaccine

programs ever devised for the prevention of a deadly disease. Ed and other staff at the Vaccine Center contributed to the efforts to evaluate the new vaccine.

- Einhorn MS, Weinberg GA, Anderson EL, Granoff PD, Granoff DM. Immunogenicity in infants of Haemophilus influenzae type B polysaccharide in a conjugate vaccine with Neisseria meningitidis outer-membrane protein. Lancet. 1986 Aug 9;2(8502):299-302. doi: 10.1016/s0140-6736(86)90001-2. PMID: 2874327

The cause of acute diarrhea in infants had been identified as rotavirus by Al Kapikian at the NIH. In the USA, babies under twelve months of age often were hospitalized when they became dehydrated consequent to this infection. In developing countries rotavirus was recognized as a leading cause of infant mortality. Al Kapikian soon developed an oral live attenuated vaccine that had the potential to prevent the disease, and Ed worked with NIH to develop the protocol to evaluate the vaccine. We conducted the first evaluation in children for the NIH.

- Anderson EL, Belshe RB, Bartram J, Crookshanks-Newman F, Chanock RM, Kapikian AZ. Evaluation of rhesus rotavirus vaccine (MMU 18006) in infants and young children. J Infect Dis. 1986 May;153(5):823-31. doi: 10.1093/infdis/153.5.823. PMID: 3009633.

By far, our largest research program was developing live attenuated influenza vaccine. This vaccine would become Flumist when commercialized by Aviron in 2002. The vaccine had very attractive characteristics. It was sprayed into the nose and, therefore, its administration remained needle-free. It induced secretory IgA as well as serum antibodies and cellular immune responses in seronegative children. For about six years, Ed and I traveled to Washington, DC, for quarterly meetings to report on progress and plan next steps for this new influenza vaccine.

- Belshe RB, Van Voris LP. Cold-recombinant influenza A/California/10/78 (H1N1) virus vaccine (CR-37) in seronegative children: infectivity and efficacy against investigational challenge. J Infect Dis. 1984 May;149(5):735-40. doi: 10.1093/infdis/149.5.735. PMID: 6726003.

- Belshe RB, Van Voris LP, Bartram J, Crookshanks FK. Live attenuated influenza A virus vaccines in children: results of a field trial. J Infect Dis. 1984 Dec;150(6):834-40. doi: 10.1093/infdis/150.6.834. PMID: 6501927.

With the departure of Lee Van Voris, we added Dr. Dr. Geoffrey Gorse to the faculty. Geoff completed a medicine residency at University of California, San Francisco, Fresno and then an ID fellowship at Irvine. He had training and interest in cellular immunology and interferon measurements. He tackled the problem evaluating interferon responses after influenza vaccines. His research fit well with the direction of the Vaccine Center. He was successful with his own program at the VA also, where he developed a program to evaluate LAIV in patients with COPD.

Veterans Administration Research Advisory Group Grant. Principal Investigator. "Effects of live influenza vaccine on cellular immunity and interferon." January 1984 to January 1985. ($25,000)

Veterans Administration Merit Review Grant. Co-investigator. "Evaluation of vaccines in adults with chronic lung diseases." April 1985 to April 1988. ($323,600 for three years).

Veterans Administration Merit Review Grant. Principal Investigator. "Cellular Immune Responses to Live and Inactivated Influenza Virus Vaccines." April 1986 to April 1989. ($105,000 for three years)

Veterans Administration Merit Review Grant. Principal Investigator, "Evaluation of vaccines in adults with chronic lung diseases." April 1988 to September 1991 ($275,000 for three years).

AIDS vaccine research

The first handful of cases of a newly recognized chronic wasting disease in men characterized by immunosuppression and chronic pneumonia leading to death were described in a report in MMWR in 1982. The syndrome was named for its hallmark findings, including sexual transmission and Immune Depression/AIDS. Most of the patients were gay men and the eti-

ology was unknown. While I was an attending on the ID Clinical Service at the VA, my team admitted a patient with these symptoms about one month after the CDC report. He displayed all the characteristics of the patients in the report. As we treated several patients with this disease in Huntington, we knew it was a large outbreak, not a rare disease. There was an extensive epidemic ongoing in the USA and Europe, and we needed to deal with it. Researchers in France confirmed the infectious etiology in 1983 and the virus was identified as a new type of retrovirus, designated Human Immunodeficiency Virus (HIV). Our role was to help NIH develop a vaccine to prevent HIV—a national effort that continues today.

We recruited adult subjects into clinical trials of vaccinia recombinant virus expressing surface proteins of HIV. It was not possible to become infected with HIV/AIDS from the vaccine, but it did convert the serologic tests positive for AIDS in vaccinated persons. We worked with the Institutional Review Board (IRB) to solve important informed consent issues since the AIDS tests would be false positive. We asked advice from the Red Cross. Our volunteers were low risk for acquiring AIDS and some were blood donors, but if they participated in this trial, they could no longer donate. These were important challenges to developing HIV vaccines in the 1980s, but slow and steady progress was made with HIV vaccines. It required years of development and some of the clinical trials lasted for several years (vide infra). We were lucky to have an educated and enlightened population of volunteers, and we made important progress at Marshall towards developing HIV vaccines. Much work remains, however. For our work on AIDS and other projects, I was named the Marshall University Scholar in 1988.

NIAID Contract N01-AI-52575. Robert Belshe Principal Investigator. AIDS Vaccine Studies, supplemental funding. 1987-1989 ($1,400,000).

- Graham BS, Belshe RB, Clements ML, Dolin R, Corey L, Wright PF, Gorse GJ, Midthun K, Keefer MC, Roberts NJ Jr, et al. Vaccination of vaccinia-naive adults with human immunodeficiency virus type 1 gp160 recombinant vaccinia virus in a blinded, controlled, randomized clinical trial. The AIDS Vaccine Clinical Trials Network. J Infect Dis. 1992 Aug;166(2):244-52. doi: 10.1093/infdis/166.2.244. PMID: 1353102.

Acting Chair, Department of Medicine 1984-85

Maury Mufson took his much-deserved sabbatical (described elsewhere in this history) to retool his lab skills during the academic year 1984-1985, and he asked whether I would serve as acting chair in his absence. I wanted to limit my administrative time since our research was progressing well in vaccine development, but if I ever wanted to be a department chair, here was a chance to find out what it would be like. Maury had Joyce Ray as his office manager, and she handled many of the routine tasks. The department was the most successful in the School of Medicine, and I was confident we could hold it together. Everything went reasonably smoothly, but attending Deans' committee meetings, defending the department against jealous chairs in less successful departments, chairing department meetings, and investigating potential faculty misconduct added up to a huge time sink. I preferred my research.

Faculty Turnover in the ID Division

When Lee Van Voris departed after five years, I realized faculty recruitment and retention would be an ongoing necessity. We needed to plan for regular turnover in faculty. Some would not get grants to continue research and move on for a new round of start-up money from another university, and some would prefer to practice and not be tied to a university practice plan (which are, by necessity, less efficient at generating income due to teaching requirements).

Fortunately, good faculty candidates were continuing to express an interest in joining our group. After William Graham moved on, we added Dr. Ulf Westblom to the faculty. Ulf trained in his native Sweden and then emigrated to Columbia, Missouri, and completed his Medicine Residency and ID fellowship at the University of Missouri. Ulf joined the faculty in 1986 and brought a new area of research to Marshall. Research elsewhere was suggesting that *Helicobacter pylori* was the possible cause of peptic ulcer disease. It was a radical idea at the time that a bacterial infection in the stomach could cause ulcers. Ulf's research helped confirm that hypothesis, and he worked with Marc Subik in the GI division developing diagnostic tests and treating infected patients with antibiotics.

- Westblom TU, Madan E, Kemp J, Subik MA. Evaluation of a rapid urease test to detect Campylobacter pylori infection. J Clin Microbiol.

1988 Jul;26(7):1393-4. doi: 10.1128/jcm.26.7.1393-1394.1988. PMID: 3410949; PMCID: PMC266616.

- Barthel JS, Westblom TU, Havey AD, Gonzalez F, Everett ED. Gastritis and Campylobacter pylori in healthy, asymptomatic volunteers. Arch Intern Med. 1988 May;148(5):1149-51. PMID: 3365082.

Ulf and I were given the responsibility of running the clinical correlations course for second year students. These were lectures presented by volunteer faculty, i.e., community physicians, about cases in their various specialties; the course was designed to keep the students interested in clinical topics during their basic science training years. We reviewed the comments from clinical faculty about their experience as lecturers. One letter noted "No one showed up for my lecture and I had to close my practice for three hours, drive to the medical school located way out by the VA hospital. I won't give any more lectures…". It turned out that the students had cut the lecture to study for an important exam; but the volunteer faculty was right—the students should show up or the school should arrange a better time if there was a conflict. Neither Ulf nor I had taken a course in education, and we assumed we could get students to show up if we gave pop quizzes during the semester. They did show up, but they hated the quizzes, and it killed the enjoyment of the clinical correlations class. We were not asked to organize the class again.

Retooling for research on the next generation of vaccines

With Maury's return from sabbatical, I began to plan my own sabbatical. My experience at the Medical Research Council is described elsewhere in this book.

I had accumulated numerous committees on which I served, including chair of the Marshall University Institutional Review Board (IRB), which reviewed all research projects involving human subjects conducted at Marshall or the VA Medical Center. Investigators in the School of Nursing were sometimes uninformed of the rules. Today, I judge that research would not start in any area of the university without a satisfactory IRB review. In 1985, the protection of volunteers was rapidly evolving, and every investigator had to be educated in order to be compliant. I also chaired the VA Medical Center's Infection Control Committee. Those were two committees that were critical to the division for its research and clinical activities. My sabbatical

leave allowed me to pass those responsibilities on to others in the division. I was off to the United Kingdom to retool my laboratory capabilities for the next decade of research in vaccine development.

It was an eventful decade, and I loved every day of my work at Marshall. Marshall was a crucible and it forged students and faculty into new doctors, better doctors, better faculty, and better researchers. The public and veterans in West Virginia and Eastern Kentucky received improved health care (in many instances I would characterize it as vastly better). Our research required the community to volunteer, and they did, wholeheartedly, and our vaccine research proved enormously successful in our medium sized community.

Endocrinology—Bruce Chertow, MD, F.A.C.P., Chief of Section

In 1978, Dr. Mufson invited me to be in the first group of physicians at Marshall University School of Medicine (MUSOM) and the Huntington VA Hospital (HVAMC) to establish the Department of Medicine, and specifically the Section of Endocrinology and Metabolism. I was associate professor of medicine at the University of Illinois, Abraham Lincoln School of Medicine (formerly the University of Illinois College of Medicine) and the West Side VA Medical Center and had established my research program studying insulin secretion from isolated islets and parathyroid secretion from bovine parathyroid tissue. I knew Dr. Mufson well, as he was the associate chief of staff for research at the West Side VAMC. I knew Marshall University had chosen the right person to establish the Department of Medicine, and I had no doubts he would be successful in his efforts. Dr. Mufson, when recruiting me, promised me fair weather, VA laboratory space, and start up support for recruiting faculty and staff. He failed on the weather for on my first recruiting visit looking for a house—I walked through two feet of snow (the blizzard of '78). I knew it would be a challenge to start up an endocrinology program, but one that would be unique and rewarding personally for me. I would also have the opportunity to develop nuclear imaging for internal medicine and the VAMC. Initial concerns include personal ones involving family. My wife Jan (now of 57 years) was agreeable to the move from Chicago with the move delayed to September 1978 so our four children could immediately start school and meet other children. We were fortunate and found a wonderful home on Fifth Street Hill. The owner's father had a kidney tumor and promised he would enter ministry school if his father was cured.

His father had successful surgery, so his son entered the ministry, and his home became available to us. The home was about ten to fifteen minutes from our hospitals and an easy ride to work in contrast to the one-and-one-half hours on wall-to-wall autos on expressways in Chicago.

Concerns for developing the clinical program included: Would the community welcome MUSOM endocrinologists; did the community have enough endocrine patients for physicians and training of future fellows; could I attract endocrinologists to Huntington and MUSOM to teach, see patient and perform research; could I establish a fellowship program. Personal concerns were: Could I continue my academic career at a new school; would I have administrative MUSOM and VAMC support for research; was there adequate space for research; would I have adequate technical support. Many of these questions could not be answered until years later.
Establishing care in the community was a concern. The community had supported and was intertwined with Marshall University and would welcome more physicians and access to care. Would community endocrinologists accept me, and other future endocrinologists and fellows added to my section. Besides the VAMC, there were two community hospitals in Huntington, Cabell Huntington Hospital and Saint Mary's Hospital. The two hospitals complemented each other in clinical and technical services. Both hospitals were supportive of our efforts to extend our resources to the community and region and within the hospital. Huntington at that time had a population of around 60-70,000 and a tri-state population including Chesapeake, Ohio and Ashland, Kentucky, of around 120,000. As everywhere, endocrine diseases were prevalent. There were plenty of patients with thyroid disease and diabetes to be cared for. I and subsequent endocrinologists were welcomed and had no problem integrating into the community.

Regarding technical services, other questions would be raised. I was interested in setting up radioimmunoassay for the community. However, these services were provided by the community hospitals. The hospital laboratories, besides providing assays for frequently requested assays in house, had to send out many assays but obtained revenues for processing and reporting samples. If the university set up a radioimmunoassay laboratory for the community, the hospitals would lose revenues. Therefore, to support cooperation between the community and Medical School, it was decided not to set up our own laboratories.

Another issue involved my ability to practice nuclear medicine and radiation safety at the hospitals. I was also certified in nuclear medicine and asked for privileges at the community hospitals. This would include imaging and therapy of thyroid cancer patients. Except for a few physicians objecting initially, I was approved to perform and interpret imaging studies and for radioactive iodine treatment. I subsequently treated hundreds of patients with thyroid cancer with radioactive iodine and served as a member and chief of the Radiation Safety Committee. This was later appreciated by radiologists and hospital administrators

My career concerns were the need to have adequate space for research and technical support. I had a VA Merit Review Research Grant that was transferrable to the VAMC. One of my technicians who ran radioimmunoassays was willing to move to Huntington and continue in her role establishing and performing insulin and other hormone assays. We also did thyroxine, cortisol, and insulin assays for the VAMC. Marshall University also provided bachelor of science and master of science graduates for us to recruit research technicians. Laboratory space was not a problem in that Dr. Mufson was also the associate chief of staff for research and a large building was available for research. The VAMC director, James DeNiro, was wonderful and supported MUSOM efforts and appreciated the support of their faculty for the care for patients and research at the VAMC. The director also supported sharing of research and clinical resources within the VAMC. It was a win-win for the MUSOM and the VAMC.

I was Chief of Endocrinology for thirty years until retirement. I retired in 2008.

In the beginning, regarding endocrinology, I was it. I alone had to teach the students and residents, see patients at three hospitals, and establish our research program. The first class had started when I arrived. I had to prepare lectures in clinical endocrinology for first and second year medical students. We had one to three medical residents in the first few years, and I occasionally had a resident on my service. I saw patients in the hospital alone and felt like a primary care physician at times, a specialist in other specialties. I recall performing a spinal tap on a patient with suspected stroke. Computer Tomography (CT) was not available but optic discs did not show any edema. The successful tap with four tubes of cerebral spinal fluid was consistent with a hemorrhagic stroke. In another case, a resident approached me and asked me to show him how to perform a colonoscopy. At the time we were using

stiff tubed colonoscopes. Years later, this resident became a gastroenterologist in our Department of Medicine.

In the first ten years I recruited Dr. Nicholas Baranetsky and Dr. William Sivitz. Dr. Baranetsky trained with Dr. Jerome Hershman at the Los Angeles VAMC. Dr. Sivitz left his clinical practice because he wanted to be in academic medicine. We were located at the old Chesapeake and Ohio Hospital (C&O). During the second ten years, after Drs. Baranetsky and Sivitz left, I recruited Dr. William Leidy in 1986 and Dr. Henry Driscoll in 1987. Dr. Leidy had trained with Chip Ridgeway at the University of Colorado and Dr. Driscoll had trained with Dr. Lewis Braverman at the University of Massachusetts, outstanding training programs. Both are outstanding individuals and physicians, contributed immensely to our programs at MUSOM and the VAMC, and are faculty in the MUSOM to this day. We could not have accomplished our goals without their dedicated commitment. Dr. Driscoll followed me as chief of endocrinology.

In 1981, we started our fellowship program, training internal medicine residents to become endocrinologists and experts in diabetes education and care. We started with one fellow in 1981. Our fellowship program gradually increased in numbers to four fellows with the support of the VA, CHH, and SMH. Each facility provided patients with different demographics, problems, and pathology. Our fellowship program was one of the best in the country.

The first diabetes program consisted of the endocrinologist, nurse, and dietitian who focused on the patient. Other components such as an ophthalmologist, exercise specialist, social worker, and pharmacist came from physicians and other professionals in the community. Jeanine Gilmore, Pat Swain, and Pam Landaker our nurses, and Mary Vega Harris, Moppy Lavery, and Ramona Anderson our dietitians initially staffed continuity for the program at the C&O Building.

In 1991, I took a sabbatical at the Baker Institute of Medical Research in Melbourne, Australia. (See chapter on Sabbatical Leaves).

Two developments occurred to improve diabetes education in the late ‘80s that enhanced the quality of diabetes education:

1) The recognition and certification of nurse specialists in diabetes education by the National Certification Board for Diabetes Educators (1986) or CDEs. This would include social skills, counseling, and communication skills as well as knowledge. Pat Swain, Pam Landaker, and Gerry Huff gained CDE certification during their tenure which qualified them as specialists in diabetes education. Pat, Pam, and Gerry played critical roles in the continuity of the program.

2) The American Diabetes Association (ADA) recognition of diabetes education programs (1987) that met national standards for education programs. Pam and Gerry were responsible in 1992 for obtaining our first ADA recognition or approval as a diabetes education and self-management center recognized by the ADA.

In the first ten years I was active in the West Virginia affiliate and served as president. I never liked political activity, but I am proud of one feat. In 1984, I called the chairmen of the finance committees of the West Virginia House and Senate and argued for a West Virginia state diabetes program. They agreed to start the program and put $50,000 in the budget to start the diabetes program and contracted the affiliate to run it the first year. Subsequently it became part of the state chronic disease management program.

The other political activity involved the passage of a 1996 state bill requiring insurance companies to provide diabetic patients with supplies for diabetes care. The year prior, the bill had failed and the following year it was up again and needed some support and swing votes. I called a local senator and convinced him of the need and the bill passed. We were one of the first states to pass such legislation.

In 1998, we also moved from the C&O building (the old DMB that had a 90-year history) into the Marshall University Physicians Medical Center attached to the Cabell Huntington Hospital. Our diabetes program expanded as the staff at the school expanded and the community physicians became colleagues and hospitals became solid partners. We needed to commit a full time nurse and dietitian to the program, obtain office space and needed examining space, and a conference room for group instruction. When the local pharmacy located next to our offices relocated to another area, this space was conveniently located adjacent to Internal medicine and became available to us. Dr. Mufson, who always supported the need for a diabetes care program, gave us the space to set up a center of excellence. The name of our center changed from the University Physicians in Internal medicine (UPIM) at CHH to the Marshall Diabetes Center at CHH.

In 2007, UPIM physicians moved into the new Byrd Clinical Center. Dr. Yingling and the design committee supported the need for more space in the design of the Diabetes Center, and we were allotted a large amount

of space. Anise Nash, RN, CDE, our coordinator oversaw the education program. Tracy Hawthorn, RN, CDE, was our dietician. Both were totally committed to the care of diabetes patients.

The basic science departments were established early to meet the needs for the first class. This was a plus for there were many basic scientists with whom I collaborated initially and later during my years at JCESOM. Gary Wright, Mike Moore, Don Primerano, Yoram Elitsur, Dick Niles, and others proved a delight to work with and discuss and collaborate on research projects and publications.

I retired in 2008. The Diabetes Center was renamed in my honor on my retirement as the Bruce S. Chertow Diabetes Center. It took many committed colleagues in medicine for it to be successful. The Huntington community was exceptionally kind. My wife, Jan, tolerated my work habits of 8 a.m. to midnight throughout my grant writing years. Our children grew up and did extremely well in Huntington and we all consider Huntington our home.

Clinical Pharmacology – Donald Robinson, MD, Chief of Section.

In 1997, Dr. Robert Coon, dean, Marshall University School of Medicine recruited me as founding chair of the Department of Pharmacology in the newly established School of Medicine. As a professor with tenure in medicine and pharmacology at University of Vermont College of Medicine, I headed the Section of Clinical Pharmacology Division.

A proposed feature of the Department of Pharmacology at Marshall, as discussed with Dean Coon and Dr. Mufson, chairman of the Department of Medicine, was to focus on clinical pharmacology in the medical curriculum beyond the second year basic science course. Teaching would extend to students and residents during their clinical rotations, and physicians in the community. Both Drs. Coon and Mufson strongly endorsed the concept and facilitated comprehensive incorporation of clinical pharmacology in the curriculum.

Clinical pharmacology at that time was a new discipline just emerging in U.S. medical education, but it was an established tradition in many other countries, especially the United Kingdom, where it was a separate clinical department with tenured professorships. Proponents in British medicine, where it was known as clinical therapeutics, spread to Canada and other affiliated countries. Clinical pharmacologists possessed degrees in medicine, focusing on teaching drug therapeutics and providing consulting services in

hospitals. The emphasis was on human pharmacology, pharmacokinetics, drug efficacy, and interactions.

A few U.S. academic centers began adopting a similar model, creating divisions within departments of medicine. Most schools, however, still confined pharmacology teaching to the second year basic science course, predominately taught by PhDs, with scant, if any, follow-up. The Marshall Department of Pharmacology was unique because I, a physician clinical pharmacologist, was head of the department and I included physicians as faculty members who held appointments in the Department of Medicine as well. The pharmacology course syllabus would be jointly developed by physicians and basic science faculty of the department.

My post-residency training in clinical pharmacology took place at the National Institutes of Health under the guidance of Albert Sjoerdsma, MD, PhD, a pioneer with a special vision of this unfolding discipline. The research facility in the NIH Clinical Center comprised a dedicated hospital patient floor with connecting laboratories for the study of medical disorders with emphasis on effective treatments for hypertension. Pioneering studies in this unique facility led to the discovery of the most efficacious drug therapy for hypertension, the alpha-methyldopa analog of sympathetic neurotransmitters. This NIH research model that combined basic and clinical research led to advances in the understanding of mechanisms of action of drugs for cardiovascular and psychopharmacologic disorders. Protégés of Dr. Sjoerdsma became heads of clinical pharmacology divisions within departments of medicine in the U.S.

After my two-year tenure at the NIH Clinical Center, I returned to the University of Vermont as professor of medicine and pharmacology with a goal to develop a new clinical pharmacology division in the Department of Medicine. The mission of this division was to establish a diversified teaching program that focused on drug therapeutics beginning in the second year pharmacology course and continuing throughout clinical training of students, residents, and other health professionals. The educational effort included publishing *Drug Alert*, a monthly drug information letter, sent to physicians in the state and co-sponsored by the office of continuing medical education of the school. An elective in clinical pharmacology was offered during clinical rotations of students and residents, which included an in-depth review of basic pharmacology and mechanism of action of drugs combined with patient consulting rounds.

Marshall provided a similar opportunity to combine basic science pharmacology, introduced in the second year course, with continuing emphasis on drug therapeutics during ensuing years. The initial faculty recruited to the Department of Pharmacology were Drs. Roger Leonard, and Donald Melnick, both of whom completed residencies in internal medicine at the University of Vermont Medical Center and electives in clinical pharmacology. Clinical pharmacology at Vermont was facilitated in 1972 by a three-year award from the Pharmaceutical Manufacturers Association followed by the coveted five-year Burroughs Wellcome Fund Scholar Award in 1975; the latter was transferred to Marshall when I assumed the chairmanship of the Department of Pharmacology. These awards helped to fund this discipline at both institutions and afforded national recognition of the teaching programs.

Drs. Leonard and Melnick held appointments in the Department of Pharmacology and the Clinical Pharmacology Section of the Department of Medicine. The clinical pharmacology faculty had full teaching and attending physician responsibilities in both departments. Two additional pharmacology faculty members, Gary O. Rankin, PhD, and Carl Gruetter, PhD, both from excellent graduate and postdoctoral programs, joined the fledgling Marshall department. The teaching philosophy adopted focused on core pharmacology instruction with an emphasis on clinical relevance. Success of the second year basic pharmacology course was evidenced by classes scoring well on the National Board of Medical Examiners pharmacology section, as compared to national averages.

The clinical pharmacology section of the Department of Medicine assumed ongoing educational efforts and application of rational drug therapy employing several venues. A clinical pharmacology elective was offered as a one- or two-month rotation for senior medical students and residents. This entailed a comprehensive review of basic pharmacology combined with daily clinical rounds with one of the clinical pharmacology faculty. Rounds typically involved patients with a drug treatment dilemma, such as severe drug reaction or a problematic response to therapy. As examples, two medicine residents authored reports of unusual adverse drug reactions in a hospitalized patient (Subik M, Robinson DS. Phenytoin overdose with high plasma levels, *W Va Med J* 1982; Liberatore MA, Robinson DS, Torsades de Pointes: Mechanism for sudden death associated with neuroleptic therapy, *J*

Clin Psychopharm 1984). Students and residents conducted literature reviews for inclusion in issues of the *Drug Alert* newsletter.

When clinical pharmacology faculty members served as attending physicians on medicine, pharmacologic concepts were addressed in patient care. Rounding with house staff prompted discussion of drug half-lives, plasma drug level monitoring, time to steady state, altered pharmacokinetics due to drug-drug interactions or age, etc. Dr. Melnick, as head of the Marshall clinic located in the downtown facility, instituted best practice clinical pharmacol-

Members of the School of Medicine's first class.

ogy and therapeutic principles in outpatient care. The VA Hospital funded a clinical laboratory for drug level monitoring under my supervision for routine testing of anti-arrhythmic and anticonvulsant drug levels, the first such lab service offered in Huntington area hospitals.

Continuing education (CME) programs for community clinicians and health professionals about issues involving drugs and therapeutics was another top priority. This teaching initiative encompassed medical grand rounds, extensive CME programs, particularly in southern West Virginia communities, and publishing the free bimonthly drug newsletter (*Drug Alert*), an educational service of the Department of Medicine and Marshall. *Drug Alert* issues encompassed drug therapy topics of interest for practicing physicians and pharmacists, such as new drugs, approved indications, adverse reactions, antibiotic-resistance, and drug abuse, etc.

It is evident that the Marshall School of Medicine fulfilled the major goals of the founders in serving the medical needs of southern West Virginia and extending the benefits of modern medicine and research to the broader community. The combined efforts of the clinical pharmacology section of the Department of Medicine and the Department of Pharmacology significantly enabled this success.

CHAPTER TEN

Random Reminiscences from the Original Faculty

Faculty felt challenged by the obvious clinical needs of the community and environs.

Most of the faculty who joined the Department of Medicine in its early years, after they completed their residency or fellowship or both, felt comfortable in the small emerging department. They constituted a congenial group who wanted to contribute and who wanted responsibilities that in a larger department would come much later in their tenure. All of them felt the importance of their pioneer role and it motivated them, so that their willingness to accept multiple responsibilities meant that the department matured quickly, and they accomplished much. These early years held much excitement. Some faculty demonstrated fine clinical skills, and some proved excellent physician investigators who received competitive grants and published important articles in refereed journals. Each of the faculty set a path for an excellent career, some remained in the department for their entire career, but most eventually moved several years later to another medical school for a promotion or a bigger research laboratory, which was the pattern in medical schools at the time. The Department of Medicine grew fast because the faculty proved fully capable in clinical care, teaching and clinical and bench research. In my retrospective assessment of faculty careers after Marshall, they all excelled in their accomplishments, some more than others, but no different than any established medical school. I sensed their potential when I offered them a position at Marshall, which proved prophetic. Marshall matured into an excellent medical school and all the first faculty in the department contributed from the start. In this chapter, original faculty remember the early days.

John William (Bill) Leidy, MD Special Thoughts – Early Days Department of Medicine

1. I started the summer of 1986 an amazingly hot summer, especially after being in Denver, Colorado, for the prior four years
2. The VA labs were an amazing hotbed of activity. Bob Belshe had many techs packed into two rooms. MaryBeth was in Bruce Chertow's lab and was very friendly as well as being very funny!
3. My lab on the second floor was very well stocked with many of the research equipment and supplies that I needed. I liked working in Building 5. On the walk over, there were plenty of birds—including swallows. We even had a nesting pair of Baltimore orioles at one time,

and I saw Cedar Waxwings one winter in the trees, which may have been hollies, surrounding the building.

4. I always enjoyed working with Teresa Mathis, who was always able to get things done. She understood the hiring and purchasing systems, so we could always get who and what we needed.
5. In general, you could get things done more easily in the VA of the era with very few barriers, compared to now where to order anything for the lab is a difficult process with a prevailing spirit of uncooperativeness and lack of understanding from Acquisitions (Purchasing).
6. The Animal Research Facility (ARF) was top notch with a friendly staff.
7. Downtown at the DMB, the clinics were fairly relaxed without too many patients and a good clinical flow. We had opportunities to teach. Being able to dictate notes and letters was a great time saver, compared to the systems now.
8. The Medical School was much smaller. I felt like I knew most everybody and many of the students. In fact, when I look at the class pictures in the Byrd, I know many of the students from that era. The faculty were close knit—both basic science and clinical.
9. I was busy with being on service six months a year—four months for endocrinology and two for medicine. Nobody does that anymore—and most will only do two weeks at a time now. As you well know, one of the biggest constraints was the travel time between downtown, the hospitals, and the VA.
10. Getting in and out of town for meetings seemed to be easier. I feel we had better air service in those days with the option of going to Pittsburgh with U.S. Air.
11. Of course, working with Bruce (Chertow) was always interesting. I admire him for: (1) his dedication to all aspects of academic medicine; (2) his forward thinking on diabetes care—he was way ahead of his time; (3) his interest in the development of his junior faculty members. Bruce made so many contributions to the Department of Medicine, the School of Medicine, and endocrine care in the region.
12. You may not realize that Bob Belshe, Ulf Westblom, and I were in a wine tasting group, and we gathered with our spouses monthly to

blind taste wines grouped around a theme. The host family provided wine-friendly snacks or sometimes even a meal.

13. We had some amazing secretaries—Judy Hayes, Gerry Huff (who later went to nursing school and came back as our diabetes nurse), and Betty Jo Morrell.
14. We enjoyed your leadership and the structure of the department. The energy of Bob Belshe's, Bruce's, and your research carried us along.

Gretchen Oley

Remembrances of career within Marshall University, Department of Medicine

1. The environment I entered as a new faculty member was pre-conditioned on my earlier experiences within the same medical school and three-year residency. It was made much easier in the sense that I was familiar with "the system," but much harder by the fact that I was now an administrator over those who had more experience and tenure.
2. I remember the struggles being monumental. Our department had to offer the full services expected within any medical school, in addition to offering day and evening ambulatory clinic hours and inpatient services for three hospitals. I always felt these burdens and responsibilities fell disproportionately on the GIM Section, seeing as how for most of the first twenty years of the medical school, all patients were admitted only to general services within the hospitals and seen primarily as outpatients as well. The specialty services ran consulting services only, and frequently were adept practitioners in keeping themselves isolated from the work. Many times, I felt I was the only failsafe in keeping many balls in the air and many services running. I suppose this was a situation I allowed to happen, part of my personality and work ethic. It was hard always having to be the "heavy," however. I also always felt that I inappropriately balanced my life too heavily toward the work rather than the personal. Again, this ends up being an individual choice. You were a great "delegator," however, which speaks best to your own administrative skills. I was greatly frustrated by not being able to recruit the numbers and kinds of faculty that I thought we needed to be better and more effective.

You, however, always soothed my most severe frustrations with a calm, measured, and philosophical approach that helped me endure!

3. On the other hand, I felt I benefited greatly from the relatively small size and camaraderie of the department. You (Dr. Mufson), as Chair, were always kind, instructive, supportive, and innovative in your approaches. Your door was always open to me, and it seemed to be the case for all else, as well. I also thought you were more reasonably fair in the financial arrangements that were provided for your faculty as compared to other departments. You always gave me sound and sincere professional advice, whether I always felt confident enough to take it. I always felt that you maintained a transparent administration vis-à-vis your own department faculty, though a few within our department and above would have argued against that, for reasons that weren't always clear to me. You never publicly criticized or shamed me that I can recall, but nevertheless, I did occasionally get a few glimpses of you being more than inappropriately cutting and condescending toward some others in group meetings, etc. Maybe this was part of the reason for some of the animosity between some departments and from Dr. McKown, once he became Dean. The politics of all that were never entirely clear to me. Nevertheless, you were very loyal to your department and to Marshall University, as a whole, which served as a model to many, as well! Including me! Your loyalty and mine, though, may not have been the most beneficial thing for us professionally, though.
4. There must have been much more good than bad, however. I formed close friendships with colleagues and staff that have lasted me my lifetime. You, as department chair, sponsored and encouraged a lot of parties, social interaction, etc. I absolutely loved my patients and the practice of clinical medicine. I never truly regretted any of my choices. I certainly never regretted going into and staying in the field of medicine. I enjoyed teaching students and residents—particularly in the early years where I know that I served as a particularly effective mentor. Of course, during the later years, I became more cynical and burned out, particularly in trying to understand "the learners." Being forced to "wear many hats" forced me to become an effective administrator of various types of clinical situations. I feel this is also a benefit from the struggles of our beginnings.

5. As a female, I was the recipient of both sexual harassment and sexual discrimination. More was outside our department than within, but not exclusively. Some I shared with you, most I didn't. I always regret not being more vocal about these issues and a constant advocate for openness and fairness in this arena. Even during my time as associate dean, I worry I may not have given the proper guidance to females under my charge and jurisdiction. I guess it may have been "safe and appropriate" for the time, but certainly not leading edge. I think that my generation experienced less than those before. I think those following may benefit from my era as well, but that is not to say that it is still not prevalent and hurtful personally and professionally and it must be constantly guarded against.
6. Despite having a personal/professional imbalance over much of my career, I truly enjoyed the fact that I was able to have such a challenging and rewarding experience and keep my family in a small-town environment. West Virginia and Huntington have their challenges, but my family thrived, and I am glad I made the choice at all turns to stay and grow within our "little department."

Sarah McCarty THOUGHTS:

Thoughts About Internal medicine Department

Being asked to reflect on the early years of the Department of Medicine, my first thoughts are that I joined the department as a resident. We were only the second group of residents to join the department, so those were hard years and I think I have purposely repressed a lot of what happened. I remember snippets quite clearly. Some of those I will share below.

I remember orientation, which was about a half a day and held at the DMB. The best part was that there were donuts. I was so anxious. I met my fellow residents and felt we were all a little anxious. That helped. And I liked them right away. That helped so much more. And I met Joyce Ray and knew right away that she was a key member of the department and that she would have a huge influence in or over my life in the future. I was right.

The next day we started at the VA. We had about half a day of signing papers. I have no idea what. And then we started our rounds. We all picked

more than twenty patients. I was overwhelmed. I saw no way to get through it. Thank goodness at some point in the late afternoon Dr. K came to me and said, "Sarah, do not worry, go home. I will take care of the patients until tomorrow." I was so thankful. I saw no way to see my way through that day or the coming months and years. But that is how we all got through, by trying to help each other. Shel, Bing, Brian, and Subik—we all tried to lift each other up, sometimes quite literally. That and in attending rounds at the VA—while appearing to be listening attentively to the presentations, we were really just trying to see if Subik's socks matched the bright color of his shirt again that day as they did every day.

I remember the day Nancy Munn interviewed at the department. We were in a situation in which many of our patients had never seen a female doctor. At one point I was assigned to one of the downtown hospitals with a young male attending. One morning I discharged a patient I had been rounding on and examining every day for a week. I saw her and gave her discharge information. Then the nurse went in after me and asked if the doctor had been in to talk to her. She responded by saying, "No but the doctor's wife was in and she said I could go home." I was happy to see another woman join the department. And eventually Shirley Neitch and I shared an office. She was a great office mate with a lot fewer journals than Nancy Munn kept in her office.

And Marshall basketball games. We all had season tickets, the Mufsons, the Belshes, the Chertows. It was so much fun. One of the most inspiring versions of the Star Spangled Banner was sung by Charlie Jones's mother (not sure this is the right player, but I think it is) before the first home WVU game. At the end, he came out and hugged her. Coach Huckababy was there in a green tux and we soundly defeated them. Magic all magic.

I remember the day that we decided to have a revolt. This was Shel, Subik, Bing, and most likely Brian. We decided we were working too hard and not satisfied with the educational component of the program. There was some discussion of going to the dean. Then came the call from Joyce Ray and we were suddenly in Dr. Mufson's office. Whoops, we had made a terrible mistake. We were told in no uncertain terms, very clearly and precisely without profanity, that we had not followed the proper chain of command. That if

we had a problem, we should always come to the chair first. That going over his head without first discussing it within the department was unacceptable. We got the message. We knew who was in charge in the department. Though there were few written policies or procedures, there clearly were rules of the game. This was a lesson that stayed with me my entire career and I tried to live by it. Start with the chain of command and only push it if the situation still requires action. But still be prepared for fallout.

Jack Bernstein. Thoughts and Memories

I came to Marshall University in 1980, having finished my fellowship at the University of Rochester. My rationale for coming to Marshall was that it had a relatively strong virology group led by Maury Mufson and Bob Belshe. I was able to get a laboratory set up relatively quickly and become productive in research.

At that time, the department was community-based. Virtually all the faculty had a research bent. Thus, all the faculty had research projects of one sort or another going on. Another interesting aspect of the department was that all of us felt that we were part of the whole no matter where are our salary funding came from. In my case, I did not have a VA appointment and was supported by state funds. Nevertheless, I attended at the VA and my laboratory was based there.

Academically, and professionally, all the internal medicine faculty were supportive of each other. There was excellent attendance at all conferences compared to nowadays when we have to offer lunches to get anybody to come.

I also remember that at faculty meetings, dissent was sometimes met by Dr. Mufson stating that "this isn't a democracy."

Huntington was a small city with all of its advantages and disadvantages. If you ever needed help, it was there. Then again, if you needed to fly anywhere, you could get anywhere you wanted as long as it was through Pittsburgh or Charlotte. In those pre-internet days, you could get your copy of *The New York Times,* although it was usually the next day since the bus delivering it came in late. We eventually got *The New York Times* by mail and,

in comparison, to *The Herald-Dispatch,* several day-old news in the Times always seemed timelier than that from the local newspaper. Circa 1980, ethnic food in Huntington was Chinese or Mexican. We fondly remember Chili Willi's. High quality restaurant food could be had at Rebels & Redcoats, along with the sound of falling bowling pins heard through the wall.

When I left Marshall in 1985, I took a little bit of Huntington with me. My technician accompanied me and helped me set up my laboratory at Wright State University. Ironically, she was introduced to one of my students whom she eventually married. Completing the circle, he went into infectious diseases in Bob Belshe's program at his new position at St. Louis University.

William Sivitz Commented:

For me, Marshall was a great opportunity. I was impressed that we were providing needed services otherwise unavailable to the surrounding community. I remember the coal miners, the VA, and the difficult medical problems we encountered. It was nice to know that we were providing important and much needed service. I remember the football team struggling to overcome the tragic plane crash that killed members of the team. On a lighter note, I remember the basketball team playing Villanova in the NCAA tournament and, of course, our faculty tennis matches and the local indoor tennis facility. I remember an ice storm so severe that I could not get my car out of my driveway. I remember Huntington along the Ohio River on the edge of a beautiful wooded and mountainous West Virginia.

I recall our department as consisting of members in different specialties, but close-knit and challenged by the obvious clinical needs of the area. Mainly, we worked together covering two community hospitals and the VA. The residents had diverse backgrounds. Generally, they worked hard and appreciated our teaching—as did the students.

I remember when, in 1980, it became possible to measure glucose by fingerstick. Trying to get the local hospitals to buy into this technology was a task. The feeling was that lab measurements of glucose were simply more accurate. As endocrinologists, we pointed out that this technology was for patients, not medical technologists and these patients needed far more monitoring than labs could offer. Even in-patients could benefit, since the bedside results would be immediately available and could guide insulin ad-

ministration. At the time, frequent in-patient glucose monitoring was done by QID urine glucose measurements. But over time the obvious benefits became clear. I remember admitting pregnant women with diabetes to Cabell Huntington Hospital at seven months pregnancy just so we could control the glucose with in-patient monitoring.

Shirley Mae Neitch, MD, FACP, AGSF Reminiscences:

My very earliest contact with the MU Department of Medicine was in mid-1980. I was newly arrived in West Virginia to re-pay my med school scholarship debt to the National Health Service Corps. NHSC payback was allowed through the Commissioned Corps of the U.S. Public Health Service or through civil service employment with one of NHSC's rural health sites, and I chose the rural clinic in Ft. Gay, West Virginia, which was being opened that same year by Valley Health Systems (VHS).

Other Valley Health physicians who arrived in the area around the same time I came included: Drs. Thomas and Linda Savory; Drs. Al Baldera and Pat Kelly; Dr. Joye Martin; the late Dr. Michael Young; and Dr. Bob Walker. Through a cooperative effort of VHS and the MU Department of Medicine, I served as hospital attending for the IM service at St. Mary's Hospital (not yet "Medical Center") through the month of November 1980. Maintaining a full hospital service and a nearly full outpatient clinic schedule in Ft. Gay was impossible, and seeing the error of my ways for having agreed to do it, I did not provide any additional months of attending while I was actively working in Ft. Gay.

Upon finishing my three-year commitment to NHSC in mid-1983, I realized that neither a solo private practice nor working for Valley Health would be viable options for me. But I had gotten married in the interim to a Wayne countian, so I looked for other opportunities in the area. My first inquiry went to Dr. James Kemp, chief of medicine at the Huntington VA Hospital (I don't think it was a Medical Center yet either). As I was board-certified in IM, Dr. Kemp shared my letter with Dr. Mufson, who was in the market, as it were, for additional faculty.

I recall my one and only meeting with Dr. Robert Coon who was dean at the time. His closing remark to me, after what I recall as a superficial and dismissive "interview," was "Well, I won't have much input in this; Mufson can make his own mistakes." And so, Dr. Mufson can judge for himself if it was a mistake or not, but on July 1, 1983, I became full time MU IM faculty.

I was assigned 5/8 time VA, as was common in that era, and I did ambulatory care at the VA and all inpatient and outpatient general internal medicine duties "downtown." Subsequently I switched to the inpatient Intermediate Medical Care Unit (IMCU) for several years before leaving the VA in (I think) 1994.

Faculty already here at the time I started in the early '80s, whom I *clearly* remember, were Sarah McCarty, Bob Belshe, Bob Touchon, Nancy Scher, and Anthony Bowdler (who always talked about hematopoietic substrates). I think Bruce Chertow, Geoff Gorse, Ed Anderson, and Duane Webb were already here, or they arrived just after I did.

Joining at the same year I did were Nancy Munn and Carl McComas. Mike Webb may have already been on faculty, or he joined soon afterward. Of course, at the beginning of my third year here, Gretchen Oley joined, and Marc Subik about the same time. A couple of residents who finished their training very early in my career and joined the faculty for brief periods of time were Al Magnin and Al Ford. I remember Al Ford going to work at the VA with my favorite PA there, Tom Bayne, and they coined a phrase I have used ever since—referring to patients who just can't seem to get along with life—"not fit for terrestrial living."

Lynne, Henry, Kevin, Ralph, and Mike Skeens all came on board before we moved from 1801 Sixth to Medical Center Drive.

A few other random early names from downtown and/or VA:
Tom Kiernan

Sam Bebawy

Tim Saxe

Don Robinson

Dr. Narayan (female) who was a Physical Medicine and Rehabilitation (PM&R) physician at the VA; her pulmonologist husband—was he on faculty at one time?

Dr. Baur

Dr. Shora was in town when I came here, but not on faculty till later

Dr. Abraham in heme-onc, whom I do not remember well

Jason Yap in nephrology

Who can forget Martin Evers?

Dr. Hanna in cardiology

Later, and all short term to very short term: Dawn MacFarland, Danielle King, Sachin Dave, Brad Richardson in older adults with chronic obstructive pulmonary disease, Dr. Gorse was the study chairman and central lab director for the VA Cooperative Study CSP #448 that was a multicenter, phase 3 influenza.

Roger Leonard, MD, MMM, FACC, FACP, FACPE, CPE Commented:
Marshall University SOM: Memories of the Beginning.
Embracing the Unknown—

Each member of the faculty of the NEW Marshall University School of Medicine arrived with excitement, energy, and uncertainty. Of course, the department chairs and administrative leadership had strong visions of what could be. I was a member of the wet-behind-the-ears junior faculty eager to teach both basic science (pharmacology) and clinical medicine. This was a special opportunity because of the very few students (18) in the first matriculating class. There would be a sense of truly getting to know each student.

The uncertainty was not anything to dwell upon. Nonetheless, it was the hallmark of an adventure. What were the students' expectations? What were the facilities like for research and clinical work? Was the faculty full or were there holes? What personality quirks might we face? What was Huntington like for a young family? How would the private practitioners in town receive us? What was the quality of care at the VA Hospital? Would we be assimilated into their culture smoothly?

One of the supposed comforts of physicians is that we know the answers (time brings greater humility). Yet, while we had our impressions and hopes, we had many unanswered questions. A good lesson: Life is more challenging and enjoyable when you don't have the answers.

Innovative Teaching—

One of the wonderful opportunities of being a physician is learning from a mentor. Such was my good fortune. Dr. Donald Robinson was mentor for my fellowship in clinical pharmacology after residency. Don offered me

a position to join the Marshall faculty. As Chair of the Department of Pharmacology, he created a unique team comprising three MDs and two PhDs. Consequently, we covered the basics; yet there was a clear, strong clinical orientation to our course. Case studies from our experiences highlighted the interface among drugs with physiology, anatomy, pathology, and clinical medicine. This instruction went beyond learning indications, contra-indications, drug-drug interactions, drug-disease interaction, and placed patient safety at the forefront. Many cases highlighted adverse outcomes. Often in life, one learns more from mistakes than from successes. Transparency is vital to learning from errors in order to prevent repeating them.

Supporting Resident Physicians—

The focus of a medical school is the education of its students in basic science and clinical medicine. The latter is not possible without a broad residency program. Marshall University faced the challenge of preparing both medical students and resident physicians where neither existed previously.

The new faculty did not know the community physicians, the nurses, other professional members of the care team, or the strengths and weaknesses of the community hospitals and the VA. As a consequence, when assigned clinical service teaching, I felt an obligation to fully examine (H&PE) every new admission as soon as possible, night/day/weekend. Call it verify and validate, because I was learning the skill set of each resident physician. This was not due to lack of trust; it was my professional obligation. Today, I am concerned about the slippage of faculty oversight. Residents present a cohesive story of the patient's presentation, lab and diagnostic exams, and clinical response to initial treatment. With many obligations, the faculty attending physician frequently performs a cursory history and limited physical exam, if any. The study of serious safety events reveals that a discordant piece of clinical data is often ignored or that family observations and concerns are not properly addressed. Selfishly, I believe that the early Marshall residents received excellent oversight.

Robert Touchon Commented:

The first chief of cardiology was Jon Cooksey, MD, trained at Tulane University and Washington University. His hometown was Catlettsburg, Kentucky. A classmate of Harry Tweel, he joined the department in 1978. His stay was short lived because his wife was anxious to return to Saint Louis.

In 1979 Frank Rivas became Chief of the Section of Cardiology, quickly leaving to begin private practice in Huntington. A letter to Dr. Schumacher in Denver led to an interview with Robert Touchon, a graduate of Saint Louis University, trained in cardiovascular medicine in Los Angeles USC and UCLA Medical Centers. Dr. Touchon was section chief from May 1982 until 2001 when his fellow and partner, Mark Studeny, took the reins of the new Department of Cardiovascular Services.

As chief of cardiology at both the VA Medical Center and the Section of Cardiology covering Cabell Huntington Hospital and Saint Mary's Hospital, coverage was busy and difficult. Gilbert Garza and Al Magnin were very helpful Internal medicine Residents. Doctor Mufson's instructions were to recruit and find grant money. In one year, Joseph Hanna joined the department from the University of Texas. Unfortunately, he and his wife were killed in a helicopter crash in the Grand Canyon. Multicenter drug trials were begun and were lucrative: intravenous metoprolol in acute myocardial infarction, transdermal nitroglycerin in chronic stable angina, and Plavix in acute myocardial infarction, stroke and peripheral vascular disease. The Veterans Administration HDL Intervention Trial (VA-HIT) was a major five-year project.

National Heart Lung and Blood Institute was offering a very competitive National Health Institute grant, Preventive Cardiology Academic Award. Marshall University School of Medicine Internal medicine was awarded this grant from 1988-1993. Preventive cardiology and angioplasty/interventional cardiology were added to the program.

Mohammed Kharsa was an Internal medicine Resident who wanted to pursue cardiology. Kharsa and Touchon designed the Fellowship training program in 1984. Andrew Burger was the second faculty recruited, trained at the University of Connecticut. He stayed eight years, was quite productive, and moved to a faculty position at Harvard University. He is now director of the fellowship training program at University of Cincinnati.

Currently there are fifteen faculty in the department, fourteen fellows-in-training. The American College of Cardiology annual scientific meeting accepted five papers from Marshall. There are four Interventional faculty very involved in structural intervention, five non-invasive cardiologists, a cardiac electrophysiologist and an advanced heart failure and transplant trained faculty.

Bruce Chertow, MD F.A.C.P., Commented:

I was one of the first members of the faculty of Marshall University's School of Medicine. I came to Huntington in 1978 as chief of the Section of Endocrinology for both the new school and the Huntington VA Hospital.

I earned my MD degree from the University of Illinois College of Medicine, following that with an internship, residency and fellowship at Presbyterian-St. Luke's Hospital (now Rush Medical University) in Chicago.

As a major in the U.S. Army, I was appointed chief of the Endocrinology Clinic at Madigan General Hospital, Ft. Lewis, in Tacoma, Washington. After my tour of service, I joined the medical faculty of the University of Illinois and the physician staff of Chicago's VA West Side Hospital.

In addition, I established the Marshall University Diabetes Center (now the Bruce S Chertow Diabetes Center) and Marshall's Endocrinology Fellowship Training Program, one of the best in the country that graduated many successful Endocrinologists. I founded the West Virginia State Diabetes Control Program. In recognition of my research, I was named Marshall University's Outstanding Scholar in 1992. Author of more than seventy scientific articles in peer reviewed scientific journals, I presented my work at meetings of many prestigious organizations. My major contributions included discovery that vitamin A deficiency in pregnant rats may cause diabetes in progeny with important implications for maternal nutrition and fetal outcomes; vitamin D feedback on parathyroid hormone secretion that led to important changes in the management of chronic renal disease; and discovery of new genetic mutations as the cause of pancreatitis, diabetes insipidus, and thyroid resistance. I was awarded several grants for my research projects from the VA, DOA, and NIH.

I was elected a fellow of the American College of Physicians and the American Association of Clinical Endocrinologists, served as president of the local and state chapters of the American Diabetes Association, and as a council member for the West Virginia chapter of the American College of Physicians. I am a member of the Endocrine Society and American Diabetes Association. I served as president of the Norville Carter Society, a Huntington, West Virginia, medical society, vice president of the Cabell County Medical Society, and chief of the Medical Section of Cabell Huntington Hospital.

I reviewed manuscripts for several medical journals, including Endocrinology, *Acta Endocrinologica, Pancreas*, and the *American Journal of*

Physiology, Metabolism, Diabetes Care. I also reviewed grant applications for the National Science Foundation and applications for the Veterans Administration Merit Review Research Program.

Marc Subik, MD Some random thoughts:

Got to give my first impression as I came for my intern interview. Flying down from Syracuse, I was impressed that I was landing on a flattened mountaintop. First time I had ever done that for sure! Maury Mufson came to pick me up for my tour of Huntington and the school, and as I look back, it was certainly impressive that the chairman of the department was there to be my tour guide and escort. I think it's fair to say that doesn't happen at all anymore

So, we are driving around town in your car—was it a VW? I'm not sure—and it was dreary and cold and slightly rainy. We passed the "superblock" and of course it was an empty lot. I have to wonder why, after touring what appeared to be a depressed ex-coal town, I decided to sign up and come down for my internship? I did indeed and stayed for all three years and things worked out well.

How did I come to know of Marshall and choose it for my internship? As a fourth year I was initially interested in radiology. I did some interviews and then decided that it wasn't for me. I decided I would do a year of medicine and get things figured out. I also didn't want to do many more interviews having done some for rads. Spending time and money, etc. I remembered receiving a letter from David Wu, who had graduated from upstate Medical Center, Syracuse (now Upstate Medical University), and who was a resident at Marshall. He explained that it was a new program and was looking for candidates to fill its residency positions. I wanted to get out of the New York/New England area for a bit as I was born and raised near Albany, New York, and went to college at Holy Cross in Worcester, Massachusetts. I had never been to West Virginia so geographically it was appealing, plus I figured I could get into the program so I would only have to do one interview for medicine. And that's the way it worked out. I finished my residency here, did GI fellowship at Baylor in Houston, came back to Marshall in 1984, and have lived in Huntington since then.

Our intern group here was a different collection of personalities. We all got along and supported each other.

Shel Thomas—the southern gentleman, bowtie wearing, impeccable dressed, slow talking southerner

Mark Bing—raspy-voiced Texan, bushy mustache, always had a plan, looking ahead to make his mark and money

Brian Richards—brought his hippy appearance to Huntington with long hair and sandals, but bright and outspoken

Sarah McCarty—another new England transplant from Vermont, was women's lib before the movement, outspoken, opinionated, independent. Loved her cats.

Our residents were David Wu and Renata Kadzilawa, both extremely nice and very patient with us. I don't think we could have asked for better residents. They were supportive and jumped in to help when needed, provided guidance with the right amount of independence for us interns.

The VA Hospital was a special place for us interns/residents, whether you were in medicine or surgery. We, together with the nurses, ran the hospital. It was a team effort. We helped them and they took care of us. I remember Skip and Rosie on the medical floor. They were young like us, but experienced and knew the ropes. If you were smart, you would ask their advice about certain patients and situations and get their sense of the problem. Usually, it was very helpful in trying to figure things out. Those two wanted to see the patients get better, as we did, and working together made for a lot smoother and less stressful place.

Morning report after call was in Dr. Kemp's office. He was the perfect attending and chief of medicine for us interns and residents, always calm and soft spoken, a rather avuncular figure. We would just gather there in our small group and do our presentations.

The staffs at Cabell Huntington Hospital and St. Mary's Medical Center were welcoming to us residents as well. All were supportive in my experience. Since there were only a small number of us, the hospital staff knew who we were. So, I did have a cyst removed from my scalp and returned to work at St. Mary's Medical Center. I had a bandage on the crown of my head. After so many people asked me about it, what happened, was I okay? I went ahead

and taped a sign to the leather vest I was wearing that day that said—"had cyst removed"—and it was rather successful in eliminating future enquiries about my status.

Geoffrey Gorse, MD Commented:

My main recollections of my time at Marshall University School of Medicine and the Huntington VA Hospital are the welcoming nature of the Department of Medicine, your strong leadership of the department, your skill in mentoring young faculty such as myself, and the opportunities afforded by the Vaccine Center there under Bob Belshe's leadership. Those experiences helped me very much in the advancement of my academic career.

Nancy Munn, MD Thoughts:

I started at Marshall University in 1983. I initially interviewed for a position at the Huntington VA Hospital and, during the interview, met with Dr. Mufson regarding doing part-time work at Marshall University in addition to working at the VA Hospital. I agreed since I was interested in working with students and residents. When I started at Marshall and the Huntington VAMC, I was the only pulmonologist for those programs. There were only two other pulmonologists in Huntington, West Virginia, at that time. Not only did I see all the pulmonary consults at the Huntington VA Hospital but also was periodically the attending for one of the general internal medicine inpatient teams, and saw consults and ICU patients at St. Mary's and at Cabell Huntington Hospital. I also provided teaching sessions and some Grand Rounds for the Department of Medicine. During my initial months in Huntington, I met Gretchen Oley who was a medical resident and Sarah McCarty who was an internal medicine faculty member. This led to a long friendship with the two of them.

Within a year or two of joining Marshall, we were able to recruit Dr. Bebawy for the Pulmonary Section. We had an internal medicine fellow, Robert Gallaher, who was interested in doing a Pulmonary Fellowship, and we planned to start this. At that time. Dr. Mufson advised us to just go ahead and allow Dr. Gallaher to start the program. When the ACGME came to review the Internal medicine Program, they would review the Pulmonary Fellowship and if approved, would give retroactive credit to the program. So, we were able to have Dr. Gallaher start as our first Pulmonary Fellow. Our

ACGME application consisted of about fifteen pages of primarily narrative and we were approved.

Unfortunately, Dr. Bebawy left the program and for a while I was the only pulmonary faculty for Marshall and the Huntington VA Hospital. For at least one year, I was on call for every day of the year except for a week of vacation. This was quite exhausting and in retrospect, I can't believe I agreed to do this. Eventually I let Dr. Gallaher round on certain weekends with me, just available by phone which we would be unable to do now.

Despite all of the very demanding work, the small group of faculty members of the Department of Medicine was quite close and worked well together. There were dinners and social occasions that we attended as a group. We shared our office space, and I was in an office with Dr. Subik and sometimes another physician. I remember that Marc frequently sat with his feet up on the desk and reading a newspaper, drinking coffee. I spent many late nights and weekends at the old C&O office catching up on work, but usually had companionship from Dr. Oley, Dr. Yingling, and many others. There was a monthly ice cream cake in the lounge to celebrate all birthdays for that month when our ID physician's dog didn't eat it. Although it was amazingly hard work and long hours, I think the faculty was truly invested in the success of the department and willing to make the sacrifice because we felt like a family. The resident graduation dinner was a great opportunity for everyone to get together and the resident skits were hilarious.

I recall some exciting times through the years. The Department of Medicine interviewed Michael Swango for an Internal medicine residency position and only by accident found out that he had prior arrests. Later we found out he was guilty of multiple murders. I also remember when Dr. Goreja was fired from the program. He came to the Huntington VA Hospital angry and looking for me. My two pulmonary colleagues hid in rooms while he talked with me and demanded a letter of recommendation. When I agreed to provide this, he then left without a problem but subsequently went to the Department of Medicine offices with a gun looking for Dr. Yingling.

Over the years we were intermittently able to recruit additional pulmonary physicians and to add fellowship positions. We even started going to the hospital in Teays Valley for pulmonary/critical care coverage. This went relatively well during the week but on weekends that meant that one physician was covering four hospitals. On most of those weekends, I started my day at five to six a.m. and returned home about midnight. Unfortunately,

our pulmonary physicians typically stayed for a few years and then left for greener pastures. Finally, when all our other pulmonary physicians left and I would have been alone to cover three to four hospitals, I elected to go to the Huntington VA Hospital full time. However, I continued with Marshall in my role as program director of the Pulmonary Fellowship program.

Fortunately, the Internal medicine Department and the Pulmonary Section have continued to grow over the years. The Pulmonary Section now consists of approximately eight physicians and has five Pulmonary Fellows. Recently a combined Pulmonary/Critical Care Fellowship was approved and will start July 2020.

Henry Driscoll, M.D., Thoughts.

I was looking for an academic faculty position as I was completing my fellowship, and I was referred to Dr. Bruce Chertow, who was recruiting at the time. Dr. Chertow was a friend of Dr. Lewis Braverman, the division director of endocrinology at UMass. Dr. Chertow and I both had interests in diabetes and insulin secretion, so it seemed like a good match. I joined the faculty at Marshall in 1987.

At Marshall, I continued working in all areas of academic medicine—research, teaching, and clinical care. I advanced from assistant professor to associate (and tenured) professor, to full professor by 1996. I continued research activities, but over time clinical needs and reduced funding opportunities reduced the amount of basic research that was possible. I have kept active in more clinically related research, often done along with our endocrinology fellows. I am particularly pleased with the endocrinology Fellowship, which has graduated more than thirty successful fellows who are in practice or in academic medicine throughout the world.

Dr. Chertow retired due to health problems, and I was appointed acting chief of endocrinology and subsequently chief of endocrinology in 2010. I was also the first recipient of the Joseph M. Farrell, MD, Endowed Professorship of Endocrinology at Marshall. That distinction will be conferred on subsequent chiefs of endocrinology at Marshall.

I have practiced medicine at Cabell Huntington Hospital, St. Mary's Medical Center, and the VA Medical Center throughout my time in Huntington, and there has been lots of expansion and changes to the institutions over time. I have served on numerous committees at the Medical School and the hospitals over time. The most significant work is probably serving as a member and chair of the Institutional Review Board (IRB) for Human Studies for Marshall and all the local hospitals. There have been many changes to the IRB policies and procedures over the years, and I am pleased to help facilitate the effective functioning of the board.

After turning 65 years of age, I have retired in part. I have stepped down as section chief and retired from Marshall University and the VA Hospital, but I am still active with Marshall Health, with the IRB, and in supervising the endocrinology fellows at Marshall and the VA Hospital. I look forward to continuing some medical care and teaching activities and having more time to travel.

One thought about the early days of the department is how well I knew everyone in the department. Now with a much larger faculty, I know a lot of names, but most of the members of the other sections are not very well known to me. So, it is certainly nice having more people and resources in more locations, but the closeness of the early days is missed by us long timers.

Frank Rivas, FACP, FACC, FAHA Commented:

Prior to joining Marshall University Department of Medicine, Section of Cardiology, I spent a long academic career at traditional universities, where in contrast to Marshall University, all academic activities were centralized in a single large multispecialty University Hospital, making daily relational matters easy to deal with.

When Carole Miller Rivas, my wife, and I visited Huntington, West Virginia in 1979, we became enchanted with the city, which was very safe for families.

I will never forget our meeting with two extraordinary people: Dr. Maurice Mufson, chairman of Marshall University School of Medicine, Department of Medicine, and an accomplished physician, educator, and researcher, and a man of great personal value, and, Deedee Mufson, his wife, best friend, and source of inspiration, and a woman of extraordinary talents and accomplishments.

I became the second Marshall University chief of cardiology, 1979-1981. I wish to recognize and give credit to the success of the Department of Medicine and Section of Cardiology, under the leadership of Dr. Mufson, Pallottine Sisters who established St. Mary' s Hospital, a complete and well-run institution, which supported a new program of cardiovascular surgery where patients received excellent cardiac surgery in Huntington and did not need to travel away from home.

In 1981, my wife (who since passed), Carol Miller Rivas, and I decided to open a private practice and we promised ourselves to continue our friendship and loyalty to Marshall, MU Cardiology, and the Department of Medicine. Carole became very active in the American Society of Clinical Pathologists. I became very active as an FACP, FACC, FAHA, FCP, FSCAI, Duke Cardiology Society, founding member of the Society of Cardiovascular Computed Tomography (CCT), member of the SCCT Section of Vascular Disease and Board certified in CCT.

In 2020, I was the recipient of the Albert Nelson Marquis Lifetime Achievement Award.

CHAPTER ELEVEN

Status of the School of Medicine and the Department of Medicine: 2021

We witnessed an awesome, amazing, accomplished outcome for the School of Medicine and the Department of Medicine.

I joined the faculty of the Marshall University School of Medicine in 1976 when it had received its Letter of Reasonable Assurance from the LCME, the Liaison Committee of Medical Education, the accrediting organization. The letter enabled the School of Medicine to select and

enroll the first class of medical students and instruct them for four years according to the approved curriculum. In 1981, when they graduated, the LCME accredited the School of Medicine. In 2019, the LCME approved the School of Medicine for eight years, the longest time they award. In addition, the university received R2 Research status, for the first time, by the Carnegie Classification of Institutions of Higher Education, due in no small part to the successes of the faculty of the School of Medicine in qualifying for NIH grants. In concert, as the School of Medicine evolved, the Department of Medicine evolved as the largest department in the school. In addition, the school's relationship with Cabell Huntington Hospital emerged. Recently, Cabell Huntington Hospital purchased St. Mary's Hospital and formed Mountain Health Network , an umbrella organization, to coordinate both hospitals, medical care programs. The two hospitals, the School of Medicine, and their affiliated groups represent the second largest medical care program in the State.

A State sponsored four-year medical school long held the interest and enthusiasm of many persons in Huntington and Cabell County, especially many community physicians and members of the Cabell County Medical Society. In 1912, West Virginia University established an independent two-year medical school of basic science curriculum and by contract the medical students who completed these two years continued their two clinical years at the College of Physicians in Baltimore. In 1951, the Fiftieth West Virginia Legislature passed a bill that decreed that Gov. Okey L. Patteson select the location of the new four-year school of medicine. Lawrence B. Gang, MD, president of the Cabell County Medical Society, submitted the committee's report, chaired by Walter E. Vest, MD, to Governor Patteson, that described in detail the reasons to locate the new school of medicine in Huntington, and the substantial resources available in Huntington and environs that would support the new school. Nonetheless, Governor Patteson selected Morgantown and West Virginia University as the site for the new school of medicine and the Legislature funded the construction of a new Health Sciences Center and University Hospital by passage of a soft drink excise tax, a "pop tax" on bottled soft drinks sold in West Virginia, and benefitting West Virginia University, then and now. The "tom-toms" suggested that he had made up his mind before Dr. Gang's letter made it to his desk, and that

the governor privately promised the new school of medicine to representatives of more than one other city. The morning newspaper in Huntington carried the unexpected news, much to the disappointment of Dr. Gang and the Cabell County Medical Society.

In the early 1970s, the next opportunity occurred to locate a second state-sponsored medical school in Huntington when the U.S. Senate passed Public Law 92-541 that established five new schools of medicine, each one associated with the local VA Hospital, which described Marshall and its Huntington VA Hospital. Dr. Albert C. Esposito, among the Huntington community physicians, worked selflessly to bring a medical school to Marshall and Huntington. He urged Senators Randolph and Byrd to support and vote for a new medical school at Marshall, and they did. He also convinced U.S. Rep. Olin Teague to vote for a school of medicine in Huntington; he lobbied the West Virginia Legislature to vote for a school of medicine at Marshall; and he befriended West Virginia Gov. Arch Moore, who brought the full strength of his office to secure a medical school for Marshall University.

However, Dr. Esposito met several obstacles. Charleston physicians were against the school of medicine at Marshall University. When they yielded on their position that Charleston should be the site of the West Virginia University four-year medical school, they supported Morgantown. The Carnegie Foundation outlined a regressive approach to any school of medicine at Marshall University, through consolidation at least of the Marshall basic sciences curriculum with WVU. Today, our retrospective view confirms their approach lacked any indication of foresight. Once Marshall University received word that it was awarded one of the five new medical schools, it began organization, faculty recruitment and curriculum design so that it qualified for a Letter of Reasonable Assurance from the LCME. Even at this point, E. Gordon Gee, then serving his first term as president of West Virginia University, decided to appear before the LCME to argue against

Front Row, left to right:
Marc Subik, Sarah McCarty, Gretchen Oley, Bruce Chertow, Maurice A. Mufson

Second Row, left to right:
Edwin Anderson, Nancy Scher, Shirley Mae Neitch

Third Row, left to right:
Andrew Burger, Vernon Humbert, Thomas Savory, Anthony Bowdler

Fourth Row, left to right:
Thomas Kiernan, Prathap Chandran, Robert B. Belshe

Marshall University School of Medicine receiving its Letter of Reasonable Assurance, to no avail.

The initial class of twenty-four medical students began in January 1978 and their first year extended through the summer, so that in September 1978, when they began their second year, they were on track to graduate in spring 1981.

Fast forward to today, July 2021. Cabell Huntington Hospital bought St. Mary's Hospital a few years ago, forming Mountain Health Network, the second largest health care system in West Virginia. In 1976, when I joined the faculty of the School of Medicine, none of the community physicians, very few, if any, faculty in the School of Medicine, and no clairvoyant envisioned that the School of Medicine would enhance the academic base of Marshall University and expand the breadth and depth of medical care in Huntington. Now, its future seems brighter than ever and limitless.

Epilogue

Dr. Hayes boasted "Dr. Mufson was able to organize a strong Department of Internal medicine."

In his book, *$7000 in the Bank: The Remarkable Story of Marshall University's Joan C. Edwards School of Medicine,* Dr. Robert Bruce Hayes, eleventh president of Marshall University, 1974-1983, detailed the formation and maturation of the Marshall University School of Medicine. His discussion of the clinical departments provided the following laudatory comments concerning the Department of Medicine:

"This department was the first established in the School of Medicine when Maurice A. Mufson, MD, was appointed chairman in 1976 and he held that position until his retirement in 2000, the longest period for any of the original chairs.

"Dr. Mufson came to Marshall from the University of Illinois (College of Medicine). He had been involved in research projects, which he brought with him and with the Veterans Administration's medical programs. Dean Coon noted that Dr. Mufson related well with the Veterans Administration and was instrumental in seeking research funding.

"During his twenty-four-year tenure as chairman, Dr. Mufson was able to organize a strong Department of Internal medicine, including recruiting a diverse teaching and research faculty, stimulating and guiding a large number of research projects—many on the cutting edge of medicine—publishing widely, and serving on national committees within his profession.

"Internal medicine is composed of a strong nucleus of generalists, complemented by several sub-specialists, who provide robust support for the school's mission. The Hanshaw Geriatric Center, the first developed in the state, is a featured component of the department, supporting medical students at all levels. The students participate in third- and fourth-year clerkships in both inpatient and outpatient settings and provide care to patients with a diverse and heterogeneous array of disease entities.

"The department holds the primary responsibility for preparing first- and second-year medical students for their upcoming clinical clerkships, providing didactic lectures, and guiding students in the development of their history-taking, physical examination, and problem analysis skills.

"Many faculty members are engaged in basic sciences and clinical research, most notably in the areas of endocrinology, infectious diseases, and clinical pharmacology. While the primary objective of the department is teaching medical students, the faculty is also committed to research programs and publication of results of this vital activity.

"The department has developed the Internal medicine residency, including recruitment of highly qualified residents at all levels. It is approved for thirty-six residents each year and supports fellowships in endocrinology and pulmonary. The department also is approved for eight internal medicine/pediatrics residents."

Appendix 1

The First Graduating Class, the Class of 1981

Patrick C. Bonasso
Ob/Gyn
Fairmont, WV

Emmett F. Branigan
Ob/Gyn, Reproductive Endo/Infertility
Bellingham, WA

Dennis M. Burton
Neuroradiology/Nuclear Med.& Radiology
Huntington, WV

Harry G. Camper III
(Deceased)

Sandra J. Joseph
Family Medicine
Huntington, WV

Galen E. Castle
(Deceased)

C. Dwight Groves
Ob/Gyn
Chesapeake, VA

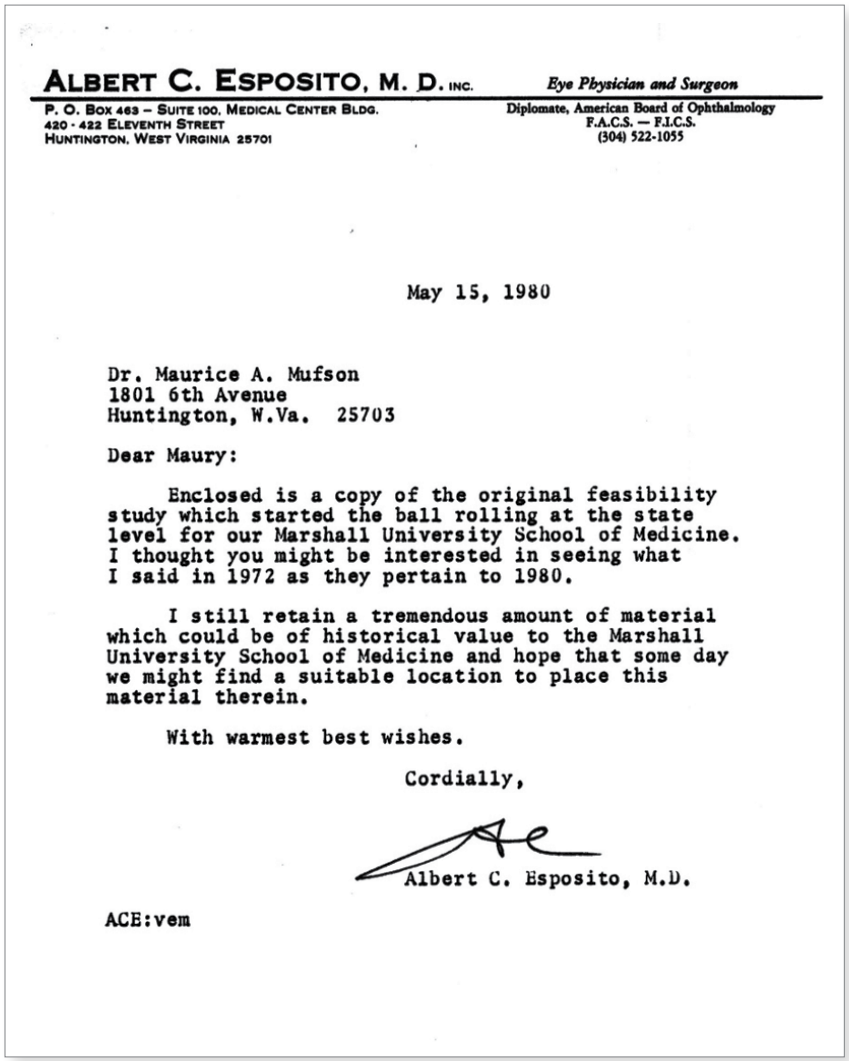
Leslie N. Huddleston
Ob/Gyn
Sioux Falls, SD

Francis Scott Hunter
Ob/Gyn
Charleston, WV

Douglas C. McCorkle
Otolaryngologist
Baltimore, MD

Stephen F. Morris
Pathology
Tarpon Springs, FL

Stephen T. Pyles
Anesthesiology/Pain Treatment
Ocala, FL



ALBERT C. ESPOSITO, M. D. INC. *Eye Physician and Surgeon*

P. O. Box 463 – Suite 100, Medical Center Bldg.
420 - 422 Eleventh Street
Huntington, West Virginia 25701

Diplomate, American Board of Ophthalmology
F.A.C.S. — F.I.C.S.
(304) 522-1055

May 15, 1980

Dr. Maurice A. Mufson
1801 6th Avenue
Huntington, W.Va. 25703

Dear Maury:

Enclosed is a copy of the original feasibility study which started the ball rolling at the state level for our Marshall University School of Medicine. I thought you might be interested in seeing what I said in 1972 as they pertain to 1980.

I still retain a tremendous amount of material which could be of historical value to the Marshall University School of Medicine and hope that some day we might find a suitable location to place this material therein.

With warmest best wishes.

Cordially,

Albert C. Esposito, M.D.

ACE:vem

Brenda C. Smith
Nephrologist
Pittsburgh, PA

Nina K. Smith
Ob/Gyn
Harrisonburg, VA

Stephen C. Smith
Internal medicine
Huntington, WV

John F. Toney
Infectious Diseases
Tampa, FL

Robert E. Turner
Family Medicine
Huntington, WV

Keith H. Wharton
Ob/Gyn
Beaver, PA

Appendix 2

Letter from Albert C. Esposito, MD, to Maurice A. Mufson, MD, MACP conveying original feasibility study for the Marshall University School of Medicine.

Appendix 3

Original Feasibility Study for the Marshall University School of Medicine: "A Program to Aid in Producing Physicians and Improving Health Care of West Virginia by Establishing a First Class Medical School at Marshall University." by Albert Esposito, MD, 1972

Introduction

The continuing decline in physician population in our state with a corresponding decline of health services obtainable, have reach serious proportions at this time, and it is deemed necessary to either train additional physicians in our state or face a continued serious diminution in numbers and quality of practicing physicians.

The West Virginia University Medical School is heroically doing all it can to train medical students for our state, but by all evidence presently obtainable and as noted by various medical educators, it is necessary to immediately train additional medical students than is now possible at the medical center in Morgantown, if our retention average is to improve. According to all available records, the maximum number of physicians that can ever be trained at Morgantown with the present facilities strained to the maximum remains a maximum of 80 students in the freshman class. At present the school is accepting 75, (50 or 53 being bona fide West Virginians) from a total West Virginia student application load of about 300 West Virginia students. Twenty to thirty of these students who are refused or declined to attend West Virginia University Medical School – end up in other medical schools, while a total of twenty-five to forty otherwise acceptable freshman West Virginia students have no place to go mainly because of financial reasons according to an unofficial survey.

We cited as an example of the declining physician population in our state, that in 1950 for example, by A.M.A. statistics there were 1,653 physicians in the active practice of medicine in West Virginia – whereas in 1970 by those same A.M.A. statistics there was only 1,270 actively practicing physicians in our state. In 1970, one-third of the practicing physicians were foreign graduates (overseas) by Dr. Dyer's office. Also, the statewide average age of the practicing physicians in our state is now 51.8 years, and Huntington, West Virginia as an example, the average age is 54.6 years – whereas it should be in the middle forties.

The serious need for more practicing physicians is graphically illustrated in figures we see each year when a number of physicians are licensed to practice medicine in our state, and yet, when the loss of physicians due to death, retirement, or removal, each year is subtracted – we end up with

fewer physicians than the previous year. As an example, in 1965, we licensed 102 physicians to practice in our state, but ended up with a total loss of 75 physicians. With a loss of 75 to 100 or more physicians annually, it is obvious that even if we have 100% retention of the graduating medical students from Morgantown – that this would fail to bridge the gap and increase our physician numbers.

The plight of our state is further complicated when we note that the American Medical Association in 1975 will require that internship and residency programs be carried out only in conjunction with a medical school, which virtually assures the loss of all residency and internship programs in our state except at Morgantown, unless we speedily set up another first class medical school in conjunction with Marshall University to serve the entire Southern end of our state.

This would then:

1. Ensure high quality medical care at this end of our state for our people.
2. Ensure that we train and retain our West Virginia medical students as practicing physicians by their complete training in our area in view of the over-abundant clinical material and hospital bed and population available for their study.

The Plan

To accomplish the speedy formation and establishment of a medical school, we suggest the acceptance of the Veteran's Administration Medical School Assistant Act, and their kind offer of buildings – (four and others) at the Huntington Veteran's Administration hospital with its three floors and ample feet of usable space, plus their animal physiology lab. These could be quickly remodeled with V. A. and Federal moneys (i.e., Comprehensive health Manpower of October 1971) with an acceptable basic Science Building with laboratory and office space plus parking.

We would suggest the teaching of the following basic sciences at the V.A. Basic Science Medical School Building of Marshall University:

Anatomy
Physiology

Pharmacology
Bacteriology
Pathology
Biochemistry and microbiology could be taught on the main campus at Marshall.
The V.A. auditorium could be used for "all classes" while classrooms would be available on each of the three floors of the building (see exhibit)

Facility:

Primary teaching of the basic sciences would be in the Veterans Administration building. Many existing facilities could be utilized on a "Joint service" basis.

Four laboratory areas would be required. Five would be preferable. Biochemistry would be taught at Marshall University.

Three classrooms, one on each floor would be required. A large auditorium in the V.A. could augment.

Space Requirements:

a. Anatomy — Minimum

Office space for 2 professors with joint
Secretaries
Equipment storage
Supply Room

Gross dissecting laboratory
1425 sq. ft.

Micro (Histology – Neuroanatomy – Embryology
1425 sq. ft.

b. Pharmacology and Physiology Joint Laboratory
Conventional teaching, preparation room and student research — 1425 sq. ft.
Office space as above

c. Pathology and Microbiology
Conventional teaching space — 1425 sq. ft.
Office space as above

d. Three classrooms

e. Administrative areas

f. Student lounge and study hall

Joint V.A. Medical School Services now available in the hospital:

a. Library
b. Tissue Laboratory
c. Radio-Isotope Laboratory
d. Pulmonary Function Laboratory
e. Medical Illustration
f. Technical Shops
g. Canteen
h. Sevice facilities post office-telephone
i. Animal Quarters
j. Animal research laboratory
k. Auditorium (500 seats)

g. Third and fourth year classes would be conducted in the hospitals:

1. Cabell-Huntington	318
2. St. Mary's	441
3. Huntington Hospital	138
4. Veterans Administration	180
5. Chesapeake and Ohio – Doctors Memorial	175
6. State hospitals – Psychiatric, Neuro	1,238
	2,500 Beds

** Region 2 Mental health Center is on Marshall University grounds

Administration

1. Basic transactions at Marshall University (Old Student Union)
2. Comptroller at Marshall University
3. Dean's records at Marshall University or basic Science Bldg.

Housing

Veterans Administration building available. (Present Nurses' Home)

Meals

Cafeteria in hospital. Provision would have to be made financially.

Parking
Area for enlargement available.

Teaching staff
Desired to establish chairs in the:

1. Basic sciences with full time men (PHD's acceptable)
2. Clinical years with voluntary competitive faculty as at Cook County or preferably, full time clinical faculty with cross match payment as noted herein.

Finances

1. Three or more $75,000 chairs desired
2. Cross hiring by Veterans Administration and Marshall University
   a. Pharmacology
   b. Pathology
   c. Biochemistry
3. Grants

Transportation

University bussing, as at Morgantown, would be required from Marshall University to the V. A. Hospital.

The Saturday Freshman and Sophomore Hospital oriented classes could be held at the local V.A. Hospital as well as at the Huntington hospitals, where the largest supply of approved hospital beds available anywhere in the state are located.
It is to be noted that Huntington – while not only having the largest number of hospital beds available, also has the most diversified number approved by the Joint Commission.

There is also located in Huntington two fully approved schools of Nursing, one – a three-year program at St. Mary's Hospital, and a two-year program affiliated with Cabell Huntington Hospital and Marshall University. There are also schools for Medical Technicians at each of the hospitals as well as schools for X-ray Technicians. There are extensive medical libraries at the

V.A., St. Mary's and Cabell Huntington Hospitals, and a minimal one at Marshall University at present.

There is also located in Huntington, the largest number of certified specialists per physician population of anywhere in the state.

The proposal has the endorsement of the Cabell County Medical Society and the entire community. Two of its members are national presidents of specialty groups. Veterans Administration cooperation is assured. American Medical Association guidance is being offered and encouraged.

The metropolitan area covered by Marshall university and Huntington embraces a metropolitan urban area of over 250,000 people and at present is the center of medical care and attention for a larger 50 to 75-mile radius comprising over three-fourths of million people as by Chamber of Commerce figures.

Third and Fourth Year Program

With the Carnegie Commissions concept of Area Health Education Center to increase the production of MD's, the second year student upon completion of his studies at the basic Veterans Hospital Medical School building could then be sent to the Huntington Area Health Education Center – utilizing the largest number of diversified hospital beds in our state (which are located in Huntington) to train the student in his clinical clerkship third and fourth years, and again avoiding the awesome costs of a truly separate medical school hospital building -while at the same time – utilizing the existing V.A. Hospital as part of this concept. The hospital complex in other large W. Va. Cities could also be utilized for part of the third- or fourth-year concept, and thus ensure their retention of their internship and residency programs, for we are truly interested in upgrading all of our state in these plans.

This would then ensure that we could retain the internship and residency programs for our end of the state and adhere to the A.M.A. new code applicable in 1975. Also, we would train these West Virginia physicians in our area, exposing them to our largest area of population and fulfill one of the criteria for more retention of our graduating physicians, as noted in the

Carnegie Report that they tend to practice in the areas in which they received their internship and residency training.

We could utilize the vacant Shawkey student union building at Marshall University for the area Health Education Center Administration Building' again – remodeling at very little cost, and thus avoiding the costs of an additional major building expense for the Administration Building for the Huntington Area Health Medical Center.

The committee recommends this route of establishing a medical school at Marshall University, knowing full well that it cost 80 to 100 million dollars and 8 to 10 years of work to get the medical school at Morgantown. Our approach would in no way cost the state any or a very minimal funds to begin – (at the most $100,000 to $200,000) to secure any matching federal funds, but this may not be necessary if the V.A. Medical School Assistant Act to new medical schools is utilized.

Further finance can be provided by the Comprehensive Health Manpower Assistant Act of 1971, but most funds needed for a period of 3 to 5 years after initiation of the primary basic training would be provided by Federal funds, as in the Comprehensive Health Manpower Training Act of 1971 and grants from N.I.H., P.H.S., and possible local industry.

Additionally, the Veterans Administration Medical Assistance Act of 1972 (H. R. Res. 748) authorizes the administrator of the V.A. to provide assistance in the establishment of not more than 5 new State Medical Schools affiliated with the V.A. It also directs him and the Secretary of H.E.W. to coordinate these programs under P.H.S. Act Sec. 309. The Act authorizes 15 million for 1972 and for sic (6) succeeding years.

It authorizes alterations, remodeling, repairs, etc. of such V.A. buildings to make them suitable for use as medical school facilities and payment of 90% of the faculty salaries for each of the first three years, then 80%, 70%, 60%, 50% respectively for the next four years.

Summarizing this part, then, we recommend the speedy establishment of a Marshall University Medical School utilizing the local Veterans Hospital Building and its surrounding as by the V.A. Medical School Assistance Act

and the Comprehensive health Manpower Act of 1971 plus grants from N.I.H. – funds from local industry in Huntington – and if necessary, funds from the ford and Kellogg Foundations, to speedily start the new Medical School at Marshall University.

In this light, to conform with the 1971 Comprehensive Health Manpower Assistance Act, a starting class of 25 to 30 could begin their studies in 2 years and then an Area health Education Center as proposed by the Carnegie commission could be operational in Huntington by the 3rd year and possibly take on the West Virginia students from Morgantown and elsewhere as necessary to retain more Interns, residents and physicians in W. Va. And this would also give more West Virginia boys and girls the opportunity to study medicine in our State.

Dr. Albert C. Esposito, President Elect of the Southern Medical Association, has obtained the aid of the American Medical Association in aiding in the setting up and assisting the proposed Medical School with all the resources available from the AMA and its various Committees on Medical Schools and Medical Education and Intern and Residency programs. Dr. Lucius L. Powell, Director of the Huntington Veterans Hospital has offered all aid and speed in assisting the establishment of the Medical School at Marshall University.

Pledges of aid have also been received from our legislators, - Senators and Congressman in Washington as well as the pronouncements of our Esteemed Governor, the honorable Arch A. Moore. The entire Huntington Community, its physicians, its hospitals, its people, industries, legislative bodies, are pledged to aid in the speedy establishment of this first class Medical School at Marshall University with the aid of the Veterans Administration and H.E.W.

It then seems feasible and reasonable that we proceed with all reasonable hast to begin the finalizing plan to set up a first class Medical School at Marshall University.

Costs

The basic science buildings, as in other Veterans Administration Medical School assistance programs, is being offered with complete maintenance by the V.A. also offered is a large dormitory building on the V.A. grounds

with ample parking in both areas. This again with complete maintenance by the V.A. The acquisition of these buildings would start the basic science program of a new Marshall university Medical School.

Utilizing the 1971 Comprehensive health Manpower Act, Section 771 (a), federal funds would be available if more than 24 students are accepted as first year students with $10,000 per student in federal funds being available in the year prior to the initiation of the first class; meaning that at a minimum $240,000 in federal funds would be given outright to the new medical School for operational funds. Also, the Act under section 770 (b) gives $50,000 outright per year in schools not having more than 50 students in its first 2 years.

If any additional construction or remodeling is contemplated it can be financed by V.A. Aid or by utilizing section 720 (a) of the 1971 Act using federal funds on a matching 80% federal funds to 20% local funds.

The cost factor of the facility in these basic science years would be on a mix ration of V.A. to State funds plus additionally local industry's pledge to grant chairs in several of the basic courses.

Several first year courses could be given on the main Marshall University campus as outline and the Region Two (2) Mental Health Clinic is available on Marshall University grounds in addition to the largest supply of approved and diversified hospital beds available anywhere in the State.

The plan for the 3rd and 4th years of the medical curriculum as noted would involve the setting up of a Carnegie Commission concept of an Area health Education Center utilizing the V.A. hospital plus all the excellent community hospitals available which incidentally have the largest number of actual approved beds available anywhere in the state with a total bed capacity in Huntington of over 2,500 beds. In the past year, these hospitals had a total of over 43,000 inpatients again almost 10,000 more than at any other one area in our state. We suggest the utilization of the vacant Shawkey Student Union building as possibly the administration building of the new medical school or for the 3rd and 4th years. It could be remodeled and renovated at a very minimal cost with the 80-20% federal funds as necessary.

The full time facility planned for these clinical years could again be on a mixed ration of V.A. plus State funds or as outright grants as by the 1971 V.A. Medical School Assistance Act but as at other schools, Medical School funds for services rendered to patients in their departments would help pay the total salaries paid – again a mix of V.A. -state-patient funds to pay for these, again at a very minimal cost to our state or at no cost to the State for the first 6 (six) years under the 1971 V.A. Medical School Assistant Act.

We feel that this concept of a medical school with the veterans administration assistance, plus federal operating and sustaining funds for chairs in the departments would necessitate an expenditure in the basic years of from $500,000 to 1 ½ million dollars at the outmost while the clinical or 3rd and 4th years would be run on a budget of 2 to 3 million annually, again, by utilizing local hospital and personnel and the cross matching of funds with federal and patient funds as at other Veteran Administration-State Medical Schools and as set forth in the 1971 V.A. Medical School Assistant Act. We feel that the need for such an economical school to <u>immediately</u> begin the training of additional West Virginia students in medical school is imperative to the health needs of our people of our State.

OUR GOALS FOR A MARSHALL UNIVERSITY MEDICAL SCHOOL

1. Train, graduate and keep more physicians in West Virginia more economically than possible anywhere else.
2. Allow more West Virginia boys and girls to enter the study of medicine and its fields by the operation of a 2nd medical school at Marshall University.
3. Provide for a better distribution of practicing physicians in our part of the state and all our state.
4. Assure the best possible medical care to all West Virginia residents, and specifically those in this end of the state.
5. Keep our West Virginia physicians in the mainstream of new medical knowledge and research, wherever in the state they may be practicing.
6. Develop our V.A. and local community hospitals and our Regional Mental Health Clinic into strong centers of medical education and research without the need of subsidizing another large Medical School Hospital.

7. Attract new industry into our area and State and make this a strong and vibrating responsive community.

RECAPITULATION

1. Basic Science Medical School – V.A. – Marshall University
   Building…Alteration and remodeling included V.A.

Parking V.A.
Auditorium (500) V.A.
Possible Dorm for students V.A.
Bussing from V.A. to Marshall Campus V.A.

2. Faculty
   Paid by V.A. first three years 90% V.A.
   4th year 80% V.A.
   5th year 70% V.A.
   6th year 60% V.A.
   Then 50% V.A.
3. Students – Must admit more than 24 students to qualify for

1971 Comprehensive Health Manpower Act (C.H.M.A.)

$10,000 per student when accepted prior to 1st year C.H.M.A.
$7,500 per student during 1st year C.H.M.A.
$5,000 per student – 2nd year C.H.M.A.
$2,500 per student – 3rd year C.H.M.A.
$2,000 per student – 4th year C.H.M.A.
$50,000 to new school for two years C.H.M.A.

The total amount available fi we use federal facilities to expedite the opening of a new Medical School will be determined C.H.M.A.

Federal funds given during first 2 years of operation will be approximately $250,000.00 to $350,000.

Faculty will be paid as noted above – actually no state funds appear necessary for the first 2 years of operation. Later, the basic science budget will range between $100.00 to $500.00 per year. After the sixth year, it is visualized than a budget of between $500,000 to $1.5 million dollars will be needed. This is the most economical method of adding MD manpower in our state as well as the most expedient method.

Clinical 3rd and 4th years, utilizing an Area health Educational Complex in Huntington, W. Va. As part of the new V.A. Marshall University Medical school.

Using the Huntington, V.A. Hospital plus the other Huntington Community hospitals with a total bed capacity of over 2,500 hospital beds and with an annual inpatient load of over 43,000 inpatients (per last year) which is more than is available in any other area of our state. Also, to be noted, the Region II Mental Health Clinic is located on Marshall University grounds.

Building Central Administration for Center N.C.
On Marshall Campus – the old Shawkey Student Union Bldg., or the old Cafeteria Bldg.

Remodeling: Minor in nature and amounts. Could use 80% federal – 20% State funds per C.H.M.A.

Library: Unification of several hospital and Marshall Library; Librarian at V.A. and at each hospital.

Faculty:

Full time chiefs contemplated V.A.
Except for Obstetrics and Gynecology and Pediatrics

Cross mixture of funds from patients – V.A. – State as at other V.A. hospital – medical schools

-Full time men will be based at local community hospitals as well as V.A. hospital and State Psychiatric hospitals to train the 3rd and 4th year students as well as the internship and residency programs.

-Local physicians can augment the teaching program by assisting in the clinical and teach as their time permits.

-The possibility that several key industries in this area will endow several chairs in the school is contemplated.

In accordance with other such V.A. Medical school endeavors, we visualize an operating budget of 2 to 3 million dollars annually after the 3rd and 4th year that the school is operational.

There are 2 accredited schools of nursing in Huntington

-one at St. Mary's Hospital – 3 years – program -oldest in state.
-another at Cabell-Huntington Hospital affiliated with Marshall University and is being upgraded to a B.S. program.

There are 2 Schools of Medical Technology – one at St. Mary's, the other at Cabell Huntington Hospital, as well as schools of X-Ray Technicians, Licensed Practical Nurses, etc.

The entire community is united in the desire to have better medical attention and care for our entire State by the establishment of this most economical and speed method of training our student in this new Huntington Veterans Hospital-Marshall University medical school.

Veterans' administration Medical School Assistance and Health Service Personnel Education and Training Act of 1971

As Passed by the House

July 19, 1971

The bill authorizes the Administrator of Veterans' Affairs to provide certain assistance in the establishment of new State medical schools; the improvement of existing medical schools affiliated with the Veterans' Administration; and to develop cooperative arrangements between institutions of higher education, hospitals, and other public or nonprofit health service institutions, and the Veterans' Administration to develop and conduct educational and training programs for health care personnel.

It would establish three health manpower programs:

1. A pilot program for assistance in the establishment of new State medical schools.
2. A program of matching grants to VA affiliated medical schools for improvement and enlargement of facilities.
3. A program of matching grants to VA affiliated schools, hospitals and other health service institutions to coordinate and expand training of professional and allied health personnel.

The bill directs the Administrator of Veterans' Affairs and the Secretary of HEW to coordinate these programs with existing programs under the Public Health Service Act: Sec. 309, project grants for graduate training and public health; Title VII, health research and teaching facilities and training of professional health personnel: Title VIII, nurses training; and Title IX, RMP's.

<u>Pilot Programs</u>

The Administrator would have authority to implement a pilot program, under which he would enter into agreements to provide assistance in the establishment of new State medical schools. Any such schools would have to be located in proximity to and operated in conjunction with VA medical facilities. A sum of $15 million would be authorized for fiscal 1972, and for each of the six succeeding fiscal years, for assistance under this pilot program.

Such assistance would be in the form of:

1. The leasing to the State of such land, buildings and structures under the control and jurisdiction of the Veterans' Administration as may be necessary for the school. (The term of such a lease would not be subject to the three-year limitation on leases entered into by the Administrator under his general authority to procure and dispose of property.)
2. The extension, alteration, remodeling or repair of such buildings and structures, to make them suitable for use as medical school facilities.
3. Partial reimbursement to the State for salaries of the faculty of such a school—to the extent of 90% of the cost of such salaries for each of the first three years of school operation; and 80%, 70%, 60% and 50%, respectively, for the four years following.

As conditions for assistance under the pilot program, the Administrator would have to determine that:

1. There will be adequate State financial support for the proposed medical school.
2. The overall plans for the school will meet professional and other standards and

3. The school will maintain mutually beneficial arrangements with the VA medical facility with which it is associated.

Authority of the Administrator under the pilot program would be limited to assisting in the establishment of not more than five new medical schools, in geographically dispersed areas.

Matching grants to Affiliated Schools: Improvement of Facilities

The Administrator would have authority to provide grants on a matching basis (50% of total costs) to assist VA affiliated medical schools to improve and enlarge their facilities. Authorization for this purpose would be $15 million for fiscal 1972, and a like sum for each of the six succeeding fiscal years.

Such assistance grants for improvement and enlargement of facilities would be available to any medical school which is affiliated with VA under the existing program (38USC Sec. 5051) for agreements between the Administrator and medical schools, hospitals, and research center for the sharing of medical facilities, equipment and information. Grants for building construction under the proposed program, however, would be made only if the building were located on land under the jurisdiction of the Administrator.

Applications for grants would be made to the Administrator and would be approved only if the Administrator found that the proposed projects and programs would make a significant contribution to strengthening the medical education program of the school and would result in a substantial increase in the number of medical students attending such school. Additional conditions of approval would be a showing in the application of assurance that federal fund will be matched by public and private funds or other resources from other sources, adequate fiscal control on accounting procedures, and provision for required reports and recordkeeping.

Assistance to Schools, Hospitals and Other Health Service Institutions for Training

Under this program, the Administrator would have authority to provide grants on a matching basis (50% of total costs), for assistance in the establishment of cooperative arrangements among VA affiliated schools, hospitals and other health service institutions, to coordinate and expand the training of professional and technical allied health services personnel; to develop

and evaluate new health careers, and to improve allied health manpower utilization.

Institutions eligible for such grants would be educational facilities or public or nonprofit institutions, including universities, colleges, junior colleges, community colleges, schools of allied health professions, State and local systems of education, hospitals and other non-profit health service institutions for the training or education of allied health or other health personnel affiliated with VA for the conduct of or the providing guidance for education and training programs for health manpower. There would be authorized for expenditures under this program $3 million for the fiscal year ending June 30, 1972 and $ 4 million for each of the six succeeding fiscal years.

By application, accompanied by a plan, an eligible institution might obtain such assistance to carry out, through the VA hospital with which it is or will become affiliated, educational and clinical projects and programs for the expansion and improvement of such institution's capacity to train health manpower, including physicians' assistants and other new types of health service personnel. For this purpose, clinical requirements of the hospital would be matched to the allied health training potential of the eligible institution.

The application would have to show: that the proposed projects and programs will make a significant contribution to improve the education (including continuing education) or training program of the eligible institution and will result in a substantial increase in the number of students trained in such institutions; set forth appropriate fiscal control and accounting procedures; and provide for making reports and keeping records as required.

Payment pursuant to grants might be made in installments and either in advance or by way of reimbursement, as the Administrator might determine.

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