

*A History of  
the UNC School of  
Pharmacy*



**By George H. Cocolas**

*to the alumni*

## ABOUT THE AUTHOR

George H. Cocolas is professor emeritus of the School of Pharmacy, having retired after 41 years as a faculty member at the University of North Carolina at Chapel Hill. He received his B.S. Pharmacy degree in 1952 from the University of Connecticut and Ph.D. in Pharmacy in 1956 from the University of North Carolina. On graduation, he was employed as a research chemist by The National Drug Company in Philadelphia but returned to Chapel Hill in 1958 to join the faculty of the School of Pharmacy. He was the associate dean of the School for 17 years. As a teacher and associate dean, he worked as an adviser with students and student leaders to make the most of their opportunities in school and as graduates.

He served as chair of the Division of Medicinal Chemistry from 1975-1982. A member of the graduate faculty, he was major adviser for eleven students, published 39 papers in peer-reviewed journals and was awarded three patents. He contributed on NSF review panels, was secretary and also chairman of the Medicinal Chemistry Section of the APhA Academy of Pharmaceutical Sciences, and chairman of the ACS Medicinal Chemistry Symposium in 1986. Trained as a synthetic organic chemist, his area of research was primarily in neurochemistry.

In January 1980 he became editor of the *American Journal of Pharmaceutical Education*, a post he held for 23 years. He has been active in academic pharmacy representing Medicinal Chemistry on the Executive Committee of the AACP Conference of Teachers, and as a member of the AACP Resolutions Committee, Program Committee member of the AACP Section of Teachers, the Committee to Evaluate the AACP Executive Director, the AACP Research and Graduate Affairs Committee and the AACP PCAT Advisory Committee. In 2003 he was elected Honorary President of AACP.

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## Acknowledgements

The writing of this second history of the School of Pharmacy of the University of North Carolina came from the invitation of Kevin Almond, associate dean for advancement and executive director of the Pharmacy Alumni Association. It was to be a sequel to the initial description of the School that was published in 1961. This overture had been made earlier by Dean William Campbell, who suggested to the author that he was a pharmacy faculty member for the majority of this period and would be well suited to write the history.

The archives located in Wilson Library on the UNC campus provided an invaluable resource for documents on the University and the School of Pharmacy. The single constant resource for information was the 1955-1991 collection of annual reports of the deans to the Chancellor. In addition, on searching the School archives stored in the basement of Beard Hall, files on the Division of University Health Affairs kept by Dean Edward Brecht were found with the help of Pharmacy staff members. In the period of this second history, capital improvements and relocation of the School of Pharmacy to temporary offices in trailers and other buildings on campus, was accompanied by a loss of files that may have been of historical value. The book could not have been written without the cooperation of faculty and staff who were interviewed and those who answered the questions that made this oral history of the School possible.

The author is grateful to Ralph P. Rogers '49 and Lloyd Milton Whaley '51 for their interviews on the North Carolina Pharmacy Foundation. The description of the clinical pharmacy program evolution at the School was helped by informative conversations with Claude Paoloni, retired UNC pharmacy faculty member, and Fred Eckel, now executive secretary of the North Carolina Association of Pharmacists and part-time faculty member. Interviews with UNC faculty Steve Caiola, Kim Deloatch, Wayne Pittman and Robert Shrewsbury provided information about the maze of curricular changes throughout the years as the School converted from a baccalaureate to the professional doctorate program. Administrative changes that accompanied curricular changes were helpfully described in an interview with Associate Dean Pamela Joyner. The interviews of the division chairs gave good insight on the nature of their programs. The author is indebted to Dr. Hal Kohn, chair of the Division of Medicinal Chemistry and Natural Products, Dr. Gary Pollack, chair of the Division of Drug Disposition, Ralph Raasch, chair of the Division of Pharmacotherapy, and past chairs of the Division of Pharmaceutical Policy and Evaluative Sciences, Joseph Norwood, now retired, and Dale Christiansen. Information from past staff members during the tenures of George Hager and Tom Miya and William Campbell, Linda Goswick, secretary to the dean, Gail Moriarty, admissions secretary, and Rebecca Work, business manager, allowed for ties between the deans and the programs of the School.

Interviews with former deans Tom Miya and William Campbell gave invaluable perspectives of the programs during their tenures. Telephone conversations of present School of Pharmacy staff and faculty were of great value to fill voids of information on dates and names. Finally, Kevin Almond, of the Development Office of the School of Pharmacy and its staff should be recognized for their assistance in providing past issues of their publications and responding to my many questions.

## FOREWORD

This history of the School of Pharmacy is a sequel to the first written by pharmacy librarian, Alice Noble, which documents the beginning of the study of pharmacy at the University of North Carolina from 1890 to the year 1961. This second attempt covers the period 1949 to 2003 and describes the events during the tenures of the four deans who served for a sufficient length of time to significantly affect programs of the School of Pharmacy. To give a perspective of the changes that took place in pharmacy education, the author felt it was necessary to first describe the setting of the School in the greater University and the events that formed the University of North Carolina in Chapel Hill to make it part of the Consolidated University as we know it today.

The emphasis of this history is on the education of students in pharmacy. The events that occurred globally and nationally during the latter half of the twentieth century molded the practice of pharmacy and affected those in higher education. During this time many changes in higher education took place. Beginning with the return of World War II veterans to the colleges and universities, higher education became a way to improve the quality of life for an ever increasing number of Americans. Advances in health sciences created an unparalleled explosion in health care practices. The School during this period was not isolated from the academic and political events of these times. The University of North Carolina at Chapel Hill underwent a dramatic change when the state legislature made an appropriation to build a four-year medical school in Chapel Hill and add to that a teaching hospital and schools of dentistry and nursing to create a medical center. Later, pharmacy education was affected by Congressional legislation that supported health manpower education and the new accreditation guidelines that mandated a change to an entry-level professional degree for graduates in pharmacy.

The events of the time presented each dean with a different environment for their administration. With the exception of Dean Edward Brecht who was a faculty member for years before his appointment and knew the pharmacists of the state, each of the new deans on their arrival took it upon themselves to travel the state to meet the alumni. They visited pharmacies, spoke at local pharmacy association meetings and opened a dialog with the leaders of the pharmaceutical industry in North Carolina. Deans became money managers balancing University appropriations with extramural support to retain and attract faculty. They struggled to address the state's pharmacy manpower shortage and limitations of physical facilities to teach the curriculum. Each of the deans had different administrative styles and an agenda to address the needs of the time.

The curriculum in the School under the tenure of Edward A. Brecht was focused on preparing graduates for the practice to accurately and efficiently dispense medication orders by prescribers. This approach dates back to his experiences as a practicing pharmacist in Minnesota. Knowing drugs, drug forms, doses, medical uses and indications for prescription and over-the-counter medical products provided a knowledge base on which the pharmacist could counsel patients and physicians and was consistent with the thoughts of most of the faculty during that time. Although manufacturing processes by the pharmaceutical industry had been developed as early as the late 1930s and were further developed after the Second World War to provide finished dosage forms for pharmacy, the Bachelor of Science (B.S.) curriculum in the 1950's

included classes on preparing drug forms as described by the official compendia. Accuracy in dispensing medication, drug nomenclature and dosages were incorporated in many of the pharmacy courses. Laboratory exercises were part of the curriculum amounting to one-half of the course content. The size of the B.S. classes in the 1940s and 1950s was between 55-60 students and taught by a faculty of five and part-time instructors. From the outset of Brecht's tenure, differences in teaching philosophy of graduate and undergraduate curricula between faculty members created tensions that resulted in faculty turnover and affected progressive development of the program. Some faculty members were in favor of increasing the basic science component of the curriculum while others preferred the more traditional preparation for practice coursework. The School during the 1950s was faced with a manpower shortage of pharmacists in the state. The dean was faced with a serious problem since the Pharmacy School (Howell Hall) which housed the classes for the curriculum was unsafe, overcrowded with students and inadequate to teach the classes in the curriculum. Some relief was obtained with an appropriation from the Legislature. Beard Hall was erected and occupied to give new life to a program that was struggling to survive. Only later would it become apparent that the planners for the new building did not look far enough into the future of the profession to prepare it for tomorrow.

The arrival of George Hager in the 1960s brought a fresh start to the School's programs. Hager was a hard working dean whose basic science background might have belied his interest in professional pharmacy practice. Being a recent president of the American Association of Colleges of Pharmacy, Hager was attuned to the importance of the education of students in the clinical aspects of pharmacy practice. New venues for pharmacist-patient interactions in North Carolina began during his time. A state program that made hospital administrators understand the need for pharmacy services brought pharmacists into hospitals to provide pharmacy services. This was a starting point of bringing pharmacy personnel into the clinic areas of hospitals. Congressional legislation to increase pharmacy manpower and an increased emphasis on training in clinical pharmacy allowed for a series of curriculum changes to take place. The School received a massive boost to add personnel in the regional AHECs when the state of North Carolina received an Area Health Center Grant to decentralize medical, dental, pharmacy and public health education and to regionalize nursing and allied health education, residency training and continuing education. Through the application of clinical pharmacy services by pharmacists at the AHEC sites, the School began to develop respect as a partner in health care. The appearance of pharmaceutical industry in Research Triangle by the Burroughs Wellcome Company from Tuckahoe, New York and later the construction of the campus of the Glaxo Pharmaceutical Company, the formation of the Research Triangle Institute and other health-care companies provided a population of pharmaceutical scientists that contributed to the programs of the School.

The growth of the enterprise of pharmacy education at the School began to unfold during the tenure of Tom Miya. The development of the AHEC regions created an educational network for pharmacists in these regions. With Federal and State support the clinical faculty members were added in the regional AHECs to provide preceptors for the experiential portion of the B.S. curriculum. The period of the 70's and 80's continued the national debate on the degree required to practice pharmacy. The debate was not limited between administrators of schools and colleges of pharmacy. It included retail pharmacy

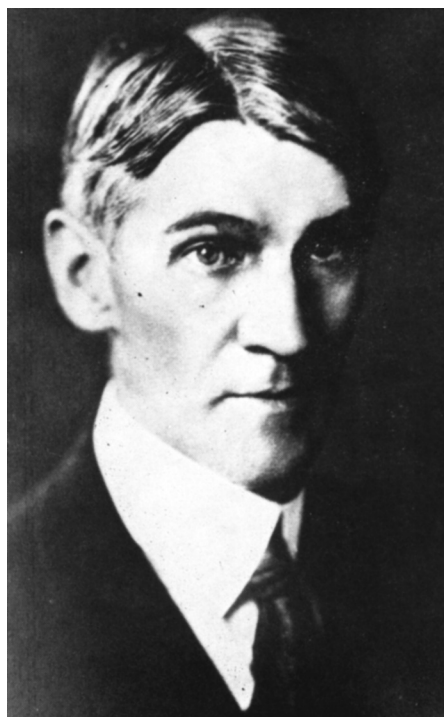
organizations, pharmacists and regulatory agencies. Within the University, the conservative approach of UNC administrators delayed the awarding of the professional doctorate degree (Pharm.D.) for many years even after it was recognized by the American Association of Colleges of Pharmacy. Although the degree was finally approved by the University, it did not receive immediate funding and was supported by existing School funds. During the fifteen and one-half years of Tom Miya's term, the Pharmacy Foundation of North Carolina undertook aggressive action in developing its assets. The Foundation allowed the School to expand its scholarships and provide faculty support. Its growth established the monetary foundation for the drive to raise funds for the construction of Kerr Building during Bill Campbell's tenure.

The administrative style of Bill Campbell's tenure was in contrast to the previous deans of the School. When Campbell arrived in Chapel Hill he found a full complement of faculty in each of the pharmacy disciplines. They were a mix of faculty who had experienced the changes in the curriculum and the growing pains as the programs of the School during the 70s and 80s and a group of new faculty added in the later 1980s to begin preparation to implement of the entry-level Pharm.D. curriculum. In short, the faculty had many discussions on how to meet their charge. To get a factious faculty to work together Campbell decentralized the administration structure in the School and challenged the faculty to commit to an educational philosophy for success. At hand for the dean and faculty were tasks to prepare for the implementation of an entry-level Pharm.D. curriculum and the appropriation and planning for the construction of Kerr Building. During his tenure Bill Campbell was able to bring about administrative and philosophical changes in the School. As did the previous deans, Campbell wanted to affect change in the practice of pharmacy by introducing the concept of progressive pharmaceutical care, a term he described as the pharmacist's responsibility for the patient's health care outcome. Campbell introduced the concept of the Bimodal School of Pharmacy that encouraged pharmacy faculty to demonstrate progressive pharmacy practice as a scholarly endeavor to practicing pharmacists. It blended together the mission of faculty teaching life-saving research with responsible patient health care.

## THE FORMATIVE PERIOD – HEALTH AFFAIRS AND BEARD HALL

### Prologue

The School of Medicine was established in 1879 at the University of North Carolina under the direction of Dr. Thomas W. Harris with a course in theoretical and practical medicine being offered under a preceptor system. A year later, Dr. Harris, serving as the Dean of the School of Medicine, offered instruction in pharmacy in connection with the School of Medicine. The faculty of the new school, in addition to Dr. Harris who was Professor of Anatomy, Materia Medica and Pharmacy, included Frederick Simmonds, Professor of Botany and Physiology, and Francis P. Venable, Professor of Chemistry. The course in pharmacy was two sessions of five months each and led to the degree of Graduate in Pharmacy (Ph.G.). The Pharmacy curriculum continued until Dr. Harris' resignation in 1886 when it was abandoned completely. Dr. Richard H. Whitehead revived the program in the fall of 1889, but again its career was cut short because of a lack of students.



**Edward Vernon Howell**  
**First Dean of the School of**  
**Pharmacy (1897-1931)**

In response to urgent requests from the pharmacists of the State, a school of pharmacy was established in 1897 beginning its formal curriculum of instruction in March 1897. Edward Vernon Howell, a North Carolinian with family ties in Rocky Mount, holding an A.B. degree from Wake Forest College and a Ph.G. from the Philadelphia College of Pharmacy, was elected Professor of Pharmacy and given charge of the School. At the time of his appointment he was a part owner and manager of a pharmacy, Kyser Drug Co. in Rocky Mount. The University began the curriculum with the understanding that it could only sustain the pharmacy program if sufficient students enrolled in Pharmacy. Nevertheless, Vernon Howell accepted the position, enrolled in the UNC Graduate School and, as it could only happen in those days, played on the undefeated 1898 UNC football team.

The pharmacy course extended over two sessions of nine months each. Graduates received the Ph.G. degree. In 1914 two new curriculums in pharmacy were added; one, a three-year course, with the graduate receiving the Doctor of Pharmacy (P.D.) degree. The other curriculum, also a three-year course, led to the degree of Pharmaceutical Chemist (Ph.C.). In 1917 the School was admitted

to membership in the American Association of Colleges of Pharmacy (AACP), an organization founded for the promotion of pharmaceutical education. A report in 1910 by Abraham Flexner revealing the poor quality of many medical schools awoke pharmacy educators to look at the education of their students. AACP asked the pharmacy schools to upgrade their formal education to avoid similar embarrassment. Included in the changes were requirements for member-colleges to maintain certain entrance and graduation standards in order to maintain their membership. For many years after the turn of the century pharmacy colleges



competed to attract students to by providing attractive credentials. To comply with the AACP requirements for member schools, the degrees of Doctor of Pharmacy and Pharmaceutical Chemist at the University of North Carolina were abandoned in 1925 and replaced by a uniform three-year degree of Graduate in Pharmacy (Ph.G.). Applicants were required to have a four-year high school diploma.<sup>1</sup>

It was the beginning of the depression era but in 1928 the American Association of Colleges of Pharmacy adopted a four-year baccalaureate course of study for pharmacy to go into effect no later than 1932. North Carolina complied with this mandate and began its four-year program on July 1, 1932. Students wanting to study pharmacy were required to apply to the University to take courses in the College of Arts and Sciences and enroll in beginning pharmacy courses as freshmen. As students moved through the curriculum, their courses were taken mostly in the School of Pharmacy. The degree awarded was a Science Bachelor in Pharmacy (S.B. Pharm.). In the 1949-1950 University catalog, the designation of the degree was changed to B.S. Pharmacy to be consistent with the other baccalaureate degrees in the University. With the exception of students taking the prerequisite courses required to complete the pharmacy curriculum, the School of Pharmacy had few formal ties with other departments in the University for the first 50 years. Graduate students, however, took many courses in the departments of the University. In the years that followed and with the formation of the Division of Health Affairs the School would become interwoven in the total fabric of the University.

### **The Making of Health Affairs**

Frank Porter Graham was once characterized as “champion of the underdog.” He was small in stature but tall in the eyes of his colleagues and friends. Graham’s ebullience and vigor of his idealism impressed his associates. He was described as outgoing, unselfish, modest, and compassionate. His courage and eloquence inspired numerous admirers. Graham was elected president of the University in 1930 and in the 19 years that followed provided strong leadership to help maintain what has been recognized by the University as “a high level of distinction and service”. The University in his days was not without problems. The stock market crash of 1929 led to the depression that followed. Government spending had to be curbed, creating economic problems for state-supported educational institutions. A study by the Brookings Institute suggested that the three major institutions of higher learning in North Carolina, the University of North Carolina in Chapel Hill, North Carolina State College of Agriculture and Engineering in Raleigh, and the North Carolina College for Women in Greensboro be consolidated for budgetary reasons. With the understanding and support of the heads of the three institutions, the three universities were consolidated in 1935 with each having a chancellor and a president as the one single presiding head of the Consolidated University. At that time, Robert B. House was the Chancellor of the University in Chapel Hill.

In combining the three universities into one administrative structure, President Graham set forth some principles for the Consolidated University. He intended to preserve the integrity of each institution, “of its historic traditions, values and loyalties around the basic purposes of each but with no duplication of schools or curricula in the upper and graduate years.”<sup>1</sup> It was important to the Consolidated University trustees that the individual schools retain their identity. With Graham’s leadership and after much discussion, it was agreed that the University of North Carolina in Chapel Hill would move forward maintaining all its

schools and divisions except engineering. This program would be transferred to Raleigh. North Carolina State University became the technological institution minus its schools of science and business which were transferred to Chapel Hill. The University in Greensboro (Woman's College) would be maintained as a first-class liberal arts college for women. Its School of Library Science was moved to Chapel Hill. Women, with few exceptions, were denied enrollment in freshmen and sophomore classes at Chapel Hill and Raleigh and channeled to Greensboro. President Graham's philosophy of an institution of higher learning established the groundwork for the characteristics of this University that exist today. He was outspoken in his espousal of free speech and human rights. He believed that the integrity, the moral autonomy, and the intellectual freedom of the Consolidated University could be preserved with faith and good will and administered a plan to reduce duplication and encourage specialization in the three universities. Graham's report and proposal to the trustees of the three universities generated much discussion, ultimately passing with most of the negative votes coming from the Chapel Hill faction of the trustees.<sup>2</sup>

With the ending of the Second World War the attention of the country, including North Carolina, turned to the development of a health care infrastructure to care for its citizens. In 1944 Governor Broughton appointed a Commission on Hospital and Medical Care to study the state's medical care needs. The Commission submitted a report in which one recommendation was the establishment of a four-year state-supported medical school and teaching hospital. The following year the state set up a permanent commission, the North Carolina Medical Care Commission, which continued the study of the state's health care needs. In 1946 the Medical Care Commission reported to the Governor, recommending that a state-supported four-year medical school be located at the University of North Carolina in Chapel Hill.<sup>3</sup> The following year the State legislature agreed to a \$3.79 million capital appropriation for Chapel Hill which included a new 400-bed teaching hospital, a medical center and a four-year medical school complex. At the same time, the General Assembly approved a \$6.25 million grant for building community hospitals and health centers around the state.<sup>4</sup>

Chapel Hill was flourishing following the end of the war in 1945. The University, situated in this small and attractive village, became known all over the country. The population in the small college town of Chapel Hill in 1950 was 18,000.. The University in 1950 had 5,660 undergraduate and graduate students enrolled. Nationwide, the State was viewed as being very progressive. Families began moving into the rapidly expanding suburbs to enjoy a lifestyle formerly enjoyed by the affluent. The moderate climate of Chapel Hill also was attractive to many. By 1970 the census of the population of Chapel Hill rose to 38,850. In no other place in the southeast did there exist the opportunity to combine the essential elements of community health. Located in Chapel Hill was the only accredited School of Public Health, the only School of Pharmacy in North Carolina, an accepted and expanded four-year School of Medicine, the new and only School of Dentistry in North Carolina, a new School of Nursing, and a new state University General Teaching Hospital. It formed a unique opportunity to set a pattern of correlated health and medical service and instruction to undergraduates and graduates and to extend these benefits and service by reciprocal agreements and exchange of personnel and teaching service to every corner of the State. Student enrollment was to rise to almost 17,000 by 1970.

In March 1949, Governor W. Kerr Scott appointed Frank Graham as the new junior U.S. Senator

from North Carolina for the recently deceased U.S. Senator J. Melville Broughton. On many occasions Graham had been frequently sought and pressed into service on national committees. As early as 1933 and for many years later, Franklin Roosevelt appointed him on committees to help the country during the depression years. Always energetic, he worked two jobs shuttling between Chapel Hill and Washington. This appointment to the Senate was a culmination of his experiences in Washington, D.C. He resigned his post as president of the Consolidated University and was succeeded by Gordon Gray.<sup>5</sup>

The beginning of the 1950s brought administrative changes for the University of North Carolina and for the School of Pharmacy. Gordon Gray, the former Secretary of the Army, took over the presidency at that time. He had few of Graham's interpersonal characteristics or deep roots and associations with Chapel Hill; but while not familiar with the style of academic life, brought a degree of formality and businesslike precision to South Building. Gray, a graduate of the University in 1930, received his J.D. degree from Yale where he was editor of the *Yale Law Review* and then practiced law in New York and Winston-Salem. In Winston-Salem he purchased the *Winston-Salem Journal and Sentinel* and a radio station, WSJS. He had state government experience having served three terms in the North Carolina Senate. In 1942 he joined the U.S. Army and rose to the rank of Captain before being discharged in 1945. Senator Kenneth Royall, Sr., Secretary of the Army and himself a North Carolinian, brought Gordon Gray on board as an assistant secretary. When Royall resigned in 1947, President Truman gave Gray the top position.

The beginning days of Gray's presidency were clouded with national events of the Korean War, fear of atomic weapons, and McCarthyism. No sooner was he in office and beginning to organize administrative changes in the Consolidated University, President Truman sought his services in Washington. Later in 1952 he became a member of President Eisenhower's Committee on International Information Activities and still later in 1954 was asked to chair the Personnel Security Board of the Atomic Energy Commission. Gray's tenure as president of the Consolidated University lasted five years. Gray was not comfortable with the academic setting; and when the invitation came from Washington to become Assistant Secretary for International Affairs in the Eisenhower administration, he submitted his resignation of the presidency to Governor Hodges in November 1955. One year later in October 1956, William C. Friday was named President succeeding J. Harris Purks who was serving as acting president.<sup>5</sup>

William (Bill) C. Friday was born in Raphine, Virginia but raised in Gaston County, North Carolina. A 1941 graduate of N.C. State, he served in the U.S. Navy and completed his law school studies at Chapel Hill, graduating in 1948. When Chancellor House asked him to be assistant dean of students, he decided to remain since his wife, Ida, was in graduate school there. In 1951 he became Assistant to President Gray. Bill Friday, quiet spoken, possessed with a sense of humor, a congenial personality and cool judgment, quickly caught the spirit of the University. He had been Secretary of the University for less than a year when he was appointed Acting President. The Trustees felt that he was not qualified because he was without a doctorate degree, lacking teaching experience and only 39 years old. While the Board of Trustees continued its search for Gray's replacement, he went to work on problems that had grown into crises due to Gray's frequent absences on federal business. Friday impressed the Trustees with his basic views of academic freedom and his strong feeling that the presidency of the University must be completely free of commitments in its pursuit of its goal to educate the people of North Carolina. On October 18, 1956 William Friday became



President of the Consolidated University.

Late in 1948 the University obtained an emergency appropriation from the Governor for the development of a Division of Health and Medical Affairs within the structure of the University of North Carolina in Chapel Hill. The committee in making this appropriation request said that the basic purpose of Health Affairs is to preserve the health of the people of the State through education of young people, to improve health through research, and determine what are and how best to meet the health care needs of the State. Such a Division was considered by the Administration to have precedence among many of the large universities throughout United States and believed that this would strengthen the development of the medical and health center already located in Chapel Hill.<sup>6</sup> The University of North Carolina had a long record of education, research, and service in the State and the whole southeast. It had a two-year medical school, a School of Pharmacy and in 1934 a School of Public Health was added. The legislative appropriation expanded the two-year medical school to one of four years, and included construction of the hospital facilities for the four-year school. It also established new schools of nursing and dentistry.<sup>6</sup>

The organizing committee for the new Division of Health and Medical Affairs established an administrative structure to oversee all the departments including the teaching hospital. To accomplish this, health science units and the medical school were joined together to create a Division in the University. A health sciences administrator was appointed to coordinate the programs of the units and be the official medium of communication between the deans of the five health science schools and the Director of the Hospital. Dr. Henry Toole Clark Jr. was selected as the first head of the health affairs component in the University and served from 1950 to 1965 with the title Administrator of Health and Medical Affairs. Clark, a 1937 graduate of the University of North Carolina, graduated from medical school at the University of Rochester. After practicing medicine his interests moved to influencing the programmatic thrust of medical organizations, especially medical schools and medical centers. Prior to coming to Chapel Hill he was the director of Vanderbilt University Hospital. An Executive Board (later called the Administrative Board) of the deans of the five member schools and the director of the University Hospital met monthly and at times more frequently to coordinate the activities of the component parts of the Division. Representatives from the Health Sciences Library and other units were added later to the group as the Health Affairs Division in the University increased in size and complexity. The Administrative Board also met to share information from the individual units of the Division, approve programs of study, school projects and faculty appointments, discuss state legislative issues pertaining to the University, budget appropriations, policy guidelines and, in general, any issues that were of interest to the health affairs units..

Clark's interests went beyond the health science schools in the University. He believed that university medical centers should become central elements and catalytic forces in the development of regional medical programs providing good quality health care to all the people of their surrounding area. This university outreach service would develop in such a way as to enhance rather than dilute the traditional university medical center's focus on teaching and research. The health center program at the University of North Carolina seemed fertile ground for Dr. Clark to develop this program. After 15 years as administrator of Health Affairs, Dr. Clark resigned. During his tenure, the newly formed Division met the objectives of training undergraduate and professional students in the health sciences to provide services to hospitals,

health departments and other institutions. It also developed a state-wide appreciation of the components of a good health program.<sup>7</sup>

A reorganization of the Division of Health Affairs was initiated by Chancellor Paul Sharp in July 1965 when he replaced Administrator Henry Clark with a part-time Assistant Vice Chancellor for Health Affairs. At the same time he dissolved the Health Science Division Advisory Board and gave the deans greater authority to administer their programs. The new structure had hardly begun to function when Chancellor Sharp's abrupt resignation was followed by the appointment of Carlyle Sitterson as Chancellor. The administrative plan outlined by Chancellor Sharpe gave deans of the individual health science schools more authority but did not have an opportunity to function for a sufficient period of time, to allow a comprehensive evaluation of its practicality and functional values. However, Chancellor Sitterson, having served as Vice Chancellor of the University, undoubtedly had formed certain opinions about the particular position to which administrators in the Division were responsible and about the function of the Division under such circumstances. A faculty committee supported his belief that there appeared to be too much separateness between Health Affairs and the academic campus recommending a close coordination and integration between the Academic Affairs and Health Affairs campuses. Sitterson saw the need for further reorganization to bring the Division of Academic Affairs and the Division of Health Affairs into one organizational structure recommending close coordination and integration of the two campuses. Each Division would have a top level appointee serving as an assistant to the Chancellor.

The new position formed, a Vice Chancellor for Health Affairs, placed a senior administrative officer with experience in health education serving as an assistant to the Chancellor. He would serve as a liaison to the Chancellor for the Division. The Vice Chancellor would be appropriately devoted to the activities of the Division and have authority and responsibility for the internal operations of the individual schools in accordance with the general administrative policies of the University. His responsibility included coordinating the efforts between the schools in the Division and support their collaboration. Modern concepts of health care, particularly those expressed by the Federal Government through the Public Health Service, emphasize the comprehensive team approach in which services of various professionals and personnel are closely coordinated. C. Arden Miller from the School of Medicine was appointed in 1967 to be the Vice Chancellor for the Division of Health Affairs to support this concept. Following his appointment was a succession of Health Affairs Vice Chancellors from within the University: Cecil Sheps (1970-1976) from the School of Medicine, Christopher Fordham (1977-1980) from the School of Medicine and James Turner (1980-1982) from General Administration. H. Garland Hershey (1983-1997) succeeded Turner in 1983. In 1989 Vice Chancellor Hershey became Vice Chancellor for Health Affairs and Vice Provost. This change was not the result of any change in the structure of the Division of Health Affairs but rather a reorganization of the Office of Provost. This arrangement continued until April 1996, when the Provost was designated the University's chief academic officer. At that time Hershey's title was changed to Vice Provost to Health Affairs and he began reporting to the Provost rather than to the Chancellor. In September 1997, when he returned to teaching in the School of Dentistry, the position of Vice Provost was eliminated and the Health Affairs deans began reporting to the Provost.

### **The Young Edward A. Brecht**

Edward A. Brecht came to the University of North Carolina to teach. A tall, slender man he was easy going and enjoyed working with students giving them riddles to stimulate them to learn. A patient teacher, his teaching method was traditional. He stressed accuracy in information. A native of Minnesota, Brecht received degrees of Bachelor of Science in Pharmacy, Master of Science and Doctor of Philosophy from the University of Minnesota. The family had a drug store in Minnesota Lake, Minnesota where, beginning as a youngster, he learned about retail pharmacy. His parents, a sister Dorothy and a brother Charles were also registered pharmacists. Ed Brecht was recruited by Dean Grover Beard to come to North Carolina in 1939 and become a member of the staff as an instructor following the awarding of his Ph.D. degree. There he joined Dr. Marion L. Jacobs, Ira W. Rose and Dr. Henry M. Burlage. Together with Dean Beard the five taught the pharmacy courses in the curriculum with the assistance of Dr. Henry R. Totten of the Botany Department who taught pharmacognosy. Brecht was an active writer and authored articles and books including being co-author of *American Pharmacy* and contributing to a portion of *Scoville's Art of Compounding*. A smoker, he liked to play golf and was not averse to getting into a poker game with friends in pharmacy. He enjoyed numbers and seemed to thrive on the mental exercise that poker demanded. Brecht was a champion chess player, frequently competing in the North Carolina Chess Tournament.

Marion Jacobs had come to the School in 1926 as an instructor having graduated from North Carolina in 1921 with a Ph.G. degree. At a later time he received his B.S. and M.S. degrees from the University of Nebraska and in 1937 a Ph.D. from the University of Maryland. His discipline was pharmaceutical chemistry. Ira W. Rose, a 1906 graduate (Ph.G.) from the University, was appointed to the faculty in 1931 as associate professor of pharmacy after many years as a community pharmacist. He had been a leader in North Carolina pharmacy serving as president of the North Carolina Pharmacy Association and a member of the North Carolina Board of Pharmacy for many years. Rose had practiced retail pharmacy in Rocky Mount and taught the practical pharmacy courses in the curriculum. Henry Burlage joined the faculty of the School in 1931 to take over the teaching of the late Dean Vernon Howell's courses. He had a strong interest in beginning a research program having received an A.B. degree from Indiana, a B.S. in Pharmacy from Purdue, M.S. from Harvard and Ph.D. from the University of Washington.

After being at the University for three years as an instructor, Ed Brecht was raised to the position of Assistant Professor of Pharmacy and in 1944 appointed Associate Professor. In the spring of 1946 Brecht accepted a lectureship in the University of California School of Pharmacy. When Dean Grover Beard died on April 23, 1946, Ed Brecht was persuaded by the new dean, Marion Jacobs, to remain at the University as a full professor. To



**Marion Lee Jacobs**  
**Third Dean of the School of**  
**Pharmacy (1946-1950)**

assist in the teaching load of the faculty, Doris Hawkins, a graduate student, was hired as an instructor in 1947. Ernestine Lynch was added as an instructor the following year.

Jacobs was keenly interested in expanding the research opportunities at the School of Pharmacy. The School already had a masters program. To support this endeavor, the North Carolina Pharmaceutical Research Foundation was chartered on December 17, 1946 to make funds available to the School for promotion of its graduate program. A petition from the School to award the doctorate degree was approved by the Graduate School in 1947. With the approved doctorate program, Jacobs was successful in receiving a small amount of support from the University to expand the staff. New faculty members holding a Ph.D. degree were added to the present small list of instructors. Herman O. Thompson, a UNC graduate in Pharmacy, joined the faculty in 1947. He had received his Ph.D. from Purdue University and taught at the University of Georgia and the University of Illinois. The following year Fred T. Semeniuk who had a B.S. Pharmacy degree from the University of Alberta and a Ph.D. from Purdue University also joined the faculty. Prior to this appointment, he had been an instructor in Pharmaceutical Chemistry at the University of Wisconsin. To make room for research activities, two rooms in the ground floor of Howell Hall were renovated to form graduate laboratories. Much to Dean Jacob's dismay, Burlage resigned in 1947 to accept the position of dean of the School of Pharmacy at the University of Texas in Austin. Not deterred, the following year he convinced Walter H. Hartung, a nationally respected organic chemist at the University of Maryland School of Pharmacy, to join the faculty at Chapel Hill. Pressing forward, Jacobs commented to the university administration about the inadequacy of the pharmacy building (Howell Hall) to teach pharmacy students and its expanding graduate program.



**Edward Almond Brecht  
Fourth Dean of the School of  
Pharmacy (1950-1965)**

Unfortunately, Marion Jacobs' ambitious plans for expanding the School of Pharmacy were cut short. He suffered an apparent heart attack in the spring of 1949 and asked to be temporarily relieved of his duties while he recovered at Duke Hospital. Ed Brecht took over as acting dean until Jacobs returned for the fall quarter of study in 1949. On March 19, 1950 Jacobs died suddenly of a heart attack in Swansboro, North Carolina where he had gone for a brief vacation with friends. Following Dean Jacobs' death, Ira Rose was named acting dean on a temporary basis since he was close to reach mandatory retirement.

A special committee was appointed by Dean McGavern, acting administrator of the Division of Health and Medical Sciences, to proceed with a national search for a new dean. The Committee reported on June 6, 1950 to the Executive Board of the Division. The Committee's first choice was Dr. Justin L. Powers, of Washington, D.C., Chairman of the National Formulary Committee and Director of the National Formulary Laboratory. The salary offered Dr. Powers were



\$10,000, an amount he said was considerably less than his remuneration with the National Formulary. The search committee in its report to Chancellor House commented that, "...in the event the first choice was unavailable, the matter of designating a second choice should be referred again to the Executive Board of the Division of Health and Medical Sciences for further study and subsequent recommendation to the chancellor." The motion to approve the report was seconded by Professor Rose, and passed unanimously. The Health Science deans, now called the Advisory Board of the Division of Health Affairs, met with Dr. Henry T. Clark Jr. as the Administrator on July 7, 1950 to discuss the prospective candidates for the pharmacy deanship. The two candidates who received the most favorable consideration were Drs. Powers and Brecht. Following a comprehensive discussion of the principal candidates, it was agreed by all that the Administrator should recommend appointment of Professor E.A. Brecht as Dean of the School of Pharmacy. Brecht was viewed by his peers as young, enthusiastic and hard working.<sup>8</sup>

### **The New Pharmacy Building**

As early as 1943, Dean Grover Beard pressed the University administration in letters describing the inadequacy of Howell Hall as a building to teach pharmacy courses. In the waning moments of Dean Marion Jacobs' tenure in 1949 he sent a plea for the University to consider appropriations for a new building for pharmacy. He wrote to Chancellor House as follows:<sup>4</sup>

"The need of a new and adequately equipped pharmacy building is immediately urgent. The School is now housed in Howell Hall, built in 1903 for the Department of Chemistry, and turned over to the School



**Howell Hall on the campus of the University of North Carolina. Constructed in 1906 for the Chemistry Department and occupied by the Department of Pharmacy in 1925.**

of Pharmacy in 1925. Since moving into the building the curriculum of the School has expanded from a two-year course to one of four years duration. This meant that enrollment naturally increased and created a crowded condition as early as 1933 when the four-year course was made mandatory.

The present building was not designed for the School's needs and could not be remodeled to suit these needs short of complete removal of the interior, using only the outer walls. Even this would not prove a satisfactory solution to the problem since the building is too small for present needs and still further expansion is planned in the immediate future, particularly at the graduate level.

Howell Hall is not fire proof. Due to the almost constant use of flammable drugs and chemicals in the building, there is a very real and constant danger of fire breaking out which might easily result in loss of life and would certainly result in the destruction of a large amount of expensive equipment, irreplaceable books and periodicals, and valuable records. The building is not equipped with fire escapes, and there is only one stairway as an exit from the top floor.

The building has been overcrowded since the enrollment in the School exceeded 140 students. There are now more than 220 students enrolled in the four classes, not to mention the anticipated increase in enrollment at the graduate level beginning next year. The auditorium is the only room in the building that will accommodate some of our present large classes, and it is necessary that more than one of these classes be held at the same hours. We are compelled, therefore, to improvise in order to arrange a place for some of the classes to meet.

The greatest bottleneck is the lack of laboratory space and the inadequacy of laboratory facilities. It was necessary last summer to offer certain courses and prevail upon students, with no advantage to them to take these courses during the summer so that the remainder of the class could be accommodated in the regular session. A similar procedure must be followed again this summer, but, even so, an abnormally large number of sections have to be arranged during the regular academic year.

Such essential facilities as hoods, hot water, steam, compressed air, and distilled water outlets are not to be found in the laboratories. The lack of some of these necessitates the omission of important laboratory experiments to protect the student's health. Plumbing and electrical wiring cause almost constant trouble and often interfere with laboratory experiments.

One of the main divisions of the pharmacy course—namely pharmacognosy—is taught in the Botany Department. We are extremely fortunate in having had such an arrangement for many years, but it must be realized that the Botany Department is overcrowded and that it cannot be expected to furnish a laboratory and teacher for this course indefinitely. Furthermore, the time may soon come when the American Council on Pharmaceutical Education will require that this subject be taught in the School. The fact is that there is no space in the present building to teach this important course.

There is no room in the present building for manufacturing pharmacy. An appreciable amount of pharmaceutical products should be manufactured for the University Hospital already authorized. Pharmacy has a role to play in the medical care program of the State, and its ability to fulfill this role will depend, among other things, upon adequate quarters being made available at the proper location. The School of Pharmacy should be closely associated with the hospital dispensary (that will be) located at the new hospital. Indeed, this dispensary should be under the supervision of the School of Pharmacy or at least it

should be administered jointly by the hospital administration and the School of Pharmacy working in close cooperation for the mutual benefit of both, and the special benefit of pharmacy students, by allowing them to receive valuable experience in the compounding and dispensing of medicines. It is also felt that since the medical care program was conceived as a means of providing adequate medical care to the indigent of the State at the least possible cost to the individual, provisions should be made to furnish medicines and medical supplies at as low cost as possible. At the same time pharmacy students will be able to gain valuable experience in manufacturing processes essential in this field of pharmaceutical training.

Since September 1946, the school has been compelled to limit enrollment of entering students. No out-of-state students have been admitted since then, although we have had several hundred inquiries, many of which were from adjoining states. During the same period a great many applicants from North Carolina have been denied admission because of limited laboratory facilities. We are compelled to limit the first year class to 60 students while at the same time there is an acute shortage of registered pharmacists in the State.

This is the only School of Pharmacy in North Carolina. There are two other colleges in the State of which either is in an excellent position to open another school if it should become generally recognized that there is not a sufficient number of pharmacists to meet the needs of North Carolina. Such a development would be highly unfortunate because one school can do the job if adequate space and facilities are made available. And in this connection it should be emphasized that, while those connected with this School are not endowed with monopolistic tendencies, the University stands to profit in the long run if this School endeavors to supply the demand for pharmacists in the State.”<sup>4</sup>

Despite this impassioned plea for a new building by Dean Jacobs, in 1949, the University had other items on its agenda for the health sciences. The Health Science Division was undergoing significant change. The University was planning the expansion to a four-year medical school, construction of a medical center a part of which was a teaching hospital and the initiation of programs to establish a School of Dentistry and School of Nursing. Added to this activity was the reorganization of the administration of the Health Sciences and the eventual formation of the Division of Health Affairs and appointment of new administrator, Dr. Henry T. Clark Jr. for this Division in 1950. The biennial budget for the Division of Health Affairs and comments in the report to the Chancellor said of the School of Pharmacy, “The functions of this well-established School should expand during the 1951-53 biennium to take advantage of training facilities open to pharmacy students by the new dispensing pharmacy in the University Hospital.” Missing was a request for an appropriation for a new pharmacy building.<sup>9,10</sup>

It was going to take some time before money would be appropriated for a new pharmacy building. The enlarged medical school and the new hospital (designated North Carolina Memorial Hospital by the 1951 General Assembly) had many delays and cost over-runs. Also, by 1953 space for the basic sciences department required the addition of a south wing for MacNider Hall. The General Assembly on the recommendations from the Advisory Budget Committee did not recommend funds for any permanent improvements throughout the State in the 1953-1955 biennium budget. The pharmacists of the state were in support for pharmacy and voiced their opinions on the need for a larger pharmacy building. Sons and daughters of pharmacy were being denied admission. Further, they pointed out that there was an acute

shortage of pharmacists in the state. North Carolina stood second from the bottom (47th) in the list of states in the population of pharmacists and pharmacies. The School had been turning away 40 percent of the applicants for admission because of space limitations in the classrooms and laboratories. The University administration actively urged a larger pharmacy building and conversion of the facilities in Howell Hall to accommodate the School of Journalism which was also in need of their own building. In the following year the Advisory Budget Committee visited the campus on July 11 to see the needs for capital improvements for the university in Chapel Hill. In a tour of the campus buildings that included Pharmacy and Journalism, the University Administration emphasized the priority of a new pharmacy building along with funds for remodeling Howell Hall for use by the School of Journalism. With support from Governor Hodges a request for a new pharmacy building was included in the 1957-1959 biennium budget requested to the General Assembly. To start the process the State appropriated \$25,000 in the fall of 1956 to Michael Saphier Associates a New York consulting firm to prepare a preliminary building plan. This turned out to be a poor decision.

The University requested \$1,575,000 for the new pharmacy building in the 1957-59 biennium budget. But Saphier Associates architects not adhering to the original plans, submitted revised plans before their review again by the School. The plan prepared by Saphier Associates Architects would require only \$1,150,000. As a result, the Advisory Budget Commission recommended to the Governor a budget of \$1,150,000 to construct a new pharmacy building. In this reduced cost estimate was a recommended reduction of square footage for the building below what was originally requested (from 71,875 sq. ft. to 63,400 sq. ft.). A larger part that created the reduced cost was the estimated square-foot cost of construction of only \$14.67 that was well below what University authorities had considered an acceptable minimum. The problems with the architect's presentation were many. The building, as planned, now had a reduced capacity for students. There was no pharmacognosy laboratory, the basic shape of the building was unsatisfactory to the Dean and faculty, and its design limited the future expansion of the building if and when this would be needed. The University dismissed Saphier Associates and engaged Holloway-Reaves, an architectural firm from Raleigh, to revise the plans to suit the needs of the University. With great speed, plans were approved, ground was broken for the new building on May 27, 1958, and the building dedicated April 24, 1960 with classes having begun in the Spring Semester 1960.

The original planned location of the pharmacy building was on the east side of Pittsboro Road opposite what was then, in 1956, the main entrance of the Memorial Hospital and closely adjacent to the Medical, Dental and Public Health schools. This location would have allowed faculty and students to take advantage of the activity in the other health professional schools. However, this location (Bell Tower parking lot) was considered to be a difficult building site since it was 12 feet below the existing street level. After review of the merits of the "eastern" location, the Building and Grounds Committee decided to place the new building on the West side of Pittsboro Road at the site of the old Chapel Hill High School. The Dean and faculty requested the Board of Trustees of the University name the new pharmacy building Beard Hall to honor John Grover Beard who was a graduate of this University (Ph.G. 1909) and had been immediately appointed to the faculty, rising through the ranks from instructor to professor. Beard served as the secretary of the North Carolina Pharmaceutical Association from 1913 to 1939 and was recognized nationally as a





**John Grover Beard**  
**Second Dean of the School of**  
**Pharmacy (1931-1946)**

pharmacy leader. He was the Dean of the School of Pharmacy from 1931 until his death in 1946.<sup>11</sup>

With the enactment of Public Law 835 the School of Pharmacy became eligible to apply for construction aid under the Health Research Facilities Program grant since approximately 34 percent of the proposed building qualified as research space. It received a grant of \$50,000 pending the availability of matching monies from the State. In 1959 the General Assembly appropriated a supplementary sum of \$140,000 from a legislative bond issue. Together with the \$50,000 grant from USPHS, the School was able to finish equipping the building with casework for the laboratories. The finished construction of the ground floor of Beard was not included in the original plans of the School. The Board of Higher Education Pharmacy in the 1959-1961 biennium budget recommended an appropriation of \$93,000 to the School to complete the northeast corner of the basement to house the Radiation Safety Office that provided a monitoring service for radioactive materials and research for the entire campus.

### **Pharmacy in the 50s and Early 60s**

In the first meeting of the faculty after Ed Brecht became Dean, a casual mention by him that the curriculum of the School of Pharmacy ought to be revised met with enthusiastic affirmation. Students declaring Pharmacy as their major field of study, were admitted as freshmen by an admissions committee of the Dean and two pharmacy faculty. To enter the University as a freshman a student must rank in the upper half of their high school class. Transfer students to the pharmacy program could enter after one year of college and were required to present a "C" average on all previous college work. Freshman students were enrolled in General College and pharmacy courses beginning with their first-year of a four year curriculum. When the accrediting committee of the American Council on Pharmaceutical Education inspected the School for accreditation in 1950, they recommended that changes be made in the courses offered to the students in Pharmacy. The curriculum they reviewed included a required course for all freshmen in Personal Hygiene taught by the Athletics Department, Pharmaceutical Latin, Botany, Zoology, Physiology and Pharmacology and the pharmacy courses. The accreditation committee noted that there was no course in Physics or Bacteriology. Following a review by the faculty, the curriculum was then revised to include courses in bacteriology, pharmaceutical jurisprudence and dispensary practice. The basic medical science courses were offered by departments in the Medical School to Pharmacy and Dental and Nursing students. Financing for this instruction was provided by budget transfer from the individual schools to the Medical School. Still wrestling with the organization of the newly formed Division of Health and Medical Affairs in 1951, an agreement was made with the medical school faculty for the basic science

departments of the Medical School to be consolidated into the Basic Science Departments of the Health Sciences Division.

There were many other problems facing the new dean in 1952. He reported that the School of Pharmacy was 20 percent above student capacity in its present old building. The enrollment in Pharmacy included 217 undergraduate and 13 graduate students. The State had a serious shortage of pharmacists compared to the rest of the nation. A study by the North Carolina Board of Pharmacy came to the conclusion that the State needed 875 more pharmacists to bring its number to the national median of 61.3 pharmacists per 100,000. Admission to study pharmacy was limited because of the lack of space in an already crowded Howell Hall. The Committee on Admissions accepted one out of three applicants into the Pharmacy curriculum. Applications to study pharmacy from nonresidents of North Carolina were turned down. Admission of women was limited to not more than 10 percent by action of the pharmacy faculty.<sup>12</sup>

When Ed Brecht took over the deanship of the School of Pharmacy in 1950 the faculty included Dr. Walter Hartung who taught pharmaceutical chemistry courses (organic and inorganic pharmaceutical chemistry and drug analysis); Dr. Herman Thompson, teaching pharmaceutics (dosage forms) and Pharmaceutical Specialties (drug products); Dr. Fred Semeniuk who taught organic chemistry and *Materia Medica*; Professor Ira Rose, who taught Dispensing Pharmacy and a practical pharmacy course; and the Dean who taught beginning pharmacy courses and Pharmaceutical Calculations. Instructors and graduate assistants assisted in the instruction. The budget permitted one instructor and two part-time instructors in 1951. Bill Taylor, B.S. '47, employed as a pharmacist at N.C. Memorial Hospital, was a part-time instructor in hospital pharmacy. The curriculum was heavily endowed with laboratory courses. The four-year B.S. curriculum in 1952 had 1,764 didactic and 1,746 laboratory hours of instruction. The M.S. and Ph.D. programs required additional hours of instruction.

The number of faculty from the late 1950s to the early 1960s rose from nine to twelve to keep pace with the increases in enrollment in the undergraduate program once Beard Hall was occupied. Needing instructors in 1955, Ben Cooper, B.S. '50, M.S. '51, Ph.D. '56; and Francis Hammerness, Ph.D. '56; who completed their graduate studies, were appointed instructors and promoted the following year to assistant professors in Pharmacy and Pharmacy Administration, respectively. Following the 1955-56 academic year, the School lost two faculty members who resigned to move to another school of pharmacy reducing the number of full-time faculty to three. Philosophical differences in the curriculum caused changes in the faculty. Walter Hartung elected voluntary retirement from UNC in 1956 after accepting a faculty position at the Medical College of Virginia School of Pharmacy. John Andrako, an assistant professor in pharmaceutical chemistry for one year, resigned also to accept a faculty position at the Medical College of Virginia that same year. Chancellor House, on receiving the resignations of Drs. Hartung and Andrako, said, "the School of Pharmacy has lost its primary scholar and best teacher." The following year Dr. Sigurdur Jonsson, with training as a synthetic organic chemist, from the New England College of Pharmacy joined the faculty to replace Hartung. Dr. Earl T. Brown, B.S. '52, a recent Ph.D. in Pharmaceutics from UNC, was appointed to replace Andrako. Dr. Claude Piantadosi, Ph.D., '54, assistant professor at Fordham University School of Pharmacy, returned to UNC in 1957 to a new position as assistant professor and was assigned to teach the dispensing course, replacing Ben Cooper who had resigned to accept a position on

the faculty at Oregon State University. When Francis Hammerness also resigned to accept a position at the School of Pharmacy at the University of Colorado, Edward Smith, B.S. '59 with a master's degree in Business in 1962 was appointed instructor to teach courses in Pharmacy Administration. The 1957-58 biennium budget included one new faculty position. George Cocolas, Ph.D. '56, left industry to join the faculty in 1958. This appointment completed the eight full-time budgeted faculty members in the School of Pharmacy. Until Beard Hall was completed in 1959, these faculty members, 244 B.S. and 12 graduate students all were housed in Howell Hall. The move of the Pharmacy School to its new quarters in Beard Hall allowed the School to increase its enrollment of undergraduate students. The size of the classes rose dramatically from 60 students per class in 1955-1956 to 120 first-year students per class in 1961-1962 when the School moved to the new building.

The School of Pharmacy and North Carolina Pharmaceutical Association (NCPhA) had a close relationship through the years. NCPhA was established in 1880 and served to represent the pharmacists of the state. Both the School and the Association worked to develop public interest in pharmacy as a profession. Scholarship aid and loans have been made available since the 1950s from an endowment fund in NCPhA. The central office of NCPhA was brought into the School of Pharmacy when Professor J.G. Beard was elected NCPhA secretary in 1912. He accepted the additional duties as treasurer in 1918 and editorship of the *Carolina Journal of Pharmacy* in 1920. These services were continued through the first ten years of his deanship, until 1940 when Mr. W.J. Smith was secured for full-time duty as secretary-treasurer of NCPhA and editor of the *Journal*. One room on the ground floor was provided for the Association. In September 1951 this office was moved to the North Carolina Institute of Pharmacy, the newly constructed building of the state association. The central office of the North Carolina Board of Pharmacy was also located in one small room on the ground floor of Howell Hall since the appointment of Mr. H.C. McAllister as secretary in 1944. His office moved to the Institute of Pharmacy in December 1951. For many years the facilities of the School of Pharmacy had been used as the site of the semi-annual examination for the licensure of pharmacists. Both of these organizations were strong voices to the State Legislature and the University in support for a new pharmacy building.

### **The Curriculum Change**

A 1927 resolution by the NABP, caused the Association of Colleges of Pharmacy, after much debate, to adopt in 1932 a four-year course of study for pharmacy at the baccalaureate level that included a minimum five-day schedule of instruction and 3,000 hours of instruction, at least 1,200 hours of lectures and recitations, and a minimum of 1,500 hours of laboratory. It was the intent by the colleges in the 1930s to raise their courses of instruction to baccalaureate academic standards to give the pharmacy graduate professional status. Once the baccalaureate degree education was decided, colleges debated about the name of the degree. At the onset of awarding the baccalaureate degree Pharmacy had not yet established itself as an area of study to most university four-year baccalaureate programs. In an editorial, pharmacy dean Ernest Little of Rutgers University wrote that when pharmacy became a four-year curriculum it had an option for the degree to be designated as a Bachelor of Pharmacy (B. Pharm.) or Bachelor of Science in Pharmacy (B.S. Pharm.). Little pointed out that the Bachelor of Pharmacy was a specific and distinctive

degree but weaker than the Bachelor of Science degree. In 1932 the “Bachelor of Pharmacy, was not known well, had less prestige, was less advantaged and less appreciated and that the degree should be a Bachelor of Science in Pharmacy, (B.S. Pharmacy) would be preferred to give the graduate more credibility and application for graduate study.<sup>13</sup> He said the Bachelor of Pharmacy degree may later enjoy a standing equal to the Bachelor of Science degree but in the meantime advocated using the Bachelor of Science designation. Colleges viewed the B.S. Pharmacy degree as a four-year course of study with a broad scientific course of study with a major emphasis on pharmacy and the majority adopted it.

The end of the Second World War was a turning point for many health professions, including pharmacy. The War had not helped the health profession, as many had been called to the War effort, causing disruptions in health manpower, student enrollments and faculties in higher education. There were shortages of pharmacists and pharmacy faculty, but an abundance of students returning from the War using the G.I. Bill.

The metamorphosis of pharmacy education began with the end of World War II and the publication of *The Pharmaceutical Survey in 1947-1949*.<sup>14</sup> The findings and recommendations of the *Survey* and those in the publication *The Pharmaceutical Curriculum* by Blauch and Webster<sup>15</sup> laid the foundation for a major restructuring of the way in which pharmacy students were taught. The publications pointed out that the science and technology of pharmacy had grown so complex that four years of study in pharmacy were inadequate for the baccalaureate degree. The *Survey* recommended that member colleges accept pharmacy students into a four-year program after completing two years of pre-pharmacy courses and urged implementing a six-year doctoral program start “at the earliest possible date.” The purpose of the *Survey* was to insure that Pharmacy continue to occupy its proper place among health professionals in the “post war era” that was marked by expanding opportunities for greater health service to the public. Not surprisingly, the recommendation for the six-year program met considerable resistance. Some believed that the four-year baccalaureate could be adjusted to meet the needs of the *Survey* recommendations. Other schools lacked the facilities and faculty to offer a doctoral program. Finally, quelling the debate the American Association of Colleges at their 1954 annual meeting passed a resolution that adopted the requirement of a minimum completion of five years as the curriculum in pharmacy to be effective after April 1, 1965. The five-year curriculum permitted more effective sequencing of courses and brought students into the professional program better prepared in the basic sciences. In January 1956 the American Council on Pharmaceutical Education adopted a new accreditation standard stating, “...on and after July 1, 1960, no college of pharmacy would be eligible for accreditation unless it provided an overall five-year educational program.”<sup>16</sup>

Pharmacists in North Carolina were not in favor of the new curriculum. North Carolina was ranked 47th of the 48 States in the ratio of pharmacists to population. There were 1.66 pharmacists in the approximately 990 pharmacies in the State. There was also a pressing need for hospital pharmacists. The additional year of study meant a one-year hiatus in the graduation of a full class of pharmacy students into a market already needing pharmacists. Ed Brecht was not thoroughly enamored with the five-year curriculum. In 1947, he wrote this about the five-year curriculum, “...if the four-year curriculum is not good, then the present energy could be better spent in its improvement.” His position had not changed since then, and he voted against

the five-year curriculum resolution at the AACP annual meeting. His argument was based on his beliefs of preparing students for the practice of pharmacy.

The five-year curriculum instituted at the School of Pharmacy was a 1-4 program that included one year of pre-pharmacy courses in the General College followed by four years in the School of Pharmacy. Students majoring in Pharmacy were admitted to the General College after review by an admission committee of the Dean, Assistant Dean, a pharmacy staff member, and the Director of Admission of the University. With the additional year of study, the new curriculum afforded an opportunity for the School to increase the size of its faculty during the 1959-60 academic year.

Dr. Melvin Chambers was appointed to the School in 1959 and began his duties as Assistant Dean. He came to UNC after two years with Merrell Laboratories in Cincinnati as a Professional Service Manager. Prior to that he had been Dean of the Southern College of Pharmacy in Atlanta for five years and while there was instrumental in the merger of the school of pharmacy with Mercer University in Atlanta. In that same year, Allan Goodeve, a native of Canada with degrees of B.S. in Pharmacy from the University of Toronto, M.S. from the University of Saskatchewan and Ph.D. from Purdue University, was added to the faculty to teach pharmacognosy to the Pharmacy students, relieving Dr. Totten of the Botany Department after many years of service. Dr. James Brannon was appointed assistant professor of pharmacy in 1959 to teach beginning pharmacy courses. He had received his B.S. and M.S. degrees in Pharmacy from the University of Illinois and Ph.D. from the University of Kansas.

The School experienced a turbulent time in the early 1960s when many faculty members were added and almost as many left for a variety of reasons. In 1960, two resignations were submitted to the dean. Newly appointed faculty after a short period of time resigned to accept other opportunities in academic pharmacy and the industry. Allan Goodeve left to go back to Canada to teach at the University of British Columbia, and Carl T. Baugess, '54, the Director of Pharmacy Extension, resigned to devote more time to graduate study. Dr. Chambers who had joined the faculty at that time as Assistant Dean and Professor of Pharmacy Administration was assigned to revive the continuing education program as part of his duty as assistant dean. Dr. Albert W. Jowdy, a North Carolina native, who had received his doctorate from UNC returned from community pharmacy practice to join the faculty to teach courses in Pharmacy Administration in 1960 but resigned in 1966 to accept a faculty position at the University of Georgia. Four new faculty members were then added to the School of Pharmacy in 1961 as assistant professors. Dr. James C. Kellett, a recent graduate from Purdue, was appointed to the faculty in 1961. He was assigned to teach the organic chemistry courses for pharmacy students but then took a leave of absence in 1963 from the School to accept a one-year position with the National Science Foundation. He did not return after his sabbatical. Dr. Margaret Ann Shaw a B.S. pharmacy graduate from Kentucky with a Ph.D. from the University of Florida, joined the faculty and was given the responsibility to teach the dispensing course in the curriculum, that was at that time considered the capstone course of the B.S. Pharmacy program. Dr. Paul J. Wurdack, a native of Pennsylvania with degrees of B.S., M.S. and Ph.D. from the University of Pittsburgh, was appointed to teach courses in Pharmaceutics. With some regret, he returned to the University of Pittsburgh two years later because he could not find a buyer for his Pennsylvania home. Dr. Jack K. Wier, a native of Nebraska, came to the faculty to teach Pharmacognosy in the pharmacy curriculum, replacing Dr. Goodeve. Wier had



a B.S. degree in Physics from the University of Wisconsin, B.S. and M.S. degrees from the University of Nebraska and a Ph.D. degree in Pharmacognosy from the University of Washington.

Faculty turnover continued. The School lost one of its faculty members, Dr. Sigurdur Jonsson, in 1961 in an automobile accident on NC 54, the state road that was the main artery to Raleigh. Dr. Brian W. Fitzgerald was appointed to the faculty in 1962 and was assigned to teach physical pharmacy. A native of Yonkers, New York he received his bachelor's degree in pharmacy from the University of Columbia and M.S. and Ph.D. degrees from the University of Connecticut. That same year two faculty members resigned from the School. Dr. Brown, who had joined the faculty in 1956, accepted a lectureship at a small pharmacy program at the University of Addis Abba for two years and then returned to western Carolina to practice pharmacy in a community hospital. In 1964, Dr. Fitzgerald resigned to accept a position at Montana State University. An additional resignation depleted the faculty some more in 1965 when Dr. Margaret Shaw accepted a faculty position at the Butler University College of Pharmacy. The School now had four unfilled faculty positions.<sup>17</sup>

### **The New Building**

After many months of delay, the students and faculty moved into Beard Hall on November 16, 1959. It was like a family moving into its new home. Faculty and students helped with the move. Students moved the contents of their laboratory lockers in Howell Hall to assigned lockers in the new building. Faculty



**Beard Hall on the campus of the University of North Carolina, circa 1960.**

moved not only their office contents but also laboratory equipment that they were able to move being concerned about damage by the commercial movers. The building, compared to Howell Hall, was spacious. Designed for 473 undergraduate students there were 305 students in the four-year B.S. program at that time. The building area was 69,240 square feet and had some unusual features. The walls were lined in the traffic areas with a light-colored enamel wainscot 53" high to reduce wear on the building. All horizontal plumbing was exposed but made less obvious by black ceilings and lowered fluorescent lights. The air circulation in the building was created by forced ventilation divided into zones separating the laboratories on the second and third floor from the first floor offices and classrooms. The building was heated using steam lines from the university power plant less than a mile away. There was no air conditioning.

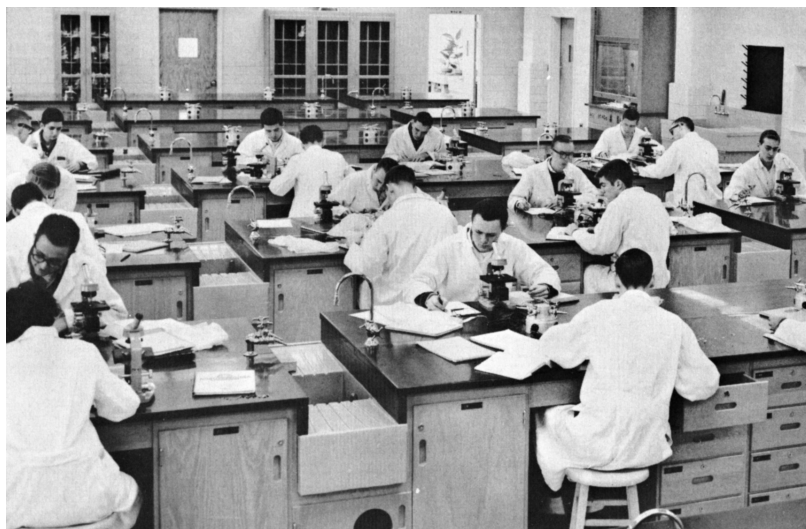
The first floor contained administrative offices and classrooms, including one large auditorium designed to seat the entire student body at that time (Room 111). Each of the two corridors leading to Room 111 was lined with museum cases containing items found in pharmacies in the early 1900s. One segment of the first floor was a retail laboratory with movable fixtures to allow for study of store layouts, traffic control and inventory systems for students for studies in pharmacy administration courses

There were four large laboratories on the second floor located on each of the four corners of the building to accommodate the



**Basic Pharmaceutics Laboratory exercise in Room 202, Beard Hall, School of Pharmacy, University of North Carolina.**

laboratory courses in the undergraduate curriculum. A stockroom for all four laboratories was centrally located. One laboratory was used for beginning pharmacy courses. Across the hall was another laboratory of equal size designed for typical dispensing and compounding functions. A room used by the laboratory assistants for preparing materials for both laboratories was located in a corridor between these large laboratories. Of the two other laboratories, one was used for third-year pharmacy students for a course in compounding preparations according to the U.S.P. and N.F. The fourth laboratory was designed for the students taking the organic chemistry course taught in the School of Pharmacy. At the end of each of these large laboratories were a faculty office and two faculty office laboratories. Each of the four large laboratories could accommodate a minimum of 64 stations for students at one time. Across from the centrally located stockroom, which was manned by Clifton Stone for almost 40 years, was a student laboratory housing analytical balances for use in laboratory exercises. On the third floor a laboratory equal in size to one of the four laboratories on the second floor was modified slightly to accommodate students taking the Pharmacognosy course in



**Pharmacognosy Laboratory exercise in Room 302 Beard Hall, School of Pharmacy, University of North Carolina**

the curriculum. At the South end of this laboratory was an inside greenhouse for natural products research. Across the hall from the pharmacognosy laboratory was another large laboratory designed to teach manufacturing pharmacy operations. It housed tablet machines, coating pans and an area to wash down the industrial equipment. Located in this lab was a sterile solution room with an autoclave that could be used as a back-up for preparing sterile solutions for the Hospital. The

other half of the third floor consisted of 17 laboratory offices for graduate students, each with a ventilation hood. Refrigeration units and rooms for special laboratory instruments were also included in this area.

### **Accreditation**

Schools of pharmacy undergo periodic examination for accreditation. The accrediting agency, The American Council on Pharmaceutical Education (ACPE), is sponsored by the National Association of Boards of Pharmacy (NABP), the American Association of Colleges of Pharmacy (AACCP), the American Pharmaceutical Association (APhA) and the American Council on Education (ACE). It has established guidelines and standards for educational, scientific, and professional principles which schools or colleges of pharmacy are expected to meet and maintain. Each of these sponsoring organizations has two members from their organization on the Council that reviews the reports of the examining committee. Standards for accreditation are periodically revised to keep up with the contemporary practice of the profession. Graduates of accredited schools have the credential to take state licensure examinations to practice pharmacy. Representatives of the Council and an invited local Board of Pharmacy member are part of the examining team that makes an accreditation visit.

The School of Pharmacy was examined for accreditation in December 1954 by Hugo Schaefer, Dean of the Brooklyn College of Pharmacy, Melvin Green, Director of Educational Relations of ACPE, and H.C. McAllister, Secretary-Treasurer of the North Carolina Board of Pharmacy. The report from the accrediting team was sent to the School after the Council met in early January 1955. The examining committee found fault with the contents of the B.S. Pharmacy curriculum. The curriculum of the four-year program was lacking a course in physics and biochemistry. The poor physical plant of Howell Hall was also noted. The Committee also urged the School to take advantage of its affiliations with the Division of Health Affairs which were not evident to the examiners. They recommended that the School press forward to move to a five-year curriculum that was being discussed at the national level by pharmacy organizations. Despite



these shortcomings, the site visit team said there was enough strength in the School, and it was accredited. However, the Council left several recommendations to be addressed by the School.<sup>18</sup>

The Council's next visit to the School was about five years later on May 4-5, 1960. The examiners, Melvin Green of ACPE, H.C. McAllister and Robert P. Fishelis, Secretary of the American Pharmaceutical Association, reported that there was no substantial improvement in the four-year program from the previous visit. The curriculum still needed revision that should include more than one semester of physics, a course in biochemistry and expanded course offerings in the discipline of Pharmacy Administration. The examiners noted that the morale of the School was being affected at both the student and faculty level because of difficulties in the working relationship between the School of Pharmacy and departments in the School of Medicine. The Council gave the School full accreditation but scheduled a return to reexamine the School on a shorter term than normal.

On March 9-10, 1964, Louis C. Zopf, Dean of the School of Pharmacy at the University of Iowa, Melvin Green and N.O. "Spec" McDowell from the North Carolina Board of Pharmacy, as examiners for the American Council on Pharmaceutical Education returned to the School for an evaluation of its progress in correcting the curriculum deficiencies that were cited in the previous visit. At the same time, representatives of the Southern Association of Colleges and Schools were at the School to evaluate the graduate program. In the course of the examination by both these accrediting agencies it became apparent that there was considerable faculty discord that seemed to prevent good progress. Faculty meetings were tense with much time taken to make corrections on the previous meeting minutes and committee reports. After receiving a preliminary report by the Council that was strongly critical of the School, Brecht discussed the Report with Health Affairs Administrator Henry Clark and President Friday. On March 13, 1964, Ed Brecht submitted a letter of resignation to Chancellor William B. Aycock. The pharmacists of the state were surprised on hearing of the resignation, and their reaction for Ed Brecht to remain as Dean was overwhelming to him. Late in April he sent a letter to Dr. Clark withdrawing his resignation.<sup>19</sup>

The final report of the Council and its decisions based on the findings of the examination committee were sent to the University in July 1964. The report stated that there were many elements of weakness in the School and they were grave. Furthermore, that the School must act vigorously to correct its weaknesses immediately or show cause why it should not be dropped from the list of accredited colleges of pharmacy citing "...there were problems of faculty inertia and a lack of leadership that have been present in this School much too long without serious attempt to solve them." The Council planned to revisit the School during the spring of the 1964-65 academic year at which time there must be evidence of "...a clearly defined plan for resolution of the problem of inadequate instruction in pharmacology; complete cooperation of the faculty with the Dean; the faculty functioning more effectively as a team either under present leadership expressed in a more productive manner or under new leadership; the faculty working diligently on restructuring the curriculum; and the School working closer with other health professions on campus."

When the report from the American Council on Pharmacy Education was received by the University, Health Science Administrator, Henry Clark, wrote to Chancellor Paul Sharpe on September 1, 1964 that he was advising President William Friday to appoint a committee from the general University faculty to examine the School of Pharmacy program and make a report to the University. The University asked and

received a postponement of planned accreditation visit scheduled in the fall of 1965. The special University Committee, chaired by Thomas W. Christopher of the UNC School of Law, after detailed review of documents and interviews of the School administration and faculty, visits by consultants Dean Hal Hewitt of the University of Connecticut and Dean George Webster, of the University of Illinois, recommended that a new dean of the School of Pharmacy be appointed and that the faculty who created disruptive and obstructive activities in the faculty be censured and the censure be placed in their official University personnel files. The conditions in the School did not materially change and in the spring of 1965 Edward Brecht resigned the deanship for the second time effective July 1, 1965. John Larsh, Professor of Parasitology in the School of Public Health, was named interim dean until a successor could be found.

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## THE HAGER YEARS

### The Beginning

On the morning of January 3, 1966 Dr. George P. Hager walked into the main office of the School of Pharmacy to assume the deanship. Facing him was a program that was seriously understaffed, student enrollments not reaching projected numbers, a faculty that had not yet matured to its potential, a curriculum that needed revision to satisfy the accreditation requirements and a lack of visibility nationally and in the University. As formidable as these problems may have been, there were many positives already in place. The School had a relatively new physical facility, a cadre of loyal pharmacy alumni in the state, the advantage of being located in a University that was already known for its academic excellence, the presence of other health professions schools including a medical center, and in close proximity to the growing Research Triangle Park complex located between the three universities in Durham, Raleigh and Chapel Hill.

At that time, George Hager was the 65th president of the American Association of Colleges of Pharmacy. He had left the post of dean of the School of Pharmacy at the University of Minnesota that he held for the past nine years to come to Chapel Hill. Hager was a graduate of the University of Maryland with a B.S. degree in Pharmacy. He began his graduate work at the University of Colorado and then returned to his alma mater to receive graduate degrees (M.S. in 1940 and Ph.D. in 1942), majoring in pharmaceutical chemistry with minors in pharmacology and microbiology. His formal education was concluded with a postdoctoral position in biochemistry at Northwestern University. Hager's working career began with employment at Eli Lilly as a research organic chemist before entering the academic community in 1945 at the University of Maryland and rising rapidly through the ranks to professor in 1948. In 1955 he returned to the pharmaceutical industry at Smith Kline & French Laboratories in Philadelphia and remained there until 1957 when he was selected as dean of the School of Pharmacy at the University of Minnesota. A tireless worker he knew no limit to his working hours. Quoting C. Boyd Granberg, editor of the *American Journal of Pharmaceutical Education* about Hager's tenure there, "His kinetic activity has resulted in a prodigiously productive term and an extension of the excellence and fame both of the undergraduate and graduate programs at the college."<sup>1</sup> a fact from which the University of Minnesota continues to benefit.



**George Philip Hager  
Fifth Dean of the School of  
Pharmacy (1966-1974)**

### Addressing Change

The first year of George Hager's tenure was a whirlwind of changes which modified existing programs

and started new ventures in education. The ACPE accreditation team in 1964 suggested that the School needed to take advantage of its presence in the University's health science complex and improve its visibility in the University. While it would take more than a single action to address this issue, Hager began by asking Chancellor Carlyle Sitterson to replace the School's present Administrative Committee of only pharmacy faculty with an Administrative Board of the School that included Frank M. Duffey, Associate Dean of the College of Arts and Sciences, Claude S. George, Associate Dean of the School of Business Administration, Louis Harris, Associate Professor, Department of Pharmacology, School of Medicine and pharmacy faculty members, Chester Cavallito, Albert Mattocks, Claude Piantadosi and Herman Thompson. The change provided Hager a committee of individuals with broader University ties that made requests for administrative changes and curriculum modifications for the graduate and undergraduate programs.

The administration of the School of Pharmacy in 1966 was very much like those of small departments in the University rather than a professional school. The administrative officers were the dean, an assistant dean and, later in 1969, an assistant dean for fiscal affairs. There were no committees and, at first, there was no agenda to appoint any. The faculty of the School who taught the undergraduate and graduate courses in Pharmaceutical Chemistry, Pharmacy, Pharmacy Administration and Pharmacognosy numbered nine, including the dean. The staff was spartan. There were no secretaries other than those in the main office. Office facilities were limited. Faculty correspondence could be typed by the secretaries but manuscripts were prepared by faculty members until more staff was hired when Divisions were formed. All telephone calls went through a main switchboard in the main office. Despite these early conditions, administrations of all the deans have been supported by a dedicated and stable staff of workers.

The new research facilities in Beard Hall allowed faculty to apply for Federal grants with some success not experienced before. Extramural funding was received by Claude Piantadosi from the National Science



**Secretaries' Office in 101 Beard Hall, School of Pharmacy, University of North Carolina**



Foundation and the National Institutes of Health throughout the early 1960s and beyond. Grant support was received by James Kellett from the National Science Foundation and the National Institute for Neurological Diseases and Blindness and by George Cocolas from the National Institutes of Health and the National Science Foundation. The school was also able to receive a National Science Foundation equipment grant. Two empty faculty slots from faculty resignations allowed Hager to improve the research program by bringing in two seasoned scientists that brought focused research programs to the School and a contribution to the teaching effort as well. Chester J. Cavallito, a nationally respected chemist and researcher in the neurosciences, joined the faculty in July 1966. Prior to coming to Chapel Hill, Cavallito had served as Director of Research and Vice-President at Neisler Laboratories. Albert M. Mattocks, Professor of Pharmacy and coordinator of Hospital Pharmacy Education and Research at the University of Michigan, was the second new faculty member. Each served as anchors of their research discipline in the School and mentors to the junior faculty. With their presence, the research program began to develop recognition locally and nationally. Cavallito was awarded a Medicinal Chemistry Training Grant in 1967 from the National Institutes of Health to support graduate study and also received pharmaceutical industry funding for research by postdoctoral fellows. Mattocks had already developed a program at the University of Michigan in biopharmaceutics that was at its beginning stages in 1966 as a science to be used by pharmacy and pharmacists in drug therapy monitoring. Two adjunct faculty members in Medicinal Chemistry were also added, Monroe E. Wall, Director of the Research Triangle Institute in the Research Triangle Park, and Fred L. Snyder at the Oak Ridge Research Laboratories in Tennessee, to recognize ongoing research collaboration between their research laboratories and faculty in the School.

University budgets did not provide new faculty positions in 1970-71 and 1971-72; however, funding from private sources and grants by the Federal government in the form of Capitation awards that began in 1970 provided support to increase faculty manpower. With the addition of several faculty members to serve as clinical instructors, the University administration asked for justification for the new faculty. The question was raised because the development of clinical instruction for pharmacy students was not widely known or understood and believed to be research oriented. Hager responded by saying, "...a substantial proportion of full-time faculty members is devoted to the instruction of undergraduate students and other activities associated with this (e.g., counseling, etc.). No member of the faculty of the School of Pharmacy has been employed primarily for research activities."<sup>2</sup> As the number of faculty increased, George Hager departmentalized the School in 1968 into divisions of Medicinal Chemistry and Pharmacognosy, Pharmaceutics, Pharmacy Administration, and Pharmacy Practice and appointed a chairperson to carry out the administrative duties of each. Staff was assigned to the Divisions to provide secretarial and record-keeping support for the faculty. By 1972 the faculty who numbered nine when George Hager began had grown to nineteen.

Pharmacy manpower was an ongoing problem for the State with few exceptions each year. Community pharmacies were manned with an average of 1.7 pharmacists per pharmacy, and many had voiced their support to the State Legislature to appropriate money for the construction of Beard Hall. The population of pharmacists per capita in the early 1960s was reported to be the lowest in North Carolina except for the state of Alaska. To make pharmacy an attractive major, an active program of recruitment and scholarships began

to take shape. Career information was provided to pre-health counselors in community and junior colleges and high schools across the state and a minority program was activated through the Urban Coalition that aimed at recruiting minority students in health profession programs. The School had an information booth in the Reynolds Pavilion at the State Fair for many years. Scholarships and loans were made available to qualified students through funds by the North Carolina Medical Care Commission, a Health Professional Scholarship Program, the North Carolina Pharmaceutical Association Scholarship Endowment Fund, the North Carolina Pharmaceutical Research Foundation, and wholesale pharmaceutical companies in North Carolina. These efforts slowly raised the enrollment applications to the School.

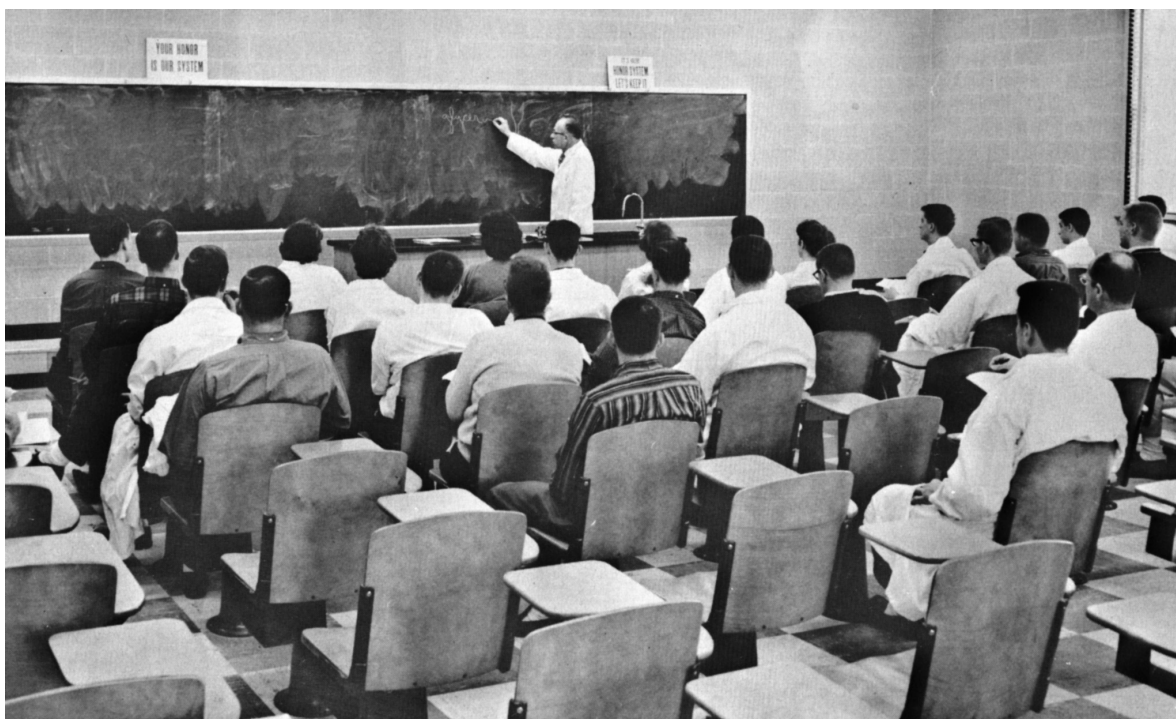
The growing undergraduate and graduate programs of the School of Pharmacy required additional University support. When the University submitted to the Board of Governors for Health Education a list of budget requests for new programs and improvements in existing programs for the 1973-75 biennial budget,<sup>3</sup> one line item was included in the University biennial budget for the Pharmacy Clerkship. The Clerkship Program that required a lower student-faculty ratio was competing with capital improvement construction requests and program increases for the schools of Medicine and Dentistry. The School of Medicine was increasing its class size from 75 to 100 students and the Dental School classes were increased from 55 students to 75 students. The low priority for Clerkship Program failed to provide additional faculty needed for this program or other pharmacy faculty appointments to compensate for the rise in student enrollment in the undergraduate program. With the increased class sizes of undergraduate student classes, teaching loads took away faculty research time and with few exceptions research by faculty was limited to the summer months.

Hager made administrative changes beginning in 1967. Melvin (Mel) Chambers had been appointed assistant dean of the school in 1959 by Ed Brecht. Prior to this he had been dean of the Southern School of Pharmacy in Atlanta and had left academia to be with Merrill Laboratories in Cincinnati before coming to Chapel Hill. When illness prevented him from continuing as assistant dean, he resigned this position in 1967 and returned to teaching in the Division of Pharmacy Administration. LeRoy Werley, whom Hager had known from his days at the University of Maryland, was appointed in September 1967, replacing Chambers as assistant dean to be responsible for admission, registration, recruitment, and to monitor the progression of students through the curriculum. Werley who had recently completed a career in the United States Air Force was serving as administrator of the hospital at Andrews Air Force Base in Washington. He received his B.S. Pharmacy degree from the University of Maryland and a Master's degree in Hospital Administration from the School of Public Health at the University of Minnesota. In 1969, Hager recruited David R. Work as assistant professor of Pharmacy Administration to teach Pharmacy Law to the students. Work, a pharmacy graduate from the University of Iowa with a J.D. degree from the University of Denver, was at that time with Blue Cross Blue Shield in Chicago. The Law course had been taught by H. C. McAllister, secretary of the North Carolina Board of Pharmacy, who welcomed the relief from teaching. As the paperwork in managing the program grew, Work was appointed assistant dean in 1971 to assist in the administration of the fiscal affairs of the School.

## **The Curriculum Change**

Henry Clark Jr., UNC's Administrator for Health Affairs and husband of Blanche Burrus Clark, a '41 UNC pharmacy graduate, in an address at the annual meeting of the American Pharmaceutical Association in August 1964, challenged the pharmacy profession to develop good practitioners.<sup>4</sup> From a physician's standpoint, he saw the general public's image of the community pharmacist as one becoming "a man pouring from a big bottle into a little bottle." In the changing health care environment of the day he saw a growing need for the pharmacist to be a true professional advisor to the physician in the field of drug therapy, but all too frequently "the pharmacist was functioning as a high class technician." He believed that this did not bode well for the profession and asked the question. "If the pharmacist was himself this type of role model, how could the profession attract students with the intellectual capacity and dedication to public service which has been the tradition in pharmacy when there are so many other career opportunities in the health field which will utilize (the student's) professional talents?" Although Clark's address to the profession was well timed to create some movement in the study of a five-year B.S. Pharmacy curriculum, there were some entrenched faculty opinions nationwide on how to educate the pharmacy student. Many curricula focused on the drug, its properties and its preparation. To support the degree designation of Bachelor of Science in Pharmacy, programs at that time were inclined to stress the scientific component leaving the application of this knowledge to the student in their practice of pharmacy.

There was, however, enough strong leadership in the national pharmacy organizations and pharmacy education to sway conservative thinkers that education for the practice of pharmacy had so "outstripped education for the profession of pharmacy that the development of good practitioners was being neglected."<sup>5</sup> Schools were graduating "highly scientifically trained individuals who in the main are becoming frustrated



**Lecture class in Room 103 Beard, School of Pharmacy, University of North Carolina**

and disillusioned in their practice,” was a common theme urging changes in the curriculum. Change from a position of comfort is often slow and always difficult, especially without good role models. The pharmacists in North Carolina were not much different than many of their pharmacy colleagues elsewhere in the nation. This was a challenge that Hager addressed. The challenge had two parts: one was to revise the B.S. curriculum at the School; the second to demonstrate contemporary pharmacy practice to the practitioner.

The deficiencies in the curriculum under Brecht’s tenure that were identified by the 1964 accreditation team were reviewed by Hager and the faculty as they set out to implement changes in the coursework required for the pharmacy degree. The curriculum was revised to include, a two-semester sequence of physics and later a course in calculus and analytical geometry for a better understanding of the physics courses. The two-semester instruction of organic chemistry, taught by a pharmacy faculty member, was transferred to the Department of Chemistry and made completion of these courses a part of the requirement for admission to the pharmacy program. The biological sciences were altered by deleting botany to make room for adding a biology or zoology course as a prerequisite for a vertebrate anatomy course. The curriculum continued to be altered almost annually for a number of years. Limited by the course load that could be imposed on students for effective learning, courses in economics, accounting, and public health offered by departments outside of pharmacy were shifted in and out of the curriculum as syllabi were altered to cover the essential topics for students. Pharmacy courses in the B.S. Pharmacy curriculum were not exempted from change. Some were renamed, but other courses such as Inorganic Pharmaceutical Chemistry, Drug Assay and one semester of Pharmacognosy were deleted and replaced by courses in biopharmaceutics and pharmacy practice. Other courses had laboratory exercises reduced or eliminated while still others had the credits reduced. More changes were to come later, but the next accreditation team visit by the American Council on Pharmacy Education in November 1966 did not find fault with the revised curriculum retaining the School on the list of accredited schools and colleges of pharmacy.

### **Clinical Pharmacy in the Curriculum**

Transformations in pharmacy practice in the late 1950s and early 1960s by some hospital-based practitioners showed that there was a need for pharmacists to provide drug information to physicians, providing not only drug information but also discriminatory evaluation and professional judgment regarding rational therapeutics to physicians in their routine clinical practice. About the same time, a few pharmacy educators on campuses with teaching hospitals began experimenting with ways to incorporate these advisory functions in their undergraduate professional programs. It was realized by these educators that pharmacists must be educated and trained to serve the public both in illness and in wellness. To accomplish this goal, they said pharmacy service must be patient-oriented and required the development of a clinical component in pharmaceutical education that could be applied in both the institutional setting and in the community setting. The School of Pharmacy at the University of North Carolina was in a fertile environment for all of this to happen.

Early in 1963 the North Carolina Board of Pharmacy revised the regulations for pharmacy services for hospitals, clinics, nursing homes and rest homes that defined minimum standards for pharmaceutical services in these institutions. A survey compiled in 1965 revealed that only 40 of the state’s 180 hospitals employed



pharmacists. The passage of Medicare legislation put Federal pressure on administrators to have competent pharmacy operations in hospitals. With the increased number and kinds of medication prescribed per patient it became apparent to state pharmacy leaders that a system of safe medication practices and distribution of drugs be developed to insure that patients receive the best possible care and protection. Reacting to the information about the lack of pharmacy services in hospitals, a resolution was passed at the April 1964 North Carolina Pharmaceutical Association annual meeting urging action. In response, the North Carolina Society of Hospital Pharmacists together with the North Carolina Pharmaceutical Association formed a Joint Committee on Hospital Pharmacy to develop an acceptable program for providing pharmaceutical services to North Carolina Hospitals.

H.C. McAllister, secretary of the Board of Pharmacy, a former pharmacist at Watts Hospital, and Claude Paoloni, chief pharmacist at Moses Cone Memorial Hospital in Greensboro, served as co-chairs. From this committee was drafted a program called “The Plan of Assistance to Develop and Improve Pharmacy Services in North Carolina Hospitals.” The project was designed to recruit, orient and train pharmacists for service to hospitals in North Carolina and to acquaint hospital administrators with the current requirements for proper hospital pharmacy services. It was supported not only by the three state pharmacy organizations but also the North Carolina Hospital Association and the North Carolina Medical Care Commission. Spurred with this backing, the Society of Hospital Pharmacists submitted a proposal to the Duke Endowment Fund and other philanthropic agencies for financial support. In the end, grants from the Duke Endowment (\$25,000), the Z. Smith Reynolds Fund (\$22,700) was received. Success of the program depended on finding a highly motivated director to travel throughout the state to present programs on hospital pharmacy services.

Fred Eckel was willing to take on this challenge and came to North Carolina from Ohio to assume the position of director of The Plan of Assistance to Develop and Improve Pharmacy Services program in 1966. Prior to coming to North Carolina Eckel was the assistant director of pharmacy at Ohio State University Hospitals and an instructor at The Ohio State College of Pharmacy. In Ohio he had pioneered the development of pharmaceutical services in nursing homes. Wishing to advance the role of the School of Pharmacy in hospital pharmacy practice, George Hager appointed Eckel as a part-time instructor in Hospital Pharmacy and brought The Plan of Assistance to Develop and Improve Pharmacy Services in North Carolina Hospitals into the School of Pharmacy. The program proved to be an immediate success and later was re-named the Plan of Pharmacy Assistance when it expanded to include nursing homes and other health care centers. Don McLeod from the Sandhills area of North Carolina who had completed a residency at the University of Texas branch in Galveston then became Eckel’s assistant in the Plan of Pharmacy Assistance. The project was supported in part by an additional grant of \$34,250 from the Z. Smith Reynolds Foundation to the North Carolina Hospital Education and Research Foundation. By April 1970, 172 of the 176 (97.7%) hospitals in North Carolina had registered pharmacist services.

The North Carolina Memorial Hospital Department of Pharmacy that provided pharmacy services to patients at the Hospital also coordinated the Hospital pharmacy’s program with the School’s mission of teaching, research and service. In 1969 it was renamed Division of Pharmacy Services to bring the School and Hospital teaching programs under the umbrella of the School. From this cooperative venture a two-year Masters’ degree program of post-baccalaureate training was developed that included a residency in

hospital pharmacy to satisfy urgent demands for hospital pharmacists in North Carolina. Residencies were established at North Carolina Memorial Hospital, Duke University Hospital, Watts Hospital and Moses H. Cone Memorial Hospital. Pharmacists who were interested in the program were invited to spend on-the-job training at North Carolina Memorial Hospital in learning about I.V. additives, clinical pharmacy, and unit drug distribution. This program signaled the beginning of training pharmacists for hospital pharmacy practice in North Carolina.

In the early 1960s the public was becoming increasingly concerned about drugs and drug use.. All elements of the society were involved: health professionals, governmental officers, legislators and consumers. Early studies had shown that two to five percent of patient admissions to medical and pediatric services of general hospitals were attributable to drug-induced disease. The United States Surgeon General Goddard, a strong promoter of the team concept of medical care, wanted pharmacy to be part of the health care team. He urged pharmacists to become involved in the clinical movement by knowing about patients' illnesses and following up on their drug therapy. The existing curriculum did not meet this need. To bring this activity into the pharmacy curriculum, Hager invited Claude Paoloni, a hospital pharmacist in Greensboro, to join the faculty to teach senior students about the contemporary pharmacy practice espoused by the Surgeon General. Paoloni took the laboratory portion of the capstone course of the curriculum known as "Dispensing" that taught the preparation of medications in response to drug orders from physicians and made students follow the therapy of patients in the clinics by the medical staff at Memorial Hospital. Practicing hospital pharmacists were invited to participate as volunteers to teach the laboratory sessions in



**Dispensing Laboratory class in Room 204 Beard Hall, School of Pharmacy, University of North Carolina.**

the dispensing course of senior pharmacy students. It was the beginning of a relationship between volunteer pharmacists and the School that eventually evolved to assigning students to pharmacists as Practitioner-Instructors at pharmacy practice settings in health care institutions and community pharmacies to satisfy requirements for licensure to practice pharmacy.

Coincident with the activity of students following therapy of patients in the clinics, was a severe shortage of nursing personnel at North Carolina Memorial Hospital where medical and dentistry students were used as assistants to administer drugs to patients. In June 1968 a special program was initiated cooperatively by the School of Pharmacy and the Hospital to provide undergraduate pharmacy students with experience in patient care and drug utilization. Students who had completed their third year of schooling applied for work in the Hospital as Medication Assistants and were trained by nurses to work in the clinic areas. It served as an excellent way for students to gain a clinical perspective of drug use. The Hospital became the new educational laboratory offering a means of bridging the gap between the theoretical knowledge of drugs and the application of this knowledge to health care. Contact with the patient and members of the medical and paramedical health team of necessity took place and enabled students to provide clinical pharmacy services as part of a health care team. Students became acquainted with their professional colleagues and uncovered new and potential applications of professional pharmacy services. Students who worked 40-hour weeks in the summer administering medications and monitoring patients at North Carolina Memorial Hospital were allowed by the North Carolina Board of Pharmacy to satisfy a portion of their internship requirement for pharmacy licensure.

The observance of the learning experience of drug use by the students in the clinic setting led to curriculum changes of clinical pharmacy coursework in the final year of the pharmacy program. To accommodate an introductory clinical pharmacy course, the traditional two-semester dispensing course that was the capstone course in the pharmacy curriculum was condensed to one-semester, the second semester being replaced by a pharmacy practice course where practical situations were used to expose students to the delivery of pharmacy services. Course content included instruction to provide a clinical perspective of major problems concerning drug therapy in disease situations to prepare the student for the pharmacist's responsibility to the clinician and patient.

Clinical pharmacy represented a complete change in the philosophy of pharmaceutical education. In the past the pharmacist's education was preoccupied with drugs as physical entities. Now emphasis is given to prescribers who use drugs for a purpose and to patients who must take drugs to satisfy a need. Through clinical pharmacy, students become aware of the personalities involved in the use of drugs and develop a keen awareness of prescribers and patients. Hager believed that the professional practice of pharmacy is a highly personal activity that involves the relationships of pharmacists with other members of the health team and with patients and patrons. He said, "the awareness of people is the objective of clinical pharmacy, and that awareness will have an important impact upon the practice of pharmacy in the institutional setting but especially upon the practice of pharmacy in communities." It was time to move the formal education of the pharmacy student out of the four walls of the classroom and into the practice arena. Initially the pharmacy curriculum was modified to include an experiential component for one-half of a semester which was then expanded to one full semester with the addition of faculty to the School to mentor the students at

the clinical sites. When the five-year degree for Pharmacy was discontinued and replaced by the six-year Pharm.D. Degree, the curriculum was further modified to include a ten-month experiential component as the final year of study. This experience was carried out at the Area Health Education Centers in North Carolina (see below) and replaced the internship requirement for licensure previously overseen by the Board of Pharmacy.

### **Faculty Growth and Capitation**

School enrollments in Pharmacy increased in 1960 when the change from a four-year to a five-year B.S. program became a requirement for all accredited schools. Increases in the biennium budgets allowed the School to add faculty to accommodate the larger classes. Dr. William E. Hall, a student of Takeru Higuchi at Wisconsin, joined the faculty in July 1966 as Assistant Professor of Pharmaceutics. Stephen M. Caiola M.S. from The Ohio State University was appointed half-time instructor in pharmacy in 1968 and full-time instructor in 1970 as Director of the Clinical Pharmacy Program at North Carolina Memorial Hospital to oversee the Program in the Hospital. Dr. James L. Olsen left Clark Cleveland, a small pharmaceutical company, in 1968 to join the faculty as assistant professor of pharmacy and Director of the Drug Product Development Program in the School.

Addressing the nation's shortage and education of health professionals, Congress extended the Health Manpower Act of 1968 and provided grants (Capitation Grants) to pharmacy schools in the country. In addition to increasing the number of students in health education programs the grant specified these funds be used to provide an increased emphasis on and training in clinical pharmacy, drug use and abuse and, where appropriate, clinical pharmacology in schools and colleges of pharmacy. The first of several years of support from the capitation program funds was received in 1970 and used to initiate the Clinical Pharmacy Training Program in the School's Division of Pharmacy Practice. Pharmacists who had recently completed a Master's degree or a hospital pharmacy residency were appointed as Clinical Pharmacy Specialists to provide pharmacy services and instruction to students at North Carolina Memorial Hospital.

Capitation funds from the Health Manpower Act had a second mandate to increase the number of pharmacy practitioners in the state. The School of Pharmacy grant of \$305,954 in 1970 was based on an assured class size that increased pharmacy student enrollment along with the commitment to initiate a clinical component in its B.S. Pharmacy curriculum. The Capitation Grant relieved a long-standing shortage of pharmacists in the state. The State of North Carolina had remained for many years near the bottom of the list of states in pharmacists per capita. Pharmacists from other states had reciprocated their pharmacy license in greater numbers for many years than those graduating from the School. In the 1967 ten-year projections, it was estimated that 130 B.S. graduates of the School each year during the period 1968-1977 would satisfy the needs of North Carolina to raise the per capita ratio of pharmacists somewhere between 37.7 per 100,000 in 1967 and the national average of 61.1 per 100,000 population. With the increase in class size, by 1975 the pharmacists/population ratio in North Carolina had risen to 51/100,000 (the national level was 62/100,000).

The benefits of funding for the clinical pharmacy programs by the government, while many, presented a degree of uncertainty to the program. Since 1970 the School had been receiving Federal funds (Capitation

Grants) to increase enrollment and improve the quality of instruction. These funds provided one-third of the salaries of the faculty and staff including almost three-fourths of the salaries for the Division of Pharmacy Practice whose principal responsibilities were in the clinical pharmacy program. Reported proposed cutbacks of fifty percent of this Federal support were estimated to cause the School to reduce its class size, eliminate many clinical pharmacy instructor positions and showed the fragile nature of this new program. Affected would be nine faculty members, six of whom staffed the Clinical Pharmacy Training Program and were paid by Capitation funds. The part-time clinical instructors in the outreach clinical locations such as the Orange-Chapel Hill Community Center were also supported in part by these same funds as was the Drug Information Program in Memorial Hospital staffed by two faculty members. Although it was important for the School to continue receiving Federal support to maintain the momentum that had been created with the clinical pharmacy concept of health care, this was not to be. Beginning with the high level of Federal support in 1974 the capitation grants to the schools and colleges of pharmacy were gradually reduced until eliminated in 1980. The School asked the University to replace the Federal support with state money. On the strength that the clinical teaching component of the curriculum was required by the American Council on Pharmaceutical Education (ACPE) for continued accreditation, some of the lost dollars were replaced by University allocations.

### **The AHECs**

In 1966 the Congress passed a multimillion dollar Comprehensive Health Planning and Public Health Services bill aimed at providing allotments to states and grants to smaller units for planning, establishing and operating health services “of high quality.” The Surgeon General, W.H. Stewart, commenting on this bill, identified comprehensive health service, by saying, “There is a generally recognized need for high quality health services structured and offered in such a manner as to provide an interrelated continuum of service including application of established preventative measures, environmental measures, early detection of disease, and prompt and effective rehabilitation. Its focus is on the needs of populations, defined as individuals and families, rather than particular diseases. Its goal is the promotion and maintenance of the health of a population through the effective use of resources at their points of maximum impact within the service continuum.”<sup>6</sup> The seeds for community health were already growing at the state level with a proposal in 1968 from the Office of Comprehensive Health Planning to design and develop comprehensive health services in North Carolina.

In the early 1970s, North Carolina was the fourth most rural state in the nation; 42nd in per capita income; 12th largest in geographical area; and with 55 percent of its population of 5.4 million living in towns less than 2,500. These, according to Gene Mayer M.D., Dean of the School of Medicine, traditionally are not characteristics that attract and retain health manpower.<sup>7</sup> In its 1970 report, *Higher Education and the Nation's Health*, the Carnegie Commission stated that medical schools and other university health science schools could more effectively meet the needs for more primary care physicians and health manpower of all types by conducting substantial portions of their clinical training programs in community settings.<sup>8</sup> The U.S. Congress authorized the development of a limited number of Area Health Education Projects under the Comprehensive Health Manpower Act of 1971. The University was one of eleven universities to receive



a federal contract in 1972 to begin the National AHEC Program. It produced a major statewide effort to decentralize medical, dental, pharmacy and public health education and to regionalize nursing and allied health education, residency training and continuing education. This was a significant contributor to the provision of contemporary education of pharmacy students. The program was designed to support facilities that provided outpatient and inpatient medical services and serve as a referral center for other patient care facilities by establishing regional Area Health Education Centers (AHECs) to serve the public.

The School of Medicine at that time had been using regional hospitals to train their students for many years and already had such arrangements in several areas of the state. During the early 1960s a committee appointed by the Board of Governors to study the location of a state-supported medical school at Greenville, North Carolina strongly endorsed a system of health education centers in the entire state to improve health care delivery. The Federal program was highly suited for North Carolina as arrangements were already in place for training students in the School of Medicine with several hospitals in the state. The University received an \$8.5 million grant for the five-year period from the government. Together with \$1 million of state funds and substantial financial support from six community hospitals, the program was able to conduct continuing education, training, and clinical instruction programs for health professionals in three AHEC areas. The immediate success of this program convinced the Board of Governors



**AHEC site at Moses Cone Memorial Hospital  
in Greensboro, North Carolina**

of the University of North Carolina and the General Assembly of the state to develop a statewide system of nine AHECs. The state appropriated \$28.2 million for the development of the statewide program in 1974. The regional AHECs anchored in hospitals across the state became a valuable adjunct system of medical and health care training. They worked in tandem with the UNC Chapel Hill School of Medicine, Duke University School of Medicine, and the Bowman Gray School of Medicine. The cooperative arrangement included health care fields such as dentistry, nursing, pharmacy and public health. Funds originally came from the State and Federal governments, but by 1980 the Federal government participation phased out and state and local resources were used.

As the various regional AHECs developed, they were funded individually by the State. At each AHEC was a pharmacist to provide experiential training to the students and develop continuing education programs for the pharmacists in the region. Eventually, there were nine off-campus AHECs. Three AHEC regions started almost simultaneously in 1974: one in Wilmington at New Hanover Hospital with Bruce Canaday, a Pharm.D. from Tennessee; a second at Mission Memorial Hospital in Asheville with C. Edwin (Ed) Webb, a Pharm.D. from Tennessee; and a third at Wake Memorial Hospital in Raleigh with Pamela Joyner, a '74

UNC graduate. These AHEC pharmacists began new careers in pharmacy. They visited local hospital and community pharmacists in their region, recruiting them to serve as preceptors for students who would come to them as part of their experiential training in the B.S. Pharmacy curriculum. To provide contemporary education to the local pharmacists they set up continuing education programs for them. They also set up their own pharmacy practice in their regional AHEC hospital serving as a clinical pharmacist with the medical teams as they made rounds in the various services. Added later were AHEC sites in Area L located in Tarboro with Stephen W. Shearer as the pharmacist, the Northwest (Mountain) AHEC at Wake Forest Memorial Hospital where Tim Poe and later Karen Oles were chief pharmacists, an AHEC in Charlotte at Memorial Hospital served initially by William Sawyer, an AHEC in Greenville centered at Pitt County Hospital: with Joseph Gee, an AHEC at Moses Cone Memorial Hospital in Greensboro where Peter Gal was the primary pharmacist. The ninth AHEC was established in Fayetteville. Clinical pharmacy faculty members were appointed in each of the developing AHECs. The one on-campus AHEC was located in the Chapel Hill-Durham area.

By 1984 the state was appropriating \$23 million annually for AHEC operations. The AHEC areas that served as training sites for medical and pharmacy students provided them with housing to carry out the experiential portion of their curriculum. AHEC programs utilized a fleet of small airplanes to fly to towns and counties bringing speakers for continuing education lectures and demonstrations and other health care practitioners to provide their expertise in health care to the counties of North Carolina. When the AHECs were established, the clinical pharmacy faculty met with hospital and community pharmacists in their region to develop experiential sites for the pharmacy students who were assigned to their region. As did the initial three AHEC pharmacists, this clinical pharmacy faculty began developing their clinical practice with medical teams as they made their rounds in the hospital.

Faculty from the School took an active part in providing continuing education lectures to pharmacists and other health care professionals throughout the state. Continuing education of pharmacists is a service program offered by the School that has been coordinated with programs of the North Carolina Pharmaceutical Association. In the late 1950s a director of pharmacy extension service was appointed for a brief period of time and then taken over by Mel Chambers, the assistant dean at that time. As the mission of educating the graduate pharmacist about contemporary health care increased, the responsibility for developing programs came under the umbrella of activities of the regional Area Health Education Centers (AHEC). The regulation that made continuing education (C.E.) mandatory for re-licensure changed the entire landscape of C.E. programs. AHEC pharmacists coordinated programs offering hours of instruction for the increased audience of pharmacists seeking to satisfy their re-licensure requirement

### **Graduate and Research Programs in the 1960s**

Masters degrees with major areas of study in Pharmaceutics and Pharmaceutical Chemistry have been awarded since 1933. The doctorate degree by the School of Pharmacy was approved by the Graduate School in 1947. There was no concerted effort by the School to interest graduate study amongst pharmacy students until 1959 when it moved to its new quarters in Beard Hall. Enrollments in the graduate program in the period 1957-1967 averaged 12 students. Fellowships and grant awards by the North Carolina Pharmaceutical

Research Foundation (NCPRF) provided support to some students. Support for graduate students came from service as part-time instructors assisting in the laboratories and classes in the undergraduate pharmacy curriculum. Undergraduate research programs by faculty provided insight to laboratory research, but salaries of pharmacy graduates were competitive with those of graduates with graduate degrees in the pharmaceutical sciences and were a barrier for encouraging graduate study by pharmacy graduates.

The graduate programs in the School grew slowly following the appointment of Dean Hager in 1966. Chester J. Cavallito, Ph.D. and Albert M. Mattocks, Ph.D. were appointed to develop a stronger research program and begin a number of new initiatives. Mattocks brought with him graduate students from his program at the University of Michigan along with grant support from the National Institutes of Health that funded studies in pharmacokinetic procedures on peritoneal dialysis and other problems in biopharmaceutics. A postdoctoral medicinal chemistry training grant program under the direction of Cavallito began in 1967 with support from the pharmaceutical industry for research in medicinal chemistry. A grant from the National Institutes of Health supported another postdoctoral student who also served as a part-time instructor. A cooperative medicinal chemistry training and research program with Oak Ridge Institute of Nuclear Studies also added another postdoctoral student to the School. In 1969 the School was awarded a five-year pre-doctoral Medicinal Chemistry Training Grant. The grant provided stipends and research support for four graduate students in Medicinal Chemistry. Research grants and fellowships from private foundations, the pharmaceutical industry and the Federal Government in support of research increased steadily as the faculty began developing their research programs. Graduate student enrollment rose from 18 in 1966 to 31 in 1974.

The Pharmacy Practice Division in the School added another dimension to the graduate program. In 1968 the Administrative Board of the Graduate School approved a post-baccalaureate program in hospital pharmacy which included, in addition to coursework, a one-year hospital pharmacy residency. The new program was designed for the post-baccalaureate training of hospital pharmacists. Pharmacists completing the program received a M.S. degree and a Certificate of Residency.

In 1970, basic science faculty members were added to support the teaching and research programs of the School. Kuo-Hsiung Lee, a recent Ph.D. graduate from the University of Minnesota, was appointed assistant professor in Medicinal Chemistry in 1970 and began an illustrious career in teaching and natural product research that has continued into the 21<sup>st</sup> century and given him international recognition for his achievements. In that same year, Khalid S. Ishaq, Ph.D. and Iris H. Hall, Ph.D. began their tenures of 30-plus years on the faculty, as appointed instructors in the Division of Medicinal Chemistry after serving as postdoctoral students in the Division. B. Wesley (Boka) Hadzija, Ph.D. began her career as an instructor in the Division of Pharmaceutics in 1970 and developed teaching skills and a teaching philosophy that have resulted in her receiving numerous teaching awards by the University of North Carolina.

Several programs created a climate of increased research activity in the School. An undergraduate research program, funded by the National Science Foundation and the North Carolina Research Foundation, allowed gifted students the opportunity and challenge of working closely with faculty advisors for many years. A lecture series, the Walter H. Hartung Memorial Lecture, invited leading scientists to the School. With the financial support of the North Carolina Pharmaceutical Research Foundation outstanding

pharmaceutical scientists and other well known personalities in the pharmacy profession were brought to the campus to present seminars and programs on pharmacy. To accommodate the research activity in the biopharmaceutics area, the basement of Beard Hall was renovated for the Division of Pharmaceutics faculty and graduate students.

### **Student and Service Programs in the School**

The social impact of the drug culture that prevailed in the 1960s and 1970s as illegal drug use spread from the confines of the drug user groups and college campuses into junior and senior high schools was reason for the University to develop a program of education. The School in contributing to this effort had an active program of drug abuse education.<sup>9</sup>

*Drug Abuse Education and Pharmacy.* The School, cooperating closely with the North Carolina Department of Public Instruction and the North Carolina Pharmaceutical Association, received an \$80,000 grant from the Z. Smith Reynolds Foundation to support of a statewide program to provide information to teachers and administrators about drug use and misuse. One part of the program was the Teacher Drug Abuse Project where pharmacy faculty gave seminars to public school teachers, administrators, counselors, police officers and prison inmates on drugs of abuse and information on the pharmacology and the social behavior of drug users. A second part of the project known as the “Student-to-Student Drug Abuse Education Project” with Steve Moore as Director, brought pharmacy and medical students to high schools and elementary schools to talk informally about drug use. They visited junior and senior high schools throughout the State talking to students, Parent-Teacher Associations and other civic groups about drug abuse. The final phase of the drug education project made available to students, schools and the general public a centralized source of information on drug abuse—books, brochures, film strips, tapes, motion picture film and a roster of speakers available for adult groups. The program, under the direction of Leonard Berlow, continued for six years with additional financial support from the North Carolina Drug Authority.

The *SHAC Program* that began in the early 1970s has been a service program of pharmacy students. As part of another clinical pharmacy experience, students volunteered to work at community health clinics in the evening and weekends under the supervision of a pharmacist. A Student Health Action Committee (SHAC) in the School organized the students’ participation. The pharmacy students are involved with medical students and physicians in the clinics offering counseling to patients on drug use. The program operates in two clinics, one in Durham and the other in Chapel Hill.

*Screening Clinics:* Using the opportunity to inform the public about their health, and learn about the public’s health, students have provided screening clinics measuring blood pressure, blood sugar levels and providing general information about good health care. Clinics at the Pitt on campus, in shopping malls, in Beard Hall during alumni reunions and on Family Day at the School also served to give the public a better understanding of the pharmacist’s role in health care.

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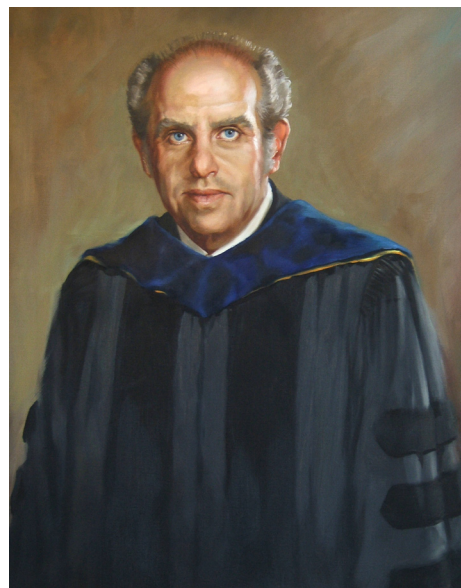
## GROWTH AND DEVELOPMENT

After eight years as dean, a serious circulatory illness in 1974 made it difficult for George Hager to continue as chief administrator of the School of Pharmacy. He resigned the deanship effective June 30, 1974 but remained on the faculty to teach. Under his leadership, from the period 1966 to 1974, the School had made rapid progress in increasing student enrollment to improve pharmacy manpower in the state. Class size rose from 366 in 1966 to 584 in 1974. Through program designs, the curriculum was changed to meet the needs of the pharmacy graduate by introducing a clinical component to the course of study. The faculty seemed to be working toward a committed objective of graduating students to be better prepared to serve the public. The School had begun to gain strength and stature locally and nationally because of the efforts of Hager. Seeking to continue this trend, a committee selected Seymour M. Blaug, Ph.D. from the School of Pharmacy at the University of Iowa to begin his tenure as dean on August 15, 1974.

Seymour Blaug was a native of New York City where he earned B.S. and M.S. degrees from the University of Columbia College of Pharmacy. He left the City to go to the Midwest where he received a doctorate degree majoring in Pharmacy at the University of Iowa, joined the faculty in 1955 and rose through the ranks to professor. As a faculty member at the University, Blaug showed that he had broad interests in the profession. He was active with practicing pharmacists in the state pharmacy association as well as a research scholar in Pharmaceutics with studies in drug stability, dosage form development, and absorption of drugs. An author of many research papers and contributor to pharmacy textbooks, he had the credentials to be a perfect fit to continue to lead the School of Pharmacy into the future and the alumni were delighted to have him as the new dean.

The School suffered a great setback on November 19, 1975 when Dean Blaug died suddenly of a heart attack. He was in Atlanta speaking to physicians at Grady Memorial Hospital as part of the CIBA Pharmaceuticals Medical Horizons program when, ironically, he was struck down at dinner surrounded at the table by a group of cardiologists. He had served only 15 months as dean of the School of Pharmacy. LeRoy D. Werley, the assistant dean for many years, was named interim dean until a successor could be found.

The Seventh Edition of the ACPE Accreditation Manual became effective in 1974. It now required schools of pharmacy to have a minimum of 400 hours of clinical experience in the curriculum.<sup>1</sup> The curriculum at North Carolina for the pharmacy students at that time included only 280 hours offered during one-half of one semester in the fifth and final year. The remaining weeks of the other half of the semester were arranged for students to take courses in pharmacy to allow them to complete their requirements for



**Seymour Blaug**  
**Sixth Dean of the School of**  
**Pharmacy (1974-1975)**

the degree by the end of the school year. To accommodate this change, the curriculum was revised to add experiential hours to the curriculum, giving students one full 15-week semester in the Academic Externship Program. The curriculum change created large student/faculty ratios that were less than those required by the ACPE. The University administration, recognizing the need to retain an accredited pharmacy program, allowed the School to add faculty to monitor and organize this portion of the program to meet the new standard.<sup>2</sup>

More curricular changes were in store for the School about his time. Since the introduction of the five-year B.S. pharmacy curriculum in 1960 the program required one year of pre-pharmacy coursework followed by four years of courses in the School of Pharmacy. Under this arrangement, students were admitted to the pharmacy program in their second college year while still completing required basic science requirements. The one pre-pharmacy college year gave students little flexibility to sequence needed preparatory courses and prevented many other qualified transfer students, including those who already had a baccalaureate degree, from admission to pharmacy. The curriculum in 1979 was revised to change the entry point into the program after all prerequisite courses for pharmacy were completed. The 1-4 Program was deleted and replaced by the 2-3 program. Students were now able to complete the prerequisite courses before beginning their study in pharmacy. With at minimum of three semesters of college study for review, the admission of students was more selective for the School and also allowed the applicant more time to consider career options. The change, however, was not without some loss. The per capita enrollment dollars in the 1979-80 Health Affairs biennium budget were reduced because of the shift of the second-year pharmacy students in the 1-4 curriculum back to the General College.

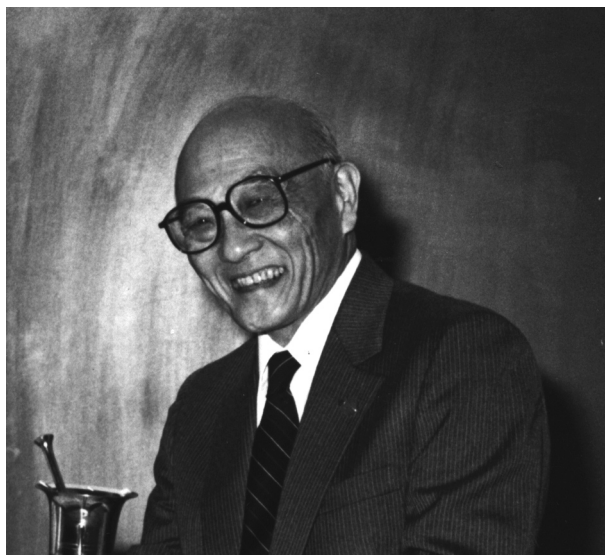
The School was fortunate to find a leader in pharmacy in Tom S. Miya who was head of the Department of Pharmacology at Purdue University. Miya, a native Californian, was interred along with many Japanese-American families to Nebraska during the Second World War. He graduated with a B.S. degree in Pharmacy and M.S. degree in physiology and pharmacology from the University of Nebraska, received his Ph.D. in Pharmacology from Purdue University and joined the faculty there in 1948. Miya left Purdue in 1956 to come back to his alma mater at Nebraska and serve as associate professor and chairman of pharmacology. He returned to Purdue in 1958 as professor and became chair of the Department of Pharmacology in 1963. His research focus was pharmacodynamics, biochemical pharmacology and toxicology. A well known research scholar, he was also recognized as a leader in pharmacy education and in 1975 was elected president of the American Association of Colleges of Pharmacy (AACP). When Tom Miya visited Chapel Hill to be interviewed for the dean's position he saw a tremendous amount of potential for growth in the surrounding Triangle area and the campus. He felt that although the School of Pharmacy was developing the practice component of the curriculum, it was not keeping up with the research growth of the other health science schools. Accepting the challenges that the School presented, he was appointed as dean of the School as of January 1, 1977.

After decades of "platitudinous assurances that the pharmacist was an appropriate and reliable source of drug information to physicians and the public alike," a study challenged that perception.<sup>3</sup> The publication of the Millis Report of the Study Commission on Pharmacy in 1975 titled *Pharmacists for the Future* examined the evolution of the health care system in the U.S. and focused on pharmacy practice and education and the

direction of pharmacy services. The Commission concluded that pharmacists were both ineffective and inefficient in developing, organizing and distributing knowledge and information about drugs. Although there was great anticipation about the content before its release, the Report stopped short of recommending a uniform six-year professional doctoral degree. Schools and colleges of pharmacy have struggled to come to a consensus about the length and title of the degree for the profession from as far back as 1930 when the decision was made to award a baccalaureate degree for pharmacy. The 1975 annual meeting of AACP was another attempt and focused on the types of pharmacy personnel and the pharmacy curriculum criteria required to meet society's

healthcare needs. Tom Miya, as the president of AACP, strongly endorsed the Pharm.D. degree concept for pharmacy. However, the academic community again was not ready to commit to this degree change for the graduate. Educators and especially deans were uncertain about the effect that the Pharm.D. would have on the schools and colleges and, with equal significance, their pharmacy alumni. Many schools did not have immediate access to facilities and were not prepared to make changes to accommodate an experiential component in their curriculum that would be required for the Pharm.D. degree. At home, faculty members were protective of the academic turf they owned for years. Because of the clinical movement, more clinical instructors were added to faculty rosters. As a result, the number of clinical faculty grew faster than faculty in the other pharmacy disciplines. Regular tenured faculty could tolerate the presence of one or two clinical faculty as a novelty, but as their numbers increased indifference often gave way to hostility, particularly in schools and colleges with large graduate research programs. There were many negative comments attached to the rapidly growing clinical faculty component. There was concern that clinical faculty would compete for money, space and other scarce resources. They were seen as unable to do research; indeed, most clinical faculty at that time valued practice over research. Basic science faculty observed that the greatest problem facing new members of the practice-oriented faculty was "their inability to effectively initiate, perform and analyze scholarly creative problems."<sup>4,5</sup>

In a prelude to seeking administrative support for the Pharm.D. curriculum, Dean Tom Miya and Dean Stuart Bondurant of the School of Medicine appointed a joint committee from each of the faculties to "conceptualize the clinical pharmacist's role." In its report it was agreed that "Clinical Pharmacy has emerged from traditional pharmacy as a specialized discipline." The Committee acknowledged that training beyond the B.S. Pharmacy degree is required and that the Pharm.D. Program "...is designed to provide the clinical pharmacist with advanced knowledge of pharmacokinetics, drug interaction, adverse drug reactions and drug product selection that constitutes the special knowledge base of the discipline." The Committee



**Tom S. Miya**  
**Seventh Dean of the School of**  
**Pharmacy (1976-1992)**

viewed the clinical pharmacist as a consultant, an educator and an enhancer of the physician-patient interaction. Although the contributions of clinical pharmacists in the clinic area were greatly appreciated by the medical staff, some administrators showed concern for this expanded pharmacy role. They “did not view the clinical pharmacist as a primary care provider of health care or as a “physician extender.”<sup>6</sup>

Miya was disappointed with the hurdles for acceptance of the Pharm.D. degree by the University. The School could not convince administrators of the importance of the small (15 students/class) program to the School’s educational mission and the contribution that this program could make to the health care in North Carolina. After submitting documents justifying the value of the Pharm.D. program, it was finally approved by the North Carolina Board of Governors at the August 1980 meeting; however, no funds were appropriated. As a result, only five students were admitted into the program in the summer of 1981. Students in their second year of the B.S. Pharmacy curriculum could apply to the Pharm.D. program and, if accepted, complete the requirements for the Pharm.D. in two years. Graduates with a B.S. Pharmacy degree were also eligible to apply to the two-year Pharm.D. curriculum but were selected in preference to the B.S. student applicants. After five years, the number of students per class was increased to fifteen. The program continued at this level until 1996 when the School moved to the Pharm.D. degree as the entry-level degree for the profession of pharmacy following the affirmative vote at the annual meeting of the American Association of Colleges of Pharmacy in 1992.

### **Changes in the School**

The growth of the School continued during Miya’s tenure. The concept of clinical pharmacy and the organization and formation of the Area Health Education concept for pharmacy was an opportunity for the pharmacist to develop as a health care team member in the community. The vision of a new education for pharmacy graduates was no longer an experiment but a goal achieved by constant improvement of the programs of the School. The period of 1974-1992 was a time of emerging strength of the School that was supported by the dean and initiatives of the faculty.

The University and its location in Chapel Hill, North Carolina had always been attractive to visitors. Through the years, the School has supported programs to bring leaders in pharmacy to campus to share their knowledge and ideas with students and faculty. A continuous agenda of speakers presenting specialized programs brought speakers to the campus. Honoring a former faculty member at UNC, The Walter H. Hartung Memorial Lecture, an invitational speaker seminar, was begun in 1968. The program included a plenary lecture and one-on-one meetings of the speaker with faculty. The Division of Medicinal Chemistry and Natural Products served as the host Division. A novel Pharmaceutical Industry Management Conference, attended by corporate, government and university officials, began in 1969. It reconvened several years later in 1972 under the guidance of Dr. Cavallito, providing a forum for the discussion of issues facing health care institutions and the pharmaceutical industry. The School and the NCPHA sponsored an Annual Seminar on Socio-Economic Aspects of Pharmacy Practice that began in 1966. Through the years speakers from the pharmaceutical industry and government organizations brought information of current interest to pharmacists of North Carolina who attended the seminars. This program has been replaced by the Annual Spring Meeting of the North Carolina Association of Pharmacists that now provides a broad spectrum of



topics on the profession for practicing pharmacists. In another co-sponsored program that began in 1967, the School and the North Carolina Society of Hospital Pharmacists offered seminars on hospital pharmacy topics. The growth and development of the AHECs, that became fully staffed in the 1970s, was used to provide continuing education to health practitioners in their regions and supplement the programs by the School and the state pharmacy organizations.

The School had always been proud of its own Pharmacy Library. Staffed with a librarian, furnished with a comfortable reading room, and holdings on pharmacy in the stacks, it served as a study and resource center for students and faculty beginning in the 1950s in Howell Hall and relocated in Beard Hall. After some planning by the Division of Health Sciences, it was decided to build a library for Medical School library holdings and consolidate the libraries of the other health science schools under one roof. Located in front of the McNider Building of the Medical School, the Health Sciences Library was constructed in 1970. Originally planned as a six-story building, only three floors were completed initially. Although interest from the School to combine the pharmacy holdings existed as early as 1970, the Pharmacy Library was finally consolidated with the Health Sciences Library in 1979. Its location, across Columbia Street, was convenient for use by pharmacy students. The consolidation was sensible because it was no longer necessary to duplicate the expense of journal subscriptions normally held by the Health Sciences Library. The space in Beard Hall formerly occupied by the library was converted to Pharmacy Practice faculty and staff offices. The reading room area was retained to provide a suitable environment for study. In 1982 a series of renovations in the main office and portions of the north side of the first floor that originally held the library stacks created space for a classroom for a computer laboratory for student use and the Student Affairs Office. Administrative changes in the business staff were also made to improve the management of the budget and other fiscal activity in the School. Rebecca Work was appointed assistant to the dean for fiscal affairs, overseeing clerical staff that monitored accounts in the School. Lee Werley, responsible for student admissions and progression through the curriculum, retired in 1982 after 16 years as associate dean and was replaced by George Cocolas from the Division of Medicinal Chemistry and Natural Products.



**Pharmacy Library Reading Room, School of Pharmacy, University of North Carolina**



The School celebrated the Centennial of its pharmacy program that started, albeit in an abortive fashion, in 1880 in the School of Medicine. The Parke Davis Company brought the famed History of Pharmacy Paintings in honor of the Centennial celebration. The forty-painting exhibit was displayed in the North Gallery of the Morehead Building. An estimated 20,000 persons viewed the paintings during the three-month showing. In 1981 the portrait of Carl T. Durham was presented to the School and entered into the Congressional Record of the 97<sup>th</sup> U.S. Congress. Carl Durham, a '18 UNC pharmacy graduate, represented the sixth District of North Carolina for 22 years in the Congress with contributions both to pharmacy and health care.

Academic pharmacy in the 1980s was full of unrest. Colleges of pharmacy were wrestling with the decision made by the American Association of Colleges of Pharmacy not to endorse the Pharm.D. as the single entry-level degree for the profession. Trade associations favored retaining the five-year baccalaureate degree, believing it would have a negative impact on pharmacy manpower. National and some state pharmacy organizations noted that the “educational enterprise did not give adequate attention to the expansion of (the pharmacist’s) professional role.” It was obvious to many that there was a decided shift in the average American’s lifestyle and values in the 1980s. In general, there was greater concern by the public for health maintenance and disease prevention and a fundamental change in the way it viewed health care needs. This suggested that there would be significant changes in the health care delivery system and the role of pharmacy. In 1984, Miya appointed a task force of pharmacy practitioners, business and industry leaders, pharmacy organization representatives, other health professionals and faculty to prepare a strategic plan and timetable for the School to maintain a leadership role in pharmacy education. The Task Force was directed by Barbara Kramer, the Assistant Vice Chancellor for Health Affairs. It took 18 months to complete its report.<sup>7</sup>

The strategic plan drafted from this task force titled “Planning for Excellence” identified action needed to affect the pharmacy profession in North Carolina. It served as a template for several years while the School set goals to meet future needs for its graduates and the School. The Task Force considered the emerging trends in health care of rapidly increasing numbers of elderly, the declining number of small rural hospitals providing traditional pharmacy services, and the increasing amount of care being delivered through outpatient service centers and in the home. Addressing these manpower needs, the School determined that 165 B.S. graduates were needed and planned to increase the Doctor of Pharmacy program enrollments begun in 1981 to 5 or 10 more students per year. Also considered were alternate forms of drug distribution and the increasing use of self-administered testing to detect disease and the increasing use of computers in diagnosis and management of disease. These thoughts effected changes in the curriculum content and teaching methods by the introduction of recitation sessions in the therapeutics and clinical pharmacy courses. New courses in socio-behavioral pharmacy and human resources management exposed pharmacy students to the social aspects of pharmacy and prepared the graduate for the expected changes in health care and approaches to public health.

In other changes, the School increased its computer hardware inventory and created a student computer lab using the space from renovations of the Pharmacy Library space. The Library had been renovated in 1981, removing the stacks and making offices for the pharmacy faculty. The area was subsequently

renovated again in 1982 to make offices for the Student Affairs Office and create the computer lab. The introduction of computer technology in the School dates back to George Hager's time. He had interests in drug information and data collection and was eager to have it used by faculty, staff and students. The increase in computer hardware for the Laboratory was made possible through gifts from the Pharmacy Alumni Association and the Pharmacy Foundation of North Carolina.

The curriculum was modified to focus on communication skills, problem-solving skills, management skills and computer skills. A study was made to determine what would be required to modify the existing baccalaureate program to meet ACPE standards for an entry-level degree program and to develop a realistic and practical post-baccalaureate Pharm.D. curriculum for practitioners. It was apparent that any changes made to the degree offering would have an impact on the present AHEC system. Some administrative changes were then made. Betty Dennis, in 1985, became full-time director of Continuing Education/Extension in the AHEC to meet the demands of the North Carolina mandatory continuing education requirements for licensure to practice pharmacy; and A. Wayne Pittman was appointed Associate Dean for Academic Program Development in 1987 to coordinate all undergraduate programs.

A survey conducted by the Task Force showed that 67% of the faculty and practicing pharmacists believed that the School should continue the Pharm.D. program of 15 students. Approximately 35% of the pharmacists' responses to the survey suggested that the School develop mechanisms that would provide existing practitioners an opportunity to obtain a Pharm.D. degree in the future. Responding to the opinions by pharmacists on the B.S. versus the Pharm.D. degree issue, there appeared to be good reason for the School to plan the steps needed to implement a single entry Doctor of Pharmacy degree and develop a post-baccalaureate program where interested pharmacists could receive the education required to receive the Pharm.D. degree.

## **THE DIVISIONS 1974-1992**

### **Pharmacy Practice**

The 1970s and 1980s brought many changes in each of the Divisions, but none more than those in the Division of Pharmacy Practice. The Chair of the Division and for part of that time the Director of Pharmacy at NCMH was under one administrator, Fred Eckel. This combined administrative arrangement allowed the hospital pharmacy residency program to have a certificate program and offer a Master's degree in hospital pharmacy. The clinical pharmacy services at NCMH began in 1970 and were provided by B.S. Pharmacy and Master's degree graduates. The position of Director of the NCMH Pharmacy Department was separated from the School in 1974 when the Hospital underwent reorganization of its finances and administrative structure. The separation was practical. The NCMH Pharmacy Department was focused on patient services while the Division of Pharmacy Practice emphasis was on student education in the clinics. The Capitation funds from the Health Manpower Act of 1970 allowed Hager to add new faculty positions to the School. Steve Caiola, hired part-time by Fred Eckel in 1968, at N.C. Memorial Hospital, became director of the Clinical Pharmacy Program and appointed full-time to the faculty in 1971. The growth of the Division began when clinical pharmacy instructors with little or no prior teaching experience

were appointed to the faculty. Some left after a short tenure while others remained and rose through the professorial ranks. The School of Pharmacy catalog listed Robert Allen, H. Shelton Brown, Betty Daniels, Don McLeod, Charles Pulliam and Hal Woodall as instructors in 1970-71 and Heyward Hull, William Paschal and Benjamin Williams in 1973-74. They served as part-time clinical pharmacists and instructors for the pharmacy students at N.C. Memorial Hospital and in the School.

They were followed in later years by Pharmacy Practice faculty appointed as instructors to lecture in the pharmacy curriculum. These faculty members began an experience of demonstrating their talents and knowledge of the clinical component of pharmacy and coping with the demands as a faculty member in a system which demanded contributions of scholarship of teaching, service and research. Their service included providing clinical pharmacist support to the medical service teams at NCMH. They would round with patient care teams in the Hospital to expand pharmacy services through patient care interactions that promoted the role of the clinical pharmacist and then brought these experiences into the classroom. These faculty members with their year of appointment were: Charles Pulliam (1971), A. Wayne Pittman (1972), Candace Brettschneider (1972), William Sawyer (1972), Arthur Straughn (1972), William Garnett (1973), Lawrence Hak (1973); Betty Dennis (1975), Steve Porter (1976), Ralph Raasch (1976). Other faculty appointed in the late 1970s and 1980s brought breadth to the spectrum of specialties of the clinical pharmacy practice faculty. These included: Celeste Lindley (1979), Robert Powell (1980), Herbert Patterson (1981), Tim Ives (1981), Dennis Williams (1983), George Dukes (1985), Michael Miles (1985), Robert Dupuis (1985), and Stanley Carson (1989). In the 1976-77 academic year there were ten full-time faculty members with offices in the School and eleven clinical faculty primarily in the nine AHECs and three on-campus AHEC in the Chapel Hill-Durham area. By 1992 the Pharmacy Practice faculty located in Beard Hall numbered sixteen. In addition, there were now nineteen clinical faculty members supported by state funds or the AHEC Program grant.

Curricular changes were made to take advantage of newer approaches to teach students how drugs were to be used in treating disease. Courses describing diseases and clinical approaches to therapy, by clinical pharmacy faculty gave students knowledge about drug use. The courses, Introduction to Clinical Pharmacy, Biology of Disease, Pathophysiology and Therapeutics and Introduction to Clinical Pharmacy Practice were offered to the undergraduate pharmacy student for the first time in the late 1970s. Most of the lecture courses were team-taught. In addition to formal lectures, one-on-one teaching was used as a teaching style in the clinic setting. Pharmacy Practice faculty continued their service responsibilities, providing support to the medical staff in the clinics at North Carolina Memorial Hospital (NCMH). The Division was also responsible for a number of ambulatory care programs that provide pharmacy services and experiential teaching to students at the Orange-Chatham Comprehensive Health Services (OCCHS) Program, the Interdisciplinary Health Team Development Project, and the Primary Care Clinic at NCMH.

When the American Council on Pharmaceutical Education (ACPE) mandated that B.S. Pharmacy programs increase the time spent by students in a structured clinical environment, another curriculum revision had to be made in 1977. To satisfy the ACPE accreditation standard, the curriculum expanded its experiential program from 6 to 15 weeks. Students were now assigned to one of the nine off-campus AHEC sites or the on-campus site in Chapel Hill. Each AHEC site was staffed by one or two clinical pharmacy

faculty and supported by volunteer practitioner-instructors to assist in training students at community or hospital pharmacy sites. A snapshot of the activity of this program in 1980 showed there were 170 certified practitioner-instructors in 84 community and 49 hospital training sites throughout the state providing experiential training. Overseeing this experiential activity were the AHEC pharmacists who coordinated the training of 162 students during the academic year.

One of the educational commitments of the School is to enhance the practice of pharmacy through educational programs carried out with the faculty on campus and in the Pharmacy Area Health Education Centers. The School formed advisory committees of practitioners from the local pharmaceutical organizations and co-sponsorship from the pharmaceutical industry to provide input to develop C.E. programs. Continuing education became mandatory for licensure in North Carolina on January 1, 1985, creating a change in the demands by pharmacists to comply with the new regulation. A director of continuing education was appointed by the School to accommodate the expected increase in C.E. programs. To meet the demand by practicing pharmacists throughout the state to satisfy their C.E. requirements, programs were provided at the nine AHECs in sites within a 90-minute drive for most of the state's pharmacists. In 1991 the AHECs provided 199 programs that totaled 830 hours of instruction.

Several programs were developed or initiated within the Division of Pharmacy Practice between 1977 and 1992.

*Pharmacy Practice Residency:* A new Master of Science residency program began in 1977 that differed from the traditional hospital residency as it accentuated development of leadership pharmacy services in health care delivery settings such as community health centers, health maintenance organizations and skilled nursing facilities. The first residents completed the program in 1979. The residency program was accredited in 1979 by the American Society of Hospital Pharmacists.

*Clinical Research Fellowship Program:* A fellowship program in clinical/drug development was established between Burroughs Wellcome Company and the Division in 1980 to allow the Fellow to train one-half the time with the Medical Department at Burroughs Wellcome and one-half time in Division activities. This program began by the initiative of Heyward Hull who asked his employer, Burroughs Wellcome Company to sponsor a fellowship program where the first year was spent at the University under the mentorship a faculty member and the second year continued with the sponsoring company. Other clinical research fellowships were eventually sponsored by GlaxoSmithKline, PPD, Pozen and EMD.

*Doctor of Pharmacy Degree*



**First University of North Carolina  
Pharm.D. Class - May 1983. (L-R) Eula Beasley,  
Emily Cate, Casey Laisure, Debbie Cartwright,  
Jan Perry.**

*Program:* The Pharm.D. program began with five students in the summer of 1981 and was later increased to fifteen in 1986. The Pharm.D. program was a course of study of four semesters plus one summer session available to students currently enrolled in the Bachelor's curriculum or graduates with a B.S. Pharmacy degree. The final year of study consists of clinical clerkship rotations. This program ended with the implementation of the entry-level Pharm.D. curriculum in 1996.

*Practitioner-Instructor Development Program:* The Program was implemented in 1986 to assist the School's Practitioner Instructors in becoming effective teachers. Working with the Office of Educational Development of the School of Medicine, educational materials were prepared for a training manual for teachers and a learner's manual for individual preceptors. The Program included training workshops for teachers and preceptors and a series of videotape vignettes for the instruction of the practitioner-instructor. Grant awards from AACP (GAPS), Burroughs Wellcome Company and the Lupton Opportunity Fund were utilized to support the curricular training program. In 1989 the Master Practitioner-Instructor Development curriculum was unveiled nationally at the APhA Annual Meeting. The Program has been adopted by more than two-thirds of the schools and colleges of pharmacy in the United States.

*Internship Exchange Program:* Since 1988 the Pharmacy AHEC sponsored an Internship Exchange Program with the University of Wales College of Pharmacy during the summer months. Students from each school participated in the exchange. The exchange program allowed the students from each university to live, work and learn about each other's health care system and get a better understanding of the culture of another country. After several years of exchanges, the program was discontinued.

The comments of the Division Chair in 1990 provided a capsule view of the Division faculty. "In the 1960s this Division was created to provide experiential education as a new component of pharmacy's educational mission. Many new faculty (members) saw themselves as change agents for both the education and the practice of pharmacy. Over the years the Pharmacy Practice faculty have matured and become comfortable in the higher education system. As the Pharmacy Practice faculty mission increased, they found themselves with less time for experiential teaching and patient care service delivery experimentation. Once again it is necessary for pharmacy practice faculty to become change agents in the drive to re-professionalize pharmacy around the delivery of pharmaceutical care. Pharmacy faculty members need to become role models to demonstrate how pharmaceutical care can be delivered in ambulatory care settings..."<sup>9</sup>

### **Medicinal Chemistry and Natural Products.**

The Division of Medicinal Chemistry and Natural Products Courses did not experience many changes and size of its faculty as the Division of Pharmacy Practice, during the period of 1974-1992. Courses in the baccalaureate curriculum taught by the Medicinal Chemistry faculty gave the pharmacy student a foundation in science and the necessary tools to provide drug information unique to other members of the health team. The 1977 pharmacy curriculum included five required courses taught by Division faculty, a one-semester course in Pharmacognosy and four courses in Medicinal Chemistry. The course Introduction to Medicinal Chemistry taught students functional group chemistry. A Biochemistry course described biochemical pathways and processes in the third year of the curriculum. Two medicinal chemistry courses in the fourth year of the five-year pharmacy curriculum introduced the chemical and physical properties of

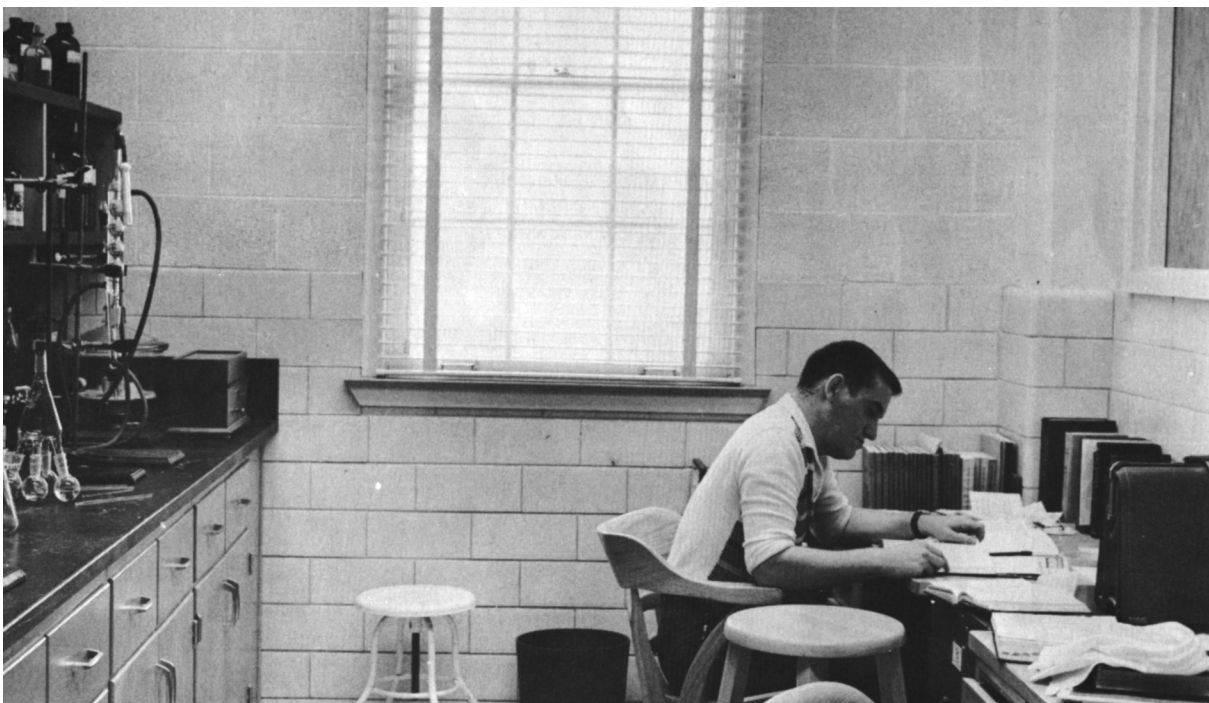


drugs and their relationship to biological activity. This two-semester course evolved from an early sequence of courses called “Materia Medica” that gave descriptive information of medical materials used in pharmacy. These courses were later revised to introduce pharmacology principles and were called “Therapeutics” for many years. The courses were team-taught by the faculty and coordinated with the cooperation of the Department of Pharmacology to prepare the pharmacy students for coursework in clinical pharmacy. The “Therapeutics” courses were later more appropriately named Medicinal Chemistry as their content became more descriptive of the chemistry and biochemistry of drugs. Division course offerings underwent almost annual change in content as the Curriculum Committee made modification in the course offerings. The course Pharmacognosy was taught until 1981 and then deleted and replaced by Microbiology taught by the Department of Microbiology and Immunology in the School of Medicine.

Medicinal Chemistry courses were originally titled Pharmaceutical Chemistry. This was in reference to earlier teachings in pharmacy curricula that provided students information on the chemistry of pharmaceutical products. It pointed out in 1968 that in the pharmaceutical industry, Pharmaceutical Chemistry has the connotation of physical pharmacy which is an entirely different discipline and should be included in an academic discipline designated as Pharmacy, Pharmaceutics or Pharmaceutical Technology. It was more accurate to use the term Medicinal Chemistry to define this area of study as the topics offered in the courses were less of a blend of chemistry and pharmacy and more of one of medicinal applications of pharmaceuticals to chemistry.<sup>10</sup> The new name appeared in the 1967-68 School catalogue. When the division structure of the School was created, the Division was named Division of Medicinal Chemistry and Pharmacognosy to represent both areas of study. In 1983 the name changed to Division of Medicinal Chemistry and Natural Products to represent the teaching and research activities of the faculty.

Between the years 1977-1991 the Division was chaired by two faculty members, George Cocolas from 1977-1982 and Claude Piantadosi from 1983-1991. There were nine full-time faculty members who taught the undergraduate and graduate Medicinal Chemistry courses in 1977. Not unusual in basic science departments of pharmacy schools, these faculty members came with different education backgrounds that included graduate degrees in chemistry, physiology or medicinal chemistry. Four faculty members at one time had active registered pharmacy licenses. Two had pharmacy degrees from a foreign country. The faculty were: George Cocolas, George Hager, Iris Hall, Khalid Ishaq, Kuo-Hsiung Lee, Larry Loeffler, Claude Piantadosi, Fred Semeniuk and Jack Wier. Few changes in the faculty occurred until the retirements of Semeniuk in 1980 and Hager in 1981. James Maguire and Steven Wyrick then joined the faculty in 1981. Other retirements took place with Larry Loeffler, in 1987, and James Maguire, in 1988, both leaving because of illness. Jack Wier retired in 1988. Replacing these vacant positions were Phil Bowen in 1987, Jane Millen in 1989 and Ray Booth in 1990.

The Division of Medicinal Chemistry and Natural Products had its offices and laboratories on the second and third floors of Beard Hall. The faculty offices and labs were small but strategically placed at the end of the two large undergraduate laboratories on the second floor at the north end of Beard Hall to be accessible to undergraduate students during the laboratory exercises. When the building was constructed, the planners did not foresee the long-term requirements for space needed for faculty research, and as a result the laboratory offices were too small and unsafe by today’s OSHA standards. Each office laboratory had



**Graduate Laboratory office, Third Floor Beard Hall, School of Pharmacy,  
University of North Carolina**

ten feet of laboratory bench space, a sink and a small ventilation hood near the door. The office laboratory had a door on the wall that opened up to the adjoining laboratory to serve as an emergency exit. The third floor on the north end housed the graduate students in similar office labs and the Division offices. There was a constant temperature room to house special equipment, but when a nuclear magnetic resonance spectrometer was purchased to be placed there, its magnet was too heavy to be safely supported by the flooring and had to be located in the basement. To accommodate the increased research activity of the Division, many renovations took place between 1977 and 1991.

Major renovations on the third floor of Beard Hall were made in 1978. The large laboratory and the plant room that was used for the Pharmacognosy course was remodeled to accommodate the research group of Dr. K.H. Lee. Dr. Lee had a collaborative program with researchers in the departments of chemistry at Duke University, the University of Tennessee and the UNC Departments of Botany and Microbiology. Lee, a 1969 Ph.D. graduate from Minnesota, had an extensive collection program of natural products from The Peoples Republic of China and traveled frequently to consult with colleagues at Sinica Academia and National Taiwan University in Taiwan. He was fluent in many Oriental dialects and could read and write in Chinese and Japanese, removing many communication barriers. His research was directed to isolation and structural identification of chemicals from natural products. Biologically active chemicals were further studied for development. A Natural Products Laboratory was formally established in 1983 within the newly named Medicinal Chemistry and Natural Products Division with Dr. Lee as the Director. Dr. Lee's research has been very productive in isolating and identifying chemicals from natural products, many originating from the Orient. His laboratory has been supported by the American Cancer Society, the National Institutes of Health and a number of private companies. The Natural Products Laboratory has a

large rotating roster of postdoctoral researchers coming from universities and institutes in Japan, Taiwan and the Peoples Republic of China.

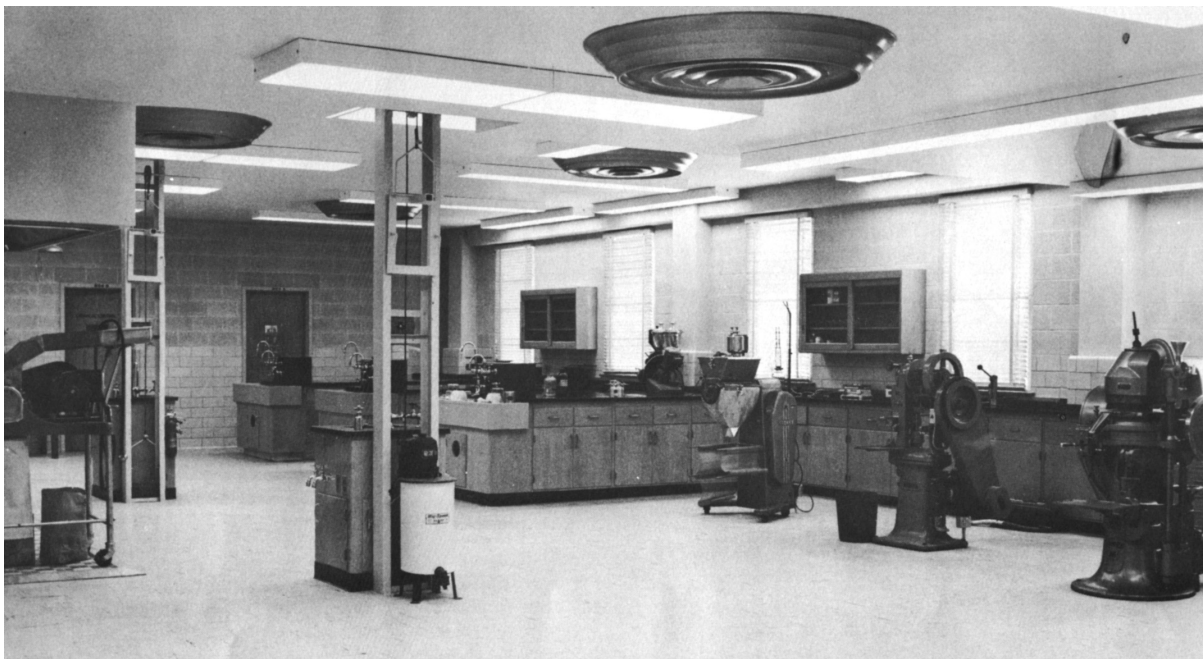
In another renovation two of the small laboratory offices in Beard Hall were remodeled to allow Dr. Steven Wyrick to handle high-level radiolabelled chemicals. Dr. Wyrick received his B.S. Pharmacy and Ph.D. degrees from UNC. He came to the School from the Research Triangle Institute in the RTP where he was a senior research chemist. The laboratory facility was designed to handle large quantities of isotopes to custom radiolabel molecules for researchers. His work led to collaboration with the departments of chemistry at UNC and Duke University as well as the UNC Department of Biochemistry. Wyrick, a popular teacher, taught for many years and replaced Piantadosi as Division chairman in 1992 until he was forced to retired in 2000 because of poor health.

The School took advantage of the developing science of computational research and the donation of state-of-the-art computer hardware and software valued at \$500,000 by Triplos Associates, Tetronics, Polygen and Silicon Graphics. Through the initiative and direction of Dr. Phillip Bowen, the Molecular Modeling Laboratory was established and placed in Room 301. The Laboratory allowed the Division to take a lead in education in this field of study. Governor James Martin dedicated the Molecular Modeling Laboratory in a ribbon-cutting ceremony on April 26, 1988. The Laboratory offered an interdisciplinary course in molecular modeling and computational chemistry in computer-assisted drug design in cooperation with the departments of chemistry, biochemistry and computer science on the UNC campus. Lecturers also came from researchers of Research Triangle Park pharmaceutical companies, Burroughs Wellcome and Glaxo, Inc. Dr. Alexander Tropsha, a graduate of Moscow University, took over the director's position when Dr. Bowen resigned in 1990 to join a similar program at the University of Georgia.

## **Pharmaceutics**

The Division of Pharmaceutics experienced a number of changes between 1974 and 1992. Three individuals served as Division chairs during this time. Albert Mattocks who chaired the Division since 1969 stepped down from that post in 1979 and was replaced by James Olsen and then James Swarbrick in 1982. Swarbrick was a pharmacy graduate from London University and received his Ph.D. in Pharmaceutics from London University's Faculty of Medicine, a D.Sc. in Surface and Physical Chemistry from London University, had served as Dean of the School of Pharmacy at the University of London and had been Director of Product Development at the Sterling Winthrop Research Institute. The faculty in 1977 included nine faculty members in the professorial ranks and two clinical instructors. The areas of study taught by the Division were: an understanding of dosage forms and their preparation, (Basic Pharmaceutics); physico-chemical principles applied to pharmacy, (Physical Pharmacy); and a study of the time-course of drugs and their metabolites (Pharmacokinetics and Biopharmaceutics). The content of the Physical Pharmacy course was incorporated in the pharmacokinetic-biopharmaceutics courses in later years. Elective.

Many faculty changes occurred in the 1970s and early 1980s. A Division faculty that was the same for many years found itself undergoing change. Bob Blum, a graduate of the University of California with a Pharm.D. and Ph.D in Pharmaceutical Chemistry, who came to the School in 1972 to strengthen the biopharmaceutics research program with Al Mattocks, left the University in 1979 to join the research



**Manufacturing laboratory -304 Beard Hall, School of Pharmacy,  
University of North Carolina**

group at Burroughs Wellcome in the Triangle. James Olsen, a Ph.D. graduate in Pharmaceutics from the University of Minnesota, who came in 1969 to teach and head the Drug Product Program decided to leave academia to start his own pharmaceutical manufacturing company in 1984. Herman Thompson, the senior faculty member, retired in 1978 as did the chair, Al Mattocks in 1982.

Other faculty changes followed. Tim Sullivan (1977-1979), a Ph.D. graduate from the University of Michigan, left to teach at the University of Toledo. Bill Wargin (1980-1982), Ph.D. graduate of the University of Minnesota, resigned to join Burroughs Wellcome Research Laboratories in the Triangle. Hani Sadek (1980-1983), a Ph.D. graduate from Germany, left the School to work for a gelatin manufacturing company in California and then moved back East to teach at the School of Pharmacy at the Medical University of South Carolina. Dale Eric Wurster (1979-1981) came to UNC with a Ph.D. in Physics from Purdue but returned to teach at that institution in the School of Pharmacy and Pharmacal Sciences after three years. Gary Liversidge (1982-1984), who had a pharmacy degree from the University of Bradford and a Ph.D. from the University of Nottingham, England, resigned to join a pharmaceutical R&D laboratory. James Longstreth (1983-1987), who came to the School with a Ph.D. in Biomedical Engineering from John Hopkins University resigned to enter the pharmaceutical industry at Searle and Company. Kathy Kletch (1987-1991), a Ph.D. graduate of the University of Connecticut, resigned to take a position with Johnson & Johnson Company. Heyward Hull, a UNC B.S. and Pharm.D. graduate (1970-1978), resigned and moved over to Burroughs Wellcome Company that provided other opportunities.

B. Wesley ("Boka") Hadzija joined the faculty as an instructor in September 1970 to teach pharmaceutics courses and Dr. Richard Kowalsky came to UNC from the University of Kentucky in 1972 with a joint appointment between the School and the Division of Nuclear Medicine of the Department of Radiology in



the School of Medicine. Both were needed new faculty. Dr. Hadzija, originally from Zagreb, Yugoslavia received degrees in chemistry and pharmacy and a Master's and Ph.D. in pharmaceuticals from the University of Zagreb. She came to UNC after teaching at the University of Connecticut, the University of London and in Ghana, West Africa.. Dr. Kowalsky serves as a nuclear pharmacist for NCMH and teaches radiopharmacy in the School of Pharmacy and the Department of Radiology. Both have been a constant on the Pharmaceutics faculty which has undergone much change since the 1980s.

The introduction of the study of biopharmaceutics and pharmacokinetics in the pharmacy curriculum brought changes in the approach to drug use by the pharmacist and gave a new direction for the Division faculty appointments. Bob Shrewsbury came from the St. Louis College of Pharmacy to join the faculty, and James Swarbrick was appointed chair of the Division in 1982. This was followed by appointments as assistant professor to Joseph Rubino (1984), a Ph.D. graduate of the University of Arizona, who remained for seven years before leaving for a research position with the DuPont Pharmaceutical Company in Wilmington, Delaware in 1991. Together with Dale Wurster, they carried out research in dosage form design and material science and taught the basic pharmaceuticals courses for the Division before both leaving in 1981. Two faculty with backgrounds in kinetics were added in the mid 1980s, Gary Pollack from the State University of Buffalo in 1984 and Kim Brouwer from the University of Kentucky (1986), who in addition to a Ph.D., was a Pharm.D. graduate. With the numerous resignations and appointments in personnel during the 15 years of Miya's tenure, Division faculty numbers remained surprisingly the same.

The curriculum in the B.S. program during 1977-1992 included three courses taught by the Pharmaceutics faculty. A course, Pharmaceutical Calculations, formerly taught by the Division, was later transferred to the Division of Pharmacy Practice. Two courses in Basic Pharmaceutics with laboratory instruction taught the theory and practice of physical-chemical principles as applied to pharmacy and an introduction to pharmaceutical dosage forms. A third course, Pharmacokinetics and Biopharmaceutics, provided a basic study of the concentration-time course of drugs and their metabolites to provide students with the background to understand bioavailability and the design of dosage regimens.

Despite many attempts to consolidate the faculty in one area of Beard Hall, the Division faculty offices and labs were found throughout Beard Hall. In the 1960s the curriculum included required courses with laboratory sessions where students prepared dosage forms and compounded prescriptions. Pharmaceutics faculty occupied offices on the second floor near the undergraduate labs. The third floor included the manufacturing laboratory under the direction of James Olsen and Henry Smith that housed tablet presses, coating pans and equipment to teach methods of manufacturing pharmaceuticals. With good manufacturing guidelines, the manufacturing laboratory provided products to NCMH and some government agencies and taught manufacturing processes to pharmacy students. As this part of the curriculum was deleted, these labs were renovated to accommodate research laboratories for Pharmaceutics faculty. A sterile solutions lab with an autoclave withstood renovation changes for some time but that too was converted to a research lab. A Drug Development Research Laboratory, initially under the direction of Dick Kowalsky, took advantage of renovations on the second floor of Beard Hall to develop an area where Pharmaceutics graduate students and Pharmacy Practice clinical fellows could carry out research activity. The Laboratory conducted pharmacokinetic and pharmacodynamic research and was a training ground for those in clinical



research/drug development and clinical pharmacokinetics. Its activity was discontinued following faculty resignations for positions in the pharmaceutical industry.

### **Pharmacy Administration**

Until the beginning of Tom Miya's term the Division included only three faculty members: the associate dean, LeRoy Werley, Leonard Berlow, a retired U.S. Air Force officer who was appointed to head the Drug Abuse Education Program during George Hager's term, and Melvin Chambers, the former assistant dean of the School under Edward Brecht and part of George Hager's tenure. The curriculum included a course in general accounting offered by the School of Business and courses in pharmacy management and pharmacy law by the Division. When Jean Paul Gagnon was added to the faculty, a course in financial and personnel management replaced the general accounting course offered by the School of Business. Werley was relieved of his administrative responsibilities as Division chair when Gagnon was appointed chair of the Division in 1977. Gagnon, a B.S. graduate from the University of Connecticut, received his Ph.D. degree at The Ohio State University under the tutelage of Chris Rodowskas. In 1977 Raymond Jang was added to the Division to teach social science aspects of pharmacy in the curriculum. To respond to the changing health care environment and expectations of the public, the Pharmacy Management course that introduced distribution of pharmaceutical products and channels of distribution of drug products was revised and renamed Pharmacy and Health Care to give students a perspective when taking an active role in planning and implementing pharmaceutical services in a health care setting. The Division was allowed to develop its graduate program when the Master's degree in Pharmacy Administration was approved by the Graduate School in 1978, allowing five graduate students to be enrolled.

The Division turned over the chairman's position to Chambers for one year (1981-82) when Gagnon was awarded a Robert Wood Johnson Health Policy Fellowship through the National Academy of Sciences to spend a year in Washington, D.C. Just before Gagnon's return, faculty changes altered the composition of the Pharmacy Administration Division. Ray Jang resigned in 1981 to take a position at the University of Cincinnati and was replaced by Abraham Hartzema in 1982. John Mackowiak and Joseph Thomas also joined the faculty and were appointed in 1984. With the added faculty, the Division offerings in the pharmacy curriculum included Social and Behavioral Aspects of Pharmacy, Financial Management, Human Resources Management in Pharmacy, Pharmacy Management and Pharmacy Law. A joint Ph.D. program with the Department of Health Policy Administration of the School of Public Health began in 1983, offering graduate students an opportunity to pursue studies in this increasingly important area of pharmacy.

With the new faculty, the Division began to broaden its scope of activity to include studies on finance, epidemiology and personnel administration. In 1987, after the addition of two more faculty members, Jan Phillips and Jane Osterhaus, a visiting assistant professor from Glaxo Inc., the Division established the Pharmacy Policy and Research Laboratory with a described mission of challenging tomorrow's pharmacy issues today. It brought together researchers from schools of pharmacy, business, economics, medicine and public health. In 1987 the Division and School of Business Administration were selected by the American Pharmaceutical Association to offer the William S. Apple Memorial Program in Community Pharmacy Management. The program, designed to memorialize the contributions of Dr. Apple, brought proven

leaders in community pharmacy together in our University environment for study, sharing and growth that are unavailable to them in their own organizations. The Laboratory also hosted a Leadership in Pharmacy Conference consisting of national pharmacy leaders in 1988 that discussed strategies to improve leadership in the profession. It also provided executive management seminars on statistical thinking, program implementation and contemporary aspects of leadership and management.

The proximity of pharmaceutical companies in the Research Triangle is an advantage as a resource for faculty in the Division. It has been, at times, a disadvantage to the School as interest in working with industry colleagues has resulted in several resignations. As the scope of this discipline grew and job opportunities expanded in the corporate world, a stable faculty complement was difficult to achieve. William Johnston resigned his AHEC clinical faculty appointment to join the Division as an assistant professor in 1988. Christopher Kosma was added to the faculty in 1989, but returned to teach at the University of South Carolina two years later. Faculty turnover continued into the 1990s. Joseph Thomas resigned to teach at his alma mater, Purdue University, in 1987 and John Mackowiak took a position with Glaxo Inc. in 1990. Jan Phillips, a graduate from the University of South Carolina, was appointed to replace Thomas in 1987, but resigned two years later to also take a position at Glaxo Inc. After ten years as chair of the Division, Gagnon resigned in 1988 to take a position with the pharmaceutical company, Marion-Merrill-Dow. Fred Eckel served as joint chair of the Division of Pharmacy Administration and Division of Pharmacy Practice until a new chair could be identified. Joseph Norwood, a former dean at the College of Pharmacy of Nova Southeastern University, was recruited to the chair position in 1990.

Continuing its growth, a graduate program arrangement with Glaxo Inc. through a joint-sponsored Fellowship in Health Policy, Health Economics, and Governmental and Professional Affairs was formed. Strengthening the Division, Christine Hansen and Brian Rittenhouse, joined the faculty in 1991. Keeping up with the changing environment of economics in the pharmaceutical industry, the Division of Pharmacy Administration and the Department of Health Policy and Administration established a Program on Pharmaceutical Economics and Policy in 1991 supported by a grant from Burroughs Wellcome Company.

### **School Activity**

As the School developed in the 1980s, opportunities arose to showcase its pharmacy program and the University. In 1986, using the Division of Medicinal Chemistry and Natural Products as the host unit of the School, the American Chemical Society Medicinal Chemistry Symposium held its annual symposium in Chapel Hill. The meeting brought together an international group of speakers and seminarians with Nobel Laureate Paul Brown serving as the banquet speaker. The plenary lectures were held in the Paul Green Theatre on the UNC campus. In 1987 the School was the host to the annual meeting of the American Society of Pharmacognosy in Chapel Hill that brought scientists in the field of natural products research to the campus. Tom Miya's active role as president in the Society of Toxicology and respect as a researcher led to his chairing the Curriculum in Toxicology for the School of Medicine and subsequent funding of a post-doctoral and pre-doctoral training grant in this discipline, bringing graduate students into the pharmacy school programs. He served as chair of the Curriculum in Toxicology of the School of Medicine for 15 years while he was dean of the School of Pharmacy

The resources of the University made it possible for an NIH grant to establish a Health Promotion/Disease Prevention (HPDP) Center at the University of North Carolina in 1984. The UNC program center was designed to encourage coordination among its health science schools. Health Promotion projects by the School of Pharmacy included screening clinics for hypertension, cholesterol, and diabetes at Pharmacy Alumni reunions by pharmacy students. Faculty research initiatives in HPDP led to funding by the Hartford Foundation on drug therapy management in rest homes, a student AIDS awareness program that received an award by the National AIDS Organization in Washington, and a student drug abuse prevention program in the elementary schools in the Triangle area.

Several initiatives were built around the understanding that the population of the aged was going to have an impact on the pharmacist in health care. The School's Program on Aging is a multidisciplinary association of faculty committed to geriatric teaching, research and service in collaboration with similar programs in the other health sciences schools. Pharmacy courses were revised in the curriculum to bring awareness of the needs and caring of the elderly. A Pharmacy Fellowship in Geriatrics and a residency in Geriatrics with support by the state and the pharmaceutical industry began in 1990.

The School has been fortunate in attracting students of good academic records and leadership qualities. To encourage these qualities for lifelong learning, the W.J. Smith Practitioner-in-Residence program was initiated in 1988 to bring successful practitioners to the School to meet with students and serve as examples of successful pharmacists. The program was first sponsored by Glaxo Inc. and later by the Pharmacy Foundation of North Carolina. Banks Kerr was selected as the first Practitioner-in-Residence to visit the School and was followed in later years by presidents and leaders of national organizations. Following a recommendation of the School of Pharmacy Task Force on Professionalism, an Honors Program was established in the School to provide intellectual stimulation and growth for highly motivated students. The Honors Program was in concert with the University's Honors Program and included weekly student seminars and a research project. Honors students from the School of Pharmacy were recognized beginning with the May 1984 Commencement.

Student publications have been a part of the School. In 1977 the UNC School of Pharmacy newsletter *Script* began publishing in the *Carolina Journal of Pharmacy*. *Script* often included articles by faculty and students on drug information and current aspects of pharmacy. In 1980 *pHarm~pHacs*, a publication of the APhA Student Branches, began publication bringing news of School activities to the students. Another publication, the *Pharmacy Mirror*, began in 1983 by the School of Pharmacy to keep alumni informed about faculty and student activities. The *Mirror* now known as *Carolina Pharmacy* is published by the Pharmacy Alumni Association twice a year for alumni and friends of the School. It provides profiles of faculty and students and reports events and programs of the School and alumni.

### **Student Life**

With most of the classes in the pharmacy curriculum being held in Beard Hall, the building became a home away from home for pharmacy students. Buried in the avalanche of curriculum changes, building renovations and program growth was the life of the student in pharmacy at UNC. College is one of challenges and experiences that remain forever in the mind of the student. It is an understanding gained

from the influence of instructors on their professional and personal behavior and the camaraderie that develops between students themselves. Since 1959 when the new Pharmacy building was opened, Beard Hall has been the student's focal point. The student lounge on the first floor intended for students, faculty and staff was furnished with tables, chairs and couches. The lounge was refurbished with new furniture by the Woman's Auxiliary of NCPhA, the Pharmacy Alumni Association and later renovated using School funds. The small kitchen as part of the lounge was available for use by students, staff and faculty. The lounge and kitchen were the replacement for the bench in the basement of Howell Hall in the 1950s with the Coke machine and the peanuts you could buy from the stockroom manager (for 5¢).

Orientation Day for the first-year pharmacy students is held the day before the beginning of class to introduce students to instructors and the curriculum. The one large room (111Beard) used for that first meeting later became very familiar as it was where the majority of lectures were given. Beginning in the 1950's pharmaceutical manufacturers invited pharmacy schools to visit their facilities and learn about the manufacturing process. Many memories will remain with North Carolina students who were in the caravan of busses that brought them to the William S. Merrell Company in Cincinnati, Eli Lilly & Company in Indianapolis, the Upjohn Company in Kalamazoo, Abbott Laboratories in Chicago or Parke-Davis Company in Detroit. Social events dot the School calendar throughout the year. A traditional student picnic brings students together before classes started. The picnic in the 1950s took place in Battle Park and later at Storybook Farm in Chatham County. An event, Family Day, was initiated by the students to bring family members and friends to the School to showcase their "home away from home."

The Student Branch of the North Carolina Pharmaceutical Association was organized in 1952 and had monthly meetings that included a variety of programs including invited speakers to present pharmacy issues of the time. The student body organized a Pharmacy Senate in 1973 with representatives from each of the organizations in the School, including all classes, Rho Chi, Phi Lambda Sigma, fraternities and other organized groups to coordinate the activities of each. The students met regularly to keep everyone informed of plans and events. The 1970s and 1980s were years when professional pharmacy was making inroads on justifying their part as health care providers. With the guidance of faculty, students held screening clinics in shopping malls and in local pharmacies on high blood pressure and diabetes for the general public. An innovative puppet video with original script and music titled "Listen to Your Body Parts" shown to elementary school children and distributed throughout the state described the harmful effect of drugs on organ parts. Carolina Association of Pharmacy Students (CAPS), fraternal organizations, Kappa Epsilon, Kappa Psi and Phi Delta Chi participate in University health fairs, "brown bag" for area elderly citizens, fundraisers for Ronald McDonald House, collecting food for the Food Bank, volunteering at Chapel Hill's Interfaith Council Homeless Shelter medical clinic, or responding to natural disasters resulting from flooding due to hurricanes such as Floyd in 1999. The School also supports annual blood drives for the Red Cross.

Employment Day each year brings together students and prospective employers. This event began in the 1980s with informal discussions by employers with students in Beard Hall expanding to meetings at the Carolina Inn and then the Great Hall in the Student Union Building. Beginning in 1989, the event has been held in the Dean E. Smith Center during January or February of each year to coincide when students are changing from one rotation site to another during their final (fourth) year. Students in the third and second



year also have an opportunity to begin dialogue with prospective employers.

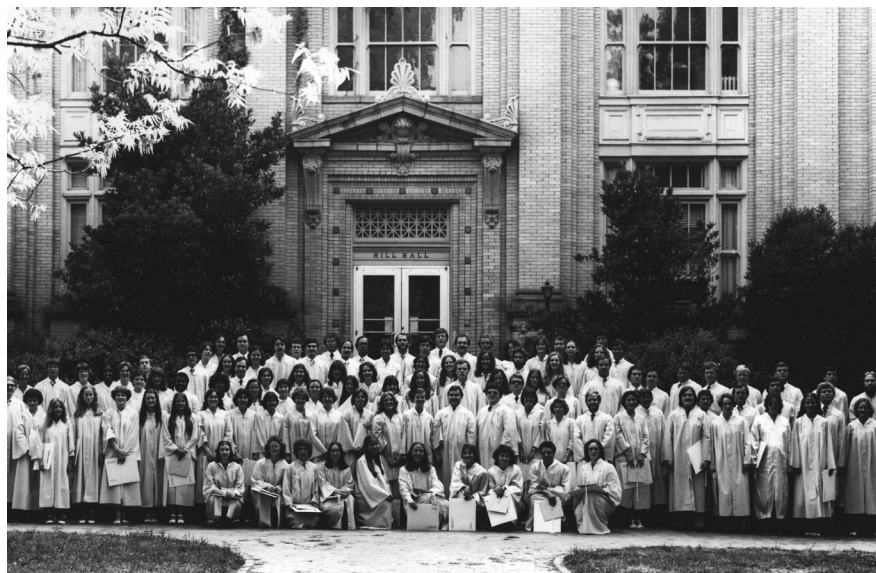
Scholarship and service for graduate and pharmacy students is recognized at an annual Awards ceremony. The awards are provided by the School, pharmaceutical companies, and fraternal organizations and from endowments provided by individuals to the North Carolina Pharmacy Foundation of North Carolina. This event held in the auditorium in Howell Hall until



**School of Pharmacy Awards Night program in 111 Beard Hall, School of Pharmacy, University of North Carolina.**

1959 was relocated to Room 111 when Beard Hall was occupied. The program was moved to the Europa Hotel in 1989 as the size of the program grew. A reception was then added to the event. In 1990 the award the program was moved to the Morehead Planetarium Building on campus to provide an elegant environment for the occasion.

Commencement for the graduate comes with mixed emotions. For some it is a time that has finally to come; for others, it is a time that has come too quickly. The University places great emphasis on the commencement program of its students and the School of Pharmacy willingly takes its part in the ceremonies recognizing the achievement of its graduates. In the 1950s because of small enrollments little recognition was given to fall semester graduates. When the number of University students graduating after the fall



**The graduating class of 1980 on the steps of Hill Hall, UNC Campus, School of Pharmacy, University of North Carolina.**

semester increased, a formal graduation program was held either in Memorial Hall or Great Hall in the Student Union. Commencement exercises for spring semester graduates are held in Kenan Stadium. To bring more intimacy to the graduate, professional schools also have a convocation program to recognize its graduates. When pharmacy classes were small, the convocation program was an informal





**The graduating class of 1997, School of Pharmacy, University of North Carolina.**

affair and held in the Howell Hall auditorium and later 111 Beard Hall. With the increase in enrollment of the graduating classes that followed, the program was moved to Great Hall in the Student Union in 1969 and then to the Hill Hall auditorium of the School of Music from 1972-1983. When other disciplines added convocation programs to recognize their graduates, it became necessary to share the small number of available campus sites with the Medicine, Dentistry, Nursing, and Business schools. The convocation program for graduates and their families and friends is now held in Carmichael Auditorium or the Dean E. Smith Center at various times following the University commencement exercises.

### **Pharmacy Foundation of North Carolina**

Paul A. Bissette Sr., president of the North Carolina Pharmaceutical Association in 1946, recommended the formation of a committee whose duty was to develop “a more favorable relationship between Pharmacy and the drug industry with the general public... and formulate a campaign for the solicitation of scholarships in the School of Pharmacy in the University.” On December 19, 1946 twelve Pharmacy leaders in the state established a non-profit organization known as the North Carolina Pharmaceutical Research Foundation. An initial 12-man Board of Directors was elected, eight from the North Carolina Pharmaceutical Association and four non-members. The objective of the Foundation was “to foster and promote growth, progress and general welfare of pharmaceutical education and research in the School of Pharmacy at the University of North Carolina and throughout the state.” Two of the reasons for starting the Foundation were the need to encourage good students to study pharmacy and Dean Marion Jacobs’ strong desire to strengthen the graduate program of the School by awarding scholarships. Starting with donations from the original directors in 1947, the Foundation was able to provide awards totaling \$1,200 in the winter of 1947 to deserving students for tuition and scholarships. When Marion Jacobs died, Ed Brecht assumed the position of secretary-treasurer of the Foundation. The name of the Foundation was changed in 1989 from the North

Carolina Pharmaceutical Research Foundation to the Pharmacy Foundation of North Carolina to more accurately reflect the way in which the funds were used, i.e., scholarships.

Lloyd Milton Whaley, '51, President of the Foundation and Chairman of the Executive Committee of the Board of Directors, recalls when he graduated the dean asked all graduating students to pledge \$10 a year to the Foundation for life. After Whaley graduated Dean Brecht appointed a pharmacist in all the 100 counties in the State and asked if they would be on a committee to raise funds for the Foundation. Soon, contributions from alumni came from all 100 North Carolina counties with donations ranging from the \$10 to shares of stock holdings. Five years later the Foundation assets had a balance of \$100,000.

The Foundation celebrated its many accomplishments at its 50th year anniversary in 1997. One of the first large contributions to the Foundation included a \$15,000 gift from the B.C. Remedy Company in 1947 for general research on analgesics. Later, in 1954, the Isaac E. Emerson Memorial Fund was created by F. Jackson Andrews, '15 from 1,000 shares of Class A stock in the Emerson Drug Company as a tribute to this innovative entrepreneur. Isaac Edward Emerson was a native of Chapel Hill, born on July 24, 1851. He was a graduate of the University of North Carolina class of 1879 having studied chemistry. Records show that in the early 1870s Isaac Emerson worked for a physician A.B. Robertson who owned a drug store. In the early years of the 20<sup>th</sup> century Isaac Emerson operated his own drug store located where University Baptist Church is presently located (near corner of Franklin Street and Cameron Avenue). There, he concocted a pain reliever known as "Bromo Seltzer" and subsequently moved to Baltimore, Maryland and founded the Emerson Drug Company. Emerson, the drug manufacturer, was also known as a naval officer, hotel and apartment builder, cattle breeder, plantation owner and yachtsman. In 1914 Emerson gave the University a check to construct Emerson Field where Davis Library and the Student Union now stand. In 1968 a one-half interest from the estate of Isaac B. Emerson in the form of the Bromo Seltzer Tower in Baltimore was awarded to the School and sold back to the city of Baltimore for \$143,000. F. Jackson Andrews, who was associated with the Emerson Drug Company, contributed securities from shares of Warner Lambert stock to endow the Fannie Jackson Andrews Award in 1975 for students who displayed a positive attitude toward pharmacy (see Award recipients in Appendix).

In 1983, fulfilling the estate of Joe Hollingsworth, a 1929 pharmacy graduate, was passed to the School by his sister, Mary L. Hollingsworth, after her death. Joe Hollingsworth was a community pharmacist and president of the North Carolina Pharmaceutical Association in 1939 when W.J. Smith became Executive Secretary of the state pharmacy association. W.J. Smith, before his death, told stories of Joe Hollingsworth and his driving around to pharmacies in North Carolina to enroll members for the Association. The Hollingsworth estate was valued at \$500,000 of which \$250,000 was assigned for undergraduate scholarships and the remainder as an unrestricted endowment to the Foundation. The Hollingsworth undergraduate scholarships have been awarded since 1985 to students for their leadership. The unrestricted portion of the estate gift supports a faculty scholars program. Hollingsworth Faculty Scholars are mid-career faculty members who have demonstrated innovative research. The Scholars Program supports them for two years with a research stipend. Since the inception of the Scholars Program in 1988, faculty members Dr. K.H. Lee, Dr. Moo Cho, Dr. Kim Brouwer, Dr. Celeste Lindley, Dr. Robert Shrewsbury and Dr. Angela Kashuba have been recipients.

Howard and Mescal Ferguson were gracious benefactors of the School and for Randleman County. They have made available educational scholarships for children of Randolph County residents for many years. In addition, their generosity has been extended to the School with bequests to the Foundation. In 1989 a \$500,000 charitable remainder trust from Howard and Mescal Ferguson provided a scholarship award program for pharmacy students in the last two years of their Pharm.D. program. In 1995 they established the first endowed professorship in the School of Pharmacy, first held by Dhiren Thakker of the Division of Drug Development and Distribution. At Howard Ferguson's funeral it was announced that an annual lecture series, the Ferguson Lecture, was being created from the bequests of the estate. The estate of Howard Ferguson was passed on to his wife Mescal after his death in 1990 and subsequently to the School on her death in 1999. The estate of Mescal Ferguson has gifted a \$1 million distinguished professorship to the School that was awarded Dale Christiansen and then Mick Murray, chairs of the Division of Pharmaceutical Policy and Evaluative Sciences. The total bequest from the Ferguson estate has been estimated at \$4 million.

The Foundation has received many generous gifts. Mr. and Mrs. George Bradham presented the School of Pharmacy with a \$500,000 remainder investment in 1991 in honor of Caleb Bradham, a druggist in New Bern who formulated "Bradham's Drink" at his soda fountain in 1896. By 1911 Caleb Bradham, a 1890 University of North Carolina graduate, had 300 franchised bottlers in 24 states that eventually became the conglomerate Pepsi-Cola. After passing through one generation, the corpus of the trust will go to the School. In another large bequest, \$500,000 was received from a pharmacy store owner, Benjamin "Doc" Stone, '26 of Elizabethtown on his death. The gift was directed to support graduate education and the development of the Pharmaceutics Skills Care Laboratory in the Doctor of Pharmacy curriculum.

In 1995 an anonymous gift of \$4 million was given to the School to be used for professional education. In 1996 the trust directed by Carolyn and Harold Malion, '77 was activated to provide three annual scholarships to students from underserved areas of North Carolina. The scholarship program totaling at least \$250,000 will be available for a period of 15 years. The trust was created by Mrs. Ruth Wootten, mother of Carolyn Malion, the granddaughter and one of the founders of Noxzema. The scholarship is named after Raymond B. Yingling, one of the two principals of the Noxzema Drug Company.

Gifts to the Foundation have given the School the opportunity to recruit and retain distinguished faculty. The North Carolina legislature has recognized the crucial role that endowed professorships play in major research universities by establishing the Distinguished Professor Trust Program. The Program established two levels of endowed professorships in the UNC System: \$1 million and \$500,000. When UNC system schools have raised, through private donations, two-thirds of the amount needed for a given professorship, the state will fund the other one-third. Howard and Mescal Ferguson established the Howard Q. Ferguson Professorships through their gifts of \$333,000 in 1995 and \$667,000 in 1999. Vaughn and Nancy Bryson, 1960 graduates, gifted \$100,000 to the School and challenged alumni, in 2000, to contribute an amount to total \$333,000 to establish the George H. Cocolas Professorship to honor his contribution to the School. This endowed distinguished professorship was awarded in 2004 to Dr. Kim Brouwer, chair of the Division of Pharmacotherapy and Experimental Therapeutics. Through the years the Brysons have given approximately \$1.5 million to support a number of programs of the School of Pharmacy. In 2000 the Brysons made a gift



of \$667,000 to the School to establish the \$1 million Bryson Distinguished Professorship awarded to Dean Robert Blouin in 2005. In 2001 Fred Eshelman ('72) co-founder and CEO of PPD, one of the nation's largest clinical research organizations, made a gift to the School of \$667,000 to establish the \$1 million Fred Eshelman Distinguished Professorship. In the largest gift given to a pharmacy school in the nation, and the third largest to the University of North Carolina, Fred Eshelman gave \$20 million to the School in 2003 to enrich a variety of programs that included facilities, professorships, equipment, graduate education, professional education and an unrestricted fund to enhance the programs of the School.

Administration of the North Carolina Pharmaceutical Research Foundation in 1947 was the responsibility of the dean of the School who served as secretary and treasurer. The dean kept records of all the funds and gave an annual report on the finances to the Foundation directors. The terms of the Directors were staggered to allow election of four new Directors each year. When the Foundation was bequeathed the property from the Isaac Emerson estate in 1968, George Hager decided that he needed assistance in managing the affairs of the Foundation and appointed an Executive Committee from the Foundation directors to help him. While the Board of Directors met once a year, the Executive Committee met more frequently to monitor the Foundation finances. One-half of the Foundation's assets at that time were invested in the CCB trust department and the other half with the Wachovia trust department. Expenditures from and contributions to the Foundation were monitored. In order to expend funds, it was customary for the Dean to submit a budget to be approved by the Foundation Board. Records were kept of individuals and the amounts they contributed to the Foundation. When their contributions became large enough, scholarships were awarded in their name.

The Board of Directors, from the inception of the Foundation in 1947, came primarily from the membership of NCPhA. The first group consisted of past presidents of NCPhA. The directors served four-year staggered terms of office. To have a broader representation in the Board of Directors, the size of the Board was increased to 24 members in 1953. The relationship between the state pharmacy association and the School of Pharmacy was exclusive. UNC alumni supported the state pharmacy association's Endowment Fund to supplement scholarships. The advent of a second school of pharmacy in the state placed the NCPhA in a position which was resolved by an amicable understanding with NCPhA where directors of the Foundation were not elected by members of the state association. In 1992 the By-Laws were changed to allow eight directors to be selected by the North Carolina Pharmacy Alumni Association.<sup>8</sup>

As the fiscal affairs of the Foundation grew, Tom Miya found it necessary to hire a bookkeeper and moved the records out of the Dean's office. AHEC faculty member Pam Joyner had been a member of the Board of Directors since 1986 when Dean Miya asked her to be President of the Foundation in 1991. She served in that position until 1994 when she received a faculty appointment to join the School. To avoid a perceived conflict of interest as a campus faculty member who receives benefits from the Foundation as a member of the Executive Committee of the Foundation, she resigned from the Board. Bill Campbell then approached Lloyd Milton Whaley to take over the post of president, and he was installed in 1994. Whaley recommended changes in the investment policies that strengthened the financial base of the Foundation by moving a portion of investments from the UNC Investment Fund and placing them with the Smith Barney investment firm. Foundation assets rose from \$5 million in 1991 to \$39 million in 2004 by a combination

of fund-raising and a sound investment policy.

It was common for deans of the schools of pharmacy in the 1980s to be solely, if not primarily, responsible for raising funds for their Foundation. To assist in this, Tom Miya asked the Development Office of the University to assign Scott Wierman from that office on a part-time basis, followed by Ivana Pelnar-Zieko, to begin active solicitation of funds for the Pharmacy Foundation in 1985. A full-time development officer for the Foundation was not begun until Lisa Grimes, BS '85 was appointed Assistant Dean for Development by Miya in 1989. When Grimes resigned in June 1991 to take a position at Glaxo, Inc., Kevin Almond, a 1983 graduate from UNC pharmacy, was appointed as Assistant Dean in August 1991 to carry out the administrative management of the Foundation. Almond at that time was a practicing pharmacist and had been recently recognized as the Young Businessman of the Year in Sanford. In 1995 the Office of Development began overseeing and administering the Pharmacy Foundation of North Carolina with Kevin Almond charged with daily management of the Foundation.

The Foundation provides a broad base of support for the School. Scholarship funds set up in the Foundation provide over 100 scholarships each year for professional and graduate students in pharmacy. The Foundation supports student attendance at national pharmacy conferences to acquaint them with professional issues and the practice. It also supports School of Pharmacy-related events, professional travel for faculty, faculty recruitment, faculty development and equipment for the programs in the School. The Ferguson Pharmacotherapy Lectureship was created to promote recognition of the importance of pharmacotherapy within the School of Pharmacy and across the campus of UNC. Like its predecessor, the Walter H. Hartung Memorial Lecture, it provides an opportunity for an outstanding practitioner to share with students and faculty their experiences and knowledge to the science of pharmacotherapy. Through the generosity of alumni and friends, the Foundation endowment continues to provide strong support to the School where state funds are not available. In 2005 the Foundation provided support of nearly \$1 million to the School.

### **Pharmacy Alumni Association**

Pharmacy alumni have gathered together at football games for years tailgating many times in the parking lots behind Beard Hall. This and other informal gatherings of the alumni led Mel Chambers, who chaired the Centennial Celebration Committee of the beginning of pharmacy education at UNC in 1980, to send a questionnaire about creating a Pharmacy Alumni Association to 2,826 UNC

pharmacy graduates from a list provided by the UNC General Alumni Association. The response that was favorable and overwhelming caused the Centennial Celebration Committee to support the formation of a pharmacy alumni association. The responses came from alumni as far away as Maryland, Pennsylvania, Virgin Islands and Peru as well as states bordering North Carolina. From a list of those responding, a Steering



**Pharmacy Alumni Association Logo**



Committee was picked and an organization meeting held in October 1980 to ratify a Constitution and By-Laws prepared by the Committee. Mel Chambers was selected as Executive Director of the Pharmacy Alumni Association with Joey Edwards, '70 of Raleigh, President, Whitaker Moose, '60 from Mount Pleasant and Mary Ann Kirkpatrick, '68 from Richmond, Virginia as the first set of officers. A Board of Directors was elected representing each of the Congressional districts in North Carolina with two additional

directors from out of state. The first meeting of the Alumni Association in May 1981 coincided with the School observing the Centennial Celebration of the commencement of pharmaceutical education at the University of North Carolina.

The formation of the Alumni Association was a natural outgrowth of interest that graduates had for the School. Its purpose was to stimulate continuing interest and professional relationships between the School of Pharmacy and its graduates. It also served to maintain the awareness and understanding of the graduates to the challenges, progress and goals of the School to enhance the cause of pharmacy education and further the practice of pharmacy. The Alumni Association, although not intended to be a fund-raiser, encourages the graduates to support the School and University in securing financial support for pharmacy education.

As the Pharmacy Alumni Association grew in numbers it found itself able to support programs and activities for the students and the School. One of many objectives of the Alumni Association is to recognize the accomplishments and contributions of graduates who enhance the image of the School and the profession. In 1985 a Distinguished Alumni Service Award was established to recognize one of its graduates. Margaret (Peggy) Yarborough, BS '66, MS '68, received the first award in 1986 for her leadership in developing an innovative pharmacy practice and national recognition of her counseling services in treatment of diabetes patients. The Alumni Association has provided financial support to the School on many occasions. It contributed in 1985 and again in 1996 to remodel the student lounge in Beard Hall. In 1986, an alumni fund drive was held to purchase computers for the newly formed computer laboratory for students. A Pharmacy Alumni Scholarship in honor of Mel Chambers was established in 1987 for an undergraduate student. With the support of Chancellor Hardin, a Cameron Avenue sign was erected in 1990 by the Facilities Department identifying Beard Hall as the School of Pharmacy. To bring unique recognition to the Pharmacy Alumni Association a logo designed by Charles Pulliam was adopted for the organization.

The Association sponsors scholarships and attendance of students to local and national meetings. Working closely with the School's Office of Development, the Alumni Association plans class reunions.



**Fall Reunion and 50plus Club class reunions on the lawn of Beard Hall prior to a football game.**

Each fall during the football season, the Alumni Association holds a fall reunion program complete with BBQ lunch and attendance at the football game at Kenan Stadium. Students are invited to provide blood pressure, diabetes and cholesterol screening during the fall meetings on football Saturdays. A 50-plus luncheon is held annually during Commencement weekend to recognize alumni who have graduated more than 50 years ago. The Alumni Association also holds an annual golf tournament to raise money for pharmacy student scholarships. Supported by the pharmaceutical industry, the first Alumni Golf tournament in 1994 raised \$12,000 by attracting corporate sponsors. From 1994 to 2004, the golf tournament has raised more than \$800,000 for pharmacy scholarships. After many years of service, Mel Chambers stepped down as Executive Director of the Association in 1988. Charles Pulliam from the Division of Pharmacy Practice was appointed to take his place.

At the urging of Tom Miya, the Alumni Board discussed placement of the Alumni assets with the Pharmacy Foundation. Concerns about the loss of identity of these assets were dispelled when a review of the Foundation By-Laws found there was no serious barrier that would allow the Alumni Association to continue with its recognition of designated gifts and scholarships. The Alumni Association funds would benefit from the financial management services used by the Foundation. In 1991 the Alumni membership approved By-Law changes to have the Alumni Association assets managed by the Pharmacy Foundation of North Carolina through designated accounts. The financial records of the Association are kept in the Pharmacy Foundation office and have been managed by the Executive Director since 1994. In order to prepare for the new relationship of the Alumni Association with the Pharmacy Foundation, changes were made in the Constitution and Bylaws of the Pharmacy Foundation in 1992 to allow one-third of the 24 Foundation directors to be elected by the Alumni Association.<sup>8</sup> Following the resignation of Charles Pulliam in 1993 to return to full-time teaching,, Kevin Almond assumed the position of Executive Director of the Pharmacy Alumni Association.

One of the important functions of the Alumni Association is to communicate with the graduates of the School. The initial publication that carried the Pharmacy Alumni Association masthead in 1980 was called a Newsletter and initially prepared on a mimeograph machine. This was followed by the *Alumni Newspaper*, which led to the *Pharmacy Mirror* which continued to inform graduates of professional development and problems or concerns of the School. In November 1983 this publication took on a more formal appearance representing itself as the official publication of the Pharmacy Alumni Association with shared support from the Pharmacy Foundation of North Carolina and printed on newsprint four times a year. From this beginning, the *Pharmacy Mirror* has developed into a professional-looking journal with staff from the Pharmacy Advancement Office to give alumni news about School activities, featured alumni events and notes about the graduates. The publication was renamed *Carolina Pharmacy* in 2003 and is published semi-annually.

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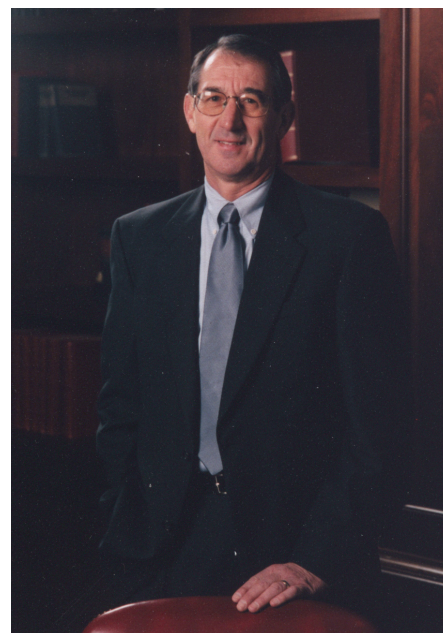
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## STRIVING TOWARDS EXCELLENCE

After going through a period of changes in the 1980s one could not avoid noting the progress made over the past decade. All Divisions had active programs in research and teaching. The graduate student enrollment had grown in number from 44 in 1980 to 77 students in 1990. Sponsored research that was at \$200,000 in 1980 was in excess of \$1.6 million in 1991. Changes in teaching methods were introduced to the B.S. student as faculty began using small recitation and discussion sessions in the curriculum. Appeal for careers in pharmacy by women during this decade continued. The enrollment of women in 1980 was 58 percent in the last three years of the five-year curriculum. Ten years later this number increased to 70 percent and showed no signs of abating in the years to come as applications from women continued to outdistance those from men. The Pharmacy Alumni Association that did not exist in January 1980 now claimed a roll of more than 1,000 members. The Pharmacy Foundation of North Carolina with the help of alumni and friends increased its magnitude in funds by a factor of ten. If there was to be a higher level of success for the School, William (Bill) Campbell in 1992, the eighth dean of the School of Pharmacy may have been the right choice to take on the challenge.

Bill Campbell descends from solid American peasant stock, having been raised on a farm near the small town of Culver in central Oregon. He began his studies in Pharmacy at Oregon State University and following his B.S degree completed a Master's program in Pharmacy Administration. By now Bill saw the virtue in graduate education and continued his studies at Purdue University. He received his Ph.D. in Pharmacy Administration and returned to Oregon State to begin his teaching career as an assistant professor. Bill Campbell moved to Washington University in 1975 as department chairman where he rose through the ranks to professor in 1980. Dr. Campbell's research and teaching interests combine health services issues with those of pharmacy practice. Colleagues describe Bill Campbell as a man with a calm demeanor, the ability to say much using only a few words and blessed with a dry and subtle wit. His leadership qualities were evident in pharmacy education circles having served on many committees of the American Association of Colleges of Pharmacy and eventually as its president in 1987. A good thinker on his feet, an excellent listener, insightful in asking the right questions and seeking the right information are qualities that he brought to the UNC campus which were needed to take the next steps for the School as the 20<sup>th</sup> century came to an end.



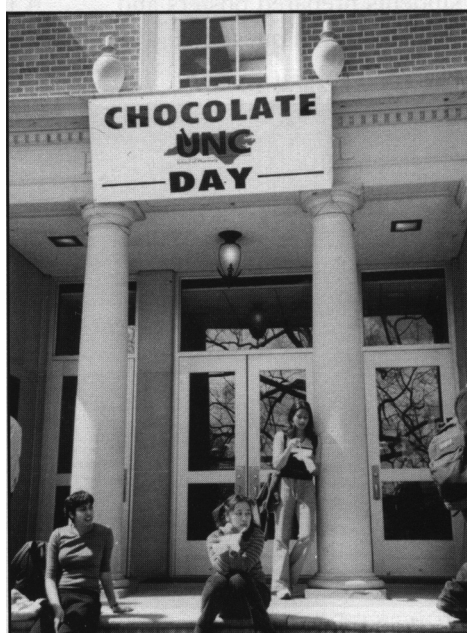
**William H. Campbell**  
**Eighth Dean of the School of**  
**Pharmacy (1992-2003)**

In the process of searching for the new dean, a member of the External Review Committee for the dean on a visit to Chapel Hill was impressed with the University and the commitment of the University to achieve excellence in all programs but did not think that the School of Pharmacy was coming close



to what the University administration expected. The biggest problem this visitor perceived seemed to be an “uncivil attitude” among the people in the School. When Bill Campbell visited the University, he got the same impression; the faculty was a group of people who had learned to stalemate each other’s progress by debate. They were so comfortable with their arguments; their tendency to argue with each other overcame their desire to actually accomplish something together. They defined success as preventing their opponent from having his/her way. The feedback from the External Review Committee to Vice Chancellor Hershey was that Bill Campbell was the right fit for the School. He was good at getting people to work together by believing there is good in everybody. When Campbell received an invitation from the Search Committee to visit the School, he had not been looking to leave the deanship at Auburn University, but was being approached by other major pharmacy schools. He decided that this was a great University with an opportunity to build a great school of pharmacy, but the problem was just the inability of faculty to function as a group and identify a process that commits to one direction. His tenure as dean at the University of North Carolina began on August 1, 1992.

Bill Campbell came to the job with enthusiasm and great expectations. There were many issues to be addressed, the first of which was the faculty. He approached the “uncivil society” that was functioning in the School with his personal influence and involvement with the faculty. He had meetings with every faculty member to try to get to know them. He had implemented new procedures and policies



**Chocolate Day observance on the steps of Beard Hall, School of Pharmacy, University of North Carolina**

and developed voting rights for all, including faculty in the AHECs. Every step taken was a painful process because once that decision was made they could not go back because the next decision was based on the previous one. That meant that that was the end of the “debating society” within the faculty. A “Monday Morning Memo” was initiated as a way to develop a line of communication between the dean’s office and everyone else. What he found was that it was the “butting of the heads” between the “administration,” which captured anybody who was in any administrative responsibility, and “the faculty.” To erode this boundary Bill Campbell tried to put a “human face” on the dean’s position, bringing in foibles, “Chocolate Day,” humor, staff awards, receptions at his home, and wove in a lot of serious, thoughtful intellectual discussions to show his concern for the life of the faculty and the institutional setting of the School. He used *Chronicle of Higher Education* articles in the “Monday Morning Memo” to move the perspective higher of the faculty and staff in terms of institutional citizenship and that the faculty belonged to something much larger than just a

school of pharmacy and that it was a community of scholars.

Looking at past faculty actions, he found no history of faculty meetings where decisions were made and implemented. To begin, committees were assigned with charges to get the faculty working together.



A strategic planning exercise was developed with a set of priorities that developed a commitment on the curriculum. It was agreed first to move toward a Pharm.D. curriculum as the entry-level degree, but it would not begin until the School received the resources to move the program to a level of excellence. The second commitment was to review the undergraduate curriculum, to update it and improve it in the short term and implement in the undergraduate program those things anticipated for the Pharm.D. curriculum, e.g., integrated teaching and the Pharmaceutical Care Skills Labs. These actions brought the faculty closer together in deciding the future direction of pharmacy education at the University of North Carolina.

Beard Hall, in 1992, was a very bad facility to meet the goals that were decided by the faculty. When Bill Campbell first came to Carolina he made it clear to the Chancellor Paul Hardin and Vice Provost Garland Hershey that the number one priority was the quantity and the quality of space that the University had to commit for him to accept the dean's position. Quality meant a commitment by the University to renovate Beard Hall and a commitment that there would be no higher priority on the campus for building renovations, and that the Pharm.D. would be implemented upon receipt of new resources. These agreements were "handshakes" between the University administrators and Bill Campbell because it was not known what resources would be necessary or the costs of renovation.

Addressing remarks to North Carolina pharmacists, most of which were UNC Pharmacy alumni, Campbell wanted to assure them that the students would receive an excellent education to prepare them to enter a contemporary practice of pharmacy and that these graduates would be committed to lifelong learning. He also wanted the linkage with the alumni and the practitioner community to be strengthened. In traveling around the state to meet the pharmacists, he had a sense that they were being left out or left behind or working in isolation in their practice and the School was not concerned about their success as pharmacy professionals. He included in his goals a program to support and stimulate development of exemplary practitioners and practices in North Carolina. He believed it was important to develop a close working relationship with practitioners that would be beneficial to students, faculty, and practitioners themselves. The strength of this goal was supported by creating a tradition of "practitioner scholarship" through practice-based research by faculty in the School and its AHEC regional sites. To support this initiative, he said there was a need for the School to evaluate new models for pharmaceutical care, develop new measures for efficacy of drug therapy and to demonstrate cost-effective roles for reimbursement of the pharmacy professional. He believed the future of pharmacy would be strengthened through research and graduate education in the pharmaceutical sciences by pharmacy faculty members. This would provide a strong foundation for the profession to adapt in times of change, and also offer a contemporary education to students and practitioners to cope with the changes in health care technology.<sup>1</sup>

### **The New Pharm.D.**

The major issue with pharmacy education for decades has been the entry-level Pharm.D. degree. Following many years of debate and discussion, the delegates at the 1992 annual meeting of the American Association of Colleges of Pharmacy (AACP) approved the policy statement that their official position is to support a single entry-level educational program at the doctoral level (Pharm.D.). The new degree now required at least four professional years of study that followed pre-professional instruction of sufficient

quality and length (two year minimum) to prepare applicants for doctoral level education. Campbell was not a proponent of the Pharm.D. that was proposed, preferring to develop a Pharm.D. equal to the stature of the other health professions, i.e., medicine and dentistry, that required a baccalaureate degree to begin study in the doctoral program. The School already had a small (15 students per class) Pharm.D. program whose orientation was preparing graduates mostly for institutional settings in pharmacy which Campbell would have liked to expand and modify to prepare the graduate for any type of pharmacy practice, including community practice. Nevertheless, he accepted and supported the decision of the AACP for a single entry-level educational program at the doctoral level.

With this AACP policy statement, schools of pharmacy in the country struggled to meet the ACPE-mandated Pharm.D. standards, many delaying implementation until the required deadline for the change. Bill Campbell's message to the Chancellor and the central administration was, "no matter what happens in pharmacy education we cannot have a University of North Carolina graduate with a second class degree." He was concerned that the School was dangerously close to this with the baccalaureate degree in pharmacy which placed our graduates at risk in competing for hospital residency positions or for anything other than the traditional retail pharmacy positions because their degree was from the University of North Carolina. To begin this new program at UNC, a class size of 120 was projected to satisfy the need for pharmacy professionals in the state. A commitment from the University was needed for additional resources to provide the manpower (faculty and staff) for this enrollment level. In an audience with UNC President Spangler, it was evident, at first, that he did not understand the importance of the degree to the pharmacy graduate and did not support the appropriation for the new Pharm.D. degree. Discussing this issue further in a meeting with Spangler, Provost Garland Hershey, and UNC Vice Presidents Roy Carroll and Bill Little, Dr. Carroll concluded, "We might disagree on a lot of things, but what we can't disagree on is that a UNC pharmacy student should never be penalized for a degree they received, and right now they are, so we do not have a choice. It is not a personal issue," he said, "it's our trust and commitment to each student." It eventually became a moral issue and the basis for the School receiving funding for the entry-level Pharm.D. degree by the University and the Legislature.

For pharmacy practitioners and the public who questioned this change, it was important to create a climate of understanding about the new degree and differentiate it from the existing small Pharm.D. program. Campbell said, "The purpose of this new degree was to prepare professional students for entry into the practice of pharmacy in North Carolina as informed, caring, ethical and enlightened citizens and professionals. Students must be able to enter the practice of pharmacy with the skills necessary to provide pharmaceutical care in a dynamic health care environment."<sup>2</sup> This statement was to assure the pharmacy community that the new degree was an upgrade in pharmacy education not just an additional year of schooling. Further, he said that the practice of pharmacy was changing to emphasize patient care, counseling and the management of patients' disease state by evaluating and modifying their drug therapy to achieve optimum health care results.

To prepare the students for this new curriculum, the faculty made a comprehensive review of the five-year program, looking at its content and structure. Courses in drug literature evaluation, physical assessment and pharmacokinetics were added to the new Pharm.D. curriculum. It became apparent to the

faculty in the process of forming this new program that there should be an examination of not only what was being taught, but rather how it was being taught. Memorization of facts gave way to problem-solving using practical experiences provided to students so they could understand the practice. The small group recitation sections in the Therapeutics courses used to discuss disease states and patient cases and develop critical thinking skills in the B.S. Pharmacy curriculum were applied to the Pharm.D. classes. Socratic teaching methods, the cornerstone of Pharm.D. teaching, was effectively translated from a group of 20 to the larger class of 120 students. This was achieved by creating a sequence of Skills Laboratory courses in the new curriculum. The Skills Lab courses are units in the curriculum that provide instruction where students integrate and apply knowledge and skills from various didactic courses. To hold these classes, the old “dispensing” lab was remodeled and furnished, in part, by an estate gift of \$500,000 by Benjamin “Doc” Stone ’26 of Elizabethtown that now serves as the classroom for the Pharmaceutical Care Laboratory (Skills Lab). The Laboratory uses conference tables where students can discuss cases and manipulate products and devices in a comfortable setting to develop skills to provide pharmaceutical care to patients. In addition to the new class setting, the Laboratory is equipped with desktop computers and Internet connections to be used as a reference resource.

The transition from the baccalaureate program to the new Pharm.D. was made by admitting students from the fourth- and fifth-year B.S. class into the first Pharm.D. class. Although the class size was scheduled to include 120 students, the first class included only 100 as sufficient experiential sites were not available immediately. Students were assigned to the AHEC regions for 10 months of experiential training under the supervision of a preceptor after completing their didactic courses.

The new degree raised many questions in the minds of the practicing pharmacist in North Carolina. It was not that they argued against the new degree, but rather desired to know the significant differences between the B.S. and the Pharm.D. For years pharmacists and doctors had a tacit understanding. Doctors prescribed the drugs. Pharmacists dispensed them, and then the doctor made sure the patient took the drugs correctly and health benefited as a result. In the late 1980s and 90’s health care practice for the public changed. The growing presence of managed care pushed doctors to treat more patients in less time. Advances in medicine often allowed patients with complex diseases to be treated as outpatients. Patients with chronic diseases such as diabetes, asthma and epilepsy, were able to manage their illnesses at home to save money and have freedom and flexibility with oversight by a health professional. Pharmacists were seen to perform a real need in helping patients manage their disease state. The education of the pharmacy student was oriented to provide an extensive and organized experience in the clinical use of drugs in patients. The curriculum was designed to make the pharmacist the most knowledgeable health professional about modern pharmacotherapy. The location of the pharmacist in the midst of the community was fundamental to successful health care. The curriculum focus was advanced by the term *pharmaceutical care* as the central mission of pharmacy rather than the drug product.

With the transition from the B.S. to the Pharm.D. curriculum, there was concern by community pharmacy that the majority of Pharm.D. graduates would gravitate toward hospital in-patient settings. Hospitals provide clinical environments in different medical specialty areas, including intensive care units which are appealing and challenging to new graduates. The new Pharm.D. curriculum was intended to

prepare the graduate for community as well as institutional pharmacy practice. To counteract this concern of the pharmacists in the state, the School made a conscious effort to develop community clerkship sites to demonstrate contemporary pharmacy practices for students that would be just as challenging. Pharmacy has argued that studies have shown that drug-related morbidity and mortality can be reduced, health status improved and quality of life maintained by the appropriate use of drugs and devices by patients through pharmacist interventions in community pharmacies. The Pharm.D. program with its additional clinical training experiences and coursework creates the capacity of the graduate to improve health care through pharmaceutical care practices. The fact remains as we have entered the 21<sup>st</sup> century, it is necessary to convince more consumers, payers, purchasers and health policy makers that these services are cost-effective.

### **The External Pharm.D. Program**

The new degree requirement did not only affect the educational programs of the schools and colleges of pharmacy, it created many questions from concerned alumni about their professional status and livelihood. It was estimated that there were approximately 5,000 pharmacy graduates from UNC practicing in North Carolina who, through either perception or reality, will soon have a degree that isn't the current standard for the practice. Although the School did not create the current situation, it was important that immediate steps be taken to make a commitment to interested practitioners who wanted to upgrade their pharmacy degree. These alumni ranged from 60-plus year-old graduates from a four-year program to recent graduates with a five-year B.S. degree who had varied amounts of clinical experience from their previous education. To assure support from the practicing pharmacists, it was apparent to the School that the alumni needed to be attended to before addressing the problems associated with implementing the on-campus entry-level Doctor of Pharmacy degree for new students and learn from that preparation in building the program on campus. One of the first things done was to get AHEC system support for preceptors to assure that there were quality practice sites and commit the School to their professional growth and development. The implementation of the new Pharm.D. created a three-fold increase in the need for experiential sites in the AHEC system. AHEC funding by the state, as it always has been, is a separate line item in the budget. The Legislature made appropriations to increase the funding at the AHEC sites to support the preceptors and develop the experiential sites.

The initial reaction by the preceptors towards the new degree was to “grandfather” the B.S. degree graduate with the Pharm.D. degree. The School had no such authority, nor did it see fairness to that request. The second fallback position, which they accepted, was that the school would develop a quality program that would be an earned degree. The External Pharm.D. Program for practicing pharmacists in North Carolina began in January 1996 using a combination of teaching methods that included independent study, correspondence materials and instruction via the North Carolina Research and Education Network (NC-REN), an interactive two-way teleconferencing system linking classrooms in the North Carolina AHECs. The content of the curriculum was the same as the on-campus Pharm.D. with the exception that 20 months of full-time courses were stretched out to several years. Students worked at their own pace but were required to complete the curriculum within five years. In addition to class work, the students were to complete six clerkships, one of which was time-consuming as it required the practicing pharmacist to

carry out the experiential training away from their practice work place. The first class included 50 students. Each applicant had to complete a preliminary course in Pharmacokinetics to be able to continue with their curriculum. A faculty member was added to the Pharmacy Practice Division to coordinate student coursework in the External Pharm.D. Program.

Support for the External Pharm.D Program came from the University when the School received a Chancellor's Instructional Technology Grant to develop a web-based interface for the program. The interface allowed the offering of a web-based course, "Pharmacy for the Older Patient." Other courses focusing on psychiatric pharmacotherapy would become available at a later time. These courses were used as models for future web-based instruction for both traditional and non-traditional students in the Pharm.D. programs. External Pharm.D. students are expected to use microcomputers while participating in the Pharm.D. curriculum. Technology made communication, discussion forums, and course work more accessible statewide to pharmacists who participated in the program. Initial course offerings included Drug Literature Evaluation and Advanced Pharmacotherapeutics. Classes were videotaped and viewed by external Pharm.D. students located throughout the state. Pharmacy Practice Division faculty further supported the external Pharm.D. students through live video conferences via NC-REN and the use of the Internet for course communication and discussion groups. Since 2002, students have been using chat rooms on the Internet for discussion and conversation, replacing the NC-REN as a communication medium. As of May 2004 a total of 229 pharmacists have completed the program. After several years of a declining applicant pool the self-supporting program has stopped admitting new students as of August 2003. Many of the External Pharm.D. Program graduates eventually became preceptors at clinical sites for the students in the on-campus program.

### **Bimodal School of Pharmacy**

During Bill Campbell's first five years as dean a number of changes in the operation of the School took place as he was strongly committed to decentralizing the administrative structure of the School of Pharmacy. Budget, graduate program admissions, graduate student support, annual evaluations, curriculum, and initial promotion reviews were moved to the respective Divisions, giving the faculty ownership to the School's success. Having empowered the faculty by increasing authority, responsibility and accountability, Bill Campbell wanted to take the School to another level of administrative leadership. It was more than a realigning of the faculty, but rather an initiative to encourage leadership skills in both the faculty and students by encouraging student participation in professional affairs and an opportunity for faculty to come out of their traditional ivory tower and become a community of scholars.

Campbell described his new administrative structure as a Bimodal School of Pharmacy, identifying it as a national prototype. A series of analyses of medical education commissioned by the Pew Foundation identified bimodal medical education as one in which there was the ability to combine the two areas that society demands of medical education: providing life-saving research being one, and doctors for people or primary care as number two.<sup>3</sup> The argument was that if any medical school could do these two things well they will have met their social contract of being a bimodal school. A bimodal school would be able to have a balance in its mission to succeed in the face of any threat because of its supportive and positive



environment. The study, seeking to identify bimodal medical schools in the country, found that they are either excellent in research or excellent in primary care, but combining them under one roof was perceived as being very difficult.<sup>4</sup> Bill Campbell's model for pharmacy is based on the UNC School of Medicine that had been identified as one of four bimodal schools of medicine in the nation.<sup>4</sup>

Campbell considered, "What would be the analogy for pharmacy education? i.e., what is our social contract as a school of pharmacy? Part of the social contract is still life-saving research. The School has a unique area of knowledge and expertise in drug development and discovery through its well-developed graduate programs. If we can provide that, we have met one part of our unique mandate as a bimodal public school of pharmacy." But for the second part of the mandate, he reasoned, "We do not produce primary care doctors, we produce a different kind of product and society demands something different from us. 'Pharmacists for the people,' as opposed to 'doctors for the people,' is less defined. By definition, pharmaceutical care is the delivery, of services to people and accepting the responsibility for the outcomes of the service to improve quality of life; not just counseling patients, not just dispensing prescriptions accurately, but having a plan to monitor the patients to see they improve and a way to intervene if they don't improve. The pharmacist must look at the stream and the outcome of these activities to be a professional." Doing this, Bill Campbell believed, would satisfy the second part of the contract of a bimodal school of pharmacy.

That was the message given to the practicing pharmacist, but one that Bill Campbell believed should be heard by academicians to satisfy the second part of the School's social contract to the public. "Faculty can't measure themselves by the quality of their lectures or the evaluations of students by passing the Boards. That," he said, "is the same as dispensing a prescription." He wanted faculty to accept the responsibility for the outcomes of their graduates in terms of their professional practice. Campbell continued, "If we do these things as great teachers year after year and the profession never changes, we are kidding ourselves because we are not accepting the responsibility for the outcomes." A bimodal school of pharmacy would have a mission of achieving excellence in sponsored research and creating progressive pharmaceutical care practice. The vision he wanted to create was the nation's first bimodal school of pharmacy that would be a model for the future that will allow it to sustain threat and also to achieve success in a supported environment.

Campbell identified the second pedestal of a bimodal school of pharmacy as being able to create progressive pharmaceutical care practice. To support the concept of progressive pharmaceutical care, he cited the enormous volume of literature on drug misadventure, inappropriate drug use and medical failures, adverse drug effects and other harmful outcomes from drug use. "Any number of surveys shows" he said, "that pharmacy is not dealing effectively with the problem and that in the practice environment these problems continue to exist at a high rate."

To begin the development of the Bimodal School concept, Bill Campbell wanted to bring more focus on the School's divisions. Changes were made in the names of some divisions in the School to describe more clearly their mission and focus. The term, Division of Pharmacy Practice, he said, implied that *only* this group of faculty has a responsibility to be concerned with practice, when, in fact, it should be the entire School. It also implied that this particular group has no scientific or other responsibilities, that is, that it is

only 'practice'. This Division name was changed to Pharmacotherapy because it is a group of faculty who are experts in drug use and the core of pharmacy practice, i.e., true experts in the healthcare system in drug use. Another division name change was that of the Division of Pharmaceutics whose area of expertise is a set of techniques having to do with measuring drug absorption, metabolism, excretion, etc. What this group does is conduct research and teaches students concepts in drug disposition and drug dynamics in the body, i.e., absorption, elimination. That group was renamed the Division of Drug Disposition and Dynamics, which describes what they do and the sort of problems they face. Finally, the third group, the Division of Pharmacy Administration, had its name changed to the Division of Pharmaceutical Policy and Evaluative Sciences to more accurately describe their teaching and research area.

Consistent with the notion of a bimodal school of pharmacy, it was necessary to make some administrative changes for the purpose of creating cutting edge research and enhancing progressive pharmaceutical care practice. The administration support structure for that traditionally had been an Associate Dean for Academic Affairs and an Associate Dean for Student Affairs. These two functions were merged together into one office, the Office of Professional Education, as both Academic Affairs and Student Affairs offices were concerned with helping the student move toward progressive pharmacy practice. Pam Joyner who was Director of Pharmacy Education at the Wake Region AHEC and now on the School faculty was appointed Associate Dean of that office in 1998. Under the umbrella of the Office of Professional Education are the offices of the Postgraduate Education Program (formerly called Continuing Education) that offers educational programs to pharmacy graduates for certificate training and other skills development, the Professional Experience Program (PEP) which schedules clerkship experience assignments at the various AHEC regions for students in the Pharm.D. program, the Student Services Office providing information and guidance for admission, the External Pharm.D. Program serving the needs of interested pharmacists, and the Pharmaceutical Care Laboratory in which faculty and staff develop student professional practice skills.

The other part of the bimodal school is graduate education. The new office was called Graduate Education and Scholarship. The term did not say Graduate Education and Research, but rather Graduate Education and Scholarship to convey a very deliberate intent that the office is not exclusively about bench research. Bill Campbell said, "We are talking about the scholarship of discovery, the scholarship of teaching or dissemination and the scholarship of development which gives every faculty member the message that doing research in developing practice is every bit as important as doing research in designing a new drug." Dhiren Thakker, formerly a researcher at Glaxo Wellcome who found the lure of working at UNC in academia was more appealing than being a scientist in the pharmaceutical industry and had joined the faculty in 1995, was appointed Associate Dean of this office.

The practice of pharmacy as a profession is built on successful collaborations: between the prescribing physician and the pharmacist who shares a responsibility to the patient; between the pharmacist and the patient who receives the drug. In a similar manner, the success of a Bimodal School of Pharmacy is the extent to which faculty members operate as teams instead of independent free agents. This organizational structure expects and rewards people for participating in effective teams. This was to be done with some change. Faculty still have their primary appointment within a Division, but there have been identified a small number of critically important areas for practice development and scholarly advancement, and

these areas are populated by faculty from multiple Divisions. Faculty members in the Bimodal School of Pharmacy serve within their disciplines teaching students in their area of expertise, but also participate in interdisciplinary projects with faculty from Divisions within and also outside the School of Pharmacy. The interdisciplinary or scholarly programs create a matrix in the School of Pharmacy where vertically there are traditional academic Divisions and then horizontally a small number of critically important programs. Every faculty member belongs to a vertical organization and then selects a horizontal area. For the first time they have to function in multiple teams. Bill Campbell recognizes this is the biggest challenge for the School.

The Division of Pharmacotherapy has faculty focused in major areas of interests of ambulatory care, infectious diseases, cardiology and critical care, and hematology/oncology. The recent appointment of Dr. Kim Brouwer from the Division of Drug Disposition and Dynamics as chair of this Division adds an individual with laboratory research experiences. The Division faculty members are Pharm.D. or Master's degree graduates with residency experience in at least one clinical practice area. The core ambulatory care pharmacy clinicians, Tim Ives, Mary Roth and Stephanie Ferreri, have interests that include chronic pain management, geriatrics and provide progressive pharmaceutical care in ambulatory settings. The infectious diseases group of clinical pharmacy faculty, Ralph Raasch, Angela Kashuba and Amanda Corbett provide consult service to clinicians in UNC Hospitals including HIV patients. The cardiology and critical care group of Herb Patterson and Jo Ellen Rogers are concerned with cardiology critical care. Wayne Pittman provides consult service in the hypertension clinic at UNC Hospitals. The oncology/hematology group of Celeste Lindley and Roy Hawke, in addition to their clinical pharmacy service in this area, take advantage of Dr. Hawke's training and experience as a Ph.D. experimental pharmacologist at Glaxo SmithKline in carrying experimental research initiatives.

Collaborative ventures by Pharmacotherapy faculty have enabled the establishment of progressive pharmaceutical care practices across the state. One of these located in Chapel Hill is the Enhanced Pharmaceutical Care Center (EPCC) at Kerr Drugs is the result of successful collaboration between the School and a community pharmacy. The EPCC is a training model for students, residents, fellows, pharmacists and other health professionals. It also serves as a working model to gather data for research on patient outcomes. The commitment to progressive practice has created a coalition of academic and professional organizations to promote pharmacists as health care providers in The Asheville Project that includes Mission St. Joseph's Hospital in Asheville, North Carolina and the City of Asheville. The City of Asheville has emerged as a partner which funds pharmacists for their progressive pharmaceutical care service to employees of the city of Asheville.

Research prior to the 1990s in the Division of Drug Disposition and Dynamics, then known as the Division of Pharmaceutics, was based on drug delivery through pharmaceutical chemistry, dosage, formulation design and evaluation. Over the last 12 years, with Gary Pollack as chair, the Division reoriented its interests towards biology to study how molecules get across cell membranes and a greater emphasis in the biochemical aspects of drug behavior. It developed a strong focus in pharmacokinetics and pharmacodynamics, drug metabolism and drug transport and integrated molecular and cell biology into the program. The research has moved from chemistry to biology at the whole system level and over the last

decade narrowed its interest from the whole system intact animals and humans to the focus on events that occur at the cellular or sub-cellular level using pharmacokinetic, mathematical modeling to predict what the behavior of drugs will be in humans. The profile of the faculty changed in the last 12 years. Beginning this change was Moo Cho, who divided his career between the industry and academia, leaving The Upjohn Company in 1990 after 15 years to teach at UNC and pursue research, and was followed by Phil Smith who joined the faculty from the University of Texas at Austin in 1992, each having research interests in drug delivery and pharmacokinetics, respectively. Pollack then hired Anthony Hickey from the University of Chicago at Illinois School of Pharmacy who specialized in aerosol delivery primarily to the lungs; Dhiren Thakker, from Glaxo Wellcome, with an interest in mechanism of absorption of drugs from the G.I. tract and drug metabolism; and more recently J. Ed Hall with a joint appointment in the School of Public Health. His area of research is the development and evaluation of drugs to treat parasitic infection. Hall's studies have been with African Sleeping Sickness and is one of the collaborative investigators in the Gates Foundation Grant to the University.

The Division of Pharmaceutical Policy and Evaluative Sciences in the late 1980s was without constant leadership until Joseph Norwood came to the School leaving the position of dean at the School of Pharmacy at Nova Southeastern University in 1990. Prior to that, following the loss of the Division chair, Jean Paul Gagnon, to the pharmaceutical industry in 1988 the Division of Pharmacy Administration, as it was known then, was led by Fred Eckel and then John Mackowiak and Bill Johnston as interim chairs. The Division interest at that time was primarily related to the practice of pharmacy and as vacant positions occurred, Norwood brought in faculty in the areas of pharmacoepidemiology, economics and pharmaceutical outcomes research. New faculty Christine Hansen, with interests in marketing and personnel management joined the faculty after graduating from University of Texas at Austin. Brian Rittenhouse, a graduate from the University of Wisconsin in pharmacoeconomics and economics, and Daniel Mullins with a degree from M.I.T. and Ph.D. from Duke University with backgrounds in economics were added to the Division. To the dismay of the chair, the faculty complement continued to change. Mackowiak and Johnston had already left the faculty before Norwood came, but in a space of two years, Tom Hughes and Rittenhouse resigned to take positions outside the University. Not long after, that, Mullins left to teach at the University of Maryland, School of Pharmacy. Replacing them were Scott Smith from the University of Michigan, with interests in pharmacoepidemiology, Tina Shih from Stanford University and Teresa Kauf from the University of Illinois, both with research interests in pharmaceutical economics. When Christine Hansen left, Betsy Sleath, a Ph.D. from Wisconsin, came from the faculty at the University of New Mexico to join the Division. Following Norwood's retirement, Dale Christensen from the University of Washington, took over the position of chair of the Division in 1998. Under Christensen the research in the Division changed from marketing and management to focus on pharmacoepidemiology, pharmacoeconomics and social and behavioral sciences. New faculty, Susan Blaylock, Richard Hansen and Gordon Liu were added when Tina Shih and Teresa Kauf left the School. Together with the addition of dean emeritus Bill Campbell, and a new Division chair, Mick Murray, the Division now had eight faculty members.

The School of Pharmacy has been fortunate to have a good working relationship with the School of Public Health. The Division graduate program had a Master's degree program in the Pharmaceutical



Sciences. Once students obtained a Masters degree, students could enter the Ph.D. program in Public Health under the collaborative arrangement with the School of Pharmacy that was established some years ago. In 2001, a Ph.D. curriculum in Pharmaceutical Policy and Evaluative Sciences was developed and approved by the Graduate School as a branch of the existing Ph.D. program in the Pharmaceutical Sciences.

The Division of Medicinal Chemistry and Natural Products did not have its name changed as did the other Divisions. However, under the guidance of Hal Kohn, chair of the Division, it did undergo a transformation when new faculty hires were made to replace faculty who had retired or resigned. The dramatic revolution in biochemistry and biology, including the genome project, and computational science has allowed a more sophisticated way to look at drug design. As a result, the Division has transformed itself from a more traditional organic chemistry synthesis emphasis to one with more biochemistry interests. Five new faculty members joined the ranks of the Division: Jian Liu from MIT; a glycobiologist, with interest in receptors on the cell and those entering into the cell, a wonderful way to look at how disease processes are initiated and a very convenient entry point to introduce new pharmaceuticals into the cell; Andrew Lee from Penn Medical School and UC Berkley with a PhD in NMR spectroscopy studying how proteins undergo motion in binding ligands such as drugs; Michael Jarstfer from the University of Colorado, doing studies in telomerase, a critical molecular target linked to aging and cancer; Rihe Liu, a Harvard graduate in a joint appointment with the Carolina Center for Genome Sciences looking at proteolytic enzymes related to disease processes and to neurological disorders; and Scott Singleton from Cal Tech and Penn State who studies enzyme in their role in bacterial processes. These five new faculty join the present Medicinal Chemistry and Natural Products Division members K.H. Lee, Ray Booth and Ken Bastow .

After five years of experiences as a Bimodal School of Pharmacy, the dean observed that there was “an increase in faculty ownership of our academic program,” and although admittedly difficult to measure, “the quality and quantity of faculty participation in the life of the School is vastly improved.” He cited The Faculty Development Committee, Curriculum Committee, and Graduate Education and Scholarship Committee as examples of faculty ownership and leadership. The dean commented that fallout from the Bimodal School design will be measured after students graduate and they function effectively as team members in hospitals, community pharmacies, industry and laboratories. If students don’t see faculty function as team members, they cannot be expected to immediately be proficient in such settings when they graduate.

The impetus of the Bimodal School of Pharmacy concept has been translated to action by the Pharm.D. students. Students organized to create a movement known as “One Voice One Vision.” The primary reason for this movement originated from the effects of membership recruitment by national and state chapters of the current pharmacy organizations. As students joined these various organizations they were divided into specialized groups early in their studies. Instead of feeling a sense of unity as students of pharmacy, they saw themselves as part of smaller groups centered on particular specialties of the practice. The students agreed to dissolve the existing student chapter organizations and create a new body, the Carolina Association of Pharmacy Students (CAPS), with a mission “to be an advocate for pharmacy students by providing resources to develop a professional attitude, enhance leadership skills, and promote responsibility for the profession.” To the students’ credit, CAPS negotiated with national pharmacy organizations, winning the right for School

of Pharmacy students to pay one membership fee and belong to all participating organizations.

### **Kerr Building**

Not long after 1960 when the School moved into Beard Hall and with the arrival of George Hager in 1966, the introduction of new programs exposed the limitations of the new building. Hager had promised to increase student enrollment to relieve the pharmacist shortage in North Carolina, and when this happened renovations were made to increase the seating capacity of lecture rooms 103, 116 and 301. The auditorium, Room 111, with a capacity of 237 students, was the only room able to seat an entire class comfortably. The Model Pharmacy located in the northwest corner of Beard Hall designed by the planners as a classroom for teaching and demonstrating community pharmacy layouts by Pharmacy Administration faculty had been seldom used and was abandoned and converted to office space in 1970. The space was used in 1966 for one of Hager's early appointments, Paul Olejar, a drug information specialist from the National Science Foundation, and to house a computer that was contemporary for its time. The addition of clinical faculty and the need for office space resulted in the renovation of the remaining portion of the area (Room 104) into multiple offices. The appointments of Drs. Chester Cavallito and Albert (Al) Mattocks in 1967 to bolster the research activities of the School required renovation of laboratories on the third floor for Dr. Cavallito and in the basement for Dr. Mattocks. At that time the space occupied by the University's Radiation Safety Offices in the basement was vacated allowing space for the growing graduate program in Pharmaceutics under the supervision of Dr. Albert Mattocks. Requests for these renovations and others were supported in the capital improvements budgets of 1971, 1973 and 1975.

These and other renovations continued for many years. Beard Hall served the School as well as it could but was not designed to accommodate the changing program of pharmacy education. In 1980, Room 202 was remodeled to house a Drug Development Laboratory at the expense of Glaxo, Inc which temporarily housed some of its employees. Still later, Glaxo used lab space on the third floor in 1986-87 while their biological laboratory in Research Triangle Park was being completed. The faculty offices in the library area that occupied the northeast quadrant of the first floor of Beard Hall were renovated once again to create the Microcomputer Lab and the Office of Student Affairs in 1982. At that time renovations were made in the animal quarters in the basement to satisfy the OSHA Code for research purposes. Tom Miya obtained the cost of this \$500,000 renovation through a capital improvements budget that addressed major issues related to health and safety of building occupants. Major upgrades were made to heating, ventilation and air conditioning (HVAC). A number of research laboratories and faculty offices were also renovated at this time.

The seeds of Kerr Building began as early as November 1986 when a footprint of the area between the South side of Beard Hall and Roseneau that housed the School of Public Health was reserved. Tom Miya wrote in his justification to allocate money in the 1989-90 biennium budget, "Presently the School of Pharmacy is in Beard Hall. The structure was first occupied in 1960 at a time when there were 10 faculty members on the staff, a student body of 305 students in the B.S. program, 16 graduate students, no postdoctoral students and four staff members. We now have 40 faculty members, 481 students, 69 graduate students, eight postdoctoral students and 23 staff members. Several forecasts of health in the

21<sup>st</sup> century show that pharmacy services and the pharmacist's responsibility in providing health care for the community will grow. To allow graduates to meet the challenge of the future health care needs of the public, the school in its long-range planning studies is projecting a programmatic change from the five-year B.S. in Pharmacy degree to a six-year entry-level Pharm.D. (professional doctorate) degree. The new program will require one additional semester of didactic coursework and one additional semester of an experiential clerkship. The student body will increase approximately 25% from 480 students to 600. To accommodate the instructional needs for the new program we are proposing an addition of a wing to the existing structure of Beard Hall." A request of \$405,100 was made for the 1989-90 budget for design and preliminary cost estimates. A construction budget request of \$6,750,000 was submitted in December 22, 1987 for the 1990-91 budget making the total \$7,155,100. The request did not have sufficient priority on the capital improvements budget to receive any funding.

In 1993 a new dean, Bill Campbell, made another plea for capital improvement to Beard Hall. He cited the exponential growth of the School and the changes that have occurred in the 35 years (since 1960) when the building was first occupied. Indeed, where there were 240 B.S. students in 1960, there were 494 in 1993. Where there were eight faculty members in 1960, there were 55 in 1993. Staff numbers were five in 1960 and now 23 in 1993. The pressing need for laboratory space had been accommodated by piecemeal renovations and converting basement and storage space into laboratories. Incremental renovations have stretched the building beyond its capacity that is seriously deficient in regards to ventilation and air handling requirements. He argued that pharmacy was far different and complex than it was in 1960. The role of the pharmacist had undergone a dramatic change with more emphasis on the patient than the product. Beard Hall, he said, "... was constructed for an entirely different era of pharmacy. The classrooms do not allow or encourage student-faculty interactions, student-centered learning, or problem-oriented approaches to understanding material. Needed are smaller conference rooms, recitation areas, private study areas and opportunities for small groups of students to work with individual faculty in a manner not possible in Beard Hall. The six-year Pharm.D. will require an extra class of undergraduates using Beard Hall. Technological advances such as online drug information services, complex dosage and monitoring devices, therapeutic drug-monitoring resources are a few of the modernizations of pharmacy practice. The key is to having a facility that will support that kind of learning and therefore support the profession of pharmacy in the State."

Campbell proposed a short-term and long-term solution to alleviate these facility problems. The short term involved a major renovation of the current structure that focused on redesign and expansion of ventilation and air handling capacities in the building. Garland Hershey, Vice Chancellor for Health Affairs, set aside \$2.5 million for renovations to Beard Hall that would take 12-18 months to complete. The long-term solution proposal was to construct Beard Hall Annex which would double the size of the School. Support for the new building came from many corners. Chancellor Paul Hardin and Vice Provost for Health Affairs Garland Hershey understood the need for pharmacy education at North Carolina to be placed as a high priority item in the University's budget. Keith Fearing (UNC '44) talked to many of the state's legislators, including his own Senator, Marc Basnight, President *pro tempore*, to have the General Assembly award \$1 million for planning and design of the new building. The University 1995-97 biennium

budget was approved in the fall 1994 by the Board of Governors appropriating approximately \$9.1 million to construct an addition to Beard Hall. However, this fell short of the \$14 million needed to complete the project for the 50,000 sq. ft. annex.

To make up the difference in the building's cost, it was necessary to seek private funds. The Fall 1994 Phonathon by the North Carolina Pharmacy Foundation focused on the upcoming building campaign. It helped enhance alumni awareness of the campaign while raising \$70,000 for the building project. The Building Campaign goals were to raise \$5 million of the now reported \$15 million needed to construct the 50,000 sq ft annex to Beard Hall to provide space for teaching and research. The Campaign was planned for a two-year effort in 1994-1995. With the assistance of George Abercrombie (UNC '78) and corporate sponsor Glaxo Wellcome, the School produced a videotape, "Building a Legacy," featuring "voice of the Tar Heels" Woody Durham and a brochure that was mailed to all alumni. Casting a broad net, the School identified corporations, foundations, and other principal gift sources along with the appropriate contact people. Alumni volunteers

also contacted their state legislators in an attempt to secure a \$10 million appropriation from the N.C. General Assembly. The budget process proved challenging in a year when the state legislators looked to reduce funding to the 16-campus UNC system. The efforts of the alumni cannot be understated in obtaining the needed support in the state Legislature to appropriate funds for the new building.

As part of the building fund campaign, the Glaxo Wellcome Foundation gave the School \$1 million for the Beard Hall Annex through the efforts of CEO Bob Ingram. Of that money, \$500,000 was for the building and \$500,000 to establish the Glaxo Wellcome Foundation Technology Center in Kerr Hall. The Center is a telecommunications complex of computer labs and pharmacy treatment databases. The technology infrastructure of the Center has served to create the Pharmacoeconomics Model for the "Program of Excellence in Pharmaceutical Care." The telecommunications center can transmit interactive audio and video educational programs to pharmacists throughout the state and beyond.

During the course of the fund raising effort an anonymous donor's challenge grant of \$1 million was successfully met through gifts by alumni totaling another \$1 million. There were other large contributions



**Students on the front steps of Kerr Hall,  
School of Pharmacy,  
University of North Carolina**



for the new building which now carry the names of the donors. Seymour and Rheta Holt and the Burroughs Wellcome Foundation were the first to step forward with contributions. One auditorium was named after Seymour '52 and Rheta Holt; a second auditorium named after Howard Q. '24 and Mescal Ferguson; the lobby of Kerr Building carries the names of Ralph P. '49 and Elizabeth Rogers; there is a Vaughn '60 and Nancy '60 Bryson Laboratory. A laboratory for M. Keith '44 and Elizabeth Fearing was named to recognize the tireless contributions of the Fearings for their part in getting the state appropriations for the building. A conference room has been named for James A. '10 and Julia I. Hutchins from a gift from their children, Jim and Marguerite Hutchins. Parents Jack and Betsy Millar made a gift to have a conference room named after their daughter, Patsy Millar Myers '79. Gifts were received from Albert P. '47 and Shirley Rachide, Russell V. Phelps and Eckerd Drug that are recognized by having conference rooms in their name in Kerr Building. Through these and other contributions of generous alumni, the School of Pharmacy Building Campaign was successful in raising \$5 million for construction of an addition to Beard Hall. Escalating costs on construction, however, increased the total cost of the addition to Beard Hall from a previous estimate of \$16.2 million to \$17.2 million, and as a result the capital campaign had to be increased to \$6 million. Combined with the previously received \$1 million in planning funds, \$8.8 million received from the Legislature, and \$2 million in gifts from Glaxo Wellcome and the anonymous donor, the new goal of \$6 million was viewed to be sufficient to meet total construction costs now listed at \$17.2 million.

With letters, phone calls and personal contacts, the School requested \$10.2 million from the General Assembly to proceed with construction. With changes in the building plans, the annex was now being identified as a 65,000 sq ft building for teaching and research. In total, the Pharmacy Foundation contributed \$8 million to the construction of Kerr Hall. Groundbreaking for 65,000 sq. ft Kerr Hall occurred on October 12, 1998 on the South side of Beard Hall. Participating in the ceremony were alumni and current students representing the 100 counties of North Carolina. Their participation reflected the School's commitment to and impact on pharmaceutical care throughout the state.



**Banks D. Kerr**  
**(August 11, 1922-August 24, 2000)**

The construction of the building, finally estimated to cost \$18.2 million, was made possible by \$11 million appropriation from the North Carolina State Legislature and remaining funds made possible by the generosity of the School's alumni, the most significant of which came from the building's namesake, Banks D. Kerr. At the groundbreaking ceremony, Banks Kerr identified himself and his wife as the anonymous donor and was so overwhelmed by the support shown by the alumni to match his \$1 million that he added another million dollars to his gift. Over 4,000 contributions were received. Building fund chairs were Ralph Ashworth '55, Keith Fearing '44 and Seymour Holt '52. George Abercrombie '78 replaced Fearing on his death.



Banks Kerr, a 1943 graduate of the School, was the retired founder and Chief Executive Officer of the Kerr Drug Store chain. Beginning with a small pharmacy in Cameron Village in Raleigh in 1950 he finally sold his chain of 97 stores in 1995 that were posting nearly \$200 million in sales annually. Although he and his wife, Dot, participated in the groundbreaking, sadly Banks Kerr died August 24, 2000 after a short illness before the building was dedicated and did not see the occupation of Kerr Hall by students and faculty in January 2002. David A. Dowdy, a '54 UNC pharmacy alumnus and well-known sculptor, prepared a bronze bust likeness of Banks Kerr which now greets all who walk into the lobby of Kerr Building.

### **Academic Endeavors**

The theme for the success and progress of the School of Pharmacy during Bill Campbell's tenure as dean has been a team approach formed by alliances between faculty within and outside the School, governmental agencies and private companies to provide a quality program of scholarship in pharmacy. The landscape is dotted with accomplishments of the faculty and collaborative programs of the School. The North Carolina Center for Pharmaceutical Care (NCCPC) formed with representation from UNC and Campbell University Schools of Pharmacy, the North Carolina Pharmaceutical Association, North Carolina Society of Health-System Pharmacists and the North Carolina Chapter of the American Society of Consultant Pharmacists is an example of progressive pharmaceutical care. It offers ambulatory patient care services by pharmacists in a community pharmacy setting. In another cooperative venture, The Certificate Program Task Force formed between the UNC and Campbell Schools of Pharmacy, NCPHA (now NCAP), North Carolina Society of Health-System Pharmacists and AHEC has developed a standard definition of pharmacy certificate programs for the State of North Carolina. Still further, in cooperation with the North Carolina Care for Pharmaceutical Care and Campbell University School of Pharmacy, an asthma certificate program has been developed and is provided in various locations in North Carolina. A certificate program in diabetes has also been developed in cooperation with the Northwest AHEC.

By far the most important project in developing progressive pharmaceutical care practices was "The Asheville Project," a collaboration with the City of Asheville to use the services of community pharmacists in treating diabetic patients. Through the leadership of John Miall in the Risk Management Department of the City of Asheville and faculty in the School of Pharmacy (particularly Dale Christensen and Fred Eckel), a program was developed whereby City of Asheville employees and their dependents would receive regular counseling and monitoring services from pharmacists to control normal blood glucose (Hemoglobin A1c) levels. Pharmacists were paid for providing these services, with the payment totally separate from prescriptions dispensing services, and patient outcomes were measured over time. Patients who received pharmaceutical care services experienced lower total medical care costs, improved blood glucose control, fewer serious complications (emergency room visits, amputations, diabetic crises), and significantly improved quality of life. The Asheville Project was reported in numerous pharmacy publications and became the national (and even international) rallying point for pharmacists to be reimbursed for non-dispensing services. The City of Asheville has since expanded the program to include asthma and cardiovascular disease states, and numerous demonstration projects around the nation are replicating its success. In fact, the term "Asheville Project" has become synonymous with pharmacists providing nondispensing services

for payment, resulting in improved patient care and reduced costs.

In a collaborative effort among the UNC health affairs schools, Pharmacy, Medicine, Public Health and the UNC Hospital together with Glaxo Wellcome, Merck, Quintiles and the Research Triangle Institute, a Center for Education and Research on Therapeutics (CERTS) to study the use of new drugs and devices in pediatric populations has been established. The Program is supported by a \$1.98 million grant authorized by the U.S. Congress in 2001. An Institute for Natural Medicine was established in 1999, bringing together the capabilities of The Natural Products Laboratory in the School with those of the Research Triangle Institute to move natural medicine from concept to marketplace as FDA-approved agents. In still another collaborative program a worldwide research consortium of researchers led by scientists from the Divisions of Medicinal Chemistry and Drug Delivery and Disposition, the Department of Pathology of the School of Medicine and more than a dozen of researchers from around the world were awarded a \$15.11 million grant in 2000 by the Melinda Gates Foundation to develop drugs to fight African Sleeping Sickness and Leishmaniasis.

The scholarship of teaching has been very evident by the successes of the Schools' innovative teaching methodologies. A clinical clerkship was implemented in 1986 by the AHEC faculty within the Academic Internship Program (AIP), the required semester-long experiential course for all senior students. The clerkship was structured into four 4-week rotations. A Practitioner-Instructor (P-I) Development Program was instituted to assist the P-Is in becoming excellent clinical teachers to provide the large number of students with qualified instructors. A Grant Award to Pharmacy Schools (GAPS) Grant was awarded by AACP to support this training program. The concept of the Program is of sufficient value that it is being used nationally. Recognition of the innovative teaching method using the Skills Laboratory has been recognized in 1995 by the American Association of Colleges of Pharmacy. The Skills Laboratory methodology was coordinated with the AHEC for the on-campus and off-campus experiential components of the curriculum. Recognition of the scholarship of teaching by the University to pharmacy faculty has been highly evident. B. Wesley "Boka" Hadzija has been recognized for her teaching by the UNC Board of Governors for several awards and has been a three-time recipient of the UNC System's Tanner Award as was Ralph Raasch and colleagues, Steven Wyrick who received the Nicholas Salgo Award and Khalid Ishaq who received the University wide Teaching Award.

The excellence for scholarship has never been more evident than in the accomplishments of K.H. Lee who has been recognized by his peers in natural products research. The People's Republic of China, Japan and Taiwan have feted Dr. Lee with their highest scientific awards. The University recognized Dr. Lee's continual achievement by honoring him with a Kenan professorship in 1992. Many faculty members had been selected by their colleagues in pharmacy for national offices and awards bringing recognition to the University and the School. Fred Eckel and Bruce Canaday have served as presidents of the American Society of Health-System Pharmacists, George P. Hager, Tom S. Miya, Jean Paul Gagnon, William H. Campbell as presidents of the American Association of Colleges of Pharmacy and Tom Miya as president of the Society of Toxicology. The School is proud to have had Dr. K.H. Lee, Tom Miya and James Swarbrick recognized as Fellows of the Academy of Pharmaceutical Sciences and Peter Gal as a Fellow in the American College of Clinical Pharmacy.

Finally, the undergraduate student body has given pride to the School by its active involvement in national pharmacy organizations. Two students have been winners of the National Patient Counseling Competition sponsored by the American Pharmaceutical Association: Martha Wall, '91 from Winston-Salem in 1990 and Kami Dell '02 from Alberta, Canada in 2001. In addition pharmacy students have won the American Society of Health-System Pharmacists Clinical Skills Competition for three consecutive years: Stephanie Wrenn of Raleigh and Jen Askew of Asheville in 2003 and Stephanie Burge Hollowell of Burlington and Sarah Katherine Ford of Raleigh in 2004.

## **Tomorrow**

Quoting from Dean Campbell's final "Monday Morning Memo," "There is no secret or hidden formula for creating a great academic program. It takes talented faculty, excellent students, dedicated staff, committed leadership, cutting-edge research, high impact publications (along with) adequate space, necessary equipment and other well-recognized ingredients. Every program realizes this, and that is why we all compete for the same faculty and resources. We will continue to do this at UNC School of Pharmacy, but what will set us apart from other programs and make us the very best, is our ability to work together as colleagues in a spirit of shared mission and mutual respect. *That* is what will always be the essential 'Carolina Difference'." On July 1, 2003 the new dean, Dr. Robert Blouin, stepped through the door of a trailer that held his temporary office. Beard Hall, which housed the School's administrative offices, was once again in the process of a renovation costing approximately \$2.6 million and estimated to take about two years before the building would be returned to the School. Bob Blouin is a B.S. Pharmacy graduate from the Massachusetts College of Pharmacy who received his Pharm.D. at the University of Kentucky. After 23 years on the faculty at the University of Kentucky he left the position of Professor and Associate Dean for Research and Graduate Education at the College of Pharmacy to accept the position of dean at UNC. The directions he received with the baton were to take over this enterprise and strive for the excellence in the School that is envisioned by every pharmacy alumnus of the University of North Carolina.

## **References**

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## Appendixes

### Three-Year Professional Degree Program\* (Leading to B.S. in Pharmacy Degree)

Fall Semester				Spring Semester			
Title	Lec	Lab	Cred.	Title	Lec	Lab	Cred.
Microbiology 51	3	2	4	Biochemistry	4	0	4
Physiology 93	3	2	4	Pharmacy 48	3	3	4
Phar. Practice 21	1	0	1	Pharmaceutics 53	3	0	3
Pharmaceutics 52	3	0	3	Pharmaceutics 53L	0	3	1
Pharmaceutics 52L	0	3	1	Phar. Practice 75	4	0	4
Med Chemistry 65	2	0	2		14	6	16
Pharmaceutics 51	<u>1</u>	<u>0</u>	<u>1</u>				
	13	7	16				
Pharmacology 55	3	0	3	Pharmacology 56	3	0	3
Phar. Administration 90	3	0	3	Phar. Administration 96	3	0	3
Med. Chem. 68	3	0	3	Med. Chemistry 69.	3	0	3
Phar. Practice. 76	4	0	4	Phar. Practice 77	4	0	4
Pharmaceutics 54	<u>3</u>	<u>0</u>	<u>3</u>	Phar. Administration 99	2	0	2
	16	0	16	Pharmaceutics 72L	<u>1</u>	<u>3</u>	<u>2</u>
					16	3	17
Fall or Spring Semester				Fall or Spring Semester			
Professional Electives	12	0	12	Pharmacy Practice	0	40	12
Free Elective	<u>3</u>	<u>0</u>	<u>3</u>	92L			
	15	0	15		<u>0</u>	<u>40</u>	<u>12</u>

\* 1995-1986 School of Pharmacy catalogue.



**Professional Entry-Level Doctor of Pharmacy Curriculum  
(for Class of 2002 and beyond)**

<b>Fall Semester Course</b>	<b>Cred.</b>	<b>Spring Semester Course</b>	<b>Cred.</b>
<b>Professional Year 1</b>			
Human Physiology	4	Intro to Pharmaceutical Care	2
Intro to Health Systems	2	Pharmacology I (Gen Principles)	2
Biochemistry I	3	Biochemistry II	4
Basic Pharmaceutics I	3	Basic Pharmaceutics II	3
Pharmaceutical Care Lab I	<u>3</u>	Pharmaceutical Care Lab II	<u>2</u>
	15		13
<b>Summer Session</b> Comm/Hosp Exterternship    4 cred.(July)			
<b>Professional Year 2</b>			
Pharmacology II (Endo/ANS)	2	Pharmacology III (Cardio/CNS/Tox)	2
Biopharm/Ph'kinetics	3	Applied Pharmacokinetics	3
ANS Med Chem	1	Pharmacy Law & Ethics	3
Pharmacotherapy I (Endo/Rheum)	3	Pharmacotherapy III (Cardiol/Nephro)	3
Pharmacotherapy II (Pulm./GI)	2	Pharmacotherapy IV (Neuro/Psych)	2
Lit Analysis & Interpretation	4	Professional Elective	3
Pharmaceutical Care Lab III	<u>2</u>	Pharmaceutical Care Lab IV	<u>2</u>
	17		18
<b>Professional Year 3</b>			
Immunology	2	Physical Assessment	3
Pharmacotherapy V (Infect Diseases)	3	Problems in Pharmacotherapy	5
Pharmacotherapy VI (Hem/Oncology)	3	Nonprescription Drugs	3
Professional Elective	3	Professional Elective	3
Professional Elective	3	Professional Elective	3
Problems in Pharmacotherapy	<u>5</u>	Problems in Pharmacotherapy	<u>5</u>
	18		16
<b>Professional Year 4</b>			
Community/Hospital Externship	4	Clerkship (Ambulatory Care)	4
Clerkship (General Medicine)	4	Clerkship (Elective)	4
Clerkship (Elec or General Med,)	4	Clerkship (Elective)	4
Clerkship (Drug Information)	4	Clerkship (Elective)	4
Seminar	<u>1</u>	Seminar	<u>1</u>
	17		17

### Pharmacy Alumni Association Presidents

<b>Term</b>	<b>Name</b>	<b>Hometown</b>
1980-1981	Joseph A. Edwards Jr. '70	Raleigh
1981-1982	J. Franklin Lowder '56	Winston-Salem
1982-1983	Laura Gaither Lennon '66	Winston-Salem
1983-1984	Gary Lee Dunham '76	Durham
1984-1985	Aubrey Chester Dollar Jr '52	Winston-Salem
1985-1986	John Dean Badgett '72	Chapel Hill
1986-1987	Donald Kermit Carter '58	Cary
1987-1988	Harry Lee Brogden '68	Lincolnton
1988-1989	Linda Tennant Taylor '63	Crossnore
1989-1990	Robert Stewart Beddingfield '72	McDeeds Creek
1990-1991	Margaret Patterson Ramsey '62	Gastonia
1991-1992	Randall Layne Knott '74	Mechanicsville, VA
1992-1993	Gary Lee Yingling '62	Washington, DC
1993-1994	James Spencer Matthews '66	Clinton
1994-1995	Lynda Lynch Butler '68	Chapel Hill
1995-1996	William White Morris '70	Bessemer City
1996-1997	John Franklin Watts '77	Taylorsville
1997-1998	Virginia Lee Lockamy '73	Raleigh
1998-1999	E. Scott Ballenger '91	Amber, PA
1999-2000	Michael (Mickey) Allen Price '73	Belmont
2000-2001	John Roy Setzer '83	Winston-Salem
2001-2002	Patti Kim Rouse '79	Morrisville
2002-2003	H. Chapman Brown III '83	Penhook, VA
2003-2004	Phebe McDonald Kirkman '60	Winston-Salem
2004-2005	Gary Glisson '78	Nashville

### **Hollingsworth Faculty Scholars**

<b>Faculty</b>	<b>Year</b>	<b>Division</b>
Kuo-Hsuing Lee	1988-1991	Medicinal Chemistry and Natural Products
Moo Cho	1992-1994	Drug Disposition and Dynamics
Kim Brouwer	1995-1997	Drug Disposition and Dynamics
Celeste Lindley	1997-1999	Pharmacotherapy
Bob Shrewsbury	1999-2002	Drug Disposition and Dynamics
Angela Kashuba	2002-2005	Pharmacotherapy

**W.J. Smith Practitioner-in-Residence**

<b>Year</b>	<b>Name</b>	<b>Location</b>	<b>Activity</b>
1988	Banks Kerr	Raleigh, North Carolina	Community Pharmacist
1989	Lonnie Hollingsworth	Lubbock, Texas	Community Pharmacist
1991	Nelson Showalter	Harrisonburg, Virginia	Consultant Pharmacist
1992	Marily Rhudy	Lawrence, Kansas	Community Pharmacist
1994	Elliott Tertes	Plainville, Connecticut	Managed Care Pharmacy
1995	Gene Graves	Little Rock, Arkansas	I.V. Infusion Pharmacy
1996	Hazel Pipkin	Bryan, Texas	Community Pharmacist
1997	Ray Marcom	Manchester, Tennessee	Community Pharmacist

## Fonnie Jackson Andrews Award Recipients

<b>Year</b>	<b>Name</b>	<b>Hometown</b>
1975	Danny Ray Dalton	Black Mountain
1976	Martha Ruth Mayo	Miami, Florida
1977	George Byrd Abercrombie	Brevard
1978	Patsy Elizabeth Millar	Winston-Salem
1979	Mary Claire Sherrill	Statesville
1980	Jennifer Ruann Price	Elizabeth City
1980	Jo Marlene Travis	Raleigh
1981	Alton Dale Johnson	Denton
1982	John Loyd McCall	Charlotte
1983	Gloria Sandra Velasquez	Charlotte
1984	Linda Jean Wastila	Raleigh
1985	James Robert Pierce	Zionville
1986	Virginia Pickens Suiter	Ahoskie
1987	Kenneth Alan Krause	Fayetteville
1988	Wilson Eugene Glaze II	Gastonia
1988	Herbert Joel Phippen	Wendell
1989	Eugene Glenn Brown III	Elizabethtown
1989	Katurah Ann Hartley	Rocky Mount
1990	Nicki Nicole Guy	Faison
1991	Julie Ann Hazlip	Raleigh
1992	Jack William Campbell IV	Moncure
1992	Brenda Chong Martin	Charlotte
1993	Angela Hope Wilson	Roxboro
1994	Stephen Frederick Eckel	Chapel Hill
1995	Kate Moore Wilson	Roanoke Rapids
1996	Michelle Lynn Childs	Cary
1996	Samir Harshad Mody	Wilmington
1997	Stephen Gene Holland	Forest City
1998	Angie Melissa Kendrick	Forest City
1999	Macary Barba Weck	Chapel Hill
2000	Jonathan Michael Gaddy	Apex
2001	Jialynn K. Wang	Silver Spring, MD
2002	Michelle Lee Miethe	Johnson City, TN
2003	Jack Denny Temple	Madison, WI
2004	Amanda Page Whitehead	Beaufort



### Hollingsworth Scholars Award Recipients

<b>Year</b>	<b>Name</b>	<b>Hometown</b>
1985	Patricia Leigh Parker	West Jefferson
1986	Laura Elizabeth Hundley	Boone
1987	Robin Ferguson Dills	Rural Hall
1988	Eric Scott Ballenger	Raleigh
1989	Amy Elizabeth Morgan	Raleigh
1990	Rebecca Ann Smith	Bladenboro
1991	Laura Melissa Kiser	Waynesville
1992	Corrine Michelle Woods	Greensboro
1993	Elizabeth Valerie McMillan	Fayetteville
1994	Danielle Weeden	Burlington
1995	Laurel Beth Evans	Wilmington
1996	Alicia Hope Barefoot	Wade
1996	Nayahmka Joy McGriff	Durham
1997	Margaret Ellen Booth	Statesville
1997	Deborah Ann Sturpe	Terrell
1998	Louella Owens Garris	Wilmington
1998	Catherine Ann Wolfe	Asheboro
1999	Rob Gradison Cockman	Stoney Creek
1999	Julie Bates Cooper	Winston-Salem
2000	Tim Reid Lowrey	Cape Cartaret
2000	Sarah Elizabeth McBane	Snow Camp
2001	Michelle Marii Kuhrt	Durham
2001	Sarah Katherine Ford	Raleigh
2002	April Dawn Miller	New Bern
2002	Larry Wayne Buie	Durham
2003	Dale Nepert Butterfoss	Laurel, MD
2003	April Susan Herdon	Pikeville
2004	Michelle Leigh Bond	Las Vegas, NV
2004	Lisa Marie Bendz	Morrisville
2004	Matthew Ransom	Asheville

### **Howard and Mescal Ferguson Scholarship Recipients**

<b>Year</b>	<b>Name</b>	<b>Hometown</b>
1989	John Harris Wakeford	Raleigh
1989	Shawn Renee Akkerman	Raleigh
1990	Christine V. O'Neill	Mansfield, OH
1991	Mollie Anne Ashe	Asheville
1993	Herbert Joel Pippen	Wendell
1994	Eric Thomas Wolford	Cary
1995	Jamie Marie Gassaway	Gastonia
1996	Kathleen Tewey Sheridan	Perryville, MD
1997	Marilyn Edith Disco	Merrimack, NH
1998	Jillaine Garris	Greenville
1998	Kristin Elayne Britton	Manteo
1999	Alison Carol Lyke	Charlotte
2000	Kristen Bova Campbell	Durham
2001	Laurie S. Anderson	Raleigh
2001	Elizabeth Ann Mejia-Millen	Durham
2002	Ashley Rose Herring	Dunn
2003	Kimberly Butler Clark	Whitsett
2003	Katrina Lea Jamison	Chandler