

CHAPTER 4

PROFESSIONAL EDUCATION

INTRODUCTION

The professional colleges at the University of Kentucky provide a very favorable academic and patient care environment. The University of Kentucky is the Commonwealth's only statewide institution and serves as the principal research and graduate degree-granting university in Kentucky's higher education system. Important aspects of the University which contribute to quality professional education include:

- * Seventeen undergraduate and professional colleges on the University campus in Lexington that span a wide range of careers and professions.
- * The University's Graduate School.
- * The Kentucky Community College System, with fourteen community colleges located across Kentucky.
- * Numerous Multidisciplinary Centers and Institutes within the University.
- * A strong Information System Sector that fosters a comprehensive, integrated communications environment supporting the exchange of information throughout the University and the Commonwealth.
- * A strong Extended Campus Education Program.
- * A strong infrastructure to support research.
- * Mandated state programs for Agriculture, Rural Health and Area Health Education.

The three professional colleges in the Medical Center are part of a comprehensive Medical Center that includes a large, modern University teaching hospital and associated ambulatory care facilities, Colleges of Allied Health and Nursing, a Veterans Hospital, major centers for Aging and Cancer, and a Medical Center library. A very wide range of clinical specialties and subspecialties is represented. The multidisciplinary centers and institutes further facilitate collaborative work. Overall, an exciting environment exists for patient care, clinical education and faculty research.

Nationally, many colleges for the education of health professionals and colleges of law exist on separate campuses, apart from the parent university. The professional colleges at the University of Kentucky are very fortunate to exist in a rich environment that includes many opportunities, both for individual and program development. Individual strengths of each

professional college are described in their respective accreditation reports and annual reports for the University.

The basic charge to the Committee was to review educational programs in the University's professional colleges. In contrast to other committees no guidelines or required "must statements" were provided to structure the activities of the Professional Education Committee. Throughout the fall of 1990, Committee members met to clarify and define how the Committee would approach its charge.

Although a number of programs on the University's Lexington Campus define themselves internally as professional programs, the Committee selected those programs that would not be reviewed through other Self-Study Committees. The Committee's review for the Self-Study included professional degree programs in the College of Law (J.D. degree), part of the Lexington Campus with administrative relationships to the Chancellor for the Lexington Campus, and three colleges which are part of the Medical Center with administrative relationships to the Chancellor for the Medical Center—the Colleges of Dentistry (D.M.D. degree), Pharmacy (Pharm. D. degree), and Medicine (M. D. degree.)

Since professional programs have no specific criteria to which they must respond, the Committee reviewed the Undergraduate and Graduate criteria for guidance. These statements were then compared to the information developed within each of the professional colleges for that college's accreditation process. The Committee concluded that those criteria which might be interpreted as applying to the professional colleges actually replicated inquiries recently made during each college's accreditation process. For example, one criterion requires that "the institution demonstrate an effective relationship between curricular content and the current practice in programs which are designed to prepare students for a specialized profession." In the professional colleges, curricular content responds in significant part to professional accreditation requirements, although the delivery of the curriculum is shaped by individual faculty expertise. The number of accreditation requirements, however, varies from college to college. Colleges in the Medical Center reported more detailed requirements than the College of Law. Each College's most recent Self-Study and Accreditation Report, and 1990-91 Annual Report are available in the respective dean's office.

The Committee also held extensive discussions concerning similarities and differences in the educational processes that occur within the four colleges; the Committee determined that, in spite of significant institutional differences between the colleges, which are reflected in administrative organization, program goals and concerns, and resources, certain issues affected all colleges and reflected shared concerns regardless of institutional affiliation.

The Committee determined not to undertake an extensive new review of admissions, curriculum, and instruction, since that review would be duplicative and unnecessary. Each of four colleges is routinely reviewed and accredited by external, national accrediting bodies. The accreditation agencies require detailed reports on each of these areas. In addition, graduates must successfully complete external examinations for professional licensure. The University requires annual reports that address issues of accountability to the Sector, the University, and Kentucky's Council on Higher Education. Each college has summary plans that describe how institutional effectiveness is addressed internally. At the University level, departments and colleges are routinely reviewed as part of the governance regulations of the University.

Given the level of existing documentation concerning the quality and effectiveness of professional education programs, the Committee determined that the most productive Self-Study review process for the professional schools would acknowledge the strong individual differences among the four colleges by referring to accreditation materials developed by each college. This would allow the Committee to focus its inquiry on common issues that influence professional education at the University of Kentucky. The Committee hoped that this cross-college emphasis would strengthen the educational programs by identifying ways in which the colleges could effectively cooperate to achieve common goals.

The following tasks were identified to guide the Committee's work and report:

- * compile summary information about the Colleges of Law, Dentistry, Medicine, and Pharmacy as an introduction to existing reports and data bases.
- * compile and review existing reports and data bases from the Colleges.
- * identify major educational issues and needs that involve professional colleges of the University.
- * focus on educational issues and needs that involve all or most of the professional colleges.
- * prepare recommendations concerning major educational issues and needs of professional education, focusing on those issues which affect more than one college.

The Committee also engaged in a series of discussions to identify issues for further exploration with faculty and students of the four colleges and agreed that its primary focus would be to explore cross-college issues related to teaching and learning.

Questions related to professional education were prepared and recommended for the Self-Study questionnaires for faculty and students. Additional information was obtained by interviews with appropriate faculty, administrators, and students in each college. The following general questions were used to structure the interviews:

- * What is the relative weight of teaching versus research in your College for purposes of (a) tenure/promotion (b) merit evaluation/salary decisions?
- * What should be the relative weight of teaching versus research in your College for purposes of (a) tenure/promotion (b) merit evaluation/salary decisions?
- * Are there serious impediments to improving teaching in your College? If so, describe these impediments.
- * How do you evaluate teaching in your College? Does your College use student evaluations, course evaluations, or peer evaluations?

- * Does your College have a faculty development program specifically concerned with developing instructional knowledge and skills?
- * Have there been changes in the administrative structure, the curriculum or the reward system in your College that have promoted better teaching?
- * What have been the most significant innovations in teaching or the curriculum in your College during the last five years?
- * What are the major problems in professional education that your College will face in the next ten years? How should these problems be addressed?
- * This is your opportunity to speak out on any issues that you think are critical to the future of professional education at the University of Kentucky. What would you like to say?

In the spring and fall 1991, interviews using these general questions were conducted with the following groups:

- * College of Law: Faculty, Administration, Students;
- * College of Medicine: Faculty Council, Medical Student Council, Assistant Deans, Basic Science Chairs, Clinical Science Chairs;
- * College of Pharmacy: Deans Council, Students
- * College of Dentistry: College Council, Student Advisory Council

A summary of issues was prepared using interview information, questionnaire results, and information provided by the committee members. During this process many issues that influence professional education at the University of Kentucky were identified. Three issues were consistently identified by faculty, administrators, and students, and were believed to substantially effect the quality of professional education in all of the colleges. Thus, the Committee elected to focus on these issues. The Committee prepared recommendations growing out of its focus on active, student-centered learning, the need for increased instructional support, and the need for student space.

DESCRIPTION OF THE COLLEGES

The A. B. Chandler Medical Center

The College of Dentistry, Medicine and Pharmacy are part of the A.B. Chandler Medical Center. The Medical Center was established in 1960 to enhance health care and to have a positive

impact on the numbers and skills of health care providers in the Commonwealth. The Medical Center also includes the Colleges of Allied Health Professions and Nursing. Programs are supported by a Medical Center Library and the clinical facilities of University Hospital, Ambulatory Medical Services, the Markey Cancer Center, and Sanders-Brown Center on Aging. The Medical Center is affiliated with the Veterans Administration Hospital, Cardinal Hill Hospital, Shriners Hospital, Charter Ridge Hospital, and many other community and regional hospitals and health care facilities throughout Kentucky.

The Medical Center serves as a major health care provider and resource center available to all Kentuckians and is used extensively throughout the eastern half of the state. Both patient care and biomedical research are integral to the educational programs of the Medical Center. The Medical Center's formal educational programs range from baccalaureate education to professional degrees and residencies. Extensive continuing education programs are conducted by each of the five Colleges. The formal educational programs currently serve a student body of approximately 2400 and include eight undergraduate programs, 17 graduate programs and three professional degree programs (Dentistry, Medicine, and Pharmacy). Residency programs are available in Pharmacy, Pastoral Counseling and several dental and many medical areas. Over eight hundred faculty support the teaching, research, patient care and public service activities of the Medical Center. Many Medical Center activities are conducted in extramural locations throughout the state and a large network of voluntary faculty also support the various educational programs.

The Medical Center Library provides support for curricular revision including problem-based learning and end-user search training activities with students and faculty from the professional colleges in the Medical Center. Librarians work with various departments in the Medical Center in the areas of on-line search software suggestions, training, and installation. The Library offers continuing education through its courses, with Grateful Med training for Medical Center students and faculty who are located in remote sites throughout the Commonwealth and cooperates with Area Health Education Center faculty and students. The Medical Center Library has established courses which are approved by the Colleges of Dentistry, Medicine, and Pharmacy for continuing education credit.

All professional colleges at the University of Kentucky are accredited. Detailed information concerning admissions, curriculum, instruction and effectiveness measures is included in the formal accreditation materials for each college, in each college's institutional effectiveness plans and in annual reports.

College of Dentistry

The College of Dentistry at the University of Kentucky was founded in 1962 as an integral component of a new Medical Center being established at the University of Kentucky. The College exists to help ensure that all Kentuckians have the benefit of oral health. Throughout its history, the University of Kentucky has been an acknowledged leader, known for innovation in dental education. Currently, the College family includes 165 D.M.D. program students, 39 postdoctoral students, 151 full-time staff, and 67 full-time faculty and 1285 alumni.

The College facilities have 67,206 net square feet of space with 205 treatment and radiological operatories. The majority of this space is in the Dental College Building adjacent to the University Hospital and in the Medical Plaza. In addition, there are about 40 centrally scheduled classrooms and laboratories in the Medical Center that are used by the College. There

are also 10 extramural clinics, a state-of-the-art Mobile Dental Van and approximately sixty private dental practices that serve doctoral and postdoctoral teaching and service programs.

The Doctor of Dental Medicine (D.M.D.) degree program is the basic degree program conducted by the Education Program of the College of Dentistry for student dentists. The curriculum involves a four-year period of study. One hundred sixty-five student dentists are currently enrolled. Faculty/student/staff relationships and supporting services for students are considered outstanding. An Office of Student Services provides a wide array of support for students including a Student Dental Association, financial and career counseling and traditional academic support. The quality of these interpersonal relationships between student, faculty and staff is viewed as a critical determinant of the success of the education process. The College has a highly qualified full-time faculty with diverse training and experience in the various clinical and science disciplines. The majority have postdoctoral or graduate credentials beyond the D.M.D. degree. The role of the faculty is to define, guide, encourage, support and, in general, facilitate students' learning. Faculty and students work actively together to foster and maintain a positive learning environment.

A major strength of the College is its innovative student-centered D.M.D. curriculum. Emphasis is placed on developing positive attitudes towards lifelong learning and excellence in patient care. It is expected that graduates will be prevention-oriented general dentists capable of diagnosis, treatment, planning, and delivery of comprehensive patient care. The D.M.D. clinical curriculum is based on two concepts: (1) comprehensive patient care, and (2) a curriculum schedule that permits early involvement by students in patient care. Clinical sciences instruction involves the routine care of patients in years two, three and four using four student patient care teams supervised by Faculty Team Leaders. Daily clinical instruction is provided by a multidisciplinary faculty who represent the various dental specialties and clinical disciplines. The development of diagnostic knowledge and skills and the application of science to clinical problems receives high priority by the faculty. Most science instruction is provided by College basic and behavioral science faculty in the Department of Oral Health Science. Anatomy instruction in year one is provided by faculty in the Department of Anatomy and Neurobiology in the College of Medicine.

Ethics and professional responsibility are emphasized throughout the curriculum with a conjoint course in each year. Another area of strength involves extramural education combining education and public service activities in many Kentucky communities.

There are 4,551 clock hours in the curriculum that include:

| | Clock Hours | Credit Hours |
|----------------------------------|------------------------|-------------------------|
| Anatomical Sciences | 335 | 12 |
| Oral Biology | 473 | 26 |
| Behavioral Sciences | 370 | 14 |
| Clinical Sciences | 117 | 111 |
| Extramural Education Experiences | 256 | 8 |
| TOTAL | 4551 | 171 |

In addition to the core curriculum, there are 20 elective courses. Two credits in elective/enrichment courses are required of all fourth year students.

Another strength of the College of Dentistry is its innovative organizational structure. The College is the first health professions college in the Country to apply matrix theory to its academic and administrative structures. In 1988, strategic planning resulted in reconfiguration of the College's eleven former departments into two, and overlaying this department structure with four major College programs, Education, Patient Care, Research and Public and Professional Service, to form a matrix organization. This organizational structure was adopted to enhance the College's performance and to refocus the College's efforts on outcomes. The leadership team of the College is the Dean, the four Program Heads, and two Department Chairs. Staff leadership is assigned to the Directors of three staff offices: Office of Administrative Affairs, Office of Student Affairs, and Office of Information Resources. The reorganization of the College of Dentistry has resulted in operational units that more directly support the achievement of the mission of the College by promoting the achievement of College goals and objectives. The structure is designed to facilitate communication in the College with multiple opportunities for faculty advice and consultation in decision making. It is intended that the reorganization of the College of Dentistry will result in a more efficient and effective organization with a College rather than a departmental focus. The College leadership was recently externally identified as a high-performing team in higher education and was invited to participate in a thesis study from Duke University that examined team performance in several academic institutions.

In addition to the D.M.D. degree, the College of Dentistry offers advanced education programs in dentistry. In conjunction with the University Graduate School, the College conducts two masters level postdoctoral graduate degree programs (orthodontics and periodontics). In addition, three postdoctoral residency programs are conducted by the College (general practice dentistry, oral and maxillofacial surgery and pediatric dentistry). The College also conducts postdoctoral fellowships in oral-facial pain and geriatric dentistry, and has an active continuing education program for dentists and dental auxiliaries.

The D.M.D. program and postdoctoral residencies and graduate programs are externally accredited by the National Commission on Dental Accreditation, an accrediting body recognized by the Council on Post-Secondary Accreditation and United States Department of Education. A formal self study followed by a site visit by a national team occurs on a seven-year cycle. Annual surveys are completed to meet interim accreditation reporting requirements. Every two years a detailed curriculum report is completed that outlines topics, curriculum time and methods. National standards and guidelines are used for both the Self-Study and interim reports. Self-Study standards for the College are defined in the following areas:

- * Administration
- * Financial resources and facilities
- * Faculty and staff
- * Students
- * Curriculum (DMD)
- * Patient Care and clinic management
- * Research
- * Outcomes
- * Public and Professional Service

(College standards are used—no national standards exist)

Each accredited postdoctoral program also has separate national standards and Self-Study guides. The College's last accreditation site visit was 1989. Strengths, weaknesses and plans related to the standards are described in each program's self study.

To qualify for professional licensure, graduates of the College of Dentistry who obtain the degree of Doctor of Dental Medicine must satisfactorily complete a National Dental Board Examination and a State and/or Regional Licensure Examination. No national licensure provisions exist. Most dental graduates of the University of Kentucky routinely take the Southern Regional Examination which is administered by an external team of dental practitioners from the various states in the region (Kentucky, Arkansas, Tennessee and Virginia).

The examination includes two components: a written component and a clinical examination. The National Dental Board Examination is required for state licensure. These examinations are developed, administered, and scored by the Joint Commission on National Dental Examinations. Currently 52 of 53 United States licensing jurisdictions recognize National Board results (Delaware does not). The purpose of this examination is to assist the state and regional dental boards in determining qualifications of dentists who seek licensure to practice dentistry. These examinations assess the ability to recall information from basic biomedical and dental sciences and the ability to apply such information in a problem-solving context.

These are separate examinations organized in two parts. Part I, which is usually taken after two years of dental college, consists of four examinations on the basic biomedical sciences. Part II, which is usually taken during the final year of dental college, consists of seven examinations covering dental clinical science. Performance on both licensure and national dental board examinations is routinely monitored by the College of Dentistry and is also reviewed as part of the national accreditation process. Profiles are included in the College Annual Report.

College of Medicine

The College of Medicine was established in 1956 and enrolled its first class of 40 students in 1960. Today, more than 2,300 graduates are counted as alumni of the College. Annually, approximately 400 medical students and 350 residents depend upon the diverse academic opportunities and experiential training provided by the College of Medicine. Graduate education at the master's, doctoral, and postdoctoral levels is also provided to approximately 145 students each year. The College offers a faculty community composed of approximately 300 clinical and 100 basic science faculty.

The curriculum of the College of Medicine provides students with a solid foundation in the basic sciences as well as diverse opportunities in tertiary care, research, and primary care in urban and rural settings. Through the many patient care programs of the University of Kentucky Hospital, the curriculum affords students extensive training in a wide range of experiential areas which may include the Level 3 Neonatal Intensive Care Unit, the Bone Marrow Transplant Unit, the Lucille Parker Markey Cancer Center, the Level I Emergency Service, the Burn Unit, the Cardiac Care Unit, Radiation Therapy Services, and Diagnostic Imaging Services. A 1992 survey conducted by *U.S. News and World Report* ranked the UK College of Medicine as the seventh-best comprehensive medical school in the nation.

The Ambulatory Medical Services Program of the University of Kentucky Hospital offers a network of outpatient departments and 100 specialty clinics including medicine, surgery, pediatrics, ophthalmology, obstetrics/gynecology, neurology, diagnostic radiology, radiation

medicine, psychiatry, and communication disorders. These components provide valuable opportunities for interaction with patients and for learning clinical medicine. In addition, the College of Medicine has established a strong outreach program offering diagnostic and continuity clinics in many rural communities of the Commonwealth.

Dedicated to the provision of knowledge, the College of Medicine is also committed to developing in each student a continuing desire to seek new knowledge and to pursue lifelong personal growth. It is expected that these students will ultimately assume leadership positions in the development of more effective and efficient health care technologies and programs for the future.

Since the health needs of the nation are constantly changing, an effective curriculum requires continuous review and evaluation and occasional revision of courses and requirements. The practice of medicine, today and in the future, means much more than direct patient care. Medical students now must be prepared to use computer technology, advanced communications systems, and scientific and technical advances in the practice of medicine. Moreover, physicians must have a deep understanding of human and social values, cultural differences, as well as effective interpersonal skills. Thus, there can be no guarantee that the curriculum, course content, or the system and criteria of student evaluation will be identical each year.

The College was recently identified by the Association of American Medical Colleges as one of the twenty most innovative educational programs in the country. In addition, the College was one of only eight medical colleges awarded a major grant for curriculum revision by The Robert Wood Johnson Foundation. The focus of the grant is to allow implementation of progressive approaches for the education of physicians to better prepare them to practice medicine in the 21st Century.

In all areas of health care education and provision, the College of Medicine embraces its mission: to equip students to meet the health needs of today and respond to the challenges of tomorrow.

The College of Medicine is accredited by the Liaison Committee on Medical Education (LCME) of the American Association of Medical Colleges (AAMC) in conjunction with the American Medical Association. All 127 medical colleges in the United States must participate in this highly structured process which takes approximately one and one-half years to complete. Accreditation from the LCME is awarded for a seven-year period. Conditional accreditation is not awarded. A Self-Study is conducted and materials submitted to the LCME regarding the following areas:

- * Objectives
- * Governance
- * Education Program including requirements, elective courses, evaluation, academic counseling, and career guidance
- * Medical students
- * Finances
- * Facilities
- * Faculty
- * Library
- * Graduate basic science education
- * Graduate medical education

- * Continuing medical education
- * Research
- * Information concerning individual departments

Reports on areas of concern are requested at various intervals during the seven years between accreditation site visits.

Since 1964, the College of Medicine has been fully accredited by the Liaison Committee on Medical Education (LCME). The last accreditation survey was completed in 1988 after the completion of an intensive Self-Study and resulted in the awarding of full accreditation. The accreditation report of the LCME cited the following strengths of the College: good leadership; a single campus under single, coordinated leadership; a dedicated and committed faculty; a successful Faculty Practice plan; a growing research program; enthusiastic, well-motivated, and capable students; a scholarship program; and the Area Health Education Centers which facilitate educational and service programs in the rural areas of the Commonwealth.

Students of the College in good academic standing are eligible to sit for the National Board Medical Examination (NBME), a three-part examination used for the assessment of individuals seeking initial licensure by United States licensing jurisdictions. This certification is accepted for initial licensure by the medical licensing authorities of all states and territories except Texas and the Virgin Islands. The examination consists of three parts. Part I is a comprehensive, two-day, written, multiple-choice examination intended to determine if an examinee understands and can apply key concepts in the biomedical sciences. Part II is a two-day written, multiple-choice examination which covers the clinical sciences. Part III is a one-day written, multiple-choice examination intended to measure the possession and use of medical knowledge which is deemed appropriate for the unsupervised practice of general medicine. An individual who is enrolled as a medical student or who is a graduate of an accredited medical college in the United States is eligible for Parts I and II of the NBME. Part III can be taken by those who have completed all requirements for the M.D. degree, have passed Parts I and II, are candidates for NBME certification, and are serving in a graduate medical education program accredited by the Accreditation Council for Graduate Medical Education.

College of Pharmacy

The University of Kentucky College of Pharmacy was founded as the Louisville College of Pharmacy in 1870. In 1947 the College became a division of the University of Kentucky. The College moved to the Lexington campus in 1957 and became a part of the Chandler Medical Center in 1966. In 1986 the College moved into a new facility adjacent to the Health Sciences Learning Center and began the Center for Pharmaceutical Science and Technology.

The College provides a wide variety of program options for which there is high demand. Enrollment in the programs stretches the capacity of both the physical facilities and the manpower available. Currently there are approximately 280 B.S. students, 80 Doctor of Pharmacy students on campus, 60 Doctor of Pharmacy students in an off-campus program, 65 graduate students, 20 Post Doctorals, and 15 Clinical Pharmacy Residents. These programs are managed by 49 full-time faculty and 10 part-time faculty.

The Faculty is organized into three academic divisions: Medicinal Chemistry and Pharmaceutics; Pharmacology and Experimental Therapeutics; and Pharmacy Practice and Science. All but one of the faculty members hold terminal degrees. Faculty are heavily involved

in teaching, research and most have significant service responsibility. The quality of the faculty of the College is demonstrated, in part, by the large number of prestigious awards won and national positions held by members of the faculty.

Educational programs in the College of Pharmacy are accredited on a six-year cycle by the American Council on Pharmaceutical Education (ACPE). The College received full accreditation in 1990 following an extensive self study. The accreditation report cited the College's strengths as nationally and internationally recognized faculty, highly recruited students, strong educational programs, a growing number of participants in an off-campus Pharm.D. program, important integration of teaching and service missions, model programs with University Hospital, and a coordinated effort involving Medical Center leadership to provide the College with needed developmental and technical support. Between accreditation visits the College undergoes continuous self study including curriculum review and evaluation of the delivery formats for the educational programs.

Evidence of the commitment of the faculty to the educational program and its quality include the selection of four current faculty for the Alumni Association Great Teacher Award and the performance of graduates on standardized licensing exams. Graduates of the Kentucky professional programs routinely surpass their counterparts across the country on the National Board of Pharmacy Exams, last year by nearly 20 percentage points. In addition, pass rates regularly exceed the national average by 10 to 15 percentage points. Surveys of graduates conducted by the University report a high degree of satisfaction with education, one of the highest satisfaction rates in the entire University. All graduates readily find employment or post graduate educational opportunities and most have more than one position from which to choose.

The quality of applicants to the professional programs of the College are excellent. Currently over 285 applicants vie for 100 positions in the entering class. The average college prepharmacy grade point for students admitted is 3.4.

The commitment to professional ideals and public service in the student body is strong. The Kentucky Academy of Students of Pharmacy and three professional organizations in the College routinely engage in community education and public service programming. Students recently received a first place in the "Innovations in Health Promotion" competition from the U.S. Secretary of Health and Human Services and the first "Professional Promotions Award" from the Kentucky Pharmacists Association. In addition they received an "Outstanding Student Organization on Campus" award from the Kentucky Student Government Association.

Evidence of excellence and innovation of the College are numerous. The College pioneered a variety of educational programs. Kentucky was the first College of Pharmacy besides the California schools to offer the Doctor of Pharmacy Degree. It was the first Pharmacy school in the country to offer educational externships and was among the first to require clinical clerkships, both of which are now required by the national pharmacy accrediting body. Additionally, Kentucky was the second College of Pharmacy to develop formal coursework leading to the Pharm.D. degree in a nontraditional off-campus format, and the first to develop programs allowing completion of the entire degree off-campus. The nuclear pharmacy option is one of seven in the country to prepare individuals for eligibility for certification as nuclear pharmacists. The Continuing Pharmaceutical Education program of the College has a national reputation for excellence with both professional education and research program offerings and a budget that has grown to \$1.2 million dollars annually.

The scope of research in the College of Pharmacy is such that a significant portion of the total College budget is from extramural sources. Equipment and technology developed with extramural research funding is routinely employed in the professional education programs to enable student exposure to developments that will soon make their way into contemporary pharmaceutical practice.

The largest issues facing the College today involve faculty resources and a debate concerning a national trend to move exclusively to the Doctor of Pharmacy as the sole professional degree offering. In two polls of college deans taken in the middle 70s Kentucky was considered among the top five of 74 Colleges of Pharmacy in the United States. Although such polls have not been conducted recently, the current reputation of the College is generally considered to be somewhere in the top 15-20. Adopting the Doctor of Pharmacy as the sole professional degree and making significant changes in the format of its educational programs—such as the utilization of problem-based learning and computer-aided instruction—will be required for the College to maintain a national reputation for leadership. In addition, such changes will be required for the college to adequately educate pharmacy practitioners for the future who can successfully compete with graduates from other programs.

To qualify for professional licensure each graduate of the College must pass a National Board of Pharmacy and State examination. These examinations include written and practice components that require the student to recall and integrate information from the basic and clinical sciences. Performance on national and state examinations is monitored by the College.

College of Law

The College of Law was established in 1910 and enrolled its first class of thirty students that year. The College has moved three times during its history, reflecting the College's strong development. The College has approximately 4,500 alumni and a current enrollment of approximately 450 students. The College's faculty offers both a solid, required first-year curriculum and a diverse range of upper-division courses forming the College's elective curriculum. A number of adjunct faculty bring additional breadth to the College's course offerings particularly in specialized areas such as bankruptcy and litigation skills. The College of Law Library serves law students, faculty, and area professionals. The Library staff plays an important part in the introductory legal research curriculum, which is designed and taught by faculty and library staff. The Library provides a solid research base for faculty members and also serves a state-wide legal community. The College's Mineral Law Center provides both curricular offerings and enrichment activities for students, faculty, and practitioners interested in mineral law.

The first-year curriculum provides students with interactive instruction in traditional courses such as contracts, property, torts, criminal, and constitutional law. The first-year schedule also includes instruction in appellate oral advocacy and legal writing. Upper division students select from a wide range of courses. They must complete courses in professional responsibility and at least one course containing a faculty-supervised substantial writing requirement prior to graduation. A number of related extracurricular activities such as the College's two law journals, the *Kentucky Law Journal* and the *Journal of Mineral Law and Policy*, the Moot Court Board, and the student section of the American Trial Lawyer's Association support the basic curriculum. The College sponsors Judicial Clerkships, which provide law students an opportunity to work in the office of a state court circuit judge. The Prison Internship, which permits students to work with prisoners incarcerated at the Federal Correctional Institute in Lexington also enhances student experiences.

The College's curriculum is monitored by the faculty curriculum committee and an executive committee that reports directly to the Dean. Individual faculty members develop and propose new programs to be offered. Among the most recent changes have been a revision of the tax law program to reflect changes in the Tax Code, the development of additional seminars, such as a seminar in Law and Religion and a seminar in state government taught jointly by a senior faculty member and the Chief Justice of the Kentucky Supreme Court and a revision of the first-year curriculum to consolidate and strengthen basic courses.

The College's graduates have a strong record of employment by major law firms throughout the country. A number of graduates have become Kentucky judges. In addition, many alumni have served as law clerks to both state and federal appellate judges.

The College of Law maintains a strong program of Continuing Legal Education, a self-supporting program which provides continuing legal education to a state-wide audience of attorneys. Faculty members regularly participate in these programs, which are also open to students without charge.

During the past ten years the College of Law has enjoyed an expanding development program, leading to the institution of a number of scholarships and faculty chairs. The College has received advice from a Visiting Committee, composed of alumni and distinguished attorneys drawn from a national pool. The College sponsors the Ray Lecture series and the Swinford Lecture series, which have brought discussion of important legal topics to the University campus. This year's Ray Lecture was presented by Nina Tottenberg, the legal reporter for National Public Radio. In addition, generous donations from alumni have permitted the establishment of a Faculty Colloquia Series.

The College of Law is regularly accredited by the American Bar Association. The review process occurs every seven years. The College will be reviewed in 1992 and is currently undergoing an internal Self-Study in preparation for that accreditation process. The last prior review was in 1985. The subjects under study for the current accreditation are:

- * History and Organization of the College of Law
- * Program and administration
- * Faculty
- * Library
- * Curriculum
- * Admissions
- * Students
- * Evaluation of output
- * Physical facilities

The College's graduates must pass a bar examination administered by individual states to practice law. The largest number of students take the Kentucky Bar Examination, which is administered by the State Bar Examiners. The bar examiners operate independently from the college. The examination consists of the Multistate Bar Examination, a one-day multiple choice examination covering a small number of subjects such as contracts, torts, property, and criminal law, and a one-day essay portion directed toward Kentucky law. Although the pass rate varies from year to year, more than ninety percent of students usually pass the bar examination, and the College generally has the highest pass rate in the State.

The College's faculty is extremely reluctant to use the bar examination as an adequate measure of student preparation because there are a number of significant courses and legal issues that are not tested by any bar examination. Measures such as the significant writing requirement and the breadth of seminar offerings are intended to encourage students to take a broader view of legal education.

The College of Law's principal strengths are committed leadership, a strong faculty, the ability to attract increasingly well-prepared students, and solid alumni support. The College of Law is fortunate to have faculty who provide students with a challenging educational experience. The College not only continues to educate much of the state's potential leadership, but also provides well-trained attorneys to a national placement market.

MAJOR ISSUES

Three issues were selected for in-depth discussion in this report. These issues are 1) active, student-centered learning which emphasizes problem solving, 2) instructional support/priorities for teaching, and 3) space for students. In the following section of the report each of these issues is discussed and recommendations made.

Active, Student-Centered Learning for Problem Solving

The professionals of tomorrow face complex choices requiring the application of sophisticated decision-making skills to an exponentially expanding base of information. Not only has modern technology increased the sum total of human knowledge, but it has made much of that knowledge rapidly accessible to all practitioners. Health care providers and attorneys can no longer rely on their ability to retain through memory all relevant information, particularly because the relevant information will change throughout their professional lives. Motivating professional students to become active, lifelong learners who take independent responsibility for their education is increasingly important. In addition, integrating cultural, social and ethical nuances into the decision-making process must begin with professional education.

A fundamental competency for professional students is critical thinking. Most educators agree that increasing active and de-emphasizing passive learning/teaching strategies is an important educational consideration to improve effectiveness related to critical thinking and the preparation for lifelong learning. In addition, students must be given the opportunity to develop adequate professional skills and to employ those skills in settings that enhance their professional development.

Interestingly, results from the Self-Study questionnaire indicate faculty have major concerns about how well the professional educational curricula are addressing these areas. For example:

- * 49 percent responded *disagree or strongly disagree* with "the curriculum encourages students to become independent learners with a commitment to lifelong learning."
- * 45 percent responded *disagree or strongly disagree* with "the curriculum offers students an excellent opportunity to develop skills related to critical and independent thinking."

- * 40 percent responded *disagree or strongly disagree* with “the curriculum teaches problem solving skills.”

Interviews conducted by the Committee with faculty and students confirmed these responses. However, many faculty asserted that substantial improvements in these areas will not be easily obtained. Complex educational issues are involved, including instructional support, faculty development, teaching space, informatics, library support, teaching reward systems, accreditation constraints and conflicting priorities for faculty and staff time and use of resources.

The College of Medicine provides an excellent example. During the past two years, the College has experimented with problem-based learning, and with the help of a planning grant from the Robert Wood Johnson Foundation, is now proposing a major curriculum revision to encourage more active self-directed learning. Many positive comments were made by faculty and students about the potential of the proposed improvements. However, equally strong opinions were heard that major modifications of the current instructional environment would be necessary, with associated resource and policy implications and effects on the other colleges of the Medical Center. Agreement exists among all groups interviewed that a major Medical Center educational initiative would be required — an initiative that cuts across college lines and provides support to all colleges. Resource needs to support educational innovation were also cited in interviews for the College of Law.

Recommendation 4-1: A major Medical Center initiative should be carried out to promote active, problem-based learning in the Medical Center colleges. The potential for collaborative activities with the College of Law should be explored with linkages developed related to general issues for professional education. Faculty development to prepare for using new instructional methods should receive strong priority in the initiative.

Recommendation 4-2: The Law Library and Medical Center Library professional staffs should serve as active partners in the active, student-centered learning process.

Recommendation 4-3: Strategic planning should be conducted related to curriculum considerations that cross the professional colleges. Academic administrators should provide the leadership and develop improved policies and specific recommendations for improvement.

Recommendation 4-4: The application of informatics (the applied science of information) in professional college curricula should be substantially increased.

Recommendation 4-5: Existing reward systems, including promotion and tenure policies, should be studied and altered as needed to support a high priority for excellence in teaching.

Recommendation 4-6: In the professional colleges, consideration should be given to incorporating a teaching dossier as part of the materials submitted for review in the promotion and tenure process.

Recommendation 4-7: Accreditation and professional licensure requirements should be studied to identify and address constraints which negatively influence the adoption of active learning strategies.

Recommendation 4-8: In recruitment, hiring, and retention decisions, candidates or faculty members' interest, experience, commitment to teaching, and attitudes toward students, should receive a higher priority than a substantial number of the survey responses indicate that it presently has.

Recommendation 4-9: Increased focus on active and lifelong learning will necessitate professionals continuing their education throughout their careers. Professional colleges should strengthen continuing education programs to meet this need.

Instructional Support/Priorities For Teaching

As contrasted with the infrastructure available to support research and patient care, the level of basic institutional support for learning/teaching was considered very weak by almost everyone the Committee contacted. The University has stated a priority for developing a student-centered educational environment. For the professional colleges to approach their potential, a much higher priority must be assigned to education in recruitment, promotion, tenure and salary decisions, faculty development, and instructional support. According to the Self-Study Survey of professional school faculty and students:

- * Forty-one percent of faculty responded *disagree or strongly disagree* in response to the statement, "I have satisfactory access to specific instructional support units for help in the development of instructional materials."
- * Forty-nine percent of students rated "academic advising from faculty" as *fair or poor*.
- * Twenty-seven percent of students responded that their professional program was *average or below average* when compared with other programs.
- * High percentages of students indicated they were *somewhat or very dissatisfied* with computing and library facilities (software for numerical analysis - 75.7%) (software for imaging and graphics - 74.7%) (library copy service - 42%).

During the Committee discussions, examples were provided about reduced financial support for instruction during the past decade. In the Medical Center reduced financial support for education and the centralization of salary savings has limited college flexibility. The College of Law cited resource constraints inhibiting development of specialized programs as well as courses and developing international opportunities.

Balancing priorities for research and teaching is an ongoing concern in all professional colleges. This is especially true in the Medical Center where patient care represents a third major programmatic priority. As a general observation, both faculty and students believe that greater rewards exist for research and patient care activities. While exceptions obviously exist in individual units, this overall view was strongly supported. Many faculty expressed concern about the level of dependence on clinical income to support teaching and new technology and about

differences across academic units in the flexibility that chairs, academic deans and deans have to support instruction. Concern was expressed by faculty, particularly in the College of Medicine, that instructional support can be dramatically influenced by changes in reimbursement for patient care, open faculty and administrative positions in clinical departments, and relationships with University Hospital. Faculty raised questions about University Hospital and requested clarification of the appropriate role and responsibilities of the Hospital in support of professional education for the Medical Center colleges.

Planning for the new University Library presents another set of issues for all professional colleges. Improved library holdings and support were cited as essential for the College of Law. Improvements in support for active, problem-based learning strategies are critical for the Medical Center colleges and are closely linked with library support. Since existing committees are working on this area, both for the Medical Center and the Lexington Campus, the Committee elected not to address library issues. However, the importance of developments related to the new University Library for the professional colleges must be noted. Improvements related to many of the issues cited in this report should be closely linked to these developments.

The general area of instructional support is very broad. It includes support for faculty development, instructional materials, teaching space, student support (advising, tutoring, etc.), instructional equipment, informatics, rewards systems, and promotion and tenure considerations. Weaknesses in instructional support in all of these dimensions were noted. It is important to acknowledge that University and college leaders have recognized that a significant need exists for instructional support and several important developments are underway to address the needs. During the time this Committee has functioned, major improvements have occurred and more are planned. State-of-the-art computer learning facilities have been developed. Both the Lexington Campus and the Medical Center have forwarded substantial new requests for instructional support as part of the 1992-94 Biennial Budget Request. The Chancellor of the Medical Center has proposed a new Center of Teaching and Learning, with an associated new Office of Informatics. Similarly, Lexington Campus Chancellor has requested additional support for the Lexington campus's newly created Teaching and Learning Center. Together with the new University Library, these developments hold great promise for upgrading the current educational environment. Recognition of these needs by the Chancellors was interpreted as general confirmation of instructional support needs identified by the Professional Schools Committee. These efforts should continue.

Recommendation 4-10: A financial resource plan for professional education should be developed and implemented to help coordinate new developments and strengthen the resource base to support instruction. The following should be explored:

- * **Modifying indirect cost policies for educational projects to direct these funds to support for instruction.**
- * **Specifying the roles and responsibilities of University Hospital to support the instructional mission of the University as a whole and Colleges of the Medical Center.**
- * **Revising the current approach to budgeting salary savings and fund balances by providing nonrecurring funds to support the instructional mission and instructional research.**

- **Revising financial incentives for educational scholarships by exploring the creation of an educational foundation.**
- **Taxing patient care revenues for central instructional support and instructional equipment.**
- **Increasing the emphasis on the development of educational partnerships with the private sector.**

Recommendation 4-11: Current biennial budget proposals to emphasize active, problem-based learning and to create a Center for Teaching and Learning and an Office of Informatics for the Medical Center and to increase funding for the Lexington Campus Center for Teaching and Learning should receive high priority.

Recommendation 4-12: The University's Information System initiatives should continue and be strengthened.

Recommendation 4-13: The development of the University Library should be viewed as a unique and major opportunity to change significantly the educational environment for the professional colleges. The library should be designed to support active, student-centered learning, informatics, and space for students and teaching.

Recommendation 4-14: Adequate Medical Library support should be maintained to provide basic information/education and on-line training to support professional students at both the Medical Center and off-campus education sites.

Space For Students

During the Committee interviews, the need for space for students emerged as a third major issue. Space for individual and group study, relaxation and collegial activities, and storage is considered inadequate both in the College of Law and the Medical Center. In the Medical Center, both the quantity and quality of space for students has steadily eroded and become increasingly problematic. Growth in student enrollment and the faculty, new programs, research, and patient care have all combined to compete for existing space and negatively influence student space. Little space for students now exists in the Medical Center.

Similar concerns exist in the College of Law. Recent surveys completed for the College's internal Self-Study indicate that needs for space for students compete with a wide variety of other interests. Students expressed concern that the Law Library does not have sufficient carrels to provide space for individual study. Carrels are provided to most third year students, but first and second year students are not able to enjoy the use of a carrel. Much of the space which might be used for small group study is inherently inadequate because it is open space in the library. Students who attempt to study in this open space may have difficulty concentrating because of classes that must use the library or because of the general traffic of library patrons. Other possible study space exists in the student lounges, but the square footage of these areas makes it impossible for a large number of students to congregate there. Many students reported that they were not able to study comfortably at the College. Student organizations, which sponsor a number of skill

development activities, also suffer from lack of space. Both law journals reported the inability to expand, and the Moot Court Board reported that it was confined to a very small room that would not accommodate the meeting of its members.

Similarly, classroom space lacks the flexibility necessary to accommodate a variety of small to medium classes. Larger classrooms cannot be blocked off to allow for use by more than one student group.

Recommendation 4-15: Planning for the new University Library should include renovation of the current Medical Center Library to increase individual and group student study and research areas.

Recommendation 4-16: A new student center to serve the South Campus and the Medical Center should be developed.

Recommendation 4-17: The proposed new building for the College of Allied Health Professions should include ample provisions for student space.

Recommendation 4-18: Any new buildings proposed for the Medical Center and the College of Law should address the need of space for student use and provide small group teaching space. Master planning should incorporate routine provisions and guidelines to improve and expand current space.

Recommendation 4-19: Improvements in the space for students at the College of Law should be gained through the rearrangements of existing space to emphasize quiet, small-group study areas.

OTHER PROFESSIONAL EDUCATION CONCERNS

A number of other issues which influence the quality of professional education programs, or problems to which the programs must respond, emerged in the committee's discussions, the Self-Study questionnaire, and during the interviews conducted by the committee. An enumeration and short description of each issue is provided.

Ethics and Professional Responsibilities

Ethical and professional responsibilities have always been significant professional concerns. In some cases accreditation agencies require that the curriculum include course work concerning professional standards. The wealth of information provided by developing technology available to professionals in both the legal and medical communities will necessarily strain the boundaries of each profession's internal ethical rules and will often result in conflict between ethical guidelines governing different professions. Professional colleges must meet the challenge of developing a keen sense of individual professional responsibility, preparing students to solve the ethical dilemmas of the future, and enabling students to envision solutions to accommodate conflicts between the goals of distinct professional groups.

Chemical Dependency

Including alcohol abuse, alcoholism, substance abuse, and drug addiction, is a serious national health problem that also affects individuals working within the legal and medical professions. Students entering high-stress professions must recognize that they are not immune to dependency problems. Professional education programs have a unique responsibility to approach this problem directly within the curriculum and to set leadership policies for intervention, treatment, and aftercare.

Cultural Diversity

Faculty, students, and staff of the professional colleges have come from many cultures, ethnic groups, and life experiences. Professional colleges have an important obligation to value diversity. Developing an increased awareness of and sensitivity to diversity can enhance the educational experience, provide better patient/client services, and provide opportunities for emerging professionals to bring their college experience to the broader community.

Informatics

Rapid development in medical informatics is occurring both nationally and internationally. These developments have the potential to significantly enhance the teaching and learning process. These advances cannot be enjoyed without additional, newer equipment and support to assist faculty in using and developing materials for this technology.

Continuing Education

Current continuing education programs in the professional colleges are expected to be mainly self-supported from course fees. Considerable variation exists in the approaches used by the colleges. Policy differences and priorities for income generation are often at conflict with educational needs.

Faculty Development

Resources and opportunities for faculty development in the professional colleges related to learning and teaching are considered meager given the rapid changes that are occurring in the professions.

Instructional Materials

Resources to help support faculty in the professional colleges to develop state-of-the-art instructional material are considered inadequate. In addition, resources vary greatly among the academic units and colleges.

Student Safety

Professional students reported serious concerns that parking areas are unsafe. As the University reorganizes the campus to eliminate parking and requires students to park further away

from the campus, more attention must be given to providing safe and convenient group transportation to professional students who often need to utilize the campus facilities after normal work hours.

Teaching Space/Instructional Equipment

Professional colleges have major difficulties with room scheduling. Colleges reported problems arising from the inability to incorporate state-of-the-art technology into existing classroom space. Classrooms are often inadequate to support instructional equipment. Space for small classes is at a premium in all colleges. In the Medical Center research space is so limited that it inhibits incorporating students into research activity as part of their educational program. Lack of space fosters competition between faculty and colleges, diminishing the overall climate of education.

Library Support

The development of a new library is a major University priority that will affect each of the professional colleges. Currently, both the Medical Center and the College of Law have their own, free-standing libraries. Integration of the new, Commonwealth Library with currently existing libraries will have important implications for professional college students and faculty.

Rewards and Promotion and Tenure Considerations

Many faculty are strongly influenced by an existing reward system that gives priority to research over teaching. This perception of priority is a matter of general consensus among professional college faculty.

Occupational Safety and Health

Infection control (HIV, Hepatitis) and new regulatory requirements concerning the use of chemicals and the disposition of hazardous wastes involve major new concerns, particularly for the Medical Center Colleges. Significant resource allocations are required to respond to the need to protect students, faculty, and patients from infection or injury.

Recruitment and Retention of Women and Minorities in Professional Colleges

Women's enrollment in the professional colleges has increased rapidly over the past decade. In addition, the presence of women on the faculty and professional staff has also increased. Professional colleges have a responsibility to address issues of gender fairness and to assure that all members of the University community are aware of issues related to discrimination on the basis of gender. Similarly, all of the professional colleges have concerns about low minority enrollment. In each college special attention has been given to the recruitment and retention of minority students. Coordination of recruitment activities, relationships with the University's Office of Minority Affairs, the number of minority faculty, loans and scholarships directed to minority students, and the general educational climate for minorities in the colleges are important areas of concern.

International Programs

The growth of a global economy affects professional colleges as well as other areas of the University. The need to respond to international opportunities adds additional pressure to a limited resource base.

Decentralization of Education/Rural Health Initiative

The University and the professional colleges are currently responding to emerging state initiatives to provide increased access to education through extended-campus course offerings and to provide selected health professional education programs on-site in rural locations. Significant resource and priority concerns are involved.

Basic Science Education

In the Medical Center basic science departments were established in the College of Medicine to serve the science educational needs of the five colleges. Over several years conflict between research and graduate education missions of these departments has developed and has led to problems in obtaining adequate science instruction in the professional programs.

Many of these issues have major implications for the professional colleges. Given time constraints, in-depth study was judged to be beyond the ability of the Committee and not indicated. Minority, gender and cultural diversity were extremely important issues for all professional colleges. However, the University Senate's studies on the status of women and minorities contains a large amount of information related to issues that could not be better stated or more thoroughly replicated by the committee. Within the Medical Center cultural diversity is being addressed in a substantial way by a standing committee. Accordingly, the committee members did not believe that the Committee could add in significant ways to these efforts. Thus, lower priority was assigned to detailed study of these areas.

PLANNING AND EVALUATION

Planning and evaluation procedures were judged to be very adequate in the Colleges of Law, Dentistry, Medicine, and Pharmacy. The Professional Schools committee did not assign a high priority to studying this area. The preliminary review indicated more in-depth consideration would be provided by the Committee on Institutional Effectiveness and accreditation requirements were previously described in this report. Most professional colleges are now accountable for outcomes assessment in conjunction with accreditation. In addition, by its *Governing Regulations*, the University of Kentucky is a "management by objectives" organization. The University and all of its academic and support units operate with a *Strategic Plan* that is formally revised every two years. Each College within the University, including the Professional Colleges, participates in the strategic planning process and maintains a current statement of mission, goals, and planning assumptions. Biannually, each college monitors environmental changes, opportunities and threats to program effectiveness and updates their plans. These plans are then incorporated in the University's Strategic Plan.

SUMMARY AND CONCLUSIONS

This chapter has reviewed professional education at the University of Kentucky as evaluated by the Committee on Professional Education. The review has included the entry level professional doctoral degree programs in the Colleges of Law, Dentistry, Pharmacy, and Medicine. While acknowledging significant differences among the Colleges and their professional education programs, it was determined that significant common factors affect these professional Colleges. These concerns constitute the themes of this chapter.

All four of the professional Colleges at the University have outstanding national reputations. They are each accredited by national professional accrediting associations. In each of their last reviews, laudatory comments were made concerning each College and their fulfillment of their mission of professional education. Each of the Colleges has national measures with which to gauge their effectiveness. All of the professions represented require state and/or national examinations for licensure. Students of Kentucky's professional Colleges routinely do well in these examinations.

After a careful review of the professional Colleges, the Committee chose to focus on three cross-cutting themes which this chapter has analyzed: active student-centered learning, improved support for the teaching-learning process, and expansion of space for student activity. The nineteen recommendations of the Committee reflect these three dimensions of concern. Addressing the recommendations will enable the University to enhance what are already outstanding programs of professional education for citizens of the Commonwealth.